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EUROPEAN COMMISSION
European Climate, Infrastructure and Environment Executive Agency

Director

GRANT AGREEMENT

NUMBER 101022965 — EUCITYCALC

This **Agreement** ('the Agreement') is **between** the following parties:

on the one part,

the **European Climate, Infrastructure and Environment Executive Agency (CINEA)** ('the Agency'), under the powers delegated by the European Commission ('the Commission'), represented for the purposes of signature of this Agreement by Christian STRASSER,

and

on the other part,

1. 'the coordinator':

ENERGY CITIES/ENERGIE-CITES ASSOCIATION (ENERGY CITIES), established in CHEMIN DE PALENTE 2, BESANCON 25000, France, VAT number: FR55379716764, represented for the purposes of signing the Agreement by Executive Director, Claire Roumet

and the following other beneficiaries, if they sign their 'Accession Form' (see Annex 3 and Article 56):

2. **POTSDAM INSTITUT FUER KLIMAFOLGENFORSCHUNG (PIK)**, established in Telegrafenberg 31, POTSDAM 14412, Germany, VAT number: DE811547185,

3. **CLIMACT SA (CLIMACT SA)**, established in PLACE DE L UNIVERSITE 16, LOUVAIN LA NEUVE 1348, Belgium, VAT number: BE0892272118,

4. **CARBON MARKET WATCH (CMW)**, established in RUE D'ALBANIE 117, BRUXELLES 1060, Belgium,

5. **RIGA MUNICIPAL AGENCY "RIGA ENERGY AGENCY" (REA)**, established in Maza Jauniela 5, Riga 1539, Latvia, VAT number: LV90011524360,

6. **COMUNE DI MANTOVA (Mantova)**, established in VIA ROMA 39, MANTOVA 46100, Italy, VAT number: IT00189800204,

7. **DIJON METROPOLE (DIJON METROPOLE)**, established in 40, AVENUE DU DRAPEAU, DIJON 21000, France, VAT number: FR65242100410,

8. **AGENCIA DE ENERGIA E AMBIENTE DA ARRABIDA (ENA)**, established in AVENIDA BELO HORIZONTE EDIFICIO ESCARPAS SANTOS NICOLAU, SETUBAL 2910 422, Portugal, VAT number: PT507796497,

9. **MESTO ZDAR NAD SAZAVOU (Zdar)**, established in ZIZKOVA 227/1, ZDAR NAD SAZAVOU 59101, Czech Republic, VAT number: CZ00295841,

10. **SDRUZENI ENERGETICKYCH MANAZERU MEST A OBCI ZS (SEMMO)**, established in TYRSOVO NAMESTI 68, LITOMERICE 412 01, Czech Republic,

11. **REGIONALNA ENERGETSKA AGENCIJA SJEVER (REA North)**, established in MIROSLAVA KRLEZE 81, KOPRIVNICA 48000, Croatia, VAT number: HR91748607924,

Unless otherwise specified, references to ‘beneficiary’ or ‘beneficiaries’ include the coordinator.

The parties referred to above have agreed to enter into the Agreement under the terms and conditions below.

By signing the Agreement or the Accession Form, the beneficiaries accept the grant and agree to implement it under their own responsibility and in accordance with the Agreement, with all the obligations and conditions it sets out.

The Agreement is composed of:

Terms and Conditions

Annex 1 Description of the action

Annex 2 Estimated budget for the action

2a Additional information on the estimated budget

Annex 3 Accession Forms

Annex 4 Model for the financial statements

Annex 5 Model for the certificate on the financial statements

Annex 6 Model for the certificate on the methodology

TERMS AND CONDITIONS

TABLE OF CONTENTS

CHAPTER 1 GENERAL....11

ARTICLE 1 — SUBJECT OF THE AGREEMENT....11

CHAPTER 2 ACTION....11

ARTICLE 2 — ACTION TO BE IMPLEMENTED....11

ARTICLE 3 — DURATION AND STARTING DATE OF THE ACTION....11

ARTICLE 4 — ESTIMATED BUDGET AND BUDGET TRANSFERS....11

4.1 Estimated budget....11

4.2 Budget transfers....11

CHAPTER 3 GRANT....11

ARTICLE 5 — GRANT AMOUNT, FORM OF GRANT, REIMBURSEMENT RATES AND FORMS OF COSTS....11

5.1 Maximum grant amount....11

5.2 Form of grant, reimbursement rates and forms of costs....11

5.3 Final grant amount — Calculation....12

5.4 Revised final grant amount — Calculation....14

ARTICLE 6 — ELIGIBLE AND INELIGIBLE COSTS....14

6.1 General conditions for costs to be eligible....14

6.2 Specific conditions for costs to be eligible....15

6.3 Conditions for costs of linked third parties to be eligible....21

6.4 Conditions for in-kind contributions provided by third parties free of charge to be eligible....22

6.5 Ineligible costs....22

6.6 Consequences of declaration of ineligible costs....22

CHAPTER 4 RIGHTS AND OBLIGATIONS OF THE PARTIES....22

SECTION 1 RIGHTS AND OBLIGATIONS RELATED TO IMPLEMENTING THE ACTION....23

ARTICLE 7 — GENERAL OBLIGATION TO PROPERLY IMPLEMENT THE ACTION....23

7.1 General obligation to properly implement the action....23

7.2 Consequences of non-compliance....23

ARTICLE 8 — RESOURCES TO IMPLEMENT THE ACTION — THIRD PARTIES INVOLVED IN THE ACTION....23

ARTICLE 9 — IMPLEMENTATION OF ACTION TASKS BY BENEFICIARIES NOT RECEIVING EU FUNDING....23

ARTICLE 10 — PURCHASE OF GOODS, WORKS OR SERVICES....23

10.1 Rules for purchasing goods, works or services ... 23

10.2 Consequences of non-compliance ... 24

ARTICLE 11 — USE OF IN-KIND CONTRIBUTIONS PROVIDED BY THIRD PARTIES AGAINST PAYMENT ... 24

11.1 Rules for the use of in-kind contributions against payment ... 24

11.2 Consequences of non-compliance ... 25

ARTICLE 12 — USE OF IN-KIND CONTRIBUTIONS PROVIDED BY THIRD PARTIES FREE OF CHARGE ... 25

12.1 Rules for the use of in-kind contributions free of charge ... 25

12.2 Consequences of non-compliance ... 25

ARTICLE 13 — IMPLEMENTATION OF ACTION TASKS BY SUBCONTRACTORS ... 25

13.1 Rules for subcontracting action tasks ... 25

13.2 Consequences of non-compliance ... 26

ARTICLE 14 — IMPLEMENTATION OF ACTION TASKS BY LINKED THIRD PARTIES ... 26

14.1 Rules for calling upon linked third parties to implement part of the action ... 26

14.2 Consequences of non-compliance ... 27

ARTICLE 14a — IMPLEMENTATION OF ACTION TASKS BY INTERNATIONAL PARTNERS ... 27

ARTICLE 15 — FINANCIAL SUPPORT TO THIRD PARTIES ... 27

15.1 Rules for providing financial support to third parties ... 27

15.2 Financial support in the form of prizes ... 27

15.3 Consequences of non-compliance ... 27

ARTICLE 16 — PROVISION OF TRANS-NATIONAL OR VIRTUAL ACCESS TO RESEARCH INFRASTRUCTURE ... 27

16.1 Rules for providing trans-national access to research infrastructure ... 27

16.2 Rules for providing virtual access to research infrastructure ... 28

16.3 Consequences of non-compliance ... 28

SECTION 2 RIGHTS AND OBLIGATIONS RELATED TO THE GRANT ADMINISTRATION ... 28

ARTICLE 17 — GENERAL OBLIGATION TO INFORM ... 28

17.1 General obligation to provide information upon request ... 28

17.2 Obligation to keep information up to date and to inform about events and circumstances likely to affect the Agreement ... 28

17.3 Consequences of non-compliance ... 28

ARTICLE 18 — KEEPING RECORDS — SUPPORTING DOCUMENTATION ... 28

18.1 Obligation to keep records and other supporting documentation ... 29

18.2 Consequences of non-compliance ... 30

ARTICLE 19 — SUBMISSION OF DELIVERABLES ... 30

19.1 Obligation to submit deliverables.... 30
19.2 Consequences of non-compliance.... 30
ARTICLE 20 — REPORTING — PAYMENT REQUESTS.... 30
20.1 Obligation to submit reports.... 30
20.2 Reporting periods.... 30
20.3 Periodic reports — Requests for interim payments.... 31
20.4 Final report — Request for payment of the balance.... 32
20.5 Information on cumulative expenditure incurred.... 32
20.6 Currency for financial statements and conversion into euro.... 32
20.7 Language of reports.... 33
20.8 Consequences of non-compliance.... 33
ARTICLE 21 — PAYMENTS AND PAYMENT ARRANGEMENTS.... 33
21.1 Payments to be made.... 33
21.2 Pre-financing payment — Amount — Amount retained for the Guarantee Fund.... 33
21.3 Interim payments — Amount — Calculation.... 34
21.4 Payment of the balance — Amount — Calculation — Release of the amount retained for the Guarantee Fund.... 34
21.5 Notification of amounts due.... 35
21.6 Currency for payments.... 35
21.7 Payments to the coordinator — Distribution to the beneficiaries.... 35
21.8 Bank account for payments.... 36
21.9 Costs of payment transfers.... 36
21.10 Date of payment.... 36
21.11 Consequences of non-compliance.... 36
ARTICLE 22 — CHECKS, REVIEWS, AUDITS AND INVESTIGATIONS — EXTENSION OF FINDINGS.... 37
22.1 Checks, reviews and audits by the Agency and the Commission.... 37
22.2 Investigations by the European Anti-Fraud Office (OLAF).... 39
22.3 Checks and audits by the European Court of Auditors (ECA).... 39
22.4 Checks, reviews, audits and investigations for international organisations.... 39
22.5 Consequences of findings in checks, reviews, audits and investigations — Extension of findings.... 39
22.6 Consequences of non-compliance.... 41
ARTICLE 23 — EVALUATION OF THE IMPACT OF THE ACTION.... 41
23.1 Right to evaluate the impact of the action.... 41
23.2 Consequences of non-compliance.... 41

SECTION 3 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND AND RESULTS 42

SUBSECTION 1 GENERAL 42

ARTICLE 23a — MANAGEMENT OF INTELLECTUAL PROPERTY 42

23a.1 Obligation to take measures to implement the Commission Recommendation on the management of intellectual property in knowledge transfer activities 42

23a.2 Consequences of non-compliance 42

SUBSECTION 2 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND 42

ARTICLE 24 — AGREEMENT ON BACKGROUND 42

24.1 Agreement on background 42

24.2 Consequences of non-compliance 42

ARTICLE 25 — ACCESS RIGHTS TO BACKGROUND 43

25.1 Exercise of access rights — Waiving of access rights — No sub-licensing 43

25.2 Access rights for other beneficiaries, for implementing their own tasks under the action 43

25.3 Access rights for other beneficiaries, for exploiting their own results 43

25.4 Access rights for affiliated entities 43

25.5 Access rights for third parties 44

25.6 Consequences of non-compliance 44

SUBSECTION 3 RIGHTS AND OBLIGATIONS RELATED TO RESULTS 44

ARTICLE 26 — OWNERSHIP OF RESULTS 44

26.1 Ownership by the beneficiary that generates the results 44

26.2 Joint ownership by several beneficiaries 44

26.3 Rights of third parties (including personnel) 45

26.4 Agency ownership, to protect results 45

26.5 Consequences of non-compliance 46

ARTICLE 27 — PROTECTION OF RESULTS — VISIBILITY OF EU FUNDING 46

27.1 Obligation to protect the results 46

27.2 Agency ownership, to protect the results 46

27.3 Information on EU funding 46

27.4 Consequences of non-compliance 47

ARTICLE 28 — EXPLOITATION OF RESULTS 47

28.1 Obligation to exploit the results 47

28.2 Results that could contribute to European or international standards — Information on EU funding 47

28.3 Consequences of non-compliance 47

ARTICLE 29 — DISSEMINATION OF RESULTS — OPEN ACCESS — VISIBILITY OF EU FUNDING 47

29.1 Obligation to disseminate results ... 47
29.2 Open access to scientific publications ... 48
29.3 Open access to research data ... 48
29.4 Information on EU funding — Obligation and right to use the EU emblem ... 49
29.5 Disclaimer excluding Agency responsibility ... 49
29.6 Consequences of non-compliance ... 49
ARTICLE 30 — TRANSFER AND LICENSING OF RESULTS ... 50
30.1 Transfer of ownership ... 50
30.2 Granting licenses ... 50
30.3 Agency right to object to transfers or licensing ... 50
30.4 Consequences of non-compliance ... 51
ARTICLE 31 — ACCESS RIGHTS TO RESULTS ... 51
31.1 Exercise of access rights — Waiving of access rights — No sub-licensing ... 51
31.2 Access rights for other beneficiaries, for implementing their own tasks under the action ... 51
31.3 Access rights for other beneficiaries, for exploiting their own results ... 51
31.4 Access rights of affiliated entities ... 52
31.5 Access rights for the EU institutions, bodies, offices or agencies and EU Member States ... 52
31.6 Access rights for third parties ... 52
31.7 Consequences of non-compliance ... 52
SECTION 4 OTHER RIGHTS AND OBLIGATIONS ... 52
ARTICLE 32 — RECRUITMENT AND WORKING CONDITIONS FOR RESEARCHERS ... 52
32.1 Obligation to take measures to implement the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers ... 52
32.2 Consequences of non-compliance ... 53
ARTICLE 33 — GENDER EQUALITY ... 53
33.1 Obligation to aim for gender equality ... 53
33.2 Consequences of non-compliance ... 53
ARTICLE 34 — ETHICS AND RESEARCH INTEGRITY ... 53
34.1 Obligation to comply with ethical and research integrity principles ... 53
34.2 Activities raising ethical issues ... 54
34.3 Activities involving human embryos or human embryonic stem cells ... 54
34.4 Consequences of non-compliance ... 55
ARTICLE 35 — CONFLICT OF INTERESTS ... 55
35.1 Obligation to avoid a conflict of interests ... 55
35.2 Consequences of non-compliance ... 55

ARTICLE 36 — CONFIDENTIALITY....55

36.1 General obligation to maintain confidentiality....55

36.2 Consequences of non-compliance....56

ARTICLE 37 — SECURITY-RELATED OBLIGATIONS....56

37.1 Results with a security recommendation....56

37.2 Classified information....56

37.3 Activities involving dual-use goods or dangerous materials and substances....56

37.4 Consequences of non-compliance....57

ARTICLE 38 — PROMOTING THE ACTION — VISIBILITY OF EU FUNDING....57

38.1 Communication activities by beneficiaries....57

38.2 Communication activities by the Agency and the Commission....58

38.3 Consequences of non-compliance....59

ARTICLE 39 — PROCESSING OF PERSONAL DATA....59

39.1 Processing of personal data by the Agency and the Commission....59

39.2 Processing of personal data by the beneficiaries....59

39.3 Consequences of non-compliance....59

ARTICLE 40 — ASSIGNMENTS OF CLAIMS FOR PAYMENT AGAINST THE AGENCY....60

CHAPTER 5 DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES — RELATIONSHIP WITH COMPLEMENTARY BENEFICIARIES — RELATIONSHIP WITH PARTNERS OF A JOINT ACTION....60

ARTICLE 41 — DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES — RELATIONSHIP WITH COMPLEMENTARY BENEFICIARIES — RELATIONSHIP WITH PARTNERS OF A JOINT ACTION....60

41.1 Roles and responsibility towards the Agency....60

41.2 Internal division of roles and responsibilities....60

41.3 Internal arrangements between beneficiaries — Consortium agreement....61

41.4 Relationship with complementary beneficiaries — Collaboration agreement....62

41.5 Relationship with partners of a joint action — Coordination agreement....62

CHAPTER 6 REJECTION OF COSTS — REDUCTION OF THE GRANT — RECOVERY — SANCTIONS — DAMAGES — SUSPENSION — TERMINATION — FORCE MAJEURE....62

SECTION 1 REJECTION OF COSTS — REDUCTION OF THE GRANT — RECOVERY — SANCTIONS....62

ARTICLE 42 — REJECTION OF INELIGIBLE COSTS....62

42.1 Conditions....62

42.2 Ineligible costs to be rejected — Calculation — Procedure....62

42.3 Effects....62

ARTICLE 43 — REDUCTION OF THE GRANT....63

43.1 Conditions....63
43.2 Amount to be reduced — Calculation — Procedure....63
43.3 Effects....64
ARTICLE 44 — RECOVERY OF UNDUE AMOUNTS....64
44.1 Amount to be recovered — Calculation — Procedure....64
ARTICLE 45 — ADMINISTRATIVE SANCTIONS....68
SECTION 2 LIABILITY FOR DAMAGES....68
ARTICLE 46 — LIABILITY FOR DAMAGES....68
46.1 Liability of the Agency....68
46.2 Liability of the beneficiaries....68
SECTION 3 SUSPENSION AND TERMINATION....68
ARTICLE 47 — SUSPENSION OF PAYMENT DEADLINE....68
47.1 Conditions....68
47.2 Procedure....69
ARTICLE 48 — SUSPENSION OF PAYMENTS....69
48.1 Conditions....69
48.2 Procedure....69
ARTICLE 49 — SUSPENSION OF THE ACTION IMPLEMENTATION....70
49.1 Suspension of the action implementation, by the beneficiaries....70
49.2 Suspension of the action implementation, by the Agency....71
ARTICLE 50 — TERMINATION OF THE AGREEMENT OR OF THE PARTICIPATION OF ONE OR MORE BENEFICIARIES....72
50.1 Termination of the Agreement, by the beneficiaries....72
50.2 Termination of the participation of one or more beneficiaries, by the beneficiaries....72
50.3 Termination of the Agreement or the participation of one or more beneficiaries, by the Agency....75
SECTION 4 FORCE MAJEURE....79
ARTICLE 51 — FORCE MAJEURE....79
CHAPTER 7 FINAL PROVISIONS....80
ARTICLE 52 — COMMUNICATION BETWEEN THE PARTIES....80
52.1 Form and means of communication....80
52.2 Date of communication....80
52.3 Addresses for communication....81
ARTICLE 53 — INTERPRETATION OF THE AGREEMENT....81
53.1 Precedence of the Terms and Conditions over the Annexes....81
53.2 Privileges and immunities....81

ARTICLE 54 — CALCULATION OF PERIODS, DATES AND DEADLINES 81

ARTICLE 55 — AMENDMENTS TO THE AGREEMENT 81

55.1 Conditions 81

55.2 Procedure 81

ARTICLE 56 — ACCESSION TO THE AGREEMENT 82

56.1 Accession of the beneficiaries mentioned in the Preamble 82

56.2 Addition of new beneficiaries 82

ARTICLE 57 — APPLICABLE LAW AND SETTLEMENT OF DISPUTES 83

57.1 Applicable law 83

57.2 Dispute settlement 83

ARTICLE 58 — ENTRY INTO FORCE OF THE AGREEMENT 83

CHAPTER 1 GENERAL

ARTICLE 1 — SUBJECT OF THE AGREEMENT

This Agreement sets out the rights and obligations and the terms and conditions applicable to the grant awarded to the beneficiaries for implementing the action set out in Chapter 2.

CHAPTER 2 ACTION

ARTICLE 2 — ACTION TO BE IMPLEMENTED

The grant is awarded for the action entitled '**European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality**' — '**EUCITYCALC**' **('action')**, as described in Annex 1.

ARTICLE 3 — DURATION AND STARTING DATE OF THE ACTION

The duration of the action will be **36 months** as of 1 September 2021 ('**starting date of the action**').

ARTICLE 4 — ESTIMATED BUDGET AND BUDGET TRANSFERS

4.1 Estimated budget

The '**estimated budget**' for the action is set out in Annex 2.

It contains the estimated eligible costs and the forms of costs, broken down by beneficiary (and linked third party) and budget category (see Articles 5, 6, and 14).

4.2 Budget transfers

The estimated budget breakdown indicated in Annex 2 may be adjusted — without an amendment (see Article 55) — by transfers of amounts between beneficiaries, budget categories and/or forms of costs set out in Annex 2, if the action is implemented as described in Annex 1.

However, the beneficiaries may not add costs relating to subcontracts not provided for in Annex 1, unless such additional subcontracts are approved by an amendment or in accordance with Article 13.

CHAPTER 3 GRANT

ARTICLE 5 — GRANT AMOUNT, FORM OF GRANT, REIMBURSEMENT RATES AND FORMS OF COSTS

5.1 Maximum grant amount

The '**maximum grant amount**' is **EUR 1 998 571.25** (one million nine hundred and ninety eight thousand five hundred and seventy one EURO and twenty five eurocents).

5.2 Form of grant, reimbursement rates and forms of costs

The grant reimburses **100% of the action's eligible costs** (see Article 6) ('**reimbursement of eligible costs grant**') (see Annex 2).

The estimated eligible costs of the action are EUR **1 998 571.25** (one million nine hundred and ninety eight thousand five hundred and seventy one EURO and twenty five eurocents).

Eligible costs (see Article 6) must be declared under the following forms ('**forms of costs**'):

(a) for **direct personnel costs**:

- as actually incurred costs ('**actual costs**') or
- on the basis of an amount per unit calculated by the beneficiary in accordance with its usual cost accounting practices ('**unit costs**').

Personnel **costs for SME owners** or **beneficiaries that are natural persons** not receiving a salary (see Article 6.2, Points A.4 and A.5) must be declared on the basis of the amount per unit set out in Annex 2a (**unit costs**);

(b) for **direct costs for subcontracting**: as actually incurred costs (**actual costs**);

(c) for **direct costs of providing financial support to third parties**: not applicable;

(d) for **other direct costs**:

- for costs of internally invoiced goods and services: on the basis of an amount per unit calculated by the beneficiary in accordance with its usual cost accounting practices ('**unit costs**');
- for all other costs: as actually incurred costs (**actual costs**);

(e) for **indirect costs**: on the basis of a flat-rate applied as set out in Article 6.2, Point E ('**flat-rate costs**');

(f) **specific cost category(ies):** not applicable.

5.3 Final grant amount — Calculation

The '**final grant amount**' depends on the actual extent to which the action is implemented in accordance with the Agreement's terms and conditions.

This amount is calculated by the Agency — when the payment of the balance is made (see Article 21.4) — in the following steps:

Step 1 — Application of the reimbursement rates to the eligible costs

Step 2 — Limit to the maximum grant amount

Step 3 — Reduction due to the no-profit rule

Step 4 — Reduction due to substantial errors, irregularities or fraud or serious breach of obligations

5.3.1 Step 1 — Application of the reimbursement rates to the eligible costs

The reimbursement rate(s) (see Article 5.2) are applied to the eligible costs (actual costs, unit costs and flat-rate costs; see Article 6) declared by the beneficiaries and linked third parties (see Article 20) and approved by the Agency (see Article 21).

5.3.2 Step 2 — Limit to the maximum grant amount

If the amount obtained following Step 1 is higher than the maximum grant amount set out in Article 5.1, it will be limited to the latter.

5.3.3 Step 3 — Reduction due to the no-profit rule

The grant must not produce a profit.

'**Profit**' means the surplus of the amount obtained following Steps 1 and 2 plus the action's total receipts, over the action's total eligible costs.

The '**action's total eligible costs**' are the consolidated total eligible costs approved by the Agency.

The '**action's total receipts**' are the consolidated total receipts generated during its duration (see Article 3).

The following are considered **receipts**:

(a) income generated by the action; if the income is generated from selling equipment or other assets purchased under the Agreement, the receipt is up to the amount declared as eligible under the Agreement;

(b) financial contributions given by third parties to the beneficiary or to a linked third party specifically to be used for the action, and

(c) in-kind contributions provided by third parties free of charge and specifically to be used for the action, if they have been declared as eligible costs.

The following are however not considered receipts:

(a) income generated by exploiting the action's results (see Article 28);

(b) financial contributions by third parties, if they may be used to cover costs other than the eligible costs (see Article 6);

(c) financial contributions by third parties with no obligation to repay any amount unused at the end of the period set out in Article 3.

If there is a profit, it will be deducted from the amount obtained following Steps 1 and 2.

5.3.4 Step 4 — Reduction due to substantial errors, irregularities or fraud or serious breach of obligations — Reduced grant amount — Calculation

If the grant is reduced (see Article 43), the Agency will calculate the reduced grant amount by deducting the amount of the reduction (calculated in proportion to the seriousness of the errors,

irregularities or fraud or breach of obligations, in accordance with Article 43.2) from the maximum grant amount set out in Article 5.1.

The final grant amount will be the lower of the following two:

- the amount obtained following Steps 1 to 3 or
- the reduced grant amount following Step 4.

5.4 Revised final grant amount — Calculation

If — after the payment of the balance (in particular, after checks, reviews, audits or investigations; see Article 22) — the Agency rejects costs (see Article 42) or reduces the grant (see Article 43), it will calculate the '**revised final grant amount**' for the beneficiary concerned by the findings.

This amount is calculated by the Agency on the basis of the findings, as follows:

- in case of **rejection of costs**: by applying the reimbursement rate to the revised eligible costs approved by the Agency for the beneficiary concerned;
- in case of **reduction of the grant**: by calculating the concerned beneficiary's share in the grant amount reduced in proportion to the seriousness of the errors, irregularities or fraud or breach of obligations (see Article 43.2).

In case of **rejection of costs and reduction of the grant**, the revised final grant amount for the beneficiary concerned will be the lower of the two amounts above.

ARTICLE 6 — ELIGIBLE AND INELIGIBLE COSTS

6.1 General conditions for costs to be eligible

'**Eligible costs**' are costs that meet the following criteria:

(a) for **actual costs**:

(i) they must be actually incurred by the beneficiary;

(ii) they must be incurred in the period set out in Article 3, with the exception of costs relating to the submission of the periodic report for the last reporting period and the final report (see Article 20);

(iii) they must be indicated in the estimated budget set out in Annex 2;

(iv) they must be incurred in connection with the action as described in Annex 1 and necessary for its implementation;

(v) they must be identifiable and verifiable, in particular recorded in the beneficiary's accounts in accordance with the accounting standards applicable in the country where the beneficiary is established and with the beneficiary's usual cost accounting practices;

(vi) they must comply with the applicable national law on taxes, labour and social security, and

(vii) they must be reasonable, justified and must comply with the principle of sound financial management, in particular regarding economy and efficiency;

(b) for **unit costs**:

(i) they must be calculated as follows:

{amounts per unit set out in Annex 2a or calculated by the beneficiary in accordance with its usual cost accounting practices (see Article 6.2, Point A and Article 6.2.D.5)

multiplied by

the number of actual units};

(ii) the number of actual units must comply with the following conditions:

- the units must be actually used or produced in the period set out in Article 3;
- the units must be necessary for implementing the action or produced by it, and
- the number of units must be identifiable and verifiable, in particular supported by records and documentation (see Article 18);

(c) for **flat-rate costs**:

(i) they must be calculated by applying the flat-rate set out in Annex 2, and

(ii) the costs (actual costs or unit costs) to which the flat-rate is applied must comply with the conditions for eligibility set out in this Article.

6.2 Specific conditions for costs to be eligible

Costs are eligible if they comply with the general conditions (see above) and the specific conditions set out below for each of the following budget categories:

A. direct personnel costs;
B. direct costs of subcontracting;
C. not applicable;
D. other direct costs;
E. indirect costs;
F. not applicable.

'Direct costs' are costs that are directly linked to the action implementation and can therefore be attributed to it directly. They must not include any indirect costs (see Point E below).

'Indirect costs' are costs that are not directly linked to the action implementation and therefore cannot be attributed directly to it.

A. Direct personnel costs

Types of eligible personnel costs

A.1 Personnel costs are eligible, if they are related to personnel working for the beneficiary under an employment contract (or equivalent appointing act) and assigned to the action ('**costs for employees (or equivalent)**'). They must be limited to salaries (including during parental leave), social security contributions, taxes and other costs included in the **remuneration**, if they arise from national law or the employment contract (or equivalent appointing act).

Beneficiaries that are non-profit legal entities[1] may also declare as personnel costs **additional remuneration** for personnel assigned to the action (including payments on the basis of supplementary contracts regardless of their nature), if:

(a) it is part of the beneficiary's usual remuneration practices and is paid in a consistent manner whenever the same kind of work or expertise is required;

(b) the criteria used to calculate the supplementary payments are objective and generally applied by the beneficiary, regardless of the source of funding used.

'Additional remuneration' means any part of the remuneration which exceeds what the person would be paid for time worked in projects funded by national schemes.

Additional remuneration for personnel assigned to the action is eligible up to the following amount:

(a) if the person works full time and exclusively on the action during the full year: up to EUR 8 000;

(b) if the person works exclusively on the action but not full-time or not for the full year: up to the corresponding pro-rata amount of EUR 8 000, or

(c) if the person does not work exclusively on the action: up to a pro-rata amount calculated as follows:

{{EUR 8 000

divided by

the number of annual productive hours (see below)},

multiplied by

the number of hours that the person has worked on the action during the year}.

A.2 The **costs for natural persons working under a direct contract** with the beneficiary other than an employment contract are eligible personnel costs, if:

(a) the person works under conditions similar to those of an employee (in particular regarding the way the work is organised, the tasks that are performed and the premises where they are performed);

(b) the result of the work carried out belongs to the beneficiary (unless exceptionally agreed otherwise), and

[1] For the definition, see Article 2.1(14) of the Rules for Participation Regulation No 1290/2013: '**non-profit legal entity**' means a legal entity which by its legal form is non-profit-making or which has a legal or statutory obligation not to distribute profits to its shareholders or individual members.

(c) the costs are not significantly different from those for personnel performing similar tasks under an employment contract with the beneficiary.

A.3 The **costs of personnel seconded by a third party against payment** are eligible personnel costs, if the conditions in Article 11.1 are met.

A.4 **Costs of owners** of beneficiaries that are small and medium-sized enterprises ('**SME owners**') who are working on the action and who do not receive a salary are eligible personnel costs, if they correspond to the amount per unit set out in Annex 2a multiplied by the number of actual hours worked on the action.

A.5 **Costs of 'beneficiaries that are natural persons'** not receiving a salary are eligible personnel costs, if they correspond to the amount per unit set out in Annex 2a multiplied by the number of actual hours worked on the action.

Calculation

Personnel costs must be calculated by the beneficiaries as follows:

{{hourly rate

multiplied by

the number of actual hours worked on the action},

plus

for non-profit legal entities: additional remuneration to personnel assigned to the action under the conditions set out above (Point A.1)}.

The number of actual hours declared for a person must be identifiable and verifiable (see Article 18).

The total number of hours declared in EU or Euratom grants, for a person for a year, cannot be higher than the annual productive hours used for the calculations of the hourly rate. Therefore, the maximum number of hours that can be declared for the grant are:

{number of annual productive hours for the year (see below)

minus

total number of hours declared by the beneficiary, for that person in that year, for other EU or Euratom grants}.

The '**hourly rate**' is one of the following:

(a) for personnel costs declared as **actual costs** (i.e. budget categories A.1, A.2, A.3): the hourly rate is calculated *per full financial year*, as follows:

{actual annual personnel costs (excluding additional remuneration) for the person

divided by

number of annual productive hours}.

using the personnel costs and the number of productive hours for each full financial year covered by the reporting period concerned. If a financial year is not closed at the end of the

reporting period, the beneficiaries must use the hourly rate of the last closed financial year available.

For the 'number of annual productive hours', the beneficiaries may choose one of the following:

(i) 'fixed number of hours': 1 720 hours for persons working full time (or corresponding pro-rata for persons not working full time);

(ii) 'individual annual productive hours': the total number of hours worked by the person in the year for the beneficiary, calculated as follows:

{annual workable hours of the person (according to the employment contract, applicable collective labour agreement or national law)

plus

overtime worked

minus

absences (such as sick leave and special leave)}.

'Annual workable hours' means the period during which the personnel must be working, at the employer's disposal and carrying out his/her activity or duties under the employment contract, applicable collective labour agreement or national working time legislation.

If the contract (or applicable collective labour agreement or national working time legislation) does not allow to determine the annual workable hours, this option cannot be used;

(iii) 'standard annual productive hours': the 'standard number of annual hours' generally applied by the beneficiary for its personnel in accordance with its usual cost accounting practices. This number must be at least 90% of the 'standard annual workable hours'.

If there is no applicable reference for the standard annual workable hours, this option cannot be used.

For all options, the actual time spent on **parental leave** by a person assigned to the action may be deducted from the number of annual productive hours.

As an alternative, beneficiaries may calculate the hourly rate *per month*, as follows:

{actual monthly personnel cost (excluding additional remuneration) for the person

divided by

{number of annual productive hours / 12}}

using the personnel costs for each month and (one twelfth of) the annual productive hours calculated according to either option (i) or (iii) above, i.e.:

- fixed number of hours or
- standard annual productive hours.

Time spent on **parental leave** may not be deducted when calculating the hourly rate per month. However, beneficiaries may declare personnel costs incurred in periods of parental leave in proportion to the time the person worked on the action in that financial year.

If parts of a basic remuneration are generated over a period longer than a month, the beneficiaries may include only the share which is generated in the month (irrespective of the amount actually paid for that month).

Each beneficiary must use only one option (per full financial year or per month) for each full financial year;

(b) for personnel costs declared on the basis of **unit costs** (i.e. budget categories A.1, A.2, A.4, A.5): the hourly rate is one of the following:

(i) for SME owners or beneficiaries that are natural persons: the hourly rate set out in Annex 2a (see Points A.4 and A.5 above), or

(ii) for personnel costs declared on the basis of the beneficiary's usual cost accounting practices: the hourly rate calculated by the beneficiary in accordance with its usual cost accounting practices, if:

- the cost accounting practices used are applied in a consistent manner, based on objective criteria, regardless of the source of funding;

- the hourly rate is calculated using the actual personnel costs recorded in the beneficiary's accounts, excluding any ineligible cost or costs included in other budget categories.

  The actual personnel costs may be adjusted by the beneficiary on the basis of budgeted or estimated elements. Those elements must be relevant for calculating the personnel costs, reasonable and correspond to objective and verifiable information;

and

- the hourly rate is calculated using the number of annual productive hours (see above).

B. Direct costs of subcontracting (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are eligible if the conditions in Article 13.1.1 are met.

C. Direct costs of providing financial support to third parties

Not applicable

D. Other direct costs

D.1 **Travel costs and related subsistence allowances** (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are eligible if they are in line with the beneficiary's usual practices on travel.

D.2 The **depreciation costs of equipment, infrastructure or other assets** (new or second-hand) as recorded in the beneficiary's accounts are eligible, if they were purchased in accordance with

Article 10.1.1 and written off in accordance with international accounting standards and the beneficiary's usual accounting practices.

The **costs of renting or leasing** equipment, infrastructure or other assets (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are also eligible, if they do not exceed the depreciation costs of similar equipment, infrastructure or assets and do not include any financing fees.

The costs of equipment, infrastructure or other assets **contributed in-kind against payment** are eligible, if they do not exceed the depreciation costs of similar equipment, infrastructure or assets, do not include any financing fees and if the conditions in Article 11.1 are met.

The only portion of the costs that will be taken into account is that which corresponds to the duration of the action and rate of actual use for the purposes of the action.

D.3 **Costs of other goods and services** (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are eligible, if they are:

(a) purchased specifically for the action and in accordance with Article 10.1.1 or

(b) contributed in kind against payment and in accordance with Article 11.1.

Such goods and services include, for instance, consumables and supplies, dissemination (including open access), protection of results, certificates on the financial statements (if they are required by the Agreement), certificates on the methodology, translations and publications.

D.4 **Capitalised and operating costs of 'large research infrastructure'**[2] directly used for the action are eligible, if:

(a) the value of the large research infrastructure represents at least 75% of the total fixed assets (at historical value in its last closed balance sheet before the date of the signature of the Agreement or as determined on the basis of the rental and leasing costs of the research infrastructure[3]);

(b) the beneficiary's methodology for declaring the costs for large research infrastructure has been positively assessed by the Commission ('**ex-ante assessment**');

(c) the beneficiary declares as direct eligible costs only the portion which corresponds to the duration of the action and the rate of actual use for the purposes of the action, and

(d) they comply with the conditions as further detailed in the annotations to the H2020 grant agreements.

[2] '**Large research infrastructure**' means research infrastructure of a total value of at least EUR 20 million, for a beneficiary, calculated as the sum of historical asset values of each individual research infrastructure of that beneficiary, as they appear in its last closed balance sheet before the date of the signature of the Agreement or as determined on the basis of the rental and leasing costs of the research infrastructure.

[3] For the definition, see Article 2(6) of the H2020 Framework Programme Regulation No 1291/2013: '**Research infrastructure**' are facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields. Where relevant, they may be used beyond research, e.g. for education or public services. They include: major scientific equipment (or sets of instruments); knowledge-based resources such as collections, archives or scientific data; e-infrastructures such as data and computing systems and communication networks; and any other infrastructure of a unique nature essential to achieve excellence in research and innovation. Such infrastructures may be 'single-sited', 'virtual' or 'distributed'.

D.5 **Costs of internally invoiced goods and services** directly used for the action are eligible, if:

(a) they are declared on the basis of a unit cost calculated in accordance with the beneficiary's usual cost accounting practices;

(b) the cost accounting practices used are applied in a consistent manner, based on objective criteria, regardless of the source of funding;

(c) the unit cost is calculated using the actual costs for the good or service recorded in the beneficiary's accounts, excluding any ineligible cost or costs included in other budget categories.

The actual costs may be adjusted by the beneficiary on the basis of budgeted or estimated elements. Those elements must be relevant for calculating the costs, reasonable and correspond to objective and verifiable information;

(d) the unit cost excludes any costs of items which are not directly linked to the production of the invoiced goods or service.

'Internally invoiced goods and services' means goods or services which are provided by the beneficiary directly for the action and which the beneficiary values on the basis of its usual cost accounting practices.

E. Indirect costs

Indirect costs are eligible if they are declared on the basis of the flat-rate of 25% of the eligible direct costs (see Article 5.2 and Points A to D above), from which are excluded:

(a) costs of subcontracting and

(b) costs of in-kind contributions provided by third parties which are not used on the beneficiary's premises;

(c) not applicable;

(d) not applicable.

Beneficiaries receiving an operating grant[4] financed by the EU or Euratom budget cannot declare indirect costs for the period covered by the operating grant, unless they can demonstrate that the operating grant does not cover any costs of the action.

F. Specific cost category(ies)

Not applicable

6.3 Conditions for costs of linked third parties to be eligible

[4] For the definition, see Article 121(1)(b) of Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 ('**Financial Regulation No 966/2012**')(OJ L 218, 26.10.2012, p.1): '**operating grant**' means direct financial contribution, by way of donation, from the budget in order to finance the functioning of a body which pursues an aim of general EU interest or has an objective forming part of and supporting an EU policy.

Costs incurred by linked third parties are eligible if they fulfil — *mutatis mutandis* — the general and specific conditions for eligibility set out in this Article (Article 6.1 and 6.2) and Article 14.1.1.

6.4 Conditions for in-kind contributions provided by third parties free of charge to be eligible

In-kind contributions provided free of charge are eligible direct costs (for the beneficiary or linked third party), if the costs incurred by the third party fulfil — *mutatis mutandis* — the general and specific conditions for eligibility set out in this Article (Article 6.1 and 6.2) and Article 12.1.

6.5 Ineligible costs

'**Ineligible costs**' are:

(a) costs that do not comply with the conditions set out above (Article 6.1 to 6.4), in particular:

(i) costs related to return on capital;

(ii) debt and debt service charges;

(iii) provisions for future losses or debts;

(iv) interest owed;

(v) doubtful debts;

(vi) currency exchange losses;

(vii) bank costs charged by the beneficiary's bank for transfers from the Agency;

(viii) excessive or reckless expenditure;

(ix) deductible VAT;

(x) costs incurred during suspension of the implementation of the action (see Article 49);

(b) costs declared under another EU or Euratom grant (including grants awarded by a Member State and financed by the EU or Euratom budget and grants awarded by bodies other than the Agency for the purpose of implementing the EU or Euratom budget); in particular, indirect costs if the beneficiary is already receiving an operating grant financed by the EU or Euratom budget in the same period, unless it can demonstrate that the operating grant does not cover any costs of the action.

6.6 Consequences of declaration of ineligible costs

Declared costs that are ineligible will be rejected (see Article 42).

This may also lead to any of the other measures described in Chapter 6.

CHAPTER 4 RIGHTS AND OBLIGATIONS OF THE PARTIES

SECTION 1 RIGHTS AND OBLIGATIONS RELATED TO IMPLEMENTING THE ACTION

ARTICLE 7 — GENERAL OBLIGATION TO PROPERLY IMPLEMENT THE ACTION

7.1 General obligation to properly implement the action

The beneficiaries must implement the action as described in Annex 1 and in compliance with the provisions of the Agreement and all legal obligations under applicable EU, international and national law.

7.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 8 — RESOURCES TO IMPLEMENT THE ACTION — THIRD PARTIES INVOLVED IN THE ACTION

The beneficiaries must have the appropriate resources to implement the action.

If it is necessary to implement the action, the beneficiaries may:

- purchase goods, works and services (see Article 10);
- use in-kind contributions provided by third parties against payment (see Article 11);
- use in-kind contributions provided by third parties free of charge (see Article 12);
- call upon subcontractors to implement action tasks described in Annex 1 (see Article 13);
- call upon linked third parties to implement action tasks described in Annex 1 (see Article 14);
- call upon international partners to implement action tasks described in Annex 1 (see Article 14a).

In these cases, the beneficiaries retain sole responsibility towards the Agency and the other beneficiaries for implementing the action.

ARTICLE 9 — IMPLEMENTATION OF ACTION TASKS BY BENEFICIARIES NOT RECEIVING EU FUNDING

Not applicable

ARTICLE 10 — PURCHASE OF GOODS, WORKS OR SERVICES

10.1 Rules for purchasing goods, works or services

10.1.1 If necessary to implement the action, the beneficiaries may purchase goods, works or services.

The beneficiaries must make such purchases ensuring the best value for money or, if appropriate, the lowest price. In doing so, they must avoid any conflict of interests (see Article 35).

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards their contractors.

10.1.2 Beneficiaries that are 'contracting authorities' within the meaning of Directive 2004/18/EC[5] (or 2014/24/EU[6]) or 'contracting entities' within the meaning of Directive 2004/17/EC[7] (or 2014/25/EU[8]) must comply with the applicable national law on public procurement.

10.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 10.1.1, the costs related to the contract concerned will be ineligible (see Article 6) and will be rejected (see Article 42).

If a beneficiary breaches any of its obligations under Article 10.1.2, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 11 — USE OF IN-KIND CONTRIBUTIONS PROVIDED BY THIRD PARTIES AGAINST PAYMENT

11.1 Rules for the use of in-kind contributions against payment

If necessary to implement the action, the beneficiaries may use in-kind contributions provided by third parties against payment.

The beneficiaries may declare costs related to the payment of in-kind contributions as eligible (see Article 6.1 and 6.2), up to the third parties' costs for the seconded persons, contributed equipment, infrastructure or other assets or other contributed goods and services.

The third parties and their contributions must be set out in Annex 1. The Agency may however approve in-kind contributions not set out in Annex 1 without amendment (see Article 55), if:

- they are specifically justified in the periodic technical report and
- their use does not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors

[5] Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public work contracts, public supply contracts and public service contracts (OJ L 134, 30.04.2004, p. 114).

[6] Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC. (OJ L 94, 28.03.2014, p. 65).

[7] Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors (OJ L 134, 30.04.2004, p. 1)

[8] Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC (OJ L 94, 28.03.2014, p. 243).

(ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards the third parties.

11.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the costs related to the payment of the in-kind contribution will be ineligible (see Article 6) and will be rejected (see Article 42).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 12 — USE OF IN-KIND CONTRIBUTIONS PROVIDED BY THIRD PARTIES FREE OF CHARGE

12.1 Rules for the use of in-kind contributions free of charge

If necessary to implement the action, the beneficiaries may use in-kind contributions provided by third parties free of charge.

The beneficiaries may declare costs incurred by the third parties for the seconded persons, contributed equipment, infrastructure or other assets or other contributed goods and services as eligible in accordance with Article 6.4.

The third parties and their contributions must be set out in Annex 1. The Agency may however approve in-kind contributions not set out in Annex 1 without amendment (see Article 55), if:

- they are specifically justified in the periodic technical report and
- their use does not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards the third parties.

12.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the costs incurred by the third parties related to the in-kind contribution will be ineligible (see Article 6) and will be rejected (see Article 42).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 13 — IMPLEMENTATION OF ACTION TASKS BY SUBCONTRACTORS

13.1 Rules for subcontracting action tasks

13.1.1 If necessary to implement the action, the beneficiaries may award subcontracts covering the implementation of certain action tasks described in Annex 1.

Subcontracting may cover only a limited part of the action.

The beneficiaries must award the subcontracts ensuring the best value for money or, if appropriate, the lowest price. In doing so, they must avoid any conflict of interests (see Article 35).

The tasks to be implemented and the estimated cost for each subcontract must be set out in Annex 1 and the total estimated costs of subcontracting per beneficiary must be set out in Annex 2. The Agency may however approve subcontracts not set out in Annex 1 and 2 without amendment (see Article 55), if:

- they are specifically justified in the periodic technical report and
- they do not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards their subcontractors.

13.1.2 The beneficiaries must ensure that their obligations under Articles 35, 36, 38 and 46 also apply to the subcontractors.

Beneficiaries that are 'contracting authorities' within the meaning of Directive 2004/18/EC (or 2014/24/EU) or 'contracting entities' within the meaning of Directive 2004/17/EC (or 2014/25/EU) must comply with the applicable national law on public procurement.

13.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 13.1.1, the costs related to the subcontract concerned will be ineligible (see Article 6) and will be rejected (see Article 42).

If a beneficiary breaches any of its obligations under Article 13.1.2, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 14 — IMPLEMENTATION OF ACTION TASKS BY LINKED THIRD PARTIES

14.1 Rules for calling upon linked third parties to implement part of the action

14.1.1 The following **affiliated entities**[10] and **third parties with a legal link to a beneficiary**[11] ('**linked third parties**') may implement the action tasks attributed to them in Annex 1:

[10] For the definition see Article 2.1(2) Rules for Participation Regulation No 1290/2013: '**affiliated entity**' means any legal entity that is:
- under the direct or indirect control of a participant, or
- under the same direct or indirect control as the participant, or
- directly or indirectly controlling a participant.

'Control' may take any of the following forms:
(a) the direct or indirect holding of more than 50% of the nominal value of the issued share capital in the legal entity concerned, or of a majority of the voting rights of the shareholders or associates of that entity;
(b) the direct or indirect holding, in fact or in law, of decision-making powers in the legal entity concerned.

However the following relationships between legal entities shall not in themselves be deemed to constitute controlling relationships:
(a) the same public investment corporation, institutional investor or venture-capital company has a direct or indirect holding of more than 50% of the nominal value of the issued share capital or a majority of voting rights of the shareholders or associates;
(b) the legal entities concerned are owned or supervised by the same public body.

- ATMO BOURGOGNE FRANCHE COMTE (Atmo BFC), affiliated or linked to DIJON METROPOLE

The linked third parties may declare as eligible the costs they incur for implementing the action tasks in accordance with Article 6.3.

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards their linked third parties.

14.1.2 The beneficiaries must ensure that their obligations under Articles 18, 20, 35, 36 and 38 also apply to their linked third parties.

14.2 Consequences of non-compliance

If any obligation under Article 14.1.1 is breached, the costs of the linked third party will be ineligible (see Article 6) and will be rejected (see Article 42).

If any obligation under Article 14.1.2 is breached, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 14a — IMPLEMENTATION OF ACTION TASKS BY INTERNATIONAL PARTNERS

Not applicable

ARTICLE 15 — FINANCIAL SUPPORT TO THIRD PARTIES

15.1 Rules for providing financial support to third parties

Not applicable

15.2 Financial support in the form of prizes

Not applicable

15.3 Consequences of non-compliance

Not applicable

ARTICLE 16 — PROVISION OF TRANS-NATIONAL OR VIRTUAL ACCESS TO RESEARCH INFRASTRUCTURE

16.1 Rules for providing trans-national access to research infrastructure

Not applicable

[11] '**Third party with a legal link to a beneficiary**' is any legal entity which has a legal link to the beneficiary implying collaboration that is not limited to the action.

16.2 Rules for providing virtual access to research infrastructure

Not applicable

16.3 Consequences of non-compliance

Not applicable

SECTION 2 RIGHTS AND OBLIGATIONS RELATED TO THE GRANT ADMINISTRATION

ARTICLE 17 — GENERAL OBLIGATION TO INFORM

17.1 General obligation to provide information upon request

The beneficiaries must provide — during implementation of the action or afterwards and in accordance with Article 41.2 — any information requested in order to verify eligibility of the costs, proper implementation of the action and compliance with any other obligation under the Agreement.

17.2 Obligation to keep information up to date and to inform about events and circumstances likely to affect the Agreement

Each beneficiary must keep information stored in the Participant Portal Beneficiary Register (via the electronic exchange system; see Article 52) up to date, in particular, its name, address, legal representatives, legal form and organisation type.

Each beneficiary must immediately inform the coordinator — which must immediately inform the Agency and the other beneficiaries — of any of the following:

(a) **events** which are likely to affect significantly or delay the implementation of the action or the EU's financial interests, in particular:

  (i) changes in its legal, financial, technical, organisational or ownership situation or those of its linked third parties and

  (ii) changes in the name, address, legal form, organisation type of its linked third parties;

(b) **circumstances** affecting:

  (i) the decision to award the grant or

  (ii) compliance with requirements under the Agreement.

17.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 18 — KEEPING RECORDS — SUPPORTING DOCUMENTATION

18.1 Obligation to keep records and other supporting documentation

The beneficiaries must — for a period of five years after the payment of the balance — keep records and other supporting documentation in order to prove the proper implementation of the action and the costs they declare as eligible.

They must make them available upon request (see Article 17) or in the context of checks, reviews, audits or investigations (see Article 22).

If there are on-going checks, reviews, audits, investigations, litigation or other pursuits of claims under the Agreement (including the extension of findings; see Article 22), the beneficiaries must keep the records and other supporting documentation until the end of these procedures.

The beneficiaries must keep the original documents. Digital and digitalised documents are considered originals if they are authorised by the applicable national law. The Agency may accept non-original documents if it considers that they offer a comparable level of assurance.

18.1.1 Records and other supporting documentation on the scientific and technical implementation

The beneficiaries must keep records and other supporting documentation on scientific and technical implementation of the action in line with the accepted standards in the respective field.

18.1.2 Records and other documentation to support the costs declared

The beneficiaries must keep the records and documentation supporting the costs declared, in particular the following:

(a) for **actual costs**: adequate records and other supporting documentation to prove the costs declared, such as contracts, subcontracts, invoices and accounting records. In addition, the beneficiaries' usual cost accounting practices and internal control procedures must enable direct reconciliation between the amounts declared, the amounts recorded in their accounts and the amounts stated in the supporting documentation;

(b) for **unit costs**: adequate records and other supporting documentation to prove the number of units declared. Beneficiaries do not need to identify the actual eligible costs covered or to keep or provide supporting documentation (such as accounting statements) to prove the amount per unit.

In addition, **for unit costs calculated in accordance with the beneficiary's usual cost accounting practices**, the beneficiaries must keep adequate records and documentation to prove that the cost accounting practices used comply with the conditions set out in Article 6.2.

The beneficiaries and linked third parties may submit to the Commission, for approval, a certificate (drawn up in accordance with Annex 6) stating that their usual cost accounting practices comply with these conditions ('**certificate on the methodology**'). If the certificate is approved, costs declared in line with this methodology will not be challenged subsequently, unless the beneficiaries have concealed information for the purpose of the approval.

(c) for **flat-rate costs**: adequate records and other supporting documentation to prove the eligibility of the costs to which the flat-rate is applied. The beneficiaries do not need to identify the costs

covered or provide supporting documentation (such as accounting statements) to prove the amount declared at a flat-rate.

In addition, for **personnel costs** (declared as actual costs or on the basis of unit costs), the beneficiaries must keep **time records** for the number of hours declared. The time records must be in writing and approved by the persons working on the action and their supervisors, at least monthly. In the absence of reliable time records of the hours worked on the action, the Agency may accept alternative evidence supporting the number of hours declared, if it considers that it offers an adequate level of assurance.

As an exception, for **persons working exclusively on the action**, there is no need to keep time records, if the beneficiary signs a **declaration** confirming that the persons concerned have worked exclusively on the action.

For costs declared by linked third parties (see Article 14), it is the beneficiary that must keep the originals of the financial statements and the certificates on the financial statements of the linked third parties.

18.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, costs insufficiently substantiated will be ineligible (see Article 6) and will be rejected (see Article 42), and the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 19 — SUBMISSION OF DELIVERABLES

19.1 Obligation to submit deliverables

The coordinator must submit the '**deliverables**' identified in Annex 1, in accordance with the timing and conditions set out in it.

19.2 Consequences of non-compliance

If the coordinator breaches any of its obligations under this Article, the Agency may apply any of the measures described in Chapter 6.

ARTICLE 20 — REPORTING — PAYMENT REQUESTS

20.1 Obligation to submit reports

The coordinator must submit to the Agency (see Article 52) the technical and financial reports set out in this Article. These reports include requests for payment and must be drawn up using the forms and templates provided in the electronic exchange system (see Article 52).

20.2 Reporting periods

The action is divided into the following '**reporting periods**':

- RP1: from month 1 to month 18
- RP2: from month 19 to month 36

20.3 Periodic reports — Requests for interim payments

The coordinator must submit a periodic report within 60 days following the end of each reporting period.

The **periodic report** must include the following:

(a) a '**periodic technical report**' containing:

(i) an **explanation of the work carried out** by the beneficiaries;

(ii) an **overview of the progress** towards the objectives of the action, including milestones and deliverables identified in Annex 1.

This report must include explanations justifying the differences between work expected to be carried out in accordance with Annex 1 and that actually carried out.

The report must detail the exploitation and dissemination of the results and — if required in Annex 1 — an updated '**plan for the exploitation and dissemination of the results**'.

The report must indicate the communication activities;

(iii) a **summary** for publication by the Agency;

(iv) the answers to the '**questionnaire**', covering issues related to the action implementation and the economic and societal impact, notably in the context of the Horizon 2020 key performance indicators and the Horizon 2020 monitoring requirements;

(b) a '**periodic financial report**' containing:

(i) an '**individual financial statement**' (see Annex 4) from each beneficiary and from each linked third party, for the reporting period concerned.

The individual financial statement must detail the eligible costs (actual costs, unit costs and flat-rate costs; see Article 6) for each budget category (see Annex 2).

The beneficiaries and linked third parties must declare all eligible costs, even if — for actual costs, unit costs and flat-rate costs — they exceed the amounts indicated in the estimated budget (see Annex 2). Amounts which are not declared in the individual financial statement will not be taken into account by the Agency.

If an individual financial statement is not submitted for a reporting period, it may be included in the periodic financial report for the next reporting period.

The individual financial statements of the last reporting period must also detail the **receipts of the action** (see Article 5.3.3).

Each beneficiary and each linked third party must **certify** that:

- the information provided is full, reliable and true;

- the costs declared are eligible (see Article 6);

- the costs can be substantiated by adequate records and supporting documentation (see Article 18) that will be produced upon request (see Article 17) or in the context of checks, reviews, audits and investigations (see Article 22), and

- for the last reporting period: that all the receipts have been declared (see Article 5.3.3);

(ii) an **explanation of the use of resources** and the information on subcontracting (see Article 13) and in-kind contributions provided by third parties (see Articles 11 and 12) from each beneficiary and from each linked third party, for the reporting period concerned;

(iii) not applicable;

(iv) a '**periodic summary financial statement**', created automatically by the electronic exchange system, consolidating the individual financial statements for the reporting period concerned and including — except for the last reporting period — the **request for interim payment**.

20.4 Final report — Request for payment of the balance

In addition to the periodic report for the last reporting period, the coordinator must submit the final report within 60 days following the end of the last reporting period.

The **final report** must include the following:

(a) a '**final technical report**' with a **summary** for publication containing:

(i) an overview of the results and their exploitation and dissemination;

(ii) the conclusions on the action, and

(iii) the socio-economic impact of the action;

(b) a '**final financial report**' containing:

(i) a '**final summary financial statement**', created automatically by the electronic exchange system, consolidating the individual financial statements for all reporting periods and including the **request for payment of the balance** and

(ii) a '**certificate on the financial statements**' (drawn up in accordance with Annex 5) for each beneficiary and for each linked third party, if it requests a total contribution of EUR 325 000 or more, as reimbursement of actual costs and unit costs calculated on the basis of its usual cost accounting practices (see Article 5.2 and Article 6.2).

20.5 Information on cumulative expenditure incurred

Not applicable

20.6 Currency for financial statements and conversion into euro

Financial statements must be drafted in euro.

Beneficiaries and linked third parties with accounting established in a currency other than the euro must convert the costs recorded in their accounts into euro, at the average of the daily exchange rates published in the C series of the *Official Journal of the European Union*, calculated over the corresponding reporting period.

If no daily euro exchange rate is published in the *Official Journal of the European Union* for the currency in question, they must be converted at the average of the monthly accounting rates published on the Commission's website, calculated over the corresponding reporting period.

Beneficiaries and linked third parties with accounting established in euro must convert costs incurred in another currency into euro according to their usual accounting practices.

20.7 Language of reports

All reports (technical and financial reports, including financial statements) must be submitted in the language of the Agreement.

20.8 Consequences of non-compliance

If the reports submitted do not comply with this Article, the Agency may suspend the payment deadline (see Article 47) and apply any of the other measures described in Chapter 6.

If the coordinator breaches its obligation to submit the reports and if it fails to comply with this obligation within 30 days following a written reminder, the Agency may terminate the Agreement (see Article 50) or apply any of the other measures described in Chapter 6.

ARTICLE 21 — PAYMENTS AND PAYMENT ARRANGEMENTS

21.1 Payments to be made

The following payments will be made to the coordinator:

- one **pre-financing payment**;
- one or more **interim payments**, on the basis of the request(s) for interim payment (see Article 20), and
- one **payment of the balance**, on the basis of the request for payment of the balance (see Article 20).

21.2 Pre-financing payment — Amount — Amount retained for the Guarantee Fund

The aim of the pre-financing is to provide the beneficiaries with a float.

It remains the property of the EU until the payment of the balance.

The amount of the pre-financing payment will be EUR **1 598 857.00** (one million five hundred and ninety eight thousand eight hundred and fifty seven EURO).

The Agency will — except if Article 48 applies — make the pre-financing payment to the coordinator within 30 days, either from the entry into force of the Agreement (see Article 58) or from 10 days before the starting date of the action (see Article 3), whichever is the latest.

An amount of EUR **99 928.56** (ninety nine thousand nine hundred and twenty eight EURO and fifty six eurocents), corresponding to 5% of the maximum grant amount (see Article 5.1), is retained by the Agency from the pre-financing payment and transferred into the '**Guarantee Fund**'.

21.3 Interim payments — Amount — Calculation

Interim payments reimburse the eligible costs incurred for the implementation of the action during the corresponding reporting periods.

The Agency will pay to the coordinator the amount due as interim payment within 90 days from receiving the periodic report (see Article 20.3), except if Articles 47 or 48 apply.

Payment is subject to the approval of the periodic report. Its approval does not imply recognition of the compliance, authenticity, completeness or correctness of its content.

The **amount due as interim payment** is calculated by the Agency in the following steps:

Step 1 — Application of the reimbursement rates

Step 2 — Limit to 90% of the maximum grant amount

21.3.1 Step 1 — Application of the reimbursement rates

The reimbursement rate(s) (see Article 5.2) are applied to the eligible costs (actual costs, unit costs and flat-rate costs; see Article 6) declared by the beneficiaries and the linked third parties (see Article 20) and approved by the Agency (see above) for the concerned reporting period.

21.3.2 Step 2 — Limit to 90% of the maximum grant amount

The total amount of pre-financing and interim payments must not exceed 90% of the maximum grant amount set out in Article 5.1. The maximum amount for the interim payment will be calculated as follows:

{90% of the maximum grant amount (see Article 5.1)

minus

{pre-financing and previous interim payments}}.

21.4 Payment of the balance — Amount — Calculation — Release of the amount retained for the Guarantee Fund

The payment of the balance reimburses the remaining part of the eligible costs incurred by the beneficiaries for the implementation of the action.

If the total amount of earlier payments is greater than the final grant amount (see Article 5.3), the payment of the balance takes the form of a recovery (see Article 44).

If the total amount of earlier payments is lower than the final grant amount, the Agency will pay the balance within 90 days from receiving the final report (see Article 20.4), except if Articles 47 or 48 apply.

Payment is subject to the approval of the final report. Its approval does not imply recognition of the compliance, authenticity, completeness or correctness of its content.

The **amount due as the balance** is calculated by the Agency by deducting the total amount of pre-financing and interim payments (if any) already made, from the final grant amount determined in accordance with Article 5.3:

{final grant amount (see Article 5.3)

minus

{pre-financing and interim payments (if any) made}}.

At the payment of the balance, the amount retained for the Guarantee Fund (see above) will be released and:

- if the balance is positive: the amount released will be paid in full to the coordinator together with the amount due as the balance;
- if the balance is negative (payment of the balance taking the form of recovery): it will be deducted from the amount released (see Article 44.1.2). If the resulting amount:
  - is positive, it will be paid to the coordinator
  - is negative, it will be recovered.

The amount to be paid may however be offset — without the beneficiaries' consent — against any other amount owed by a beneficiary to the Agency, the Commission or another executive agency (under the EU or Euratom budget), up to the maximum EU contribution indicated, for that beneficiary, in the estimated budget (see Annex 2).

21.5 Notification of amounts due

When making payments, the Agency will formally notify to the coordinator the amount due, specifying whether it concerns an interim payment or the payment of the balance.

For the payment of the balance, the notification will also specify the final grant amount.

In the case of reduction of the grant or recovery of undue amounts, the notification will be preceded by the contradictory procedure set out in Articles 43 and 44.

21.6 Currency for payments

The Agency will make all payments in euro.

21.7 Payments to the coordinator — Distribution to the beneficiaries

Payments will be made to the coordinator.

Payments to the coordinator will discharge the Agency from its payment obligation.

The coordinator must distribute the payments between the beneficiaries without unjustified delay.

Pre-financing may however be distributed only:

(a) if the minimum number of beneficiaries set out in the call for proposals has acceded to the Agreement (see Article 56) and

(b) to beneficiaries that have acceded to the Agreement (see Article 56).

21.8 Bank account for payments

All payments will be made to the following bank account:

Name of bank: BANQUE POPULAIRE BOURGOGNE FRANCHE COMTE
Full name of the account holder: ASS ENERGIE CITES
IBAN code: FR7610807000310212135564406

21.9 Costs of payment transfers

The cost of the payment transfers is borne as follows:

- the Agency bears the cost of transfers charged by its bank;
- the beneficiary bears the cost of transfers charged by its bank;
- the party causing a repetition of a transfer bears all costs of the repeated transfer.

21.10 Date of payment

Payments by the Agency are considered to have been carried out on the date when they are debited to its account.

21.11 Consequences of non-compliance

21.11.1 If the Agency does not pay within the payment deadlines (see above), the beneficiaries are entitled to **late-payment interest** at the rate applied by the European Central Bank (ECB) for its main refinancing operations in euros ('reference rate'), plus three and a half points. The reference rate is the rate in force on the first day of the month in which the payment deadline expires, as published in the C series of the *Official Journal of the European Union*.

If the late-payment interest is lower than or equal to EUR 200, it will be paid to the coordinator only upon request submitted within two months of receiving the late payment.

Late-payment interest is not due if all beneficiaries are EU Member States (including regional and local government authorities or other public bodies acting on behalf of a Member State for the purpose of this Agreement).

Suspension of the payment deadline or payments (see Articles 47 and 48) will not be considered as late payment.

Late-payment interest covers the period running from the day following the due date for payment (see above), up to and including the date of payment.

Late-payment interest is not considered for the purposes of calculating the final grant amount.

21.11.2 If the coordinator breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or the participation of the coordinator may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 22 — CHECKS, REVIEWS, AUDITS AND INVESTIGATIONS — EXTENSION OF FINDINGS

22.1 Checks, reviews and audits by the Agency and the Commission

22.1.1 Right to carry out checks

The Agency or the Commission will — during the implementation of the action or afterwards — check the proper implementation of the action and compliance with the obligations under the Agreement, including assessing deliverables and reports.

For this purpose the Agency or the Commission may be assisted by external persons or bodies.

The Agency or the Commission may also request additional information in accordance with Article 17. The Agency or the Commission may request beneficiaries to provide such information to it directly.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

22.1.2 Right to carry out reviews

The Agency or the Commission may — during the implementation of the action or afterwards — carry out reviews on the proper implementation of the action (including assessment of deliverables and reports), compliance with the obligations under the Agreement and continued scientific or technological relevance of the action.

Reviews may be started up to two years after the payment of the balance. They will be formally notified to the coordinator or beneficiary concerned and will be considered to have started on the date of the formal notification.

If the review is carried out on a third party (see Articles 10 to 16), the beneficiary concerned must inform the third party.

The Agency or the Commission may carry out reviews directly (using its own staff) or indirectly (using external persons or bodies appointed to do so). It will inform the coordinator or beneficiary concerned of the identity of the external persons or bodies. They have the right to object to the appointment on grounds of commercial confidentiality.

The coordinator or beneficiary concerned must provide — within the deadline requested — any information and data in addition to deliverables and reports already submitted (including information on the use of resources). The Agency or the Commission may request beneficiaries to provide such information to it directly.

The coordinator or beneficiary concerned may be requested to participate in meetings, including with external experts.

For **on-the-spot** reviews, the beneficiaries must allow access to their sites and premises, including to external persons or bodies, and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the review findings, a '**review report**' will be drawn up.

The Agency or the Commission will formally notify the review report to the coordinator or beneficiary concerned, which has 30 days to formally notify observations ('**contradictory review procedure**').

Reviews (including review reports) are in the language of the Agreement.

22.1.3 Right to carry out audits

The Agency or the Commission may — during the implementation of the action or afterwards — carry out audits on the proper implementation of the action and compliance with the obligations under the Agreement.

Audits may be started up to two years after the payment of the balance. They will be formally notified to the coordinator or beneficiary concerned and will be considered to have started on the date of the formal notification.

If the audit is carried out on a third party (see Articles 10 to 16), the beneficiary concerned must inform the third party.

The Agency or the Commission may carry out audits directly (using its own staff) or indirectly (using external persons or bodies appointed to do so). It will inform the coordinator or beneficiary concerned of the identity of the external persons or bodies. They have the right to object to the appointment on grounds of commercial confidentiality.

The coordinator or beneficiary concerned must provide — within the deadline requested — any information (including complete accounts, individual salary statements or other personal data) to verify compliance with the Agreement. The Agency or the Commission may request beneficiaries to provide such information to it directly.

For **on-the-spot** audits, the beneficiaries must allow access to their sites and premises, including to external persons or bodies, and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the audit findings, a '**draft audit report**' will be drawn up.

The Agency or the Commission will formally notify the draft audit report to the coordinator or beneficiary concerned, which has 30 days to formally notify observations ('**contradictory audit procedure**'). This period may be extended by the Agency or the Commission in justified cases.

The '**final audit report**' will take into account observations by the coordinator or beneficiary concerned. The report will be formally notified to it.

Audits (including audit reports) are in the language of the Agreement.

The Agency or the Commission may also access the beneficiaries' statutory records for the periodical assessment of unit costs or flat-rate amounts.

22.2 Investigations by the European Anti-Fraud Office (OLAF)

Under Regulations No 883/2013[16] and No 2185/96[17] (and in accordance with their provisions and procedures), the European Anti-Fraud Office (OLAF) may — at any moment during implementation of the action or afterwards — carry out investigations, including on-the-spot checks and inspections, to establish whether there has been fraud, corruption or any other illegal activity affecting the financial interests of the EU.

22.3 Checks and audits by the European Court of Auditors (ECA)

Under Article 287 of the Treaty on the Functioning of the European Union (TFEU) and Article 161 of the Financial Regulation No 966/2012[18], the European Court of Auditors (ECA) may — at any moment during implementation of the action or afterwards — carry out audits.

The ECA has the right of access for the purpose of checks and audits.

22.4 Checks, reviews, audits and investigations for international organisations

Not applicable

22.5 Consequences of findings in checks, reviews, audits and investigations — Extension of findings

22.5.1 Findings in this grant

Findings in checks, reviews, audits or investigations carried out in the context of this grant may lead to the rejection of ineligible costs (see Article 42), reduction of the grant (see Article 43), recovery of undue amounts (see Article 44) or to any of the other measures described in Chapter 6.

Rejection of costs or reduction of the grant after the payment of the balance will lead to a revised final grant amount (see Article 5.4).

Findings in checks, reviews, audits or investigations may lead to a request for amendment for the modification of Annex 1 (see Article 55).

Checks, reviews, audits or investigations that find systemic or recurrent errors, irregularities, fraud or breach of obligations may also lead to consequences in other EU or Euratom grants awarded under similar conditions ('**extension of findings from this grant to other grants**').

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[16] Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council of 11 September 2013 concerning investigations conducted by the European Anti-Fraud Office (OLAF) and repealing Regulation (EC) No 1073/1999 of the European Parliament and of the Council and Council Regulation (Euratom) No 1074/1999 (OJ L 248, 18.09.2013, p. 1).

[17] Council Regulation (Euratom, EC) No 2185/1996 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities (OJ L 292, 15.11.1996, p. 2).

[18] Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 (OJ L 298, 26.10.2012, p. 1).

Moreover, findings arising from an OLAF investigation may lead to criminal prosecution under national law.

22.5.2 Findings in other grants

The Agency or the Commission may extend findings from other grants to this grant ('**extension of findings from other grants to this grant**'), if:

(a) the beneficiary concerned is found, in other EU or Euratom grants awarded under similar conditions, to have committed systemic or recurrent errors, irregularities, fraud or breach of obligations that have a material impact on this grant and

(b) those findings are formally notified to the beneficiary concerned — together with the list of grants affected by the findings — no later than two years after the payment of the balance of this grant.

The extension of findings may lead to the rejection of costs (see Article 42), reduction of the grant (see Article 43), recovery of undue amounts (see Article 44), suspension of payments (see Article 48), suspension of the action implementation (see Article 49) or termination (see Article 50).

22.5.3 Procedure

The Agency or the Commission will formally notify the beneficiary concerned the systemic or recurrent errors and its intention to extend these audit findings, together with the list of grants affected.

22.5.3.1 If the findings concern **eligibility of costs**: the formal notification will include:

(a) an invitation to submit observations on the list of grants affected by the findings;

(b) the request to submit **revised financial statements** for all grants affected;

(c) the **correction rate for extrapolation** established by the Agency or the Commission on the basis of the systemic or recurrent errors, to calculate the amounts to be rejected if the beneficiary concerned:

(i) considers that the submission of revised financial statements is not possible or practicable or

(ii) does not submit revised financial statements.

The beneficiary concerned has 90 days from receiving notification to submit observations, revised financial statements or to propose a duly substantiated **alternative correction method**. This period may be extended by the Agency or the Commission in justified cases.

The Agency or the Commission may then start a rejection procedure in accordance with Article 42, on the basis of:

- the revised financial statements, if approved;
- the proposed alternative correction method, if accepted

or

- the initially notified correction rate for extrapolation, if it does not receive any observations or revised financial statements, does not accept the observations or the proposed alternative correction method or does not approve the revised financial statements.

22.5.3.2 If the findings concern **substantial errors**, **irregularities or fraud** or **serious breach of obligations**: the formal notification will include:

(a) an invitation to submit observations on the list of grants affected by the findings and

(b) the flat-rate the Agency or the Commission intends to apply according to the principle of proportionality.

The beneficiary concerned has 90 days from receiving notification to submit observations or to propose a duly substantiated alternative flat-rate.

The Agency or the Commission may then start a reduction procedure in accordance with Article 43, on the basis of:

- the proposed alternative flat-rate, if accepted

or

- the initially notified flat-rate, if it does not receive any observations or does not accept the observations or the proposed alternative flat-rate.

22.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, any insufficiently substantiated costs will be ineligible (see Article 6) and will be rejected (see Article 42).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 23 — EVALUATION OF THE IMPACT OF THE ACTION

23.1 Right to evaluate the impact of the action

The Agency or the Commission may carry out interim and final evaluations of the impact of the action measured against the objective of the EU programme.

Evaluations may be started during implementation of the action and up to five years after the payment of the balance. The evaluation is considered to start on the date of the formal notification to the coordinator or beneficiaries.

The Agency or the Commission may make these evaluations directly (using its own staff) or indirectly (using external bodies or persons it has authorised to do so).

The coordinator or beneficiaries must provide any information relevant to evaluate the impact of the action, including information in electronic format.

23.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the Agency may apply the measures described in Chapter 6.

SECTION 3 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND AND RESULTS

SUBSECTION 1 GENERAL

ARTICLE 23a — MANAGEMENT OF INTELLECTUAL PROPERTY

23a.1 Obligation to take measures to implement the Commission Recommendation on the management of intellectual property in knowledge transfer activities

Beneficiaries that are universities or other public research organisations must take measures to implement the principles set out in Points 1 and 2 of the Code of Practice annexed to the Commission Recommendation on the management of intellectual property in knowledge transfer activities[19].

This does not change the obligations set out in Subsections 2 and 3 of this Section.

The beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

23a.2 Consequences of non-compliance

If a beneficiary breaches its obligations under this Article, the Agency may apply any of the measures described in Chapter 6.

SUBSECTION 2 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND

ARTICLE 24 — AGREEMENT ON BACKGROUND

24.1 Agreement on background

The beneficiaries must identify and agree (in writing) on the background for the action ('**agreement on background**').

'**Background**' means any data, know-how or information — whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights — that:

(a) is held by the beneficiaries before they acceded to the Agreement, and

(b) is needed to implement the action or exploit the results.

24.2 Consequences of non-compliance

[19] Commission Recommendation C(2008) 1329 of 10.4.2008 on the management of intellectual property in knowledge transfer activities and the Code of Practice for universities and other public research institutions attached to this recommendation.

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 25 — ACCESS RIGHTS TO BACKGROUND

25.1 Exercise of access rights — Waiving of access rights — No sub-licensing

To exercise access rights, this must first be requested in writing ('**request for access**').

'**Access rights**' means rights to use results or background under the terms and conditions laid down in this Agreement.

Waivers of access rights are not valid unless in writing.

Unless agreed otherwise, access rights do not include the right to sub-license.

25.2 Access rights for other beneficiaries, for implementing their own tasks under the action

The beneficiaries must give each other access — on a royalty-free basis — to background needed to implement their own tasks under the action, unless the beneficiary that holds the background has — before acceding to the Agreement —:

(a) informed the other beneficiaries that access to its background is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel), or

(b) agreed with the other beneficiaries that access would not be on a royalty-free basis.

25.3 Access rights for other beneficiaries, for exploiting their own results

The beneficiaries must give each other access — under fair and reasonable conditions — to background needed for exploiting their own results, unless the beneficiary that holds the background has — before acceding to the Agreement — informed the other beneficiaries that access to its background is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel).

'**Fair and reasonable conditions**' means appropriate conditions, including possible financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, for example the actual or potential value of the results or background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

25.4 Access rights for affiliated entities

Unless otherwise agreed in the consortium agreement, access to background must also be given — under fair and reasonable conditions (see above; Article 25.3) and unless it is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel) —

to affiliated entities[20] established in an EU Member State or '**associated country**'[21], if this is needed to exploit the results generated by the beneficiaries to which they are affiliated.

Unless agreed otherwise (see above; Article 25.1), the affiliated entity concerned must make the request directly to the beneficiary that holds the background.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

25.5 Access rights for third parties

Not applicable

25.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

SUBSECTION 3 RIGHTS AND OBLIGATIONS RELATED TO RESULTS

ARTICLE 26 — OWNERSHIP OF RESULTS

26.1 Ownership by the beneficiary that generates the results

Results are owned by the beneficiary that generates them.

'**Results**' means any (tangible or intangible) output of the action such as data, knowledge or information — whatever its form or nature, whether it can be protected or not — that is generated in the action, as well as any rights attached to it, including intellectual property rights.

26.2 Joint ownership by several beneficiaries

Two or more beneficiaries own results jointly if:

(a) they have jointly generated them and

(b) it is not possible to:

(i) establish the respective contribution of each beneficiary, or

(ii) separate them for the purpose of applying for, obtaining or maintaining their protection (see Article 27).

[20] For the definition, see 'affiliated entity' footnote (Article 14.1).

[21] For the definition, see Article 2.1(3) of the Rules for Participation Regulation No 1290/2013: '**associated country**' means a third country which is party to an international agreement with the Union, as identified in Article 7 of Horizon 2020 Framework Programme Regulation No 1291/2013. Article 7 sets out the conditions for association of non-EU countries to Horizon 2020.

The joint owners must agree (in writing) on the allocation and terms of exercise of their joint ownership ('**joint ownership agreement**'), to ensure compliance with their obligations under this Agreement.

Unless otherwise agreed in the joint ownership agreement, each joint owner may grant non-exclusive licences to third parties to exploit jointly-owned results (without any right to sub-license), if the other joint owners are given:

(a) at least 45 days advance notice and

(b) fair and reasonable compensation.

Once the results have been generated, joint owners may agree (in writing) to apply another regime than joint ownership (such as, for instance, transfer to a single owner (see Article 30) with access rights for the others).

26.3 Rights of third parties (including personnel)

If third parties (including personnel) may claim rights to the results, the beneficiary concerned must ensure that it complies with its obligations under the Agreement.

If a third party generates results, the beneficiary concerned must obtain all necessary rights (transfer, licences or other) from the third party, in order to be able to respect its obligations as if those results were generated by the beneficiary itself.

If obtaining the rights is impossible, the beneficiary must refrain from using the third party to generate the results.

26.4 Agency ownership, to protect results

26.4.1 The Agency may — with the consent of the beneficiary concerned — assume ownership of results to protect them, if a beneficiary intends — up to four years after the period set out in Article 3 — to disseminate its results without protecting them, except in any of the following cases:

(a) the lack of protection is because protecting the results is not possible, reasonable or justified (given the circumstances);

(b) the lack of protection is because there is a lack of potential for commercial or industrial exploitation, or

(c) the beneficiary intends to transfer the results to another beneficiary or third party established in an EU Member State or associated country, which will protect them.

Before the results are disseminated and unless any of the cases above under Points (a), (b) or (c) applies, the beneficiary must formally notify the Agency and at the same time inform it of any reasons for refusing consent. The beneficiary may refuse consent only if it can show that its legitimate interests would suffer significant harm.

If the Agency decides to assume ownership, it will formally notify the beneficiary concerned within 45 days of receiving notification.

No dissemination relating to these results may take place before the end of this period or, if the Agency takes a positive decision, until it has taken the necessary steps to protect the results.

26.4.2 The Agency may — with the consent of the beneficiary concerned — assume ownership of results to protect them, if a beneficiary intends — up to four years after the period set out in Article 3 — to stop protecting them or not to seek an extension of protection, except in any of the following cases:

(a) the protection is stopped because of a lack of potential for commercial or industrial exploitation;

(b) an extension would not be justified given the circumstances.

A beneficiary that intends to stop protecting results or not seek an extension must — unless any of the cases above under Points (a) or (b) applies — formally notify the Agency at least 60 days before the protection lapses or its extension is no longer possible and at the same time inform it of any reasons for refusing consent. The beneficiary may refuse consent only if it can show that its legitimate interests would suffer significant harm.

If the Agency decides to assume ownership, it will formally notify the beneficiary concerned within 45 days of receiving notification.

26.5 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to the any of the other measures described in Chapter 6.

ARTICLE 27 — PROTECTION OF RESULTS — VISIBILITY OF EU FUNDING

27.1 Obligation to protect the results

Each beneficiary must examine the possibility of protecting its results and must adequately protect them — for an appropriate period and with appropriate territorial coverage — if:

(a) the results can reasonably be expected to be commercially or industrially exploited and

(b) protecting them is possible, reasonable and justified (given the circumstances).

When deciding on protection, the beneficiary must consider its own legitimate interests and the legitimate interests (especially commercial) of the other beneficiaries.

27.2 Agency ownership, to protect the results

If a beneficiary intends not to protect its results, to stop protecting them or not seek an extension of protection, the Agency may — under certain conditions (see Article 26.4) — assume ownership to ensure their (continued) protection.

27.3 Information on EU funding

Applications for protection of results (including patent applications) filed by or on behalf of a beneficiary must — unless the Agency requests or agrees otherwise or unless it is impossible — include the following:

> "The project leading to this application has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101022965".

27.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 28 — EXPLOITATION OF RESULTS

28.1 Obligation to exploit the results

Each beneficiary must — up to four years after the period set out in Article 3 — take measures aiming to ensure '**exploitation**' of its results (either directly or indirectly, in particular through transfer or licensing; see Article 30) by:

(a) using them in further research activities (outside the action);

(b) developing, creating or marketing a product or process;

(c) creating and providing a service, or

(d) using them in standardisation activities.

This does not change the security obligations in Article 37, which still apply.

28.2 Results that could contribute to European or international standards — Information on EU funding

If results are incorporated in a standard, the beneficiary concerned must — unless the Agency requests or agrees otherwise or unless it is impossible — ask the standardisation body to include the following statement in (information related to) the standard:

> "Results incorporated in this standard received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101022965".

28.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced in accordance with Article 43.

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 29 — DISSEMINATION OF RESULTS — OPEN ACCESS — VISIBILITY OF EU FUNDING

29.1 Obligation to disseminate results

Unless it goes against their legitimate interests, each beneficiary must — as soon as possible — '**disseminate**' its results by disclosing them to the public by appropriate means (other than those resulting from protecting or exploiting the results), including in scientific publications (in any medium).

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, the security obligations in Article 37 or the obligations to protect personal data in Article 39, all of which still apply.

A beneficiary that intends to disseminate its results must give advance notice to the other beneficiaries of — unless agreed otherwise — at least 45 days, together with sufficient information on the results it will disseminate.

Any other beneficiary may object within — unless agreed otherwise — 30 days of receiving notification, if it can show that its legitimate interests in relation to the results or background would be significantly harmed. In such cases, the dissemination may not take place unless appropriate steps are taken to safeguard these legitimate interests.

If a beneficiary intends not to protect its results, it may — under certain conditions (see Article 26.4.1) — need to formally notify the Agency before dissemination takes place.

29.2 Open access to scientific publications

Each beneficiary must ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results.

In particular, it must:

(a) as soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications;

Moreover, the beneficiary must aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.

(b) ensure open access to the deposited publication — via the repository — at the latest:

(i) on publication, if an electronic version is available for free via the publisher, or

(ii) within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.

(c) ensure open access — via the repository — to the bibliographic metadata that identify the deposited publication.

The bibliographic metadata must be in a standard format and must include all of the following:

- the terms “European Union (EU)” and “Horizon 2020”;
- the name of the action, acronym and grant number;
- the publication date, and length of embargo period if applicable, and
- a persistent identifier.

29.3 Open access to research data

Regarding the digital research data generated in the action (‘**data**’), the beneficiaries must:

(a) deposit in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the following:

(i) the data, including associated metadata, needed to validate the results presented in scientific publications, as soon as possible;

(ii) not applicable;

(iii) other data, including associated metadata, as specified and within the deadlines laid down in the 'data management plan' (see Annex 1);

(b) provide information — via the repository — about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (and — where possible — provide the tools and instruments themselves).

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, the security obligations in Article 37 or the obligations to protect personal data in Article 39, all of which still apply.

As an exception, the beneficiaries do not have to ensure open access to specific parts of their research data under Point (a)(i) and (iii), if the achievement of the action's main objective (as described in Annex 1) would be jeopardised by making those specific parts of the research data openly accessible. In this case, the data management plan must contain the reasons for not giving access.

29.4 Information on EU funding — Obligation and right to use the EU emblem

Unless the Agency requests or agrees otherwise or unless it is impossible, any dissemination of results (in any form, including electronic) must:

(a) display the EU emblem and

(b) include the following text:

"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101022965".

When displayed together with another logo, the EU emblem must have appropriate prominence.

For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Agency.

This does not however give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

29.5 Disclaimer excluding Agency responsibility

Any dissemination of results must indicate that it reflects only the author's view and that the Agency is not responsible for any use that may be made of the information it contains.

29.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 30 — TRANSFER AND LICENSING OF RESULTS

30.1 Transfer of ownership

Each beneficiary may transfer ownership of its results.

It must however ensure that its obligations under Articles 26.2, 26.4, 27, 28, 29, 30 and 31 also apply to the new owner and that this owner has the obligation to pass them on in any subsequent transfer.

This does not change the security obligations in Article 37, which still apply.

Unless agreed otherwise (in writing) for specifically-identified third parties or unless impossible under applicable EU and national laws on mergers and acquisitions, a beneficiary that intends to transfer ownership of results must give at least 45 days advance notice (or less if agreed in writing) to the other beneficiaries that still have (or still may request) access rights to the results. This notification must include sufficient information on the new owner to enable any beneficiary concerned to assess the effects on its access rights.

Unless agreed otherwise (in writing) for specifically-identified third parties, any other beneficiary may object within 30 days of receiving notification (or less if agreed in writing), if it can show that the transfer would adversely affect its access rights. In this case, the transfer may not take place until agreement has been reached between the beneficiaries concerned.

30.2 Granting licenses

Each beneficiary may grant licences to its results (or otherwise give the right to exploit them), if:

(a) this does not impede the access rights under Article 31 and

(b) not applicable.

In addition to Points (a) and (b), exclusive licences for results may be granted only if all the other beneficiaries concerned have waived their access rights (see Article 31.1).

This does not change the dissemination obligations in Article 29 or security obligations in Article 37, which still apply.

30.3 Agency right to object to transfers or licensing

The Agency may — up to four years after the period set out in Article 3 — object to a transfer of ownership or the exclusive licensing of results, if:

(a) it is to a third party established in a non-EU country not associated with Horizon 2020 and

(b) the Agency considers that the transfer or licence is not in line with EU interests regarding competitiveness or is inconsistent with ethical principles or security considerations.

A beneficiary that intends to transfer ownership or grant an exclusive licence must formally notify the Agency before the intended transfer or licensing takes place and:

- identify the specific results concerned;
- describe in detail the new owner or licensee and the planned or potential exploitation of the results, and
- include a reasoned assessment of the likely impact of the transfer or licence on EU competitiveness and its consistency with ethical principles and security considerations.

The Agency may request additional information.

If the Agency decides to object to a transfer or exclusive licence, it must formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information it has requested).

No transfer or licensing may take place in the following cases:

- pending the Agency decision, within the period set out above;
- if the Agency objects;
- until the conditions are complied with, if the Agency objection comes with conditions.

30.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 31 — ACCESS RIGHTS TO RESULTS

31.1 Exercise of access rights — Waiving of access rights — No sub-licensing

The conditions set out in Article 25.1 apply.

The obligations set out in this Article do not change the security obligations in Article 37, which still apply.

31.2 Access rights for other beneficiaries, for implementing their own tasks under the action

The beneficiaries must give each other access — on a royalty-free basis — to results needed for implementing their own tasks under the action.

31.3 Access rights for other beneficiaries, for exploiting their own results

The beneficiaries must give each other — under fair and reasonable conditions (see Article 25.3) — access to results needed for exploiting their own results.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

31.4 Access rights of affiliated entities

Unless agreed otherwise in the consortium agreement, access to results must also be given — under fair and reasonable conditions (Article 25.3) — to affiliated entities established in an EU Member State or associated country, if this is needed for those entities to exploit the results generated by the beneficiaries to which they are affiliated.

Unless agreed otherwise (see above; Article 31.1), the affiliated entity concerned must make any such request directly to the beneficiary that owns the results.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

31.5 Access rights for the EU institutions, bodies, offices or agencies and EU Member States

The beneficiaries must give access to their results — on a royalty-free basis — to EU institutions, bodies, offices or agencies, for developing, implementing or monitoring EU policies or programmes.

Such access rights are limited to non-commercial and non-competitive use.

This does not change the right to use any material, document or information received from the beneficiaries for communication and publicising activities (see Article 38.2).

31.6 Access rights for third parties

Not applicable

31.7 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

SECTION 4 OTHER RIGHTS AND OBLIGATIONS

ARTICLE 32 — RECRUITMENT AND WORKING CONDITIONS FOR RESEARCHERS

32.1 Obligation to take measures to implement the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers

The beneficiaries must take all measures to implement the principles set out in the Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers[23], in particular regarding:

- working conditions;
- transparent recruitment processes based on merit, and

[23] Commission Recommendation 2005/251/EC of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers (OJ L 75, 22.3.2005, p. 67).

- career development.

The beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

32.2 Consequences of non-compliance

If a beneficiary breaches its obligations under this Article, the Agency may apply any of the measures described in Chapter 6.

ARTICLE 33 — GENDER EQUALITY

33.1 Obligation to aim for gender equality

The beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level.

33.2 Consequences of non-compliance

If a beneficiary breaches its obligations under this Article, the Agency may apply any of the measures described in Chapter 6.

ARTICLE 34 — ETHICS AND RESEARCH INTEGRITY

34.1 Obligation to comply with ethical and research integrity principles

The beneficiaries must carry out the action in compliance with:

(a) ethical principles (including the highest standards of research integrity)

and

(b) applicable international, EU and national law.

Funding will not be granted for activities carried out outside the EU if they are prohibited in all Member States or for activities which destroy human embryos (for example, for obtaining stem cells).

The beneficiaries must ensure that the activities under the action have an exclusive focus on civil applications.

The beneficiaries must ensure that the activities under the action do not:

(a) aim at human cloning for reproductive purposes;

(b) intend to modify the genetic heritage of human beings which could make such changes heritable (with the exception of research relating to cancer treatment of the gonads, which may be financed), or

(c) intend to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

In addition, the beneficiaries must respect the fundamental principle of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity[24].

This implies compliance with the following fundamental principles:

- **reliability** in ensuring the quality of research reflected in the design, the methodology, the analysis and the use of resources;
- **honesty** in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair and unbiased way;
- **respect** for colleagues, research participants, society, ecosystems, cultural heritage and the environment;
- **accountability** for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts

and means that beneficiaries must ensure that persons carrying out research tasks follow the good research practices and refrain from the research integrity violations described in this Code.

This does not change the other obligations under this Agreement or obligations under applicable international, EU or national law, all of which still apply.

34.2 Activities raising ethical issues

Activities raising ethical issues must comply with the '**ethics requirements**' set out as deliverables in Annex 1.

Before the beginning of an activity raising an ethical issue, each beneficiary must have obtained:

(a) any ethics committee opinion required under national law and

(b) any notification or authorisation for activities raising ethical issues required under national and/or European law

needed for implementing the action tasks in question.

The documents must be kept on file and be submitted upon request by the coordinator to the Agency (see Article 52). If they are not in English, they must be submitted together with an English summary, which shows that the action tasks in question are covered and includes the conclusions of the committee or authority concerned (if available).

34.3 Activities involving human embryos or human embryonic stem cells

Activities involving research on human embryos or human embryonic stem cells may be carried out, in addition to Article 34.1, only if:

- they are set out in Annex 1 or
- the coordinator has obtained explicit approval (in writing) from the Agency (see Article 52).

[24] European Code of Conduct for Research Integrity of ALLEA (All European Academies) http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

34.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or participation of the beneficiary may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 35 — CONFLICT OF INTERESTS

35.1 Obligation to avoid a conflict of interests

The beneficiaries must take all measures to prevent any situation where the impartial and objective implementation of the action is compromised for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest ('**conflict of interests**').

They must formally notify to the Agency without delay any situation constituting or likely to lead to a conflict of interests and immediately take all the necessary steps to rectify this situation.

The Agency may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline.

35.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or participation of the beneficiary may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 36 — CONFIDENTIALITY

36.1 General obligation to maintain confidentiality

During implementation of the action and for four years after the period set out in Article 3, the parties must keep confidential any data, documents or other material (in any form) that is identified as confidential at the time it is disclosed ('**confidential information**').

If a beneficiary requests, the Agency may agree to keep such information confidential for an additional period beyond the initial four years.

If information has been identified as confidential only orally, it will be considered to be confidential only if this is confirmed in writing within 15 days of the oral disclosure.

Unless otherwise agreed between the parties, they may use confidential information only to implement the Agreement.

The beneficiaries may disclose confidential information to their personnel or third parties involved in the action only if they:

(a) need to know to implement the Agreement and

(b) are bound by an obligation of confidentiality.

This does not change the security obligations in Article 37, which still apply.

The Agency may disclose confidential information to its staff, other EU institutions and bodies. It may disclose confidential information to third parties, if:

(a) this is necessary to implement the Agreement or safeguard the EU's financial interests and

(b) the recipients of the information are bound by an obligation of confidentiality.

Under the conditions set out in Article 4 of the Rules for Participation Regulation No 1290/2013[25], the Commission must moreover make available information on the results to other EU institutions, bodies, offices or agencies as well as Member States or associated countries.

The confidentiality obligations no longer apply if:

(a) the disclosing party agrees to release the other party;

(b) the information was already known by the recipient or is given to him without obligation of confidentiality by a third party that was not bound by any obligation of confidentiality;

(c) the recipient proves that the information was developed without the use of confidential information;

(d) the information becomes generally and publicly available, without breaching any confidentiality obligation, or

(e) the disclosure of the information is required by EU or national law.

36.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 37 — SECURITY-RELATED OBLIGATIONS

37.1 Results with a security recommendation

Not applicable

37.2 Classified information

Not applicable

37.3 Activities involving dual-use goods or dangerous materials and substances

Not applicable

[25] Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 December 2013 laying down the rules for participation and dissemination in "Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)" (OJ L 347, 20.12.2013 p.81).

37.4 Consequences of non-compliance

Not applicable

ARTICLE 38 — PROMOTING THE ACTION — VISIBILITY OF EU FUNDING

38.1 Communication activities by beneficiaries

38.1.1 Obligation to promote the action and its results

The beneficiaries must promote the action and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner.

This does not change the dissemination obligations in Article 29, the confidentiality obligations in Article 36 or the security obligations in Article 37, all of which still apply.

Before engaging in a communication activity expected to have a major media impact, the beneficiaries must inform the Agency (see Article 52).

38.1.2 Information on EU funding — Obligation and right to use the EU emblem

Unless the Agency requests or agrees otherwise or unless it is impossible, any communication activity related to the action (including in electronic form, via social media, etc.) and any infrastructure, equipment and major results funded by the grant must:

(a) display the EU emblem and

(b) include the following text:

For communication activities:

"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101022965".

For infrastructure, equipment and major results:

"This *[infrastructure][equipment][insert type of result]* is part of a project that has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101022965".

When displayed together with another logo, the EU emblem must have appropriate prominence.

For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Agency.

This does not, however, give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

38.1.3 Disclaimer excluding Agency and Commission responsibility

Any communication activity related to the action must indicate that it reflects only the author's view and that the Agency and the Commission are not responsible for any use that may be made of the information it contains.

38.2 Communication activities by the Agency and the Commission

38.2.1 Right to use beneficiaries' materials, documents or information

The Agency and the Commission may use, for its communication and publicising activities, information relating to the action, documents notably summaries for publication and public deliverables as well as any other material, such as pictures or audio-visual material received from any beneficiary (including in electronic form).

This does not change the confidentiality obligations in Article 36 and the security obligations in Article 37, all of which still apply.

If the Agency's or the Commission's use of these materials, documents or information would risk compromising legitimate interests, the beneficiary concerned may request the Agency or the Commission not to use it (see Article 52).

The right to use a beneficiary's materials, documents and information includes:

(a) **use for its own purposes** (in particular, making them available to persons working for the Agency, the Commission or any other EU institution, body, office or agency or body or institutions in EU Member States; and copying or reproducing them in whole or in part, in unlimited numbers);

(b) **distribution to the public** (in particular, publication as hard copies and in electronic or digital format, publication on the internet, as a downloadable or non-downloadable file, broadcasting by any channel, public display or presentation, communicating through press information services, or inclusion in widely accessible databases or indexes);

(c) **editing or redrafting** for communication and publicising activities (including shortening, summarising, inserting other elements (such as meta-data, legends, other graphic, visual, audio or text elements), extracting parts (e.g. audio or video files), dividing into parts, use in a compilation);

(d) translation;

(e) giving **access in response to individual requests** under Regulation No 1049/2001[27], without the right to reproduce or exploit;

(f) **storage** in paper, electronic or other form;

(g) **archiving**, in line with applicable document-management rules, and

(h) the right to authorise **third parties** to act on its behalf or sub-license the modes of use set out in Points (b), (c), (d) and (f) to third parties if needed for the communication and publicising activities of the Agency or the Commission.

If the right of use is subject to rights of a third party (including personnel of the beneficiary), the beneficiary must ensure that it complies with its obligations under this Agreement (in particular, by obtaining the necessary approval from the third parties concerned).

[27] Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents, OJ L 145, 31.5.2001, p. 43.

Where applicable (and if provided by the beneficiaries), the Agency or the Commission will insert the following information:

> "© – [year] – [name of the copyright owner]. All rights reserved. Licensed to the European Climate, Infrastructure and Environment Executive Agency (CINEA) and the European Union (EU) under conditions."

38.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 39 — PROCESSING OF PERSONAL DATA

39.1 Processing of personal data by the Agency and the Commission

Any personal data under the Agreement will be processed by the Agency or the Commission under Regulation No 45/2001[28] and according to the 'notifications of the processing operations' to the Data Protection Officer (DPO) of the Agency or the Commission (publicly accessible in the DPO register).

Such data will be processed by the '**data controller**' of the Agency or the Commission for the purposes of implementing, managing and monitoring the Agreement or protecting the financial interests of the EU or Euratom (including checks, reviews, audits and investigations; see Article 22).

The persons whose personal data are processed have the right to access and correct their own personal data. For this purpose, they must send any queries about the processing of their personal data to the data controller, via the contact point indicated in the privacy statement(s) that are published on the Agency and the Commission websites.

They also have the right to have recourse at any time to the European Data Protection Supervisor (EDPS).

39.2 Processing of personal data by the beneficiaries

The beneficiaries must process personal data under the Agreement in compliance with applicable EU and national law on data protection (including authorisations or notification requirements).

The beneficiaries may grant their personnel access only to data that is strictly necessary for implementing, managing and monitoring the Agreement.

The beneficiaries must inform the personnel whose personal data are collected and processed by the Agency or the Commission. For this purpose, they must provide them with the privacy statement(s) (see above), before transmitting their data to the Agency or the Commission.

39.3 Consequences of non-compliance

[28] Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data (OJ L 8, 12.01.2001, p. 1).

If a beneficiary breaches any of its obligations under Article 39.2, the Agency may apply any of the measures described in Chapter 6.

ARTICLE 40 — ASSIGNMENTS OF CLAIMS FOR PAYMENT AGAINST THE AGENCY

The beneficiaries may not assign any of their claims for payment against the Agency to any third party, except if approved by the Agency on the basis of a reasoned, written request by the coordinator (on behalf of the beneficiary concerned).

If the Agency has not accepted the assignment or the terms of it are not observed, the assignment will have no effect on it.

In no circumstances will an assignment release the beneficiaries from their obligations towards the Agency.

CHAPTER 5 DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES — RELATIONSHIP WITH COMPLEMENTARY BENEFICIARIES — RELATIONSHIP WITH PARTNERS OF A JOINT ACTION

ARTICLE 41 — DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES — RELATIONSHIP WITH COMPLEMENTARY BENEFICIARIES — RELATIONSHIP WITH PARTNERS OF A JOINT ACTION

41.1 Roles and responsibility towards the Agency

The beneficiaries have full responsibility for implementing the action and complying with the Agreement.

The beneficiaries are jointly and severally liable for the **technical implementation** of the action as described in Annex 1. If a beneficiary fails to implement its part of the action, the other beneficiaries become responsible for implementing this part (without being entitled to any additional EU funding for doing so), unless the Agency expressly relieves them of this obligation.

The **financial responsibility** of each beneficiary is governed by Article 44.

41.2 Internal division of roles and responsibilities

The internal roles and responsibilities of the beneficiaries are divided as follows:

(a) Each **beneficiary** must:

(i) keep information stored in the Participant Portal Beneficiary Register (via the electronic exchange system) up to date (see Article 17);

(ii) inform the coordinator immediately of any events or circumstances likely to affect significantly or delay the implementation of the action (see Article 17);

(iii) submit to the coordinator in good time:

- individual financial statements for itself and its linked third parties and, if required, certificates on the financial statements (see Article 20);

- the data needed to draw up the technical reports (see Article 20);

- ethics committee opinions and notifications or authorisations for activities raising ethical issues (see Article 34);

- any other documents or information required by the Agency or the Commission under the Agreement, unless the Agreement requires the beneficiary to submit this information directly to the Agency or the Commission.

(b) The **coordinator** must:

(i) monitor that the action is implemented properly (see Article 7);

(ii) act as the intermediary for all communications between the beneficiaries and the Agency (in particular, providing the Agency with the information described in Article 17), unless the Agreement specifies otherwise;

(iii) request and review any documents or information required by the Agency and verify their completeness and correctness before passing them on to the Agency;

(iv) submit the deliverables and reports to the Agency (see Articles 19 and 20);

(v) ensure that all payments are made to the other beneficiaries without unjustified delay (see Article 21);

(vi) inform the Agency of the amounts paid to each beneficiary, when required under the Agreement (see Articles 44 and 50) or requested by the Agency.

The coordinator may not delegate or subcontract the above-mentioned tasks to any other beneficiary or third party (including linked third parties).

41.3 Internal arrangements between beneficiaries — Consortium agreement

The beneficiaries must have internal arrangements regarding their operation and co-ordination to ensure that the action is implemented properly. These internal arrangements must be set out in a written '**consortium agreement**' between the beneficiaries, which may cover:

- internal organisation of the consortium;

- management of access to the electronic exchange system;

- distribution of EU funding;

- additional rules on rights and obligations related to background and results (including whether access rights remain or not, if a beneficiary is in breach of its obligations) (see Section 3 of Chapter 4);

- settlement of internal disputes;

- liability, indemnification and confidentiality arrangements between the beneficiaries.

The consortium agreement must not contain any provision contrary to the Agreement.

41.4 Relationship with complementary beneficiaries — Collaboration agreement

Not applicable

41.5 Relationship with partners of a joint action — Coordination agreement

Not applicable

CHAPTER 6 REJECTION OF COSTS — REDUCTION OF THE GRANT — RECOVERY — SANCTIONS — DAMAGES — SUSPENSION — TERMINATION — FORCE MAJEURE

SECTION 1 REJECTION OF COSTS — REDUCTION OF THE GRANT — RECOVERY — SANCTIONS

ARTICLE 42 — REJECTION OF INELIGIBLE COSTS

42.1 Conditions

The Agency will — after **termination of the participation of a beneficiary**, at the time of an **interim payment**, **at the payment of the balance** or **afterwards** — reject any costs which are ineligible (see Article 6), in particular following checks, reviews, audits or investigations (see Article 22).

The rejection may also be based on the **extension of findings from other grants to this grant** (see Article 22.5.2).

42.2 Ineligible costs to be rejected — Calculation — Procedure

Ineligible costs will be rejected in full.

If the rejection of costs does not lead to a recovery (see Article 44), the Agency will formally notify the coordinator or beneficiary concerned of the rejection of costs, the amounts and the reasons why (if applicable, together with the notification of amounts due; see Article 21.5). The coordinator or beneficiary concerned may — within 30 days of receiving notification — formally notify the Agency of its disagreement and the reasons why.

If the rejection of costs leads to a recovery, the Agency will follow the contradictory procedure with pre-information letter set out in Article 44.

42.3 Effects

If the Agency rejects costs at the time of an **interim payment** or **the payment of the balance**, it will deduct them from the total eligible costs declared, for the action, in the periodic or final summary financial statement (see Articles 20.3 and 20.4). It will then calculate the interim payment or payment of the balance as set out in Articles 21.3 or 21.4.

If the Agency rejects costs **after termination of the participation of a beneficiary**, it will deduct them from the costs declared by the beneficiary in the termination report and include the rejection in the calculation after termination (see Article 50.2 and 50.3).

If the Agency — **after an interim payment but before the payment of the balance** — rejects costs declared in a periodic summary financial statement, it will deduct them from the total eligible costs declared, for the action, in the next periodic summary financial statement or in the final summary financial statement. It will then calculate the interim payment or payment of the balance as set out in Articles 21.3 or 21.4.

If the Agency rejects costs **after the payment of the balance**, it will deduct the amount rejected from the total eligible costs declared, by the beneficiary, in the final summary financial statement. It will then calculate the revised final grant amount as set out in Article 5.4.

ARTICLE 43 — REDUCTION OF THE GRANT

43.1 Conditions

The Agency may — **after termination of the participation of a beneficiary**, **at the payment of the balance** or **afterwards** — reduce the grant amount (see Article 5.1), if :

(a) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed:

  (i) substantial errors, irregularities or fraud or

  (ii) serious breach of obligations under the Agreement or during the award procedure (including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles) or

(b) a beneficiary (or a natural person who has the power to represent or take decision on its behalf) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2).

43.2 Amount to be reduced — Calculation — Procedure

The amount of the reduction will be proportionate to the seriousness of the errors, irregularities or fraud or breach of obligations.

Before reduction of the grant, the Agency will formally notify a '**pre-information letter**' to the coordinator or beneficiary concerned:

- informing it of its intention to reduce the grant, the amount it intends to reduce and the reasons why and

- inviting it to submit observations within 30 days of receiving notification.

If the Agency does not receive any observations or decides to pursue reduction despite the observations it has received, it will formally notify **confirmation** of the reduction (if applicable, together with the notification of amounts due; see Article 21).

43.3 Effects

If the Agency reduces the grant **after termination of the participation of a beneficiary**, it will calculate the reduced grant amount for that beneficiary and then determine the amount due to that beneficiary (see Article 50.2 and 50.3).

If the Agency reduces the grant **at the payment of the balance**, it will calculate the reduced grant amount for the action and then determine the amount due as payment of the balance (see Articles 5.3.4 and 21.4).

If the Agency reduces the grant **after the payment of the balance**, it will calculate the revised final grant amount for the beneficiary concerned (see Article 5.4). If the revised final grant amount for the beneficiary concerned is lower than its share of the final grant amount, the Agency will recover the difference (see Article 44).

ARTICLE 44 — RECOVERY OF UNDUE AMOUNTS

44.1 Amount to be recovered — Calculation — Procedure

The Agency will — after **termination of the participation of a beneficiary, at the payment of the balance** or **afterwards** — claim back any amount that was paid, but is not due under the Agreement.

Each beneficiary's financial responsibility in case of recovery is limited to its own debt (including undue amounts paid by the Agency for costs declared by its linked third parties), except for the amount retained for the Guarantee Fund (see Article 21.4).

44.1.1 Recovery after termination of a beneficiary's participation

If recovery takes place after termination of a beneficiary's participation (including the coordinator), the Agency will claim back the undue amount from the beneficiary concerned, by formally notifying it a debit note (see Article 50.2 and 50.3). This note will specify the amount to be recovered, the terms and the date for payment.

If payment is not made by the date specified in the debit note, the Agency or the Commission will **recover** the amount:

(a) by '**offsetting**' it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Agency, the Commission or another executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Agency or the Commission may offset before the payment date specified in the debit note;

(b) not applicable;

(c) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date specified in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following

the payment date in the debit note, up to and including the date the Agency or the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC[29] applies.

44.1.2 Recovery at payment of the balance

If the payment of the balance takes the form of a recovery (see Article 21.4), the Agency will formally notify a '**pre-information letter**' to the coordinator:

- informing it of its intention to recover, the amount due as the balance and the reasons why;
- specifying that it intends to deduct the amount to be recovered from the amount retained for the Guarantee Fund;
- requesting the coordinator to submit a report on the distribution of payments to the beneficiaries within 30 days of receiving notification, and
- inviting the coordinator to submit observations within 30 days of receiving notification.

If no observations are submitted or the Agency decides to pursue recovery despite the observations it has received, it will **confirm recovery** (together with the notification of amounts due; see Article 21.5) and:

- pay the difference between the amount to be recovered and the amount retained for the Guarantee Fund, **if the difference is positive** or
- formally notify to the coordinator a **debit note** for the difference between the amount to be recovered and the amount retained for the Guarantee Fund, **if the difference is negative**. This note will also specify the terms and the date for payment.

If the coordinator does not repay the Agency by the date in the debit note and has not submitted the report on the distribution of payments: the Agency or the Commission will **recover** the amount set out in the debit note from the coordinator (see below).

If the coordinator does not repay the Agency by the date in the debit note, but has submitted the report on the distribution of payments: the Agency will:

(a) identify the beneficiaries for which the amount calculated as follows is negative:

{{{beneficiary's costs declared in the final summary financial statement and approved by the Agency multiplied by the reimbursement rate set out in Article 5.2 for the beneficiary concerned

plus

its linked third parties' costs declared in the final summary financial statement and approved by

[29] Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC (OJ L 319, 05.12.2007, p. 1).

the Agency multiplied by the reimbursement rate set out in Article 5.2 for each linked third party concerned}

divided by

the EU contribution for the action calculated according to Article 5.3.1}

multiplied by

the final grant amount (see Article 5.3)},

minus

{pre-financing and interim payments received by the beneficiary}}.

(b) formally notify to each beneficiary identified according to point (a) a **debit note** specifying the terms and date for payment. The amount of the debit note is calculated as follows:

{{amount calculated according to point (a) for the beneficiary concerned

divided by

the sum of the amounts calculated according to point (a) for all the beneficiaries identified according to point (a)}

multiplied by

the amount set out in the debit note formally notified to the coordinator}.

If payment is not made by the date specified in the debit note, the Agency or the Commission will **recover** the amount:

(a) by **offsetting** it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Agency, the Commission or another executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Agency or the Commission may offset before the payment date specified in the debit note;

(b) by **drawing on the Guarantee Fund**. The Agency or the Commission will formally notify the beneficiary concerned the debit note on behalf of the Guarantee Fund and recover the amount:

(i) not applicable;

(ii) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the payment date in the debit note, up to and including the date the Agency or the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC applies.

44.1.3 Recovery of amounts after payment of the balance

If, for a beneficiary, the revised final grant amount (see Article 5.4) is lower than its share of the final grant amount, it must repay the difference to the Agency.

The beneficiary's share of the final grant amount is calculated as follows:

{{{beneficiary's costs declared in the final summary financial statement and approved by the Agency multiplied by the reimbursement rate set out in Article 5.2 for the beneficiary concerned

plus

its linked third parties' costs declared in the final summary financial statement and approved by the Agency multiplied by the reimbursement rate set out in Article 5.2 for each linked third party concerned}

divided by

the EU contribution for the action calculated according to Article 5.3.1}

multiplied by

the final grant amount (see Article 5.3)}.

If the coordinator has not distributed amounts received (see Article 21.7), the Agency will also recover these amounts.

The Agency will formally notify a **pre-information letter** to the beneficiary concerned:

- informing it of its intention to recover, the due amount and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If no observations are submitted or the Agency decides to pursue recovery despite the observations it has received, it will **confirm** the amount to be recovered and formally notify to the beneficiary concerned a **debit note**. This note will also specify the terms and the date for payment.

If payment is not made by the date specified in the debit note, the Agency or the Commission will **recover** the amount:

(a) by **offsetting** it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Agency, the Commission or another executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Agency or the Commission may offset before the payment date specified in the debit note;

(b) by **drawing on the Guarantee Fund**. The Agency or the Commission will formally notify the beneficiary concerned the debit note on behalf of the Guarantee Fund and recover the amount:

(i) not applicable;

(ii) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under

Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the date for payment in the debit note, up to and including the date the Agency or the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC applies.

ARTICLE 45 — ADMINISTRATIVE SANCTIONS

In addition to contractual measures, the Agency or the Commission may also adopt administrative sanctions under Articles 106 and 131(4) of the Financial Regulation No 966/2012 (i.e. exclusion from future procurement contracts, grants, prizes and expert contracts and/or financial penalties).

SECTION 2 LIABILITY FOR DAMAGES

ARTICLE 46 — LIABILITY FOR DAMAGES

46.1 Liability of the Agency

The Agency cannot be held liable for any damage caused to the beneficiaries or to third parties as a consequence of implementing the Agreement, including for gross negligence.

The Agency cannot be held liable for any damage caused by any of the beneficiaries or third parties involved in the action, as a consequence of implementing the Agreement.

46.2 Liability of the beneficiaries

Except in case of force majeure (see Article 51), the beneficiaries must compensate the Agency for any damage it sustains as a result of the implementation of the action or because the action was not implemented in full compliance with the Agreement.

SECTION 3 SUSPENSION AND TERMINATION

ARTICLE 47 — SUSPENSION OF PAYMENT DEADLINE

47.1 Conditions

The Agency may — at any moment — suspend the payment deadline (see Article 21.2 to 21.4) if a request for payment (see Article 20) cannot be approved because:

(a) it does not comply with the provisions of the Agreement (see Article 20);

(b) the technical or financial reports have not been submitted or are not complete or additional information is needed, or

(c) there is doubt about the eligibility of the costs declared in the financial statements and additional checks, reviews, audits or investigations are necessary.

47.2 Procedure

The Agency will formally notify the coordinator of the suspension and the reasons why.

The suspension will **take effect** the day notification is sent by the Agency (see Article 52).

If the conditions for suspending the payment deadline are no longer met, the suspension will be **lifted** — and the remaining period will resume.

If the suspension exceeds two months, the coordinator may request the Agency if the suspension will continue.

If the payment deadline has been suspended due to the non-compliance of the technical or financial reports (see Article 20) and the revised report or statement is not submitted or was submitted but is also rejected, the Agency may also terminate the Agreement or the participation of the beneficiary (see Article 50.3.1(l)).

ARTICLE 48 — SUSPENSION OF PAYMENTS

48.1 Conditions

The Agency may — at any moment — suspend payments, in whole or in part and interim payments or the payment of the balance for one or more beneficiaries, if:

(a) a beneficiary (or a natural person who has the power to represent or take decision on its behalf) has committed or is suspected of having committed:

  (i) substantial errors, irregularities or fraud or

  (ii) serious breach of obligations under the Agreement or during the award procedure (including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles) or

(b) a beneficiary (or a natural person who has the power to represent or take decision on its behalf) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2).

If payments are suspended for one or more beneficiaries, the Agency will make partial payment(s) for the part(s) not suspended. If suspension concerns the payment of the balance, — once suspension is lifted — the payment or the recovery of the amount(s) concerned will be considered the payment of the balance that closes the action.

48.2 Procedure

Before suspending payments, the Agency will formally notify the coordinator or beneficiary concerned:

- informing it of its intention to suspend payments and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If the Agency does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify **confirmation** of the suspension. Otherwise, it will formally notify that the suspension procedure is not continued.

The suspension will **take effect** the day the confirmation notification is sent by the Agency.

If the conditions for resuming payments are met, the suspension will be **lifted**. The Agency will formally notify the coordinator or beneficiary concerned.

During the suspension, the periodic report(s) for all reporting periods except the last one (see Article 20.3), must not contain any individual financial statements from the beneficiary concerned and its linked third parties. The coordinator must include them in the next periodic report after the suspension is lifted or — if suspension is not lifted before the end of the action — in the last periodic report.

The beneficiaries may suspend implementation of the action (see Article 49.1) or terminate the Agreement or the participation of the beneficiary concerned (see Article 50.1 and 50.2).

ARTICLE 49 — SUSPENSION OF THE ACTION IMPLEMENTATION

49.1 Suspension of the action implementation, by the beneficiaries

49.1.1 Conditions

The beneficiaries may suspend implementation of the action or any part of it, if exceptional circumstances — in particular *force majeure* (see Article 51) — make implementation impossible or excessively difficult.

49.1.2 Procedure

The coordinator must immediately formally notify to the Agency the suspension (see Article 52), stating:

- the reasons why and
- the expected date of resumption.

The suspension will **take effect** the day this notification is received by the Agency.

Once circumstances allow for implementation to resume, the coordinator must immediately formally notify the Agency and request an **amendment** of the Agreement to set the date on which the action will be resumed, extend the duration of the action and make other changes necessary to adapt the action to the new situation (see Article 55) — unless the Agreement or the participation of a beneficiary has been terminated (see Article 50).

The suspension will be **lifted** with effect from the resumption date set out in the amendment. This date may be before the date on which the amendment enters into force.

Costs incurred during suspension of the action implementation are not eligible (see Article 6).

49.2 Suspension of the action implementation, by the Agency

49.2.1 Conditions

The Agency may suspend implementation of the action or any part of it, if:

(a) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed or is suspected of having committed:

  (i) substantial errors, irregularities or fraud or

  (ii) serious breach of obligations under the Agreement or during the award procedure (including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles);

(b) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2), or

(c) the action is suspected of having lost its scientific or technological relevance.

49.2.2 Procedure

Before suspending implementation of the action, the Agency will formally notify the coordinator or beneficiary concerned:

- informing it of its intention to suspend the implementation and the reasons why and

- inviting it to submit observations within 30 days of receiving notification.

If the Agency does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify **confirmation** of the suspension. Otherwise, it will formally notify that the procedure is not continued.

The suspension will **take effect** five days after confirmation notification is received (or on a later date specified in the notification).

It will be **lifted** if the conditions for resuming implementation of the action are met.

The coordinator or beneficiary concerned will be formally notified of the lifting and the Agreement will be **amended** to set the date on which the action will be resumed, extend the duration of the action and make other changes necessary to adapt the action to the new situation (see Article 55) — unless the Agreement has already been terminated (see Article 50).

The suspension will be lifted with effect from the resumption date set out in the amendment. This date may be before the date on which the amendment enters into force.

Costs incurred during suspension are not eligible (see Article 6).

The beneficiaries may not claim damages due to suspension by the Agency (see Article 46).

Suspension of the action implementation does not affect the Agency's right to terminate the Agreement or participation of a beneficiary (see Article 50), reduce the grant or recover amounts unduly paid (see Articles 43 and 44).

ARTICLE 50 — TERMINATION OF THE AGREEMENT OR OF THE PARTICIPATION OF ONE OR MORE BENEFICIARIES

50.1 Termination of the Agreement, by the beneficiaries

50.1.1 Conditions and procedure

The beneficiaries may terminate the Agreement.

The coordinator must formally notify termination to the Agency (see Article 52), stating:

- the reasons why and
- the date the termination will take effect. This date must be after the notification.

If no reasons are given or if the Agency considers the reasons do not justify termination, the Agreement will be considered to have been '**terminated improperly**'.

The termination will **take effect** on the day specified in the notification.

50.1.2 Effects

The coordinator must — within 60 days from when termination takes effect — submit:

(i) a periodic report (for the open reporting period until termination; see Article 20.3) and

(ii) the final report (see Article 20.4).

If the Agency does not receive the reports within the deadline (see above), only costs which are included in an approved periodic report will be taken into account.

The Agency will **calculate** the final grant amount (see Article 5.3) and the balance (see Article 21.4) on the basis of the reports submitted. Only costs incurred until termination are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

Improper termination may lead to a reduction of the grant (see Article 43).

After termination, the beneficiaries' obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

50.2 Termination of the participation of one or more beneficiaries, by the beneficiaries

50.2.1 Conditions and procedure

The participation of one or more beneficiaries may be terminated by the coordinator, on request of the beneficiary concerned or on behalf of the other beneficiaries.

The coordinator must formally notify termination to the Agency (see Article 52) and inform the beneficiary concerned.

If the coordinator's participation is terminated without its agreement, the formal notification must be done by another beneficiary (acting on behalf of the other beneficiaries).

The notification must include:

- the reasons why;
- the opinion of the beneficiary concerned (or proof that this opinion has been requested in writing);
- the date the termination takes effect. This date must be after the notification, and
- a request for amendment (see Article 55), with a proposal for reallocation of the tasks and the estimated budget of the beneficiary concerned (see Annexes 1 and 2) and, if necessary, the addition of one or more new beneficiaries (see Article 56). If termination takes effect after the period set out in Article 3, no request for amendment must be included unless the beneficiary concerned is the coordinator. In this case, the request for amendment must propose a new coordinator.

If this information is not given or if the Agency considers that the reasons do not justify termination, the participation will be considered to have been **terminated improperly**.

The termination will **take effect** on the day specified in the notification.

50.2.2 Effects

The coordinator must — within 30 days from when termination takes effect — submit:

(i) a report on the distribution of payments to the beneficiary concerned and

(ii) if termination takes effect during the period set out in Article 3, a '**termination report**' from the beneficiary concerned, for the open reporting period until termination, containing an overview of the progress of the work, an overview of the use of resources, the individual financial statement and, if applicable, the certificate on the financial statement (see Articles 20.3 and 20.4).

The information in the termination report must also be included in the periodic report for the next reporting period (see Article 20.3).

If the request for amendment is rejected by the Agency (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the Agreement may be terminated according to Article 50.3.1(c).

If the request for amendment is accepted by the Agency, the Agreement is **amended** to introduce the necessary changes (see Article 55).

The Agency will — on the basis of the periodic reports, the termination report and the report on

the distribution of payments — **calculate** the amount which is due to the beneficiary and if the (pre-financing and interim) payments received by the beneficiary exceed this amount.

The **amount which is due** is calculated in the following steps:

Step 1 — Application of the reimbursement rate to the eligible costs

The grant amount for the beneficiary is calculated by applying the reimbursement rate(s) to the total eligible costs declared by the beneficiary and its linked third parties in the termination report and approved by the Agency.

Only costs incurred by the beneficiary concerned until termination takes effect are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

Step 2 — Reduction due to substantial errors, irregularities or fraud or serious breach of obligations

In case of a reduction (see Article 43), the Agency will calculate the reduced grant amount for the beneficiary by deducting the amount of the reduction (calculated in proportion to the seriousness of the errors, irregularities or fraud or breach of obligations, in accordance with Article 43.2) from the grant amount for the beneficiary.

If the payments received **exceed the amounts due**:

- if termination takes effect during the period set out in Article 3 and the request for amendment is accepted, the beneficiary concerned must repay to the coordinator the amount unduly received. The Agency will formally notify the amount unduly received and request the beneficiary concerned to repay it to the coordinator within 30 days of receiving notification. If it does not repay the coordinator, the Agency will draw upon the Guarantee Fund to pay the coordinator and then notify a **debit note** on behalf of the Guarantee Fund to the beneficiary concerned (see Article 44);

- in all other cases, in particular if termination takes effect after the period set out in Article 3, the Agency will formally notify a **debit note** to the beneficiary concerned. If payment is not made by the date in the debit note, the Guarantee Fund will pay to the Agency the amount due and the Agency will notify a debit note on behalf of the Guarantee Fund to the beneficiary concerned (see Article 44);

- if the beneficiary concerned is the former coordinator, it must repay the new coordinator according to the procedure above, unless:

    - termination takes effect after an interim payment and

    - the former coordinator has not distributed amounts received as pre-financing or interim payments (see Article 21.7).

  In this case, the Agency will formally notify a **debit note** to the former coordinator. If payment is not made by the date in the debit note, the Guarantee Fund will pay to the Agency the amount due. The Agency will then pay the new coordinator and notify a debit note on behalf of the Guarantee Fund to the former coordinator (see Article 44).

If the payments received **do not exceed the amounts due**: amounts owed to the beneficiary concerned will be included in the next interim or final payment.

If the Agency does not receive the termination report within the deadline (see above), only costs included in an approved periodic report will be taken into account.

If the Agency does not receive the report on the distribution of payments within the deadline (see above), it will consider that:

- the coordinator did not distribute any payment to the beneficiary concerned and that
- the beneficiary concerned must not repay any amount to the coordinator.

Improper termination may lead to a reduction of the grant (see Article 43) or termination of the Agreement (see Article 50).

After termination, the concerned beneficiary's obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

50.3 Termination of the Agreement or the participation of one or more beneficiaries, by the Agency

50.3.1 Conditions

The Agency may terminate the Agreement or the participation of one or more beneficiaries, if:

(a) one or more beneficiaries do not accede to the Agreement (see Article 56);

(b) a change to their legal, financial, technical, organisational or ownership situation (or those of its linked third parties) is likely to substantially affect or delay the implementation of the action or calls into question the decision to award the grant;

(c) following termination of participation for one or more beneficiaries (see above), the necessary changes to the Agreement would call into question the decision awarding the grant or breach the principle of equal treatment of applicants (see Article 55);

(d) implementation of the action is prevented by force majeure (see Article 51) or suspended by the coordinator (see Article 49.1) and either:

  (i) resumption is impossible, or

  (ii) the necessary changes to the Agreement would call into question the decision awarding the grant or breach the principle of equal treatment of applicants;

(e) a beneficiary is declared bankrupt, being wound up, having its affairs administered by the courts, has entered into an arrangement with creditors, has suspended business activities, or is subject to any other similar proceedings or procedures under national law;

(f) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has been found guilty of professional misconduct, proven by any means;

(g) a beneficiary does not comply with the applicable national law on taxes and social security;

(h) the action has lost scientific or technological relevance;

(i) not applicable;

(j) not applicable;

(k) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed fraud, corruption, or is involved in a criminal organisation, money laundering or any other illegal activity;

(l) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed:

(i) substantial errors, irregularities or fraud or

(ii) serious breach of obligations under the Agreement or during the award procedure (including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles);

(m) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2);

(n) despite a specific request by the Agency, a beneficiary does not request — through the coordinator — an amendment to the Agreement to end the participation of one of its linked third parties or international partners that is in one of the situations under points (e), (f), (g), (k), (l) or (m) and to reallocate its tasks.

50.3.2 Procedure

Before terminating the Agreement or participation of one or more beneficiaries, the Agency will formally notify the coordinator or beneficiary concerned:

- informing it of its intention to terminate and the reasons why and

- inviting it, within 30 days of receiving notification, to submit observations and — in case of Point (l.ii) above — to inform the Agency of the measures to ensure compliance with the obligations under the Agreement.

If the Agency does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify to the coordinator or beneficiary concerned **confirmation** of the termination and the date it will take effect. Otherwise, it will formally notify that the procedure is not continued.

The termination will **take effect**:

- for terminations under Points (b), (c), (e), (g), (h), (j), (l.ii) and (n) above: on the day specified in the notification of the confirmation (see above);

- for terminations under Points (a), (d), (f), (i), (k), (l.i) and (m) above: on the day after the notification of the confirmation is received.

50.3.3 Effects

(a) for **termination of the Agreement**:

The coordinator must — within 60 days from when termination takes effect — submit:

(i) a periodic report (for the last open reporting period until termination; see Article 20.3) and

(ii) a final report (see Article 20.4).

If the Agreement is terminated for breach of the obligation to submit reports (see Articles 20.8 and 50.3.1(l)), the coordinator may not submit any reports after termination.

If the Agency does not receive the reports within the deadline (see above), only costs which are included in an approved periodic report will be taken into account.

The Agency will **calculate** the final grant amount (see Article 5.3) and the balance (see Article 21.4) on the basis of the reports submitted. Only costs incurred until termination takes effect are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

This does not affect the Agency's right to reduce the grant (see Article 43) or to impose administrative sanctions (Article 45).

The beneficiaries may not claim damages due to termination by the Agency (see Article 46).

After termination, the beneficiaries' obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

(b) for **termination of the participation of one or more beneficiaries**:

The coordinator must — within 60 days from when termination takes effect — submit:

(i) a report on the distribution of payments to the beneficiary concerned;

(ii) a request for amendment (see Article 55), with a proposal for reallocation of the tasks and estimated budget of the beneficiary concerned (see Annexes 1 and 2) and, if necessary, the addition of one or more new beneficiaries (see Article 56). If termination is notified after the period set out in Article 3, no request for amendment must be submitted unless the beneficiary concerned is the coordinator. In this case the request for amendment must propose a new coordinator, and

(iii) if termination takes effect during the period set out in Article 3, a **termination report** from the beneficiary concerned, for the open reporting period until termination, containing an overview of the progress of the work, an overview of the use of resources, the individual financial statement and, if applicable, the certificate on the financial statement (see Article 20).

The information in the termination report must also be included in the periodic report for the next reporting period (see Article 20.3).

If the request for amendment is rejected by the Agency (because it calls into question the

decision awarding the grant or breaches the principle of equal treatment of applicants), the Agreement may be terminated according to Article 50.3.1(c).

If the request for amendment is accepted by the Agency, the Agreement is **amended** to introduce the necessary changes (see Article 55).

The Agency will — on the basis of the periodic reports, the termination report and the report on the distribution of payments — **calculate** the amount which is due to the beneficiary and if the (pre-financing and interim) payments received by the beneficiary exceed this amount.

The **amount which is due** is calculated in the following steps:

Step 1 — Application of the reimbursement rate to the eligible costs

The grant amount for the beneficiary is calculated by applying the reimbursement rate(s) to the total eligible costs declared by the beneficiary and its linked third parties in the termination report and approved by the Agency.

Only costs incurred by the beneficiary concerned until termination takes effect are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

Step 2 — Reduction due to substantial errors, irregularities or fraud or serious breach of obligations

In case of a reduction (see Article 43), the Agency will calculate the reduced grant amount for the beneficiary by deducting the amount of the reduction (calculated in proportion to the seriousness of the errors, irregularities or fraud or breach of obligations, in accordance with Article 43.2) from the grant amount for the beneficiary.

If the payments received **exceed the amounts due**:

- if termination takes effect during the period set out in Article 3 and the request for amendment is accepted, the beneficiary concerned must repay to the coordinator the amount unduly received. The Agency will formally notify the amount unduly received and request the beneficiary concerned to repay it to the coordinator within 30 days of receiving notification. If it does not repay the coordinator, the Agency will draw upon the Guarantee Fund to pay the coordinator and then notify a **debit note** on behalf of the Guarantee Fund to the beneficiary concerned (see Article 44);

- in all other cases, in particular if termination takes effect after the period set out in Article 3, the Agency will formally notify a **debit note** to the beneficiary concerned. If payment is not made by the date in the debit note, the Guarantee Fund will pay to the Agency the amount due and the Agency will notify a debit note on behalf of the Guarantee Fund to the beneficiary concerned (see Article 44);

- if the beneficiary concerned is the former coordinator, it must repay the new coordinator according to the procedure above, unless:

    - termination takes effect after an interim payment and

- the former coordinator has not distributed amounts received as pre-financing or interim payments (see Article 21.7).

In this case, the Agency will formally notify a **debit note** to the former coordinator. If payment is not made by the date in the debit note, the Guarantee Fund will pay to the Agency the amount due. The Agency will then pay the new coordinator and notify a debit note on behalf of the Guarantee Fund to the former coordinator (see Article 44).

If the payments received **do not exceed the amounts due**: amounts owed to the beneficiary concerned will be included in the next interim or final payment.

If the Agency does not receive the termination report within the deadline (see above), only costs included in an approved periodic report will be taken into account.

If the Agency does not receive the report on the distribution of payments within the deadline (see above), it will consider that:

- the coordinator did not distribute any payment to the beneficiary concerned and that
- the beneficiary concerned must not repay any amount to the coordinator.

After termination, the concerned beneficiary's obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

SECTION 4 FORCE MAJEURE

ARTICLE 51 — FORCE MAJEURE

'Force majeure' means any situation or event that:

- prevents either party from fulfilling their obligations under the Agreement,
- was unforeseeable, exceptional situation and beyond the parties' control,
- was not due to error or negligence on their part (or on the part of third parties involved in the action), and
- proves to be inevitable in spite of exercising all due diligence.

The following cannot be invoked as force majeure:

- any default of a service, defect in equipment or material or delays in making them available, unless they stem directly from a relevant case of force majeure,
- labour disputes or strikes, or
- financial difficulties.

Any situation constituting force majeure must be formally notified to the other party without delay, stating the nature, likely duration and foreseeable effects.

The parties must immediately take all the necessary steps to limit any damage due to force majeure and do their best to resume implementation of the action as soon as possible.

The party prevented by force majeure from fulfilling its obligations under the Agreement cannot be considered in breach of them.

CHAPTER 7 FINAL PROVISIONS

ARTICLE 52 — COMMUNICATION BETWEEN THE PARTIES

52.1 Form and means of communication

Communication under the Agreement (information, requests, submissions, 'formal notifications', etc.) must:

- be made in writing and
- bear the number of the Agreement.

All communication must be made through the Participant Portal **electronic** exchange system and using the forms and templates provided there.

If — after the payment of the balance — the Agency finds that a formal notification was not accessed, a second formal notification will be made by registered post with proof of delivery ('formal notification on **paper**'). Deadlines will be calculated from the moment of the second notification.

Communications in the electronic exchange system must be made by persons authorised according to the Participant Portal Terms & Conditions. For naming the authorised persons, each beneficiary must have designated — before the signature of this Agreement — a 'legal entity appointed representative (LEAR)'. The role and tasks of the LEAR are stipulated in his/her appointment letter (see Participant Portal Terms & Conditions).

If the electronic exchange system is temporarily unavailable, instructions will be given on the Agency and Commission websites.

52.2 Date of communication

Communications are considered to have been made when they are sent by the sending party (i.e. on the date and time they are sent through the electronic exchange system).

Formal notifications through the **electronic** exchange system are considered to have been made when they are received by the receiving party (i.e. on the date and time of acceptance by the receiving party, as indicated by the time stamp). A formal notification that has not been accepted within 10 days after sending is considered to have been accepted.

Formal notifications **on paper** sent by **registered post** with proof of delivery (only after the payment of the balance) are considered to have been made on either:

- the delivery date registered by the postal service or
- the deadline for collection at the post office.

If the electronic exchange system is temporarily unavailable, the sending party cannot be considered in breach of its obligation to send a communication within a specified deadline.

52.3 Addresses for communication

The **electronic** exchange system must be accessed via the following URL:

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/myarea/projects

The Agency will formally notify the coordinator and beneficiaries in advance any changes to this URL.

Formal notifications on paper (only after the payment of the balance) addressed **to the Agency** must be sent to the official mailing address indicated on the Agency's website.

Formal notifications on paper (only after the payment of the balance) addressed **to the beneficiaries** must be sent to their legal address as specified in the Participant Portal Beneficiary Register.

ARTICLE 53 — INTERPRETATION OF THE AGREEMENT

53.1 Precedence of the Terms and Conditions over the Annexes

The provisions in the Terms and Conditions of the Agreement take precedence over its Annexes.

Annex 2 takes precedence over Annex 1.

53.2 Privileges and immunities

Not applicable

ARTICLE 54 — CALCULATION OF PERIODS, DATES AND DEADLINES

In accordance with Regulation No 1182/71[30], periods expressed in days, months or years are calculated from the moment the triggering event occurs.

The day during which that event occurs is not considered as falling within the period.

ARTICLE 55 — AMENDMENTS TO THE AGREEMENT

55.1 Conditions

The Agreement may be amended, unless the amendment entails changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

Amendments may be requested by any of the parties.

55.2 Procedure

[30] Regulation (EEC, Euratom) No 1182/71 of the Council of 3 June 1971 determining the rules applicable to periods, dates and time-limits (OJ L 124, 8.6.1971, p. 1).

The party requesting an amendment must submit a request for amendment signed in the electronic exchange system (see Article 52).

The coordinator submits and receives requests for amendment on behalf of the beneficiaries (see Annex 3).

If a change of coordinator is requested without its agreement, the submission must be done by another beneficiary (acting on behalf of the other beneficiaries).

The request for amendment must include:

- the reasons why;
- the appropriate supporting documents, and
- for a change of coordinator without its agreement: the opinion of the coordinator (or proof that this opinion has been requested in writing).

The Agency may request additional information.

If the party receiving the request agrees, it must sign the amendment in the electronic exchange system within 45 days of receiving notification (or any additional information the Agency has requested). If it does not agree, it must formally notify its disagreement within the same deadline. The deadline may be extended, if necessary for the assessment of the request. If no notification is received within the deadline, the request is considered to have been rejected.

An amendment **enters into force** on the day of the signature of the receiving party.

An amendment **takes effect** on the date agreed by the parties or, in the absence of such an agreement, on the date on which the amendment enters into force.

ARTICLE 56 — ACCESSION TO THE AGREEMENT

56.1 Accession of the beneficiaries mentioned in the Preamble

The other beneficiaries must accede to the Agreement by signing the Accession Form (see Annex 3) in the electronic exchange system (see Article 52) within 30 days after its entry into force (see Article 58).

They will assume the rights and obligations under the Agreement with effect from the date of its entry into force (see Article 58).

If a beneficiary does not accede to the Agreement within the above deadline, the coordinator must — within 30 days — request an amendment to make any changes necessary to ensure proper implementation of the action. This does not affect the Agency's right to terminate the Agreement (see Article 50).

56.2 Addition of new beneficiaries

In justified cases, the beneficiaries may request the addition of a new beneficiary.

For this purpose, the coordinator must submit a request for amendment in accordance with Article 55.

It must include an Accession Form (see Annex 3) signed by the new beneficiary in the electronic exchange system (see Article 52).

New beneficiaries must assume the rights and obligations under the Agreement with effect from the date of their accession specified in the Accession Form (see Annex 3).

ARTICLE 57 — APPLICABLE LAW AND SETTLEMENT OF DISPUTES

57.1 Applicable law

The Agreement is governed by the applicable EU law, supplemented if necessary by the law of Belgium.

57.2 Dispute settlement

If a dispute concerning the interpretation, application or validity of the Agreement cannot be settled amicably, the General Court — or, on appeal, the Court of Justice of the European Union — has sole jurisdiction. Such actions must be brought under Article 272 of the Treaty on the Functioning of the EU (TFEU).

If a dispute concerns administrative sanctions, offsetting or an enforceable decision under Article 299 TFEU (see Articles 44, 45 and 46), the beneficiaries must bring action before the General Court — or, on appeal, the Court of Justice of the European Union — under Article 263 TFEU. Actions against offsetting and enforceable decisions must be brought against the Commission (not against the Agency).

ARTICLE 58 — ENTRY INTO FORCE OF THE AGREEMENT

The Agreement will enter into force on the day of signature by the Agency or the coordinator, depending on which is later.

SIGNATURES

For the coordinator

Claire Roumet with ECAS id n0021sq7 signed in the Participant Portal on 05/05/2021 at 10:05:22 (transaction id SigId-64454-1zalvOFqRNcKPp34UgCZ2izK1izpDkAGIR4zS5DtQTgy4cgdiQUftdKZ4PPLH5W7VLt8R4leY7FcACpyWFrUzG4-rS0vSrmBGYCcDi0Km7yFYi-MhQlslSxV3f38UBWoKX8GNJUrzNQ3NyE5ucaLKztXR1wNHauQcOnKzbD9EPwwpvdMPWJ0ZgYxDQRPONSvAsUyr0). Timestamp by third party at 2021.05.05 11:05:26 CEST

For the Agency

Signed by Christian STRASSER with ECAS id strasch as an authorised representative on 06-05-2021 10:17:02 (transaction id SigId-76313-izzfQJAkYKu0n4zllSuHmyJWSzzGoaal5TC4TTCNGjsVWja5GOjaMTIzVzNzwAgjtNM3mMixvUrHmBUh1u9Msbbn-rS0vSrmBGYCcDi0Km7yFYi-NSzGM5TeTZUAzfJqlW7Wp4MzlRemhTEpg44sNHvzIrsG2S6Mm7ZUNkzTuIgAlJ3EG0eXya75tjRbtH2WzqOzq7hW)
2021.05.06 10:17:05 CEST

EUROPEAN COMMISSION

European Climate, Infrastructure and Environment Executive Agency

The Director

ANNEX 1 (part A)

Coordination and support action

NUMBER — 101022965 — EUCITYCALC

Table of Contents

1.1. The project summary....3
1.2. The list of beneficiaries....4
1.3. Workplan Tables - Detailed implementation....5
1.3.1. WT1 List of work packages....5
1.3.2. WT2 List of deliverables....6
1.3.3. WT3 Work package descriptions....9
Work package 1....9
Work package 2....12
Work package 3....15
Work package 4....18
Work package 5....21
Work package 6....24
Work package 7....28
1.3.4. WT4 List of milestones....32
1.3.5. WT5 Critical Implementation risks and mitigation actions....34
1.3.6 WT6 Summary of project effort in person-months....36
1.3.7. WT7 Tentative schedule of project reviews....37

1.1. The project summary

Project Number [1]	101022965	Project Acronym [2]	EUCITYCALC

One form per project

General information	
Project title [3]	European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality
Starting date [4]	01/09/2021
Duration in months [5]	36
Call (part) identifier [6]	H2020-LC-SC3-EE-2020-2
Topic	LC-SC3-EC-5-2020 Supporting public authorities in driving the energy transition
Fixed EC Keywords	Energy efficiency - general
Free keywords	energy and climate planning, climate neutrality, transition pathways, policy scenarios, multi-level governance framework, prospective modelling, webtool, cities, energy agencies, peer-to-peer learning

Abstract [7]

In order for Europe's transition towards climate neutrality to succeed, cities need to be in the driving seat. European cities are at the forefront in addressing climate change, with many having committed to develop and implement SEAPs/SECAPs through initiatives such as the Covenant of Mayors. Many cities have also committed to become climate-neutral by 2050 or even earlier. Yet, despite ambitious short- and long-term commitments, only few cities have managed to translate plans into concrete implementation strategies with tangible decarbonisation pathways. In transitioning towards climate neutrality, cities have to overcome complex challenges that cannot be tackled with a business-as-usual approach. For this, cities need to be equipped with tools, information and skills that empower them to become local transition leaders.

This is where EUCityCalc comes into play. Its objective is to support public authorities in planning towards climate neutrality through the prospective modelling approach of the European City Calculator webtool. The European City Calculator is an open-source, prospective modelling tool providing cities with a sectoral outlook on the type and ambition of measures they can take to achieve a transition towards climate neutrality. As a flexible model adapted to territorial specificities and reflecting the city governance, it supports cities in designing tailored transition pathways and policy scenarios.

With the webtool at its core, EUCityCalc will support 10 pilot cities - Riga, Dijon Métropole, Mantova, Zdar, Palmela, Sesimbra, Setubal, Koprivnica, Varazdin, Virovitica - in developing and implementing scientifically robust, detailed and integrated pathways and scenarios towards climate neutrality. Through peer-to-peer learning, a multifaceted capacity-building and training programme and the engagement of local stakeholders in expert working groups, EUCityCalc will empower cities in devising a clear and concrete roadmap towards climate neutrality.

1.2. List of Beneficiaries

Project Number [1]	101022965	Project Acronym [2]	EUCITYCALC

List of Beneficiaries

No	Name	Short name	Country	Project entry month[8]	Project exit month
1	ENERGY CITIES/ENERGIE-CITES ASSOCIATION	ENERGY CITIES	France	1	36
2	POTSDAM INSTITUT FUER KLIMAFOLGENFORSCHUNG	PIK	Germany	1	36
3	CLIMACT SA	CLIMACT SA	Belgium	1	36
4	CARBON MARKET WATCH	CMW	Belgium	1	36
5	RIGA MUNICIPAL AGENCY "RIGA ENERGY AGENCY"	REA	Latvia	1	36
6	COMUNE DI MANTOVA	Mantova	Italy	1	36
7	DIJON METROPOLE	DIJON METROPOLE	France	1	36
8	AGENCIA DE ENERGIA E AMBIENTE DA ARRABIDA	ENA	Portugal	1	36
9	MESTO ZDAR NAD SAZAVOU	Zdar	Czech Republic	1	36
10	SDRUZENI ENERGETICKYCH MANAZERU MEST A OBCI ZS	SEMMO	Czech Republic	1	36
11	REGIONALNA ENERGETSKA AGENCIJA SJEVER	REA North	Croatia	1	36

1.3. Workplan Tables - Detailed Implementation

1.3.1. WT1 List of work packages

WP Number[9]	WP Title	Lead beneficiary[10]	Person-months[11]	Start month[12]	End month[13]
WP1	Project Management	1 - ENERGY CITIES	24.25	1	36
WP2	Refining the methodology of the European City Calculator	2 - PIK	23.50	1	16
WP3	Support pilot cities in leveraging the European City Calculator for their transition	3 - CLIMACT SA	51.75	1	18
WP4	Delivering transition pathways and policy scenarios in the pilot cities	8 - ENA	47.25	1	36
WP5	Capacity-building and training programme	11 - REA North	41.45	6	35
WP6	Shaping the multi-level governance framework for climate neutrality	4 - CMW	32.30	12	36
WP7	Communication and Dissemination	1 - ENERGY CITIES	35.35	1	36
		Total	255.85		

1.3.2. WT2 list of deliverables

Deliverable Number[14]	Deliverable Title	WP number[9]	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D1.1	Minutes of project meetings	WP1	1 - ENERGY CITIES	Report	Confidential, only for members of the consortium (including the Commission Services)	36
D1.2	Quality Management Plan	WP1	1 - ENERGY CITIES	Other	Confidential, only for members of the consortium (including the Commission Services)	2
D1.3	Risk Management Plan	WP1	1 - ENERGY CITIES	Other	Confidential, only for members of the consortium (including the Commission Services)	3
D1.4	Data Management Plan	WP1	1 - ENERGY CITIES	Other	Confidential, only for members of the consortium (including the Commission Services)	5
D2.1	Guide prospective modelling	WP2	2 - PIK	Report	Public	6
D2.2	Guidelines data integration	WP2	2 - PIK	Report	Public	9
D2.3	Report scope emissions and air quality	WP2	2 - PIK	Report	Public	16
D3.1	Final data gathering forms	WP3	3 - CLIMACT SA	Other	Confidential, only for members of the consortium (including the Commission Services)	6
D3.2	Report on levers	WP3	2 - PIK	Report	Public	12
D3.3	European City Calculator web-tool	WP3	3 - CLIMACT SA	ORDP: Open Research Data Pilot	Public	17
D4.1	Report expert working groups	WP4	1 - ENERGY CITIES	Report	Confidential, only for members of the consortium (including the	12

Deliverable Number[14]	Deliverable Title	WP number[9]	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
					Commission Services)	
D4.2	Report co-creation in pilot cities	WP4	8 - ENA	Report	Public	27
D4.3	Guidelines for SEAPs/ SECAPs	WP4	8 - ENA	Report	Public	31
D4.4	Report SEAPs/SECAPs pilot cities	WP4	1 - ENERGY CITIES	Report	Public	36
D5.1	Report on peer to peer learning	WP5	1 - ENERGY CITIES	Report	Public	25
D5.2	Report on training programme	WP5	11 - REA North	Report	Public	35
D5.3	Handbook emission calcul. method.	WP5	3 - CLIMACT SA	Report	Public	35
D6.1	Report on national and EU factors	WP6	4 - CMW	Report	Public	22
D6.2	Toolkit Governance Regulation	WP6	4 - CMW	Report	Public	25
D6.3	Country-specific recommendations	WP6	4 - CMW	Other	Public	30
D6.4	Report on national workshops & submission of country-specific recommendations to consultation processes	WP6	1 - ENERGY CITIES	Report	Public	35
D6.5	Report on EU-level workshops	WP6	4 - CMW	Report	Public	36
D6.6	Overall policy recommendations	WP6	4 - CMW	Report	Public	30
D7.1	Communicat. & disseminat. plan	WP7	1 - ENERGY CITIES	Report	Public	3
D7.2	Visual identity and media package	WP7	4 - CMW	Websites, patents filing, etc.	Public	3
D7.3	Project website	WP7	1 - ENERGY CITIES	Websites, patents filing, etc.	Public	6
D7.4	Local campaign toolkits	WP7	4 - CMW	Websites, patents filing, etc.	Public	15
D7.5	Report on dissemination activities	WP7	1 - ENERGY CITIES	Report	Public	36

Deliverable Number[14]	Deliverable Title	WP number[9]	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D7.6	Narrative prospective modelling	WP7	4 - CMW	Report	Public	33
D7.7	Report on final conference	WP7	1 - ENERGY CITIES	Report	Public	36
D7.8	Updated Communicat. & disseminat. plan	WP7	1 - ENERGY CITIES	Report	Public	18

1.3.3. WT3 Work package descriptions

Work package number [9]	WP1	**Lead beneficiary** [10]	1 - ENERGY CITIES
Work package title	Project Management		
Start month	1	**End month**	36

Objectives

The overall goal of WP1 is the effective management of the project. The specific objectives of WP1 are to:
- Ensure efficient and effective project management and coordination of consortium and project work;
- Enhance exchanges among the partners, between the WPs and with the project advisory board;
- Assure rigorous project monitoring, reporting and quality control;
- Communication with and reporting to the Agency;

Description of work and role of partners

WP1 - Project Management [Months: 1-36]
ENERGY CITIES, PIK, CLIMACT SA, CMW, REA, Mantova, DIJON METROPOLE, ENA, Zdar, SEMMO, REA North
Task 1.1: Overall project management (M1-M36) (Lead: Energy Cities, Contributing: all partners)
Project management will be structured as in Section 3.2, with Energy Cities as coordinator assuming the responsibilities to oversee project activities and handle administrative and financial aspects. In project implementation, Energy Cities will rely on the project management group (with all WP leaders) and the steering group (involving all partners).
Project meetings
The steering group will gather in-person once every 5-7 months, to ensure regular exchange of experiences, foster common understanding and motivation for project activities and objectives, and instill a team spirit throughout the consortium. The steering group meetings will be organised back-to-back with other project events (e.g. peer-to-peer learning exchanges, trainings), to minimise travel and the project's GHG emissions. The kick-off, interim and final meeting will be held in Brussels, with the participation of the project advisory board. The meetings in month 12 and 30 will also occur in Brussels, while the two remaining meetings (in month 6 and month 25) will be held in Croatia (REA North) and Portugal (ENA) to better anchor the project locally.
Internal communication between meetings
The project management group will regularly convene virtually to review progress made in the WPs, keep track of the interactions between the WPs, resolve potential delays and problems, and discuss next steps. This format will ensure smooth horizontal communication and alignment between partners, as well as facilitate their contributions in a democratic and decisive manner. Energy Cities will also facilitate continuous internal communication, collaboration and information-sharing by providing appropriate online tools to all partners.
Risk management plan
During the project's inception phase, a risk management plan will be elaborated, based on the proposed one in Section 3.2, to mitigate and contain identified risks. It will be regularly monitored by Energy Cities in collaboration with WP leaders, and updated as soon as new risks are identified during the project.
Data management plan
A data management plan will be produced in the inception phase to define the strategy for data collection, processing, protection and retention during and beyond the project. This plan will be drafted by the coordinator with support of the Energy Cities data protection officer. It will comply with the GDPR and align with the data requirements of the models captured in WP2 and WP3. It will be regularly updated as project datasets evolve.
Relations with the Project Advisory Board
Energy Cities will centralise relations with the project advisory board. Alongside their participation to project meetings as outlined above, they will provide their expertise on key tasks (e.g. input to focus group session in WP6).
Task 1.2: Project monitoring and quality control (M1-M36) (Lead: Energy Cities, Contributing: all partners)
Energy Cities as coordinator will ensure that all activities and deliverables are implemented in a timely manner, and will take corrective actions in case of delays. High-quality administrative, technical and financial project management will be coupled with rigorous monitoring and reporting of progress, including all KPIs. Budgetary discipline will be ascertained through the regular gathering of financial statements from partners. Quality control will be assured through the quality management plan, which will define an internal quality control system involving Energy Cities as overall

responsible quality manager and all WP leaders. The quality, coherence and consistency of deliverables will be ensured through peer-review and an approval procedure.
Task 1.3: Reporting to & liaising with the Agency (M1-M36) (Lead: Energy Cities, Contributing: all partners)
The reports provided to the Agency, in particular the interim and the final reports, will be produced by the coordinator in cooperation with all partners. Energy Cities will assure regular contact with the Agency throughout the project by responding in a timely manner to all requests and inquiries (including participation in contractors' meetings), and contributing upon invitation with information material, presentation slides and reports.
Task 1.4: Common dissemination activities (M1-M36) (Lead: Energy Cities, Contributing: all partners)
Contribute, upon invitation by the Agency, to common information (like reporting on impact indicators) and dissemination activities to increase synergies between, and the visibility of H2020 and European Commission supported actions such as contractors meetings. Cooperate and communicate with the Agency and similar EU-funded projects. EUCITYCALC will seek cooperation with similar ongoing as well as future H2020 projects on the same or similar topic and will set up common actions if the opportunity arises.

Role of participants: Energy Cities as coordinator will lead all tasks in this WP, with contributions from all partners.

Participation per Partner

Partner number and short name	WP1 effort
1 - ENERGY CITIES	9.00
2 - PIK	1.75
3 - CLIMACT SA	1.75
4 - CMW	1.75
5 - REA	1.10
6 - Mantova	1.10
7 - DIJON METROPOLE	1.10
8 - ENA	2.25
9 - Zdar	1.10
10 - SEMMO	1.10
11 - REA North	2.25
Total	24.25

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D1.1	Minutes of project meetings	1 - ENERGY CITIES	Report	Confidential, only for members of the consortium (including the Commission Services)	36
D1.2	Quality Management Plan	1 - ENERGY CITIES	Other	Confidential, only for members of the consortium (including the Commission Services)	2

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D1.3	Risk Management Plan	1 - ENERGY CITIES	Other	Confidential, only for members of the consortium (including the Commission Services)	3
D1.4	Data Management Plan	1 - ENERGY CITIES	Other	Confidential, only for members of the consortium (including the Commission Services)	5

Description of deliverables

D1.1: Minutes of project meetings (with agendas, list of participants, decisions taken) (M1-36)
D1.2: Quality management plan (M2)
D1.3: Risk management plan (M3)
D1.4: Data management plan (M5)

D1.1 : Minutes of project meetings [36]

Minutes of project meetings (with agendas, list of participants, decisions taken). The minutes will be sent to the Agency after each meeting via email and submitted in a consolidated report on M36.

D1.2 : Quality Management Plan [2]

Quality Management Plan

D1.3 : Risk Management Plan [3]

Risk Management Plan

D1.4 : Data Management Plan [5]

Data Management Plan

Schedule of relevant Milestones

Milestone number[18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	Kick-off meeting	1 - ENERGY CITIES	1	Kick-off meeting, with participation of advisory board & EASME
MS2	Interim meeting	1 - ENERGY CITIES	18	Interim meeting, with participation of advisory board & EASME
MS3	Final meeting	1 - ENERGY CITIES	36	Final meeting, with participation of advisory board & EASME

Work package number [9]	WP2	Lead beneficiary [10]	2 - PIK
Work package title	Refining the methodology of the European City Calculator		
Start month	1	End month	16

Objectives

The overall aim of WP2 is to refine the methodology of the European City Calculator web-tool to enable a city-level prospective modelling approach. The specific objectives of WP2 are:
- Identify the main challenges related to prospective modelling faced by the pilot cities;
- Establish guidelines to leverage data and knowledge from pilot cities into the web-tool framework;
- Partially automate the data gathering and processing of additional data required from the pilot cities;
- Develop methods to enhance the modelling of Scope 1-3 emissions and air quality in cities;

Description of work and role of partners

WP2 - Refining the methodology of the European City Calculator [Months: 1-16]
PIK, ENERGY CITIES, CLIMACT SA, CMW, REA, Mantova, DIJON METROPOLE, ENA, Zdar, SEMMO, REA North
Task 2.1: Identification of operational and information challenges for prospective modelling in cities (M1-M6) (Lead: PIK, Supporting: Climact SA, Contributing: all other partners)
This task evaluates the knowledge and data barriers observable in pilot cities to the adoption of prospective modelling. The mapping of these barriers will be done along overarching categorisations of challenges found in the literature, such as e.g., technical aspects of data integration, difficulties in capturing views on decarbonisation across city departments and stakeholders, or the identification of adequate emission criteria to benchmark their pathways against national and EU targets. A substantial challenge is expected to be placed around the issues of identifying and acquiring relevant data. Therefore, it will be ensured that pilot cities can understand what prerequisites existing data need to fulfil to be integrated into the European City Calculator model, and can subsequently conduct initial data queries in their departments. This task will conduct the systematic analysis of these challenges across pilot cities and its results will feed into task 2.2.
Task 2.2: Establishment of common guidelines for pilot cities to leverage existing data and knowledge in the tool (M1-M9) (Lead: PIK, Supporting: Climact SA)
Although the needs of cities in terms of their decarbonisation pathways are different, interfacing of cities with the European City Calculator model will be common for all pilot cities. This task will devise guidelines for cities to leverage their existing data into the web-tool. The task will result in a thorough collection of data available in the pilot cities, and establish guidelines for its standardisation. In addition to data, knowledge that can be crucial to reflect in the model, e.g. city-expert opinion or national frameworks that can pose constraints to setting levers in a sector will also be collected. Finally, the task will map and prioritise the main data entries required from the pilot cities to be further processed in task 2.3 and WP3.
Task 2.3: Partial automation of additional data gathering and processing required from pilot cities (M3-M12) (Lead: Climact SA, Supporting: PIK)
This task will initiate the partial automation of the data gathering and processing required from the pilot cities (e.g. some model inputs can be pre-populated based on the country information). Several processing methods will be implemented in this regard (e.g. ratio based on city population, or based on city transport modal share).
Task 2.4: Development of new methods for enhancing the added value of the European City Calculator (M9-M16) (Lead: PIK, Supporting: Climact SA, Energy Cities, CMW)
Methods to highlight the city-specific decarbonisation challenges for a better representation of Scope 1-3 emissions and air quality in the city will be developed. Consumption-based emissions for the pilot cities will be investigated in regards to products, materials and energy requirements that originate from the city, and the corresponding amounts of products, materials and energy required, both within city boundaries and outside of it. A link with the accounting standard GHG protocol will be provided, segmenting emissions along Scopes 1-3 emissions vis-à-vis city boundaries. For Scope 2, consistency will be ensured by linkages to the European
Calculator, in which country and European-based electricity emissions are already modelled. For Scope 3, transboundary transportation will be specified (i.e. some plans/boats depart in a city and emit outside of it, creating upstream emissions, some cars are registered in the city but emit outside of it, creating "satellite cities"). Import of products (e.g. food, consumer goods) will be addressed by repurposing the emission drivers modelled by the European Calculator. The emissions outside city boundaries will be segmented in national, EU and extra-EU emissions. On air quality, the concentrations of pollutants will be specified (in PM2.5e). This will leverage the air quality module of the European

Calculator. Emissions factors are already available at country-level, and will be refined with city-specific activity levels (e.g. traffic density) and concentrations where possible. Linkages to health via country-specific mortality functions will also be established.

Role of participants: PIK will lead WP2, including tasks 2.1-2.2 and 2.4. Climact SA will support PIK to guarantee alignment with WP3 and lead task 2.3. All local and regional partners will contribute to task 2.1. Energy Cities and CMW will both contribute to tasks 2.1 and 2.4, CMW especially with expertise on Scope emissions.

Participation per Partner

Partner number and short name	WP2 effort
1 - ENERGY CITIES	0.30
2 - PIK	13.00
3 - CLIMACT SA	7.00
4 - CMW	0.20
5 - REA	0.50
6 - Mantova	0.50
7 - DIJON METROPOLE	0.25
Atmo BFC	0.25
8 - ENA	0.50
9 - Zdar	0.25
10 - SEMMO	0.25
11 - REA North	0.50
Total	23.50

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D2.1	Guide prospective modelling	2 - PIK	Report	Public	6
D2.2	Guidelines data integration	2 - PIK	Report	Public	9
D2.3	Report scope emissions and air quality	2 - PIK	Report	Public	16

Description of deliverables

D2.1: Guide to adopting a prospective modelling approach at city-level (M6)
D2.2: Guidelines for integration of data and knowledge from pilot cities in European City Calculator (M9)
D2.3: Methods report on scope-emissions and air quality in the European City Calculator (M16)

D2.1 : Guide prospective modelling [6]

Guide to adopting a prospective modelling approach at city-level

D2.2 : Guidelines data integration [9]

Guidelines for integration of data and knowledge from pilot cities in European City Calculator

D2.3 : Report scope emissions and air quality [16]

Methods report on scope-emissions and air quality in the European City Calculator

Schedule of relevant Milestones

Milestone number[18]	**Milestone title**	**Lead beneficiary**	**Due Date (in months)**	**Means of verification**
MS4	Data automation protocol and processing	3 - CLIMACT SA	12	Data automation protocol and processing

Work package number [9]	WP3	Lead beneficiary [10]	3 - CLIMACT SA
Work package title	Support pilot cities in leveraging the European City Calculator for their transition		
Start month	1	End month	18

Objectives

The overall objective of WP3 is to work with local and regional partners to make the European City Calculator web-tool fully functional, help pilot cities in gathering the relevant data to establish their energy and emissions baseline in the web-tool, and learn how to use the web-tool most effectively. The specific objectives are to:

- Fine-tune the data identification form with the pilot cities and other local and regional partners;
- Support them in gathering the required data and performing data quality checks;
- Leverage the data for the models in the relevant module and processes of the web-tool's model;
- Refine the levers to properly represent the impact of various governance levels;
- Improve the connection between technical levers and underlying policies;
- Train all project partners in the use of the European City Calculator web-tool;

Description of work and role of partners

WP3 - Support pilot cities in leveraging the European City Calculator for their transition [Months: 1-18]
CLIMACT SA, ENERGY CITIES, PIK, CMW, REA, Mantova, DIJON METROPOLE, ENA, Zdar, SEMMO, REA North

Task 3.1: Interacting with local and regional partners to improve data forms and gather the required data (M1-M12) (Lead: Climact SA, Supporting: PIK, Energy Cities, Contributing: all local and regional partners).

This task will ensure that the work done in WP2 is fit for purpose, and that the structure of the data forms is in line with the requirements of the project's local and regional partners and with the data they have available. Climact SA & PIK will fine-tune data identification forms with them, while also supporting them in gathering the data and performing data quality checks. Hence, local and regional partners will be able to define which source or approach is used for the various categories of data (e.g. data from this country downsized with this approach to this city). As the data for the pilot cities comes in, it will be leveraged into the relevant module and processes simulated by the European City Calculator model, and it will be ensured that all the inputs are used adequately.

Task 3.2: Improving the approach to reflect governance levels and underlying policies (M6-M12) (Lead: PIK, Supporting: Climact SA, Energy Cities, Contributing: all other partners).

As an objective of WP3 is to improve the connection between the model use and reality at city-level, this task will reflect this twofold: firstly, it will provide local and regional partners with a clear view on the adequate governance level that the pilot cities can implement the levers on. Secondly, the connection between policies at governance levels and the technical levers will be highlighted. In the transport sector e.g., vehicle energy efficiency is mostly driven at EU-level with CO2 emission performance standards for new vehicles. Concurrently, accelerating the modal shift is significantly driven by policies at the city level. Thus, local and regional partners will get insight on the critical impact that city regulation can have across sectors on their territories.

Task 3.3: Refining the European City Calculator web-tool for application by the local and regional partners (M13-M15) (Lead: Climact SA, Supporting: PIK, Energy Cities, Contributing: all local and regional partners)

After tasks 3.1 and 3.2 will have supported local and regional partners in establishing the energy and emissions baseline for each pilot city, the European Calculator will then be refined into the European City Calculator web-tool to match pilot cities' needs in planning their climate-neutral transition. This will include the notions of governance levels and policies, visualisations of the implementation levels of key levers, and an option for cities to compare their own implementation levels (and the rate of implementation over time) with other cities.

Task 3.4: Co-defining with local and regional partners how to use the European City Calculator at city level (M15 - M17) (Lead: Climact SA, Supporting: PIK, Energy Cities, Contributing: all local and regional partners)

Once the web-tool is populated with the relevant data, and the levers categorised and detailed, this task will codefine with local and regional partners how they can use its model. A highly collaborative, iterative codefinition process, consisting of several feedback sessions and a survey, will ensure that the web-tool meets pilot cities' needs. This will include: testing the impact of the levers, checking how far implemented levers lead to climate neutrality, and ensuring that newly implemented functionalities work properly. Once all web-tool parameters are agreed upon, the European City Calculator will be translated into the national languages of the pilot cities (LV, IT, FR, HR, CZ and PT).

Task 3.5: Conducting demonstration session to train project partners in the European City Calculator (M18) (Lead: Climact SA, Supporting: PIK, Participating: all other partners)

Following the completion of the first operational version of the webtool in task 3.4, Climact SA & PIK will train partners in the web-tool's use in 1 in-depth demonstration session in month 18, back-to-back with the interim project meeting. This session will be key in preparing all local and regional partners in conducting the co-creation process with stakeholders in the pilot cities' expert working groups in WP4, and running the training programme in WP5. It will also enable pilot cities to assess under which conditions (e.g. ambition in short-term by 2030) they can achieve climate neutrality in the long-term (e.g. 2050). After this session, pilot cities and local and regional partners will further be able to independently develop and update their developed transition pathways & policy scenarios with the European City Calculator web-tool.

Role of participants: Climact SA will lead WP3, including tasks 3.1 and 3.3-3.5. PIK will support Climact SA to ensure alignment with WP2 and lead task 3.2. All local and regional partners will contribute to tasks 3.1-3.4, to gather data for pilot cities' baselines for the web-tool. CMW will contribute to task 3.2 with expertise on EU legislation to reflect in the levers. Energy Cities will support PIK & Climact SA in tasks 3.1-3.4 by facilitating interactions with local and regional partners, and ensure the web-tool's translation in task 3.4. All partners join task 3.5.

Participation per Partner

Partner number and short name	WP3 effort
1 - ENERGY CITIES	1.60
2 - PIK	9.00
3 - CLIMACT SA	11.00
4 - CMW	0.20
5 - REA	4.35
6 - Mantova	4.35
7 - DIJON METROPOLE	1.85
Atmo BFC	2.50
8 - ENA	5.85
9 - Zdar	2.60
10 - SEMMO	2.60
11 - REA North	5.85
Total	51.75

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D3.1	Final data gathering forms	3 - CLIMACT SA	Other	Confidential, only for members of the consortium (including the Commission Services)	6
D3.2	Report on levers	2 - PIK	Report	Public	12
D3.3	European City Calculator web-tool	3 - CLIMACT SA	ORDP: Open Research Data Pilot	Public	17

Description of deliverables

D3.1: Final data gathering forms (M6)
D3.2: Report on the relationship between levers and governance levels as well as concrete policies (M12)
D3.3: European City Calculator web-tool with translations in pilot cities' 6 national languages (M17)

D3.1 : Final data gathering forms [6]

Final data gathering forms

D3.2 : Report on levers [12]

Report on the relationship between levers and governance levels as well as concrete policies

D3.3 : European City Calculator web-tool [17]

European City Calculator web-tool with translations in pilot cities' 6 national languages

Schedule of relevant Milestones

Milestone number[18]	**Milestone title**	**Lead beneficiary**	**Due Date (in months)**	**Means of verification**
MS5	Baseline in pilot cities	3 - CLIMACT SA	13	Energy and emissions baseline established in pilot cities for European City Calculator webtool
MS6	Demonstration session on European City Calculator	3 - CLIMACT SA	18	In-depth demonstration session back-to-back with interim project meeting

Work package number [9]	WP4	Lead beneficiary [10]	8 - ENA
Work package title	Delivering transition pathways and policy scenarios in the pilot cities		
Start month	1	End month	36

Objectives

Based on the learnings of WP2-3, the overall aim of WP4 is for pilot cities to design and adopt robust, detailed and actionable transition pathways and policy scenarios towards climate neutrality, in co-creation with their key local stakeholders and in line with the 2050 EU targets. The specific objectives of WP4 are to:

- Conduct the mapping of key local stakeholders in the pilot cities;
- Set up the expert working groups in the pilot cities;
- Implement the co-creation process with key local stakeholders through the expert working groups;
- Establish guidelines to insert adopted pathways and scenarios into pilot cities' SEAPs/SECAPs and related strategic plans;
- Develop/update SEAPs/SECAPs and related strategic plans in the pilot cities;

Description of work and role of partners

WP4 - Delivering transition pathways and policy scenarios in the pilot cities [Months: 1-36]
ENA, ENERGY CITIES, PIK, CLIMACT SA, CMW, REA, Mantova, DIJON METROPOLE, Zdar, SEMMO, REA North

Task 4.1: Mapping of key local stakeholders in the pilot cities (M1-M6) (Lead: ENA, Supporting: Energy Cities, Contributing: all other local and regional partners)

Key local stakeholders in pilot cities will be identified to prepare the ground for establishing the expert working groups in task 4.2. While identified stakeholders will be suited to local circumstances, a common set of criteria will be defined to guide the stakeholders mapping. These criteria will e.g. account for the share of stakeholders' GHG emissions on pilot cities' territories, whether they belong to key sectors that need to be tackled to achieve climate neutrality, and if they are opinion leaders that can shape actions of actors not directly addressed by EUCityCalc in its co-creation process (e.g. other stakeholders not part of expert working groups, citizens).

Task 4.2: Set up of the expert working groups in the pilot cities (M7-M12) (Lead: Energy Cities, Supporting: ENA, Contributing: all other local and regional partners)

In each pilot city, an expert working group with the identified stakeholders will be established. Their composition will vary depending on territorial specificities of the pilot cities. In all pilot cities however, key members will include public officials in charge of their SEAPs/SECAPs and related strategic plans. Also, depending on stakeholders involved, further public officials from other key city departments (e.g. transport, housing), especially those with planning competence, will join expert working group meetings. In Dijon Metropole, Mantova and REA, expert working groups will be chaired solely by the pilot cities. In the Croatian and Portuguese pilot cities and Zdar, REA North, ENA and SEMMO will support pilot cities in chairing the expert working groups.

Task 4.3: Implementing co-creation with stakeholders in expert working groups in pilot cities (M12-27) (Lead: ENA, Supporting: Energy Cities, Climact SA, PIK, CMW, Contributing: all other local and regional partners)

Prior to launching the expert working group meetings in the pilot cities, a workshop involving all partners will be held back-to-back with the project meeting in month 12. In this workshop, representatives from the URBACT Zero Carbon Cities project will be invited to share guidance and lessons learnt in delivering effective co-creation processes with stakeholders, based on their experiences with the URBACT local groups format. Alongside this workshop, CMW will provide guidance on engagement with NGOs, while PIK & Climact SA will provide insight on how to perform a sequential co-creation process through the European City Calculator, based on their experience with the stakeholder engagement for the European Calculator. Then, between months 18-26, the meeting structure and co-creation process as outlined in the methodology part of the Excellence section, will be implemented for the 5 face-to-face meetings of the expert working groups in each pilot city. Dijon Metropole, Mantova and REA will run the co-creation process of their expert working groups. For the 3 Croatian, the 3 Portuguese pilot cities and Zdar, REA North, ENA and SEMMO will support them in implementing the co-creation process. Additionally, in Croatia and Portugal, the introductory meeting of expert working groups will be held jointly for the 3 pilot cities, before being split into separate expert working groups for each pilot city.

Task 4.4: Guidelines to insert adopted transition pathways and policy scenarios into SEAPs/SECAPs (M27-M31) (Lead: ENA, Supporting: REA North, SEMMO, Contributing: Energy Cities, PIK, Climact SA, CMW)

Following the co-creation process, ENA, with support of REA North and SEMMO, will develop guidelines to facilitate the insertion of the adopted pathways and scenarios into pilot cities' SEAPs/SECAPs. Energy Cities, PIK, Climact SA and CMW will contribute with guidance on how to conduct this insertion, based on their experience with NECPs. These guidelines will further comply with the Covenant of Mayors SEAP/SECAP guidebooks.
Task 4.5: Development/Update of SEAPs/SECAPs and related strategic plans in the pilot cities (M27-M36) (Lead: Energy Cities, Contributing: all local and regional partners)
In this task, all pilot cities will transpose their adopted pathways and scenarios towards climate neutrality from the expert working groups as politically binding planning instruments into their SEAPs/SECAPs and related strategic plans. All pilot cities will feed their adopted pathway and scenario into their SEAP/SECAP update. Zdar will also use them to develop a new transition roadmap for its 2028-2050 development strategy. In Mantova, they will feed into updating its city plan, while in Dijon Metropole, they will inform the update of its PCAET.
Task 4.6: Impact monitoring (M1-M36) (Lead: ENA, Supporting: Energy Cities)
This task monitors the results and impact of the co-creation process. It will monitor the performance of the project in terms of meeting its KPIs on engaging local stakeholders and shaping policies/strategies. It will also derive findings and recommendations for improving the overall process and encourage participants to the training programme (WP5) to adopt this approach. Inputs for the results and impact monitoring will include meeting minutes of the expert working groups and satisfaction surveys with the stakeholders of these groups.

Role of participants: ENA will lead WP4, including tasks 4.1, 4.3, 4.4 and 4.6. Energy Cities will have a strong supporting role and lead tasks 4.2 and 4.5. REA North and SEMMO will be involved in tasks 4.1-4.5 and support ENA in the development of the guidelines in task 4.4. Dijon Metropole, REA, Zdar and Mantova are involved in tasks 4.1-4.3 and 4.5 as indicated. PIK, Climact SA & CMW will contribute with indicated expertise to tasks 4.3 and 4.4.

Participation per Partner

Partner number and short name	WP4 effort
1 - ENERGY CITIES	3.50
2 - PIK	1.00
3 - CLIMACT SA	1.00
4 - CMW	1.00
5 - REA	4.75
6 - Mantova	4.75
7 - DIJON METROPOLE	3.25
Atmo BFC	1.50
8 - ENA	13.00
9 - Zdar	3.05
10 - SEMMO	2.20
11 - REA North	8.25
Total	47.25

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D4.1	Report expert working groups	1 - ENERGY CITIES	Report	Confidential, only for members of the	12

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
				consortium (including the Commission Services)	
D4.2	Report co-creation in pilot cities	8 - ENA	Report	Public	27
D4.3	Guidelines for SEAPs/ SECAPs	8 - ENA	Report	Public	31
D4.4	Report SEAPs/SECAPs pilot cities	1 - ENERGY CITIES	Report	Public	36

Description of deliverables

D4.1: Report on set-up of expert working groups in pilot cities (M12)
D4.2: Report on co-creation process in pilot cities (M27)
D4.3: Guidelines to leverage pathways and scenarios into SEAPs/SECAPs (M31)
D4.4: Report on development/update of SEAPs/SECAPs and related strategic plans in the pilot cities (M36)

D4.1 : Report expert working groups [12]

Report on set-up of expert working groups in pilot cities

D4.2 : Report co-creation in pilot cities [27]

Report on co-creation process in pilot cities

D4.3 : Guidelines for SEAPs/SECAPs [31]

Guidelines to leverage pathways and scenarios into SEAPs/SECAPs

D4.4 : Report SEAPs/SECAPs pilot cities [36]

Report on development/update of SEAPs/SECAPs and related strategic plans in the pilot cities

Schedule of relevant Milestones

Milestone number[18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS7	Mapping key stakeholders in pilot cities	8 - ENA	6	Mapping of key local stakeholders in pilot cities
MS8	Workshop with URBACT Zero Carbon Cities	1 - ENERGY CITIES	12	Workshop with URBACT Zero Carbon Cities on co-creation with stakeholders
MS9	MoUs with stakeholders of expert working groups	8 - ENA	26	MoUs with stakeholders of expert working groups in pilot cities on adopted pathway and scenario

Work package number [9]	WP5	**Lead beneficiary** [10]	11 - REA North
Work package title	Capacity-building and training programme		
Start month	6	**End month**	35

Objectives

Taking the lessons learnt of the application process of the web-tool in the pilot cities, the overall objective of WP5 is to build the capacity and skills of public officials in other cities and public authorities in using the European City Calculator to plan their climate-neutral transition. The specific objectives of WP5 are to:

- Facilitate 3 peer-to-peer learning exchanges on the application of the web-tool for the pilot cities;
- Design and deliver the training programme for cities and public authorities on the web-tool in the pilot cities' 6 countries (Croatia, Portugal, Czechia, Italy, France, Latvia) and at EU-level;
- Develop a handbook on the European City Calculator web-tool emission calculation methodology for cities to use in the Covenant of Mayors and European Energy Award initiatives;

Description of work and role of partners

WP5 - Capacity-building and training programme [Months: 6-35]
REA North, ENERGY CITIES, PIK, CLIMACT SA, CMW, REA, Mantova, DIJON METROPOLE, ENA, Zdar, SEMMO

Task 5.1: Peer-to-peer learning for the pilot cities (M6-M25) (Lead: Energy Cities, Participating: all partners)
As the pilot cities work with the European City Calculator throughout the project, Energy Cities will facilitate 3 peer-to-peer learning exchanges, back-to-back with project meetings in months 6, 12 and 25, for them to share their experiences and challenges faced in applying the web-tool, and identify lessons learnt for other cities and public authorities in using the European City Calculator web-tool to plan their climate-neutral transition. The lessons learnt will feed into the design of the training programme of the web-tool in task 5.2.

Task 5.2: Design of the training programme on the web-tool (M19-M26) (Lead: REA North, Supporting: Energy Cities, ENA, SEMMO, REA, Mantova, Contributing: Dijon Metropole, Zdar, PIK, Climact SA, CMW)
Drawing on the lessons learnt from task 5.1, and after the internal demonstration session in month 18 to train all partners in using the web-tool, the training programme on the web-tool will be designed. The programme will employ the principles of active learning (see methodology part in Section 1.3). Its main elements will contain the same amount of face-to-face and online training modules in both the pilot cities' 6 countries and at EU level, as it will identify and target cities and public authorities that are similar to the project's local and regional partners. The programme will follow a sequential learning process: this will include a problem-framing of the "big picture" of the transition towards climate neutrality; webinars to adopt a cross-sectorial and territorial approach to decarbonisation through the web-tool; and a face-to-face demonstration session on how to apply the web-tool to develop pathways and support the creation of scenarios towards climate neutrality.

Task 5.3: Delivering training programme in pilot cities' countries and at EU-level (M27-M35) (Lead: REA North, Supporting: Energy Cities, ENA, SEMMO, REA, Mantova, Contributing: Dijon Metropole, Zdar, PIK, Climact SA, CMW)
The programme will then be implemented in the pilot cities' six countries (FR, HR, LV, IT, PT and CZ) and at EU-level as outlined in the methodology part of the Excellence section. In HR (REA North), PT (ENA) and CZ (SEMMO), the pilot cities and Zdar will contribute to the programme run by these project partners. In FR, Energy Cities will run the programme with the contribution of Dijon Metropole to ensure peer-to-peer city learning. In IT (Mantova) and LV (REA), the pilot cities will implement the programme for their peers. At country-level, the programme will be run in national languages. At EU-level, the programme will be run in English and led by REA North and Energy Cities, with contribution of PIK, Climact SA and CMW, and participation of other local and regional partners.

Task 5.4: Development of handbook on emission calculation methodology of European City Calculator and interactions of web-tool with Covenant of Mayors and European Energy Award initiatives (M27-M35) (Lead: Climact SA, Supporting: PIK, Contributing: Energy Cities, REA North, ENA, SEMMO)
Building on the experiences of the local and regional partners in applying the project's data approach for the web-tool, as well as the interactions of participants of the training programme with this approach, Climact SA, with support of PIK and contribution of REA North, ENA and SEMMO, will draw up a handbook on the web-tool's emission calculation methodology for cities to use in the Covenant of Mayors and European Energy Award. It will include guidance on how the web-tool can be used to meet the Covenant of Mayors' SEAPs/SECAPs criteria, especially the baseline emission inventory, and how it can fulfil the GHG balance criteria of the

European Energy Award. Energy Cities will contribute to the handbook by engaging with the European Energy Award Secretariat on how CoME EASY project's synchronization efforts done between the European Energy Award and Covenant of Mayors can be fed into the handbook. Furthermore, Energy Cities will assess with the Covenant of Mayors secretariat the feasibility of establishing a bridge between the API of the web-tool and the API of the Covenant of Mayors online calculation tool, which can be also reflected in the handbook, as outlined in the Excellence section.
Task 5.5: Impact monitoring (M6-M35) (Lead: REA North, Supporting: Energy Cities)
In this task, the results and impact of the capacity-building activities and training programme will be monitored. It will monitor the project's performance in terms of meeting its KPI on increasing the capacity and skills of public officials and public authorities. It will also draw up findings and recommendations to improve the programme for further exploitation after the project's end. Inputs for the results and impact monitoring will include the stocktaking webinars done at the end of the programme in countries and at EU-level, as well as interviews with pilot cities on their learning experience with the web-tool during the project.

Role of participants: REA North will lead WP5 and tasks 5.2-5.3 and 5.5, as well as run the training programme in HR and at EU-level. Energy Cities will have a strong supporting role and lead task 5.1, as well as run the training programme in FR and at EU-level. Climact SA will lead task 5.4 with partners contributing as indicated. ENA, SEMMO, REA and Mantova will lead the programme in PT, CZ, LV and IT, while Dijon Metropole and Zdar will contribute to the programme's delivery in FR and CZ. CMW, PIK & Climact SA will contribute to the design of the training programme and its delivery at EU-level through their involvement in tasks 5.2 and 5.3.

Participation per Partner

Partner number and short name	WP5 effort
1 - ENERGY CITIES	7.50
2 - PIK	2.45
3 - CLIMACT SA	2.95
4 - CMW	0.95
5 - REA	4.20
6 - Mantova	4.20
7 - DIJON METROPOLE	0.30
Atmo BFC	0.25
8 - ENA	4.70
9 - Zdar	0.55
10 - SEMMO	3.70
11 - REA North	9.70
Total	41.45

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D5.1	Report on peer to peer learning	1 - ENERGY CITIES	Report	Public	25
D5.2	Report on training programme	11 - REA North	Report	Public	35

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D5.3	Handbook emission calcul. method.	3 - CLIMACT SA	Report	Public	35

Description of deliverables

D5.1: Report on peer-to-peer learning exchanges (M25)
D5.2: Report on project's training programme in pilot cities' six countries and at EU-level (M35)
D5.3: Handbook on European City Calculator emission calculation methodology (M35)

D5.1 : Report on peer to peer learning [25]

Report on peer-to-peer learning exchanges

D5.2 : Report on training programme [35]

Report on project's training programme in pilot cities' six countries and at EU-level

D5.3 : Handbook emission calcul. method. [35]

Handbook on European City Calculator emission calculation methodology

Schedule of relevant Milestones

Milestone number[18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS10	Training programme on webtool established	11 - REA North	26	Training programme on the webtool established
MS11	Training programme done in countries & at EU-level	11 - REA North	33	Training programme delivered in six countries of pilot cities (M29) and at EU-level (M33)

Work package number [9]	WP6	**Lead beneficiary** [10]	4 - CMW
Work package title	Shaping the multi-level governance framework for climate neutrality		
Start month	12	**End month**	36

Objectives

WP6's objective is to trigger change at the necessary levels of the Governance Regulation to strengthen pilot cities' role in this key multi-level governance framework for climate neutrality. Its specific objectives are:

- Identify national and EU-level factors affecting the pilot cities' transition towards climate neutrality;
- Establish links between the pilot cities' SEAPs/SECAPs and their countries' NECPs and LTS;
- Inform the update of the NECPs and LTS in the pilot cities' countries;
- Enhance the alignment of city, national and EU decarbonisation policies for climate neutrality;

Description of work and role of partners

WP6 - Shaping the multi-level governance framework for climate neutrality [Months: 12-36]
CMW, ENERGY CITIES, PIK, CLIMACT SA, REA, Mantova, DIJON METROPOLE, ENA, Zdar, SEMMO, REA North

Task 6.1: Assessment of enabling and constraining factors at national and EU-level (M12-35) (Lead: CMW, Supporting: Energy Cities, Contributing: all other partners)

A focus group session with all partners will be arranged at the project meeting in month 12, to identify enabling and constraining national and EU factors affecting pilot cities' transition towards climate neutrality. Prior to this session, the advisory board will be consulted to contribute to the assessment. A survey will also be carried out among the stakeholders of the expert working groups (WP4) to feed into the collection of these factors. The results of the focus group session and survey will feed into a first report in month 22, which will be updated before the project's end, to add any further factors identified by participants of the training programme (WP5).

Task 6.2: Online advocacy training on the Governance Regulation for the local and regional partners (M23-M30) (Lead: CMW, Supporting: Energy Cities, Contributing: all other partners)

A capacity-building toolkit on the Governance Regulation processes will be prepared by CMW and Energy Cities for the online advocacy training with local and regional partners. 3 hands-on online advocacy training sessions will then be conducted with the local and regional partners, as outlined in the Excellence section, to help them formulate their recommendations for their countries' NECPs/LTS update. All sessions (in English) will be recorded and published on the project website to provide this opportunity to other cities and public authorities.

Task 6.3: Feed the pilot cities' contributions into the NECPs and LTS (M30-M35) (Lead: Energy Cities, Supporting: CMW, Contributing: all local and regional partners)

1 national roundtable workshop will be organised in month 34 in the 6 countries of the pilot cities, with participation of national policymakers and stakeholders of their expert working groups. In these workshops, the pilot cities' adopted pathways and scenarios towards climate neutrality will be presented, and how they will shape their SEAPs/SECAPs. These workshops will also outline and discuss pilot cities' country-specific recommendations for the update of their countries' NECPs in 2023/2024 and the LTS in 2024/2025. ENA and REA North will support the Portuguese and Croatian pilot cities in organising the workshops and presenting the recommendations for Portugal and Croatia, while SEMMO will do the same for Zdar in the case of Czechia. Energy Cities and CMW will support the pilot cities and local and regional partners in further submitting their recommendations to their countries' consultation processes organized for their NECPs and LTS update.

Task 6.4: Align city, national & EU climate neutrality policies (M25-M36)(Lead: CMW, Supporting: Energy Cities)

CMW and Energy Cities will formulate overall policy recommendations for cities, EU-countries and EU institutions to accelerate the transition towards climate neutrality, by enhancing the integration of top-down policy mechanisms with new bottom-up incentives that leverages cities' role as key decarbonisation arenas. For this, it will build on the web-tool's approach to connect the levers with governance levels and policies (WP3), and the pathways and scenarios developed in the pilot cities (WP4). It will also identify remaining gaps in the Governance Regulation and how to bridge them, to drive stronger alignment between cities, Member States and the EU-level. The recommendations will be ready in month 30 and presented in 2 EU-level workshops in Brussels: 1 workshop will be organised by Energy Cities with the Covenant of Mayors, back-to-back with the project meeting in month 30 during the EUWRC, where outcomes of the co-creation process in the pilot cities will be discussed with Covenant signatories. 1 workshop will be organised by CMW in the EP in month 34 (with the Green Deal Intergroup), to discuss the key role of cities in the EU's transition towards climate neutrality.

Task 6.5: Impact monitoring (M12-M36) (Lead: CMW, Supporting: Energy Cities)
Results and impact of WP6 capacity-building and advocacy activities will be monitored. It will monitor project performance in meeting its KPIs on increasing capacity and skills of public officials and public authorities and shaping policies/strategies. It will draw up learnings on how the WP6 capacity-building process could be refined to empower more cities in using the Governance Regulation to strengthen their role in this framework. Inputs for the results and impact monitoring will include interviews with local and regional partners on their learning experience with the advocacy training, and satisfaction surveys after the national and EU-level events.

Role of participants: CMW will lead WP6 and tasks 6.1-6.2 and 6.4-6.5. Energy Cities will have a strong supporting role and lead task 6.3. All local and regional partners contribute as indicated to tasks 6.1-6.3. PIK & Climact SA will contribute to the focus group session organised in task 6.1, and with indicated expertise to task 6.2.

Participation per Partner

Partner number and short name	WP6 effort
1 - ENERGY CITIES	6.50
2 - PIK	0.60
3 - CLIMACT SA	0.60
4 - CMW	10.00
5 - REA	2.20
6 - Mantova	2.20
7 - DIJON METROPOLE	2.20
8 - ENA	2.40
9 - Zdar	1.60
10 - SEMMO	1.60
11 - REA North	2.40
Total	32.30

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D6.1	Report on national and EU factors	4 - CMW	Report	Public	22
D6.2	Toolkit Governance Regulation	4 - CMW	Report	Public	25
D6.3	Country-specific recommendations	4 - CMW	Other	Public	30
D6.4	Report on national workshops & submission of country-specific recommendations to consultation processes	1 - ENERGY CITIES	Report	Public	35

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D6.5	Report on EU-level workshops	4 - CMW	Report	Public	36
D6.6	Overall policy recommendations	4 - CMW	Report	Public	30

Description of deliverables

D6.1: Report on national and EU factors affecting pilot cities' climate-neutral transition (M22)
D6.2: Capacity building toolkit highlighting the Governance Regulation processes (M25)
D6.3: Country-specific recommendations to improve updated NECPs & LTS in pilot cities' 6 countries (M30)
D6.4: Report on national roundtable workshops and submission of country-specific recommendations to NECPs and LTS consultation processes in pilot cities' 6 countries (M35)
D6.5: Report on EU-level workshops (M36)
D6.6: Policy recommendations to improve multi-level governance framework for climate neutrality (M30)

D6.1 : Report on national and EU factors [22]

Report on national and EU factors affecting pilot cities' climate-neutral transition

D6.2 : Toolkit Governance Regulation [25]

Capacity building toolkit highlighting the Governance Regulation processes

D6.3 : Country-specific recommendations [30]

Country-specific recommendations to improve updated NECPs & LTS in pilot cities 6 countries

D6.4 : Report on national workshops & submission of country-specific recommendations to consultation processes [35]

Report on national roundtable workshops and submission of country-specific recommendations to NECPs and LTS consultation processes in pilot cities' 6 countries

D6.5 : Report on EU-level workshops [36]

Report on EU-level workshops.

D6.6 : Overall policy recommendations [30]

Policy recommendations to improve multi-level governance framework for climate neutrality

Schedule of relevant Milestones

Milestone number[18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS12	Focus group session	4 - CMW	12	Focus group session
MS13	3 online advocacy training sessions completed	4 - CMW	30	3 online advocacy training sessions completed on the Governance Regulation
MS14	6 workshops held in pilot cities' countries	1 - ENERGY CITIES	34	6 national roundtable workshops held in the pilot cities' 6 countries (1 per country)
MS15	2 EU workshops held	4 - CMW	34	2 EU-level workshops organised, 1 with Covenant of

Schedule of relevant Milestones

Milestone number[18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
				Mayors (M30) & 1 with EU Parliament (M34)
MS16	Finalised report on national and EU factors	4 - CMW	35	Finalised report on national and EU factors affecting pilot cities' climate-neutral transition

Work package number [9]	WP7	Lead beneficiary [10]	1 - ENERGY CITIES
Work package title	Communication and Dissemination		
Start month	1	End month	36

Objectives

The overall objective of WP7 is to promote the prospective modelling approach of the European City Calculator web-tool to other European cities and public authorities, and to support the outreach of pilot cities to their stakeholders in the application of the web-tool. The main activities to support this objective are:

- Developing an effective communication and dissemination plan and the main communication tools;
- Developing highly adaptable local communication campaign toolkits for the pilot cities;
- Designing attractive and understandable multimedia tools to visualise the language of modelling;
- Disseminating findings widely to encourage more cities and public authorities (e.g. local and regional energy agencies) to launch the planning process towards climate neutrality with the web-tool;

Description of work and role of partners

WP7 - Communication and Dissemination [Months: 1-36]
ENERGY CITIES, PIK, CLIMACT SA, CMW, REA, Mantova, DIJON METROPOLE, ENA, Zdar, SEMMO, REA North

Task 7.1 Communication & dissemination plan (M1 – M19) (Lead: Energy Cities, Supporting: CMW)
A communication & dissemination plan will be developed at the project's start, for submission in M3, building on the draft proposed in Section 2.2. This plan will ensure a high visibility and effective dissemination of EUCityCalc outputs, and will elaborate the methods and tools employed to reach the project's key target groups. For this, it will draw on the established networks of the local and regional partners. The plan, which will be regularly updated, including at the mid-term of the project (in M19), will also identify other projects (i.e. EU projects identified in Section 1.3) to seek synergies and maximise impact.

Task 7.2 Project visual identity and media package (M1-M3) (Lead: CMW, Supporting: Energy Cities)
This task will develop tailored communication tools for the EUCityCalc key target groups. This will consist of the project visual identity (logo, templates for presentations and reports, brandbook), a roll-up for project events and a media package, in order to ensure a cohesive and common branding of all project activities.

Task 7.3 Establishing and maintaining the project main communication tools (M1-M6) (Lead: Energy Cities, Supporting: CMW, Contributing: all partners)
The project website created in month 6 will be a user-friendly, open-access knowledge dissemination platform. It will enable an intuitive viewing of the web-tool, which will be the core of the website hosting. It will provide a resource library of project publications, multimedia outputs, activities and capacity-building materials, and include information about project objectives, members and reports. The website will be maintained for at least 5 years after the project's end, to exploit results beyond its lifetime. Other external communication tools and channels will include mailing lists, social media, a newsletter and mass media. Mailing lists will alert key target groups about events and publications every 2-3 months. All partners will contribute to build up mailing list audiences, and advertise subscription to it among their contacts and participants to project activities. Partners will be encouraged to use social media to communicate project findings and outcomes. Social media use will be also promoted among participants to project activities through social media packages, which will share information and highlight project campaigns, e.g. the local communication campaigns in task 7.4 for pilot cities. These packages (in English) will be editable for translation into pilot cities' national languages. The project will publish periodically a newsletter, and also make use of mass media and publications.

Task 7.4: Design of local communication campaign toolkits for pilot cities (M3-M15) (Lead: CMW, Supporting: Energy Cities, Contributing: all local and regional partners)
CMW and Energy Cities will develop adaptable and translatable local communication campaign toolkits, one per pilot cities' country, together with local and regional partners. The toolkits will contain media and social media strategies and promoted content, as well as campaign videos and infographics created by CMW and Energy Cities in task 7.5. The toolkits will support outreach in pilot cities to key local stakeholders of their expert working groups in WP4, and raise awareness of other stakeholders not part of these groups, by highlighting the benefits of prospective modelling in planning a climate-neutral transition. CMW, with its expertise on working with NGOs, will support local and regional partners with methods to facilitate outreach to key NGOs on their territories. Local and regional partners will translate and adapt the toolkits before running their campaigns.

Task 7.5: Creation of multimedia tools (videos, infographics and podcasts) (M3-M36) (Lead: Energy Cities, Supporting: CMW, Contributing: all local and regional partners)
This task will respond to the challenge of translating modelling into a language that those impacted can understand and apply. In alignment with task 7.4 and to support the national outreach of local and regional partners, Energy Cities & CMW will develop several multimedia tools to visualise the prospective modelling approach of the web-tool in attractive formats. CMW will create 1 campaign video per pilot cities' country, in
collaboration with local and regional partners, for the toolkits of task 7.4. These videos will be adapted by local and regional partners to their context and translated by them into their languages to ensure broad outreach and impact. Energy Cities will develop 1 infographic per pilot cities' country, together with local and regional partners, for the toolkits, to highlight how pilot cities address their main challenges towards climate neutrality with the web-tool. Energy Cities will also produce with support of CMW 1 podcast per pilot cities' country. The podcasts will be in English and contain interviews with the pilot cities on their experiences with applying the web-tool at local level. Local and regional partners will contribute to their podcast with short audio interviews (in their national language and translated by Energy Cities into English) with the stakeholders of their expert working groups.
Task 7.6: EU narrative on prospective modelling in cities (M24-M33) (Lead: CMW, Supporting: Energy Cities)
This task will summarise the application process of the web-tool in the pilot cities. It will be written in a visually compelling storytelling format, to facilitate dissemination and encourage more cities to take up the web-tool's prospective modelling approach in planning their climate-neutral transition. The narrative will be a brochure in English, and include 'short narratives' outlining the benefits of planning such a transition in co-creation with stakeholders. It will become part of project presentations at national and EU-level dissemination events.
Task 7.7: Dissemination at national and EU-level (M6-M36) (Lead: Energy Cities, Supporting: CMW, Contributing: all other partners)
EUCityCalc will ensure broad dissemination of its information to its key target groups at national and EU-level and invite them to its activities through a threefold approach. Firstly, all partners will disseminate findings through their communication channels and their media contacts. Secondly, local and regional partners will present project findings in 1 national dissemination event (e.g. Assises de l'Energie in France). Energy Cities will support national dissemination through its collective members outside of the pilot cities' countries. PIK, Climact SA & CMW will each present findings in English in 1 EU-level dissemination event (e.g. EU modelling forum). Thirdly, Energy Cities will disseminate project contents during key EU events (e.g. EUSEW) and through its involvement in the Covenant of Mayors. For the Covenant of Mayors, Energy Cities will highlight how the pathways & scenarios towards climate neutrality developed with the web-tool can support signatories in updating their commitment to include climate neutrality. In month 36, Energy Cities will organise with support of CMW the project's final conference in Brussels, which will target European public authorities at all governance levels and EU institutions. It will communicate on the project's final results and what they entail for public authorities. It will also tie them to the political context to contribute to the EU Green Deal debate on long-term goals and the need for short-term action. It will invite broad participation through an interactive exchange with attendees to debate how prospective modelling can shape the planning of the climate-neutral transition beyond the city-level.
Task 7.8: Impact monitoring (M1-M36) (Lead: Energy Cities, Supporting: CMW)
Regular data collection of outputs will be conducted, to measure if project performance is on track in meeting its KPIs (dissemination impact indicators as in Section 2) as laid out in the communication and dissemination plan. This continuous monitoring will ensure that when EUCityCalc is not performing adequately in reaching its key target groups, corrective actions can be rapidly identified and implemented to remedy the situation.

Role of participants: Energy Cities will lead WP7 and tasks 7.1, 7.3, 7.5, 7.7-7.8. CMW will have a strong supporting role and lead tasks 7.2, 7.4, 7.6. All partners contribute to tasks 7.3 and 7.6 as indicated. Climact SA will also support Energy Cities in task 7.3 in maintaining the webtool on the website. All local and regional partners will contribute to tasks 7.4 & 7.5 as indicated to ensure strong linkage of WP7 to their co-creation process in WP4.

Participation per Partner

Partner number and short name	WP7 effort
1 - ENERGY CITIES	9.75
2 - PIK	0.75
3 - CLIMACT SA	1.00

Partner number and short name	WP7 effort
4 - CMW	8.00
5 - REA	2.50
6 - Mantova	2.50
7 - DIJON METROPOLE	2.00
Atmo BFC	0.50
8 - ENA	2.75
9 - Zdar	1.60
10 - SEMMO	1.25
11 - REA North	2.75
Total	35.35

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D7.1	Communicat. & disseminat. plan	1 - ENERGY CITIES	Report	Public	3
D7.2	Visual identity and media package	4 - CMW	Websites, patents filing, etc.	Public	3
D7.3	Project website	1 - ENERGY CITIES	Websites, patents filing, etc.	Public	6
D7.4	Local campaign toolkits	4 - CMW	Websites, patents filing, etc.	Public	15
D7.5	Report on dissemination activities	1 - ENERGY CITIES	Report	Public	36
D7.6	Narrative prospective modelling	4 - CMW	Report	Public	33
D7.7	Report on final conference	1 - ENERGY CITIES	Report	Public	36
D7.8	Updated Communicat. & disseminat. plan	1 - ENERGY CITIES	Report	Public	18

Description of deliverables

D7.1: Communication and Dissemination plan (M3)
D7.2: Visual identity and media package (M3)
D7.3: Project website (M6)
D7.4: Local communication campaign toolkits (1 per pilot cities' country) (M15)
D7.5: Report on dissemination activities (M36)
D7.6: European narrative on prospective modelling in cities (M33)
D7.7: Report on EUCityCalc final conference (M36)

D7.8: Updated Communication and Dissemination plan (M19)

D7.1 : Communicat. & disseminat. plan [3]
Communication and Dissemination plan

D7.2 : Visual identity and media package [3]
Visual identity and media package

D7.3 : Project website [6]
Project website

D7.4 : Local campaign toolkits [15]
Local communication campaign toolkits (1 per pilot cities' country)

D7.5 : Report on dissemination activities [36]
Report on dissemination activities

D7.6 : Narrative prospective modelling [33]
European narrative on prospective modelling in cities

D7.7 : Report on final conference [36]
Report on EUCityCalc final conference

D7.8 : Updated Communicat. & disseminat. plan [18]
Updated Communication and Dissemination plan

Schedule of relevant Milestones

Milestone number[18]	**Milestone title**	**Lead beneficiary**	**Due Date (in months)**	**Means of verification**
MS17	Multimedia tools	1 - ENERGY CITIES	36	Multimedia tools: 6 campaign videos & 6 infographics for toolkits (M15), & 6 podcasts (M36)
MS18	Final conference organised	1 - ENERGY CITIES	36	EUCityCalc final conference organised

1.3.4. WT4 List of milestones

Milestone number[18]	Milestone title	WP number[9]	Lead beneficiary	Due Date (in months)[17]	Means of verification
MS1	Kick-off meeting	WP1	1 - ENERGY CITIES	1	Kick-off meeting, with participation of advisory board & EASME
MS2	Interim meeting	WP1	1 - ENERGY CITIES	18	Interim meeting, with participation of advisory board & EASME
MS3	Final meeting	WP1	1 - ENERGY CITIES	36	Final meeting, with participation of advisory board & EASME
MS4	Data automation protocol and processing	WP2	3 - CLIMACT SA	12	Data automation protocol and processing
MS5	Baseline in pilot cities	WP3	3 - CLIMACT SA	13	Energy and emissions baseline established in pilot cities for European City Calculator webtool
MS6	Demonstration session on European City Calculator	WP3	3 - CLIMACT SA	18	In-depth demonstration session back-to-back with interim project meeting
MS7	Mapping key stakeholders in pilot cities	WP4	8 - ENA	6	Mapping of key local stakeholders in pilot cities
MS8	Workshop with URBACT Zero Carbon Cities	WP4	1 - ENERGY CITIES	12	Workshop with URBACT Zero Carbon Cities on co-creation with stakeholders
MS9	MoUs with stakeholders of expert working groups	WP4	8 - ENA	26	MoUs with stakeholders of expert working groups in pilot cities on adopted pathway and scenario
MS10	Training programme on webtool established	WP5	11 - REA North	26	Training programme on the webtool established
MS11	Training programme done in countries & at EU-level	WP5	11 - REA North	33	Training programme delivered in six countries of pilot cities (M29) and at EU-level (M33)
MS12	Focus group session	WP6	4 - CMW	12	Focus group session
MS13	3 online advocacy training sessions completed	WP6	4 - CMW	30	3 online advocacy training sessions completed on the Governance Regulation
MS14	6 workshops held in pilot cities' countries	WP6	1 - ENERGY CITIES	34	6 national roundtable workshops held in the pilot cities' 6 countries (1 per country)
MS15	2 EU workshops held	WP6	4 - CMW	34	2 EU-level workshops organised, 1 with Covenant of

Milestone number[18]	Milestone title	WP number[9]	Lead beneficiary	Due Date (in months)[17]	Means of verification
					Mayors (M30) & 1 with EU Parliament (M34)
MS16	Finalised report on national and EU factors	WP6	4 - CMW	35	Finalised report on national and EU factors affecting pilot cities' climate-neutral transition
MS17	Multimedia tools	WP7	1 - ENERGY CITIES	36	Multimedia tools: 6 campaign videos & 6 infographics for toolkits (M15), & 6 podcasts (M36)
MS18	Final conference organised	WP7	1 - ENERGY CITIES	36	EUCityCalc final conference organised

1.3.5. WT5 Critical Implementation risks and mitigation actions

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
1	Lack of availability of pilot cities and local and regional partners' staff (due to workload peaks of their day-to-day work), and changes in staff, prevent them to work on project activities (low)	WP1, WP2, WP3, WP4, WP5, WP6, WP7	The involved pilot cities and local and regional partners were selected due to their motivation and vision of how they will match the project with their local agenda. Also, all local partners will commit between 2-5 staff to the project, which should assure continuity in the delivery even if a staff member is leaving.
2	Resurgence of COVID-19 pandemic in Europe prevents partners from travelling to project meetings and organising face-to-face events of the project (high)	WP1, WP3, WP4, WP5, WP6, WP7	A continued ban on free movement and face-to-face events would impact planned project activities in almost all WPs. In WP1, it would impact the project meetings, and in WP3 the demonstration session on the webtool. In WP4, it would impact especially the expert working group meetings in the pilot cities, and in WP5 the trainings planned as face-to-face events (problem-framing workshop, demonstration session). Finally, it would impact in WP6 the focus group session and the national workshops, while in WP7 the final conference would be especially affected. Considering these impacts, the following suitable risk mitigation measures are proposed. Firstly, the fact that the project revolves around a webtool that enables broad online interactions, allows for transforming key project activities involving the webtool (WP3-5) from face-to-face events into online events if necessary, without losing on the engagement and appeal of these events. This is because all partners have gathered profound experience in how to transform face-to-face events effectively into online events, by using engaging online facilitation tools (e.g. Zoom, Teams, Miro, Menti.meter, etc.). All partners have further acquired this experience during the first two COVID-19 waves, as they have managed to transform face-to-face events of different formats into engaging online ones, such as project meetings, trainings, workshops, meetings with stakeholders or national / EU-level dissemination events. Secondly, a key lesson learnt from the COVID-19 pandemic has been that online events require significantly more preparation and delivery effort than face-to-face ones. Thus, if it becomes necessary to transform planned face-to-face events into online ones due to COVID-19, unspent other direct costs for these events would be especially reallocated into staff costs to match the higher preparation and delivery effort required. Thirdly, the risk management plan for the project will include a COVID-19 contingency plan to account for a scenario where the limitations and restrictions caused by COVID-19 impact the entirety of the project implementation. This will include an

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
			alternate project implementation plan, as well as required cost reallocations within each partner's budget in such a case.
3	Delays in mapping the main data entries required from pilot cities in task 2.2 delays the data automation procedure of task 2.3 and data usage in WP3 (medium)	WP2	PIK and Climact, with support of ENC, will engage as of month 1 the pilot cities and other local and regional partners to identify their information challenges in this regard and how to overcome them.
4	Pilot cities and the local and regional partners of the project require additional support to standardise data entries to be used in the model of the European City Calculator (medium-high)	WP2	Best data practices (e.g. filling up missing years, interpolations) and common metadata structures will be provided through pilot cases at the kickoff meeting. Regular and tailored support will be further ensured by PIK & Climact throughout the first project year.
5	Insufficient availability of city-specific air quality emission factors (medium)	WP2	This risk will be addressed by using country factors instead for the pilot cities' six countries.
6	Connection between policies at various governance levels and the technical levers is not always 1:1, meaning that the quantitative effect of one lever cannot be linked unequivocally to local or national policies (low-medium)	WP3	This risk will be mitigated through a qualitative judgment drawn from established literature on the differential effect of national vs local governance level for the technical lever in question.
7	Delay in the delivery of the first operational version of the European City Calculator for the pilot cities and other local and regional partners (medium)	WP3	The project can draw on the well-functioning webtool of the European Calculator, which has modelled relevant data for the pilot cities' countries. Thus, the required adaptations from the country to city level should not be an obstacle to all local and regional partners to already start work with the existing webtool, before the European City Calculator is available.
8	Insufficient availability of data at city level for the pilot cities (medium)	WP3	To mitigate this risk, already modelled country data from the European Calculator can be used (downscaling), or data from another similar city leveraged. City values can also be automatically interpolated based on European or national values based on their respective populations.
9	Resistance from hierarchy in the administrations (e.g. due to elections changing leadership) of pilot cities prevents insertion of adopted scenarios and pathways into SEAPs/SECAPs (low)	WP4	EUCityCalc engages departments with a strategic planning function within pilot cities to mitigate this risk. Also, LoCs were provided by them at mayor, deputy-mayor or director level to demonstrate political commitment. ENC as PCO will also monitor political changes in pilot cities and ensure early engagement of new hierarchies in administrations and local leaders.

1.3.6. WT6 Summary of project effort in person-months

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	Total Person/Months per Participant
1 - ENERGY CITIES	9	0.30	1.60	3.50	7.50	6.50	9.75	38.15
2 - PIK	1.75	13	9	1	2.45	0.60	0.75	28.55
3 - CLIMACT SA	1.75	7	11	1	2.95	0.60	1	25.30
4 - CMW	1.75	0.20	0.20	1	0.95	10	8	22.10
5 - REA	1.10	0.50	4.35	4.75	4.20	2.20	2.50	19.60
6 - Mantova	1.10	0.50	4.35	4.75	4.20	2.20	2.50	19.60
7 - DIJON METROPOLE	1.10	0.25	1.85	3.25	0.30	2.20	2	10.95
· Atmo BFC	0	0.25	2.50	1.50	0.25	0	0.50	5
8 - ENA	2.25	0.50	5.85	13	4.70	2.40	2.75	31.45
9 - Zdar	1.10	0.25	2.60	3.05	0.55	1.60	1.60	10.75
10 - SEMMO	1.10	0.25	2.60	2.20	3.70	1.60	1.25	12.70
11 - REA North	2.25	0.50	5.85	8.25	9.70	2.40	2.75	31.70
Total Person/Months	24.25	23.50	51.75	47.25	41.45	32.30	35.35	255.85

1.3.7. WT7 Tentative schedule of project reviews

No project reviews indicated

1. Project number

The project number has been assigned by the Commission as the unique identifier for your project. It cannot be changed. The project number **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

2. Project acronym

Use the project acronym as given in the submitted proposal. It can generally not be changed. The same acronym **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

3. Project title

Use the title (preferably no longer than 200 characters) as indicated in the submitted proposal. Minor corrections are possible if agreed during the preparation of the grant agreement.

4. Starting date

Unless a specific (fixed) starting date is duly justified and agreed upon during the preparation of the Grant Agreement, the project will start on the first day of the month following the entry into force of the Grant Agreement (NB : entry into force = signature by the Agency). Please note that if a fixed starting date is used, you will be required to provide a written justification.

5. Duration

Insert the duration of the project in full months.

6. Call (part) identifier

The Call (part) identifier is the reference number given in the call or part of the call you were addressing, as indicated in the publication of the call in the Official Journal of the European Union. You have to use the identifier given by the Commission in the letter inviting to prepare the grant agreement.

7. Abstract

8. Project Entry Month

The month at which the participant joined the consortium, month 1 marking the start date of the project, and all other start dates being relative to this start date.

9. Work Package number

Work package number: WP1, WP2, WP3, ..., WPn

10. Lead beneficiary

This must be one of the beneficiaries in the grant (not a third party) - Number of the beneficiary leading the work in this work package

11. Person-months per work package

The total number of person-months allocated to each work package.

12. Start month

Relative start date for the work in the specific work packages, month 1 marking the start date of the project, and all other start dates being relative to this start date.

13. End month

Relative end date, month 1 marking the start date of the project, and all end dates being relative to this start date.

14. Deliverable number

Deliverable numbers: D1 - Dn

15. Type

Please indicate the type of the deliverable using one of the following codes:

R	Document, report
DEM	Demonstrator, pilot, prototype
DEC	Websites, patent fillings, videos, etc.
OTHER	
ETHICS	Ethics requirement
ORDP	Open Research Data Pilot
DATA	data sets, microdata, etc.

16. Dissemination level

Please indicate the dissemination level using one of the following codes:

PU	Public
CO	Confidential, only for members of the consortium (including the Commission Services)
EU-RES	Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)
EU-CON	Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)
EU-SEC	Classified Information: SECRET UE (Commission Decision 2005/444/EC)

17. Delivery date for Deliverable

Month in which the deliverables will be available, month 1 marking the start date of the project, and all delivery dates being relative to this start date.

18. Milestone number

Milestone number:MS1, MS2, ..., MSn

19. Review number

Review number: RV1, RV2, ..., RVn

20. Installation Number

Number progressively the installations of a same infrastructure. An installation is a part of an infrastructure that could be used independently from the rest.

21. Installation country

Code of the country where the installation is located or IO if the access provider (the beneficiary or linked third party) is an international organization, an ERIC or a similar legal entity.

22. Type of access

TA-uc	if trans-national access with access costs declared on the basis of unit cost,
TA-ac	if trans-national access with access costs declared as actual costs, and
TA-cb	if trans-national access with access costs declared as a combination of actual costs and costs on the basis of unit cost,
VA-uc	if virtual access with access costs declared on the basis of unit cost,
VA-ac	if virtual access with access costs declared as actual costs, and
VA-cb	if virtual access with access costs declared as a combination of actual costs and costs on the basis of unit cost.

23. Access costs

Cost of the access provided under the project. For virtual access fill only the second column. For trans-national access fill one of the two columns or both according to the way access costs are declared. Trans-national access costs on the basis of unit cost will result from the unit cost by the quantity of access to be provided.

History of Changes

Date	Shortcoming addressed	Changes made + title/section
28.01.2021	No Deliverable Type ORDP selected, though project opts into the ORDP	Change Deliverable Type from Other to ORDP for Deliverable 3.3 European City Calculator webtool to align with opt-in of the ORDP (Part A, Table 3.1c, D3.3)
11.2.2021	However, it is not sufficiently clear how the chosen tool would interact with other existing tools	Clarification provided on how the European City Calculator would interact with other existing tools, by using the example of the Covenant of Mayors online calculation tool (Part B, Section 1.3, new subsection added with title "Interaction of the European City Calculator webtool with other existing tools") Task 5.4 has been modified as a result, in order to include the interactions with the Covenant of Mayors (Part A, WP5, Task 5.4)
11.2.2021	Moreover, the fact that the whole concept is based on one tool only could limit the effectiveness of the project	Clarifications provided on the limitations and risks of the European City Calculator webtool as core component of the project concept, and why in spite of these limitations and risks the effectiveness of the project can be ensured by centering its concept on one webtool (Part B, Section 1.3, new subsection added with title "Limitations and risks of the European City Calculator webtool as core component of the project concept")
11.2.2021	Impact section: Ambitious energy savings and investment triggered are not fully substantiated by calculations	Detailed explanations provided to substantiate the calculations, including on the limitations of the approach taken, by using the example of the indicator reduction of final energy demand. Further addition provided on the manner through which the triggered impacts will be tracked during the project, even if they are expected to only fully amass in 2030 and 2050 (Part B, Section 2.1)
11.2.2021	In terms of webtool development, the proposal is not sufficiently detailed	Addition of subsections to describe the architecture of the webtool, as well as the webtool development and improvements necessary for the transition from the European Calculator webtool to the European City Calculator webtool (Part B, Section 1.3, new subsection "The architecture of the European City Calculator webtool", page 18, and new subsection "Required steps for the transition from the European Calculator to the European City Calculator")
11.2.2021	Please better explore interactions with similar projects	Foreseen interactions outlined in particular for the Horizon 2020 project CoME EASY, and how project seeks to capitalize on CoME EASY results for the handbook on the emission calculation methodology. More detail on foreseen interactions also provided as concerns the

		INTERREG project CliMobCity (Part B, Section 1.3, Subsection d) Task 5.4 has been modified as a result, to include the interactions with the European Energy Award (Part A, WP5, Task 5.4)
11.2.2021	Please better clarify data availability for the participating cities	Detailed clarification provided on how the project would aim to ensure data availability for the participating cities (Part B, Section 1.3, new subsection added with title "How EUCityCalc seeks to ensure the availability of data for participating cities")
11.2.2021	Impact section: Please clarify how the project will contribute to the update of 6 NECPs and LTS in the six listed countries	Clarification provided that the project's contribution to inform the update of 6 NECPs and LTS in the 6 listed countries consists in submitting the pilot cities' country-specific recommendations to the consultation processes organised by the 6 countries for the update of their NECPs and LTS, as well as in presenting these recommendations to national policymakers in the national roundtable workshops organized in the 6 listed countries; (Part B, Section 2.1, Table 9) In order to ensure consistency, this clarification was further provided in Part B for Objective 7 (Part B, Section 1.1, Table 1), for the subheading on the online advocacy training in the subsection on the overall project concept (Part B, Section 1.3) and for the Phase 6 subheading in the subsection on the overall methodology of the project; (Part B, Section 1.3) This clarification was also added in Part A to the description of Task 6.3 (Part A, WP6, Task 6.3) and to the description of the Deliverable 6.4 Report on national roundtable workshops (Part A, Table 3.1c, D.6.4)
11.2.2021	Please explain whether potential limitations and restrictions caused by the COVID-pandemic will impact on your planned project activities and propose suitable mitigation measures	Additional explanations on impact and further proposed risk mitigation measures included for the critical risk "Resurgence of COVID-19 pandemic in Europe prevents partners from travelling to project meetings and organising face-to-face events of the project (high)" (Part A, Table 3.2b)
11.2.2021	Table 3.4b Other direct costs: For the category travel costs use the following structure for every event (apply to all beneficiaries): event + n° trips + n° persons travelling + costs estimation per trip per person = total amount	Corrective change made for all project beneficiaries in the category travel costs for all their travels to every event. The explanatory text preceding Table 3.4b was further complemented with a clarification on the difference in estimated travel costs per person for transnational and national travel to project events (Part B, Table 3.4b)
11.2.2021	Beneficiary 1: Other goods and services category	Cost breakdown added for final conference and subsequent change made to the overall final

	final conference 6.000 €: include cost breakdown zoom subscription 1.900 €: provide details about the need of the subscription travel for 3 meetings project advisory board 8.100 €; travel for participants 2 trainings France 3.000 €; travel for participants for 2 trainings EU-level 18.000 €; travel 2 speakers EU-level workshop 1.800 €: if they are travel costs should be under travel costs category, if it is under other goods and services please modify and detail the description and costs breakdown organisation of 5 project meetings 10.000 €; translation webtool 25.000 €; project website 8.000 €: provide cost breakdown and detailed description	amount allocated for final conference from EUR 6000 to EUR 5000; Following the guidance on subscription to web-conferencing tools, the subscriptions to zoom and soundcloud have been moved to indirect costs; All indicated travel costs have been moved to the travel costs category and specified using the correct structure for travel costs; Cost breakdown and detailed description provided for the cost items organisation of 5 project meetings, translation webtool and project website. Changes made to the overall final amount allocated for the organisation of 5 project meetings from EUR 10000 to EUR 11250, for the translation webtool from EUR 25000 to EUR 22050, and for the project website from EUR 8000 to EUR 12000; Cost breakdown and detailed description further added for the cost items organisation of 2 trainings at EU-level and organisation of 1 EU-level workshop (Part B, Table 3.4b)
11.2.2021	Beneficiary 3: Other goods and services category Webtool improvements 50.000 €: provide cost breakdown and detailed description	Cost breakdown and detailed description provided for the webtool improvements foreseen to be contracted in this cost category (Part B, Table 3.4b)
11.2.2021	Beneficiary 4: Other goods and services category Visual identity & media package 5.000 €; 6 videos for toolkits 12.000 €: please detail the description and costs breakdown	Cost breakdown and detailed description provided for the cost items visual identity & media package and 6 videos for toolkits; Travel for 2 speakers to 1 EU-level workshop was further moved to the travel costs category and specified by using the correct structure for travel costs; Cost breakdown and detailed description further added for the cost item organization of 1 EU-level workshop (Part B, Table 3.4b)
11.2.2021	Beneficiary 5: Other goods and services category Travel for participants 2 trainings Latvia 3.000 €: if they are travel costs they should be under travel costs category, if it is under other goods and services please modify and detail the description and costs breakdown	Travel for participants to 2 trainings Latvia was moved to the travel costs category and specified by using the correct structure for travel costs; Cost breakdown and detailed description was further added for the cost items organization of expert working group meetings, organization of 2 trainings and organization of 1 national workshop. Changes made to the overall final amount allocated for the organisation of expert working group meetings from EUR 2500 to EUR 3150, for the organisation of 2 trainings from EUR 1500 to EUR 600, and for the organization of 1 national workshop from EUR 1000 to EUR 1250; (Part B, Table 3.4b)

11.2.2021	Beneficiary 6: Other goods and services category Please detail the description and costs breakdown	Travel for participants to 2 trainings Italy was moved to the travel costs category and specified by using the correct structure for travel costs; Cost breakdown and detailed description was further added for the cost items organization of expert working group meetings, organization of 2 trainings and organization of 1 national workshop. Changes made to the overall final amount allocated for the organisation of expert working group meetings from EUR 2500 to EUR 3000, for the organisation of 2 trainings from EUR 1500 to EUR 720, and for the organization of 1 national workshop from EUR 1000 to EUR 1280; (Part B, Table 3.4b)
11.2.2021	Beneficiary 7: Other goods and services category Please detail the description and costs breakdown	Cost breakdown and detailed description was added for the cost items organization of expert working group meetings, organization of 2 trainings and organization of 1 national workshop. Changes made to the overall final amount allocated for the organisation of expert working group meetings from EUR 2500 to EUR 3000, for the organisation of 2 trainings from EUR 1500 to EUR 720, and for the organization of 1 national workshop from EUR 1000 to EUR 1280; (Part B, Table 3.4b)
11.2.2021	Beneficiary 8: Other goods and services category Please detail the description and costs breakdown	Travel for participants to 2 trainings Portugal moved to travel costs category and specified with correct structure for travel costs; Cost breakdown and detailed description was added for the cost items organization of 1 project meeting, organization of expert working group meetings, organization of 2 trainings and organization of 1 national workshop (Part B, Table 3.4b)
11.2.2021	Beneficiary 9: Other goods and services category Please detail the description and costs breakdown	Cost breakdown and detailed description was added for the cost items organization of expert working group meetings, organization of 2 trainings and organization of 1 national workshop (Part B, Table 3.4b)
11.2.2021	Beneficiary 10: Other goods and services category Travel for participants 2 trainings in Zdar 9.000 €: if they are travel costs they should be under travel costs category, if it is under other goods and services please modify and detail the description and costs breakdown	Travel for participants to 2 trainings in Zdar was moved to the travel costs category and specified by using the correct structure for travel costs (Part B, Table 3.4b)
11.2.2021	Beneficiary 11: Other goods and services category	Travel for participants to 2 trainings Croatia was moved to the travel costs category and specified by using the correct structure for travel costs;

	Travel for participants 2 trainings Croatia 9.000 €: if they are travel costs they should be under travel costs category, if it is under other goods and services please modify and detail the description and costs breakdown	Cost breakdown and detailed description was added for the cost items organization of 1 project meeting, organization of expert working group meetings, organization of 2 trainings and organization of 1 national workshop (Part B, Table 3.4b)
25.2.2021	Missing overview table of all of the project's impacts	Table 16 has been amended to include the overview of all of the project's impacts (Part B, Section 2.1, Table 16)
25.2.2021	Missing task on common dissemination activities	A new task on common dissemination activities has been added to WP1 (Part A, WP1, Task 1.4). The Gantt chart been amended to integrate the new Task 1.4 for WP1 (Part B, Section 3.1)
25.2.2021	D3.4 mentioned in Gantt chart but not in the system	D3.4 has been removed from the Gantt chart (Part B, Section 3.1)
25.2.2021	Missing deliverable for the updated Communication and Dissemination plan of the project	A new deliverable D7.8 has been added for the update of the Communication and Dissemination Plan (Part A, Table 3.1c, D7.8). The Gantt chart has been amended to integrate the new deliverable D7.8 (Part B, Section 3.1)
25.2.2021	Modify timeframe of Task 7.1 to account for the addition of D7.8 for the updated Communication and Dissemination Plan	The timeframe and description of Task 7.1 has been changed to account for the addition of D7.8 (Part A, WP7, Task 7.1). The Gantt Chart has been amended to account for the modified timeframe of Task 7.1 (Part B, Section 3.1)
25.2.2021	Replace EASME with the Agency in Part A and Part B	This replacement was done for the entire project (Part A & B)
25.2.2021	Align short name of beneficiaries between Part A and Part B	The alignment was done for the entire project (Part A & B)
25.2.2021	Update D1.1 description to include changed submission procedure for minutes of project meetings	The description of D1.1 was changed to include the modified submission procedure (Part A, Table 3.1c, D1.1)
25.2.2021	Please explain why 2 or 3 persons per beneficiary should travel to project meetings, dissemination events, working group meetings, and national workshops	Clarification added to the explanatory text preceding Section 3.4 table (Part B, Section 3.4)
25.2.2021	Beneficiary 1: Zoom and Soundcloud subscriptions: please provide details about the need of the subscription and explain the specific use	Details provided about the need of the subscriptions for these cost items, as well as their specific use in the project (Part B, Section 3.4)
25.2.2021	Beneficiary 1, Section 3.4: Please explain why the estimated budget of the following items was changed: 5 project meetings from EUR 10000 to EUR 11250 Zoom subscription from EUR 1900 to EUR 600 Translation webtool from EUR 25000 to EUR 22050	*Explanation on why estimated budget for 5 project meetings was changed from EUR 10000 to EUR 11250* The estimated budget for this cost item was changed, as the initially estimated cost per person for the project lunches & dinners offered by catering service providers / restaurants in Brussels are projected to increase in the (post)COVID period.

	Project website from EUR 8000 to EUR 12000 Final conference from EUR 6000 to EUR 5000	*Explanation on why estimated budget for Zoom subscription was changed from EUR 1900 to EUR 600* The estimated budget for this cost item was changed, as the initially foreseen Zoom Video Webinar subscription option was ultimately not deemed necessary. The whiteboarding and annotation tools offered by Zoom Video Webinar, which are required for the project's interactive online training sessions in WP5 and WP6, can be equally provided by other online whiteboarding and annotation tools already available to the project, such as Miro, Mural or OneNote. *Explanation on why estimated budget for translation webtool was changed from EUR 25000 to EUR 22050* The estimated budget for this cost item was changed, due to recent experience with translation service providers supplying translation services from English to multiple EU languages at more competitive prices than initially foreseen. *Explanation for why estimated budget for Project website was changed from EUR 8000 to EUR 12000* The estimated budget for this cost item was changed, as the cost assigned for the open-source CMS website development, including the insertion of the European Calculator interface from which the European City Calculator will be built on, is estimated to be higher than initially foreseen. *Explanation for why estimated budget for Final conference was changed from EUR 6000 to EUR 5000* The estimated budget for this cost item was changed, since the foreseen cost for an external moderator for the final conference was ultimately not deemed necessary, as this expertise is available internally at Energy Cities.
25.2.2021	Beneficiary 5, Section 3.4: Please explain why the estimated budget of the following items was changed: Organisation of expert working group meetings from EUR 2500 to EUR 3150 Organisation of 2 trainings in Latvia from EUR 1500 to EUR 600 Organisation of 1 national workshop from EUR 1000 to EUR 1250	*Explanation on why estimated budget for organisation of expert working group meetings was changed from EUR 2500 to EUR 3150* The estimated budget for this cost item was changed, as more local stakeholders, including from the different strategic planning departments of the city of Riga, will join these meetings than initially foreseen by REA.

		Explanation on why the organisation of 2 trainings in Latvia was changed from EUR 1500 to EUR 600 The estimated budget for this cost item was changed, since cost for room rental will ultimately not be required, as REA can conduct the trainings in suitable room facilities that belong to the beneficiary. *Explanation on why organisation of 1 national workshop was changed from EUR 1000 to EUR 1250* The estimated budget for this cost item was changed, as a higher number of participants, in particular from local stakeholders and representatives from the different strategic planning departments of the city of Riga, will join the national workshop than foreseen.
25.2.2021	Beneficiary 6, Section 3.4: Please explain why the estimated budget of the following items was changed: Organisation of expert working group meetings from EUR 2500 to EUR 3000 Organisation of 2 trainings from EUR 1500 to EUR 720 Organisation of 1 national workshop from EUR 1000 to EUR 1280	*Explanation on why organisation of expert working group meetings was changed from EUR 2500 to EUR 3000* The estimated budget for this cost item was changed, as more local stakeholders, including from the different strategic planning departments of the city of Mantova, will join these meetings than initially foreseen by Mantova. *Explanation on why the organisation of 2 trainings was changed from EUR 1500 to EUR 720* The estimated budget for this cost item was changed, since cost for room rental will ultimately not be required, as Mantova can conduct the trainings in suitable room facilities that belong to the beneficiary. *Explanation on why organisation of 1 national workshop was changed from EUR 1000 to EUR 1280* The estimated budget for this cost item was changed, as a higher number of participants, in particular from local stakeholders and representatives from the different strategic planning departments of the city of Mantova, will join the national workshop than foreseen.
25.2.2021	Beneficiary 7, Section 3.4: Please explain why the estimated budget of the following items was changed: Organisation of expert working group meetings from EUR 2500 to EUR 3000 (correct error saying EUR 2500 in total) Organisation of 2 trainings from EUR 1500 to EUR 720	*Explanation on why organisation of expert working group meetings was changed from EUR 2500 to EUR 3000* The estimated budget for this cost item was changed, as more local stakeholders, including from the different strategic planning departments of Dijon Metropole, will join these meetings than initially foreseen by Dijon Metropole.

	Organisation of 1 national workshop from EUR 1000 to EUR 1280	*Explanation on why the organisation of 2 trainings was changed from EUR 1500 to EUR 720* The estimated budget for this cost item was changed, since cost for room rental will ultimately not be required, as Dijon Metropole can conduct the trainings in suitable room facilities that belong to the beneficiary. *Explanation on why organisation of 1 national workshop was changed from EUR 1000 to EUR 1280* The estimated budget for this cost item was changed, as a higher number of participants, in particular from local stakeholders and representatives from the different strategic planning departments of Dijon Metropole, will join the workshop than foreseen by Dijon Metropole.
12.3.2021	Change in Annex II	ODC of beneficiary 1 changed from 98,000.00 Euro to 97,100.00 Euro due to move of zoom and soundcloud subscriptions to indirect costs. The overall budget of the project changes from 1,999,691.25 Euro to 1.998.571,25 Euro.
31.3.2021	Missing information for linked third party for Beneficiary 7	Addition of involvement in tasks, involvement of key persons and estimated amount according to Annex II for the linked third party in Section 4.2 of Part B. In the effort person-months table 1.3.6 in Part A, the person-months effort of the linked third party for Beneficiary 7 was further added. As a result of the additions for the linked third party of Beneficiary 7, the effort person-months table 1.3.6 in Part A and the estimated amount according to Annex II have been modified for Beneficiary 7, without changing the overall total budget for Beneficiary 7.

Table of Contents

1. EXCELLENCE **10**

1.1 OBJECTIVES 12
1.2 RELATION TO THE WORK PROGRAMME OF THE ENERGY EFFICIENCY CALL FOR PROPOSALS 14
1.3 CONCEPT AND METHODOLOGY; QUALITY OF THE MEASURES 18

2. IMPACT **37**

2.1 EXPECTED IMPACTS 37
2.2 MEASURES TO MAXIMISE IMPACT 46

3. IMPLEMENTATION **51**

3.1 WORK PLAN – WORK PACKAGES AND DELIVERABLES 51
3.2 MANAGEMENT STRUCTURE AND PROCEDURES 52
3.3 CONSORTIUM AS A WHOLE 54
3.4 RESOURCES TO BE COMMITTED 55

4. MEMBERS OF THE CONSORTIUM **64**

4.1. PARTICIPANTS 64
4.2. THIRD PARTIES INVOLVED IN THE PROJECT (INCLUDING USE OF THIRD PARTY RESOURCES) 90

5. ETHICS AND SECURITY **92**

5.1 ETHICS 92
5.2 SECURITY 92

1. Excellence

The EU is a global frontrunner as it catalyses the energy transition, tackles climate change and builds a society that lives within its environmental boundaries. It has undertaken significant efforts to meet the Paris Agreement's objective to limit global temperature increase to well below 2°C. The Energy Union strategy and the "Clean Energy for all Europeans" package have set a robust energy and climate framework for 2030 to cut greenhouse gas (GHG) emissions, increase the share of renewables and energy efficiency. The European 2050 long-term strategy, the Green Deal roadmap and the Recovery plan have laid the foundation for Europe to become the world's first climate-neutral continent and achieve an economy with net-zero GHG emissions by 2050.

In order for Europe's transition towards climate neutrality to become a reality, cities need to be in the driving seat. While cities account for most of GHG emissions and energy consumption in the EU, they are also laboratories that foster transformative solutions. In this respect, the Commission has called on the EU to expand and capitalise on the role of cities in its vision for a climate-neutral EU[1]. Furthermore, cities are at the forefront in addressing climate change, with many among them having declared a climate emergency. Through urban initiatives such as the Covenant of Mayors for Climate & Energy or the European Energy Award, thousands of cities have voluntarily committed to develop and implement Sustainable Energy Action Plans (SEAPs) and Sustainable Energy and Climate Action Plans (SECAPs) to meet or even exceed the EU's 2020 and 2030 energy and climate targets. Many European cities have also committed to become climate-neutral by 2050 or even earlier.

Yet, despite ambitious short- and long-term commitments, only few European cities have succeeded in translating plans into concrete implementation strategies with tangible decarbonisation pathways. There are several reasons for this, which Energy Cities has identified thanks to its European network of 1,000 members and its decade-long experience in co-leading the European secretariat of the Covenant of Mayors. Firstly, many plans of cities often lack clearly defined sectoral milestones and targets. Progress monitoring of actions is also ineffective, as cities can only assess a limited number of indicators. And even if they have data and knowledge available, it is often dispersed, with no centralised platform available to contextualise or leverage this information for planning purposes. As a result, it is difficult for them to effectively plan and operate a climate-neutral transition. Addressing these problems is of the utmost urgency. **In transitioning towards climate neutrality, European cities and their public officials have to overcome complex systemic challenges that cannot be tackled with a business-as-usual approach:** alongside the energy transition, climate change and environmental degradation, the health and economic crisis triggered by the COVID-19 pandemic requires them to think "outside of the box" in order to resolve these challenges. With the current pace of changes observed, clean technologies can become market competitive in a few years' time, and rapid societal transformations can profoundly alter public support for the transition. Hence, the policy choices and investments that cities make today will determine whether they are setting the right trajectory towards climate neutrality. The milestones and targets they establish for the different sectors on their territory will also set the direction of travel for their key local stakeholders. **All this implies a high level of flexibility and leadership for cities when devising their transition plan towards climate neutrality, continuously iterating it and evaluating its outlook in face of these dynamic developments.** For this, cities need to be equipped with tools, information and skills that empower them to take on the role as local energy transition leaders and plan towards climate neutrality in line with the 2050 EU targets. **This is where EUCityCalc comes into play. Its overall objective is to support European public authorities in planning towards climate neutrality through the prospective modelling approach of the European City Calculator webtool**.

The European City Calculator is an open-source, web-based modelling tool providing cities with a sectoral outlook on the type and ambition of measures they can take, to achieve a transition towards climate neutrality. In addition, such system view highlights the implications and trade-offs between energy, climate, resource use, and socio-economic impacts. As a flexible model adapted to territorial specificities and reflecting the city governance, it supports cities in designing tailored transition pathways and policy scenarios, that allow their stakeholders to explore decarbonisation trajectories in the short- and long-term. **The European City Calculator is thus a prospective modelling webtool**, **providing cities and their public officials with a critical anticipation and foresight ability** on the policy choices and investments they need to make, in order to effectively plan their transition towards climate neutrality. **The European City Calculator is based on the European Calculator**[2], a

[1] European Commission Communication (2018), "Strategic Vision for a Climate Neutral Europe", accessed at: https://ec.europa.eu/clima/policies/strategies/2050_en

[2] http://www.european-calculator.eu/

model of energy, climate, resources (incl. land-use, water, biodiversity, air quality and materials), products and food systems at EU and Member State level representing GHG emissions dynamics until 2050 (see Section 1.3 for how the European City Calculator builds on and enhances the European Calculator model). The European Calculator is the key outcome of the Horizon 2020 R&I project EUCalc, one of the 3 Horizon 2020 projects that contributed to the High-Level Panel of the European Decarbonisation Pathways Initiative[3].

The European Calculator was chosen as basis for the European City Calculator due to two key advantages:

- **Comprehensiveness**: by being built on a system view with strong cross-sector interactions, it can cover issues within the city as e.g. building renovation and transport challenges, and also connect it to all the activities supplying the cities from outside their border. It is also built with both the short- and long-term perspective in mind, thereby ensuring that cities can define their action plan for the next years in light of long-term challenges;
- **User-friendliness**: it is also built to be used by a wide range of stakeholders to support the co-creation of transition pathways and policy scenarios, and visualizing their implications for cities. Users will be able to define complexity on demand, deep diving into the actions and the implications which are closest to their daily issues. It is further intuitive and allows anyone to connect, explore existing pathways and scenarios and build new ones easily, with short calculation times enabling a rapid exploration of a wide range of options linked with potential tradeoffs and synergies. Finally, it covers a broad range of impacts and opportunities for cities.

The market analysis conducted by EUCityCalc during the proposal phase has shown that other tools (e.g. ClimateView, FutureProofedCities) tend to be less comprehensive in their scope, and only focus on short timelines (i.e. few years). This can be misleading, as cities can dismiss their impact beyond their territory from imported goods and energy, and also disregard the real ambition required to reach climate neutrality in the medium- to long-term. EUCityCalc has thus taken on the challenge to capture these issues, while remaining accessible and user-friendly, especially for cities and public authorities (e.g. local and regional energy agencies) as key beneficiaries.

With the European City Calculator at its core, EUCityCalc will support cities in leading the transition towards climate neutrality. It will bring together a broad range of cities in different stages in their transition, but united in the effort to attain climate neutrality. **These 10 cities will spearhead EUCityCalc as pilot cities**:

- The city of Riga (Latvia (LV) – **in short REA**), directly involved as project partner
- The city of Mantova (Italy (IT) – **in short Mantova**), directly involved as project partner
- The city of Dijon Métropole (France (FR) – **in short Dijon Metropole**), directly involved as project partner
- The city of Žďár nad Sázavou (Czechia (CZ) – **in short Zdar**), directly involved as project partner
- The city of Palmela (Portugal (PT) - **in short PAL**), indirectly through its local energy agency ENA
- The city of Sesimbra (PT - **in short SES**); indirectly through its local energy agency ENA
- The city of Setúbal (PT - **in short SET**); indirectly through its local energy agency ENA
- The city of Koprivnica (Croatia (HR) **in short KOP**); indirectly through its regional energy agency REA North
- The city of Varazdin (HR - **in short VAR**); indirectly through its regional energy agency REA North
- The city of Virovitica (HR - **in short VIR**); indirectly through its regional energy agency REA North

EUCityCalc has also gathered support from more than 50 additional European local, regional and national authorities (i.e. cities, regions, energy agencies, ministries, etc.) and from associations representing these public authorities, as evidenced by their letters of support (LoS) (see proposal annex).

The EUCityCalc pilot cities are the outcome of a careful selection process, that began in the early stages of the proposal**.** The proposal idea was presented in a webinar to Energy Cities' network in March 2020, which triggered a lot of interest from its membership. Following the webinar, a call for interest was organised within Energy Cities, which was also extended beyond the network's membership in order to attract an even more diverse selection of pilot cities for the proposal. The call for interest then considered several factors in the final selection of the EUCityCalc pilot cities. Firstly, they represent a geographically balanced set of European cities. Secondly, they have widely differing territorial specificities, planning cultures, key local stakeholders, regulatory frameworks, energy systems, and climatic conditions. And thirdly, by being mostly small- to medium-sized cities, they often face significant resource constraints. This selection ultimately provides an added-value to other European cities, as in spite of their different starting points and challenges, they will showcase the feasibility to plan a transition towards climate neutrality through their involvement in EUCityCalc. The pilot cities will be guided in this undertaking by the scientific and technical partners behind the European Calculator, PIK and Climact SA, and

[3] DG RTD 2018, Final report of the High-Level Panel of the European Decarbonisation Pathways Initiative, accessed at: https://op.europa.eu/en/publication-detail/-/publication/226dea40-04d3-11e9-adde-01aa75ed71a1

supported by Energy Cities as network of cities in energy transition and CMW as a European NGO experienced in policy, dissemination and communication. ENA will continuously accompany PAL, SES and SET throughout EUCityCalc with technical support, while REA North will do the same for KOP, VAR and VIR. Zdar will also get this dedicated support from SEMMO, the Czech Association of Energy Managers of Towns and Municipalities. **The European City Calculator will support pilot cities in developing scientifically robust, detailed and actionable policy scenarios and transition pathways towards climate neutrality, in line with the 2050 EU targets and underpinned by a cross-sectoral and territorial approach to decarbonisation.** This will be done in co-creation with key local stakeholders through expert working groups. The developed scenarios and pathways will be politically binding for the pilot cities, as they will feed into the development and update of their SEAPs/SECAPs and related strategic plans. **The capacity-building approach of EUCityCalc will include three dimensions**. In its first dimension, **the pilot cities will receive**, as outlined earlier, **continued dedicated support** from project partners in developing their transition pathways and policy scenarios towards climate neutrality. The second dimension will consist of **peer-to-peer learning** among all EUCityCalc local and regional partners to exchange their experiences and discuss challenges faced in planning the climate-neutral transition in the pilot cities. The third dimension will then include the **project's multifaceted training programme**. The EUCityCalc training programme will **train an additional 75 cities and public authorities (e.g. local and regional energy agencies) across Europe during the project** in using the prospective modelling of the European City Calculator and adopting a cross-sectoral and territorial approach in planning a climate-neutral transition. **A national and EU-wide dissemination and communication campaign, reaching out to a further 600 European cities and public authorities, will motivate at least 60 more European cities and public authorities to launch this planning process with the webtool's prospective modelling beyond the project's lifetime**. Finally, EUCityCalc will strengthen its pilot cities' role in the multi-level governance framework for their transition towards climate neutrality, especially through the updated National Energy and Climate Plans (NECPs) and National Long-Term Strategies (LTS) in the Energy Union Governance and Climate Action Regulation (Governance Regulation).

1.1 Objectives

The specific objectives of the EUCityCalc project are the following:

Table 1: EUCityCalc objectives

Objective 1	Enable cities to integrate their vision and data on the sectors (e.g. buildings, transport, etc.) on their territory in the prospective modelling framework of the European City Calculator to design transition pathways and policy scenarios towards climate neutrality.
	Measures of success: Data is available for all city-relevant activities across departments, without needing external consulting. Cities can assess under which conditions (e.g. ambition in the short-term by 2030) climate neutrality can be achieved in the long-term (e.g. 2050), and can independently develop and update their transition pathways & policy scenarios with the European City Calculator.
	How will it be achieved: A guide will be produced to adopting a prospective modelling approach on the city-level. It will establish guidelines to leverage existing data and knowledge from cities into the webtool's framework, and also partially automate the data gathering and processing of additional data required from cities. Furthermore, a report will outline methods to enhance the modelling of Scope 1-3 emissions and air quality in cities. Data identification forms will enable cities to gather the necessary data by using these approaches, perform data quality checks and establish their energy and emissions baseline for the webtool. An in-depth demonstration session will finally coach cities in independently developing and updating their transition pathways and policy scenarios with the European City Calculator, and enable them to assess the conditions under which they can achieve climate neutrality in the long-term. **(addressed in WP2-3)**
Objective 2	Explore the opportunities, barriers and trade-offs associated with cities' pathways and scenarios to climate neutrality, and enable them to assess the concrete impact of policy choices on their territories.
	Measures of success: Cities can independently develop their own "measure packages" in their most relevant sectors and evaluate the energy, emissions, resources, and costs benefits for their territories.

	How will it be achieved: The concept of ambition levers (in short levers) will be used to enable cities to design their measure packages, assess the concrete impact of their policy choices and explore the pros and cons of different decarbonisation trajectories towards climate neutrality in their pathways and scenarios. A report will outline how ambition levers such as e.g. travel habits or energy technology can be used by cities to inform the design of their measures, and evaluate the corresponding benefits and trade-offs. It will also illustrate the relationship between these levers and different governance levels (i.e. local, regional, national, EU-level), as well as concrete policies. Moreover, it will outline the adequate governance level that cities can implement these levers on, and highlight in particular the impact that city-level policies can have on their territory, but also on higher governance levels. **(addressed in WP3)**
Objective 3	Enable cities to use the European City Calculator's emission calculation processes in the framework of key urban initiatives such as the Covenant of Mayors and the European Energy Award.
	Measures of success: Cities can employ the European City Calculator webtool to fulfil the Covenant of Mayors' SEAPs/SECAPs criteria, in particular for the baseline emission inventory, as well as the GHG balance criteria of the European Energy Award.
	How will it be achieved: A handbook on the emission calculation methodology of the European City Calculator will be produced to outline in detail how cities can use the webtool to meet the requirements of the Covenant of Mayors for SEAPs/SECAPs, in particular the baseline emission inventory, as well as the GHG balance criteria of the European Energy Award. **(addressed in WP5)**
Objective 4	Co-create policy scenarios and transition pathways towards climate neutrality in the pilot cities by engaging key local stakeholders with the European City Calculator webtool.
	Measures of success: Policy scenarios and transition pathways in line with the 2050 EU targets are established in the 10 pilot cities, through a co-creation process involving in total 200 key local stakeholders in expert working groups. The developed scenarios and pathways feed into the development and update of the pilot cities' SEAPs/SECAPs & related strategic plans.
	How will it be achieved: The key local stakeholders in the 10 pilot cities will be identified and engaged through local communication campaigns to join the expert working groups. A sequential co-creation process will be performed in the expert working groups, which will result in a binding agreement (Memorandum of Understanding) between pilot cities and their key local stakeholders on the policy scenario and transition pathway to adopt in line with 2050 EU targets. Guidelines will be developed for the pilot cities to then insert the adopted scenarios and pathways into the development and update of their SEAPs/SECAPs and related strategic plans. **(addressed in WP4)**
Objective 5	Based on the lessons learnt and skills acquired in the pilot cities in applying the European City Calculator, train other European cities and public authorities (e.g. local and regional energy agencies) in the use of the webtool for planning their own transition towards climate neutrality.
	Measures of success: The multifaceted training programme of EUCityCalc builds up the capacity and skills of at 165 public officials in 75 additional European cities and public authorities (e.g. local and regional energy agencies) in using the European City Calculator webtool during the project's lifetime.
	How will it be achieved: The EUCityCalc training programme will build up the capacity and skills of its participants by employing an active learning approach, where recipients actively engage in the material they are learning, instead of simply listening to and memorising information they receive. The training programme will follow a sequential learning process, which will enable participating European public authorities (cities and local and regional energy agencies) to understand the "big picture" of a transition towards climate neutrality, learn the use of the European City Calculator webtool to develop pathways and scenarios and adopt a cross-sectorial and territorial approach to decarbonisation. **(addressed in WP5)**

Objective 6	Target other European cities and public authorities (e.g. local and regional energy agencies) through an EU-wide communication campaign to disseminate EUCityCalc findings and encourage them to take up the webtool's prospective modelling approach in their planning towards climate neutrality.
	Measures of success: The project's communication campaign reaches out to 600 further cities and public authorities (e.g. local and regional energy agencies) out of which at least 60 will be motivated to launch the planning process for a climate-neutral transition with the webtool 5 years after the project has ended.
	How will it be achieved: By leveraging the network of Energy Cities and its involvement in the Covenant of Mayors initiative as co-leader of its European secretariat, as well as the various memberships of the project's local and regional partners in multipliers (i.e. associations of cities or energy agencies), EUCityCalc will widely promote the European City Calculator as a powerful communication, capacity-building and policy outlet for cities and public authorities to launch a planning process towards climate neutrality with their stakeholders. It will also employ innovative and tailored communication and dissemination tools to share project findings and materials to attract widespread interest beyond the project's lifetime, by developing in particular attractive multimedia tools (i.e. videos, infographics, podcasts, European narrative on prospective modelling in cities) to visualise the language of modelling in an understandable manner for the project's target groups. **(addressed in WP7)**
Objective 7	Strengthen the pilot cities' role in the multi-level governance framework of their transition towards climate neutrality, by enabling them to feed into the update of their countries' NECPs and LTS as part of the EU Energy Union Governance and Climate Action Regulation.
	Measures of success: The pilot cities' SEAPs/SECAPs and related strategic plans outline their contributions to their six countries' updated NECPs and LTS. Policy recommendations are developed to improve the alignment of local, national and EU decarbonisation policies.
	How will it be achieved: An online advocacy training will build the project's local and regional partners' capacity to engage in the Governance Regulation, identify and establish links between their pathways/scenarios and SEAPs/SECAPs with their countries' NECPs and LTS, and formulate country-specific policy recommendations to address national and EU-level barriers through the updated NECPs and LTS. These recommendations will be discussed with national policymakers in six national roundtable workshops (one per country), and also submitted to the consultation processes organized by countries for the update of the NECPs and LTS. The project's overall policy recommendations will outline the remaining gaps in the Governance Regulation and how to bridge them, by building on the webtool's approach to connect the levers with governance levels and policies, and the pathways and scenarios developed in the pilot cities. The overall recommendations will be debated in 2 EU-level workshops. **(addressed in WP6)**

1.2 Relation to the work programme of the Energy Efficiency Call for Proposals

EUCityCalc relates to the Horizon 2020 call LC-SC3-EC-5-2020 "Supporting public authorities in driving the energy transition", with the main scope addressed being "Support to local and regional public authorities". The table below outlines the specific challenges and scope of this topic, and how these are addressed by EUCityCalc:

Table 2: Relation between EUCityCalc and the specific challenges and scope of LC-SC3-EC-5-2020

Specific challenges	**How it is addressed by EUCityCalc**
"The delivery of the Energy Union targets requires the full engagement of the public sector at all governance levels. Local and regional public authorities have a crucial role in setting ambitious energy efficiency	EUCityCalc highlights the central role of cities in driving the energy transition. It supports clarifying which actions are needed from the local, national and EU levels. The 10 pilot cities are engaged in the Covenant of Mayors and have developed corresponding ambitious energy and climate action strategies. Through adopting the European City Calculator's prospective modelling, they will embark in a cross-

strategies, e.g. in the framework of the Covenant of Mayors [...]"	sectoral planning process towards climate neutrality that will contribute to the delivery of the Energy Union targets across all of its five dimensions. However, as 10 cities are not enough for meeting the Energy Union's objectives, the project will therefore train during its lifetime an additional 75 cities and public authorities (e.g. local and regional energy agencies) in using the webtool to plan their climate-neutral transition, and also motivate 60 more cities and public authorities to launch this planning process beyond the project period.
"The political commitment at local level should be enhanced and the focus should turn to implementation and effective monitoring of concrete energy efficiency solutions and actions, which can contribute to modernise and decarbonise the European economy."	All pilot cities are well positioned in their countries to act as flagships among peer cities. By showcasing the feasibility to plan a transition towards climate neutrality, they will challenge and encourage other cities to raise their commitments. This will be done mainly through the project's training programme, where similar city profiles to the pilot cities will be identified and targeted, to facilitate peer-to-peer city learning and also enable a high level of uptake and replication. Pilot cities will also demonstrate how to enhance implementation and monitoring of actions, by devising tailor-made "measure packages" that can be flexibly adapted and updated. At EU level, outreach to cities will be strengthened through Energy Cities, which will share project results with the Covenant of Mayors as co-leader of its European secretariat.
"Synergies should be sought, whenever possible, with local and regional air quality plans and air pollution control programmes to reduce costs since these plans rely to a large extent on similar measures and actions."	In EUCityCalc, the pilot cities' transition pathways and policy scenarios will feed into their air quality and pollution control strategies. The project will leverage the PM2.5 modelling work from the European Calculator. It will provide concentrations of pollutants and emissions at country-level. Emissions factors will be scaled with city-specific activity levels (e.g. traffic density) and city-concentrations derived. Linkages to health via country-specific mortality functions will also be created, highlighting the societal impact of air pollution at local level.
"Support should continue and be reinforced in building capacity of public authorities and empowering them to take up their role of energy transition leaders at regional and local level, by permanently improving their skills as public entrepreneurs and supporters of market transformation towards more efficient energy systems."	EUCityCalc will strengthen the capacity of pilot cities and empower them to become transition leaders through various capacity building activities and materials, such as e.g. guidelines for data standardisation, data identification forms to easily gather data and perform data quality checks, and a demonstration session on the webtool. It will further provide them with the webtool a highly flexible instrument to independently design, implement and monitor their transition towards climate neutrality. Moreover, the pilot cities will be able to centralise data across all sectors on one single platform, which will facilitate the engagement with their key local stakeholders. Furthermore, the pilot cities will be supported in accelerating the market transformation towards climate neutrality, by using the webtool to tap into societal and technological trends, and react and adapt to fast-paced changes.
Scope	**How it is addressed by EUCityCalc**
"Support public authorities in the development of policy scenarios and transition roadmaps that clearly outline the path to the European long-term 2050 targets and inform the ongoing implementation of SEAPs/SECAPs or similar plans and	**This is the core scope addressed by EUCityCalc.** The project will accompany its pilot cities throughout their development and implementation of their transition pathways and policy scenarios towards climate neutrality by using the prospective modelling framework of the webtool. The pilot cities will be supported in ensuring that these plans are scientifically robust, detailed and actionable to comply with the EU's aim to become climate-neutral by 2050. Scope

the development of future plans/targets for 2030 and beyond. Actions should closely link to the Covenant of Mayors initiative and the Energy Union Governance Regulation, where relevant."	1, 2 and 3 emissions will be covered to ensure cities can realise their comprehensive impact on GHG emissions. They will be equipped with guidelines to apply these pathways and scenarios in the development and update of their SEAPs/SECAPs and related strategic plans. EUCityCalc will also enable cities to use the webtool's emission calculation processes in the framework of the Covenant of Mayors. A handbook on its adopted emission calculation methodology will outline how the webtool can be used by cities to meet the criteria for SEAPs/SECAPs, in particular the baseline emission inventory. The 10 pilot cities' SEAPs/SECAPs and related strategic plans will contribute to their six countries' updated NECPs and LTS, and overall policy recommendations will outline how to better align city, national & EU decarbonisation policies through the Governance Regulation.
"Enhance decision-making processes of regional and local authorities, to deliver a higher quality, coherence and consistency of energy efficiency measures - and accelerate reaching targets [...]"	The prospective modelling of the European City Calculator aims to simplify cities' decision-making processes, by giving them a systems view on which measures they can take in which sectors, using varied levers adapted to their territorial specificities, to achieve the impacts consistent with a transition towards climate neutrality. EUCityCalc also provides the necessary data for the design and delivery of more qualitative, coherent and consistent measures, laying the foundation for cities to reach their short- and long-term targets more rapidly.
"[…] developing interface capacities within public authorities to engage with civil society."	The pilot cities will be equipped with enhanced interface capacities to engage the key local stakeholders of their expert working groups, in particular civil society actors. Their main instrument will be tailored and easily adaptable local communication campaign toolkits, that will be developed by CMW and Energy Cities. CMW, as a European NGO experienced in engaging and working with civil society actors across Europe, will furthermore support the project's pilot cities with methods to facilitate the outreach to key civil society actors on their territories.
"Deliver innovative capacity-building programmes for cities and/or regions to step up their capacity to drive the sustainable energy transition [...]"	The capacity-building approach of EUCityCalc will include three dimensions. In its first dimension, the pilot cities will receive continued, **dedicated support** from experienced local and regional energy agencies and national city network partners, and from the scientific and technical partners behind the European Calculator in developing their transition pathways and policy scenarios towards climate neutrality. The second dimension will consist of **peer-to-peer learning** among all the project's local and regional partners to exchange their experiences and discuss challenges faced in planning the climate-neutral transition in the pilot cities. The third dimension includes the **project's training programme**, which will train 75 cities and public authorities across Europe during the project in the webtool and adopting a cross-sectoral and territorial approach in planning a climate-neutral transition.

Involvement of relevant key actors and target groups

Key actors

EUCityCalc will firstly involve the **10 pilot cities as key actors in the project**. The pilot cities will contribute with key staff from various departments, especially from those with a strategic function and planning competence within their administration, i.e. that are in charge of data collection and planning documents such as SEAP/SECAP, Smart City concepts, urban development and air quality strategies. **The political commitment of the pilot cities is demonstrated by their letters of commitment (LoC) (see proposal annex), which are provided by their**

mayors, deputy mayors or technical directors. This backing will ascertain that the pilot cities' planning towards climate neutrality through the European City Calculator constitutes a transformative and durable undertaking.

The second group of key actors are the pilot cities' respective local and regional energy agencies, in particular for PAL, SES, SET, KOP, VAR and VIR. ENA and REA North will provide continuous technical support to the aforementioned pilot cities throughout the development process of their transition pathways and policy scenarios towards climate neutrality. This technical expertise will also be provided by the **third group of key actors, the scientific and technical project partners** PIK and Climact SA, responsible for the creation of the European Calculator and its refinement into the European City Calculator.
ENA and REA North will also form part of the **fourth group of key actors, the multipliers**, by participating in the project's peer-to-peer learning, capacity building and dissemination activities, in particular at national level. Another such a multiplier at national level will be SEMMO as the Czech Association of Energy Managers of Towns and Municipalities, which will also accompany the pilot city Žďár nad Sázavou throughout its planning towards climate neutrality. At EU level, the multipliers are Energy Cities as European city network and CMW as European NGO. They will lead dissemination, communication and policy activities. Furthermore, they will contribute to peer-to-peer learning and capacity building, which will also be the case for PIK & Climact SA.
The pilot cities' cross-sectoral and territorial approach to decarbonisation requires the close and continued involvement of **key local stakeholders, which will form the fifth group of key actors**. These stakeholders will provide vital inputs to the pilot cities' transition pathways and policy scenarios. As their trust, buy-in and support is essential to the planning of the pilot cities' climate-neutral transition, they will take part in the expert working groups as part of the project's co-creation process. (described in detail in Section 1.3).

Table 3: Overview of key actors involved in EUCityCalc

Key actors	**Involvement in project**	**Letters of commitment / support or other evidence**
10 Pilot cities with key staff from strategic departments	4 cities (Zdar, Mantova, Dijon Metropole, REA) directly as partners 6 cities (PAL, SES, SET, KOP, VIR, VAR) indirectly via ENA & REA North As expert working groups members	Letters of commitment received from all 10 pilot cities, attached as annex to the proposal
Local and regional energy agencies	ENA & REA North as project partners support 6 pilot cities with expertise & lead their expert working groups	Participant Information
Research institutes and engineering consultancies	PIK & Climact SA as project partners support all pilot cities with expertise	Participant Information
Multipliers	Energy Cities, CMW, ENA, REA North and SEMMO as project partners	Participant Information
Key local stakeholders (e.g. industry, energy suppliers, data observatories, NGO, academia)	As members of the expert working groups in the 10 pilot cities As linked third parties	22 Letters of support attached as annex to the proposal, divided by pilot cities

Key target groups
Considering that EUCityCalc aims to mobilise and motivate more public authorities (especially cities and local and regional energy agencies) to plan their transition towards climate neutrality through prospective modelling, **the most critical target group are European cities and their public officials**, in particular staff from strategic departments with responsibility for key planning documents such as SEAP/SECAP. The project will propose its findings and training programme in particular to this target group both on a national and a European level, through the various multipliers among its consortium partners. EUCityCalc will also target other relevant groups with a

stake in the climate-neutral transition at local level through dissemination of project information and invitation to its activities, such as policymakers at regional, national and EU level, academia, think tanks and NGOs.

Table 4: Overview of key target groups addressed in EUCityCalc

Key target groups	**Involvement in project**	**Letters of support**
European cities and their public officials from key departments	Invited to join trainings & project events via Energy Cities, ENA, REA North, SEMMO, CMW and pilot cities national & EU-level dissemination activities	28 Letters of support, attached in proposal annex
European local and regional energy agencies	Invited to join trainings via ENA, REA North, Energy Cities & CMW national & EU dissemination activities	13 LoS, attached in proposal annex
Policymakers at regional, national and EU level	Invited to join events through national dissemination by pilot cities & EU dissemination by Energy Cities & CMW	7 LoS, attached in proposal annex
Other multipliers such as associations of cities, associations of energy agencies	Spread information about project trainings and events to their members through Energy Cities, ENA, REA North, SEMMO & pilot cities	4 LoS, attached in proposal annex
Academia and think tanks	Invited to join events via Energy Cities, CMW, PIK and Climact SA national & EU-level dissemination activities	3 LoS, attached in proposal annex
Key local stakeholders of the expert working groups, and stakeholders not part of groups	Through stakeholder opinion leaders in expert working groups and via local communication campaigns of pilot cities	2 LoS, attached in proposal annex

1.3 Concept and methodology; quality of the measures

a. Overall project concept and how it addresses the needs and constraints of key actors

For cities to plan their climate-neutral transition, they need to understand the "big picture" of what this transition implies for all their sectors and actors. They have to demonstrate agility in the face of fast-paced changes, while also having to look ahead in the short- and long-term. Their measures need to be adapted to their territorial specificities and context, but also fit a robust decarbonisation trajectory consistent with climate neutrality. Cities have to conduct this transition by setting the direction of travel and engaging their key local stakeholders to leverage their support and buy-in. But cities face constraints preventing them from taking on this leadership role:

Table 5: Needs and constraints of cities & how they will be addressed by EUCityCalc

Needs and constraints of cities	**How they will be addressed by EUCityCalc**
Lack of quality data that can be accessed on regular basis and in a timely manner;	Provision of enabling methods and guidance for data collection, processing and standardisation, as e.g. guidelines for integration of data and knowledge into the webtool, data automation protocol and processing;
Lack of internal capacity, with public officials not being able to gather and contextualise available data on a centralised platform, or communicating and integrating this data across departments;	Capacity-building activities to train cities in contextualizing data through the European City Calculator as centralised platform, with e.g. demonstration session on how to use the webtool;
Lack of staff and time to develop plans, often having to rely instead on external expertise which at best delivers a generic, static report without tangible milestones and targets, and which doesn't adequately reflect their territorial specificities;	Capacity-building materials and activities as e.g. guidelines for insertion of pathways and scenarios into SEAPs/SECAPs, webtool demonstration session, to enable cities to gather data for all city-relevant activities across departments without needing external

	consulting, and to use the webtool to independently develop and update scenarios and pathways that they can transpose into their SEAPs/SECAPs;
Difficulties in developing own policy scenarios and transition pathways, and as a result, their decision-making processes are hampered by incomplete assessment of benefits, trade-offs, synergies and impacts of the choices and investments they make;	Provision of continuous support and guidance by e.g. scientific and technical project partnes, tailored to the territorial specificities and context of pilot cities, to ensure scientific robustness and technical rigour in their transition pathways and policy scenarios;
Lack of insight into which levers they can pull to which extent, in order to affect their decarbonisation trajectory in the short- and long-term;	Capacity-building materials as e.g. report on relation between levers and governance levels & policies, to highlight the impact that city-level policies can have across governance levels;
National and EU-level barriers often prevent them from adopting ambitious policies on their territory (e.g. more stringent building code)	Capacity-building activities as e.g. online advocacy training on the Governance Regulation to help pilot cities formulate recommendations to address barriers;

EUCityCalc deems the prospective modelling webtool of the European City Calculator as essential to building cities' capacities, but also considers it vital to enable a multi-level governance framework that leverages the key role of cities in the transition towards climate neutrality. **Thus, the overall concept of EUCityCalc combines**:

- **The European City Calculator prospective modelling webtool**, which builds on the European Calculator model for the EU- and Member States level, but is refined to enable city-level modelling in a highly flexible, easily accessible and transparent manner across all sectors on the territory;
- **10 pilot cities, which represent a geographically balanced and diverse set of mostly small- to medium-sized cities**, that are well-placed to learn from each other and provide valuable lessons and guidance for the planning of the climate-neutral transition of many more similar European cities;
- **Continuous support and guidance tailored to the territorial specificities and context of pilot cities,** provided by the scientific and technical partners behind the European Calculator and by experienced practitioners from the local and regional energy agencies and national city network partners, to ensure scientific robustness and technical rigour in the pilot cities' transition pathways and policy scenarios;
- **Scientifically sound advice and know-how provided by the expert members of the advisory board**, to ensure EUCityCalc is firmly grounded in the realities that shape cities' planning of a climate-neutral transition;
- **An innovative co-creation process with key local stakeholders in the pilot cities**, consisting of expert working groups in order to build support, buy-in and trust for their transition towards climate neutrality;
- **Online advocacy training provided** by a European NGO and European city network experienced in policy, to help the pilot cities, local and regional energy agencies and national city network partners in navigating the multi-level governance framework for climate neutrality, in particular **the Governance Regulation**;
- **A multifaceted training programme for European cities and public authorities to learn the use of the European City Calculator,** understand the "big picture" of the transition towards climate neutrality and adopt a cross-sectorial and territorial approach to decarbonisation;

The European City Calculator webtool - a state of the art approach to city-level prospective modelling

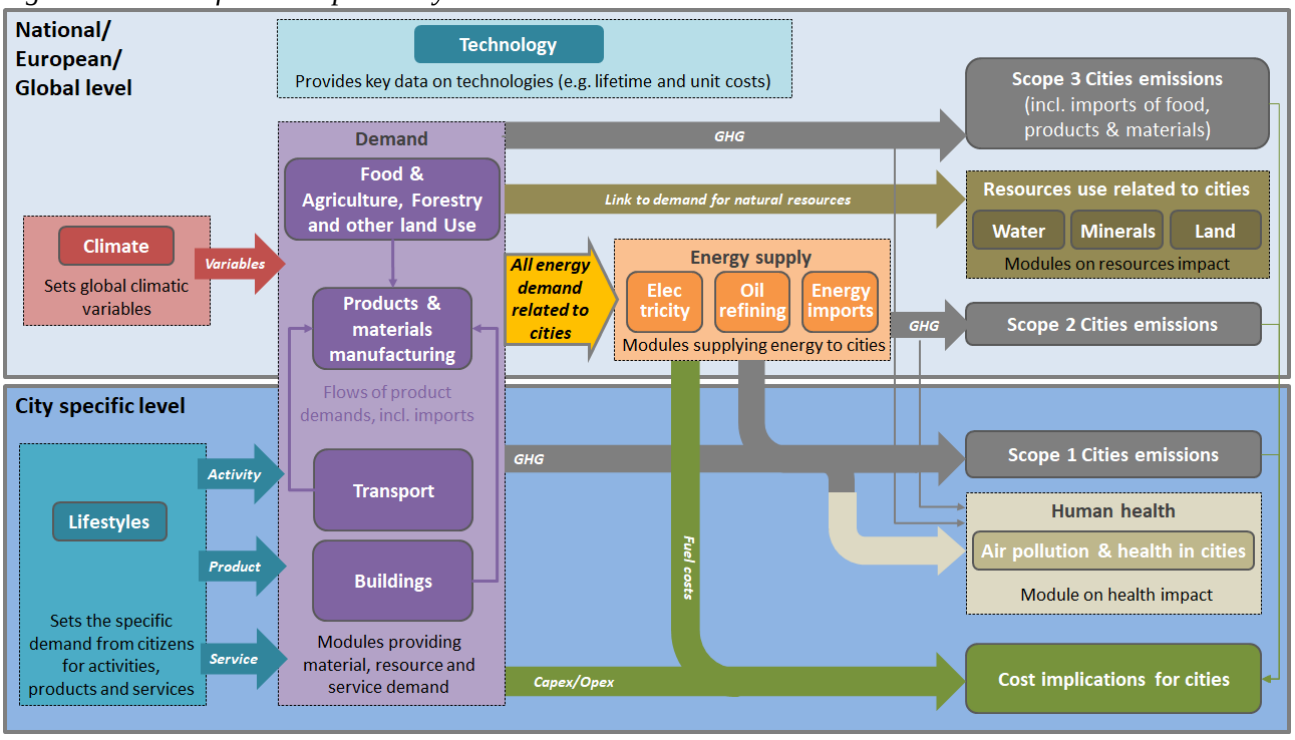
The conceptual starting point of the European City Calculator webtool is the flexible web-interface of the European Calculator, which is the key outcome of the Horizon 2020 R&I project EUCalc, as mentioned earlier. **The European Calculator is best described as a simulation model composed of sequential operations**, **without recurring to complex feedback mechanisms or optimisation**. While optimisation models are the norm in decarbonisation analysis, they struggle to capture transformative change and the dynamics associated with disruption, innovation, and non-linear change in human behaviour[4]. Accordingly, policy optimisation models are now being complemented with policy simulation models, to enable exploring the full abatement strategy space[5].

[4] Rockström J et al. 2017, A roadmap for rapid decarbonization, Science 355, pp. 1269–71.

[5] Lamontagne J R et al. 2019, Robust abatement pathways to tolerable climate futures require immediate global action, Nature Climate Change 9, pp. 290–294.

Simulation models are useful tools to investigate the full option space for climate mitigation in particular, as shifts in preferences for mobility, housing or diets can be imposed exogenously, and technology options can sometimes not be ready yet for cost-effective market deployment. **The most defining feature of the European Calculator model are the so-called "ambition levers" (in short levers)**. These levers[6] set the 2020-2050 trajectories at the country-level for technology, lifestyles and agricultural practices. The term ambition refers to whether a trajectory represents the continuation of current trends, or that associated with a transformational level, both in terms of societal change and technology deployment. At the country-level scale, the European Calculator consists of 18 modules representing the evolution of climate, lifestyles, energy supply, resource and material demand/supply, technology costs, carbon capture use and sequestration and societal impact of air pollution and employment. At the core of the European Calculator model are the modules representing the energy-relevant sectors of agriculture, buildings (incl. district heating and cooling), electricity[7], transport and manufacturing. Consultations with experts across co-creation workshops[8] within EUCalc have challenged assumptions made by module developers and lead to further improvements. **The prospective modelling of the European City Calculator in EUCityCalc carries over many of the defining features of the European Calculator. The below figure shows the representation of the European City Calculator model, including its different aspects and dimensions**:

Figure 1: Model of the European City Calculator



The architecture of the European City Calculator webtool

Figure 1 describes in essence the architecture of the European City Calculator webtool. In practice, the European City Calculator will work at the city-level, while at the same time leveraging the strength of the European Calculator, which includes a wide coverage of GHG emissions, energy use and supply, products use, materials use, resources use (water, minerals and land) and human health.

[6] For a full set of ambition levers in the European Calculator model: http://www.european-calculator.eu/wp-content/uploads/2020/04/EUCalc_D9.6_EUCalc-model-Pathways-Explorer-release-2.pdf

[7] Gyalai-Korpos M et al. 2020, The Role of Electricity Balancing and Storage: Developing Input Parameters for the European Calculator for Concept Modeling, Sustainability 12, p. 811, accessed at: https://www.mdpi.com/2071-1050/12/3/811

[8] Rankovic A and Patrick-Kelly G 2019, Implementing co-designed research: Experiences gained from expert consultation workshops, accessed at: http://www.european-calculator.eu/wp-content/uploads/2019/12/EUCalc_D9.7.pdf

The model starts from the lifestyles of the city inhabitants, and its implications in terms of activities (e.g. km travelled, diet chosen, m^2 heated), **then in terms of products use** (e.g. m^2 of houses renovated, cars, appliances, packaging) **and services use** (e.g. private vehicle renting, public transport, infrastructures, tertiary sector).
To feed the model of the European City Calculator, for each city the activities, products, services and some contextual information will have to be specified. When no city-specific information is available, approximations can be easily generated through methods such as leveraging information from the country-level or from a comparable city (described in more detail in the subsection on ensuring data availability for cities).

Based on this information, the model will segment what happens at the city-level and beyond the city boundaries (national/European/Global level), as follows:

- **At the city level**: the model assesses the various dimensions mentioned beforehand: of GHG emissions, energy use and supply, products use, materials use, resources use (water, minerals and land) and human health. In terms of transport e.g., the model assesses city vehicle fleet and renewal rate, per vehicles per technology, reflecting the adoption choices regarding technologies and circular economy principles (right sizing, repairing, renting or owning). Indirect implications are also assessed regarding the evolving share of petrol and electricity being used in these cars, the transport infrastructures, the air particles, etc.

- **Beyond the city borders**: the model assesses the imports and exports generated by the city inhabitant lifestyles. As concerns e.g. transport, the model assesses imports and exports of: vehicles, batteries, rare earth minerals for the batteries, materials for the car manufacturing and for the transport infrastructures (such as cement and steel) and energy (electricity, fossil fuels, biomass and H_2). Imports and exports are assessed taking into account the local demand and the local production capabilities. In addition to imports and exports, indirect implications in terms of water and land use are also assessed.

Then, **the scenarios for future years** (e.g. 2030, 2050) **will be based on the choices of the actions (or levers,** as explained previously**) that the city decides to activate or support.** These actions will be clearly split between elements that:

- **the city can influence directly** (e.g., improvements in buildings or the modal shift in transport, and potentially shifts in lifestyles and the way society is organized (such as e.g. encouraging more teleworking even beyond the COVID-19 pandemic, and a more circular economy by e.g., fixing bikes and increasing car sharing))
- **are defined by other legislative levels** (e.g. the electricity mix of centralised power production, or the improvements in industrial efficiency);

Interaction of the European City Calculator webtool with other existing tools
Considering that a key aim of the project is to support the pilot cities in inserting their adopted transition pathways and policy scenarios from the European City Calculator into the development and update of their SEAPs/SECAPs and related strategic plans, it is key to understand how the European City Calculator can interact in particular with the Covenant of Mayors online calculation tool, to facilitate this insertion for the pilot cities. It is also relevant for other cities and public authorities using the webtool and wanting to apply it in the frame of the Covenant of Mayors, for which the project handbook on the emission calculation methodology of the webtool will provide guidance.
Subsequently, EUCityCalc will explore with the Covenant of Mayors Secretariat, which Energy Cities currently co-leads, the following key option for interaction during the project implementation:

- **Assessing the feasibility of establishing a bridge between the API of the Covenant of Mayors online calculation tool and the API of the European City Calculator webtool**

The API – Application Programming Interface – is the communication language between the website, model and database, and is critical for allowing applications to talk to each other. **The ongoing service contract of the Covenant of Mayors Secretariat aims to assess the possibility of establishing a bridge between the Covenant of Mayors platform and other tools (such as the European Energy Award)**. The objective of establishing such an API bridge is to enable Covenant signatories to ideally copy-paste data from one tool to another, without having

to manually insert data over and over, which is currently a bottleneck for some Covenant signatories that have e.g. national reporting obligations, while also reporting in the frame of the Covenant of Mayors.
An API link between the European City Calculator and the Covenant of Mayors online calculation tool could enable the project's pilot cities to e.g. transfer baselines from the European City Calculator to compile their baseline emission inventory for their SEAP/SECAP in the Covenant of Mayors. Moreover, it could also enable them to transpose the measures defined through the European City Calculator as actions for their SEAP/SECAP. Finally, such a bridge would also be relevant for the project's foreseen handbook on the emission calculation methodology of the European City Calculator, whereas aforementioned, guidance will be provided on how the webtool can be used to meet the Covenant of Mayors SEAP/SECAP criteria.

Considering this, EUCityCalc will interact with the Covenant of Mayors Secretariat (i.e. its IT partner) to assess the feasibility of a bridge between the API of the webtool and the Covenant of Mayors online calculation tool, by notably gathering information on the functionalities of the API of the Covenant of Mayors online calculation tool, and assessing in which measure it can be leveraged to link with the API of the European City Calculator.
Collaboration with other Horizon 2020 actions such as CoME EASY – that has already worked on API compatibility with the Covenant of Mayors IT developers – will be sought.

Required steps for the transition from the European Calculator to the European City Calculator
Here, it will be outlined in which ways the European City Calculator carries over several key defining features of the European Calculator. This will require firstly a series of improvements for the European City Calculator webtool in the process, which are listed below:

- Improve the friendliness and usability of the interface (e.g. better automate the lever descriptions based on the available data, make data model input refinement by cities easier)
- Improve the city KPIs visualization (modify the website interface to reflect city-specific KPIs)
- Update the API to reflect the city specificities (it will be e.g. adapted to better handle the hierarchies between cities, regions and countries)
- Implement a comparison feature (between different cities, and between different pathways – as e.g. enabling to compare pathways to be visible in absolute or in per capita)
- Improve the display of the graphs (to make graphs more readable)
- Add additional graph types (such as bars, tables, sankeys)

Alongside these improvements, the European City Calculator will take over many of the key outputs of the European Calculator model in its city-level modelling. These outputs include not only GHG emissions, but also energy metrics around all relevant sectors on the territory of a city (transport, buildings, energy, industry, agriculture). The European City Calculator also accounts for physical implications across these sectors (e.g. amount of floors under renovation, composition of municipal fleet), as well as investment levels. Additionally, it accounts for air quality (PM2.5e), food supply and land-use among its modelled outputs. Costs associated with the roll-out of particular strategies or technologies, such as capital expenditures per transport mode, are considered. Key interlinkages between sectors are also modelled: e.g. the renovation of roads would in turn require the manufacturing sector to deliver cement and other materials, which comes with associated emissions. Thus, cities are provided with a standardised accounting of their GHG footprint and climate mitigation potentials for Scope 1, 2 and 3 emissions (see explanatory table of Scope 1-3 emissions on following page) with the European City Calculator. Tackling Scope 3 emissions is also key, as in Europe, about 2/3 of consumption-based GHG emissions are imported from regions outside cities[9].

[9] https://www.c40.org/researches/consumption-based-emissions

Table 6: Overview of Scope 1, 2 and 3 GHG emissions for a city - in terms of Scope 3 emissions, examples can also include imports of food (and impact on deforestation) and imports of products (e.g. materials, goods)[10]

	Scope	Definition	Category	Examples
	Scope 1 = Territorial	Carbon emissions from sources located within the city.	In-boundary	• Natural gas consumption • Fugitive emissions from mining coal • Fuel consumption in vehicles • Wastewater generated in the city • Emissions from livestock
	Scope 2	Use of grid-supplied electricity in the city.	Grid-supplied energy sources	• Electricity use in commercial buildings • Electricity use in residential buildings • Electricity use for streetlighting • Charging electric vehicles • Electricity use for railways
S3	Scope 3	All other carbon emissions that occur outside the boundary of the city as a result of activities within the city.	Out-of-boundary	• Transmission and distribution losses of grid-supplied electricity • Waste disposal and treatment outside the city/LGA boundary • Transboundary transportation

Secondly, the European City Calculator can leverage many of the levers from the European Calculator model, simulating the technical and social changes needed for climate neutrality. These levers range from behavioural to technical, such as e.g. travel habits or energy technology. Each lever is related to one or several governance levels, between EU (e.g. car technology), country or city level (e.g. modal shift). The levers are connected to measures and indicators, and thus can simulate a large range of decarbonisation options for cities. They are intuitive enough to be used by non-experts, while at the same time providing enough detailed and open-source modules to technical experts to ensure the transparency of the calculations. The trajectories can be easily visualised and updated to match the new outlook of the city if it is needed.
The ambition levers of the European City Calculator introduce four possible course of action - to follow historical trends, intermediate effort, very ambitious effort and drive transformational change -, which have been carried over from the European Calculator:

Table 7: The four possible course of action for the ambition levers in the European City Calculator:

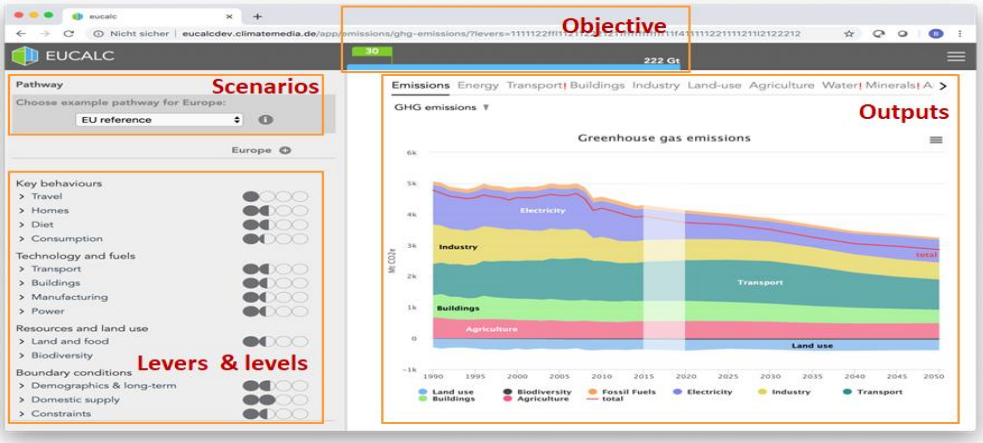
Level 1	*Level 2*	*Level 3*	*Level 4*
Projections of **historical trends**.	**Intermediate scenario**, more ambitious than a projection of historical trends but not reaching the full potential of available solutions.	**Very ambitious but realistic** scenario, given the current technology evolutions and the best practices observed in some geographical areas.	**Transformational requiring additional breakthroughs** or efforts such as cost reduction for key technologies, very fast deployment of infrastructures, technological advances, strong societal change, etc...

The European City Calculator will include documentation of the assumptions, ideas and data behind the ambition levers, so cities using the webtool can understand the context underlying the simulations of the prospective modelling. The model of the webtool will also be highly flexible, in order to enable cities to determine themselves which aspects are critical to address on their territory (e.g. traffic, heating, electricity).

The European City Calculator carries over the majority "scenario exploration" function of the European Calculator, which includes ambition levers and levels (i.e. course of action) (bottom left side of the figure on the following page); scenarios (top left side) and outputs (bottom right side). While the overarching objective of the European Calculator was to keep EU emissions below a budget compliant with 2 or 1.5 degrees (see blue bar above outputs), this might not be the optimal metric for cities to benchmark against national and EU 2030 and 2050 emission targets with the European City Calculator. Accordingly, EUCityCalc will consult with pilot cities on different benchmark criteria available - from simple (e.g. carbon law[11]) to more complex ones (e.g., down-scaled carbon budgets). The most consensual metric will then be implemented in the European City Calculator webtool.

[10]According to the definition of the scopes by GPC, the Greenhouse Gas Protocol for cities, accessed at: https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities
[11] Rockström J et al. 2017, A roadmap for rapid decarbonization, Science 355, pp. 1269–71.

Figure 2: Web interface of the European Calculator and its Transition Pathway Explorer[12]



Limitations and risks of the European City Calculator webtool as core component of the project concept

Here, the decision to have the project concept tightly linked solely to the European City Calculator webtool will be explained, and the limitations and risks this entails. Firstly, the consortium made a careful assessment regarding the limitations that cities currently have in transforming data/knowledge into cross-sectoral decarbonisation targets and plans, in view of their long-term transition towards climate neutrality. Being a centralised tool in one coherent framework that connects all the dots, the European City Calculator shows the interdependencies of decision taken in different sectors, as well as the benefits and costs for the city as a whole. It is thus paramount to achieve the kind of integrated planning that cities need, in particular small- to medium-sized cities that are pilot cities in the project. Furthermore, discussions with the pilot cities and local and regional partners, as well with cities that are part of other projects in which consortium members are involved in (e.g. PIK for the INTERREG project 2050CliMobCity), confirm this view. From these discussions, cities prefer to have to work with less tools and more insights when planning their climate-neutral transition. It is also worth to mention that while larger cities might have the staff numbers and capacities available to operate different tools and methodologies, small- to medium-sized cities are more constrained in this regard. Thus, focusing on one tool constitutes a more effective way to enhance their prospective modelling capacities as a first step.

That said, relying on one webtool comes with its limitations and risks. It can be challenging when it comes to timing and management of the European City Calculator's deployment for the pilot cities. A delay in delivering the first operational version of the webtool constitutes a significant delivery risk for other project activities (as e.g. engagement with local stakeholders, training programme on the webtool for cities and public authorities outside the consortium). Moreover, while the European City Calculator is a cross-sectoral instrument, there is a risk that in order to keep the timeframe for its first operational version and avoid deployment delays, not all relevant key indicators are yet available that cities require for meeting the SEAPs/SECAPs criteria in the Covenant of Mayors or the GHG balance criteria in the European Energy Award, which would constitute a shortcoming for the project's foreseen handbook on the emission calculation methodology of the webtool.

With the consortium being aware of these limitations and risks, the effectiveness of the project can nevertheless be ensured with the webtool as core component of its concept. With the European City Calculator, the project does not start from scratch, but adopts the modelling framework of the European Calculator that was already tested extensively in previous Horizon 2020 projects (e.g. EUCalc, but also LIFE PlanUp) and also at national level (e.g. the Belgium calculator based on the European Calculator). Thus, a strong basis is already available, and the European City Calculator webtool can build on and enhance this basis, instead of having to reinvent the wheel. Furthermore, centering efforts on only one webtool actually enhances the effectiveness of the project, as participating cities will only have to understand working with this webtool to centralise their planning towards climate neutrality. In addition to this, having the project centered on one webtool helps in terms of project development and impact, as it brings together the different WPs that depend on it for their respective work, and

[12] http://tool.european-calculator.eu

pushes the consortium to keep efforts aligned as much as possible, since every partner would lose from a delay in the webtool's deployment. Finally, by concentrating on one webtool instead of centering work on a multitude of tools and thus spreading efforts too widely, is considered beneficial by the consortium especially for the pilot cities: as they will involve their different planning departments during the project, it is important that these departments have access to the same coherent information and scenarios, in order to facilitate more efficient decision-making.

How EUCityCalc seeks to ensure the availability of data for participating cities

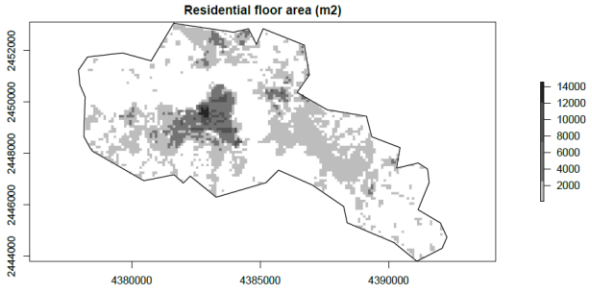
It should be noted that data availability will be necessary to fully run the European City Calculator webtool for each participating city. Thus, the issue of data availability for the participating cities was a core concern during the project development, and it will be described here how this issue is addressed in EUCityCalc. Firstly, the project's pilot cities and local and regional partners have acquired LoS from key local and regional data sources relevant to their territory: e.g. Zdar and Riga from their local district heating companies, or Dijon Metropole from the regional data observatory (Atmo Bourgogne-Franche-Comté, which is also involved in the project as third linked party) and the key electricity company EDF. As concerns the Croatian pilot cities, REA North already conducted several meetings with relevant stakeholders at different governance levels (e.g. the Croatian Bureau of Statistics) in order to ensure which stakeholders can provide the necessary data to the Croatian pilot cities during project implementation. This notwithstanding, the consortium is aware of the risk that even with a good collection of data at city-scale, not all inputs (or calibration data) required to run the European City Calculator webtool might be available. In this regard, the consortium has set forward a concrete hierarchy of data collection and methods to approximate missing data that is further detailed below:

Hierarchy for data collection:

1: City-scale data originating from the participating cities themselves or their trusted sources, such as e.g. the number of private cars registered in Dijon Metropole;

2: City-scale data from existing or past EU-funded projects or, alternatively, peer reviewed scientific literature, as e.g. for residential floor area in Mantova:

Figure 3: Residential floor area in Mantova, acquired from the EU-funded Heat Roadmap Europe project[13]



3: Regional-scale data (as close as possible in scale to the city) from national or European statistical repositories, as e.g. for fuel consumption in cars per habitant in the Lisbon metropolitan area, to which the Portuguese pilot cities belong to:

Figure 4: Fuel consumption in cars per habitant in Lisbon metropolitan area, from Portuguese National Institute of Statistics[14]

Local de residência (NUTS - 2002)	Consumo de combustível automóvel por habitante (tep/ hab.) por Local de residência (NUTS - 2002); Anual (1)
	Período de referência dos dados
	2015
	tep/ hab.
Grande Lisboa	0,4

Consumo de combustível automóvel por habitante (tep/ hab.) por Local de residência (NUTS - 2002); Anual - DGEG, Estatísticas do carvão, petróleo, energia eléctrica e gás natural

Nota(s):

(1) O combustível automóvel inclui o gás auto, a gasolina aditivada, a gasolina sem chumbo 95, a gasolina sem chumbo 98 e o gasóleo rodoviário.

[13] https://heatroadmap.eu/project/

[14]https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_unid_territorial&menuBOUI=13707095&contexto=ut&selTab=tab3

4: National/European-scale data, as e.g. percentage of residential building stock renovated from the H2020 Zebra project.

Figure 5: Percentage of residential building stock renovated, from Horizon 2020 Zebra project[15]

Data availability at city scale: In case data is acquired via hierarchies 1 and 2, no further (or very little) processing is needed. But in case data is available only via hierarchies 3 and 4, then appropriate methods to meaningfully transform data from regional/national scale to the city are required, also understood as **downscaling**. EUCityCalc will explore several approaches in this regard, as for example: statistical downscaling, cluster analysis, correlation analysis or spatial interpolation. These approaches are further detailed below:

Example of statistical downscaling: The EU EDGAR[16] emission database provides spatial explicit data on GHG emissions across major sectors, for example the residential sector. From this database, the pixel overlaying with a project pilot city can be selected, the total m^2 of residential buildings determined. Then, the ratio total m^2 of residential buildings in the pixel to the total m2 of residential buildings in the pilot city is done. Then, the direct proportionality of emissions is assumed, and the time series for the pilot city in question retrieved.
Another potential approach in this regard is to use population numbers to translate regional/national values to the city-level. In this respect, the project will explore the possibility of using the approach in LaunchPad[17] to obtain consistent data on emissions.

Example of correlation analysis: Data of vehicle registration is available at Nuts 2 level from Eurostat. From this, the number of vehicle registrations per capita for Nuts 2 can be derived. Then, the data is correlated with the respective income per capita of each region. The project's pilot cities inform on the average income on their territories, and from this the approximate number of car registrations based on the correlations previously established can be derived.

Example of spatial interpolation: Public transportation shares are only available for large cities around a pilot city. The modal share based on city population densities is thus interpolated, by assuming a direct proportionality and weighted by the project's pilot city distance to the other cities.

A balanced selection of pilot cities reflecting the diversity and challenges faced by European cities
The concept of a European City Calculator requires it to be open enough to appeal to a broad variety of cities, while at the same time being able to be tailored to each city's availability of both data and resources. The 10 EUCityCalc pilot cities, with their widely differing starting points and conditions, reflect the diverse challenges faced by European cities in planning the transition towards climate neutrality, and are thus suited to act as demonstrators, from which valuable lessons and guidance can be derived for the further take-up of the webtool.

The selection of Riga, Mantova, Dijon Metropole, Žďár nad Sázavou, Palmela, Sesimbra, Setúbal, Koprivnica, Varazdin and Virovitica (see Excellence section for description of early engagement and selection process) was further underpinned by the assumption that planning a transition towards climate neutrality will require different

[15] https://zebra2020.eu/
[16] https://data.jrc.ec.europa.eu/dataset/jrc-edgar-jrc-edgarv42_gridmaps/resource/639f80d7-bcb1-4ded-b201-0c74b6abfe3f
[17] https://launchpad.futureproofed.com/en/area/2

priorities, measures and investments, depending on the territorial specificities and context within each city - in terms of stakeholders to engage, climatic conditions to take into account, planning cultures, regulatory frameworks and energy systems.

The pilot cities, being mostly small- to medium-sized cities, also have widely differing challenges to address in their climate-neutral transition, such as decarbonising industry (PAL, SES, SET), renovating historic buildings (Mantova as UNESCO World Heritage city), reducing household consumption (REA), decreasing share of individual private car trips (Zdar, Dijon Metropole) and retrofitting private buildings (KOP, VAR and VIR).

However, the pilot cities also share similarities that will facilitate their peer-to-peer learning, such as difficulties in gathering, centralising and contextualising data, independently developing and updating transition pathways and policy scenarios, and effectively monitoring progress made. Moreover, they are at different stages in their transition, which will enable mutually beneficial experience sharing between the frontrunners and beginners (those supported in the project by local and regional energy agencies and national city network partners). The pilot cities are also united in transiting towards climate neutrality (see their letters of commitment in proposal annex).

Tailored technical and scientific support and guidance for the pilot cities

Planning a transition towards climate neutrality is a complex, multifaceted challenge for the pilot cities that cannot be addressed with a one-size-fits-all solution. Each scenario and pathway comes with its technological, socio-economic, energy and emission implications, as well as different opportunities, costs, externalities and trade-offs for the city and its actors. The rapid pace of changes requires an equally fast reaction to be in tune with the latest science, socio-technical and economic developments. Pilot cities will need to acquire competences on the webtool's model and its interdisciplinary concepts: policy simulation modelling, prospective analysis, social science and humanities of the transition (e.g. behavioural levers), data contextualisation and cross-sectorial design of measures.

PIK & Climact SA, as scientific and technical partners behind the European Calculator, are ideally placed to enrich these competences, thereby ensuring the scientific robustness of their scenarios and pathways towards climate neutrality. Technical rigour is ascertained throughout this process by the experienced practitioners from the local and regional energy agencies (ENA and REA North) and national city network partners (SEMMO), given their strength in data collection (through their energy observatories), policy analysis and methodological discipline.

The expert members of the project advisory board to enrich competences of project partners

The role of the project advisory board is to provide strategic guidance and external insight to the EUCityCalc partners, to anchor the project firmly in the societal, regulatory and policymaking realities that shape cities' planning of their climate-neutral transition. The members of the project advisory board are experts in their field and are well-placed to provide scientifically sound advice and know-how, especially to the pilot cities and the other local and regional partners. They will join 3 project meetings (kick-off, interim and final meeting), and provide their expertise on key tasks within the project (e.g. input to focus group session in **WP6**). The 5 members of the advisory board have confirmed their interest in joining the project through an LoS (see proposal annex):

- **Erica Hope**, Director for Climate Planning and Laws, European Climate Foundation;
- **Matthias Duwe**, Head of Climate, Ecologic Institute;
- **Eddy Deruwe**, Flemish Energy Agency, Coordinator of the LIFE IP BE REEL! project;
- **Dr. Ekki Kreutzberger**, Delft University of Technology, Coordinator of the 2050 CliMobCity project;
- **Prof. Júlia Seixas**, University of Lisbon, Center for Environmental and Sustainability Research;

Expert working groups - foundation of co-creation engagement process in the pilot cities

As cities' administrations are only responsible for a fraction of the GHG emissions on their territory, planning their transition towards climate neutrality must account for their key local stakeholders to be an effective undertaking. EUCityCalc holds the view that for cities to act as conductors of this transition, the direction of travel they set for their stakeholders has to leverage their support, buy-in and trust. Thus, innovative engagement concepts are needed to overcome sectorial silos, bridge departmental divides within city administrations and reach out to stakeholders in a time when large-scale gatherings could remain constrained by the COVID-19 pandemic.

In response, EUCityCalc bases the engagement process of its pilot cities in the co-creation format of small-scale, but targeted expert working groups with key local stakeholders. The expert working groups bring together the public officials from the pilot cities in charge of their SEAPs/SECAPs and related strategic plans with their stakeholders across sectors (e.g. industry, energy suppliers, data observatories, NGOs, academia). In the case of the Croatian, Portuguese and Czech pilot cities, the local and regional energy agencies and national city network partners will support them in chairing their expert working groups. Additionally, depending on the stakeholders present in the pilot cities' expert working groups, further public officials from other relevant departments (e.g. transport, housing) within the pilot cities will join the face-to-face meetings of the expert working group, in particular officials with planning competence. Thus, the composition of the expert working groups will vary depending on the territorial context of each pilot city.

However, the key function of the expert working groups will be the same across pilot cities, consisting in leveraging feedback to co-build their transition pathways and policy scenarios towards climate neutrality. This format will not only foster collaboration and learning between the pilot city and its stakeholders (external dimension), but also between their departments (internal dimension).

Online advocacy training on the multi-level governance framework for climate neutrality

EUCityCalc departs from the perspective that cities are in the driving seat of the EU's transition towards climate neutrality. However, even as empowered and ambitious transition leaders on their territory, cities don't operate in a closed environment, as they are impacted by the decisions taken by higher-tiered governance levels (e.g. national, EU-level) in planning their transition towards climate neutrality.

Adopting a multi-level governance perspective is thus necessary, which considers in particular enabling and constraining national- and EU-level factors (e.g. measures, policies) affecting cities, and the necessity of aligning city, national and EU decarbonisation policies for the transition towards climate neutrality. In the EU, the multi-level governance framework for climate neutrality is strongly determined in the short- and long-term by the Governance Regulation, in particular by its NECPs (short-term, till 2030) and LTS (long-term, till 2050) developed and implemented by Member States, and assessed by the Commission for their compatibility with EU objectives. NECPs and LTS are key planning instruments that affect cities' measures across sectors (e.g. transport, buildings) and thus their decarbonisation trajectories. Hence, the Governance Regulation forms the key policy context for the EUCityCalc pilot cities.

Being able to navigate and understand the Governance Regulation becomes a necessity for the pilot cities as well as for the local and regional energy agencies and national city network partners, in view of influencing its upcoming key milestones, which are the update of the NECPs in 2023/24 and the LTS in 2024/25. The Governance Regulation and these milestones are then the key topic for the online advocacy training provided to the pilot cities to enrich their knowledge and skills in this field. As a result of this training, country-specific policy recommendations will be developed by all local and regional partners for the 6 countries in which the pilot cities are located (LV, IT, FR, HR, CZ, PT). These recommendations will be debated in national roundtable workshops with policymakers and stakeholders, as well as submitted to the consultation processes organized by the 6 countries, to contribute to and inform these countries' update of their NECPs and LTS. CMW and Energy Cities are well positioned to provide the online advocacy training, given their experience and capacity in shaping the Governance Regulation.

Furthermore, the European City Calculator closely links to this training, as it includes multi-level governance in its inputs (each lever will be associated to a governance level), and model results (comparing the ambitions of national and city pathways). Finally, CMW and Energy Cities will establish the project's overall policy recommendations to improve the alignment between city, national and EU policies towards climate neutrality, in particular in the frame of the Governance Regulation.

Active learning as backbone of the training programme of the European City Calculator

As the web-based, open-source and interactive prospective modelling tool of the European City Calculator is a hands-on instrument underpinned by a variety of interdisciplinary technical and scientific concepts (e.g. prospective analysis, simulation modelling, etc.), the design of the EUCityCalc training programme reflects this

notion by basing itself on the principles of active learning. Active learning[18] means that recipients engage in the material they are learning, instead of simply listening to and memorising information they receive from their instructors. Recipients learn more when they actively participate and collaborate in the learning process, be it through e.g. practice, application, discussion and review, then when they are subject to a traditional learning style where they have to merely absorb information presented by the instructor[19].

EUCityCalc thus views active learning as suitable to the purposes of its training programme, which are for European public authorities (cities and local and regional energy agencies) to understand the "big picture" of a transition towards climate neutrality, learn the use of the European City Calculator webtool and adopt a cross-sectorial and territorial approach to decarbonisation. With active learning, they can learn about the model and concepts underlying the webtool, but are not limited to this knowledge, since they can apply it in the webtool itself in a dynamic and interactive manner, with concrete results (i.e. transition pathways and policy scenarios) that can be linked to their planning towards climate neutrality.

b. Overall methodology of the project

The aforementioned concepts will be transposed into the methodological approach of the EUCityCalc project. The methodological approach is divided into the following phases, of which an overview is provided below:

- **Phase 1:** Prepare guidance materials on the European City Calculator prospective modelling framework;
- **Phase 2:** Support the pilot cities in establishing their energy and emissions baseline, through enabling methods and guidance for data collection, processing and standardisation;
- **Phase 3:** Tailor the European City Calculator to the pilot cities' territorial specificities and context underpinning their climate-neutral transition, through the adoption of an iterative co-definition process;
- **Phase 4:** Implement the co-creation process of transition pathways and policy scenarios towards climate neutrality by using the webtool with key local stakeholders in the pilot cities, through a sequential approach to co-creation in expert working groups and local communication campaigns;
- **Phase 5:** Take stock of the application process of the European City Calculator in the pilot cities and anchor lessons learnt in the training programme on the webtool for European cities and public authorities;
- **Phase 6:** Leverage the developed pathways and scenarios in the pilot cities in shaping the Governance Regulation as key multi-level governance framework for climate neutrality, through hands-on online advocacy trainings, a capacity-building toolkit and consolidated policy recommendations;
- **Phase 7:** Engage other European cities and public authorities to plan a climate-neutral transition with the webtool, through communication and dissemination visualising the language of modelling;

Phase 1: Preparing guidance materials on the European City Calculator prospective modelling framework

Here, the project will prepare the following guidance materials on the webtool's underlying model and concepts:

A guide to adopting a prospective modelling approach on the city level: An integrated modelling approach has to be adopted in order to effectively exploit the concepts underpinning the prospective modelling approach of the European City Calculator. Such an integrated approach is already widely used at the national, regional and EU levels[20], thereby allowing for iterative target setting and revision between policy makers, planners and researchers. The uptake of similar integrated approaches by cities has been rare[21], with cities often relying on more detailed, consulting-based studies. However, this approach is ill-suited for cities, as they have to update their planning flexibly to match fast-paced developments and ever-changing needs.

[18] https://teachingcommons.stanford.edu/resources/learning-resources/promoting-active-learning

[19] Grunert, J (1997), The course syllabus: A learning-centered approach, Bolton, MA: Anker Publishing Co, Inc.

[20] Lopion, P et al. 2018. A review of current challenges and trends in energy systems modeling. *Renewable and sustainable energy reviews*, *96*, 156-166.

[21] Chalendar, J. A. et al. (2019). City-scale decarbonisation experiments with integrated energy systems. *Energy & Environmental Science*, *12*(5), 1695-1707.

Hence, EUCityCalc will develop a guide to adopt its prospective modelling approach on the city level. It will identify overarching categorisations of challenges faced by cities from literature review[22] and derive recommendations to overcome them. For the Czech, Croatian and Portuguese pilot cities, SEMMO, REA North and ENA will be involved in this identification process **(WP2)**.

Guidelines to insert city information, knowledge and vision into the webtool's model: To enact the adoption of the webtool's prospective modelling approach, EUCityCalc will equip the 10 pilot cities, ENA, SEMMO and REA North with guidelines to leverage existing information, knowledge and vision into the webtool's model (**WP2**). The first phase is critical for pilot cities before using the webtool to develop their pathways and scenarios, as it builds their knowledge about the model and its concepts. It is also key for SEMMO, ENA and REA North, as they will accompany the webtool' application process by the Czech, Portuguese and Croatian pilot cities, and design and deliver the project's training programme on the European City Calculator webtool **(WP5)**.

Objective 1: Enable cities to integrate their vision and data on the sectors (e.g. buildings, transport, etc.) on their territory in the prospective modelling framework of the European City Calculator to design transition pathways and policy scenarios towards climate neutrality.

Phase 2: Supporting the pilot cities in establishing their energy and emissions baseline through the webtool

This phase will support the pilot cities in establishing their energy and emission baseline for the webtool. Firstly, the available data of the pilot cities, ENA, REA North and SEMMO will be identified, including on Scope 1-3 emissions and air quality. Based on this analysis, a template with data gathering priorities will be established. Secondly, the methods and sources will be defined to collect and process data that is currently not available. The methods employed will aim at setting up a protocol to automatically fill missing data, such as through downscaling and refining data from higher governance levels - building on data from the European Calculator -, or leveraging it from cities similar to the pilot cities **(WP2-3)**. Thirdly, pilot cities, ENA, REA North and SEMMO will benefit from regular interactions and coaching from PIK and Climact SA in regard to data collected. Fourthly, developed guidelines for data standardisation and harmonisation will facilitate data insertion into the pilot cities' baseline **(WP2-3).** Based on the EUCityCalc's local and regional partner's experiences with the data approach, as well as the interactions of participating public authorities in the training programme with this approach, a handbook on its emission calculation methodology will be developed. The handbook will outline how cities can use the webtool to comply with the SEAPs/SECAPs requirements of the Covenant of Mayors (especially its baseline emission inventory), and also how it can be used to fulfill the GHG balance criteria of the European Energy Award. **(WP5)**.

Objective 1: Enable cities to integrate their vision and data on the sectors (e.g. buildings, transport, etc.) on their territory in the prospective modelling framework of the European City Calculator to design transition pathways and policy scenarios towards climate neutrality.
Objective 3: Enable cities to use the European City Calculator's emission calculation processes in the framework of key urban initiatives such as the Covenant of Mayors and the European Energy Award.

Phase 3: Tailoring the webtool's features and interface to the pilot cities' territorial specificities and context

The approach taken here follows three processes: to tailor the webtool's features and interface to the territorial specificities and context underpinning the pilot cities' climate neutral-transition; to train the pilot cities in using the webtool to implement the co-creation process of their pathways and scenarios towards climate neutrality with their key local stakeholders; and to also train ENA, REA North and SEMMO in the webtool's use, for supporting the co-creation process of the Czech, Portuguese and Croatian pilot cities, and the design and delivery of the training programme **(WP3-5)**. A highly collaborative, iterative co-definition process, consisting of several feedback sessions and a survey, will be adopted to ensure that the transition from the European Calculator to the European City Calculator meets cities' needs. This will consist in several refinements and additions to the webtool:

[22] Lim, C. et al. (2018). Smart cities with big data: Reference models, challenges, and considerations. *Cities*, *82*, 86-99.

- Co-determine the ambition levers pertinent to city-level modelling;
- Connect the levers to governance levels and corresponding policies at these levels, by highlighting the impact that city-level policies can have, not only on their territory but also on higher governance levels;
- Co-specify the indicators and sectors that require more detailed modelling, and flexibly adapt the graphs included in the webtool based on pilot cities' inputs;
- Introduce comparison of scenarios, across cities and between cities and countries/EU-level, to enable the pilot cities to benchmark between themselves, with other cities and their countries/EU-level;

This process will conclude in creating an operational version of the European City Calculator webtool, on which the pilot cities, ENA, REA North and SEMMO will be trained by PIK & Climact SA through 1 face-to-face demonstration session. The webtool will be translated into the pilot cities' 6 national languages to facilitate use by local and regional partners **(WP3)**. The approach to connect the levers with governance levels and policies **(WP2)** will further inform the project's training programme **(WP5)** and its overall policy recommendations **(WP6)**.

Objective 1: Enable cities to integrate their vision and data on the sectors (e.g. buildings, transport, etc.) on their territory in the prospective modelling framework of the European City Calculator to design transition pathways and policy scenarios towards climate neutrality.
Objective 2: Explore the opportunities, barriers and trade-offs associated with cities' pathways and scenarios to climate neutrality, and enable them to assess the concrete impact of policy choices on their territories.

Phase 4: Implementing the co-creation process of transition pathways and policy scenarios towards climate neutrality with key local stakeholders in the pilot cities

With the webtool in an operational status, the co-creation process of pathways and scenarios towards climate neutrality will be implemented in the pilot cities. This will be done through **5 face-to-face meetings with key local stakeholders in the expert working groups**. Although the composition of these groups will differ among pilot cities, their co-creation process will be comparable, consisting in the following sequential co-creation process:

- **1 Introductory meeting of expert working group** with presentation of the webtool (month 18)
- **1 Workshop on the technical assumptions** (e.g. how far can be renovated) **for each sector** (month 20)
- **1 Workshop on scenario analysis and trade-offs across sectors** (e.g. is it cheaper to focus on renewables or building insulation, and is it easier to focus on technology vs. behavioural change) (month 22)
- **1 Co-creation session to build and refine pathways and scenarios**, with the objective to reach an agreement on pathway and scenario to adopt that is in line with 2050 EU targets (month 24)
- **1 Final meeting to define responsibilities for all members to put adopted pathway and scenario into action, including establishment of a binding MoU**, and taking stock of the process (month 26)

Following the meetings, the **10 pilot cities will then insert the adopted pathway and scenario as politically binding planning instruments** into the development and update of their SEAPs/SECAPs and related strategic plans, by using insertion guidelines developed by ENA, REA North, SEMMO, Energy Cities, PIK, Climact SA & CMW **(WP4)**. The Portuguese, Croatian and Czech pilot cities will be accompanied throughout this process by ENA, REA North and SEMMO. Tailor-made toolkits will be provided by CMW and Energy Cities to run local communication campaigns in the pilot cities for engaging stakeholders **(WP7)**. The main outputs (i.e. pathways and scenarios feeding into SEAPs/SECAPs and related strategic plans) will serve as basis for the online advocacy training on the Governance Regulation, and the stakeholder members of the expert working groups will also contribute to the assessment of enabling/constraining factors at national/EU-level in the pilot cities' climate-neutral transition **(WP6).**

Objective 4: Co-create policy scenarios and transition pathways towards climate neutrality in the pilot cities by engaging key local stakeholders with the European City Calculator webtool.

Phase 5: Taking stock of the application process of the European City Calculator in the pilot cities and anchoring the lessons learnt in the approach of the training programme on the webtool

3 peer-to-peer learning exchanges will be organised for the pilot cities, to share their experiences and discuss their challenges in using the webtool. These exchanges will be facilitated by Energy Cities, to foster a common understanding and shared vision of planning a climate-neutral transition through the webtool. The exchanges will result in lessons learnt, that will be anchored into the approach of the training programme on the webtool for other European cities and public authorities (e.g. local and regional energy agencies). **The training programme will**

consist of 2 face-to-face and 3 online trainings, and will employ the principles of active learning. **The approach of the training programme will be implemented in the same manner in the pilot cities' 6 countries (in their national languages) and at EU-level (in English)**. The sequential learning process will include these training modules:

- **1 face-to-face problem framing workshop** on the "big picture" of the climate-neutral transition, the challenges faced by cities in planning it, and how adopting a prospective modelling approach can help address it. This workshop will be held in month 27 in the pilot cities' six countries, and in month 30 at EU-level, back-to-back with the project meeting in Brussels;
- **1 online webinar** with interactive break-out sessions on how to establish the energy and emissions baseline within the webtool, with participants peer reviewing each other's work. This webinar will be held in month 27 in the pilot cities' six countries, and in month 30 at EU-level;
- **1 online webinar** with interactive break-out sessions on the webtool's levers approach, including role-playing simulations and virtual whiteboards where participants interpret levers from the perspective of their key actors. This webinar will be held in month 28 in the pilot cities' countries and in month 30 at EU-level;
- **1 face-to-face demonstration session** for participants to apply the webtool in developing their transition pathways and supporting the creation of policy scenarios towards climate neutrality. This session will be held in month 29 in the pilot cities' countries and in month 33 at EU-level;
- **1 final online webinar** to take stock of participants' experience with the webtool and outline possibilities to integrate developed pathways and scenarios into their key plans, in co-creation with their stakeholders. This webinar will be held in month 29 in the pilot cities' countries and in month 33 at EU-level;

REA North, ENA and SEMMO will design the training programme with support from the pilot cities, Energy Cities, PIK, Climact SA and CMW. All project partners will be involved in running the programme at national and EU-level (see workplan for detailed division of work among partners). To enable a high level of uptake and replication, the programme will target similar cities and public authorities to the project's local and regional partners **(WP5)** (see Impact section for exact number of cities and public authorities targeted per pilot city' country and at EU-level). Findings from the problem-framing workshops of the programme at national and EU-level will feed into updating the report on national/EU-level enablers and barriers to cities' climate neutral transition **(WP6).** The programme will further be made available to additional cities and public authorities after the project (see Exploitation section).

Objective 5: Based on the lessons learnt and skills acquired in the pilot cities in applying the European City Calculator, train other European cities and public authorities (e.g. local and regional energy agencies) in the use of the webtool for planning their own transition towards climate neutrality.

Phase 6: Leveraging the pathways and scenarios developed in the pilot cities in shaping the Governance Regulation as key multi-level governance framework for climate neutrality

In this phase, the approach taken is to feed the learnings and outputs (the adopted transition pathways and policy scenarios informing their SEAPs/SECAPs and related strategic plans) from the co-creation process in the pilot cities **(WP4)** and the approach to connect levers to governance levels and policies **(WP3)** into the Governance Regulation as key multi-level governance framework for climate neutrality. This will be done at the necessary levels of the framework, by developing country-specific recommendations targeted at the 6 countries of the pilot cities for the update of their NECPs/LTS. It will be also done through drafting overall policy recommendations to improve the alignment between city, national and EU policies towards climate neutrality. CMW and Energy Cities will establish these overall recommendations, and support the pilot cities, ENA, REA North and SEMMO by:

- **Helping them identify enabling and constraining national and EU-level factors** in their climate-neutral transition, through 1 focus group session and a survey with members of pilot cities' expert working groups;
- **3 online advocacy training sessions** (in English), which will have the following structure and sequence:
    - **1 session (**in month 26**) to build their knowledge of the Governance Regulation** and their capacity to engage in the design and delivery of NECPs and LTS. This session will also link to related initiatives under the EU Green Deal that are key to the Governance Regulation, such as e.g. the Climate Law;
    - **1 session** (in month 28) **to support them in identifying linkages between the pilot cities' SEAPs/SECAPs and the NECPs/LTS of their country**, and enable them to use the adopted

pathways and scenarios to match with the relevant dimensions in their countries' NECP and LTS. PIK & Climact SA will contribute to this session with guidance to local and regional partners, based on their experience in working with Member States on their NECPs through the European Calculator;
    - **1 session (**in month 30**) to help formulate country-specific recommendations to address national barriers through the updated NECPs/LTS**. REA North (for HR), ENA (for PT) and SEMMO (for CZ) will support the Croatian and Portuguese pilot cities and Zdar in formulating these recommendations;
- Providing them with a **capacity-building toolkit highlighting the Governance regulation processes**;
- **Supporting the organization of 6 face-to-face national roundtable workshops in the pilot cities' 6 countries** (one per country), where the pilot cities' adopted pathways and scenarios informing their SEAPs/SECAPs and related strategic plans, and their country-specific recommendations for the updated NECPs and LTS will be discussed with policymakers and stakeholders from the expert working groups. The submission of the country-specific recommendations to the consultation processes in the pilot cities' 6 countries will also be supported by CMW and Energy Cities in this regard **(WP6)**.

Objective 7: Strengthen the pilot cities' role in the multi-level governance framework of their transition towards climate neutrality, by enabling them to feed into the update of their countries' NECPs and LTS as part of the EU Energy Union Governance and Climate Action Regulation.

Phase 7: Engaging other European cities and public authorities in planning towards climate neutrality using the webtool's prospective modelling approach

This phase will employ innovative and tailored communication and dissemination activities, to promote the European City Calculator and its prospective modelling approach as a powerful communication, capacity-building and policy outlet for other European cities and public authorities (e.g. local and regional energy agencies) to launch a planning process towards climate neutrality with their stakeholders. These activities will deliver the project's methodological tools, guidelines, handbooks, reports and policy recommendations to its target audiences to maximise uptake and exploitation of results. This will be done in particular by leveraging Energy Cities' network and its involvement in the Covenant of Mayors initiative (which currently has +10,000 signatories) as co-leader of its European secretariat, as well as through the various memberships of the project's local and regional partners in multipliers (i.e. associations of cities or energy agencies). To ensure high quality dissemination and exploitation of outputs, attractive multimedia tools will further be used to translate prospective modelling into a language that those impacted by it can understand and apply. The main activities will include (more details in section 2.2):

- Establishing and maintaining the project's communication tools;
- Disseminating the project outcomes through national and EU events, stakeholders, initiatives and media;
- Multimedia tools in the form of videos, infographics and podcasts
- A European narrative around "Prospective modelling for the climate-neutral transition in cities"

Objective 6: Target other European cities and public authorities (e.g. local and regional energy agencies) through an EU-wide communication campaign to disseminate EUCityCalc findings and encourage them to take up the webtool's prospective modelling approach in their planning towards climate neutrality.

c. Key characteristics of the pilot cities

The 10 pilot cities represent a geographically balanced set of cities, with different starting points, conditions and challenges to consider in planning their transition towards climate neutrality, as outlined earlier. This makes them suited to demonstrate to more cities and public authorities the feasibility to plan such a transition through the prospective modelling approach of the European City Calculator.

Here, the key characteristics of the pilot cities Riga, Mantova, Dijon Metropole, Žďár nad Sázavou, Palmela, Sesimbra, Setúbal, Koprivnica, Varazdin and Virovitica will be outlined, which will include their political objectives, their main emission/energy sources and critical sectors to tackle in planning their climate-neutral transition, what they seek to learn from the project, and how project results will feed into their key planning documents.

Riga

Riga was the first European capital city to sign the Covenant of Mayors in 2008. Currently, Riga is upgrading its SEAP to a SECAP, with the aim to achieve a GHG emission reduction of 40% by 2030. The Latvian pilot city's vision is to reach climate neutrality in 2050, by cutting its GHG emissions by 95%. Its main emission/energy sources are households (36% of final consumption), the service sector (25%), motor vehicle transport (24%) and industry (15%). Riga has identified these sectors as critical in planning its transition towards climate neutrality - for example, a key challenge is the renovation of 6000 multi-apartment buildings in the city. Through its involvement in EUCityCalc, Riga seeks to learn new tools and methods for data gathering and analytics, as well as how to better engage NGOs in the SECAP implementation process. Riga plans to feed project results into updating its SECAP with specific metrics and forecasts for a 2050 vision towards climate neutrality.

Mantova

Mantova, a renowned UNESCO World Heritage city in Italy, renewed in 2019 its commitment to the Covenant of Mayors, with the aim to reach 40% GHG emission reduction compared to a 2005 baseline. The main emission/energy sources identified concern tertiary buildings (32% of emissions), residential buildings (29%), the productive sector (27%) and the transport sector (11%). Mantova has identified the renovation of its historic buildings as its most critical sector to tackle in planning its climate-neutral transition. Through its involvement in EUCityCalc, Mantova seeks to develop its capacity to independently monitor its SECAP and related plans, and learn about new ways to effectively communicate and disseminate climate-related issues to its local stakeholders. Mantova plans to feed project results into updating its SECAP, as well as in supporting the update of its city plan.

Dijon Metropole

Dijon Metropole, the regional capital of the Burgundy-Franche-Comté region, renewed its Covenant of Mayors commitment in 2019, with the aim to cut GHG emissions by 40% by 2030. It also adopted new energy and climate objectives in 2019, including the goal to move towards climate neutrality by 2050 by reducing GHG emissions by 95%. The French pilot city's main emission/energy sources are its buildings and transport sectors. Private transport has been identified as the most critical sector in reaching climate neutrality, in particular as concerns decreasing the share of individual private car trips. Through EUCityCalc, Dijon Metropole seeks to create a centralised data platform, as well as acquire new methods in engaging local stakeholders, in particular NGOs. It also plans to use project results to inform the update of its PCAET (Territorial climate, air and energy plan), which is a requirement that Dijon Metropole has to comply with under the French Energy Transition Law.

Žďár nad Sázavou

Žďár nad Sázavou, a small town in the Bohemian-Moravian highland in Czechia, is currently preparing its Covenant SECAP, with the GHG emission reduction goal of -40% by 2030. Žďár nad Sázavou has not yet established its GHG emission reduction objective for 2050, but has already identified its main emission/energy sources and critical sectors that would need to be addressed in planning a transition towards climate neutrality. Its largest emission source is the machinery factory Žďas, which is included in the EU ETS, however, Žďár has also other emission-intensive factories that are not part of the EU ETS. Žďár's critical sectors to be tackled alongside its local industry, concern especially the transport sector (individual private car trips). The Czech pilot city aims to learn through EUCityCalc how to conduct a comprehensive review of GHG sources, and how to tackle them in its long-term development. It seeks to feed project results into the update of its SECAP, and into the development of a new transition roadmap that will be incorporated in its 2028-2050 development strategy.

Palmela

Palmela, a medium-sized town in the Lisbon metropolitan area, joined the Covenant of Mayors already in 2009. This Portuguese pilot city is currently adapting its 2030 objectives to match a 2050 vision for climate neutrality, which would result in -45 to -55% GHG emission cuts by 2030, and -85 to -90% GHG emission cuts by 2050, both compared to a 2005 baseline. Its main emission/energy sources are industry (VW plant on its territory) and transport, followed by residential buildings. These are its critical sectors to tackle to plan towards climate neutrality by 2050. Through its indirect involvement in EUCityCalc (via ENA), Palmela aims to learn about new methods to better collect and systematise data, and will feed project results into its SECAP update.

Sesimbra

Sesimbra, another medium-sized town in the Lisbon metropolitan area, joined the Covenant of Mayors in 2019. Sesimbra is also in the process of adapting its 2030 objectives to match a 2050 vision for climate neutrality, which would result in -45 to -55% GHG emission cuts by 2030, and -85 to -90% GHG emission reduction by 2050, compared to a 2005 baseline. Its main emission/energy sources are transport, residential buildings and industry,

which are its critical sectors to address to plan towards climate neutrality by 2050. Through its indirect involvement in EUCityCalc (via ENA), Sesimbra also seeks to learn about new methods to better collect and systematise data, and will also feed project results into its SECAP update.

Setúbal

Setúbal, like Palmela and Sesimbra a medium-sized town in the Lisbon metropolitan area, renewed its Covenant commitment already in 2016. Setúbal is also currently adapting its 2030 objectives to match a 2050 vision for climate neutrality, to cut by -45 to -55% its GHG emission by 2030, and by -85 to -90% by 2050, both compared to a 2005 baseline. Its main emission/energy sources are transport, residential buildings and industry (Paper Pulp plant on its territory). As in Palmela and Sesimbra, these are Setúbal's critical sectors to tackle to plan towards climate neutrality. Through its indirect involvement in EUCityCalc (via ENA), Setúbal aims to learn about new methods to better collect and systematise data, and will feed project results into the update of its SECAP.

Koprivnica

Koprivnica, a medium-sized town and political and economic center of Northern Croatia counties, renewed its Covenant commitment in 2019. This Croatian pilot city is currently in the process of adopting its SECAP, with the objective of reducing emissions by 40% by 2030, and by 80% by 2050. Koprivnica's main emission/energy sources are buildings, industry and transport. The retrofitting of private buildings has been identified as a critical sector, to be fully on track in moving towards climate neutrality. Through its indirect involvement in EUCityCalc (via REA North), Koprivnica aims to learn about new data gathering methods, as well as receive guidance on how to engage stakeholders with the webtool. It will feed project results into its SECAP update.

Varazdin

Varazdin, another medium-sized town and political and economic center of Northern Croatia counties, is currently preparing the renewal of its Covenant commitment. Varazdin is also in the process of adopting its SECAP, with the objective of reducing emissions by 40% by 2030, and by 80% by 2050. Its main emission/energy sources are buildings, industry and transport, with also the retrofitting of private buildings identified as a critical sector to move towards climate neutrality. Through its indirect involvement in EUCityCalc (via REA North), this Croatian pilot city aims to learn about new data gathering methods, as well as receive guidance on how to engage stakeholders with the webtool. It will also feed project results into its SECAP update.

Virovitica

Virovitica, like Koprivnica and Varazdin a political and economic hub of Northern Croatia counties, renewed its Covenant commitment in 2020. This Croatian pilot city is also currently in the process of adopting its SECAP, with the objective of reducing emissions by 40% by 2030, and by 80% by 2050. Its main emission/energy sources are also buildings, industry and transport, with the retrofitting of private buildings similarly identified as a critical sector in staying on track towards climate neutrality. Through its indirect involvement in EUCityCalc (via REA North), Virovitica also aims to learn about new data gathering methods, as well as receive guidance on how to engage stakeholders with the webtool. It will also feed project results into its SECAP update.

d. Related EU projects & how EUCityCalc can build on and interact with them

EUCityCalc leverages the key outcome of the EUCalc project, the model of the European Calculator webtool, for its European City Calculator webtool. The project's webtool builds on the methods (e.g. levers) and previous calculations and data gathering done for the European Calculator, e.g. data modelled at national and EU-level. EUCityCalc will leverage these inputs from EUCalc into **WP2** and **WP3**, and also the experiences of EUCalc town hall events for **WP4** and **WP5**. EUCityCalc will also create synergies with the following EU-funded projects:

Table 8: Overview of relevant EU-funded projects and how EUCityCalc can build on and interact with them:

Name of EU-funded project	Main focus	Relevance to EUCityCalc
LIFE PlanUp (CMW, Energy Cities, Climact SA), until 07/2021	Governance Regulation, NECPs, SEAPs/SECAPs	Project results and good practices will be shared at EUCityCalc kick-off meeting
LIFE UNIFY, until 08/2022	Governance Regulation, NECPs, LTS, SEAPs/SECAPs	Project results will feed into the capacity-building approach for **WP6**
INTERREG Europe	Climate mitigation in the field of	Use synergies for **WP2** & **WP3** in

2050 CliMobCity, until 07/2023 (PIK)	urban mobility	particular on data gathering, tailoring to city specificities and output selection; the coordinator of the CliMobCity project is further part of the EUCityCalc advisory board, to provide strategic guidance and external insight in particular on the available decarbonisation options to plan towards climate neutrality in the transport sector of the project's pilot cities
Horizon 2020 TOMORROW (Energy Cities), until 08/2022	Empower cities to develop 2050 transition roadmaps with citizens	Its community of practice to be invited to join **WP5** training programme
Horizon 2020 C-Track 50 (REA North), until 02/2021	Putting regions on track for carbon neutrality by 2050	Project results will be fed by REA North & Croatian pilot cities into **WP4-6**
Horizon 2020 RESPONSE (Smart City Project) (Dijon Metropole), until mid-2025	Roll-out of positive energy neighbourhoods in cities	Dijon Metropole as lighthouse city can use synergies especially for data collection (**WP2 & WP3**) & stakeholder engagement (**WP4**)
Horizon 2020 Urban GreenUP (Mantova), until 05/2022	Renaturing urban plans through nature-based solutions	Project results can feed into European City Calculator approach to land-use in urban areas in **WP 2 & WP3**
Horizon 2020 ATELIER (Smart City project) (REA), until 10/2024	Create and replicate positive energy districts within cities through broad citizen involvement	REA as follower city in this project can use the experience gathered to establish synergies for the co-creation engagement process in **WP4**
Horizon 2020 CoME EASY (Energy Cities was in the project's advisory board), until 04/2021	Linking European Energy Award to Covenant of Mayors	The CoME EASY project, in which Energy Cities was part of the advisory board, is expected to already have ended once EUCityCalc would begin its implementation. Nevertheless, the project results from CoME EASY can be relevant for the project, specifically the materials that CoME EASY developed during its duration to synchronise the European Energy Award's certification instruments (e.g. on benchmarking, facilitators or calculation) to the Covenant of Mayors. EUCityCalc's handbook on the emission calculation methodology of the European City Calculator webtool targets both the European Energy Award and the Covenant of Mayors, by including guidance on how the webtool can be used to fulfill the GHG balance criteria of the European Energy Award and Covenant's SEAPs/SECAPs criteria

		(especially the baseline emission inventory).Thus, it is in the interest of the project to understand the level of advancement that CoME EASY was able to reach in better linking the European Energy Award with the Covenant of Mayors through its abovementioned synchronization efforts, and to what extent EUCityCalc can build on these efforts done through its handbook, to ensure its usefulness for both these initiatives. Subsequently, as part of Task 5.4, Energy Cities will explore possibilities to capitalize on the aforementioned CoME EASY's project results through meetings with the European Energy Award coordination contact, to ascertain how they can feed into the handbook **(WP5)**
Horizon 2020 STARDUST (Smart City project) (SEMMO), until 07/2022	Create and replicate positive energy districts and complex approach in sustainable energy	As SEMMO supports a follower city in this project, it can use this experience to establish synergies for the co-creation engagement process in **WP4**
Horizon 2020 SCORE (SEMMO), until 03/2021	Create and replicate consumer co-ownership in renewables	Participation process in community projects from this project will feed into co-creation engagement process in **WP4**
URBACT Zero Carbon Cities (Energy Cities), until 08/2022	Capacity-building of cities to develop science-based carbon reduction targets & carbon budgets	Guidance and lessons learnt on effective co-creation process from this project will be shared at the EUCityCalc project meeting in month 12

e. Gender dimension

Levers portraying key behaviour choices that will be carried over from the European Calculator model, as e.g. travel distance and diets, already account for gender aspects – e.g. young men travel on average more for work and study using private transport, while women travel mostly for access to services and child care using public transport. Regarding diets, the calorie requirements also scale with age (due to pregnancy and body size) and sex (due to activity levels). Research points also for differences in gender metabolism to influence room temperature in buildings. All this will be discussed in tailoring the levers for the European City Calculator webtool under **WP3,** and may be expanded if deemed paramount for the pilot cities' pathways and scenarios towards climate neutrality. Furthermore, the research team implementing EUCityCalc will strive for a balance between women and men.

2. Impact

2.1 Expected impacts

EUCityCalc will have both direct and triggered impacts. Its direct impacts, which concern in particular capacity-building and shaping policies, are expected during the project as well as shortly thereafter, keeping in mind that even when a policy is in place, it takes time for it to show its effect. The direct impacts are the number of public authorities and public officials with improved capacities and skills in delivering the energy transition, the number of policies and strategies created or influenced by the project, and the number of local stakeholders engaged in co-creating transition pathways and policy scenarios towards climate neutrality. Those impacts are then expected to trigger investments in sustainable energy (compared to a 2020 baseline), net GHG emission reduction (compared to a 1990 baseline), reduction of final energy demand (also compared to a 1990 baseline) and alleviation of air pollution (compared to a 2005 baseline). The triggered impacts are expected to occur after the project has ended,

but this will also depend on how much and how fast the multi-level governance framework for cities' climate-neutral transition (the Governance Regulation in particular) will change in a favorable manner. The below table shows how EUCityCalc actions will contribute to the expected direct impacts:

Table 9: Direct impacts of EUCityCalc

Expected impact	**Project Performance Indicator**	**Measurement unit**	**Quantified target**	**Contribution of project outputs**
Public authorities and officials with improved skills and capacities	Staff in pilot cities & local & regional energy agencies involved throughout project acquire long-lasting and transferrable ability to independently develop & update cross-sectorial and territorial transition pathways & policy scenarios towards climate neutrality, through the adoption of the prospective modelling approach of the European City Calculator webtool; Staff from similar cities to pilot cities, as well as from similar local and regional energy agencies at national and EU-level, through participation in training programme, acquire substantial ability to independently develop & update cross-sectorial and territorial transition pathways & policy scenarios towards climate neutrality through prospective modelling approach of the European City Calculator webtool;	**Number of public authorities** **Number of public officials**	**<u>In total:</u> 317 officials from 147 authorities with improved skills & capacities, as follows:** <u>During project:</u> **20 officials from 6 authorities as direct project partners:** (REA 3, Dijon Metropole 3, Mantova 3, Zdar 2, ENA 6, REA North 3); **12 officials from 6 authorities indirectly involved** via ENA & REA North: (PAL, SES, SET, KOP, VAR, VIR each 2) **165 officials from 75 authorities** (2 officials / authority joining the training programme), from the pilot cities' 6 countries & at EU-level: 30 officials from 15 cities/agencies in CZ: several cities/agencies already provided an LoS; 30 officials from 15 authorities in PT (cities & agencies): several identified cities/agencies already provided an LoS; 30 officials from 15 authorities in HR (cities & agencies): several identified cities/agencies already provided an LoS; 30 officials from 15 cities/agencies in LV, IT, FR (5/country): several identified cities/agencies already provided an LoS;	<u>During project</u> Capacity building activities and materials such as e.g. guidelines for data standardisation & harmonisation, the report on relation between levers and governance levels & policies, webtool demonstrations, emission calculation method handbook, training programme, online advocacy trainings; <u>5 years after project</u> The EUCityCalc dissemination materials (e.g. the multimedia tools, the European narrative on prospective modelling in cities) and the project information and results, will cause the number of European cities and local and regional energy agencies motivated to take up the European City Calculator webtool to grow, thereby contributing to their improvement of capacities and skills; the training programme will be further made available to interested cities, local and regional

			30 officials from 15 public authorities at EU-level (cities & agencies): several identified cities/agencies have already provided an LoS; 5 years after project **120 officials from 60 authorities** joining the training programme	energy agencies after the project has ended (see in detail in exploitation section);
Policies and strategies created or influenced	The pathways and scenarios towards climate neutrality in each pilot city feed into their SEAPs/SECAPs and related strategic plans, increasing their ambition both in the short- (2030) and long-term (2050), to cut net GHG emissions, reduce final energy demand, alleviate air pollution and trigger investments in sustainable energy; The pathways and scenarios towards climate neutrality in the public authorities that joined the training programme similarly feed in their SEAPs/SECAPs and related strategic plans, to increase their short- and long-term ambition to cut net GHG emissions, reduce final energy demand, alleviate air pollution and trigger investments in sustainable energy; The country-specific policy recommendations drawn up for the pilot cities' 6 countries are submitted to the consultation processes for the update of the NECPs & LTS, and presented to policymakers in the national roundtable workshops, thereby constituting the pilot cities' key contribution to informing the NECPs & LTS update; furthermore, the project's overall policy recommendations influence the Governance Regulation;	**Number of created or influenced policies and strategies**	**In total: 100 policies and strategies created or influenced, as follows:** During project 10 SEAPs/SECAPs are updated in the pilot cities, and also 3 related strategic plans are developed or updated in Zdar, Mantova & Dijon Metropole; The country-specific recommendations are submitted and presented as part of the consultation processes to contribute to and inform the update of 6 NECPs and 6 LTS in the EU-countries PT, HR, FR, LV, IT and CZ – several national authorities have also provided an LoS; 5 years after project 75 SECAPs updated in the European public authorities that had joined the training programme during the project's lifetime;	During project Capacity building activities such as e.g. the online advocacy trainings, the toolkit on the Governance Regulation; guidelines to insert pathways and scenarios into SEAPS/SECAPs and related strategic plans, report on the national / EU-level enablers & barriers to the pilot cities' climate-neutral transition; advocacy activities such as the national roundtable workshops with policymakers, the EU-level events, the country-specific recommendations and overall policy recommendations; 5 years after project the overall policy recommendations, guidelines to insert pathways and scenarios into SEAPS/SECAPs, the online advocacy trainings recordings;

Local stakeholders engaged in the co-creation process	Local stakeholders are involved in the co-creation engagement process of the expert working groups to develop and adopt pathways and scenarios towards climate neutrality in the project's pilot cities; The cities and public authorities that joined the training programme during the project also take up this co-creation approach adopted by the pilot cities, and similarly involve their local stakeholders;	**Number of local stakeholders engaged**	**In total: 950 local stakeholders engaged, as follows :** During project 200 local stakeholders are involved in the 10 pilot cities, as on average 20 local stakeholders are involved in each of their expert working groups; 5 years after project 750 local stakeholders involved in 75 more cities and authorities, as they involve on average 10 local stakeholders;	During project The mapping of key local stakeholders in pilot cities and the communication & dissemination products as e.g. the local communication campaign toolkits; 5 years after project The developed local communication campaign toolkits, report on co-creation process in the project's pilot cities;

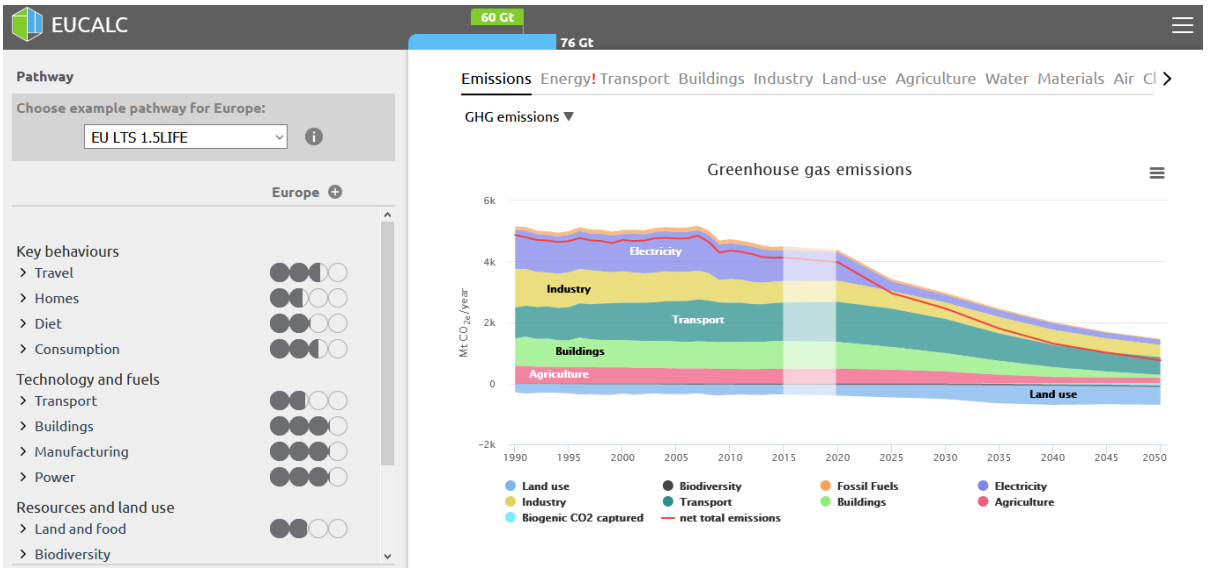
Methodology for estimation of triggered impacts

EUCityCalc views cities' transition towards climate neutrality in both a short-term (2030) and long-term (2050) perspective. As the project will support cities as its key target group to permanently build their capacities in independently developing and updating their transition pathways and policy scenarios, it will trigger significant impacts beyond its duration. This is also to account for the policy time lag, before enhanced planning processes and changes to the multi-level governance framework start to affect investments in sustainable energy, net GHG emission reduction, reduction of final energy demand and alleviation of air pollution. Thus, it uses 2030 and 2050 to estimate its triggered impacts in its calculation methodology, with the following assumptions:

- EUCityCalc takes as starting point the assumptions underlying the 1.5 degrees LIFE scenario (see figure below) of the Commission's 2050 vision for a climate-neutral EU[23]. It considers this scenario as key benchmark for cities' transition towards climate neutrality in line with the 2050 European targets.
- The standard 1.5 degrees LIFE scenario is already inserted into the Transition Pathway Explorer of the European Calculator webtool at EU-level and for all Member States. It shows the projections for the project's triggered impacts from a 1990 (for net GHG emission reduction and reduction of final energy demand), 2005 baseline (for alleviation of air pollution) and 2020 baseline (for investments in sustainable energy). As concerns e.g. the forecasted reduction of final energy demand in 2050 compared to a 1990 baseline, it shows in this scenario at EU-level a projected reduction in final energy demand by more than 50%.
- As a key aim of EUCityCalc is to support cities' transition towards climate neutrality and raise their ambition in 2030 and 2050, the calculations outlined here will illustrate how the project supports cities to increase these forecasted reductions in final energy demand in these timeframes.
- The Transition Pathway Explorer further shows the expected investment in sustainable energy in 2030 and 2050 compared to a 2020 baseline, which is the latest baseline for which data is available in the Transition Pathway Explorer. Investments in sustainable energy are calculated by compiling the forecasted capital expenditure levels for the energy, buildings, transport, and carbon capture, utilisation and storage (CCUS) sectors.
- The figure on the next page, for the example of the indicator of net GHG emissions reduction, shows how the data is represented in the Transition Pathway Explorer:

[23] https://ec.europa.eu/clima/sites/clima/files/docs/pages/com_2018_733_analysis_in_support_en_0.pdf

Figure 6: 1,5 LIFE degrees scenario from EU long-term strategy in the Transition Pathway Explorer



- As a first step for the project's 10 pilot cities in the EU-countries PT, CZ, IT, FR, HR and LV, the data from the model is first added into an overall figure for each of the forecasted triggered impacts at national level for 2030 and 2050, in comparison to the different baselines as mentioned beforehand. Taking the indicator of expected reduction of final energy demand as example, this provides the following figures, as can be seen below:

Table 10: Forecasted reduction of final energy demand at national level in 2030 and 2050 for PT, CZ, IT, FR, HR and LV compared to 1990 baseline, according to figures from the Transition Pathway Explorer

Indicator	**PT**	**CZ**	**IT**	**FR**	**HR**	**LV**
Final energy demand baseline in 1990, in GWh	174000	254000	1244000	1565000	57800	31600
Final energy demand reduction achieved in 2030, in GWh	51000	86000	329000	395000	7000	7000
Final energy demand reduction achieved in 2050, in GWh	98000	160000	669000	852000	28000	10000

- The share of these impacts applying to the pilot cities is then calculated by dividing them into the current population share of the pilot cities per Member State. The current population share is as follows:
  - **Zdar** (20,544 population) for Czechia (10,69 million population), **equivalent to 0,19% of the total Czech population;**
  - **Mantova** (50,000 population) for Italy (60 million population), **equivalent to 0,08% of the total Italian population**;

- **Dijon Metropole** (258,000 population) for France (66,66 million population), **equivalent to 0,38% of the total French population**;
- **Riga** (630,000 population) for Latvia (1,88 million population), **equivalent to 33% of the total Latvian population;**
- **KOP** (23,212), **VAR** (36,643) and **VIR** (13,922 population) for Croatia (4,1 million population), the combined population of these pilot cities **equivalent to 1,79% of the total Croatian population**;
- **SET** (127,314), **PAL** (72,173) and **SES** (62,679 population) for Portugal (10,2 million population), combined population of these pilot cities **equivalent to 2,5% of the total Portuguese population;**

- **It is important to note that there are three significant limitations to this exercise**: firstly, it does not account for potential changes in the number of inhabitants at national level and in the pilot cities in 2030 and 2050, which may change the corresponding population share.
  Secondly, it does not account for the fact that pilot cities don't have an equal role to play in all factors determining the reduction of final energy demand (such as e.g. in industry or agriculture), as well as in all components included in the investments in sustainable energy indicator (such as e.g. in parts of the buildings, transport energy and CCUS sectors).
  Thirdly, it also does not consider that projected final energy demand reductions and levels of investment are sensitive, and forecasts can change drastically due to e.g. unforeseen shocks. Thus, assuming that the figures expected now for these indicators for 2030 and 2050 will still stay constant when these timeframes actually arrive, is a limitation that has to be factored in. Taking thus all this into consideration, the share of the impacts applying to the pilot cities is thus as follows, as can be seen for the example of reduction of final energy demand below:

Table 11: Share applying to the pilot cities, as concerns the forecasted reduction of final energy demand in 2030 and 2050 compared to 1990 baseline, for PT, CZ, IT, FR, HR and LV pilot cities

Indicator	**PT pilot cities**	**CZ pilot city**	**IT pilot city**	**FR pilot city**	**HR pilot cities**	**LV pilot city**
Final energy demand baseline in 1990, in GWh	4350	482	995	5947	1034	10428
Final energy demand reduction in 2030, in GWh	1275	163	263	1501	125	2345
Final energy demand reduction in 2050, in GWh	2450	304	535	3237	500	3333

- It is assumed that due to the project capacity-building activities and materials, the pilot cities will push the levers and also identify innovative measures that are not yet part of their SEAPs/SECAPs and related strategic plans, and thus will be able to **increase their forecasted triggered impacts for 2030 and 2050 by 5%;**
- It is assumed that by engaging their stakeholders in the co-creation engagement process of the expert working groups, the measures and policies across the sectors on the pilot cities' territories will be better aligned, **resulting in a further 5% increase of each of their forecasted triggered impacts for 2030 and 2050**;
- Thus, the assumption is that the project enables the pilot cities to increase each of their forecasted triggered impacts by a total of 10% for 2030 and 2050. Applying this to the indicator of reduction of final energy demand as an example, this results in the following figures for the pilot cities:

Table 12: Project contribution to raise forecasted reduction of final energy demand in 2030 and 2050 compared to 1990 baseline for PT, CZ, IT, FR, HR and LV pilot cities

Indicator	**PT pilot cities**	**CZ pilot city**	**IT pilot city**	**FR pilot city**	**HR pilot cities**	**LV pilot city**	**Total**
Additional final energy demand reduction in 2030, in GWh	**127,** resulting from: 1275 (without project) * factor 1,1 (project contribution) = 1402; 1402 – 1275 = 127	**16**, resulting from: 163 (without project) * factor 1,1 (project contribution) = 179; 179 – 163 = 16	**26**, resulting from: 263 (without project) * factor 1,1 (project contribution) = 289; 289 – 263 = 26	**150**, resulting from: 1501 (without project) * factor 1,1 (project contribution) = 1651; 1651 – 1501 = 150	**13**, resulting from: 125 (without project) * factor 1,1 (project contribution) = 138; 138 – 125 = 13	**234**, resulting from: 2345 (without project) * factor 1,1 (project contribution) = 2579; 2579 – 2345 = 234	**566**
Additional final energy demand reduction in 2050, in GWh	**245**, using same method as above	**30**, using same method as above	**53**, using same method as above	**323**, using same method as above	**50**, using same method as above	**333**, using same method as above	**1034**

- As concerns the cities and public authorities joining the training programme, the same calculation procedure as above is applied, as exemplified in the tables for the example of reduction of final energy demand on the next page. The total forecasted triggered impacts in the pilot cities' 6 countries and at EU-level are divided into the estimated current total population share of cities and authorities reached. Factoring in that similar city profiles (with similar population) to the pilot cities will be targeted among the **75 cities and public authorities** to join the training programme during the project, **the population share of cities and authorities reached is estimated at 10 million inhabitants,** and is split up as follows:

    - **15 cities/agencies in Czechia** with a total estimated population of 700,000, **equivalent to 6,5% of the total Czech population;**
    - **5 cities/agencies in Italy** with a total estimated population of 500,000, **equivalent to 0,8% of the total Italian population;**
    - **5 cities/agencies in France** with a total estimated population of 1 million, **equivalent to 1,5% of the total French population;**
    - **5 cities/agencies in Latvia** with a total estimated population of 300,000, **equivalent to 16% of the total Latvian population;**
    - **15 cities/agencies in Croatia** with a total estimated population of 800,000, **equivalent to 19% of the total Croatian population;**
    - **15 cities/agencies in Portugal** with a total estimated population of 2 million, **equivalent to 19% of the total Portuguese population;**

    - **15 cities/agencies from other EU Member States** with a total estimated population of 4,7 million, **equivalent to 1% of the total EU population** (this estimation factors in Energy Cities' membership of 1,000 cities, which reaches a total estimated population of 60 million). It should be noted here that the overall EU-level figures in the Transition Pathway Explorer also include the abovementioned 6 EU countries. However, as the share for the 6 listed countries is already estimated separately, it is important to avoid double-counting as concerns the share applying to the cities and public authorities joining the training programme at EU-level. Thus, a corrective measure is applied by removing the figures for the 6 listed countries from the overall EU-level figure.

Table 13: Share applying to cities & public authorities joining the training programme in PT, CZ, IT, FR, HR, LV and at EU-level, as concerns the forecasted impact of reduction of final energy demand in 2030 and 2050 compared to 1990 baseline

Indicator	**PT joining**	**CZ joining**	**IT joining**	**FR joining**	**HR joining**	**LV joining**	**EU joining**
Final energy demand baseline in 1990, in GWh	33060	16510	9952	23475	10982	5056	70000
Final energy demand reduction in 2030, in GWh	9690	5590	2630	5925	1330	1116	12045
Final energy demand reduction in 2050, in GWh	18620	10400	5350	12780	5320	1600	36700

- Due to the participation of these cities and public authorities in the training programme, with spillover effects from peer-to-peer city and agencies learning (as all pilot cities and ENA, REA North and SEMMO will be involved in running the programme), it is assumed that the **75 cities and public authorities joining the programme will achieve an additional 2,5% of each of the forecasted triggered impacts for 2030 and 2050**. Applying this to the indicator reduction of final energy demand as an example, through using the method applied in Table 12, this results in the following figures:

Table 14: Project contribution to raise forecasted impact of reduction of final energy demand in 2030 and 2050 compared to 1990 baseline for PT, CZ, IT, FR, HR, LV & EU training programme participants

Indicator	**PT**	**CZ**	**IT**	**FR**	**HR**	**LV**	**EU**	**Total**
Additional final energy demand reduction in 2030, in GWh	**242**, resulting from: 9690 (without project) * factor 1,025 (project contribution) = 9932 9932 – 9690 = 242	**139**	**66**	**148**	**33**	**28**	**251**	**907**
Additional final energy demand reduction in 2050, in GWh	**465**, using same method as above	**260**	**133**	**319**	**133**	**40**	**917**	**2267**

- With the total amounts for the pilot cities and cities and public authorities participating in the training programme now being available for the impact of reduction of final energy demand given as example, this leads to the following forecasted total triggered impact for this key indicator:

Table 15: Triggered impact on reduction of final energy demand in 2030 and 2050 for the project, compared to a 1990 baseline:

Indicator	**Total for 2030**	**Total for 2050**	**Total triggered impact**
Reduction of final energy demand, in GWh	566 for pilot cities + 907 for cities & public authorities joining training programme = **1473**	1034 for pilot cities + 2267 for cities & public authorities joining training programme = **3301**	1473 + 3301 = **4,774**

- All other impacts triggered by the project's pilot cities and cities and public authorities joining the training programme are also estimated, calculated and added up using the steps of the approach outlined beforehand.
- The total amount for all forecasted overall estimated triggered impacts can be then found in the following table, which also includes as overview all direct impacts of the project:

Table 16: All triggered and direct impacts of EUCityCalc

Project Performance Indicator	**Quantification**				**Total impacts**	**Measurement unit**
	within project duration	5 years after project	2030	2050		
Investments in sustainable energy			686	565	**1,251**	million EUR, cumulated
Net GHG emission reduction			1,435,400	2,588,000	**4,023,400**	Tons CO2 eq,, cumulated
Reduction of final energy demand			1,473	3,301	**4,774**	GWh, cumulated
Alleviation of air pollution			147	194	**341**	Fewer deaths due to PM2.5 in air, cumulated
Public authorities with improved skills and capacities	87	60			**147**	Number of public authorities with improved skills and capacities
Public officials with improved skills and capacities	197	120			**317**	Number of public officials with improved skills and capacities

Policies and strategies created or influenced	25	75			**100**	Number of created or influenced policies and strategies
Local stakeholders engaged in the co-creation process	200	750			**950**	Number of local stakeholders engaged

While the project triggers these impacts beyond its duration, tracking these impacts will still be undertaken while the project is being implemented, as foreseen between 2021-2024. Specifically, it will focus on the pilot cities' SEAPs/SECAPs and related strategic plans in this regard. As their adopted transition pathways and policy scenarios are fed into their SEAPs/SECAPs and related strategic plans, it will be compared to which extent this first insertion of the pathways and scenarios enables the pilot cities to raise their ambitions to cut net GHG emissions, reduce final energy demand, alleviate air pollution and trigger investments in sustainable energy.

Barriers, obstacles and framework conditions to project impacts
Several barriers, obstacles and framework conditions can detrimentally affect EUCityCalc's impacts:

- Firstly, **the national and EU framework conditions** (e.g. measures, policies) can negatively affect the pilot cities' ability to plan an ambitious transition towards climate neutrality. EUCityCalc addresses this barrier by assessing all possible constraining national and EU-level factors impacting pilot cities in this regard, and will propose country-specific and overall policy recommendations to address them **(WP6)**;
- Secondly, **the internal governance conditions in the pilot cities** themselves can pose a key obstacle, in particular as concerns a lack of interdepartmental collaboration, which would be however required to deliver a cross-sectoral and territorial approach to decarbonisation that is inherent to the European City Calculator. By involving key city staff with planning competence across departments as members of the expert working groups, the project seeks to remedy this obstacle **(WP4**);
- Thirdly, another critical barrier is the **reluctance of key local stakeholders to participate in the co-creation process** of the expert working groups, which will apply the webtool concretely in the pilot cities. Reasons for this reluctance could be due to stakeholders' lack of interest in working with the webtool, as they don't perceive its added value in planning a climate-neutral transition. The project will address this barrier notably by involving stakeholders early and also through its local communication campaign toolkits **(WP7)**, which will highlight in an accessible and visually appealing manner the benefits of using the prospective modelling approach of the webtool to plan towards climate neutrality in the pilot cities;
- Finally, a significant barrier concerns the **budgetary limits of many cities and public authorities in Europe** to participate in external capacity-building activities. Oftentimes, it is not possible for staff from cities and public authorities to travel to such activities, as there is no internal funding for it available. By providing a travel subsidy to cities and public authorities joining its training programme **(WP5)**, EUCityCalc will ensure that lacking financial means do not pose this constraint for interested participants.

2.2 Measures to maximise impact

a) Dissemination and exploitation of results

EUCityCalc aims to maximise its impact by extensively disseminating its project findings to its target groups (see Section 1.2). In its draft dissemination and exploitation plan proposed below, and which will be further refined in WP7, the project lays out a clear strategy for spreading its results and enabling its target groups to build on them, in particular European cities and their public officials as EUCityCalc's most critical target group. **For this purpose, the project follows three main lines in its dissemination and exploitation activities:**

1. **Disseminating and exploiting the leveraged knowledge** on the capacity required to adopt the prospective modelling approach of the European City Calculator in planning a climate-neutral transition, which will in particular address European cities and their public officials, but also other public authorities (e.g. local and regional energy agencies) that are key partners for cities in such a transition;
2. **Disseminating and exploiting propositions** to shape the Governance Regulation as the key multi-level governance framework for climate neutrality, but also being attune of other policies that can play a key role in adjusting the framework for cities' climate-neutral transition (e.g. the forthcoming EU climate law);
3. **Disseminating and exploiting the actions** taken by the project's pilot cities in applying the webtool through a co-creation engagement process, which will mainly address their key local stakeholders that are part of the expert working groups, but also other local stakeholders that are not part of these groups.

Each of these main lines will be underpinned by the three major components of the dissemination strategy:

- **Dissemination for awareness-raising**, which informs target groups about the project results;
- **Dissemination for understanding**, which provides capacity-building materials for target groups to gain a broader insight into the project's resources;
- **Dissemination for action**, which refers to actively exchanging and adopting project knowledge by having target groups involved in the project's activities, such as its training programme in **WP5**;

For the first main line of dissemination and exploitation, EUCityCalc is keen on achieving a high uptake of its webtool and its prospective modelling approach, by focusing its national and EU-level outreach efforts in particular on city profiles that are similar to the project's pilot cities, both in the pilot cities' 6 countries as well as at EU-level. These city profiles will be invited in priority to join the training programme in **WP5**. Considering e.g. the advantage of facing similar challenges and also a common language (i.e. for the training programme in the 6 countries), impact will be maximised both in terms of knowledge transfer in the training programme, as well as also in terms of fostering additional dissemination of project results. **This dissemination and exploitation line uses the dissemination components for understanding, and also for action in its activities**.

As concerns the second main line of dissemination and exploitation, the project will be leveraging various opportunities (e.g. national updates of NECPs/LTS) to influence the policy processes in the Governance Regulation, through the activities of **WP6** (i.e. national roundtable and EU-level workshops, country-specific and overall policy recommendations). EUCityCalc will be also attentive to other relevant policy developments outside of the Governance Regulation, such as the climate law under the EU Green Deal, in order to inform its target groups in its dissemination activities accordingly. **Hence, in this dissemination and exploitation line, the project uses both the dissemination components for awareness-raising and understanding in its activities**.

Finally, the third main line of dissemination and exploitation relates to fostering a close cooperation between the pilot cities and their stakeholders in applying the webtool locally, in particular by directly addressing key local stakeholders as members of the expert working groups, and also indirectly other stakeholders that are not part of these groups. To support the pilot cities in this outreach and especially motivate key local stakeholders to engage in the co-creation process of the expert working groups, visually attractive and easily understandable local communication campaign toolkits will be provided to the project's local and regional partners. As a side-effect of this dissemination activity, these toolkits will also contribute to raise awareness about the benefits of the webtool to those stakeholders that are not part of the expert working groups. **Thus, this line of dissemination and exploitation addresses both action and awareness-raising in its activities**.

Alongside these main lines for dissemination and exploitation, **the project will further trigger widespread dissemination through its website**, which will act as a central hub to provide all relevant information about the project. As a user-friendly platform, it will enable straightforward disseminating of news, events, media coverage and all deliverables. EUCityCalc will further exploit synergies with other projects and platforms to further spread its results, in particular with projects identified in the Section 1.3 table of related EU projects.

At EU- and national level, **the project will make use of existing, established events to broadly disseminate its project results**. At EU level, renowned events such as the Covenant of Mayors ceremony, EUSEW, EUWRC or the EU modelling forum will be leveraged in this regard, alongside large-scale events of project partners (e.g.

Energy Cities' annual conference). At national level, EUCityCalc will use big conferences (e.g. ANCI congress in Italy for Italian municipalities, Assises de l'Energie in France for French municipalities) to also convey its findings.

The following table on dissemination and exploitation actions provides a comprehensive overview on the pursued objective of the impact, the target groups addressed, the means/dissemination products employed and KPIs:

Table 17: Dissemination and exploitation actions to maximise impact

Objective of impact	**Which target groups are addressed**	**Means / dissemination products employed**	**Key Performance Indicators (KPIs)**
Support the build-up of capacity in cities and public authorities to use the European City Calculator for planning their transition towards climate neutrality	Cities & public officials (incl. pilot cities and their staff), local & regional energy agencies (incl. the project's local and regional energy agencies and their staff)	Training programme; Capacity-building materials developed in WP2-6 and published on project website (e.g. handbook, guidelines for SEAPs/SECAPs, etc.)	165 officials from 75 cities and authorities join training programme in pilot cities' 6 countries & EU-level during project; >1000 downloads in total of developed materials
Spread visually attractive and easily accessible and understandable information about the project knowledge and results to increase awareness about the benefits of using the webtool in building the capacity of more cities and public authorities	Cities and public officials, local and regional energy agencies, other multipliers such as associations of cities or associations of energy agencies, both at national (in pilot cities' countries) and at EU-level	Project visual identity; Communication tools (i.e. mass media); Narrative on prospective modelling in cities; The capacity-building materials of WP 2-6; EU & national-level dissemination by Energy Cities, REA North, ENA, SEMMO and pilot cities; Final conference	>200 downloads of the narrative brochure from the project website; >15 mentions of project in EU (3 mentions) and national media (12 mentions, two per pilot cities' countries); At least 30 participants from these target groups join the EUCityCalc final conference in Brussels;
Support the EU and the pilot cities' 6 countries in better delivering the Governance Regulation by highlighting the benefits of adjusting this framework to fit cities' climate-neutral transition	Policymakers at regional, national (pilot cities' 6 countries) and at EU-level (i.e. Commission DGs, progressive MEPs in EU Parliament - EP); Project pilot cities and the local and regional partners and their staff	6 country-specific and the overall project policy recommendations; National roundtable workshops (WS) in pilot cities' 6 countries; EU-level workshops with Covenant of Mayors / EP Final conference	>250 downloads in total of recommendations from project website; >18 policymakers join nat. WS (3 per country); >30 policymakers join EU workshops in total; >15 policymakers join the final conference;
Increase awareness of and empower local stakeholders in the pilot cities about their potential to take targeted climate action to support the local planning efforts towards climate neutrality	Key local stakeholders of the expert working groups (e.g. NGOs, industry, energy suppliers, etc.) and the stakeholders not part of these groups; all of the project's local & regional partners and their staff	Local communication campaign toolkits with videos and infographics; Podcasts with pilot cities; Project website; Project communication tools (i.e. social media); Meetings of expert working groups	>600 views of videos; >300 downloads of infographics and >300 downloads of podcasts; >200 mentions on social media channels in total; >20 stakeholders join on average expert working groups in pilot cities

Inform academic & think tank community about findings to improve research on the planning of city transitions towards climate neutrality through prospective modelling	Academia and think tanks, the scientific and technical partners of the project (PIK & Climact SA)	Project website Project communication tools (i.e. mailing lists, newsletter, social media); EU-level and national dissemination of PIK & Climact SA, incl. PIK scientific publications	>2 presentations at relevant conferences (i.e. EU modelling forum); >2 publications in academic journals during the project lifetime, with more to be expected after the project has ended

Follow-up of the project and business plan
The ambition of EUCityCalc is to pursue exploitation of project results after the project has ended. The pilot cities and the other local and regional project partners are committed to continue using the European City Calculator to further refine their developed planning of their transition towards climate neutrality, and potentially explore a co-creation process going beyond their stakeholders, which would involve their citizens. **All project partners are keen to provide the training programme for free to other interested cities and public authorities in Europe, with the aim to train at least 60 other cities and public authorities in the webtool 5 years after the project has ended**.

In terms of securing funding to finance the continuation of the training programme beyond the project lifetime, the consortium will explore suitable funding options, such as established philanthropic organisations (i.e European Climate Foundation - already member of the project advisory board as outlined in the Excellence section). The approach would be to secure funding to finance the staff effort, and cover travel and organisation costs for the partners as well as cities and public authorities participating in the training programme, on a long-term basis. This funding would also contribute to cover a yearly maintenance fee for the project website, to make information accessible and maintained for more than 5 years after the project's end. A reasonable yearly fee from cities and public authorities using the webtool could be considered to cover some of the fixed costs related to data updates, maintenance and servers.

Knowledge management and protection
Knowledge management and protection is not foreseen to be a major issue for the project. EUCityCalc partners have already agreed on a joint ownership and access to key knowledge developed by the project (e.g. the webtool). The developed key knowledge will be open-source and not subject to restrictions. The project will further aim to provide the scientific publications resulting from its actions under a green open access publishing policy.

Data collection, protection and management
EUCityCalc will comply with the General Data Protection Regulation (GDPR) in its approach to data collection, protection and management. Energy Cities as coordinator will draw up a data management plan under **WP1**, and thereby draw on the expertise of its designated data protection officer for the GDPR. It is not foreseen that the data generated by the project, notably the data requirements of the models captured in **WP2** and **WP3**, will conflict with protecting international property rights of any form.

b) Communication activities

In its communication activities, EUCityCalc will advocate and showcase three main messages:

- Cities are key to drive the planning towards climate neutrality, and the European City Calculator will support cities and their public officials in their decision-making through an intuitive and comprehensive webtool that uses a prospective modelling approach to provide them with a systems view on the choices and investments they need to make to transition towards climate neutrality;
- As cities' climate action is crucial for a successful transition towards climate neutrality, city, national and EU policies all need to be aligned to support them in helping Europe achieve its 2050 targets;
- Local stakeholders have a key role in supporting cities in their planning towards climate neutrality, by taking targeted climate action that can contribute to multiply the efforts of city administrations;

To reach a broad audience, the project will communicate its three main messages along the following lines:

- In a first instance, it will put forward its pilot cities, which act both as "living labs" for the application of the European City Calculator, as well as ambassadors for the relevance of the webtool, in order to share project messages in a way that other European cities, but also the pilot cities' stakeholders (key local stakeholders part of expert working groups, as well as stakeholders outside of these groups) can relate to;
- EUCityCalc will leverage Energy Cities' network, which represents 1,000 cities and public authorities in Europe. Energy Cities also co-leads the Covenant of Mayors in Europe and will leverage its community of +10,000 signatories for effective communication and outreach to the main target group of the project, which are in particular cities and their public officials. In doing so, Energy Cities will also highlight how EUCityCalc outcomes (e.g. pathways and scenarios that can be developed through the webtool, guidelines for insertion in SEAPs/SECAPs, handbook on emission calculation methodology) can support Covenant cities in updating their political commitment in the initiative to include a planning perspective towards climate neutrality;
- At national level, i.e. in the pilot cities' countries, the project will rely on ENA, REA North and SEMMO, as well as also on the pilot cities themselves, to broadly communicate project findings in national conferences. The project also seeks to leverage the membership of all its local and regional partners in multipliers, i.e. associations of cities or association of energy agencies, to further increase its national outreach. All local and regional partners have already identified these multipliers to leverage, such as e.g. ENA as board member of RNAE (national network of energy agencies in Portugal – see LoS in proposal annex). Outside of the pilot cities' countries, Energy Cities will support communication outreach through its collective members (national associations of cities, such as OER in Romania – see LoS in proposal annex);
- At EU-level, EUCityCalc will not reinvent the wheel, and therefore organise its events back-to-back with larger events (e.g. EUSEW, EUWRC, Covenant of Mayors ceremony) to broadly convey project findings. It will also seek to establish a regular presence at these events widely attended by its target groups. It will further seek cooperation with other projects in this regard, i.e. with EU projects identified in Section 1.3;
- Furthermore, the project will draw on the long-standing experience of CMW in building successful communication campaigns, turning complex issues into a comprehensible language that attracts media attention, engages policymakers and also NGOs as a key local stakeholder in the pilot cities. In engaging with NGOs, CMW will notably draw on its established EU-wide network of NGOs;

EUCityCalc will start its communication activities as of month 1, and has designed activities specifically tailored to its target groups and objectives, and which will be further tailored during project implementation and beyond its lifetime. High visibility will be ensured in particular through the project's main communication tools, which will notably provide direct communication at events where the target groups meet. For effective outreach to the project's main target group, European cities and their public officials, EUCityCalc has further identified suitable online channels and platforms, with Facebook and Twitter as the main social media channels. Local communication campaign toolkits for pilot cities and a European narrative on prospective modelling at local level will also be created to engage with the project's target groups (see section 1.2 for the identified target groups).

WP7 will mainly communicate the project's results, with also **WP6** advocating towards policymakers for a better alignment of city, national and EU policies to improve the multi-level governance framework for climate neutrality with a stronger role for cities (i.e. with communication activities foreseen for the national and EU-level workshops, as well as the country-specific and overall policy recommendations).

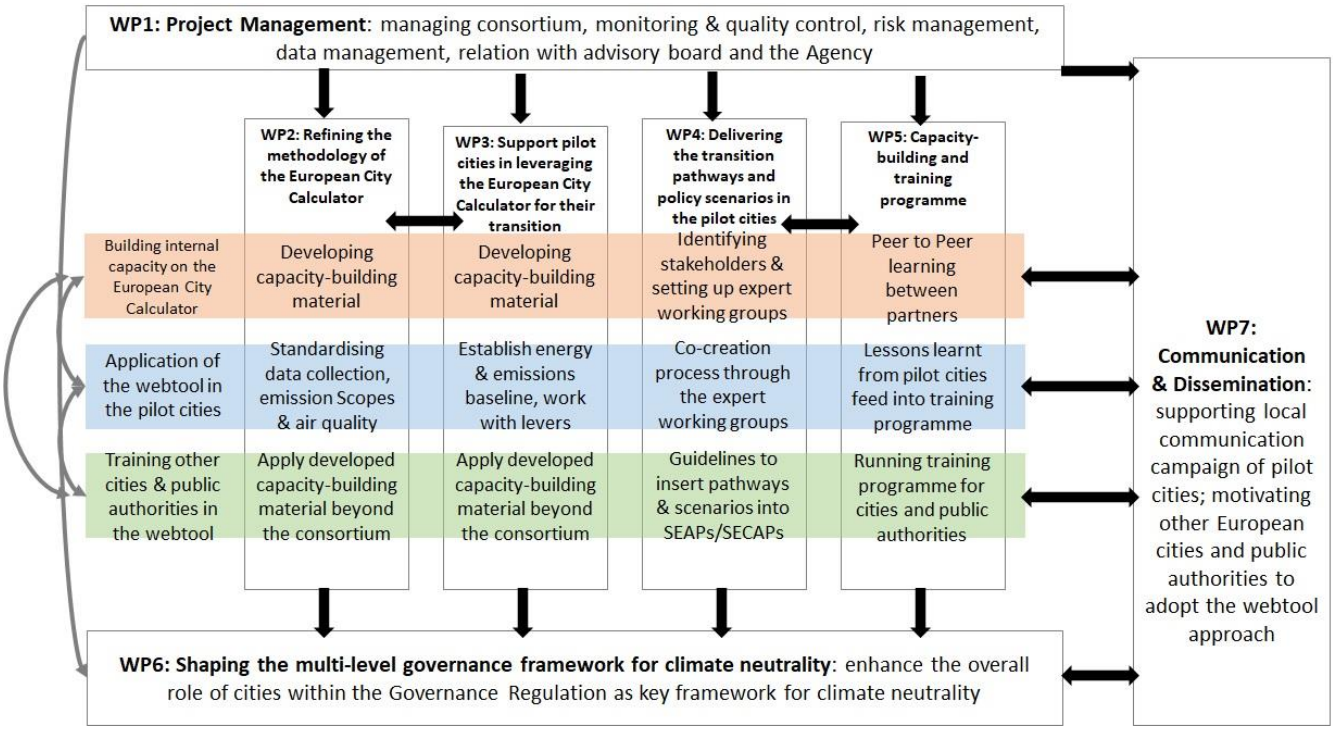
Taking the aforementioned into account, EUCityCalc has defined the following quantified target for its communication outreach: Using its communication channels, networks and other multipliers, the project's **communication campaign is expected to reach out to 600 further cities and public authorities** (e.g. local and regional energy agencies), out of which **at least 60 will be motivated to launch the planning process for a climate-neutral transition with the webtool's prospective modelling**.

The reasoning behind this number stems from the numerous networks and multipliers that EUCityCalc can build on, e.g. Energy Cities' own network and its close ties with the Covenant of Mayors as co-leader of this initiative, of which it can also leverage its communication channels (e.g. newsletter, social media). Additionally, the networks of ENA, REA North, SEMMO and the pilot cities, which also factors in their membership in multipliers, also underpins this reasoning. Finally, CMW's expertise in designing successful communication campaigns will support EUCityCalc in reaching out to its target groups using tailored communication activities.

3. Implementation

3.1 Work plan – Work packages and deliverables

Figure 7: Work Package structure EUCityCalc



The workplan is divided into 7 work packages (WP), which are complementary and are briefly described below:

WP1: Project Management aims to effectively manage and coordinate the project, including assuring monitoring, reporting and quality control, risk management, liaising with the Agency, and enhancing exchanges among the partners, between the WPs and with the project advisory board. **WP2: Refining the methodology of the European City Calculator** aims to refine the methodology of the European City Calculator to enable a city-level prospective modelling approach, including designing guidelines to leverage city data into the webtool, and developing methods to enhance the modelling of Scope 1-3 emissions and air quality in cities. **WP3: Support pilot cities in leveraging the European City Calculator for their transition** is to work with all local and regional partners to make the European City Calculator webtool fully functional, help pilot cities in gathering the relevant data to establish their energy and emissions baseline in the webtool, and learn how to use the webtool most effectively. This WP will deliver an operational version of the webtool in the pilot cities' national languages. **WP4: Delivering the transition pathways and policy scenarios in the pilot cities** will aim, based on WP2-3 learnings, to design and adopt scientifically robust, detailed and actionable transition pathways and policy scenarios towards climate neutrality in the pilot cities, in co-creation with their key local stakeholders and in line with the 2050 EU targets. **WP5: Capacity-building and training programme** aims to take the lessons learnt of the application process of the webtool in the pilot cities, to build the capacity and skills of public officials in other cities and public authorities in using the webtool to plan their climate-neutral transition. **WP6: Shaping the multi-level governance framework for climate neutrality** aims to trigger change at the necessary levels of the Governance Regulation to strengthen pilot cities' role in this key multi-level governance framework for climate neutrality. **WP7: Communication and Dissemination** aims to promote the webtool's approach to other cities and public authorities, and support the outreach of pilot cities to their key local stakeholders in the application of the webtool.

Figure 8: Gantt Chart EUCityCalc
Legend: M = Milestone; x = project meeting / workshop / event, face-to-face & online; D = Deliverable

Project month			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
WP1	**Energy Cities**	**Project Management**																																			
T1.1	Energy Cities	Overall project management	x	D1.2	D1.3		D1.4	x						x						x							x				x						x / D1.1
T1.2	Energy Cities	Project monitoring & quality control																																			
T1.3	Energy Cities	Reporting to & liaising with the Agency	M																	M																	M
T1.4	Energy Cities	Common dissemination activities																																			
WP2	**PIK**	**Refining the methodology of the European City Calculator**																																			
T2.1	PIK	Identify challenges on modelling in cities						D2.1																													
T2.2	PIK	Guidelines to leverage data in the web-tool									D2.2																										
T2.3	Climact SA	Partial automation data gathering/processing												M																							
T2.4	PIK	New methods for added value of web-tool																D2.3																			
WP3	**Climact SA**	**Support pilot cities in leveraging the European City Calculator for their transition**																																			
T3.1	Climact SA	Interact to improve data forms & gather data						D3.1																													
T3.2	PIK	Approach for governance levels/policies												D3.2																							
T3.3	Climact SA	Refine web-tool for application													M																						
T3.4	Climact SA	Co-define how to use web-tool at city level																	D3.3																		
T3.5	Climact SA	Internal demonstration session on web-tool																		x																	
WP4	**ENA**	**Delivering the transition pathways and policy scenarios in the pilot cities**																																			
T4.1	ENA	Map key stakeholders in pilot cities						M																													
T4.2	Energy Cities	Set up expert working groups in pilot cities												D4.1																							
T4.3	ENA	Implement co-creation process												x/M						x		x		x		x		x/M	D4.2								
T4.4	ENA	Guidelines for insertion in SEAPs/SECAPs																															D4.3				
T4.5	Energy Cities	Develop/update SEAPs/SECAPs in pilot cities																																			D4.4
T4.6	ENA	Impact monitoring																																			
WP5	**REA North**	**Capacity-building and training programme**																																			
T5.1	ENC	Peer-to-peer learning for pilot cities						x						x													x/D5.1										
T5.2	REA North	Design training programme on web-tool																										M									
T5.3	REA North	Run training programme nationally & at EU																											x	x	x/M	x	x	x	x/M		D5.2
T5.4	Climact SA	Handbook emission calculation methodology																																			D5.3
T5.5	REA North	Impact monitoring																																			
WP6	**CMW**	**Shaping the multi-level governance framework for climate neutrality**																																			
T6.1	CMW	Assessing factors at national & EU-level												x/M										D6.1													M	
T6.2	CMW	Online training Governance Regulation																									D6.2	x		x		x/M/D6.3					
T6.3	Energy Cities	Pilot cities' contributions to NECPs and LTS																																		x/M	D6.4	
T6.4	CMW	Alignment policies for climate neutrality																														x/M/D6.6				x/M		D6.5
T6.5	CMW	Impact monitoring																																			
WP7	**Energy Cities**	**Communication & dissemination**																																			
T7.1	Energy Cities	Communication & dissemination plan			D7.1																D7.8																
T7.2	CMW	Visual identity & media package			D7.2																																
T7.3	Energy Cities	Main project communication tools						D7.3																													
T7.4	CMW	Local communication campaign toolkits															D7.4																				
T7.5	Energy Cities	Multimedia tools (video/podcast/infographic)															M																				M
T7.6	CMW	EU narrative on prospective modelling cities																																	D7.6		
T7.7	Energy Cities	Dissemination at national and EU-level																																			x/D7.7/M
T7.8	Energy Cities	Impact monitoring																																			D7.5

3.2 Management structure and procedures

EUCityCalc will set up a flexible and straightforward management approach that will match the complexity and scale of the proposal. Energy Cities with its 30 years' experience in managing EU-funded projects, will draw on proven and relevant management structures and procedures to oversee the project's delivery. The management approach taken will ensure a high level of engagement and collaboration among partners. Relations between partners, including a code of conduct, will be established in detail at the project's start in its consortium agreement (CA). **The organisational structure, decision-making mechanisms and roles and responsibilities will be as follows**:

Project coordinator (PCO): Energy Cities as PCO will assume the responsibilities of coordination and management, in line with the grant agreement (GA) and the CA. The PCO will oversee the delivery of project activities, monitoring and reporting of progress, and handle administrative and financial aspects. In terms of financial project management, the PCO will manage the overall project budget, but partners will be responsible to manage their own project finances in compliance with GA requirements. The PCO will require regular financial updates from partners (expected on a 6-month basis) to assure sound monitoring and reporting of spending levels, and if needed implement changes in reallocating resources among partners. The PCO will manage project meetings (the steering group meetings), and support ENA and REA North in the management of their allocated project meetings. The PCO will also manage the meetings of the project management group. It will be responsible for implementing decisions taken in the steering group and project management group meetings. It will be also the final instance of quality control of deliverables, and the first instance in representing EUCityCalc to the outside. Finally, the PCO will centralise all required communications with the Agency. The role of PCO will be assumed by an expert with a PMP certification from the Project Management Institute (PMI), who will be supported by a junior project manager with a CAPM certification from the PMI. Project management will follow best practices according to PMI standards.

Project management group (PMG): In the project delivery, the PCO will rely on the PMG for taking operative decisions that don't require escalation to the steering group. The PMG, which includes the PCO and all WP leaders, will regularly meet virtually to discuss operational matters, such as reviewing progress made in WPs, and ensuring coherent interactions between WPs. The PMG will strive to take decisions by consensus, but if it is not possible, it will adopt decisions by majority. WP leaders are responsible for overseeing and delivering the activities within their WP, and are the first instance for quality control of deliverables of their WP. They are also responsible for supervising the timely delivery of tasks within their WP by task leaders. WP leaders have been designated based on their competences and available capacity, and have experience from previous EU projects in being WP leader.

Steering group (SG): The PCO will also rely on the SG for the project's delivery. The SG is composed of two representatives per partner and acts as the project's decision-making body for strategic, principle decisions. Decisions in the SG are also strived to be taken by consensus, with each partner having one vote. In case consensus is not possible, a 2/3 majority will be required. The issues subject to adoption by the SG concern substantial administrative changes (e.g. GA modifications) and definition of strategic, policy and dissemination orientations.

Project advisory board: The PCO will centralise relations with the project advisory board, as outlined earlier.

Conflict management

In EUCityCalc, all partners are responsible for raising critical difficulties and conflicts. These will be discussed during SG meetings. For serious conflicts, the PCO will organise the conflict resolution. If required, the matter will be escalated to higher levels in the hierarchy of involved partners, or subject to a decision in an SG meeting.

Innovation management

As concerns innovation management, the management structure and work plan will allow to exploit in particular the numerous capacity-building materials developed on the webtool. This will be ensured notably by feeding in learnings from local and regional partners, and also from cities and public authorities joining the training programme, in refining these materials to improve them and increase their relevance for more European cities and public authorities. Synthesis outputs such as the policy recommendations in WP6 and the narrative on prospective modelling in WP7, will contribute to this innovation process by providing more generalised and easily accessible innovation. The PCO will assume overall responsibility for innovation management with support of WP leaders.

Risk management
Effective risk management will be key considering EUCityCalc's complexity and scale. A first draft of the risk management plan is already provided and will be completed at the project's start. This plan will be regularly monitored by the PCO as overall responsible risk manager together with WP leaders. It will mitigate and contain identified risks, and centralise risks in a risk register, which will be updated as new risks are identified. Below, a first list of risks and risk-mitigation measures is provided, which will pre-populate the project's risk register:

3.3 Consortium as a whole

EUCityCalc gathers a balanced, interdisciplinary team of experts. It unites Energy Cities as PCO and dissemination and communication lead, PIK and Climact SA as partners behind the European Calculator, CMW as policy partner in shaping the Governance Regulation, and practitioners from ENA and REA North as leaders of the co-creation process in the pilot cities (also supporting the pilot cities PAL, SES, SET, KOP, VAR and VIR, all indirect partners) and the training programme for cities and public authorities. It also brings in an additional national capacity-building and dissemination partner (SEMMO supporting Zdar and running the programme in CZ) and 4 pilot cities (REA, Mantova, Dijon Metropole and Zdar) as direct partners. Partners have not worked in this constellation before, but have acquired profound experience in working in EU projects. Their selection was also guided by EUCityCalc's ambition to support cities and public authorities as key beneficiaries in learning novel approaches and acquiring a higher level of expertise to meet their challenges in planning a climate-neutral transition: adopting a prospective modelling approach through the webtool (PIK, Climact SA), shaping the Governance Regulation (CMW), and driving a co-creation process to engage with stakeholders (Energy Cities, PIK, Climact SA, and CMW).

The selection of the 10 pilot cities, as outlined earlier, allows for meaningful peer-to-peer learning and enables other cities and public authorities to learn from their experiences in working with the European City Calculator. The 4 pilot cities (**REA, Mantova, Dijon Metropole and Zdar**) as direct partners are represented by senior staff from departments with a strategic planning function. The other 6 pilot cities as indirect partners will also be represented through such staff, and will be involved by ENA and REA North in all project activities. **The selection of the remaining partners was guided as follows:**

Energy Cities: As European network of cities in energy transition, its strengths lie in managing EU-funded projects involving cities and public authorities, in fostering peer-to-peer learning and in maximising outreach across the EU. Energy Cities also acquired profound understanding of the European Calculator by working with it in the frame of the LIFE PlanUp project, and will use this experience to support the transition from the European Calculator to the European City Calculator, by acting as broker between the modelling world and the local energy transition reality.
PIK: As one of the two modelling partners of the project responsible for the European Calculator, PIK is well-positioned with its scientific expertise to ensure that the prospective modelling approach of the European City Calculator will be in line with the latest science and the 2050 EU targets. PIK also has experience from other EU projects (e.g. 2050 CliMobCity) in supporting cities and public authorities in planning their energy transition.
Climact SA: In complementarity to the modelling expertise provided by PIK, Climact SA's competences are especially its ability to support cities and public authorities with a practically applicable perspective on how they can use the levers approach to trigger systemic change at the adequate governance level. Climact SA is also astute in the main local planning documents (e.g. SEAPs/SECAPs), especially due to their experience in working with cities in Belgium. Climact SA's work with Member States in feeding European Calculator pathways and scenarios into their NECPs can be leveraged to support the project's 10 pilot cities in doing the same for their pathways and scenarios.
CMW: With its policy expertise in shaping the Governance Regulation, CMW is well-placed to support the pilot cities in strengthening their role within this framewok. CMW can also leverage this expertise through its experience in coordinating LIFE PlanUp, which has shaped the NECPs agenda in the past two years. CMW's strength in developing and applying innovative communication tools, especially multimedia tools, will contribute to strengthen the project's communication and outreach capacity. As NGO, CMW's knowledge on how to engage these key local stakeholders will also be critical in shaping the co-creation process of the webtool in the pilot cities.
ENA: As practitioners with long-term expertise in supporting city planning, e.g. SEAPs/SECAPs, ENA's strengths lie in technical rigour, methodological discipline and data collection. ENA has participated in the SEAPs/SECAPs of the PT pilot cities it will support in EUCityCalc, and they are part of ENA's Board. ENA is also astute in

establishing and maintaining ties with local stakeholders, which will be key in leading **WP4**. ENA will commit senior staff to EUCityCalc, including an expert on dissemination and communication to boost outreach in PT.
REA North: With a similar profile to ENA, REA North complements ENA and will ensure that the Croatian pilot cities it supports will benefit from all learnings of EUCityCalc. REA North was also established by the Croatian pilot cities to support their transition, e.g. in the SEAPs/SECAPs process. REA North has experience in training other cities and public authorities in this regard, which will be key for leading the **WP5** training programme. REA North will commit senior staff to the project, including a dissemination and communication expert to boost outreach in Croatia.
SEMMO: SEMMO's long-term expertise of supporting Czech cities in their planning process, e.g. on SEAPs/SECAPs, will serve its accompaniment of Zdar in working with the webtool. SEMMO will also run the training programme in CZ, and contribute to dissemination and communication to increase outreach in this country.

3.4 Resources to be committed

Table 3.4 b 'Other direct cost' items (travel, equipment, goods and services)
Reasons are stated for partners where other direct costs are higher than 15% of direct personal costs. These costs are e.g. due to travel, event organisation, webtool tailoring and communication tools. Transnational travel costs are generally budgeted at EUR 900 per travel per person (EUR 500 travel, EUR 400 subsistence), due to partners aiming to travel low-carbon, i.e. train, where possible. As train travel is still costlier than flying, this informed travel costs calculation.

However, concerning travel costs within the pilot cities' countries (as for the expert working group meetings, trainings, national workshops and national-level dissemination events), these are budgeted lower, due to shorter travel distances and lower accommodation expenses.

Furthermore, clarifications are provided on the amount of persons per beneficiary travelling to project meetings, dissemination events, expert working group meetings and national workshops.

As concerns the project meetings, 2 persons per beneficiary are required to travel. This is because the project meetings gather the Steering group of EUCityCalc, which is composed of two representatives per partner and acts as the project's decision-making body for strategic, principle decisions.

As regards the travel to dissemination events, 2 persons are required for those beneficiaries travelling to dissemination events at national level (REA, Mantova, Dijon Metropole, ENA, Zdar, SEMMO, REA North). This is necessary, as these beneficiaries are usually represented at these events by their high-level representative (e.g. mayor, deputy mayor, president) who is accompanied by a senior staff to support them throughout the event, including i.e. their speech in a session and participation in plenary discussions.

Concerning the travel to national workshops, 3 persons are required to travel in the case of the beneficiaries ENA, SEMMO and REA North. This is necessary as 1 senior staff is moderating the national workshop, 1 high-level representative (e.g. mayor, deputy mayor, president) is presenting and discussing the country-specific recommendations with the national policymakers present, and 1 staff is responsible for overseeing the overall organization of the workshop on the spot (e.g. setting up the venue, managing the attendance, distributing relevant materials, etc.).

Finally, regarding the travel to expert working group meetings, 2 persons are needed to travel in the case of the beneficiaries ENA, SEMMO and REA North. The role of ENA, SEMMO and REA North is to accompany the Portuguese, Czech and Croatian pilot cities in the organization of the expert working group meetings. For this, it is deemed necessary that 1 person from these beneficiaries travels to co-moderate the meetings, and 1 person supports in facilitating interactions with the local stakeholders during the meetings (such as e.g. for the co-creation session, the workshop on technical assumptions, the workshop on scenario analysis and trade-offs between sectors).

Energy Cities (1)	Cost (€)	Justification
Travel	39000	Project meetings in Croatia and Portugal + 2 trips + 2 Energy Cities staff travelling + EUR 900 cost estimation per trip per person = **EUR 3600** Dissemination events at EU-level + 3 trips + 1 Energy Cities staff travelling + EUR 900 cost estimation per trip per person = **EUR 2700** Trainings in Dijon + 2 trips + 1 Energy Cities staff travelling from Brussels + EUR 900 cost estimation per trip per person = **EUR 1800** Kick-off, interim and final project meetings in Brussels with project advisory board + 3 trips + 3 advisory board members travelling + EUR 900 cost estimation per trip per person = **EUR 8100** Trainings in Dijon for participants + 2 trips + 10 persons travelling + EUR 150 travel subsidy per trip per person = **EUR 3000** Trainings at EU-level for participants + 2 trips + 30 persons travelling + EUR 300 travel subsidy per trip per person = **EUR 18000** EU-level workshop + 1 trip + 2 speakers travelling + EUR 900 cost estimation per trip per person = **EUR 1800**
Other goods and services	58100	Organisation of 5 project meetings in Brussels = **EUR 11250**: cost breakdown and description EUR 2250 cost estimated per project meeting at Energy Cities room facilities, as follows: EUR 1250 for 2 lunches for on average 25 participants, with cost per person estimated at EUR 25: EUR 25*25 participants*2 lunches = EUR 1250 EUR 1000 for 1 dinner for on average 25 participants, with cost per person estimated at EUR 40: EUR 40*25 participants = EUR 1000 5 project meetings*EUR 2250 per meeting = EUR 11250 in total Translation of webtool = **EUR 22050**: cost breakdown and description The webtool will be translated into 6 languages of the pilot cities, which are Czech, Italian, Latvian, Croatian, French and Portuguese. The English interface in Excel of the entire webtool consists of approximately 30625 words to be translated. The average translation cost per word according to standard market prices is at EUR 0,12 per word. As 6 languages have to be covered in the translation, the calculation is as follows: 30625 words*EUR 0,12 translation cost per word*6 languages = EUR 22050 Organisation of 2 trainings at EU-level in Brussels = **EUR 2000**: cost breakdown and description EUR 1000 cost estimated per training at Energy Cities room facilities, as follows: EUR 1000 for 1 lunch and coffee for 33 persons (30 participants & 3 Energy Cities staff conducting training), with cost per person estimated at EUR 30,3: EUR 30,3*33 persons = EUR 1000 2 trainings*EUR 1000 per training = EUR 2000 in total Organisation of 1 EU-level workshop in Brussels = **EUR 1000**: cost breakdown and description EUR 1000 cost estimated for 1 workshop at Energy Cities room facilities, as follows: EUR 1000 for 1 lunch and coffee for an estimated 30 participants, with cost per person estimated at EUR 33,33: EUR 33,33*30 persons = EUR 1000 in total Project website = **EUR 12000**: cost breakdown and description The Project website will consist of the following cost components: Website development based on open-source CMS, including insertion of the existing European Calculator interface, from which the European City Calculator interface will be

		built on = EUR 6000 Website design = EUR 1000 Newsletter system for website = EUR 2000 Annual maintenance = EUR 3000 Final conference in Brussels = **EUR 5000**: cost breakdown and description Room rental cost for conference venue = EUR 2000 1 Lunch and coffee for an estimated 75 participants, with estimated cost at EUR 40 per person = EUR 3000 Translation for 6 podcasts = **EUR 1200** Editing 6 infographics = **EUR 3600**
Total	97100	

Climact SA (3)	**Cost (€)**	**Justification**
Travel	4500	Project meetings in Croatia and Portugal + 2 trips + 2 Climact SA staff travelling + EUR 900 cost estimation per trip per person = **EUR 3600** Dissemination event at EU-level + 1 trip + 1 Climact SA staff travelling + EUR 900 cost estimation per trip per person = **EUR 900**
Other goods and services	50000	Webtool improvements = **EUR 50000**: cost breakdown and description The improvements made to the webtool will consist of the following cost components: - Improve the friendliness and usability of the interface (e.g. better automate the lever descriptions based on the available data, make data model input refinement by cities easier) = EUR 11100 - Improve the city KPIs visualization (modify the website interface to reflect city-specific KPIs) = EUR 4690 - Update the API to reflect the city specificities (it will be e.g. adapted to better handle the hierarchies between cities, regions and countries) = EUR 12650 - Implement a comparison feature (between different cities, and between different pathways – as e.g. enabling to compare pathways to be visible in absolute or in per capita) = EUR 8210 - Improve the display of the graphs (to make graphs more readable) = EUR 6450 - Add additional graph types (such as bars, tables, sankeys) = EUR 6900
Total	54500	

CMW (4)	**Cost (€)**	**Justification**
Travel	6300	Project meetings in Croatia and Portugal + 2 trips + 2 CMW staff travelling + EUR 900 cost estimation per trip per person = **EUR 3600** Dissemination event at EU-level + 1 trip + 1 CMW staff travelling + EUR 900 cost estimation per trip per person = **EUR 900** EU-level workshop + 1 trip + 2 speakers travelling + EUR 900 cost estimation per trip per person = **EUR 1800**
Other goods and services	22500	Organisation of 1 EU-level workshop in Brussels = **EUR 1000**: cost breakdown and description EUR 1000 cost estimated for 1 workshop at EP room facilities, as follows:

		EUR 1000 for 1 lunch for an estimated 30 participants, with cost per person estimated at EUR 33,33: EUR 33,33*40 persons = EUR 1000 in total Visual identity & media package = **EUR 5000**: cost breakdown and description The visual identity & media package will consist of the following cost components: Development and creation of brand design and visual identity (logo, templates for presentations and reports) = EUR 2700 Development of a corporate identity manual (brandbook) = EUR 1300 Project management = EUR 500 Media promotion = EUR 500 6 videos for toolkits = **EUR 12000**: cost breakdown and description The 6 videos for the local communication campaign toolkits will consist of the following cost components, based on experience with animation service providers: EUR 2000 per video, which includes text storyboard, concept design, 2D animation, rigging, illustrations and video editing Layout and printing of narrative report = **EUR 2000** Layout and printing of overall policy recommendations = **EUR 2500**
Total	28800	

REA (5)	**Cost (€)**	**Justification**
Travel	16500	Project meetings in Brussels, Croatia and Portugal + 7 trips + 2 REA staff travelling + EUR 900 cost estimation per trip per person = **EUR 12600** Dissemination event at national level + 1 trip + 2 REA staff travelling + EUR 450 cost estimation per trip per person = **EUR 900** Trainings in Riga for participants + 2 trips + 10 persons travelling + EUR 150 travel subsidy per trip per person = **EUR 3000**
Other goods and services	5000	Organisation of 5 expert working group meetings in Riga = **EUR 3150**: cost breakdown and description EUR 630 cost estimated per meeting at REA facilities, as follows: EUR 630 for 1 lunch for an estimated 35 participants (local stakeholders & REA staff), with cost per person estimated at EUR 18: EUR 18*35 participants = EUR 630 5 meetings*EUR 630 per meeting = EUR 3150 in total Organisation of 2 trainings in Riga = **EUR 600**: cost breakdown and description EUR 300 cost estimated per training at REA facilities, as follows: EUR 300 for 1 lunch & coffee for an estimated 12 persons (10 participants and 2 REA staff), with cost per person estimated at EUR 25: EUR 25*12 persons = EUR 300 2 trainings*EUR 300 per training = EUR 600 in total Room facilities provided for trainings Organisation of 1 national roundtable workshop in Riga = **EUR 1250**: cost breakdown and description EUR 1250 cost estimated for 1 workshop at REA facilities, as follows: EUR 1250 for 1 lunch for an estimated 50 participants, with cost per person estimated at EUR 25: EUR 25*50 participants = EUR 1250 in total
Total	21500	

Mantova (6)	Cost (€)	Justification
Travel	16500	Project meetings in Brussels, Croatia and Portugal + 7 trips + 2 Mantova staff travelling + EUR 900 cost estimation per trip per person = **EUR 12600** Dissemination event at national level + 1 trip + 2 Mantova staff travelling + EUR 450 cost estimation per trip per person = **EUR 900** Trainings in Mantova for participants + 2 trips + 10 persons travelling + EUR 150 travel subsidy per trip per person = **EUR 3000**
Other goods and services	5000	Organisation of 5 expert working group meetings in Mantova = **EUR 3000**: cost breakdown and description EUR 600 cost estimated per meeting at Mantova facilities, as follows: EUR 600 for 1 lunch for an estimated 25 participants (local stakeholders and Mantova staff), cost per person estimated at EUR 24: EUR 24*25 participants = EUR 600 5 meetings*EUR 600 per meeting = EUR 3000 in total Organisation of 2 trainings in Mantova = **EUR 720**: cost breakdown and description EUR 360 cost estimated per training, as follows: EUR 360 for 1 lunch and coffee for an estimated 12 persons (10 participants and 2 Mantova staff), with cost per person estimated at EUR 30: EUR 30*12 persons = EUR 360 2 trainings*EUR 360 per training = EUR 720 in total Room facilities provided for trainings Organisation of 1 national roundtable workshop in Mantova = **EUR 1280**: cost breakdown and description EUR 1280 cost estimated for 1 workshop at Mantova facilities, as follows: EUR 1280 for 1 lunch for an estimated 40 participants, with cost per person estimated at EUR 32: EUR 32*40 persons = EUR 1280 in total
Total	21500	

Dijon Metropole (7)	Cost (€)	Justification
Travel	13500	Project meetings in Brussels, Croatia and Portugal + 7 trips + 2 staff travelling + EUR 900 cost estimation per trip per person = **EUR 12600** Dissemination event at national level + 1 trip + 2 Dijon Metropole staff travelling + EUR 450 cost estimation per trip per person = **EUR 900**
Other goods and services	5000	Organisation of 5 expert working group meetings in Dijon = **EUR 3000**: cost breakdown and description EUR 600 cost estimated per meeting at Dijon Metropole facilities, as follows: EUR 600 for 1 lunch for an estimated 25 participants (local stakeholders and Dijon Metropole staff), with cost per person estimated at EUR 24: EUR 24*25 participants = EUR 600 5 meetings*EUR 600 per meeting = EUR 3000 in total Organisation of 2 trainings in Dijon = **EUR 720**: cost breakdown and description EUR 360 cost estimated per training, as follows:

		EUR 360 for 1 lunch and coffee for an estimated 12 persons (10 participants, Dijon Metropole and Energy Cities staff), with cost per person estimated at EUR 30: EUR 30*12 persons = EUR 360 2 trainings*EUR 360 per training = EUR 720 in total Room facilities provided for trainings Organisation of 1 national roundtable workshop in Dijon = **EUR 1280**: cost breakdown and description EUR 1280 cost estimated for 1 workshop at Dijon Metropole facilities, as follows: EUR 1280 for 1 lunch for an estimated 40 participants, with cost per person estimated at EUR 32: EUR 32*40 persons = EUR 1280 in total
Total	18500	

ENA (8)	**Cost (€)**	**Justification**
Travel	24300	Project meetings in Brussels and Croatia + 6 trips + 2 ENA staff travelling + EUR 900 cost estimation per trip per person = **EUR 10800** Dissemination event at national level + 1 trip + 2 ENA staff travelling + EUR 450 cost estimation per trip per person = **EUR 900** Expert working group meetings in Portugal + 8 trips + 2 ENA staff travelling + EUR 112,5 cost estimation per trip per person = **EUR 1800** Trainings in Portugal + 2 trips + 3 ENA staff travelling + EUR 150 cost estimation per trip per person = **EUR 900** Trainings in Portugal for participants + 2 trips + 30 persons travelling + EUR 150 travel subsidy per trip per person = **EUR 9000** National workshop in Portugal + 1 trip + 3 ENA staff travelling + EUR 300 cost estimation per trip per person = **EUR 900**
Other goods and services	9500	Organisation of 1 project meeting in Portugal = **EUR 2000**: cost breakdown and description EUR 2000 cost estimated for meeting at ENA room facilities, as follows: EUR 1000 for 2 lunches for 25 participants, with cost per person estimated at EUR 20: EUR 20*25 participants*2 lunches = EUR 1000 EUR 1000 for 1 dinner for 25 participants, with cost per person estimated at EUR 40: EUR 40*25 participants = EUR 1000 Organisation of 13 expert working group meetings in Portugal = **EUR 5000**: cost breakdown and description First meeting jointly for the expert working groups of the 3 Portuguese pilot cities, estimated at EUR 800, as follows: EUR 800 for 1 lunch for an estimated 40 participants (local stakeholders, pilot cities, ENA staff), cost per person estimated at EUR 20: EUR 20*40 participants = EUR 800 Remaining 12 expert working group meetings – 4 per pilot city – estimated each at EUR 350, as follows: EUR 350 for 1 lunch for an estimated 20 participants (local stakeholders, pilot cities, ENA staff) with cost per person estimated at EUR 17,5: EUR 17,5*20 participants = EUR 350 12 meetings*EUR 350 per meeting = EUR 4200 Room facilities provided for all meetings Total amount for 13 meetings = EUR 5000 in total

		Organisation of 2 trainings in Portugal = **EUR 1500**: cost breakdown and description EUR 750 cost estimated per training, as follows: EUR 750 for 1 lunch and coffee for 33 persons (30 participants and 3 ENA staff), with cost per person estimated at EUR 22,72: EUR 22,72*33 persons = EUR 750 2 trainings*EUR 750 per training = EUR 1500 in total Room facilities provided for trainings Organisation of 1 national roundtable workshop in Portugal = **EUR 1000**: cost breakdown and description EUR 1000 cost estimated for 1 workshop, as follows: EUR 1000 for 1 lunch for an estimated 40 participants, with cost per person estimated at EUR 25: EUR 25*40 persons = EUR 1000 in total Workshop venue provided
Total	33800	

Zdar (9)	**Cost (€)**	**Justification**
Travel	13500	Project meetings in Brussels, Croatia and Portugal + 7 trips + 2 Zdar staff travelling + EUR 900 cost estimation per trip per person = **EUR 12600** Dissemination event at national level + 1 trip + 2 Zdar staff travelling + EUR 450 cost estimation per trip per person = **EUR 900**
Other goods and services	5000	Organisation of 5 expert working group meetings in Zdar = **EUR 2500**: cost breakdown and description EUR 500 cost estimated per meeting at Zdar facilities, as follows: EUR 500 for 1 lunch for an estimated 25 participants (local stakeholders, Zdar and SEMMO staff), with cost per person estimated at EUR 20: EUR 20*25 participants = EUR 500 5 meetings*EUR 500 per meeting = EUR 2500 in total Organisation of 2 trainings in Zdar = **EUR 1500**: cost breakdown & description EUR 750 cost estimated per training at Zdar facilities, as follows: EUR 750 for 1 lunch and coffee for 35 persons (30 participants, 2 Zdar staff & 3 SEMMO staff), with cost per person estimated at EUR 21,42: EUR 21,42*35 persons = EUR 750 2 trainings*EUR 750 per training = EUR 1500 in total Room facilities provided for trainings Organisation of 1 national roundtable workshop in Zdar = **EUR 1000**: cost breakdown and description EUR 1000 cost estimated for 1 workshop at Zdar facilities, as follows: EUR 1000 for 1 lunch for an estimated 40 participants, with cost per person estimated at EUR 25: EUR 25*40 persons = EUR 1000 in total
Total	18500	

SEMMO (10)	**Cost (€)**	**Justification**
Travel	26100	Project meetings in Brussels, Croatia and Portugal + 7 trips + 2 SEMMO staff travelling + EUR 900 cost estimation per trip per person = **EUR 12600** Dissemination event at national level + 1 trip + 2 SEMMO staff travelling + EUR 450 cost estimation per trip per person = **EUR 900**

		Expert working group meetings in Zdar + 5 trips + 2 SEMMO staff travelling + EUR 180 cost estimation per trip per person = **EUR 1800** Trainings in Zdar + 2 trips + 3 SEMMO staff travelling + EUR 150 cost estimation per trip per person = **EUR 900** Trainings in Zdar for participants + 2 trips + 30 persons travelling + EUR 150 travel subsidy per trip per person = **EUR 9000** National workshop in Zdar + 1 trip + 3 SEMMO staff travelling + EUR 300 cost estimation per trip per person = **EUR 900**
Total	26100	

REA North (11)	**Cost (€)**	**Justification**
Travel	24300	Project meetings in Brussels and Portugal + 6 trips + 2 REA North staff travelling + EUR 900 cost estimation per trip per person = **EUR 10800** Dissemination event at national level + 1 trip + 2 REA North staff travelling + EUR 450 cost estimation per trip per person = **EUR 900** Expert working group meetings in Croatia + 8 trips + 2 REA North staff travelling + EUR 112,5 cost estimation per trip per person = **EUR 1800** Trainings in Croatia + 2 trips + 3 REA North staff travelling + EUR 150 cost estimation per trip per person = **EUR 900** Trainings in Croatia for participants + 2 trips + 30 persons travelling + EUR 150 travel subsidy per trip per person = **EUR 9000** National workshop in Croatia + 1 trip + 3 REA North staff travelling + EUR 300 cost estimation per trip per person = **EUR 900**
Other goods and services	9500	Organisation of 1 project meeting in Croatia = **EUR 2000**: cost breakdown and description EUR 2000 cost estimated for meeting at REA North room facilities, as follows: EUR 1000 for 2 lunches for 25 participants, with cost per person estimated at EUR 20: EUR 20*25 participants*2 lunches = EUR 1000 EUR 1000 for 1 dinner for 25 participants, with cost per person estimated at EUR 40: EUR 40*25 participants = EUR 1000 Organisation of 13 expert working group meetings in Croatia = **EUR 5000**: cost breakdown and description First meeting jointly for the expert working groups of the 3 Croatian pilot cities, estimated at EUR 800, as follows: EUR 800 for 1 lunch for an estimated 40 participants (local stakeholders, pilot cities, REA North staff), cost per person estimated at EUR 20: EUR 20*40 participants = EUR 800 Remaining 12 expert working group meetings – 4 per pilot city – estimated each at EUR 350, as follows: EUR 350 for 1 lunch for an estimated 20 participants (local stakeholders, pilot cities, REA North staff) with cost per person estimated at EUR 17,5: EUR 17,5*20 participants = EUR 350 12 meetings*EUR 350 per meeting = EUR 4200 Room facilities provided for all meetings Total amount for 13 meetings = EUR 5000 in total Organisation of 2 trainings in Croatia = **EUR 1500**: cost breakdown and description EUR 750 cost estimated per training, as follows:

		EUR 750 for 1 lunch and coffee for 33 persons (30 participants and 3 REA North staff), with cost per person estimated at EUR 22,72: EUR 22,72*33 persons = EUR 750 2 trainings*EUR 750 per training = EUR 1500 in total Room facilities provided for trainings Organisation of 1 national roundtable workshop in Croatia = **EUR 1000**: cost breakdown and description EUR 1000 cost estimated for 1 workshop, as follows: EUR 1000 for 1 lunch for an estimated 40 participants, with cost per person estimated at EUR 25: EUR 25*40 persons = EUR 1000 in total Workshop venue provided
Total	33800	

4. Members of the consortium

4.1. Participants

Participant No. 1 – Energy Cities (Energy Cities)

Description of the legal entity

Energy Cities is the European association of local authorities in energy transition. The network represents 1,000 cities and towns from 30 countries. Energy Cities triggers a trustful dialogue between local leaders and EU & national institutions to accelerate the energy transition in Europe. The network gathers frontrunners and energy transition beginners, city officials and technical experts. Energy Cities is steered by a Board of Directors of 11 cities from 11 countries, and its activities are driven by a staff of 25 international experts. Its current President is the City of Heidelberg (Germany), which also sits at the board of the Covenant of Mayors Europe and the Global Covenant of Mayors initiatives.

Its main objectives are to:

- Strengthen local authorities' role and skills in the field of sustainable energy.
- Represent their interests and influence the EU policies in the fields of energy, environmental protection and urban policy.
- Develop and promote cities' initiatives through exchange of experiences, transfer of know-how and implementation of joint projects.

Energy Cities wants a radical transformation of the energy systems and policies, giving citizens the power to shape a decentralised and renewable energy future. The network believes that the energy transition is not just about clean energy or great technologies: It is about a wise use of resources, while strengthening local participation and well-being in a democratic Europe.

Through persistent advocacy work in Brussels and Member States, Energy Cities transforms European governance and legal frameworks so that cities can fully play their role in the energy transition. Its events provide creative spaces for our community to connect and share experiences. The network also develops, tests and applies new solutions in projects. They serve as tools for others. The stories shared demonstrate the many benefits of a participatory energy transition to national and European decision-makers.

With more than 30 year of experience in the management and coordination of EU-funded projects in programmes such as Horizon 2020, IEE, FP7, LIFE and INTERREG, Energy Cities is well placed to support cities in driving the energy transition in Europe. By developing capacity-building materials, organizing trainings and peer-to-peer activities and facilitating collaboration, networking and new partnerships, we seek to foster the upscaling and replication of innovative and successful governance, transition management, roadmapping and other tools by European public authorities at local level.

Energy Cities has also been engaged in different projects and programmes addressing in particular the long-term decarbonisation pathways of cities, such as the French Post-Carbon City Programme led by ADEME (French National Environment and Energy Agency) and the French Environment Ministry, but also the EU FP7 funded POCACITO (Post-Carbon Cities of Tomorrow) project and the on-going INTERREG Europe project MOLOC - Low carbon urban morphology.

From 2009 onwards, Energy Cities has also been coordinating the European Covenant of Mayors initiative, which is supporting now over 10 000 signatory cities in the development and implementation of their Sustainable energy & climate action plans (SECAPs). The ambitious SECAPs developed by local authorities committed to the Covenant of Mayors have proven to be critical in supporting the EU in meeting its 2020 and 2030 EU climate and energy objectives. Energy Cities can leverage on this experience to further support public authorities, in particular local authorities, in their energy transition in Europe.

In EUCityCalc, Energy Cities will be involved as coordinator and lead WP1 (Project Management) and WP7 (Communication & Dissemination). For WP1, Energy Cities will leverage its abovementioned experience in managing and coordinating EU-funded projects. For WP7, Energy Cities will notably build in the communication and dissemination on its established channels, such as e.g. its monthly newsletter with over 4,000 subscriptions, and its Twitter account with over 9,000 followers. Moreover, Energy Cities' annual conference attracts each year some 200 participants (cities, regions, national- and EU-decision-makers, etc.).

Key personnel to be involved in the proposed project

Name :	Gonçalves	**First Name:**	Francisco	**Gender:**	Male	**Nationality:**	Portuguese
Qualification (degree):	MSc in Environmental Engineering & Executive Master in Management						
Job title:	Project Management & Overall Coordination						
Short description of work experience, relevant to the proposal:	Francisco Gonçalves is PMP® (Project Management Professional) and IPMVP (International Performance Measurement and Verification Protocol) certified and has a strong experience in urban sustainable management - energy efficiency and renewable energy. He has gained strong technical skills in the fields of Smart Cities, energy efficiency, low carbon energy production and urban water cycle management in Lisbon's Energy and Environmental Agency – Lisboa E-Nova; between 2009 and 2017. Francisco Gonçalves has been working for Energy Cities since April 2017. He is coordinating and managing European projects, including project strategic orientation and building trustful relationships with consortia of project partners coming from various European countries. He is currently responsible for the coordination of the recently launched EU City Facility and is also managing replication activities in the Smarter Together (Horizon 2020 Smart Cities and communities) project and mPOWER (Horizon 2020) projects. He speaks Portuguese, English, German and Spanish.						
Role within the project:	Overall project coordination & capacity-building and training programme						

Name :	Cappelletti	**First Name:**	Floriane	**Gender:**	Female	**Nationality:**	French
Qualification (degree):	Bachelor degree in Applied Foreign Languages & Master degree in Management – International Business						
Job title:	Communication Management & Overall Coordination						
Short description of work experience, relevant to the proposal:	Floriane Cappelletti has been working for Energy Cities since 2011 as a communication specialist. She has been involved in several European projects related to supporting public authorities in their energy transition, such as the progRESsHEAT project (H2020) and the Infinite Solutions project (Intelligent Energy Europe). Floriane Cappelletti became Communication Manager for the European Covenant of Mayors Office in 2015, where she is responsible for communication strategy development, communication team coordination, production of communication tools (printed materials, website content management, etc.), community management, event partnerships and media relations. She speaks French, English and Italian.						
Role within the project:	Coordination of Communication & Dissemination						

Name :	Donnerer	**First Name:**	David	**Gender:**	Male	**Nationality:**	Austrian & French
Qualification (degree):	BA in Journalism and Media Management & MA in International Studies						
Job title:	EU Policy & Project Manager						
Short description of work experience, relevant to the proposal:	David Donnerer is EU Policy and Project Manager at Energy Cities since September 2015. His focus areas in EU policy include notably EU funding processes, energy and climate governance, energy efficiency and digital energy technologies. He is CAPM® (Certified Associate in Project Management) certified. Within the Covenant of Mayors, he has organized capacity-building events and advanced the impact of the initiative at EU and national level. He has worked in EU projects related to supporting public authorities in their energy efficiency policies, such as the Energy Efficiency						

	Watch 3 project (Intelligent Energy Europe) or the PUBLEnEF project (H2020). He currently manages the activities related to facilitating a multi-level governance framework in the ongoing National Energy and Climate Plan process in the EU Member States Italy, Spain, Poland, Hungary and Romania through the LIFE PlanUp project. Before joining Energy Cities, David Donnerer worked for 6 years as a journalist for various Austrian and European media outlets. He speaks German, French, English, Spanish and Dutch.
Role within the project:	Supporting overall project coordination & shaping the multi-level governance framework for climate neutrality

List of up to 5 relevant projects or activities

Project/activities	**National or local/regional or European**	**Year of finalisation**	**Website**
TOMORROW	European (Horizon 2020)	2022	www.citiesoftomorrow.eu
LIFE PlanUp	European (LIFE)	2021	www.planup.eu
Covenant of Mayors service contract n°4	European	2020	www.eumayors.eu
PUBLEnEF	European (Horizon 2020)	2019	http://publenef-project.eu/
POCACITO	European (FP7)	2016	https://pocacito.eu/

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	**Year**	**Website**
INTERREG MOLOC project: City pathways to low-carbon models	2020	https://energy-cities.eu/wp-content/uploads/2020/01/publication_MOLOC_EN_web.pdf
Horizon 2020 Hotmaps project: Toolbox to support strategic heating & cooling planning at local level	2019	https://energy-cities.eu/wp-content/uploads/2019/11/brochure-hotmaps-web-2-1.pdf
LIFE PlanUp project: Report on good practices in energy and climate governance	2019	https://energy-cities.eu/wp-content/uploads/2019/09/C7.4_Report-on-good-practices-in-energy-and-climate-governance_ENC.pdf
Cities heading towards 100% renewable energy by controlling their consumption	2016	https://energy-cities.eu/wp-content/uploads/2018/11/publi_100pourcent_final-web_en.pdf
Low-Energy City Policy Handbook (INTERREG IVC project IMAGINE)	2014	http://www.energy-cities.eu/IMG/pdf/handbook_imagine_a.pdf & http://www.energy-cities.eu/IMG/pdf/handbook_imagine_b.pdf

Participant No. 2 – Potsdam Institute for Climate Impact Research (PIK)

Description of the legal entity

The **Potsdam Institute for Climate Impact Research** (PIK), founded in 1992, is a non-profit research institute addressing crucial scientific questions in the fields of global change, climate impacts and sustainable development. Researchers in the natural and social sciences work closely together to examine the earth system‘s capacity for withstanding human interventions and devise options for a sustainable development of humankind and nature; bringing together the concepts of global commons and of planetary boundaries are key in this interdisciplinary endeavour. The co-production of knowledge with representatives of politics, economy and civil society play a

pivotal role at PIK in assisting stakeholder to develop robust mitigation and adaptation strategies and to illuminate the implications of potential policy options.

Within PIK's research structure, the working group 'Urban Transformations' (UT) is dedicated to the investigation of sustainability challenges at the urban scale. Among these are the creation of knowledge and tools assisting the reconfiguration of structures and service-provision in cities in order to bring these in line with low-carbon pathways. Because the UT group takes a systematic approach to the investigation of city-scale challenges, the lessons learned are transferrable across urban geographies. This is of importance in the context of the EUCityCalc project, as it will allow to compile the fragmented knowledge regarding mitigation actions that currently characterises cites (observable even across the different planning offices within just one single city). On the modelling side, the UT group has lead the scientific work of the European Calculator, an open-source model that assists decision makers to test their own policies. The model accounts for various topics like lifestyles, mobility, health, land use, and food security for example. This fits perfectly with the needs of the current proposal to the extent that although cities are unique entities, they are embedded into national and European structures (e.g., electricity provision, common markets) that need to be accounted for in the development of local policy scenarios, transition pathways and action plans towards climate neutrality.

In EUCityCalc, PIK will be especially involved as leader of WP2 (Refining the methodology of the European City Calculator), for which it will be able to leverage its aforementioned expertise and experience.

Key personnel to be involved in the proposed project

Name :	Costa	**First Name:**	Luís	**Gender:**	Male	**Nationality:**	Portuguese
Qualification (degree):	PhD						
Job title:	Post-Doc						
Short description of work experience, relevant to the proposal:	Luís Costa has managed over the last 3 years the scientific work of the EUCalc project and respective model, on which the European City Calculator will build upon. He has the full overview of model outputs and capabilities across economic sectors, particular regarding the demand side. This is fundamental in facilitating the communication with cities and in assisting them leveraging the European City Calculator for the purposes of developing their policy scenarios and transition pathways towards climate neutrality. He has been an active participant in stakeholder workshops for the purposes of energy model refinement and stakeholder needs; these skills will be relevant to assist the co-creation process in the pilot cities through expert working groups with key local stakeholders. Finally, his long experience with EU-funded projects will guarantee the timely delivery of project outputs.						
Role within the project:	Coordination refining the methodology of the European City Calculator and supporting the co-creation process in pilot cities						

Name :	Reitemeyer	**First Name:**	Fabian	**Gender:**	Male	**Nationality:**	German
Qualification (degree):	Master						
Job title:	Junior Scientist						
Short description of work experience, relevant to the proposal:	Fabian Reitemeyer is currently leading the modelling and comparison of GHG transport emissions in the case-study cities of the ongoing INTERREG 2050CliMobCity project. The lessons learned and knowledge acquired in terms of data needs from cities and current status of energy modelling at city-scale from 2050CliMobCity will be valuable to transfer to the EUCityCalc proposal. Prior to joining PIK, he worked in the environment and nature department of Charlottenburg-Wilmersdorf, an inner-city district of Berlin.						
Role within the project:	Refining the methodology of the European City Calculator and supporting pilot cities in leveraging the webtool for their transition, overall dissemination of project results						

Name :	Hezel	**First Name:**	Bernd	**Gender:**	Male	**Nationality:**	German
Qualification (degree):	PhD						
Job title:	Post-Doc						
Short description of work experience, relevant to the proposal:	Bernd Hezel was over the last 3 years closely involved in the scientific work of the EUCalc project. He supported the model process and content related discussions, especially in regard how to link the different sectors and to find efficient ways to calculate the results in the European Calculator. Additionally, he presented the model to stakeholders and collected also their feedback during an iterative co-creation process. Bernd Hezel has been working for many years closely with the so-called calculator community and is very experienced in bringing together scientific based knowledge with stakeholders usability needs.						
Role within the project:	Refining the methodology of the European City Calculator, supporting pilot cities in leveraging the webtool for their transition and the co-creation process in pilot cities						

Name :	Walter	**First Name:**	Christiane	**Gender:**	Female	**Nationality:**	German
Qualification (degree):	Magistra Artium						
Job title:	Coordinator						
Short description of work experience, relevant to the proposal:	Christiane Walter is project and also group coordinator of Urban Transformations working group at PIK's Research Department 2. She was also part of the coordination team that lead the EUCalc project and is therefore familiar with the approach and developed model as well as tools and other communication material. As journalist by training, she is very experienced in stakeholder involvement, targeted communication processes as well as organisation of events and related materials like policy briefs, fact sheets etc.						
Role within the project:	Coordination administrative issues and reporting duties of PIK and supporting project dissemination and communication related tasks						

List of up to 5 relevant projects or activities

Project/activities	**National or local/regional or European**	**Year of finalisation**	**Website**
EUCalc	European (Horizon 2020)	2020	www.european-calculator.eu
2050 CliMobCity	European (INTERREG)	2023	www.interregeurope.eu/2050climobcity
RAMSES	European (FP7)	2017	https://ramses-cities.eu/home/
Global Calculator	Global	2014	http://tool.globalcalculator.org/
KLiB	Local	2019	https://klimaneutral.berlin/

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	**Year**	**Website**
European Calculator model	2020	https://bitbucket.org/account/user/eucalcmodel/projects/EC & http://www.european-calculator.eu/
Master thesis: Reitemeyer, Fabian (2019) Erstellung einer Treibhausgasbilanz für Bezirke und Vergleich mit einer verbraucherbasierten Treibhausgasbilanz mit direkten und indirekten Emissionen.	2019	

Book chapter: Reusswig, Fritz, Lass, Wiebke, Bock, Seraja (2020) Urban low-carbon futures: Results from real-world lab experiment in Berlin. In: Marta Lopes, Carlos Henggeler Antunes and Kathryn B. Janda (eds.): Energy and Behaviour. Towards a Low Carbon Future. Elsevier, pp. 419-450.	2020	https://doi.org/10.1016/B978-0-12-818567-4.00016-8
Paper: Ramana Gudipudi, Till Fluschnik, Anselmo García Cantú Ros, Carsten Walther, Jürgen P. Kropp (2016) City density and CO2 efficiency, Energy Policy, Volume 91, p.352-361, ISSN 0301-4215.	2016	https://doi.org/10.1016/j.enpol.2016.01.015
Paper: Steffen Kriewald, Prajal Pradhan, Luis Costa, Anselmo Garcia Cantu Ros, Jürgen Kropp (2019): Hungry Cities: how local food self-sufficiency relates to climate change, diets, and urbanization. Environmental Research Letters	2019	https://doi.org/10.1088/1748-9326/ab2d56

Participant No. 3 – Climact S.A. (Climact SA)

Description of the legal entity

Climact SA is an engineering consultancy founded in Belgium whose mission is to support organisations to reduce their energy dependence and climate impact. Since 2007, Climact SA is building a solid reputation of professionalism, expertise and integrity. Its clients include small & large companies, NGOs, public authorities at all governance levels and local communities. Its services encompass prospective studies such as low carbon & energy roadmaps, GHG reduction strategies, carbon footprints, life cycle assessments and legal support. Climact SA's key experience and major activity over the past 10 years has been to develop and deploy models on a wide array of geographies and sectors, also assessing embedded emissions and economic impacts.

Climact SA was the modelling and programming lead for the development of the European Calculator in the EUCalc project. Prior to that, Climact SA was also leading the transport & manufacturing components of the Global Calculator (www.globalcalculator.org). Climact SA also has a key role in setting-up low carbon roadmaps in several territories across the world (e.g. Albania, Algeria, Belgium, Bosnia, Croatia, Ireland, Kosovo, North Macedonia, Malaysia, Montenegro, Serbia, Vietnam).
Climact SA is also supporting several federations in equipping their sector with low-carbon roadmaps (such as e.g. steel, Innovative products, furniture, glass, paper, printing & textiles). Furthermore, it has already supported various cities and regions in the development and implementation of their low-carbon roadmaps (in Belgium e.g. Ans, Les Bons Villers, Brussels, Louvain-la-Neuve, Mons, Namur, Pont-à-Selle, Seneffe, Visé, Antwerpen, Wallonia, Flanders).

In EUCityCalc, Climact SA will be especially involved as leader of WP3 (Supporting the pilot cities in leveraging the European City Calculator for their transition), for which it will be able to leverage its aforementioned expertise and experience in supporting public authorities at all governance levels.

Key personnel to be involved in the proposed project

Name :	Pestiaux	**First Name:**	Julien	**Gender:**	Male	**Nationality:**	Belgian
Qualification (degree):	Master in Civil Engineering – Orientation in Energy Master in Engineering Management (Energy and sustainability)						
Job title:	Director of Prospective analysis						
Short description of work experience, relevant to the proposal:	Julien Pestiaux has been leading the EUCalc work at Climact SA, and previously also the development of the transport sector for the Global Calculator project. He was further involved as project director for the Belgium Low Carbon roadmap 2050 and project manager for the development of 2050 low-carbon and renewable energy scenarios for the Walloon Region in Belgium. Prior to working at Climact SA, he worked at the EU Commission as member of the 2050 energy roadmap team at the DG Energy, detached from the European Climate Foundation, and was also project manager at McKinsey with a focus on energy and climate change issues. At McKinsey, he worked on energy projects such as the roadmap 2050: towards a prosperous, zero-carbon Europe and the Pathways to a low-carbon economy: Version 2 of the Global Greenhouse Gas Abatement Cost Curve. Julien Pestiaux is also co-author of the UNEP Bridging the gap report of 2011. He speaks French, English, Spanish and Dutch.						
Role within the project:	Supervisor of the Climact SA team providing strategic guidance						

Name :	Cornet	**First Name:**	Michel	**Gender:**	Male	**Nationality:**	Belgian
Qualification (degree):	Master in Civil Engineering – Orientation : Computer science						
Job title:	Energy & Climate Change Consultant and Business Partner						
Short description of work experience, relevant to the proposal:	Michel Cornet leads Climact SA's work on the industry and materials sector for various roadmaps, and also supported the work for the EUCalc and Global Calculator projects. He was also project manager for the Low Carbon 2050 roadmaps of Albania, Bosnia, Croatia, Kosovo, North Macedonia, Montenegro and Serbia. He also performed key components of the Belgium, Brussels, Ireland, Flanders & Wallonia 2050 roadmap. Michel Cornet is also managing several sector roadmaps (steel, innovative products, glass, paper, printing & textiles). Prior to working at Climact SA, he was consultant as A.T. Kearney with a focus on private equity and complexity management, and also worked in microfinance both on the field and within the special microfinance unit of the UNDP. Michel speaks French, English, Spanish and Dutch.						
Role within the project:	Supervisor providing strategic guidance						

Name :	Matton	**First Name:**	Vincent	**Gender:**	Male	**Nationality :**	Belgian
Qualification (degree):	Master degree in Applied Mathematics						
Job title:	Energy & Climate Change Consultant						
Short description of work experience, relevant to the proposal:	Vincent Matton is specialised in modelling and has worked both on a national and European level to build CO2 emissions calculators. He was furthermore one of the central programmers for the European Calculator in the EUCalc project. His expertise covers in particular data analytics and energy modelling. Prior to working at Climact SA, he worked at Image Matters as a Product Manager.						
Role within, the project:	Programming architect, coordinating the support provided to pilot cities in leveraging the European City Calculator for their transition and supporting the refinement of the methodology of the webtool						

Name :	Martin	**First Name:**	Benoît	**Gender:**	Male	**Nationality:**	Belgian
Qualification (degree):	Master in electromechanical engineering - orientation energy PhD in Electrical Engineering						
Job title:	Energy & Climate Change Consultant						
Short description of work experience, relevant to the proposal:	Benoît Martin works within Climact SA in mainly contributing to various low carbon models, low-carbon scenarios and quantitative assessment of climate policies in the European context, such as in the framework of EU projects like LIFE PlanUp. As concerns the European Calculator in the EUCalc project, he was involved in the development of the transport module. His expertise covers in particular programming, power systems and transport. Prior to working at Climact SA, he worked for a year for Boydens Engineering (HVAC). Benoît Martin is a native French speaker, and also speaks English and Dutch.						
Role within the project:	Transport lead, support provided to pilot cities in leveraging the European City Calculator for their transition and supporting the refinement of the methodology of the webtool, overall dissemination of project results.						

Name :	Jonas	**First Name:**	Maïté	**Gender:**	Female	**Nationality:**	Belgian
Qualification (degree):	Master of Science in Bio-engineering – Agronomy Major in Water and Soil Resources						
Job title:	Energy & Climate Change Consultant						
Short description of work experience, relevant to the proposal:	Maite Jonas is a consultant at Climact SA and is mainly specialised in data management and modelling. Prior to joining Climact SA, she had worked on hospital data management (from reception of data to web site creation to deliver results), and also on creating an automated method to detect changes under forest based on remote imagery.						
Role within the project:	Programming and air quality lead, support to pilot cities in leveraging the European City Calculator for their transition and supporting refinement of the methodology of the webtool						

List of up to 5 relevant projects or activities

Project/activities	**National or local/ regional or European**	**Year of finalisation**	**Website**
Structuration and steering of a local energy renovation for Ottignies-Louvain-la-Neuve. Facilitation of the local market for energy renovation, optimisation of the customer journey, communication and sensibilisation campaign, mobilisation of stakeholders	Local	Since 2019 (ongoing)	(WIP version) https://renovation-energetique-olln.webnode.be/
Contribution to development and improvement of Excel tool that is provided by AWAC to cities in Wallonia to support them in the realisation of their climate plan	Regional	2020	http://www.awac.be/index.php/thematiques/politiques-actions/agir/calculer-ses-emissions
EUCalc project supporting the development of the European Calculator. Coordination of programming in KNIME and developing the conversion to the Python code.	European (Horizon 2020)	2020	www.european-calculator.com

2050 Low Carbon Scenarios for the Brussels region. Development of a calculator and analysis of low carbon pathways. Assessment of imported emissions.	Regional	2016	https://document.environnement.brussels/opac_css/elecfile/2017-02-03_-_Rapport_v17-final.pdf
2015 South East Europe sustainable Energy Policy: Developed by SEEChangeNet (an NGO network), performed policy recommendation based on Low Carbon 2050 roadmaps for Albania, Bosnia, Croatia, Kosovo, North Macedonia, Montenegro & Serbia. Provided weekly coaching to the teams.	European	2015	seechangenetwork.org/see-2050-carbon-calculator/ simpler tool developed for schools/ students: http://seechangenetwork.org/see-2050-energy-model/

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	**Year**	**Website**
Case study: The transition of Belgium towards a low carbon society: A macroeconomic analysis fed by a participative approach, Energy Strategy Reviews (2020) 29 by Berger L, Bréchet T, Pestiaux J, et al.	2020	https://www.sciencedirect.com/science/article/pii/S2211467X20300171 based on the full study https://climat.be/doc/macro-low-carbon-report.pdf
Climact SA, Net zero by 2050: from whether to how	2019	https://europeanclimate.org/content/uploads/2019/12/09-19-net-zero-by-2050-from-whether-to-how-executive-summary.pdf
Prosperous living for the world in 2050: insights from the Global Calculator by UK Department of Energy and Climate Change, Climate-KIC, the International Energy Agency, Climate Media Factory, Climact SA, Ernst & Young India, the World Resources Institute, The Chinese Energy and Resource Institute, Imperial College, the London School of Economics, NERC Science of the Environment, the National Oceanographic Center, PIK, Walker Institute at the University of Reading	2015	http://tool.globalcalculator.org/ https://www.gov.uk/government/publications/the-global-calculator
Etude de prospective : Transition énergétique (2015), for l'Institut Wallon de l'évaluation, de la prospective et de la statistique by Boulanger PM, Bréchet T, Henry A, Marenne Y, Pichault F, Vanderstraeten P, Meessen J et Vermeulen P	2015	https://www.iweps.be/publication/transition-energetique-etude-prospective/
Scenarios for a Low Carbon Belgium by 2050, for the Climate Change Section of the Federal Public Service Health, Food Chain Safety and Environment by Cornet M, Duerinck J, Laes E, Lodewijks P, Meynaerts E, Pestiaux J, Renders N, Vermeulen P	2013 and 2019	https://climat.be/2050-en/scenario-analysis https://climat.be/doc/low-carbon-scenarios-for-be-2050-final-report.pdf

Participant No. 4 – Carbon Market Watch (CMW)

Description of the legal entity

Carbon Market Watch has 11 years' experience in assessing and informing EU and international climate policy developments with the unique combination of technical policy expertise and bottom-up pressure through its NGO members and strategic partnerships. CMW promotes environmental integrity and human rights and empowers communities to participate in decision making processes related to climate policies. CMW has also been closely involved in the legislative implementation of the EU 2030 climate and energy framework (including the EU Emission Trading System, Effort Sharing Regulation, Regulation on greenhouse gas emissions and removals from land use, land use change and forestry) through the organisation of policy events, the commissioning of reports and the drafting of policy briefings. More recently, CMW is working to advocate for an EU-wide zero-carbon industrial strategy to bring energy-intensive industries in line with the Paris Agreement climate goals, including proposals for new regulatory and financial instruments.

CMW is currently coordinating the LIFE PlanUP project, which tracks the development of National Energy & Climate Plans in five EU Member States: Spain, Italy, Poland, Romania and Hungary. To support rapid decarbonisation in Europe, the project promotes good practices in the transport, agriculture and building sector and fosters dialogue on low-carbon policymaking between local, regional and national authorities, civil society organizations and academia. Evidence-based advocacy is central to CMW's work. CMW in-depth policy expertise is coupled with strong communication and dissemination skills and close work with community groups and NGOs in over 60 countries across the world operating in English, French, and Spanish. CMW has established strong partnerships inter alia through regional capacity-building workshops in South and East Europe as well as most major regions across the globe, including China, India, West Africa, South and Central America. CMW is furthermore an accredited member of the United Nations Framework Convention on Climate Change (UNFCCC), the Green Climate Fund (GCF) and the Intergovernmental Panel on Climate Change (IPCC).

In EUCityCalc, CMW will be especially involved as leader of WP6 (Shaping the multi-level governance framework for climate neutrality), for which it will be able to leverage its aforementioned experience. Furthermore, CMW will strongly support Energy Cities in WP7 with its communication campaigning expertise.

Key personnel to be involved in the proposed project

Name :	Van den Plas	**First Name:**	Sam	**Gender:**	Male	**Nationality:**	Belgian
Qualification (degree):	Master Degree						
Job title:	Policy Director						
Short description of work experience, relevant to the proposal:	Sam Van den Plas is in charge of CMWs European and International policy strategy, positioning and advocacy outreach. Sam worked previously with WWF, where he focused on advocacy work towards the European institutions and linking the organisations network in Europe to the EU legislative and policy-making cycles on climate and energy issues. His main areas of expertise include EU and international climate policy, carbon markets, the EU Emissions Trading System and industrial decarbonisation.						
Role within the project:	Coordination shaping the multi-level governance framework for climate neutrality and support on scope 1-3 emissions in WP3						

Name :	Amaral	**First Name:**	Kaisa	**Gender:**	Female	**Nationality:**	Finnish
Qualification (degree):	Master Degree						
Job title:	Communication Director						
Short description of work experience, relevant to the proposal:	At CMW, Kaisa Amaral is in charge of developing and implementing communication strategies and managing media relations. She has 10 years of work experience in the field of media and communications. Prior to working at CMW, she has worked at the European Commission's citizens' information service and in the press team of the Permanent Representation of Finland to the EU.						
Role within the project:	Communication and dissemination						

Name :	Vicente Marcos	**First Name:**	Miriam	**Gender:**	Female	**Nationality:**	Spanish
Qualification (degree):	Master Degree in Marketing, Branding and Communications Major in audiovisual communication						
Job title:	Communication and Outreach Officer						
Short description of work experience, relevant to the proposal:	At CMW, Miriam Vicente Marcos works on the development and implementation of communication strategies and its digital media content. She has experience as a video creator, photographer, graphic designer and social media marketer, notably in the framework of EU-funded projects such as LIFE PlanUp.						
Role within the project:	Communication and dissemination						

Name :	Martellucci	**First Name :**	Elisa	**Gender :**	Female	**Nationality:**	Italian
Qualification (degree):	Master Degree in Political Science						
Job title:	Project Manager						
Short description of work experience, relevant to the proposal:	At CMW, Elisa Martellucci is in charge of managing EU-funded projects. She is currently project coordinator of the LIFE PlanUp project. Before joining CMW team, worked at the Centre for European Policy Studies (CEPS) where she has been extensively involved in several EU funded research projects on employment and education.						
Role within the project:	Shaping the multi-level governance framework for climate neutrality						

List of up to 5 relevant projects or activities

Project/activities	**National or local/regional or European**	**Year of finalisation**	**Website**
LIFE PlanUp: A multi-stakeholder platform for inclusive and ambitious 2030 climate plans	EU (LIFE programme)	2021	https://www.planup.eu/en/countries
Delivering the EU 2030 and long term climate objectives in Central, Eastern and Southern Europe, with a specific focus on transport	EU (EUKI programme)	2018	https://carbonmarketwatch.org/publications/national-energy-and-climate-plans-and-the-transition-to-carbon-free-societies-a-civil-society-guide/
LIFE Operating grant	EU	2020	https://carbonmarketwatch.org/

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	Year	Website
Last chance: how to strengthen the final national energy and climate plans	2019	https://www.planup.eu/en/resources
Fit to lead? An assessment of selected 5 draft national energy and climate plans	2019	https://www.planup.eu/en/resources
Fit to succeed? An assessment of the national draft energy and climate plans	2019	https://www.planup.eu/en/resources
National Energy and Climate Plans and the transition to carbon-free societies – A civil society guide	2018	https://carbonmarketwatch.org/publications/national-energy-and-climate-plans-and-the-transition-to-carbon-free-societies-a-civil-society-guide/
Understanding the Climate Action Regulation	2018	https://carbonmarketwatch.org/publications/understanding-the-climate-action-regulation/

Participant No. 5 – Riga Energy Agency (REA)

Description of the legal entity

Riga Energy Agency (REA), established by the Riga City Council, is the first local energy agency in Latvia. On behalf of the City of Riga, REA engages in long term partnerships signing agreements with professional associations, universities, research centres and NGOs to share the knowledge and disseminate the results of implemented projects and innovative actions. REA represents the city and takes an active part in European networks such as Energy Cities, the Local Governments for Sustainability (ICLEI), the European Association for Hydrogen and fuel cells and Electro-mobility in European Regions (HyER), ManagEnergy, the Union of the Baltic Cities (UBC), EUROCITIES, WHO Healthy Cities Network and others.

Riga was one of the first European capitals to sign the Covenant of Mayors initiative in 2008. Through cooperating with other cities in the implementation of a number of energy efficiency projects, Riga has been able to introduce new innovative technologies that add to citizen's comfort and make their lives more environment-friendly. Riga has also strong commitments to bringing its city closer to a smart city status.

In the past ten years, Riga has become an active player in addressing EU policies and targets to go beyond the national ambition on energy issues. REA has been engaging various stakeholders in this regard, including businesses, universities, NGOs and energy suppliers, in order to learn and share the expertise in Latvia, but also with neighbouring countries, especially Eastern partnership countries.

REA is a key player in promoting renewable energy sources and rational use of energy in Riga as well as nationwide, and also in enhancing the shift to sustainable transport modes and solutions. It is also consulting and advising local decision makers and inhabitants on energy efficiency issues, thereby ensuring public awareness and public involvement within its core activities. REA was a coordinating institution to develop Riga's Smart City SEAP for 2020 and is also responsible for monitoring its implementation. It is also in charge of developing Riga's SECAP for 2030 and other energy planning frameworks. REA's advisory Board consists of Latvia's most outstanding researchers for energy, engineering, economics and law.

Based on developed long-term development strategies and short-term action plans, REA has successfully implemented within the last 5 years more than a dozen international projects, including infrastructure co-creation and IT solutions, managing both local teams and international consortia. REA has also managed the implementation of a large-scale municipal financing programme for multi-apartment building renovation in more than 130 households in Riga, including running media campaigns in this regard. REA has established partnerships between Riga and more than 36 cities in the EU, Japan, China, India and CIS countries, including Kazakhstan, Belarus, Ukraine, Kirgistan, Russia and others.

In EUCityCalc, REA will be involved in all WPs, in particular in WP4 (delivering transition pathways and policy scenarios in the pilot cities), where it will run the co-creation engagement process of its expert working group involving key local stakeholders, and also in WP3 (support pilot cities in leveraging the European City Calculator for their transition). REA will also run the training programme on the European City Calculator webtool in Latvia in the framework of WP5 (Capacity-building and training programme).

Key personnel to be involved in the proposed project

Name :	Riekstina	**First Name:**	Evita	**Gender:**	Female	**Nationality:**	Latvia
Qualification (degree):	MSc in International Law and BSc in Law (both from Turība University)						
Job title:	Acting Director						
Short description of work experience, relevant to the proposal:	Evita Riekstina has more than 10 years' experience in international project management and is also a senior procurement expert. Within REA, she has led local programme coordination within the urban development field, including on energy efficiency, renewable energy sources, sustainability and smart climate actions, with a special focus on public procurements. She has also profound experience in strategy and action plan development, as well as administrative and legal issue management.						
Role within the project:	Overall coordination, with special focus on leveraging the webtool for Riga's transition, shaping the multi-level governance framework and dissemination and communication						

Name :	Kalnina	**First Name:**	Ieva	**Gender:**	Female	**Nationality:**	Latvia
Qualification (degree):	MSc in Project Management (Riga International School of Economics and Business Administration) and BSc in Financial Sector Management (University of Latvia)						
Job title:	International project manager						
Short description of work experience, relevant to the proposal:	Ieva Kalnina is a senior expert in strategic planning and project management. She has profound competence in management of EU funded projects related to energy and climate issues, and is also experienced in the development of integration action plans, such as e.g. for the introduction of circular economy in the building sector (renewable energy resources as part of the circular economy process) and the municipal strategic planning process in the field of sustainable housing (development of the Riga City Development Program 2021-2027).						
Role within the project:	Leveraging the webtool for Riga's transition, delivering transition pathways and policy scenarios in Riga and capacity-building and training programme						

Name :	Latisevs	**First Name:**	Jevgenijs	**Gender:**	Male	**Nationality:**	Latvia
Qualification (degree):	MSc in Finance and Investments (Nottingham University) and BSc in Finance (University of Essex)						
Job title:	International project manager						
Short description of work experience, relevant to the proposal:	Jevgenijs Latisevs has over 5 years of experience in managing international projects within the Horizon 2020 programme, with a specific focus on research and business model development, including qualitative and quantitative research, as well as empirical testing of concepts. He has been also extensively involved in cooperation and communication with international organizations on urban development. Furthermore, he has profound experience in full-cycle digital service development and fintech implementation.						
Role within the project:	Leveraging the webtool for Riga's transition, delivering transition pathways and policy scenarios in Riga and capacity-building and training programme						

List of up to 5 relevant projects or activities

Project/activities	**National or local/regional or European**	**Year of finalisation**	**Website**
ATELIER	European (Horizon 2020)	2024	https://smartcity-atelier.eu/
INNOVATE	European (Horizon 2020)	2020	http://www.financingbuildingrenovation.eu/
SMR	European (Horizon 2020)	2019	https://smr-project.eu/
GreenSAM	European (INTERREG)	2021	http://greensam.eu/
Municipal co-financing programme for multi-apartment building renovation	Local	ongoing	www.renove.lv

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	Year	Website
Carbon Disclosure Project (CDP) rated Riga with highest "A" rating in the "leadership" category for demonstrated best practice standards in the field of climate adaptation and mitigation, as well as significant progress in achieving set urban development goals.	2019	https://www.cdp.net/en
Utility-e-vehicles for municipal hospital	2019	https://www.1slimnica.lv/lv/par-mums/aktualitates/jaunums/elektroskuteri-pacientu-parvietosanai
Euro-China Green and Smart City Award 2018 in category "Innovations" for the development of innovative FinTech applications	2018	http://www.prospective-innovation.org/
Database on energy consumption in multi-apartment buildings in Riga (6000 buildings)	2017	http://www.rea.riga.lv/energoefektivitate/datu-baze-dzivojamam-majam-riga
Sustainable Energy Action Plan for Riga Smart City 2020	2014	https://www.covenantofmayors.eu/about/covenant-community/signatories/action-plan.html?scity_id=11849

Participant No. 6 – Municipality of Mantova (Mantova)

Description of the legal entity

The Municipality of Mantova is the local government authority of the city of Mantova (ca. 50,000 inhabitants) and it's the main city for the province of Mantova (ca. 400,000 inhabitants). Together with the neighboring municipalities of the "Greater Mantova" area, it slightly surpasses 100,000 inhabitants. The municipality's main tasks are manifold: from urban planning and maintenance, to social service, primary education, culture, arts and museums, local policing, etc. It employs around 400 people in three different buildings around town, with the headquarter in the city centre. Mantova has achieved the prestigious title of Italian Capital of Culture 2016 and European Region of Gastronomy 2017. In addition, Mantova is part of the UNESCO World Heritage List since 2008, which on the other hand imposes several strict limitations on energy efficiency actions and tools which the Municipality is aiming to address in an innovative and flexible manner. Mantova is also located in the heart of the Po Valley, an area known for critical air pollution levels.

Mantova is deeply involved in multidisciplinary and shared urban regeneration, green policies for a sustainable urban development for the improvement of the quality of life, as well as in projects aiming at reducing air pollution due to urban traffic. The Municipality is provided with the EMAS Registration (the EU Ecomanagement and audit scheme) since 2008 and also the ISO 14001 environmental management system certification since 2004 for all of the municipal organisation's sectors. Mantova has also been involved in:

- The Covenant of Mayors signed by the city of Mantova, with the development and monitoring of its SEAP and the development of its new SECAP;
- The Joint SEAP promoted by Mantova, in which 7 surrounding municipalities participate. The Joint SEAP represents a first step for a supra-communal approach in dealing with shared sustainable environment policies at the local level;
- Mantova Resilient - Guidelines for Climate Change Adaptation strategy;
- C-Change – Mantova is part of the URBACT project network aiming at supporting cities in mobilising their arts and culture sectors to contribute towards local climate change action;
- EUR 1.5 million investment in tree planting as a climate resilience and air quality measure;
- Mantova Challenge" launched by the City together with FAO, with the goal of creating an international network of green cities to take part in the FAO initiative "Tree cities of the world"

- Sustainable Urban Mobility Plan (SUMP), approved in November 2019, promotes sustainable and efficient mobility with the goals of protecting the historical, cultural and environmental heritage , as well as improving citizens' quality of life.

In EUCityCalc, Mantova will be involved in all WPs, in particular in WP4 (delivering transition pathways and policy scenarios in the pilot cities), where it will run the co-creation engagement process of its expert working group involving key local stakeholders, and also in WP3 (support pilot cities in leveraging the European City Calculator for their transition). Mantova will also run the training programme on the European City Calculator webtool in Italy in the framework of WP5 (Capacity-building and training programme).

Key personnel to be involved in the proposed project

Name :	Moraschi	**First Name:**	Giulia	**Gender:**	Female	**Nationality:**	Italian
Qualification (degree):	Architecture Degree						
Job title:	Head of the Environment, territory policies						
Short description of work experience, relevant to the proposal:	Giulia Moraschi is energy manager within Mantova. She is also single responsible of the procedure with the role of technical, economical and administrative feasibility, as well as environmental, urban and territorial compliance supervisor. She manages the relation with Institutions at national, regional and local level (e.g. with the region of Lombardia in which Mantova is situated in, ISS, ISPRA, ARPA, ATS Valpadana, Ente Parco Mincio, AIPO, etc) to obtain the needed opinions and authorizations for design activities. Giulia Moraschi is furthermore the competent authority for Mantova's environmental evaluation procedures.						
Role within the project:	Overall coordination, with special focus on shaping the multi-level governance framework for climate neutrality and capacity building and training programme						

Name :	Marchioro	**First Name:**	Roberta	**Gender:**	Female	**Nationality:**	Italian
Qualification (degree):	Environmental Sciences Degree Planning and Policy for city landscape and environment degree						
Job title:	Executive instructor technical activities and Manager Environmental Sector						
Short description of work experience, relevant to the proposal:	Roberta Marchioro is in charge of environmental evaluations (VIA and VAS) and projects related to sustainable development and territorial resilience promotion within Mantova. She is further responsible for policies and projects related to the reduction of CO2 emissions: SEAP, Joint SEAP and SECAP, and also issues related to resilience as e.g. the "Guidelines for climate adaptation" and the goal for Mantova to become a plastic free territory. Roberta Marchioro is also involved in EU-funded projects as e.g. the Horizon2020 "Urban GreenUP". She is member of the "Tree Board" in the context of the "Mantova challenge" launched after the first World Forum for Urban Forests.						
Role within the project:	Leveraging the European City Calculator for Mantova's transition, including management of data (in particular the ones from Mantova's SECAP system), delivering transition pathways and policy scenarios in Mantova, and also communication and dissemination						

Name :	Parisi	**First Name:**	Elisa	**Gender:**	Female	**Nationality:**	Italian
Qualification (degree):	Degree in Environmental Science Master degree in Environmental, quality and safety integrated system						
Job title:	Executive instructor technical activities						
Short description of work experience, relevant to the proposal:	Elisa Parisi has been in charge for the past 10 years of the Municipality Environmental management system/EMAS environmental area in Mantova, where she especially conducts data collection and elaboration and environmental reporting. She also works on Mantova's SEAP and SECAP, and further took part in the development of the "Guidelines for climate adaptation". Elisa Parisi has been involved in several EU-funded projects as e.g. LIFE IDEMS, "ERO Regio, Horizon2020 Urban Green UP and URBACT C-Change.						
Role within the project:	Leveraging the European City Calculator for Mantova's transition, including management of data (in particular the ones from the EMAS system), delivering transition pathways and policy scenarios in Mantova, and also capacity-building and training programme						

List of up to 5 relevant projects or activities

Project/activities	National or local/regional or European	Year of finalisation	Website
SECAP	European	2020	http://www.comune.mantova.gov.it/index.php/territorio/mantova-sostenibile-alias/mantova-sostenibile-home
INNOVATE	European (Horizon 2020)	2020	http://www.financingbuildingrenovation.eu/
URBAN GREENUP	European (Horizon 2020)	2022	https://www.urbangreenup.eu/
BHENEFIT	European (INTERREG)	2020	https://www.interreg-central.eu/Content.Node/BhENEFIT.html
"CreiamoPA"-Project Promotion of environmental and energetic management models in Public Administration, promoted by the Ministry of Environment	National	2023	https://creiamopa.minambiente.it/

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	Year	Website
"MANTOVA SI RIGENERA"	2019	https://mantovasirigenera.giscloud.com/

Participant No. 7 – Dijon Metropole (Dijon Metropole)

Description of the legal entity

Dijon Metropole is a public institution of intercommunal cooperation bringing together 23 municipalities including the city of Dijon, regional capital of the Burgundy-Franche-Comté region. With more than 250,000 inhabitants, the community acquired the status of metropolitan area in April 2017. Dijon Metropole is one of 22 French metropolitan areas. Dijon Metropole implements its public policies under the authority of a Metropolitan Concil, a deliberative assembly bringing together 79 elected representatives representing the municipal concils of each of the 23 municipalities. Its main competences are economic, social and cultural development, land-use planning, housing and urban renewal policy, management of services of collective interest (water, sanitation, waste, public transport, etc.) and ecology policy (energy, GHG emissions, air quality, noise, etc.). Dijon Metropole places at the core of its economic strategy its major sectors of excellence: agri-food, health and digital with internationally renowned companies (e.g. Tetra Pak, Unilever). It is also working to develop its advanced competitiveness poles in these areas, to provide favourable conditions for the emergence of experimentations and innovations on its territory.

Since more than 10 years, Dijon Metropole has been implementing energy and climate policies. Since 2010, it has assisted low-income landlords to renovate their house, financing relevant studies and a part of the renovation itself, and also assisting public housing companies to renovate and/or build new positive energy buildings. Between 2010 and 2016, Dijon Metropole has also increased by 164% its production of renewable energies, notably thanks to the development of its heating and cooling network. The heating and cooling network is powered by 70% renewable energy (biomass and waste incineration). As part of its mobility policy, Dijon Metropole has managed to reduce its energy consumption and has begun the energy transition of its municipal fleet (purchase of tramway in 2012, 102 hybrid buses in 2013, 5 electric shuttle buses in 2017, etc.) It has also aimed to become a national experimental

territory for the hydrogen sector. Furthermore, it will create a production site from recovered electricity from waste treatment and with several distribution stations to supply garbage trucks and buses.
Dijon Metropole has also developed OnDijon, its ambitious smart and connected metropolitan area project (Smart Cities). OnDijon will make it possible to collect data from public services and share them with the world of digital economy, thus providing real opportunities to develop new activities and innovations around the analysis and processing of this data. Dijon Metropole participates in the development of a unique local digital ecosystem and encourages businesses to create the services of tomorrow. The digital ecosystem is made up of innovative companies, start-up, accelerators, different clusters and activity poles (e.g. Smart Building cluster specialised in 3D imaging for the management of buildings, the robotics pole of excellence, Fablabs).
In EUCityCalc, Dijon Metropole will be involved in all WPs, in particular in WP4 (delivering transition pathways and policy scenarios in the pilot cities), where it will run the co-creation engagement process of its expert working group involving key local stakeholders, and also in WP3 (support pilot cities in leveraging the European City Calculator for their transition). Dijon Metropole will also be involved in the training programme on the European City Calculator webtool in France, run by Energy Cities, in the frame of WP5 (Capacity-building and training programme).

Key personnel to be involved in the proposed project

Name :	Codet-Hache	**First Name:**	Oanez	**Gender:**	Female	**Nationality:**	French
Qualification (degree):	Master in Geography at the Ecole Normale Superieure of Lyon						
Job title:	Head of Urban Ecology Department						
Short description of work experience, relevant to the proposal:	Since 2009, Oanez Codet-Hache has been working as Head of the Urban Ecology Department for the city of Dijon and Dijon Metropole. She is in charge of energy climate change (mitigation) and air quality projects, and has been responsible for coordinating the drafting of Dijon's SEAP and also its SECAP. She is also in charge of Dijon's involvement in the European Energy Award initiative (its equivalent in France being Cit'ergie), as well as the metropolitan areas' Smart City projects. In this regard, Oanez Codet-Hache is responsible for the delivery of the Horizon 2020 Smart City project RESPONSE in Dijon Metropole.						
Role within the project:	Overall coordination and implementation of Dijon-Metropole's involvement in EUCityCalc, also to leverage synergies with its Smart City project RESPONSE						

List of up to 5 relevant projects or activities

Project/activities	**National or local/regional or European**	**Year of finalisation**	**Website**
RESPONSE	European (Horizon 2020 Smart City Project)	2025	https://www.metropole-dijon.fr/Actualites/Programme-europeen-H2020
Heating Network	Local	2021	https://www.metropole-dijon.fr/Services-et-missions/Environnement-et-qualite-de-vie/Reseaux-de-chaleur
RenovEco platform	Local	2022	https://www.metropole-dijon.fr/Services-et-missions/Renoveco-Dijon-metropole
Hydrogen production	Local	2021	https://www.metropole-dijon.fr/Actualites/Production-d-hydrogene

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	**Year**	**Website**
SECAP	2020	http://mycovenant.eumayors.eu/
Cit'ergie (European Energy Award)	2019	https://tool.european-energy-award.org
Energy – GHG emissions – Air Quality datasets	2020	http://opteer.org/

Jeparticipe.dijon.fr: discussion and empowerment website with inhabitants	2018	https://www.dijon.fr/Je-participe
Air quality web application in real time for view at street by street level	2019	https://www.airtogo.fr/web

Participant No. 8 – Energy and Environment Agency of Arrábida (ENA)

Description of the legal entity
ENA is an energy and environment agency, non-profit association, which began operating in June 2006. Its location in the Setúbal Peninsula, integrated in the Lisbon Metropolitan Area, leads to very important challenges in the scope of economical, socio-demographic and territorial structuring mechanisms, taking into account the work developed in a region that brings together heavy and cutting-edge technology industry, forest, agriculture and handicraft activities, tourism infrastructures and large natural areas.
Through technical activities, research and cooperation projects, awareness raising campaigns, information and training, ENA provides expertise and advice to municipalities, public and private entities, associations, industry, research organisations, universities, schools and citizens. ENA participates actively in RNAE, the Portuguese Network of Energy Agencies, and has been involved in the elaboration and debate of international and national policies and strategies on environment and energy, as well as specific network projects. Since 2006, ENA has been working in several European, national and local projects, establishing partnerships and developing specific activities that helped to acquire useful experience for EUCityCalc:

- Energy and environment awareness raising and behaviour change campaigns targeting public authorities, private entities, associations (consumers) and citizens in the scope of specific projects (e.g. Conhecer & Agir, BundleUp, Esmartcity and EnerNetMob);
- In the scope of the Covenant of Mayors processes, fostering involvement of public authorities, companies, citizens and NGOs in the SEAP/SECAP elaboration, implementation and monitoring in ENA's municipalities Palmela, Sesimbra and Setúbal;
- Implementation of Energy management processes in public and private entities (e.g. Smart Offices: Energy Off Platform: http://energyoff.pt/site/index, Por um Turismo Sustentável);
- Development and implementation of technical training programmes (for e.g. teachers, students, decision makers, private and public technical staff) on environment, renewables and energy efficiency (e.g. Energy Game II, Young Energy Leaders, Municipal Energy Managers, School Energy Tutors, ISO 50 001);
- Energy auditing (ISO 50 002) and energy certification of buildings (public and private entities);
- Measurement and verification of Energy Performance of Organisations (ISO 50 015);
- Development and implementation of Municipal Energy Observatories, since 2009;
- Development, together with ENA's 3 municipalities, of the Arrábida Energy Strategy;
- Development, together with NGOs and associations representing civil society, of awareness raising tools and materials and technical projects solutions for rural communities to become energy independent and efficient (e.g. Interreg MED COMPOSE).

ENA has also been participating in the implementation of renewables and energy performance contracts at local administration level. In the scope of this work, ENA is collaborating with several national and European entities, namely funding entities and EIB, lawyers' cabinets and policy makers, resulting in jurisprudence standards for Portugal in the subjects of Energy efficiency and renewable energy sources.

In EUCityCalc, ENA will be involved in all WPs and further lead WP4 (delivering transition pathways and policy scenarios in the pilot cities), where it will also support ENA's 3 municipalities and project pilot cities Palmela, Sesimbra and Setúbal in running the co-creation engagement process of their expert working groups with key local stakeholders. Furthermore, in the framework of WP3 (support pilot cities in leveraging the European City Calculator for their transition), WP6 (Shaping the multi-level governance framework for climate neutrality) and WP7 (communication & dissemination), ENA will involve and support its 3 municipalities in the project activities in these WPs. ENA also will run the training programme on the European City Calculator webtool in Portugal in WP5 (Capacity-building and training programme).

Key personnel to be involved in the proposed project

Name :	Daniel	**First Name:**	Cristina	**Gender:**	Female	**Nationality:**	Portuguese
Qualification (degree):	Post-Graduation in Renewable Energy Sources Management (Universidade Católica) Graduation in Forest Engineering (Universidade de Trás-os-Montes e Alto Douro)						
Job title:	Executive Manager						
Short description of work experience, relevant to the proposal:	Cristina Daniel is responsible for the creation, development and management of ENA, where she works as CEO and managing director since 2006. She has also worked as energy and environment senior expert/advisor in the Portuguese municipalities of Palmela and Loures (2008-2015). She holds and ISQ and AML certification in energy efficiency skills and is also specialised in renewable energy sources (main skills in residual biomass) and natural resources' sustainable management. She has more than two decades' experience in drafting and implementing development and cooperation projects in the scope of national and European funding programmes, as e.g. PROFLOREN (Altener/96-98), RURAQUA21 and GEO-LINK (Interreg IIIB Sudoe/03-05), PROMOTION 3E (IEE/08-11), PERIPHERIA (CIP-Pilot actions/11-13), Maletas da Sustentabildiade e da Água (Fundo Ambiental 17-18). With competencies in communication and dissemination strategies and sustainability reporting (GRI4), she is also member of the Technical Commission (TC) 184, assessing the works developed by ISO/TC 268 in the scope of the translation and publication of ISO/DIS 37101, ISO 37120, ISO/DTR 37121 and ISO/DIS 37102, participating in local development organisations and initiatives (e.g. ADREPES, Palmela Mobility Council).						
Role within the project:	Overall coordination, with special focus on communication and dissemination, delivering transition pathways and policy scenarios in the 3 Portuguese pilot cities supported by ENA, and supporting them in shaping the multi-level governance framework for climate neutrality						

Name :	Paraíba	**First Name:**	Orlando	**Gender:**	Male	**Nationality:**	Portuguese
Qualification (degree):	Post-graduation in Energy Production and Conservation Systems Graduation in Electromechanical Engineering (both from the Universidade da Beira Interior)						
Job title:	Technical Manager						
Short description of work experience, relevant to the proposal:	Orlando Paraíba has been ENA's technical manager since 2008, with expertise in developing awareness raising projects/campaigns, studies, training programs in the scope of renewable energy sources and energy efficiency, energy auditing, sustainable development (adaptation and mitigation actions) and the Energy Performance of Buildings Directive. He has been working in energy efficiency auditing since 1999 and is qualified by DGEG for energy audit and planning for big energy consumers (industries and transports). He also has deep knowledge in renewables, particularly on wind, having worked in the past on the installation of wind farms. Orlando Paraíba has more than a decade of experience in working with national and EU-funded projects, such as e.g. deSOLaSOL, IEE/06-08, Yaeci, IEE/12-15, Atlas da Energia and Tutores da Energia. He is the active contact of ENA in the board of RNAE and advisor on new national plans/laws related with energy efficiency and renewables. He also participates in local organisations and initiatives related with sustainable development (IN2SET), and is trainer for IPQ – Portuguese Institute of Quality on ISO 50 001 – Energy Management Systems, ISO 50 002 – Energy Audits and ISO 50 015 – Measurement and Verification of Energy Performance of Organizations.						
Role within the project:	Supporting the 3 Portuguese pilot cities in leveraging the European City Calculator for their transition, capacity building and training programme and delivering transition pathways and policy scenarios in the 3 Portuguese pilot cities supported by ENA						

Name :	Alegria	**First Name:**	Ricardo	**Gender:**	Male	**Nationality:**	Portuguese
Qualification (degree):	Master Degree in Energy and Bio-Energy (Universidade Nova de Lisboa), Post-graduation in Energy Management and Energy Efficiency (Instituto de Soldadura e Qualidade) and Graduation in Electrical Engineering (Instituto Superior de Engenharia de Lisboa)						
Job title:	Expert						

Short description of work experience, relevant to the proposal:	Ricardo Alegria works for ENA as senior energy official since 2009, holding expertise in developing awareness raising projects/campaigns, studies and training programs in the scope of renewable energy sources and energy efficiency (e.g. ISO 50 001 training, ISO 50 002 energy audits, energy certification of buildings). He also holds expertise in energy audits and certification for industry, domestic and services' buildings, and is trainer on ISO 50 001 – Energy Management Systems and technical implementation of the Social Housing and public buildings' energy auditing and certification projects. He has also more than a decade experience in working with national and European projects (e.g. Promotion 3e, Esmartcity). Ricardo is also a qualified expert for the National System of Energy Certification of Buildings.
Role within the project:	Supporting the 3 Portuguese pilot cities in leveraging the European City Calculator for their transition, capacity building and training programme and delivering transition pathways and policy scenarios in the 3 Portuguese pilot cities supported by ENA

Name :	Rodriguez	**First Name:**	Isabel	**Gender:**	Female	**Nationality:**	Spanish
Qualification (degree):	Degree in Communication Sciences from the University of Seville						
Job title:	Project Manager						
Short description of work experience, relevant to the proposal:	Isabel Rodriguez has been working since 2019 at ENA as project manager, with her main responsibility being managing communication and dissemination activities (e.g. media relations, website, social media, etc.). Prior to joining ENA, she was working as a journalist in radio and TV for e.g. Cadena Ser, Una TV, Spanish National Radio. She was also responsible for the creation of the Energy Agency of Cádiz (Spain) and managing its involvement in European projects, as well as coordinating the involvement of the Province of Cadiz in the Covenant of Mayors. She was there also in charge of the Provincial Energy Optimisation and Savings Plans (POEE) and the Municipal Energy Plans (PEM). Isabel Rodriguez has also profound experience in communication management, in particular by working as a communication Manager of the Andalusian Government in the Tourism sector, and as responsible for Institutional Communication at the Delegation of the Andalusian Government, as well as at the Department of Environment of the Andalusian Government.						
Role within the project:	Communication and Dissemination						

Name :	Cardona	**First Name:**	Fábio	**Gender:**	Male	**Nationality:**	Portuguese
Qualification (degree):	Master of Environmental Engineering						
Job title:	Expert						
Short description of work experience, relevant to the proposal:	Fábio Cardona is currently technical responsible within ENA for accompanying and monitoring the SEAPs and SECAPs of Setúbal, Palmela, and Sesimbra. He is also managing ENA's projects on Green Libraries, Green Seal and the environmental education project Sustainability and Water briefcases. He is specialised in developing projects for environmental assessment, environmental education and supporting decision-making methodologies. In this regard, he has e.g. developed risk maps for overtopping and coastal flooding in the Hidralerta Project, developed the strategy for the implementation of a local protected marine area in the Foz Azul Marine Protected Area in Torres Vedras, and performed cost-benefit analysis and structural resilience proposals for buildings at coastal flooding risk in the northern region of Portugal mainland in the frame of the INTERREG MarRISK project.						
Role within the project:	Supporting the 3 Portuguese pilot cities in leveraging the European City Calculator for their transition, capacity building and training programme and delivering transition pathways and policy scenarios in the 3 Portuguese pilot cities supported by ENA						

Name :	Rocha	**First Name:**	Fernanda	**Gender:**	Female	**Nationality:**	Portuguese
Qualification (degree):	Degree in Public Administration from the University of Lisbon						
Job title:	Secretary and Administrative support						

Short description of work experience, relevant to the proposal:	Fernanda Rocha is working since 2019 as administrative technician at ENA, where she supports ENA's experts in the management and implementation of national and EU-funded projects. Prior to joining ENA, she was responsible for the administrative and financial monitoring of training projects from Community Support Frameworks.
Role within the project:	Supporting overall coordination and implementation of ENA activities within EUCityCalc

List of up to 5 relevant projects or activities

Project/activities	National or local/regional or European	Year of finalisation	Website
RecOil (coordinator)	European (IEE)	2015	www.recoilproject.eu
COMPOSE	European (INTERREG MED)	2019	https://compose.interreg-med.eu/
BundleUp	European (Horizon 2020)	2021	https://www.pontoenergia.pt/english/
Esmartcity	European (INTERREG MED)	2020	https://esmartcity.interreg-med.eu/
EnerNetMob	European (INTERREG MED)	2022	https://enernetmob.interreg-med.eu/

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	Year	Website
Palmela's SEAP	2009	http://www.cm-palmela.pt/pages/1700
Appliances' efficient utilisation Guide	2012	http://www.ena.com.pt/?cix=792&lang=1
The Used Cooking Oil-to-biodiesel chain in Europe: assessment of best practices and environmental performance	2015	http://www.sciencedirect.com/science/article/pii/S1364032115010096
Energy Management Handbook	2016	http://www.ena.com.pt/?cix=792&lang=1
The Sustainability and Water Briefcases	2017-18	http://www.maletas.ena.com.pt/

Participant No. 9 – City of Žďár nad Sázavou (Zdar)

Description of the legal entity

The city of Žďár nad Sázavou in Czechia is the local authority governing the local policy in the town Žďár nad Sázavou and some villages nearby - see here: https://www.zdarns.cz/en/about-the-town . Zdar governs the daily life and development of the town Žďár nad Sázavou. It ensures the energy management of municipal buildings (e.g. schools, administrative buildings, sport and fitness buildings, part of residential buildings, municipal library, etc). Zdar also plans the town's next development, such as e.g. energy supply for newly planned buildings. The city owns the local heat distributing company called SATT, which distributes the heat from the central source factory called Žďas to the majority of buildings on the town's territory (both private and public). Zdar also promotes climate policies and other relevant topics to its citizens, in order to raise their awareness and motivate behavioural change regarding energy efficiency and the environment. Zdar runs many projects relevant for energy efficiency and climate change, and is currently preparing its SECAP in the framework of its commitment to the Covenant of Mayors, which will be ready in early 2021.

In EUCityCalc, Zdar will be involved in all WPs, in particular in WP4 (delivering transition pathways and policy scenarios in the pilot cities), where it will run the co-creation engagement process of its expert working group involving key local stakeholders with the support of SEMMO. Zdar will also be involved in WP3 (support pilot cities in leveraging the European City Calculator for their transition), where it will be also supported by SEMMO in the WP's activities. Finally, Zdar will also be involved in the training programme on the European City Calculator webtool in Czechia, run by SEMMO, in the frame of WP5 (Capacity-building and training programme).

Key personnel to be involved in the proposed project

Name :	Bačovský	**First Name:**	Michal	**Gender:**	Male	**Nationality:**	Czech
Qualification (degree):	Ing. (equivalent to a Master of Science) in energy management from Czech Technical University in Prague						
Job title:	Project Manager and Smart City Coordinator						
Short description of work experience, relevant to the proposal:	Michal Bačovský has been working for Zdar since 2018, where he is responsible for the preparation and implementation of the city's Smart City concept. He is also in charge of clean mobility support, the development of the municipal energy management, including on renewable energy sources and green roofs, and also for the popularisation of energy and climate changes issues for the wide audience of Zdar's inhabitants. Michal Bačovský has also experience in process engineering, ISO 9000 and 9001 and holds certificate level D in project management from the International Project Management Association. Prior to joining Zdar, he notably worked as financial manager for the Czech Ministry of Education, Youth and Sports, and as project manager for the Faculty of Electrical Engineering at the Czech Technical University in Prague.						
Role within the project:	Overall coordination and implementation of Zdar's involvement in EUCityCalc						

List of up to 5 relevant projects or activities

Project/activities	**National or local/regional or European**	**Year of finalisation**	**Website**
Smart City Strategy and Energy Management Implementation in Zdar (presentation at conference)	National	2020	Presentation in Czech on conference website: https://www.bids.cz/cz/konference/energeticky-management-pro-verejnou-spravu/448
The Process of Smart City Conception (presentation at Urbis Smart city fair)	National		Presentation in Czech on fair website: https://www.bvv.cz/urbis/
The exhibition "Climate has Changed and You Should Change too" (article for Covenant of Mayors website)	European	2020	https://www.eumayors.eu/news-and-events/news/1770-climate-has-changed-and-you-should-change,-too-an-exhibition-in-czech-republic.html
The e-mobility experience (presentation for the Vysočina Region Transport Committee)	Regional	2018	Presentation in Czech on website of Region Vysočina government: https://www.kr-vysocina.cz/en/vismo5/dokumenty2.asp?id_org=450028&id=1014&p1=1024

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	**Year**	**Website**
The territorial energy politics according to the act 103/2015, colloquium on energy management	2018	Construction Macroeconomics Conference (2018), Conference Proceedings: http://www.conference-cm.com/index.php?history=history9
How the Czech municipalities fulfil the commitments in their SECAPs	2019	Construction Macroeconomics Conference (2019), Conference Proceedings

		http://www.conference-cm.com/index.php?history=history10
The energy poverty severity inspected in Zdar	2019	Business & IT scientific journal: http://bit.fsv.cvut.cz/issue.html

Participant No. 10 – Association of Energy Managers of Towns and Municipalities (SEMMO)

Description of the legal entity

The Association of Energy Managers of Towns and municipalities (SEMMO) is a Czech association of towns and municipalities interested in implementing energy-saving measures, renewable energy sources or related solutions in transport. Its mission is to disseminate examples of good practice, to educate Czech cities and municipalities in the field of sustainable energy and transport, and to help them to manage energy effectively. SEMMO aims to create an effective platform to exchange information on sustainable energy and transport, to educate towns and municipalities at seminars and conferences, and to involve cities and municipalities in innovative projects and activities.

SEMMO was a partner in the "Energy Cities - Mainstream the Covenant of Mayors in Member States" project, jointly funded by the European Commission and Energy Cities. The project was realised from January 2018 until December 2019. Together with the Healthy Cities network of Czechia, the Czech Ministry of the Environment and the Czech Ministry of Industry and Trade, SEMMO organised a series of webinars, workshops, conferences, including a study trip, to promote the Covenant of Mayors Europe in Czechia. In 2019, SEMMO ran another project called "Evaluation of energy management (EM) in the Czech municipalities and recommendations for the future EM development", which was also supported by the Czech Ministry of Industry and Trade.

In EUCityCalc, SEMMO will be involved in all WPs, especially in WP4 (delivering transition pathways and policy scenarios in the pilot cities), where it will support the pilot city Zdar in running its co-creation engagement process of its expert working groups with key local stakeholders. SEMMO will further support Zdar in the project activities in the framework of WP3 (support pilot cities in leveraging the European City Calculator for their transition), WP6 (Shaping the multi-level governance framework for climate neutrality) and WP7 (communication & dissemination). Finally, SEMMO also will run the training programme on the European City Calculator webtool in Czechia in WP5 (Capacity-building and training programme).

Key personnel to be involved in the proposed project

Name :	Klusák	**First Name:**	Jaroslav	**Gender:**	Male	**Nationality:**	Czech
Qualification (degree):	PhD in Environmental Economics from the University of Economics in Prague						
Job title:	Chairman						
Short description of work experience, relevant to the proposal:	Jaroslav Klusák has been Chairman of SEMMO since 2018. He has also been working since 2011 as Energy Manager for the Czech town of Litoměřice. He has been active in the field of municipal sustainable energy since 2004, and has participated in multiple national, European and international projects, such as e.g. Horizon 2020 INNOVATE, SCORE and STARDUST. He is a member of the Committee on Sustainable Energy at the Government Council for Sustainable Development.						
Role within the project:	Overall coordination and implementation of SEMMO's involvement in EUCityCalc, with a specific focus on supporting Zdar in leveraging the webtool for its transition, supporting the delivery of Zdar's transition pathways and policy scenarios towards climate neutrality, and running the training programme on the European City Calculator in Czechia						

Name :	McLaughlin Váňová	**First Name:**	Tereza	**Gender:**	Female	**Nationality:**	Czech
Qualification (degree):	Masters degree from the Faculty of Social Sciences, West European Studies at Charles University in Prague						
Job title:	Communication and International Cooperation Manager						
Short description of work	Tereza McLaughlin Váňová is responsible for communication, public relations and international cooperation at SEMMO. Prior to joining SEMMO, she has worked at the Centre for Clean Technology and the Environment (CSTM) at the University of Twente in the						

experience, relevant to the proposal:	Netherlands and at the Scottish University of Strathclyde at the Centre for Endangered Children (CELCIS). Since 2015, she has worked at the Czech Technical University in Prague, University Centre for Energy Efficient Buildings. She coordinates the Energy Efficient Buildings platform (EEB-CZ) in Czechia, and is also principle investigator in 3 INTERREG Europe projects focused on financial instruments, renewables in industry and transitions to low-carbon districts.
Role within the project:	Communication and dissemination, supporting Zdar in shaping the multi-level governance for climate neutrality and supporting capacity-building and training programme in Czechia

List of up to 5 relevant projects or activities

Project/activities	**National or local/regional or European**	**Year of finalisation**	**Website**
Energy Cities - Mainstream the Covenant of Mayors in Member States	National	2019	https://www.zdravamesta.cz/cz/NSZM-pakt-starostu-energetika
INNOVATE: Integrated solutioNs for ambitiOus energy refurbishment of priVATE housing	European (Horizon 2020)	2020	http://www.financingbuildingrenovation.eu/
Evaluation of energy management in Czech municipalities & recommendations for next steps	National	2020	
SCORE	European (Horizon 2020)	2021	https://www.score-h2020.eu
STARDUST: Holistic and integrated urban model for Smart Cities	European (Horizon 2020)	2022	https://stardustproject.eu/

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	**Year**	**Website**
NCEÚ (National Centre for Energy Savings) Proč energetické úspory: Why energy savings – handbook for mayors	2019	http://www.nceu.cz/file/edee/tiskove-zpravy/nceu_prirucka-k-energetickym-opatrenim-pro-starosty.pdf
Klusák, J. et al.: Úspory v energetice – Energy Savings, in Sbírka případových studií – Compilation of case studies, Svaz měst a obcí ČR 2015; Union of Towns and Municipalities of the Czech Republic	2015	http://www.mepco.cz/wp-content/uploads/2014/01/Sb%C3%ADrka-p%C5%99%C3%ADpadov%C3%BDch-studi%C3%AD_2015.pdf
Klusák, J. et al.: Školy, učitelé a energetická soběstačnost – Schools, Teachers and Energy Efficiency, Bedrník 2014/3	2014	
Klusák, J. et al.: Litoměřice - Udržitelná energetika a soběstačnost jsou tím správným přístupem, Litomerice: Sustainable Energy and self-sufficiency are the right approach; Moderní obec 2014	2014	https://www.moderniobec.cz/litomerice-udrzitelna-energetika-a-sobestacnost-jsou-tim-spravnym-pristupem/
Klusák, J. et al.: Litoměřice – Indikátory udržitelné energetiky pro rozhodování měst a obcí – Sustainable Energy Indicators for municipalities decision-making, ISBN 978-80-254-5995-9	2009	http://www.dvs.cz/clanek.asp?id=6404770

Participant No. 11 – Regional Energy Agency North (REA North)

Description of the legal entity

Regional Energy Agency North (REA North) was established in 2009 as a public, independent and not-for-profit institution within the Intelligent Energy Europe programme. REA North was established by the Croatian cities Koprivnica, Varazdin and Virovitica with the aim of providing support, consulting and related services to all participants directly or indirectly involved in energy in the Northern part of Croatia. REA North is focused on renewable energy sources, energy efficiency, rational use of energy and environmental protection.

It has a substantial relevant working experience that can be leveraged in EUCityCalc proposal: participation in long term energy and climate planning, mobilisation of and guidance for public authorities in defining long-term energy policy priorities, promotion of multi-level governance, and supporting regional and local authorities in developing, financing and implementing ambitious integrated sustainable energy and climate policy action plans. REA North has also experience in use of long-range energy alternatives planning systems as a tool for energy policy analysis and climate change mitigation assessment.

In EUCityCalc, REA North will be involved in all WPs and further lead WP5 (capacity-building and training programme), where it will run the training programme on the European City Calculator in Croatia and at EU-level. REA North will also be particularly involved in WP4 (delivering transition pathways and policy scenarios in the pilot cities), to support its 3 municipalities and project pilot cities Koprivnica, Varazdin and Virovitica in running the co-creation engagement process of their expert working groups with key local stakeholders. Furthermore, in the framework of WP3 (support pilot cities in leveraging the European City Calculator for their transition), WP6 (Shaping the multi-level governance framework for climate neutrality) and WP7 (communication & dissemination), REA North will involve and support its 3 municipalities in the project activities in these WPs.

Key personnel to be involved in the proposed project

Name :	Ivan	**First Name:**	Simic	**Gender:**	Male	**Nationality:**	Croat
Qualification (degree):	Masters Degree in Electrical Engineering						
Job title:	Managing Director						
Short description of work experience, relevant to the proposal:	Ivan Simic has been running REA North for the past 8 years. At REA North, Ivan Simic has been extensively involved in managing EU- and national projects targeted at end users or consumers of energy and energy related products and services. He has included REA North in many educational and awareness raising activities for the communities in Northern Croatia. Prior to working for REA North, he gathered 20+ years of experience in telecommunications and leading global consulting companies, where he held various managing positions and senior positions. He was also engaged in numerous national and international projects in telecommunications, IT and management consulting to develop mass market services, systems and provide support targeted directly at consumers and their needs.						
Role within the project:	Overall coordination, with special focus on leveraging the European City Calculator for the 3 Croatian pilot cities' transition, delivering transition pathways and policy scenarios in these cities supported by REA North, and also supporting them in shaping the multi-level governance framework for climate neutrality						

Name :	Jurica	**First Name:**	Perko	**Gender:**	Male	**Nationality:**	Croat
Qualification (degree):	Masters Degree in Electrical Engineering						
Job title:	Business Development Manager						
Short description of work experience, relevant to the proposal:	Jurica Perko has over 7 years of experience in electrical engineering and in the field of power energy and renewable energy sources. He is responsible for developing REA North's project activities and is specialised in communicating and engaging with all the different stakeholders involved in the local and regional energy transition. Jurica Perko has also extensive project management experience in national and EU-funded projects (e.g. Horizon 2020 C-Track 50)						

Role within the project:	Delivering transition pathways and policy scenarios in the 3 Croatian pilot cities supported by REA North, communication and dissemination, capacity-building and training programme

Name :	Petra	**First Name:**	Orehovacki	**Gender:**	Female	**Nationality:**	Croat
Qualification (degree):	Masters Degree in Environmental Engineering						
Job title:	Energy Advisor						
Short description of work experience, relevant to the proposal:	Petra Orehovacki has profound experience in energy and climate planning, implementation of climate mitigation and adaptation actions, data gathering and professional management through collaboration with local and regional authorities. She works at REA North since 2018 as energy advisor, where she has been mainly involved in participating in EU funded projects and energy and climate planning consulting in the public sector. Petra Orehovacki has also wide expertise in the use of tools for energy and climate planning and in the management of projects related to social housing and energy poverty. Her experience and skills will contribute in particular to facilitate data gathering and cooperation with public authorities.						
Role within the project:	Leveraging the European City Calculator for the 3 Croatian pilot cities' transition, Capacity building and training programme, delivering pathways and scenarios in 3 Croatian pilot cities						

List of up to 5 relevant projects or activities

Project/activities	**National or local/regional or European**	**Year of finalisation**	**Website**
C-Track 50	European (Horizon 2020)	2021	www.c-track50.eu
Prominent MED	European (INTERREG MED)	2020	https://prominent-med.interreg-med.eu/
COMPOSE	European (INTERREG MED)	2019	https://compose.interreg-med.eu/
INFINITE Solutions	European (IEE)	2016	https://energy-cities.eu/publication/infinite-solutions-guidebook-2/
EE Pannonia: Elaboration of joint energy efficiency action plan for the border region by municipalities, involving the local community	European (ERDF 2007-2013)	2015	http://rea-sjever.hr/naslovnica/vijesti/zapo%C4%8Deo-projekt-ee-pannonia.html

List of up to 5 relevant publications, and/or products, services (including widely-used datasets or software), or other achievements

Publications, products, services	**Year**	**Website**
Regional Energy Efficiency Action Plan for Brod-Posavina County	2020	http://www.bpz.hr/_Data/Files/Prijedlog%20Akcijskog%20plana%20energetske%20u%C4%8Dinkovitosti.pdf
SECAP of the Croatian City of Krizevci	2019	https://krizevci.hr/vijecnici-donijeli-odluke-vezane-uz-gradnju-nove-sportske-dvorane-i-kupnju-vatrogasnog-vozila/
Greening social housing in Varazdin, Croatia	2019	https://www.interregeurope.eu/socialgreen/library/#folder=1756
Study on the use of renewable energy sources in Koprivnica-Krizevci County	2015	https://www.prostorno-kkz.hr/novosti1/ostale-novosti?start=30

4.2. Third parties involved in the project (including use of third party resources)

Participant	Does the participant plan to subcontract certain tasks (please note that core tasks of the project should not be sub-contracted)	Does the participant envisage that part of its work is performed by linked third parties	Does the participant envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	Does the participant envisage that part of the work is performed by International Partners (Article 14a of the General Model Grant Agreement)?
Energy Cities	N	N	N	N
PIK	N	N	N	N
Climact SA	N	N	N	N
CMW	N	N	N	N
REA	N	N	N	N
Mantova	N	N	N	N
Dijon Metropole	N	**Y**	N	N
ENA	N	N	N	N
Zdar	N	N	N	N
SEMMO	N	N	N	N
REA North	N	N	N	N

Dijon Metropole (Dijon Metropole) envisages that part of its work is performed by linked third parties:

Description of the third party, the link of the participant to the third party, and description and justification of the foreseen tasks to be performed by the third party for Dijon Metropole:

Atmo Bourgogne Franche Comté (Atmo BFC) is a non-profit association that monitors air quality, energy and GHG emissions for Dijon Metropole and the whole Bourgogne-Franche-Comté region. Atmo BFC produces inventories of GHG emissions, energy consumption and air quality for Dijon Metropole, and also collaborates with Dijon Metropole to analyse and communicate on the produced data. In addition, Atmo BFC implements air quality modelling systems to evaluate and predict pollution levels at different scales. The president of Atmo BFC is a local elected representative of the city of Dijon.

In EUCityCalc, Atmo BFC will participate in the expert working group of Dijon Metropole and be involved in the following tasks:

Collaboration in WP2, task 2.1, WP3, tasks 3.1-3.5, WP4, task 4.3, WP5, task 5.3 and WP7, task 7.4.

The key persons involved from Atmo BFC will be:

Francis Schweitzer: Director
Stéphane Francois: Climate-air-energy task officer
Mathieu Boilleaut: Modelling manager
Thomas Bagot: Geomatics specialist
Benjamin Pauc: Facilitator of the OPTEER Climate-Air Quality-Energy Observatory of the regional district of Bourgogne-Franche-Comté

A travel budget has been allocated for Atmo BFC to participate with 1 staff in 3 project meetings (kick-off, intermediate and final project meeting) of EUCityCalc in Brussels, with EUR 900 cost estimation per trip per person (EUR 2700).

The estimated amount according to Annex 2 for Atmo BFC will thus be:

Direct personnel costs: EUR 25301,85 (Task 2.1, Tasks 3.1-3.5, Task 4.3, Task 5.3, Task 7.4)
Other direct costs: EUR 2700
Subcontracting: EUR 0
Indirect costs: EUR 7000,46
Total: EUR 35002,31

5. Ethics and Security

5.1 Ethics

This proposal does not involve any ethical issues.

5.2 Security

Please indicate if your project will involve:

- activities or results raising security issues: NO
- 'EU-classified information' as background or results: NO

ESTIMATED BUDGET FOR THE ACTION

Associated with document Ref. Ares(2021)2995359 - 05/05/2021

	Estimated eligible[1] costs (per budget category)										EU contribution			Additional information		
	A. Direct personnel costs				B. Direct costs of subcontracting	*[C. Direct costs of fin. support]*	D. Other direct costs		E. Indirect costs[2]	Total costs	Reimbursement rate %	Maximum EU contribution[3]	Maximum grant amount[4]	Information for indirect costs	Information for auditors	Other information:
	A.1 Employees (or equivalent) A.2 Natural persons under direct contract A.3 Seconded persons *[A.6 Personnel for providing access to research infrastructure]*		A.4 SME owners without salary A.5 Beneficiaries that are natural persons without salary				D.1 Travel D.2 Equipment D.3 Other goods and services *[D.4 Costs of large research infrastructure]*	D.5 Costs of internally invoiced goods and services						Estimated costs of in-kind contributions not used on premises	Declaration of costs under Point D.4	Estimated costs of beneficiaries/ linked third parties not receiving funding/ international partners
Form of costs[6]	Actual	Unit[7]	Unit[8]		Actual	Actual	Actual	Unit[9]	Flat-rate[10] 25%							
	a	Total b	No hours	Total c	d	*[e]*	f	Total g	h = 0,25 x (a +b+c+f+g *+[i1]*[13]*+[i2]*[13]-n)	j = a+b+c+d *+[e]*+f+g+h *+[i1]+[i2]*	k	l	m	n	Yes/No	
1. ENERGY CITIES	216 578.00	0.00	0.00	0.00	0.00	0.00	97 100.00	0.00	78 419.50	392 097.50	100.00	392 097.50	392 097.50	0.00	No	n/a
2. PIK	208 440.00	0.00	0.00	0.00	0.00	0.00	13 500.00	0.00	55 485.00	277 425.00	100.00	277 425.00	277 425.00	0.00	No	n/a
3. CLIMACT SA	175 985.00	0.00	0.00	0.00	0.00	0.00	54 500.00	0.00	57 621.25	288 106.25	100.00	288 106.25	288 106.25	0.00	No	n/a
4. CMW	133 783.00	0.00	0.00	0.00	0.00	0.00	28 800.00	0.00	40 645.75	203 228.75	100.00	203 228.75	203 228.75	0.00	No	n/a
5. REA	38 737.00	0.00	0.00	0.00	0.00	0.00	21 500.00	0.00	15 059.25	75 296.25	100.00	75 296.25	75 296.25	0.00	No	n/a
6. Mantova	71 279.00	0.00	0.00	0.00	0.00	0.00	21 500.00	0.00	23 194.75	115 973.75	100.00	115 973.75	115 973.75	0.00	No	n/a
7. DIJON METROPOLE	55 415.15	0.00	0.00	0.00	0.00	0.00	15 800.00	0.00	17 803.79	89 018.94	100.00	89 018.94	89 018.94	0.00	No	n/a
- Atmo BFC	25 301.85	0.00	0.00	0.00	0.00	0.00	2 700.00	0.00	7 000.46	35 002.31	100.00	35 002.31	35 002.31	0.00	No	n/a
Total beneficiary	80 717.00	0.00			0.00	0.00	18 500.00	0.00	24 804.25	124 021.25		124 021.25	124 021.25	n/a	n/a	0.00
8. ENA	93 471.00	0.00	0.00	0.00	0.00	0.00	33 800.00	0.00	31 817.75	159 088.75	100.00	159 088.75	159 088.75	0.00	No	n/a
9. Zdar	43 928.00	0.00	0.00	0.00	0.00	0.00	18 500.00	0.00	15 607.00	78 035.00	100.00	78 035.00	78 035.00	0.00	No	n/a
10. SEMMO	75 441.00	0.00	0.00	0.00	0.00	0.00	26 100.00	0.00	25 385.25	126 926.25	100.00	126 926.25	126 926.25	0.00	No	n/a
11. REA North	92 898.00	0.00	0.00	0.00	0.00	0.00	33 800.00	0.00	31 674.50	158 372.50	100.00	158 372.50	158 372.50	0.00	No	n/a
Total consortium	1 231 257.00	0.00		0.00	0.00	0.00	367 600.00	0.00	399 714.25	1 998 571.25		1 998 571.25	1 998 571.25			0.00

[1] See Article 6 for the eligibility conditions.
[2] Indirect costs already covered by an operating grant (received under any EU or Euratom funding programme; see Article 6.5.(b)) are ineligible under the GA. Therefore, a beneficiary/linked third party that receives an operating grant during the action's duration cannot declare indirect costs for the year(s)/reporting period(s) covered by the operating grant, unless it can demonstrate that the operating grant does not cover any costs of the action (see Article 6.2.E).
[3] This is the theoretical amount of EU contribution that the system calculates automatically (by multiplying all the budgeted costs by the reimbursement rate). This theoretical amount is capped by the 'maximum grant amount' (that the Agency decided to grant for the action) (see Article 5.1).
[4] The 'maximum grant amount' is the maximum grant amount decided by the Agency. It normally corresponds to the requested grant, but may be lower.
[5] Depending on its type, this specific cost category will or will not cover indirect costs. Specific unit costs that include indirect costs are: costs for energy efficiency measures in buildings, access costs for providing trans-national access to research infrastructure and costs for clinical studies.
[6] See Article 5 for the forms of costs.
[7] Unit : hours worked on the action; costs per unit (hourly rate) : calculated according to the beneficiary's usual accounting practice.
[8] See Annex 2a 'Additional information on the estimated budget' for the details (costs per hour (hourly rate)).
[9] Unit and costs per unit : calculated according to the beneficiary's usual accounting practices.
[10] Flat rate : 25% of eligible direct costs, from which are excluded: direct costs of subcontracting, costs of in-kind contributions not used on premises, direct costs of financial support, and unit costs declared under budget category F if they include indirect costs (see Article 6.2.E).
[11] See Annex 2a 'Additional information on the estimated budget' for the details (units, costs per unit).
[12] See Annex 2a 'Additional information on the estimated budget' for the details (units, costs per unit, estimated number of units, etc).
[13] Only specific unit costs that do not include indirect costs.
[14] See Article 9 for beneficiaries not receiving funding.
[15] Only for linked third parties that receive funding.

ANNEX 2a

ADDITIONAL INFORMATION ON THE ESTIMATED BUDGET

- **Instructions and footnotes in blue will not appear in the text generated by the IT system (since they are internal instructions only).**
- **For options *[*in square brackets*]*: the applicable option will be chosen by the IT system. Options not chosen will automatically not appear.**
- **For fields in [grey in square brackets] (even if they are part of an option as specified in the previous item): IT system will enter the appropriate data.**

⚠ **Transitory period: Until SyGMa fully supports Annex 2a, you must prepare it manually (using this template by choosing and deleting the options/entering the appropriate data).**
For the 'unit cost tables': either fill them out manually or use currently existing tables from Annex 1 or the proposal.
The document can then be uploaded in SyGMa and attached to the grant agreement.

Unit cost for SME owners/natural beneficiaries without salary

1. Costs for a *[*SME owner*][*beneficiary that is a natural person*]* not receiving a salary

Units: hours worked on the action

Amount per unit ('hourly rate'): calculated according to the following formula:

{the monthly living allowance for researchers in MSCA-IF actions / 143 hours}
multiplied by
{country-specific correction coefficient of the country where the beneficiary is established}

The monthly living allowance and the country-specific correction coefficients are set out in the Work Programme (section 3 MSCA) in force at the time of the call:

- for calls *before* Work Programme 2018-2020:
  - for the monthly living allowance: **EUR 4 650**
  - for the country-specific correction coefficients: see Work Programme 2014-2015 and Work Programme 2016-2017 (available on the Participant Portal Reference Documents page)
- for calls *under* Work Programme 2018-2020:
  - for the monthly living allowance: **EUR 4 880**
  - for the country-specific correction coefficients: see Work Programme 2018-2020 (available on the Participant Portal Reference Documents page)

[additional OPTION for beneficiaries/linked third parties that have opted to use the unit cost (in the proposal/with an amendment): For the following beneficiaries/linked third parties, the amounts per unit (hourly rate) are fixed as follows:

- beneficiary/linked third party [short name]: EUR [insert amount]
- beneficiary/linked third party [short name]: EUR [insert amount]

[same for other beneficiaries/linked third parties, if necessary] *]*

Estimated number of units: see Annex 2

Energy efficiency measures unit cost

2. Costs for energy efficiency measures in buildings

Unit: m^2 of eligible 'conditioned' (i.e. built or refurbished) floor area

Amount per unit*: see (for each beneficiary/linked third party and BEST table) the 'unit cost table' attached

* Amount calculated as follows:
{EUR 0.1 x estimated total kWh saved per m^2 per year x 10}

Estimated number of units: see (for each beneficiary/linked third party and BEST table) the 'unit cost table' attached

Unit cost table (energy efficiency measures unit cost)[1]

Short name beneficiary/linked third party	BEST No	Amount per unit	Estimated No of units	Total unit cost (cost per unit x estimated no of units)

[1] Data from the 'building energy specification table (BEST)' that is part of the proposal and Annex 1.

Research infrastructure unit cost

3. Access costs for providing trans-national access to research infrastructure

Units[2]: see (for each access provider and installation) the 'unit cost table' attached

Amount per unit*: see (for each access provider and installation) the 'unit cost table' attached

* Amount calculated as follows:

$$\frac{\text{average annual total access cost to the installation (over past two years[3])}}{\text{average annual total quantity of access to the installation (over past two years[4])}}$$

Estimated number of units: see (for each access provider and installation) the 'unit cost table' attached

Unit cost table (access to research infrastructure unit cost)[5]

Short name access provider	Short name infrastructure	Installation		Unit of access	Amount per unit	Estimated No of units	Total unit cost (cost per unit x estimated no of units)
		No	Short name				

Clinical studies unit cost

4. Costs for clinical studies

Units: patients/subjects that participate in the clinical study

Amount per unit*: see (for each sequence (if any), clinical study and beneficiary/linked third party) the 'unit cost table' attached

* Amount calculated, for the cost components of each task, as follows:

For **personnel costs**:

For personnel costs of doctors: 'average hourly cost for doctors', i.e.:

{certified or auditable total personnel costs for doctors for year N-1

{1720 * number of full-time-equivalent for doctors for year N-1}
multiplied by
estimated number of hours to be worked by doctors for the task (per participant)**}**

For personnel costs of other medical personnel: 'average hourly cost for other medical personnel', i.e.:

{certified or auditable total personnel costs for other medical personnel for year N-1

{1720 * number of full-time-equivalent for other medical personnel for year N-1}

---

2 Unit of access (e.g. beam hours, weeks of access, sample analysis) fixed by the access provider in proposal.
3 In exceptional and duly justified cases, the Commission/Agency may agree to a different reference period.
4 In exceptional and duly justified cases, the Commission/Agency may agree to a different reference period.
5 Data from the 'table on estimated costs/quantity of access to be provided' that is part of the proposal and Annex 1.

multiplied by
estimated number of hours to be worked by other medical personnel for the task (per participant)**}**

For personnel costs of technical personnel: **'**average hourly cost for technical personnel', i.e.:

{certified or auditable total personnel costs for technical personnel for year N-1

{1720 * number of full-time-equivalent for technical personnel for year N-1}
multiplied by
estimated number of hours to be worked by technical personnel for the task (per participant)**}**

'total personnel costs' means actual salaries + actual social security contributions + actual taxes and other costs included in the remuneration, provided they arise from national law or the employment contract/equivalent appointing act

For **consumables**:

For each cost item: 'average price of the consumable', i.e.:

{{certified or auditable total costs of purchase of the consumable in year N-1

total number of items purchased in year N-1}
multiplied by
estimated number of items to be used for the task (per participant)**}**

'total costs of purchase of the consumable' means total value of the supply contracts (including related duties, taxes and charges such as non-deductible VAT) concluded by the beneficiary for the consumable delivered in year N-1, provided the contracts were awarded according to the principle of best value- for-money and without any conflict of interests

For **medical equipment**:

For each cost item: 'average cost of depreciation and directly related services per unit of use', i.e.:

{{ certified or auditable total depreciation costs in year N-1 + certified or auditable total costs of purchase of services in year N-1 for the category of equipment concerned}

total capacity in year N-1
multiplied by
estimated number of units of use of the equipment for the task (per participant)**}**

'total depreciation costs' means total depreciation allowances as recorded in the beneficiary's accounts of year N-1 for the category of equipment concerned, provided the equipment was purchased according to the principle of best value for money and without any conflict of interests + total costs of renting or leasing contracts (including related duties, taxes and charges such as non-deductible VAT) in year N-1 for the category of equipment concerned, provided they do not exceed the depreciation costs of similar equipment and do not include finance fees

For **services**:

For each cost item: 'average cost of the service per study participant', i.e.:

{certified or auditable total costs of purchase of the service in year N-1

total number of patients or subjects included in the clinical studies for which the service was delivered in year N-1**}**

'total costs of purchase of the service' means total value of the contracts concluded by the beneficiary (including related duties, taxes and charges such as non-deductible VAT) for the specific service delivered in year N-1 for the conduct of clinical studies, provided the contracts were awarded according to the principle of best value for money and without any conflict of interests

For **indirect costs**:

{{{cost component 'personnel costs' + cost component 'consumables' + cost component 'medical equipment'}

minus

{costs of in-kind contributions provided by third parties which are not used on the beneficiary's premises + costs of providing financial support to third parties (if any)}**}**

multiplied by

25%**}**

The estimation of the resources to be used must be done on the basis of the study protocol and must be the same for all beneficiaries/linked third parties/third parties involved.

The year N-1 to be used is the last closed financial year at the time of submission of the grant application.

Estimated number of units: see (for each clinical study and beneficiary/linked third party) the 'unit cost table' attached

Unit cost table: clinical studies unit cost[6]

Task, Direct cost categories	**Resource per patient**	**Costs year N-1 Beneficiary 1 [short name]**	**Costs year N-1 Linked third party 1a [short name]**	**Costs year N-1 Beneficiary 2 [short name]**	**Costs year N-1 Linked third party 2a [short name]**	**Costs year N-1 Third party giving in-kind contributions 1 [short name]**
Sequence No. 1						
Task No. 1 Blood sample						
(a) **Personnel costs:** - Doctors	n/a					
- Other Medical Personnel	Phlebotomy (nurse), 10 minutes	8,33 EUR	11,59 EUR	10,30 EUR	11,00 EUR	9,49 EUR
- Technical Personnel	Sample Processing (lab technician), 15 minutes	9,51 EUR	15,68 EUR	14,60 EUR	15,23 EUR	10,78 EUR
(b) **Costs of consumables**:	Syringe	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	Cannula	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	Blood container	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(c) **Costs of medical equipment**:	Use of -80° deep freezer, 60 days	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	Use of centrifuge, 15 minutes	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(d) **Costs of services**	Cleaning of XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(e) **Indirect costs** (25% flat-rate)		XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
Task No. 2						
…						
Amount per unit (unit cost sequence 1):		**XX EUR**	**XX EUR**	**XX EUR**	**XX EUR**	**XX EUR**
Sequence No. 2						
Task No. 1						

[6] Same table as in proposal and Annex 1.

XXX						
(a) **Personnel costs:** - Doctors	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
- Other Medical Personnel	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
- Technical Personnel	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(b) **Costs of consumables**:	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(c) **Costs of medical equipment**:	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(d) **Costs of services**	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(e) **Indirect costs** (25% flat-rate)		XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
Task No. 2						
…						
Amount per unit (unit cost sequence 2):		**XX EUR**	**XX EUR**	**XX EUR**	**XX EUR**	**XX EUR**
…						
Amount per unit (unit cost entire study):		**XX EUR**	**XX EUR**	**XX EUR**	**XX EUR**	**XX EUR**

1

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

POTSDAM INSTITUT FUER KLIMAFOLGENFORSCHUNG (PIK), established in Telegrafenberg 31, POTSDAM 14412, Germany, VAT number: DE811547185, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('2')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Frauke HANEBERG with ECAS id nhanebfr signed in the Participant Portal on 11/05/2021 at 10:40:45 (transaction id SigId-119458-lF3m9rP9NfUzzvsl6X33v4f620JSuL3fGjQu5TDA0RhSCV7xdXi1jHrasGlgOfNV8dGl5CMwydvVNrL5d8kTNh-rS0vSrmBGYCcDi0Km7yFYi-LhnNASSjLWoIglYK0B05bwDMa5mrkhjDLztzspYgraVrIdjDbouyYgbzeDm4tIRVXf3yUdrlYQSY57dls1R1Ci0). Timestamp by third party at 2021.05.11 11:40:49 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

CLIMACT SA (CLIMACT SA), established in PLACE DE L UNIVERSITE 16, LOUVAIN LA NEUVE 1348, Belgium, VAT number: BE0892272118, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('3')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Pascal VERMEULEN with ECAS id nvermpsc signed in the Participant Portal on 27/05/2021 at 10:26:56 (transaction id SigId-21358-sT4kjj4saLgJg2UzLcOmGDroCJ7tv5eqnZTN8u4Gn8wbVuLgE4ozNf5xXJuiHDg6VRLU1hDDFDVu9yFNXf3TGi-yntOf97TTHq9CFzhzMUcGym-kJ0LVKmzYBCtC3K1S2xPzXV7Abhf4KhkTXHXzLNxQLa2czf5R4a9fNKR7Mzzfu924sWGrrjiUFzHN3RDFhxB7r90). Timestamp by third party at 2021.05.27 11:27:04 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

CARBON MARKET WATCH (CMW), established in RUE D'ALBANIE 117, BRUXELLES 1060, Belgium, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('4')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Sabine Frank with ECAS id n002pz2j signed in the Participant Portal on 06/05/2021 at 11:57:36 (transaction id SigId-79741-GJTEvlH2cgJMcVSkIzRMBK5fRzdWxWedu3ClYPTZJwshTHWLzIzMSDhgkolbaRE6hLXn49YKy55vSUyDkXzMkzvW-rS0vSrmBGYCcDi0Km7yFYi-H96HUzdZzzdoE8HRluxqKwK4wmKTEbESnVOhX3Rh4eJyjL19H1vGbLQpcyXHzXq1N9eo0NUQjqQUdMscXd5ZUE4). Timestamp by third party at 2021.05.06 12:57:42 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

RIGA MUNICIPAL AGENCY "RIGA ENERGY AGENCY" (REA), established in Maza Jauniela 5, Riga 1539, Latvia, VAT number: LV90011524360, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('5')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Janis Ikaunieks with ECAS id n006yypn signed in the Participant Portal on 08/05/2021 at 11:46:09 (transaction id SigId-100282-mzda1Hy753jlTtLKZyvQS8uu52P1Jgol6AGEQoPsOoF4DUfewtR5AYxtwKILhm3FrUcVR1pOvdlwazNWzWCrgTW-rS0vSrmBGYCcDi0Km7yFYi-1zITAqp1zLkiWyJTyMx3W8DODuf1uwIWrVFQild95hmTqzg0Rf2A3dNyt3D6jy62WVqo5rWWiuf71FmtIcMToPW). Timestamp by third party at 2021.05.08 12:46:14 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

COMUNE DI MANTOVA (Mantova), established in VIA ROMA 39, MANTOVA 46100, Italy, VAT number: IT00189800204, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('6')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Mattia PALAZZI with ECAS id npalmtti signed in the Participant Portal on 10/05/2021 at 06:51:04 (transaction id SigId-101707-mWUHHoAojtZRmAozPR6d7IGRQw3dI2XfOtZmY7wzZbG3XDN8CNvsQzRupr9rFM7xaictmcj2KghLzpFxQ7EsU5q-rS0vSrmBGYCcDi0Km7yFYi-6ozUczapAlk0vUdOJaMAHAayCqIOBVSJx0a0QgwLQYGqUbww5mzeoFzsdp1pSTjo4OC8NcBIUZo1LKcUjtWzSgb). Timestamp by third party at 2021.05.10 07:51:10 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

DIJON METROPOLE (DIJON METROPOLE), established in 40, AVENUE DU DRAPEAU, DIJON 21000, France, VAT number: FR65242100410, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('7')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

François REBSAMEN with ECAS id n003bc5j signed in the Participant Portal on 28/05/2021 at 07:33:43 (transaction id SigId-31398-AUeZZtjPqN9roBShOlzLkyqlybLmm8DcOT9qzGXkE10ehU00o20HUM6QO5kSMqUDL5FWXHaUMhgFpOJsZ5DoAw-yntOf97TTHq9CFzhzMUcGym-Xjs2jWCKzdgzXg8aeTrGM9CELqoLumBu7FlihDMPEX2O8zjUnUmWtYeW8VFBf9JZWKyLss2orzbhonvi7cJh5Gq). Timestamp by third party at 2021.05.28 08:33:49 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

AGENCIA DE ENERGIA E AMBIENTE DA ARRABIDA (ENA), established in AVENIDA BELO HORIZONTE EDIFICIO ESCARPAS SANTOS NICOLAU, SETUBAL 2910 422, Portugal, VAT number: PT507796497, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('8')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Sérgio Marcelino with ECAS id nrovitor signed in the Participant Portal on 12/05/2021 at 19:02:21 (transaction id SigId-138099-HhNtfLlVaO3JbyM5ouYsFDp5qRIqztl3QpKKf0JQKzLnQMyirCHk5G5zmelk0b1YzOlqi7wdTRT5zHZMY9qFzdzm-rS0vSrmBGYCcDi0Km7yFYi-1WRGFzMwFqPPrdKxd3hcdjnyxvzJtbl06b3BElUm2evYTQzrhIkKmObuhpcJgv9ELEVFGzw0Nmube7EGvnOneAK). Timestamp by third party at 2021.05.12 20:02:26 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

MESTO ZDAR NAD SAZAVOU (Zdar), established in ZIZKOVA 227/1, ZDAR NAD SAZAVOU 59101, Czech Republic, VAT number: CZ00295841, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('9')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Michal Bačovský with ECAS id n002t4g7 signed in the Participant Portal on 06/05/2021 at 11:09:27 (transaction id SigId-78877-a9S3l6hHQ7O4wVfnD2qM2ZrjlwBFb6HhFbldA70pqVfTpMnzzuW8bluzeOCl5LRiGAEJhBLOBIzoSvzgUmKyRyT-rS0vSrmBGYCcDi0Km7yFYi-ozR8BH6lvXiiWqd1Qwc6zNgezl7yBgboDWKYNusmdNWm2oBeEUoDvQRLlRaACovtPDfMHdX6JIXioRrESVJSfvG). Timestamp by third party at 2021.05.06 12:09:32 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

SDRUZENI ENERGETICKYCH MANAZERU MEST A OBCI ZS (SEMMO), established in TYRSOVO NAMESTI 68, LITOMERICE 412 01, Czech Republic, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('10')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Jaroslav Klusak with ECAS id n003b7v0 signed in the Participant Portal on 06/05/2021 at 09:45:43 (transaction id SigId-76922-ukML gnnDLMLMSZGUi0x7NGkJ3CHxiEgFPIczaBy2qXh7IjjMwzjjbvVlCRAu HQEtAvM1JOibQZYZps0uU50CeR-rS0vSrmBGYCcDi0Km7yFYi-4e0l AwdzX0Ok5T8ih7MgFuT3x2B0tjJtLoJrdPEH70OrWzwPi1HzM3xU8v MwSsDNglzSg4Qg64kDM6ALAe9jiai). Timestamp by third party at 2021.05.06 10:45:48 CEST

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

REGIONALNA ENERGETSKA AGENCIJA SJEVER (REA North), established in MIROSLAVA KRLEZE 81, KOPRIVNICA 48000, Croatia, VAT number: HR91748607924, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('11')

in Grant Agreement No 101022965 ('the Agreement')

between ENERGY CITIES/ENERGIE-CITES ASSOCIATION **and** the European Climate, Infrastructure and Environment Executive Agency (CINEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'European City Calculator: Prospective modelling tool supporting public authorities in reaching climate neutrality (EUCITYCALC)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

Ivan SIMIC with ECAS id nsimicii signed in the Participant Portal on 06/05/2021 at 09:20:44 (transaction id SigId-76383-e4Cy6PClocUp8KR5riTtN3FGw5BvBw5D5KDI0Fk6dOzzdrkQag2zkGat38beF5CVthay9K9IFe9cXwlBa9muDoW-rS0vSrmBGYCcDi0Km7yFYi-gLzKmbNzmVtRFzv0IM0aPp3JkwOHeuD5YfFHi5uRy0pG1PaKzTzO1Za8seaOx8QN6KyPRLqOu1wCmqdkkwLfJqa). Timestamp by third party at 2021.05.06 10:20:48 CEST

ⓘ print format A4 landscape

MODEL ANNEX 4 FOR H2020 GENERAL MGA — MULTI

FINANCIAL STATEMENT FOR *[BENEFICIARY [name]/ LINKED THIRD PARTY [name]]* FOR REPORTING PERIOD [reporting period]

	Eligible[1] costs (per budget category)													Receipts	EU contribution			Additional information
	A. Direct personnel costs				B. Direct costs of subcontracting	*[C. Direct costs of fin. support]*	D. Other direct costs			E. Indirect costs[2]	*[F. Costs of …]*		Total costs	Receipts	Reimbursement rate %	Maximum EU contribution[3]	Requested EU contribution	Information for indirect costs :
	A.1 Employees (or equivalent) A.2 Natural persons under direct contract A.3 Seconded persons *[A.6 Personnel for providing access to research infrastructure]*		A.4 SME owners without salary A.5 Beneficiaries that are natural persons without salary			*[C.1 Financial support]* *[C.2 Prizes]*	D.1 Travel D.2 Equipment D.3 Other goods and services	*[D.4 Costs of large research infrastructure]*	D.5 Costs of internally invoiced goods and services		*[F.1 Costs of …]*	*[F.2 Costs of …]*		Receipts of the action, to be reported in the last reporting period, according to Article 5.3.3				Costs of in-kind contributions not used on premises
Form of costs[4]	Actual	Unit	Unit		Actual	Actual	Actual	Actual	Unit	Flat-rate[5] 25%	Unit		*[Unit][Lump sum]*					
	a	Total b	No hours	Total c	d	*[e]*	f	*[g]*	Total h	i=0,25 x (a+b+ c+f+*[g]* + h+ *[j 1]*[6] +*[j2]*[6] -p)	No units	Total *[j1]*	Total *[j2]*	k = a+b+c+d+*[e]* +*f* + *[g]* +h+ i + *[j1]* +*[j2]*	l	m	n	o	p
[short name beneficiary/linked third party]																		

The beneficiary/linked third party hereby confirms that:
The information provided is complete, reliable and true.
The costs declared are eligible (see Article 6).
The costs can be substantiated by adequate records and supporting documentation that will be produced upon request or in the context of checks, reviews, audits and investigations (see Articles 17, 18 and 22).
For the last reporting period: that all the receipts have been declared (see Article 5.3.3).

ⓘ Please declare all eligible costs, even if they exceed the amounts indicated in the estimated budget (see Annex 2). Only amounts that were declared in your individual financial statements can be taken into account lateron, in order to replace other costs that are found to be ineligible.

[1] See Article 6 for the eligibility conditions

[2] The indirect costs claimed must be free of any amounts covered by an operating grant (received under any EU or Euratom funding programme; see Article 6.2.E). If you have received an operating grant during this reporting period, you cannot claim indirect costs unless you can demonstrate that the operating grant does not cover any costs of the action.

[3] This is the *theoretical* amount of EU contribution that the system calculates automatically (by multiplying the reimbursement rate by the total costs declared). The amount you request (in the column 'requested EU contribution') may be less,

[4] See Article 5 for the forms of costs

[5] Flat rate : 25% of eligible direct costs, from which are excluded: direct costs of subcontracting, costs of in-kind contributions not used on premises, direct costs of financial support, and unit costs declared under budget category F if they include indirect costs (see Article 6.2.E)

[6] Only specific unit costs that do not include indirect costs

ANNEX 5

MODEL FOR THE CERTIFICATE ON THE FINANCIAL STATEMENTS

- **For options [*in italics in square brackets*]: choose the applicable option. Options not chosen should be deleted.**
- **For fields in [grey in square brackets]: enter the appropriate data**

TABLE OF CONTENTS

TERMS OF REFERENCE FOR AN INDEPENDENT REPORT OF FACTUAL FINDINGS ON COSTS DECLARED UNDER A GRANT AGREEMENT FINANCED UNDER THE HORIZON 2020 RESEARCH FRAMEWORK PROGRAMME

INDEPENDENT REPORT OF FACTUAL FINDINGS ON COSTS DECLARED UNDER A GRANT AGREEMENT FINANCED UNDER THE HORIZON 2020 RESEARCH FRAMEWORK PROGRAMME

Terms of Reference for an Independent Report of Factual Findings on costs declared under a Grant Agreement financed under the Horizon 2020 Research and Innovation Framework Programme

This document sets out the '**Terms of Reference (ToR)**' under which

[OPTION 1: [insert name of the beneficiary] ('the Beneficiary')] [OPTION 2: [insert name of the linked third party] ('the Linked Third Party'), third party linked to the Beneficiary [insert name of the beneficiary] ('the Beneficiary')]

agrees to engage

[**insert legal name of the auditor**] ('the Auditor')

to produce an independent report of factual findings ('the Report') concerning the Financial Statement(s)[1] drawn up by the *[Beneficiary] [Linked Third Party]* for the Horizon 2020 grant agreement [insert number of the grant agreement, title of the action, acronym and duration from/to] ('the Agreement'), and

to issue a Certificate on the Financial Statements' ('CFS') referred to in Article 20.4 of the Agreement based on the compulsory reporting template stipulated by the Commission.

The Agreement has been concluded under the Horizon 2020 Research and Innovation Framework Programme (H2020) between the Beneficiary and *[OPTION 1: the European Union, represented by the European Commission ('the Commission')][OPTION 2: the European Atomic Energy Community (Euratom,) represented by the European Commission ('the Commission')][OPTION 3: the [Research Executive Agency (REA)] [European Research Council Executive Agency (ERCEA)] [Innovation and Networks Executive Agency (INEA)] [Executive Agency for Small and Medium-sized Enterprises (EASME)] ('the Agency'), under the powers delegated by the European Commission ('the Commission').]*

The *[Commission] [Agency]* is mentioned as a signatory of the Agreement with the Beneficiary only. The *[European Union][Euratom][Agency]* is not a party to this engagement.

1.1 Subject of the engagement

The coordinator must submit to the *[Commission][Agency]* the final report within 60 days following the end of the last reporting period which should include, amongst other documents, a CFS for each beneficiary and for each linked third party that requests a total contribution of EUR 325 000 or more, as reimbursement of actual costs and unit costs calculated on the basis of its usual cost accounting practices (see Article 20.4 of the Agreement). The CFS must cover all reporting periods of the beneficiary or linked third party indicated above.

The Beneficiary must submit to the coordinator the CFS for itself and for its linked third party(ies), if the CFS must be included in the final report according to Article 20.4 of the Agreement.

The CFS is composed of two separate documents:

- The Terms of Reference ('the ToR') to be signed by the *[Beneficiary] [Linked Third Party]* and the Auditor;

[1] By which costs under the Agreement are declared (see template 'Model Financial Statements' in Annex 4 to the Grant Agreement).

- The Auditor's Independent Report of Factual Findings ('the Report') to be issued on the Auditor's letterhead, dated, stamped and signed by the Auditor (or the competent public officer) which includes the agreed-upon procedures ('the Procedures') to be performed by the Auditor, and the standard factual findings ('the Findings') to be confirmed by the Auditor.

If the CFS must be included in the final report according to Article 20.4 of the Agreement, the request for payment of the balance relating to the Agreement cannot be made without the CFS. However, the payment for reimbursement of costs covered by the CFS does not preclude the Commission *[Agency,]* the European Anti-Fraud Office and the European Court of Auditors from carrying out checks, reviews, audits and investigations in accordance with Article 22 of the Agreement.

1.2 Responsibilities

The *[Beneficiary] [Linked Third Party]:*

- must draw up the Financial Statement(s) for the action financed by the Agreement in compliance with the obligations under the Agreement. The Financial Statement(s) must be drawn up according to the *[Beneficiary's] [Linked Third Party's]* accounting and book-keeping system and the underlying accounts and records;
- must send the Financial Statement(s) to the Auditor;
- is responsible and liable for the accuracy of the Financial Statement(s);
- is responsible for the completeness and accuracy of the information provided to enable the Auditor to carry out the Procedures. It must provide the Auditor with a written representation letter supporting these statements. The written representation letter must state the period covered by the statements and must be dated;
- accepts that the Auditor cannot carry out the Procedures unless it is given full access to the *[Beneficiary's] [Linked Third Party's]* staff and accounting as well as any other relevant records and documentation.

The Auditor:

- *[Option 1 by default:* is qualified to carry out statutory audits of accounting documents in accordance with Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC or similar national regulations*]*.
- *[Option 2 if the Beneficiary or Linked Third Party has an independent Public Officer:* is a competent and independent Public Officer for which the relevant national authorities have established the legal capacity to audit the Beneficiary*]*.
- *[Option 3 if the Beneficiary or Linked Third Party is an international organisation:* is an [internal] [external] auditor in accordance with the internal financial regulations and procedures of the international organisation*]*.

The Auditor:

- must be independent from the Beneficiary *[and the Linked Third Party]*, in particular, it must not have been involved in preparing the *[Beneficiary's] [Linked Third Party's]* Financial Statement(s);
- must plan work so that the Procedures may be carried out and the Findings may be assessed;
- must adhere to the Procedures laid down and the compulsory report format;
- must carry out the engagement in accordance with this ToR;
- must document matters which are important to support the Report;
- must base its Report on the evidence gathered;
- must submit the Report to the *[Beneficiary] [Linked Third Party]*.

The Commission sets out the Procedures to be carried out by the Auditor. The Auditor is not responsible for their suitability or pertinence. As this engagement is not an assurance engagement, the Auditor does not provide an audit opinion or a statement of assurance.

1.3 Applicable Standards

The Auditor must comply with these Terms of Reference and with[2]:

- the International Standard on Related Services ('ISRS') 4400 *Engagements to perform Agreed-upon Procedures regarding Financial Information* as issued by the International Auditing and Assurance Standards Board (IAASB);
- the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants (IESBA). Although ISRS 4400 states that independence is not a requirement for engagements to carry out agreed-upon procedures, the *[Commission][Agency]* requires that the Auditor also complies with the Code's independence requirements.

The Auditor's Report must state that there is no conflict of interests in establishing this Report between the Auditor and the Beneficiary *[and the Linked Third Party]*, and must specify - if the service is invoiced - the total fee paid to the Auditor for providing the Report.

1.4 Reporting

The Report must be written in the language of the Agreement (see Article 20.7).

Under Article 22 of the Agreement, the Commission*[, the Agency],* the European Anti-Fraud Office and the Court of Auditors have the right to audit any work that is carried out under the action and for which costs are declared from [*the European Union*] [*Euratom*] budget. This includes work related to this engagement. The Auditor must provide access to all working papers (e.g. recalculation of hourly rates, verification of the time declared for the action) related to this assignment if the Commission *[, the Agency]*, the European Anti-Fraud Office or the European Court of Auditors requests them.

1.5 Timing

The Report must be provided by *[*dd Month yyyy*]*.

1.6 Other terms

[*The [Beneficiary] [Linked Third Party] and the Auditor can use this section to agree other specific terms, such as the Auditor's fees, liability, applicable law, etc. Those specific terms must not contradict the terms specified above.*]

[legal name of the Auditor]	[legal name of the *[Beneficiary][Linked Third Party]*]
[name & function of authorised representative]	[name & function of authorised representative]
[dd Month yyyy]	[dd Month yyyy]
Signature of the Auditor	Signature of the *[Beneficiary][Linked Third Party]*

[2] Supreme Audit Institutions applying INTOSAI-standards may carry out the Procedures according to the corresponding International Standards of Supreme Audit Institutions and code of ethics issued by INTOSAI instead of the International Standard on Related Services ('ISRS') 4400 and the Code of Ethics for Professional Accountants issued by the IAASB and the IESBA.

Independent Report of Factual Findings on costs declared under Horizon 2020 Research and Innovation Framework Programme

(To be printed on the Auditor's letterhead)

To
[name of contact person(s)], [Position]
[[*Beneficiary's*] [*Linked Third Party's*] name]
[Address]
[dd Month yyyy]

Dear [Name of contact person(s)],

As agreed under the terms of reference dated [dd Month yyyy]

with *[OPTION 1: [insert name of the beneficiary] ('the Beneficiary')] [OPTION 2: [insert name of the linked third party] ('the Linked Third Party'), third party linked to the Beneficiary [insert name of the beneficiary] ('the Beneficiary')],*

we

[name of the auditor] ('the Auditor'),

established at

[full address/city/state/province/country],

represented by

[name and function of an authorised representative],

have carried out the procedures agreed with you regarding the costs declared in the Financial Statement(s)[3] of the *[Beneficiary] [Linked Third Party]* concerning the grant agreement [insert grant agreement reference: number, title of the action and acronym] ('the Agreement'),

with a total cost declared of
[total amount] EUR,

and a total of actual costs and unit costs calculated in accordance with the [*Beneficiary's*] [*Linked Third Party's*] usual cost accounting practices' declared of

[sum of total actual costs and total direct personnel costs declared as unit costs calculated in accordance with the *[Beneficiary's] [Linked Third Party's]* usual cost accounting practices] EUR

and **hereby provide our Independent Report of Factual Findings ('the Report')** using the compulsory report format agreed with you.

The Report

Our engagement was carried out in accordance with the terms of reference ('the ToR') appended to this Report. The Report includes the agreed-upon procedures ('the Procedures') carried out and the standard factual findings ('the Findings') examined.

[3] By which the Beneficiary declares costs under the Agreement (see template 'Model Financial Statement' in Annex 4 to the Agreement).

The Procedures were carried out solely to assist the *[Commission] [Agency]* in evaluating whether the *[Beneficiary's] [Linked Third Party's]* costs in the accompanying Financial Statement(s) were declared in accordance with the Agreement. The *[Commission] [Agency]* draws its own conclusions from the Report and any additional information it may require.

The scope of the Procedures was defined by the Commission. Therefore, the Auditor is not responsible for their suitability or pertinence. Since the Procedures carried out constitute neither an audit nor a review made in accordance with International Standards on Auditing or International Standards on Review Engagements, the Auditor does not give a statement of assurance on the Financial Statements.

Had the Auditor carried out additional procedures or an audit of the *[Beneficiary's] [Linked Third Party's]* Financial Statements in accordance with International Standards on Auditing or International Standards on Review Engagements, other matters might have come to its attention and would have been included in the Report.

Not applicable Findings

We examined the Financial Statement(s) stated above and considered the following Findings not applicable:

Explanation (to be removed from the Report):

*If a Finding was not applicable, it must be marked as '**N.A.**' ('Not applicable') in the corresponding row on the right-hand column of the table and means that the Finding did not have to be corroborated by the Auditor and the related Procedure(s) did not have to be carried out.*

The reasons of the non-application of a certain Finding must be obvious i.e.

i) if no cost was declared under a certain category then the related Finding(s) and Procedure(s) are not applicable;

ii) if the condition set to apply certain Procedure(s) are not met the related Finding(s) and those Procedure(s) are not applicable. For instance, for 'beneficiaries with accounts established in a currency other than euro' the Procedure and Finding related to 'beneficiaries with accounts established in euro' are not applicable. Similarly, if no additional remuneration is paid, the related Finding(s) and Procedure(s) for additional remuneration are not applicable.

List here all Findings considered not applicable for the present engagement and explain the reasons of the non-applicability.

….

Exceptions

Apart from the exceptions listed below, the *[Beneficiary] [Linked Third Party]* provided the Auditor all the documentation and accounting information needed by the Auditor to carry out the requested Procedures and evaluate the Findings.

Explanation (to be removed from the Report):

- *If the Auditor was not able to successfully complete a procedure requested, it must be marked as '**E**' ('Exception') in the corresponding row on the right-hand column of the table. The reason such as the inability to reconcile key information or the unavailability of data that prevents the Auditor from carrying out the Procedure must be indicated below.*
- *If the Auditor cannot corroborate a standard finding after having carried out the corresponding procedure, it must also be marked as '**E**' ('Exception') and, where possible, the reasons why the Finding was not fulfilled and its possible impact must be explained here below.*

List here any exceptions and add any information on the cause and possible consequences of each exception, if known. If the exception is quantifiable, include the corresponding amount.

….

Example (to be removed from the Report):

1. *The Beneficiary was unable to substantiate the Finding number 1 on … because ….*
2. *Finding number 30 was not fulfilled because the methodology used by the Beneficiary to calculate unit costs was different from the one approved by the Commission. The differences were as follows: …*
3. *After carrying out the agreed procedures to confirm the Finding number 31, the Auditor found a difference of _____ EUR. The difference can be explained by …*

Further Remarks

In addition to reporting on the results of the specific procedures carried out, the Auditor would like to make the following general remarks:

Example (to be removed from the Report):

1. *Regarding Finding number 8 the conditions for additional remuneration were considered as fulfilled because …*
2. *In order to be able to confirm the Finding number 15 we carried out the following additional procedures: ….*

Use of this Report

This Report may be used only for the purpose described in the above objective. It was prepared solely for the confidential use of the *[Beneficiary] [Linked Third Party]* and the [*Commission*] [*Agency*], and only to be submitted to the *[Commission] [Agency]* in connection with the requirements set out in Article 20.4 of the Agreement. The Report may not be used by the *[Beneficiary] [Linked Third Party]* or by the *[Commission] [Agency]* for any other purpose, nor may it be distributed to any other parties. The *[Commission] [Agency]* may only disclose the Report to authorised parties, in particular to the European Anti-Fraud Office (OLAF) and the European Court of Auditors.

This Report relates only to the Financial Statement(s) submitted to the *[Commission] [Agency]* by the *[Beneficiary] [Linked Third Party]* for the Agreement. Therefore, it does not extend to any other of the *[Beneficiary's] [Linked Third Party's]* Financial Statement(s).

There was no conflict of interest[4] between the Auditor and the Beneficiary *[and Linked Third Party]* in establishing this Report. The total fee paid to the Auditor for providing the Report was EUR _____ (including EUR_____ of deductible VAT).

We look forward to discussing our Report with you and would be pleased to provide any further information or assistance.

[legal name of the Auditor]
[name and function of an authorised representative]
[dd Month yyyy]
Signature of the Auditor

[4] A conflict of interest arises when the Auditor's objectivity to establish the certificate is compromised in fact or in appearance when the Auditor for instance:
- was involved in the preparation of the Financial Statements;
- stands to benefit directly should the certificate be accepted;
- has a close relationship with any person representing the beneficiary;
- is a director, trustee or partner of the beneficiary; or
- is in any other situation that compromises his or her independence or ability to establish the certificate impartially.

Agreed-upon procedures to be performed and standard factual findings to be confirmed by the Auditor

The European Commission reserves the right to i) provide the auditor with additional guidance regarding the procedures to be followed or the facts to be ascertained and the way in which to present them (this may include sample coverage and findings) or to ii) change the procedures, by notifying the Beneficiary in writing. The procedures carried out by the auditor to confirm the standard factual finding are listed in the table below.

If this certificate relates to a Linked Third Party, any reference here below to 'the Beneficiary' is to be considered as a reference to 'the Linked Third Party'.

The 'result' column has three different options: 'C', 'E' and 'N.A.':

- 'C' stands for 'confirmed' and means that the auditor can confirm the 'standard factual finding' and, therefore, there is no exception to be reported.
- 'E' stands for 'exception' and means that the Auditor carried out the procedures but cannot confirm the 'standard factual finding', or that the Auditor was not able to carry out a specific procedure (e.g. because it was impossible to reconcile key information or data were unavailable),
- 'N.A.' stands for 'not applicable' and means that the Finding did not have to be examined by the Auditor and the related Procedure(s) did not have to be carried out. The reasons of the non-application of a certain Finding must be obvious i.e. i) if no cost was declared under a certain category then the related Finding(s) and Procedure(s) are not applicable; ii) if the condition set to apply certain Procedure(s) are not met then the related Finding(s) and Procedure(s) are not applicable. For instance, for 'beneficiaries with accounts established in a currency other than the euro' the Procedure related to 'beneficiaries with accounts established in euro' is not applicable. Similarly, if no additional remuneration is paid, the related Finding(s) and Procedure(s) for additional remuneration are not applicable.

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
A	**ACTUAL PERSONNEL COSTS AND UNIT COSTS CALCULATED BY THE BENEFICIARY IN ACCORDANCE WITH ITS USUAL COST ACCOUNTING PRACTICE**		
	The Auditor draws a sample of persons whose costs were declared in the Financial Statement(s) to carry out the procedures indicated in the consecutive points of this section A. (*The sample should be selected randomly so that it is representative. Full coverage is required if there are fewer than 10 people (including employees, natural persons working under a direct contract and personnel seconded by a third party), otherwise the sample should have a minimum of 10 people, or 10% of the total, whichever number is the highest)* The Auditor sampled _____ people out of the total of _____ people.		

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
A.1	**PERSONNEL COSTS** For the persons included in the sample and working under an employment contract or equivalent act (general procedures for individual actual personnel costs and personnel costs declared as unit costs) To confirm standard factual findings 1-5 listed in the next column, the Auditor reviewed following information/documents provided by the Beneficiary: o a list of the persons included in the sample indicating the period(s) during which they worked for the action, their position (classification or category) and type of contract; o the payslips of the employees included in the sample; o reconciliation of the personnel costs declared in the Financial Statement(s) with the accounting system (project accounting and general ledger) and payroll system; o information concerning the employment status and employment conditions of personnel included in the sample, in particular their employment contracts or equivalent; o the Beneficiary's usual policy regarding payroll matters (e.g. salary policy, overtime policy, variable pay); o applicable national law on taxes, labour and social security and o any other document that supports the personnel costs declared. The Auditor also verified the eligibility of all components of the retribution (see Article 6 GA) and recalculated the personnel costs for employees included in the sample.	1) The employees were i) directly hired by the Beneficiary in accordance with its national legislation, ii) under the Beneficiary's sole technical supervision and responsibility and iii) remunerated in accordance with the Beneficiary's usual practices.	
		2) Personnel costs were recorded in the Beneficiary's accounts/payroll system.	
		3) Costs were adequately supported and reconciled with the accounts and payroll records.	
		4) Personnel costs did not contain any ineligible elements.	
		5) There were no discrepancies between the personnel costs charged to the action and the costs recalculated by the Auditor.	
	Further procedures if 'additional remuneration' is paid To confirm standard factual findings 6-9 listed in the next column, the Auditor: o reviewed relevant documents provided by the Beneficiary (legal form, legal/statutory	6) The Beneficiary paying "additional remuneration" was a non-profit legal entity.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	obligations, the Beneficiary's usual policy on additional remuneration, criteria used for its calculation, the Beneficiary's usual remuneration practice for projects funded under national funding schemes…); o recalculated the amount of additional remuneration eligible for the action based on the supporting documents received (full-time or part-time work, exclusive or non-exclusive dedication to the action, usual remuneration paid for projects funded by national schemes) to arrive at the applicable FTE/year and pro-rata rate (see data collected in the course of carrying out the procedures under A.2 'Productive hours' and A.4 'Time recording system'). *'ADDITIONAL REMUNERATION' MEANS ANY PART OF THE REMUNERATION WHICH EXCEEDS WHAT THE PERSON WOULD BE PAID FOR TIME WORKED IN PROJECTS FUNDED BY NATIONAL SCHEMES.* *IF ANY PART OF THE REMUNERATION PAID TO THE EMPLOYEE QUALIFIES AS "ADDITIONAL REMUNERATION" AND IS ELIGIBLE UNDER THE PROVISIONS OF ARTICLE 6.2.A.1, THIS CAN BE CHARGED AS ELIGIBLE COST TO THE ACTION UP TO THE FOLLOWING AMOUNT:* *(A) IF THE PERSON WORKS FULL TIME AND EXCLUSIVELY ON THE ACTION DURING THE FULL YEAR: UP TO EUR 8 000/YEAR;* *(B) IF THE PERSON WORKS EXCLUSIVELY ON THE ACTION BUT NOT FULL-TIME OR NOT FOR THE FULL YEAR: UP TO THE CORRESPONDING PRO-RATA AMOUNT OF EUR 8 000, OR* *(C) IF THE PERSON DOES NOT WORK EXCLUSIVELY ON THE ACTION: UP TO A PRO-RATA AMOUNT CALCULATED IN ACCORDANCE TO ARTICLE 6.2.A.1.*	7) The amount of additional remuneration paid corresponded to the Beneficiary's usual remuneration practices and was consistently paid whenever the same kind of work or expertise was required.	
		8) The criteria used to calculate the additional remuneration were objective and generally applied by the Beneficiary regardless of the source of funding used.	
		9) The amount of additional remuneration included in the personnel costs charged to the action was capped at EUR 8,000 per FTE/year (up to the equivalent pro-rata amount if the person did not work on the action full-time during the year or did not work exclusively on the action).	
	Additional procedures in case "unit costs calculated by the Beneficiary in accordance with its usual cost accounting practices" is applied: Apart from carrying out the procedures indicated above to confirm standard factual findings 1-5 and, if applicable, also 6-9, the Auditor carried out following procedures to confirm standard	10) The personnel costs included in the Financial Statement were calculated in accordance with the Beneficiary's usual cost accounting practice. This methodology was consistently	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	factual findings 10-13 listed in the next column: o obtained a description of the Beneficiary's usual cost accounting practice to calculate unit costs;. o reviewed whether the Beneficiary's usual cost accounting practice was applied for the Financial Statements subject of the present CFS; o verified the employees included in the sample were charged under the correct category (in accordance with the criteria used by the Beneficiary to establish personnel categories) by reviewing the contract/HR-record or analytical accounting records; o verified that there is no difference between the total amount of personnel costs used in calculating the cost per unit and the total amount of personnel costs recorded in the statutory accounts; o verified whether actual personnel costs were adjusted on the basis of budgeted or estimated elements and, if so, verified whether those elements used are actually relevant for the calculation, objective and supported by documents.	used in all H2020 actions.	
		11) The employees were charged under the correct category.	
		12) Total personnel costs used in calculating the unit costs were consistent with the expenses recorded in the statutory accounts.	
		13) Any estimated or budgeted element used by the Beneficiary in its unit-cost calculation were relevant for calculating personnel costs and corresponded to objective and verifiable information.	
	<u>For natural persons included in the sample and working with the Beneficiary under a direct contract other than an employment contract, such as consultants (no subcontractors).</u> To confirm standard factual findings 14-17 listed in the next column the Auditor reviewed following information/documents provided by the Beneficiary: o the contracts, especially the cost, contract duration, work description, place of work, ownership of the results and reporting obligations to the Beneficiary; o the employment conditions of staff in the same category to compare costs and; o any other document that supports the costs declared and its registration (e.g. invoices, accounting records, etc.).	14) The natural persons worked under conditions similar to those of an employee, in particular regarding the way the work is organised, the tasks that are performed and the premises where they are performed.	
		15) The results of work carried out belong to the Beneficiary, or, if not, the Beneficiary has obtained all necessary rights to fulfil its obligations as if those	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
		results were generated by itself.	
		16) Their costs were not significantly different from those for staff who performed similar tasks under an employment contract with the Beneficiary.	
		17) The costs were supported by audit evidence and registered in the accounts.	
	<u>For personnel seconded by a third party and included in the sample (not subcontractors)</u> To confirm standard factual findings 18-21 listed in the next column, the Auditor reviewed following information/documents provided by the Beneficiary: o their secondment contract(s) notably regarding costs, duration, work description, place of work and ownership of the results; o if there is reimbursement by the Beneficiary to the third party for the resource made available (in-kind contribution against payment): any documentation that supports the costs declared (e.g. contract, invoice, bank payment, and proof of registration in its accounting/payroll, etc.) and reconciliation of the Financial Statement(s) with the accounting system (project accounting and general ledger) as well as any proof that the amount invoiced by the third party did not include any profit; o if there is no reimbursement by the Beneficiary to the third party for the resource made available (in-kind contribution free of charge): a proof of the actual cost borne by the Third Party for the resource made available free of charge to the Beneficiary such as a statement of costs incurred by the Third Party and proof of the registration in the Third Party's accounting/payroll;	18) Seconded personnel reported to the Beneficiary and worked on the Beneficiary's premises (unless otherwise agreed with the Beneficiary).	
		19) The results of work carried out belong to the Beneficiary, or, if not, the Beneficiary has obtained all necessary rights to fulfil its obligations as if those results were generated by itself..	
		If personnel is seconded against payment: 20) The costs declared were supported with documentation and recorded in the	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	○ any other document that supports the costs declared (e.g. invoices, etc.).	Beneficiary's accounts. The third party did not include any profit.	
		If personnel is seconded free of charge: 21) The costs declared did not exceed the third party's cost as recorded in the accounts of the third party and were supported with documentation.	
A.2	**PRODUCTIVE HOURS** To confirm standard factual findings 22-27 listed in the next column, the Auditor reviewed relevant documents, especially national legislation, labour agreements and contracts and time records of the persons included in the sample, to verify that: ○ the annual productive hours applied were calculated in accordance with one of the methods described below, ○ the full-time equivalent (FTEs) ratios for employees not working full-time were correctly calculated. If the Beneficiary applied method B, the auditor verified that the correctness in which the total number of hours worked was calculated and that the contracts specified the annual workable hours. If the Beneficiary applied method C, the auditor verified that the 'annual productive hours' applied when calculating the hourly rate were equivalent to at least 90 % of the 'standard annual workable hours'. The Auditor can only do this if the calculation of the standard annual workable	22) The Beneficiary applied method [*choose one option and delete the others*] [**A**: 1720 hours] [**B**: the 'total number of hours worked'] [**C**: 'standard annual productive hours' used correspond to usual accounting practices]	
		23) Productive hours were calculated annually.	
		24) For employees not working full-time the full-time equivalent (FTE) ratio was correctly applied.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	hours can be supported by records, such as national legislation, labour agreements, and contracts. *BENEFICIARY'S PRODUCTIVE HOURS' FOR PERSONS WORKING FULL TIME SHALL BE ONE OF THE FOLLOWING METHODS:* ***A**. 1720 ANNUAL PRODUCTIVE HOURS (PRO-RATA FOR PERSONS NOT WORKING FULL-TIME)* ***B**. THE TOTAL NUMBER OF HOURS WORKED BY THE PERSON FOR THE BENEFICIARY IN THE YEAR (THIS METHOD IS ALSO REFERRED TO AS 'TOTAL NUMBER OF HOURS WORKED' IN THE NEXT COLUMN). THE CALCULATION OF THE TOTAL NUMBER OF HOURS WORKED WAS DONE AS FOLLOWS: ANNUAL WORKABLE HOURS OF THE PERSON ACCORDING TO THE EMPLOYMENT CONTRACT, APPLICABLE LABOUR AGREEMENT OR NATIONAL LAW PLUS OVERTIME WORKED MINUS ABSENCES (SUCH AS SICK LEAVE OR SPECIAL LEAVE).* ***C**. THE STANDARD NUMBER OF ANNUAL HOURS GENERALLY APPLIED BY THE BENEFICIARY FOR ITS PERSONNEL IN ACCORDANCE WITH ITS USUAL COST ACCOUNTING PRACTICES (THIS METHOD IS ALSO REFERRED TO AS 'STANDARD ANNUAL PRODUCTIVE HOURS' IN THE NEXT COLUMN). THIS NUMBER MUST BE AT LEAST 90% OF THE STANDARD ANNUAL WORKABLE HOURS.* *'ANNUAL WORKABLE HOURS' MEANS THE PERIOD DURING WHICH THE PERSONNEL MUST BE WORKING, AT THE EMPLOYER'S DISPOSAL AND CARRYING OUT HIS/HER ACTIVITY OR DUTIES UNDER THE EMPLOYMENT CONTRACT, APPLICABLE COLLECTIVE LABOUR AGREEMENT OR NATIONAL WORKING TIME LEGISLATION.*	*If the Beneficiary applied method B.* 25) The calculation of the number of 'annual workable hours', overtime and absences was verifiable based on the documents provided by the Beneficiary. 25.1) The Beneficiary calculates the hourly rates per full financial year following procedure A.3 (method B is not allowed for beneficiaries calculating hourly rates per month).	
		If the Beneficiary applied method C. 26) The calculation of the number of 'standard annual workable hours' was verifiable based on the documents provided by the Beneficiary.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
		27) The 'annual productive hours' used for calculating the hourly rate were consistent with the usual cost accounting practices of the Beneficiary and were equivalent to at least 90 % of the 'annual workable hours'.	
A.3	**HOURLY PERSONNEL RATES** I) For unit costs calculated in accordance to the Beneficiary's usual cost accounting practice (unit costs): If the Beneficiary has a "Certificate on Methodology to calculate unit costs " (CoMUC) approved by the Commission, the Beneficiary provides the Auditor with a description of the approved methodology and the Commission's letter of acceptance. The Auditor verified that the Beneficiary has indeed used the methodology approved. If so, no further verification is necessary. If the Beneficiary does not have a "Certificate on Methodology" (CoMUC) approved by the Commission, or if the methodology approved was not applied, then the Auditor: o reviewed the documentation provided by the Beneficiary, including manuals and internal guidelines that explain how to calculate hourly rates; o recalculated the unit costs (hourly rates) of staff included in the sample following the results of the procedures carried out in A.1 and A.2. II) For individual hourly rates: The Auditor: o reviewed the documentation provided by the Beneficiary, including manuals and internal guidelines that explain how to calculate hourly rates;	28) The Beneficiary applied [*choose one option and delete the other*]: [Option I: "Unit costs (hourly rates) were calculated in accordance with the Beneficiary's usual cost accounting practices"] [Option II: Individual hourly rates were applied] *For option I concerning unit costs and if the Beneficiary applies the methodology approved by the Commission (CoMUC):* 29) The Beneficiary used the Commission-approved methodology to calculate hourly rates. It corresponded to the organisation's usual cost accounting practices and was applied consistently for all	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	○ recalculated the hourly rates of staff included in the sample (recalculation of all hourly rates if the Beneficiary uses annual rates, recalculation of three months selected randomly for every year and person if the Beneficiary uses monthly rates) following the results of the procedures carried out in A.1 and A.2; ○ (only in case of monthly rates) confirmed that the time spent on parental leave is not deducted, and that, if parts of the basic remuneration are generated over a period longer than a month, the Beneficiary has included only the share which is generated in the month. *"UNIT COSTS CALCULATED BY THE BENEFICIARY IN ACCORDANCE WITH ITS USUAL COST ACCOUNTING PRACTICES":* *IT IS CALCULATED BY DIVIDING THE TOTAL AMOUNT OF PERSONNEL COSTS OF THE CATEGORY TO WHICH THE EMPLOYEE BELONGS VERIFIED IN LINE WITH PROCEDURE A.1 BY THE NUMBER OF FTE AND THE ANNUAL TOTAL PRODUCTIVE HOURS OF THE SAME CATEGORY CALCULATED BY THE BENEFICIARY IN ACCORDANCE WITH PROCEDURE A.2.* *HOURLY RATE FOR INDIVIDUAL ACTUAL PERSONAL COSTS:* *IT IS CALCULATED FOLLOWING ONE OF THE TWO OPTIONS BELOW:* *A) [OPTION BY DEFAULT] BY DIVIDING THE ACTUAL ANNUAL AMOUNT OF PERSONNEL COSTS OF AN EMPLOYEE VERIFIED IN LINE WITH PROCEDURE A.1 BY THE NUMBER OF ANNUAL PRODUCTIVE HOURS VERIFIED IN LINE WITH PROCEDURE A.2 (FULL FINANCIAL YEAR HOURLY RATE);* *B) BY DIVIDING THE ACTUAL MONTHLY AMOUNT OF PERSONNEL COSTS OF AN EMPLOYEE VERIFIED IN LINE WITH PROCEDURE A.1 BY 1/12 OF THE NUMBER OF ANNUAL PRODUCTIVE HOURS VERIFIED IN LINE WITH PROCEDURE A.2.(MONTHLY HOURLY RATE).*	activities irrespective of the source of funding.	
		For option I concerning unit costs and if the Beneficiary applies a methodology not approved by the Commission: 30) The unit costs re-calculated by the Auditor were the same as the rates applied by the Beneficiary.	
		For option II concerning individual hourly rates: 31) The individual rates re-calculated by the Auditor were the same as the rates applied by the Beneficiary. 31.1) The Beneficiary used only one option (per full financial year or per month) throughout each financial year examined. 31.2) The hourly rates do not include additional remuneration.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
A.4	**TIME RECORDING SYSTEM** To verify that the time recording system ensures the fulfilment of all minimum requirements and that the hours declared for the action were correct, accurate and properly authorised and supported by documentation, the Auditor made the following checks for the persons included in the sample that declare time as worked for the action on the basis of time records: o description of the time recording system provided by the Beneficiary (registration, authorisation, processing in the HR-system); o its actual implementation; o time records were signed at least monthly by the employees (on paper or electronically) and authorised by the project manager or another manager; o the hours declared were worked within the project period; o there were no hours declared as worked for the action if HR-records showed absence due to holidays or sickness (further cross-checks with travels are carried out in B.1 below) ; o the hours charged to the action matched those in the time recording system. *ONLY THE HOURS WORKED ON THE ACTION CAN BE CHARGED. ALL WORKING TIME TO BE CHARGED SHOULD BE RECORDED THROUGHOUT THE DURATION OF THE PROJECT, ADEQUATELY SUPPORTED BY EVIDENCE OF THEIR REALITY AND RELIABILITY (SEE SPECIFIC PROVISIONS BELOW FOR PERSONS WORKING EXCLUSIVELY FOR THE ACTION WITHOUT TIME RECORDS).*	32) All persons recorded their time dedicated to the action on a **daily/ weekly/ monthly** basis using a **paper/computer-based** system. (*delete the answers that are not applicable)*	
		33) Their time-records were authorised at least monthly by the project manager or other superior.	
		34) Hours declared were worked within the project period and were consistent with the presences/absences recorded in HR-records.	
		35) There were no discrepancies between the number of hours charged to the action and the number of hours recorded.	
	<u>If the persons are working exclusively for the action and without time records</u> For the persons selected that worked exclusively for the action without time records, the Auditor verified evidence available demonstrating that they were in reality exclusively dedicated to the action and that the Beneficiary signed a declaration confirming that they have worked exclusively for the action.	36) The exclusive dedication is supported by a declaration signed by the Beneficiary and by any other evidence gathered.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
B	**COSTS OF SUBCONTRACTING**		
B.1	**The Auditor obtained the detail/breakdown of subcontracting costs and sampled _____ cost items selected randomly** (*full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest*). To confirm standard factual findings 37-41 listed in the next column, the Auditor reviewed the following for the items included in the sample: o the use of subcontractors was foreseen in Annex 1; o subcontracting costs were declared in the subcontracting category of the Financial Statement; o supporting documents on the selection and award procedure were followed; o the Beneficiary ensured best value for money (key elements to appreciate the respect of this principle are the award of the subcontract to the bid offering best price-quality ratio, under conditions of transparency and equal treatment. In case an existing framework contract was used the Beneficiary ensured it was established on the basis of the principle of best value for money under conditions of transparency and equal treatment). In particular, i. if the Beneficiary acted as a contracting authority within the meaning of Directive 2004/18/EC (or 2014/24/EU) or of Directive 2004/17/EC (or 2014/25/EU), the Auditor verified that the applicable national law on public procurement was followed and that the subcontracting complied with the Terms and Conditions of the Agreement. ii. if the Beneficiary did not fall under the above-mentioned category the Auditor verified that the Beneficiary followed their usual procurement rules and respected the Terms and Conditions of the Agreement..	37) The use of claimed subcontracting costs was foreseen in Annex 1 and costs were declared in the Financial Statements under the subcontracting category.	
		38) There were documents of requests to different providers, different offers and assessment of the offers before selection of the provider in line with internal procedures and procurement rules. Subcontracts were awarded in accordance with the principle of best value for money. *(When different offers were not collected the Auditor explains the reasons provided by the Beneficiary under the caption "Exceptions" of the Report. The Commission will analyse this information to evaluate whether these costs might be accepted as eligible)*	
		39) The subcontracts were not awarded to other Beneficiaries	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	For the items included in the sample the Auditor also verified that: o the subcontracts were not awarded to other Beneficiaries in the consortium; o there were signed agreements between the Beneficiary and the subcontractor; o there was evidence that the services were provided by subcontractor;	of the consortium.	
		40) All subcontracts were supported by signed agreements between the Beneficiary and the subcontractor.	
		41) There was evidence that the services were provided by the subcontractors.	
C	**COSTS OF PROVIDING FINANCIAL SUPPORT TO THIRD PARTIES**		
C.1	**The Auditor obtained the detail/breakdown of the costs of providing financial support to third parties and sampled _____ cost items selected randomly** (*full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest*). The Auditor verified that the following minimum conditions were met: a) the maximum amount of financial support for each third party did not exceed EUR 60 000, unless explicitly mentioned in Annex 1; b) the financial support to third parties was agreed in Annex 1 of the Agreement and the other provisions on financial support to third parties included in Annex 1 were respected.	42) All minimum conditions were met	

D	OTHER ACTUAL DIRECT COSTS		
D.1	**COSTS OF TRAVEL AND RELATED SUBSISTENCE ALLOWANCES** **The Auditor sampled _____ cost items selected randomly** (*full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is the highest*). The Auditor inspected the sample and verified that: o travel and subsistence costs were consistent with the Beneficiary's usual policy for travel. In this context, the Beneficiary provided evidence of its normal policy for travel costs (e.g. use of first class tickets, reimbursement by the Beneficiary on the basis of actual costs, a lump sum or per diem) to enable the Auditor to compare the travel costs charged with this policy; o travel costs are correctly identified and allocated to the action (e.g. trips are directly linked to the action) by reviewing relevant supporting documents such as minutes of meetings, workshops or conferences, their registration in the correct project account, their consistency with time records or with the dates/duration of the workshop/conference; o no ineligible costs or excessive or reckless expenditure was declared (see Article 6.5 MGA).	43) Costs were incurred, approved and reimbursed in line with the Beneficiary's usual policy for travels.	
		44) There was a link between the trip and the action.	
		45) The supporting documents were consistent with each other regarding subject of the trip, dates, duration and reconciled with time records and accounting.	
		46) No ineligible costs or excessive or reckless expenditure was declared.	
D.2	**DEPRECIATION COSTS FOR EQUIPMENT, INFRASTRUCTURE OR OTHER ASSETS** **The Auditor sampled _____ cost items selected randomly** (*full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is the highest*). For "equipment, infrastructure or other assets" [from now on called "asset(s)"] selected in the sample the Auditor verified that: o the assets were acquired in conformity with the Beneficiary's internal guidelines and procedures;	47) Procurement rules, principles and guides were followed.	
		48) There was a link between the grant agreement and the asset charged to the action.	
		49) The asset charged to the action was traceable to the accounting records and the underlying documents.	

	○ they were correctly allocated to the action (with supporting documents such as delivery note invoice or any other proof demonstrating the link to the action) ○ they were entered in the accounting system; ○ the extent to which the assets were used for the action (as a percentage) was supported by reliable documentation (e.g. usage overview table); The Auditor recalculated the depreciation costs and verified that they were in line with the applicable rules in the Beneficiary's country and with the Beneficiary's usual accounting policy (e.g. depreciation calculated on the acquisition value). The Auditor verified that no ineligible costs such as deductible VAT, exchange rate losses, excessive or reckless expenditure were declared (see Article 6.5 GA).	50) The depreciation method used to charge the asset to the action was in line with the applicable rules of the Beneficiary's country and the Beneficiary's usual accounting policy. 51) The amount charged corresponded to the actual usage for the action. 52) No ineligible costs or excessive or reckless expenditure were declared.	
D.3	**COSTS OF OTHER GOODS AND SERVICES** **The Auditor sampled _____ cost items selected randomly** (*full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest*). For the purchase of goods, works or services included in the sample the Auditor verified that: ○ the contracts did not cover tasks described in Annex 1; ○ they were correctly identified, allocated to the proper action, entered in the accounting system (traceable to underlying documents such as purchase orders, invoices and accounting); ○ the goods were not placed in the inventory of durable equipment; ○ the costs charged to the action were accounted in line with the Beneficiary's usual accounting practices; ○ no ineligible costs or excessive or reckless expenditure were declared (see Article 6 GA). In addition, the Auditor verified that these goods and services were acquired in conformity with	53) Contracts for works or services did not cover tasks described in Annex 1. 54) Costs were allocated to the correct action and the goods were not placed in the inventory of durable equipment. 55) The costs were charged in line with the Beneficiary's accounting policy and were adequately supported. 56) No ineligible costs or excessive or reckless expenditure were declared. For internal invoices/charges only the cost element was charged, without any mark-ups.	

	the Beneficiary's internal guidelines and procedures, in particular: o if Beneficiary acted as a contracting authority within the meaning of Directive 2004/18/EC (or 2014/24/EU) or of Directive 2004/17/EC (or 2014/25/EU), the Auditor verified that the applicable national law on public procurement was followed and that the procurement contract complied with the Terms and Conditions of the Agreement. o if the Beneficiary did not fall into the category above, the Auditor verified that the Beneficiary followed their usual procurement rules and respected the Terms and Conditions of the Agreement. For the items included in the sample the Auditor also verified that: o the Beneficiary ensured best value for money (key elements to appreciate the respect of this principle are the award of the contract to the bid offering best price-quality ratio, under conditions of transparency and equal treatment. In case an existing framework contract was used the Auditor also verified that the Beneficiary ensured it was established on the basis of the principle of best value for money under conditions of transparency and equal treatment); *SUCH GOODS AND SERVICES INCLUDE, FOR INSTANCE, CONSUMABLES AND SUPPLIES, DISSEMINATION (INCLUDING OPEN ACCESS), PROTECTION OF RESULTS, SPECIFIC EVALUATION OF THE ACTION IF IT IS REQUIRED BY THE AGREEMENT, CERTIFICATES ON THE FINANCIAL STATEMENTS IF THEY ARE REQUIRED BY THE AGREEMENT AND CERTIFICATES ON THE METHODOLOGY, TRANSLATIONS, REPRODUCTION.*	57) Procurement rules, principles and guides were followed. There were documents of requests to different providers, different offers and assessment of the offers before selection of the provider in line with internal procedures and procurement rules. The purchases were made in accordance with the principle of best value for money. *(When different offers were not collected the Auditor explains the reasons provided by the Beneficiary under the caption "Exceptions" of the Report. The Commission will analyse this information to evaluate whether these costs might be accepted as eligible)*	
D.4	**AGGREGATED CAPITALISED AND OPERATING COSTS OF RESEARCH INFRASTRUCTURE** The Auditor ensured the existence of a positive ex-ante assessment (issued by the EC Services) of the cost accounting methodology of the Beneficiary allowing it to apply the guidelines on direct costing for large research infrastructures in Horizon 2020.	58) The costs declared as direct costs for Large Research Infrastructures (in the appropriate line of the Financial Statement) comply with the methodology described in the positive ex-ante assessment report.	

	In the cases that a positive ex-ante assessment has been issued *(see the standard factual findings 58-59 on the next column)***,** The Auditor ensured that the beneficiary has applied consistently the methodology that is explained and approved in the positive ex ante assessment; ***In the cases that a positive ex-ante assessment has NOT been issued*** *(see the standard factual findings 60 on the next column),* The Auditor verified that no costs of Large Research Infrastructure have been charged as direct costs in any costs category; ***In the cases that a draft ex-ante assessment report has been issued with recommendation for further changes*** *(see the standard factual findings 60 on the next column),* • The Auditor followed the same procedure as above (when a positive ex-ante assessment has NOT yet been issued) and paid particular attention (testing reinforced) to the cost items for which the draft ex-ante assessment either rejected the inclusion as direct costs for Large Research Infrastructures or issued recommendations.	59) Any difference between the methodology applied and the one positively assessed was extensively described and adjusted accordingly. 60) The direct costs declared were free from any indirect costs items related to the Large Research Infrastructure.	
D.5	**Costs of internally invoiced goods and services** **The Auditor sampled cost items selected randomly** (*full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest*). To confirm standard factual findings 61-65 listed in the next column, the Auditor: ○ obtained a description of the Beneficiary's usual cost accounting practice to calculate costs of internally invoiced goods and services (unit costs); ○ reviewed whether the Beneficiary's usual cost accounting practice was applied for the Financial Statements subject of the present CFS; ○ ensured that the methodology to calculate unit costs is being used in a consistent manner, based on objective criteria, regardless of the source of funding; ○ verified that any ineligible items or any costs claimed under other budget categories, in particular indirect costs, have not been taken into account when calculating the costs of	61) The costs of internally invoiced goods and services included in the Financial Statement were calculated in accordance with the Beneficiary's usual cost accounting practice. 62) The cost accounting practices used to calculate the costs of internally invoiced goods and services were applied by the Beneficiary in a consistent manner based on objective criteria regardless of the source of funding. 63) The unit cost is calculated using the actual costs for the good or service recorded in the Beneficiary's accounts, excluding any ineligible cost or costs included in other	

	internally invoiced goods and services (see Article 6 GA); ○ verified whether actual costs of internally invoiced goods and services were adjusted on the basis of budgeted or estimated elements and, if so, verified whether those elements used are actually relevant for the calculation, and correspond to objective and verifiable information. ○ verified that any costs of items which are not directly linked to the production of the invoiced goods or service (e.g. supporting services like cleaning, general accountancy, administrative support, etc. not directly used for production of the good or service) have not been taken into account when calculating the costs of internally invoiced goods and services. ○ verified that any costs of items used for calculating the costs internally invoiced goods and services are supported by audit evidence and registered in the accounts.	budget categories. 64) The unit cost excludes any costs of items which are not directly linked to the production of the invoiced goods or service. 65) The costs items used for calculating the actual costs of internally invoiced goods and services were relevant, reasonable and correspond to objective and verifiable information.	
E	**USE OF EXCHANGE RATES**		
E.1	a) For Beneficiaries with accounts established in a currency other than euros **The Auditor sampled _____ cost items selected randomly and verified that the exchange rates used for converting other currencies into euros were in accordance with the following rules established in the Agreement** (*full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest)*: *COSTS RECORDED IN THE ACCOUNTS IN A CURRENCY OTHER THAN EURO SHALL BE CONVERTED INTO EURO AT THE AVERAGE OF THE DAILY EXCHANGE RATES PUBLISHED IN THE C SERIES OF OFFICIAL JOURNAL OF THE EUROPEAN UNION (https://www.ecb.int/stats/exchange/eurofxref/html/index.en.html), DETERMINED OVER THE CORRESPONDING REPORTING PERIOD.* *IF NO DAILY EURO EXCHANGE RATE IS PUBLISHED IN THE OFFICIAL JOURNAL OF THE EUROPEAN UNION FOR THE CURRENCY IN QUESTION, CONVERSION SHALL BE MADE AT THE AVERAGE OF THE MONTHLY ACCOUNTING RATES ESTABLISHED BY THE COMMISSION AND PUBLISHED ON ITS WEBSITE (http://ec.europa.eu/budget/contracts_grants/info_contracts/inforeuro/inforeuro_en.cfm),*	66) The exchange rates used to convert other currencies into Euros were in accordance with the rules established of the Grant Agreement and there was no difference in the final figures.	

	DETERMINED OVER THE CORRESPONDING REPORTING PERIOD.		
	b) For Beneficiaries with accounts established in euros **The Auditor sampled _____ cost items selected randomly and verified that the exchange rates used for converting other currencies into euros were in accordance with the following rules established in the Agreement** (*full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest)*: *COSTS INCURRED IN ANOTHER CURRENCY SHALL BE CONVERTED INTO EURO BY APPLYING THE BENEFICIARY'S USUAL ACCOUNTING PRACTICES.*	67) The Beneficiary applied its usual accounting practices.	

[legal name of the audit firm]
[name and function of an authorised representative]
[dd Month yyyy]
<Signature of the Auditor>

ANNEX 6

MODEL FOR THE CERTIFICATE ON THE METHODOLOGY

- **For options [*in italics in square brackets*]: choose the applicable option. Options not chosen should be deleted.**
- **For fields in [grey in square brackets]: enter the appropriate data.**

TABLE OF CONTENTS

TERMS OF REFERENCE FOR AN AUDIT ENGAGEMENT FOR A METHODOLOGY CERTIFICATE IN CONNECTION WITH ONE OR MORE GRANT AGREEMENTS FINANCED UNDER THE HORIZON 2020 RESEARCH AND INNOVATION FRAMEWORK PROGRAMME

INDEPENDENT REPORT OF FACTUAL FINDINGS ON THE METHODOLOGY CONCERNING GRANT AGREEMENTS FINANCED UNDER THE HORIZON 2020 RESEARCH AND INNOVATION FRAMEWORK PROGRAMME

Terms of reference for an audit engagement for a methodology certificate in connection with one or more grant agreements financed under the Horizon 2020 Research and Innovation Framework Programme

This document sets out the '**Terms of Reference (ToR)**' under which

[OPTION 1: [insert name of the beneficiary] ('the Beneficiary')] [OPTION 2: [insert name of the linked third party] ('the Linked Third Party'), third party linked to the Beneficiary [insert name of the beneficiary] ('the Beneficiary')]

agrees to engage

[**insert legal name of the auditor**] ('the Auditor')

to produce an independent report of factual findings ('the Report') concerning the *[Beneficiary's] [Linked Third Party's]* usual accounting practices for calculating and claiming direct personnel costs declared as unit costs ('the Methodology') in connection with grant agreements financed under the Horizon 2020 Research and Innovation Framework Programme.

The procedures to be carried out for the assessment of the methodology will be based on the grant agreement(s) detailed below:

[title and number of the grant agreement(s)] ('the Agreement(s)')

The Agreement(s) has(have) been concluded between the Beneficiary and *[OPTION 1: the European Union, represented by the European Commission ('the Commission')][OPTION 2: the European Atomic Energy Community (Euratom,) represented by the European Commission ('the Commission')][OPTION 3: the [Research Executive Agency (REA)] [European Research Council Executive Agency (ERCEA)] [Innovation and Networks Executive Agency (INEA)] [Executive Agency for Small and Medium-sized Enterprises (EASME)] ('the Agency'), under the powers delegated by the European Commission ('the Commission').]*.

The *[Commission] [Agency]* is mentioned as a signatory of the Agreement with the Beneficiary only. The *[European Union] [Euratom] [Agency]* is not a party to this engagement.

1.1 Subject of the engagement

According to Article 18.1.2 of the Agreement, beneficiaries *[and linked third parties]* that declare direct personnel costs as unit costs calculated in accordance with their usual cost accounting practices may submit to the *[Commission] [Agency]*, for approval, a certificate on the methodology ('CoMUC') stating that there are adequate records and documentation to prove that their cost accounting practices used comply with the conditions set out in Point A of Article 6.2.

The subject of this engagement is the CoMUC which is composed of two separate documents:

- the Terms of Reference ('the ToR') to be signed by the *[Beneficiary] [Linked Third Party]* and the Auditor;

- the Auditor's Independent Report of Factual Findings ('the Report') issued on the Auditor's letterhead, dated, stamped and signed by the Auditor which includes; the standard statements ('the Statements') evaluated and signed by the *[Beneficiary] [Linked Third Party]*, the agreed-upon procedures ('the Procedures') performed by the Auditor and the standard factual findings

('the Findings') assessed by the Auditor. The Statements, Procedures and Findings are summarised in the table that forms part of the Report.

The information provided through the Statements, the Procedures and the Findings will enable the Commission to draw conclusions regarding the existence of the *[Beneficiary's] [Linked Third Party's]* usual cost accounting practice and its suitability to ensure that direct personnel costs claimed on that basis comply with the provisions of the Agreement. The Commission draws its own conclusions from the Report and any additional information it may require.

1.2 Responsibilities

The parties to this agreement are the *[Beneficiary] [Linked Third Party]* and the Auditor.

The *[Beneficiary] [Linked Third Party]:*

- is responsible for preparing financial statements for the Agreement(s) ('the Financial Statements') in compliance with those Agreements;
- is responsible for providing the Financial Statement(s) to the Auditor and enabling the Auditor to reconcile them with the *[Beneficiary's] [Linked Third Party's]* accounting and bookkeeping system and the underlying accounts and records. The Financial Statement(s) will be used as a basis for the procedures which the Auditor will carry out under this ToR;
- is responsible for its Methodology and liable for the accuracy of the Financial Statement(s);
- is responsible for endorsing or refuting the Statements indicated under the heading 'Statements to be made by the Beneficiary/ Linked Third Party' in the first column of the table that forms part of the Report;
- must provide the Auditor with a signed and dated representation letter;
- accepts that the ability of the Auditor to carry out the Procedures effectively depends upon the *[Beneficiary] [Linked Third Party]* providing full and free access to the *[Beneficiary's] [Linked Third Party's]* staff and to its accounting and other relevant records.

The Auditor:

- *[Option 1 by default: is qualified to carry out statutory audits of accounting documents in accordance with Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC or similar national regulations].*
- *[Option 2 if the Beneficiary or Linked Third Party has an independent Public Officer: is a competent and independent Public Officer for which the relevant national authorities have established the legal capacity to audit the Beneficiary].*
- *[Option 3 if the Beneficiary or Linked Third Party is an international organisation: is an [internal] [external] auditor in accordance with the internal financial regulations and procedures of the international organisation].*

The Auditor:

- must be independent from the Beneficiary *[and the Linked Third Party]*, in particular, it must not have been involved in preparing the Beneficiary's *[and Linked Third Party's]* Financial Statement(s);
- must plan work so that the Procedures may be carried out and the Findings may be assessed;
- must adhere to the Procedures laid down and the compulsory report format;
- must carry out the engagement in accordance with these ToR;
- must document matters which are important to support the Report;
- must base its Report on the evidence gathered;
- must submit the Report to the *[Beneficiary] [Linked Third Party]*.

The Commission sets out the Procedures to be carried out and the Findings to be endorsed by the Auditor. The Auditor is not responsible for their suitability or pertinence. As this engagement is not an assurance engagement the Auditor does not provide an audit opinion or a statement of assurance.

1.3 Applicable Standards

The Auditor must comply with these Terms of Reference and with[1]:

- the International Standard on Related Services ('ISRS') 4400 *Engagements to perform Agreed-upon Procedures regarding Financial Information* as issued by the International Auditing and Assurance Standards Board (IAASB);
- the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants (IESBA). Although ISRS 4400 states that independence is not a requirement for engagements to carry out agreed-upon procedures, the Commission requires that the Auditor also complies with the Code's independence requirements.

The Auditor's Report must state that there was no conflict of interests in establishing this Report between the Auditor and the Beneficiary *[and the Linked Third Party]* that could have a bearing on the Report, and must specify – if the service is invoiced - the total fee paid to the Auditor for providing the Report.

1.4 Reporting

The Report must be written in the language of the Agreement (see Article 20.7 of the Agreement).

Under Article 22 of the Agreement, the Commission, *[the Agency]*, the European Anti-Fraud Office and the Court of Auditors have the right to audit any work that is carried out under the action and for which costs are declared from *[the European Union] [Euratom]* budget. This includes work related to this engagement. The Auditor must provide access to all working papers related to this assignment if the Commission*[, the Agency]*, the European Anti-Fraud Office or the European Court of Auditors requests them.

1.5 Timing

The Report must be provided by [dd Month yyyy].

1.6 Other Terms

[The [Beneficiary] [Linked Third Party] and the Auditor can use this section to agree other specific terms, such as the Auditor's fees, liability, applicable law, etc. Those specific terms must not contradict the terms specified above.]

[legal name of the Auditor]	[legal name of the [Beneficiary] [Linked Third Party]]
[name & title of authorised representative]	[name & title of authorised representative]
[dd Month yyyy]	[dd Month yyyy]
Signature of the Auditor	Signature of the *[Beneficiary] [Linked Third Party]*

[1] Supreme Audit Institutions applying INTOSAI-standards may carry out the Procedures according to the corresponding International Standards of Supreme Audit Institutions and code of ethics issued by INTOSAI instead of the International Standard on Related Services ('ISRS') 4400 and the Code of Ethics for Professional Accountants issued by the IAASB and the IESBA.

Independent report of factual findings on the methodology concerning grant agreements financed under the Horizon 2020 Research and Innovation Framework Programme

(To be printed on letterhead paper of the auditor)

To
[name of contact person(s)], [Position]
[[Beneficiary's] [Linked Third Party's] name]
[Address]
[dd Month yyyy]

Dear [Name of contact person(s)],

As agreed under the terms of reference dated [dd Month yyyy]

with *[OPTION 1: [insert name of the beneficiary] ('the Beneficiary')] [OPTION 2: [insert name of the linked third party] ('the Linked Third Party'), third party linked to the Beneficiary [insert name of the beneficiary] ('the Beneficiary')]*,

we

[name of the auditor] ('the Auditor'),

established at

[full address/city/state/province/country],

represented by

[name and function of an authorised representative],

have carried out the agreed-upon procedures ('the Procedures') and provide hereby our Independent Report of Factual Findings ('the Report'), concerning the *[Beneficiary's] [Linked Third Party's]* usual accounting practices for calculating and declaring direct personnel costs declared as unit costs ('the Methodology').

You requested certain procedures to be carried out in connection with the grant(s)

[title and number of the grant agreement(s)] ('the Agreement(s)').

The Report

Our engagement was carried out in accordance with the terms of reference ('the ToR') appended to this Report. The Report includes: the standard statements ('the Statements') made by the *[Beneficiary] [Linked Third Party]*, the agreed-upon procedures ('the Procedures') carried out and the standard factual findings ('the Findings') confirmed by us.

The engagement involved carrying out the Procedures and assessing the Findings and the documentation requested appended to this Report, the results of which the Commission uses to draw conclusions regarding the acceptability of the Methodology applied by the *[Beneficiary] [Linked Third Party]*.

The Report covers the methodology used from [dd Month yyyy]. In the event that the *[Beneficiary] [Linked Third Party]* changes this methodology, the Report will not be applicable to any Financial Statement[1] submitted thereafter.

The scope of the Procedures and the definition of the standard statements and findings were determined solely by the Commission. Therefore, the Auditor is not responsible for their suitability or pertinence.

Since the Procedures carried out constitute neither an audit nor a review made in accordance with International Standards on Auditing or International Standards on Review Engagements, we do not give a statement of assurance on the costs declared on the basis of the *[Beneficiary's] [Linked Third Party's]* Methodology. Had we carried out additional procedures or had we performed an audit or review in accordance with these standards, other matters might have come to its attention and would have been included in the Report.

Exceptions

Apart from the exceptions listed below, the *[Beneficiary] [Linked Third Party]* agreed with the standard Statements and provided the Auditor all the documentation and accounting information needed by the Auditor to carry out the requested Procedures and corroborate the standard Findings.

List here any exception and add any information on the cause and possible consequences of each exception, if known. If the exception is quantifiable, also indicate the corresponding amount.

…..

Explanation of possible exceptions in the form of examples (to be removed from the Report):

i. the [Beneficiary] [Linked Third Party] did not agree with the standard Statement number … because…;

ii. the Auditor could not carry out the procedure … established because …. (e.g. due to the inability to reconcile key information or the unavailability or inconsistency of data);

iii. the Auditor could not confirm or corroborate the standard Finding number … because ….

Remarks

We would like to add the following remarks relevant for the proper understanding of the Methodology applied by the [Beneficiary] [Linked Third Party] or the results reported:

Example (to be removed from the Report):

Regarding the methodology applied to calculate hourly rates …

Regarding standard Finding 15 it has to be noted that …

The [Beneficiary] [Linked Third Party] explained the deviation from the benchmark statement XXIV concerning time recording for personnel with no exclusive dedication to the action in the following manner: …

Annexes

Please provide the following documents to the auditor and annex them to the report when submitting this CoMUC to the Commission:

[1] Financial Statement in this context refers solely to Annex 4 of the Agreement by which the Beneficiary declares costs under the Agreement.

1. Brief description of the methodology for calculating personnel costs, productive hours and hourly rates;
2. Brief description of the time recording system in place;
3. An example of the time records used by the [*Beneficiary] [Linked Third Party*];
4. Description of any budgeted or estimated elements applied, together with an explanation as to why they are relevant for calculating the personnel costs and how they are based on objective and verifiable information;
5. A summary sheet with the hourly rate for direct personnel declared by the [*Beneficiary*] [*Linked Third Party*] and recalculated by the Auditor for each staff member included in the sample (the names do not need to be reported);
6. A comparative table summarising for each person selected in the sample a) the time claimed by the [*Beneficiary*] [*Linked Third Party*] in the Financial Statement(s) and b) the time according to the time record verified by the Auditor;
7. A copy of the letter of representation provided to the Auditor.

Use of this Report

This Report has been drawn up solely for the purpose given under Point 1.1 Reasons for the engagement.

The Report:

- is confidential and is intended to be submitted to the Commission by the [*Beneficiary*] [*Linked Third Party*] in connection with Article 18.1.2 of the Agreement;
- may not be used by the [*Beneficiary*] [*Linked Third Party*] or by the Commission for any other purpose, nor distributed to any other parties;
- may be disclosed by the Commission only to authorised parties, in particular the European Anti-Fraud Office (OLAF) and the European Court of Auditors.
- relates only to the usual cost accounting practices specified above and does not constitute a report on the Financial Statements of the [*Beneficiary*] [*Linked Third Party*].

No conflict of interest[2] exists between the Auditor and the Beneficiary *[and the Linked Third Party*] that could have a bearing on the Report. The total fee paid to the Auditor for producing the Report was EUR _____ (including EUR _____ of deductible VAT).

We look forward to discussing our Report with you and would be pleased to provide any further information or assistance which may be required.

Yours sincerely

[legal name of the Auditor]
[name and title of the authorised representative]
[dd Month yyyy]
Signature of the Auditor

[2] A conflict of interest arises when the Auditor's objectivity to establish the certificate is compromised in fact or in appearance when the Auditor for instance:
- was involved in the preparation of the Financial Statements;
- stands to benefit directly should the certificate be accepted;
- has a close relationship with any person representing the beneficiary;
- is a director, trustee or partner of the beneficiary; or
- is in any other situation that compromises his or her independence or ability to establish the certificate impartially.

Statements to be made by the Beneficiary/Linked Third Party ('the Statements') and Procedures to be carried out by the Auditor ('the Procedures') and standard factual findings ('the Findings') to be confirmed by the Auditor

The Commission reserves the right to provide the auditor with guidance regarding the Statements to be made, the Procedures to be carried out or the Findings to be ascertained and the way in which to present them. The Commission reserves the right to vary the Statements, Procedures or Findings by written notification to the Beneficiary/Linked Third Party to adapt the procedures to changes in the grant agreement(s) or to any other circumstances.

If this methodology certificate relates to the Linked Third Party's usual accounting practices for calculating and claiming direct personnel costs declared as unit costs any reference here below to 'the Beneficiary' is to be considered as a reference to 'the Linked Third Party'.

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
A. Use of the Methodology I. The cost accounting practice described below has been in use since *[*dd Month yyyy*]*. II. The next planned alteration to the methodology used by the Beneficiary will be from [dd Month yyyy*]*.	**Procedure:** ✓ The Auditor checked these dates against the documentation the Beneficiary has provided. **Factual finding:** 1. The dates provided by the Beneficiary were consistent with the documentation.
B. Description of the Methodology III. The methodology to calculate unit costs is being used in a consistent manner and is reflected in the relevant procedures. *[Please describe the methodology your entity uses to calculate personnel costs, productive hours and hourly rates, present your description to the Auditor and annex it to this certificate]* *[If the statement of section "B. Description of the methodology" cannot be endorsed by the Beneficiary or there is no written methodology to calculate unit costs it should be listed here below and reported as exception by the Auditor in the main Report of Factual Findings:* - *…]*	**Procedure:** ✓ The Auditor reviewed the description, the relevant manuals and/or internal guidance documents describing the methodology. **Factual finding:** 2. The brief description was consistent with the relevant manuals, internal guidance and/or other documentary evidence the Auditor has reviewed. 3. The methodology was generally applied by the Beneficiary as part of its usual costs accounting practices.

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
C. **Personnel costs** General IV. The unit costs (hourly rates) are limited to salaries including during parental leave, social security contributions, taxes and other costs included in the remuneration required under national law and the employment contract or equivalent appointing act; V. Employees are hired directly by the Beneficiary in accordance with national law, and work under its sole supervision and responsibility; VI. The Beneficiary remunerates its employees in accordance with its usual practices. This means that personnel costs are charged in line with the Beneficiary's usual payroll policy (e.g. salary policy, overtime policy, variable pay) and no special conditions exist for employees assigned to tasks relating to the European Union or Euratom, unless explicitly provided for in the grant agreement(s); VII. The Beneficiary allocates its employees to the relevant group/category/cost centre for the purpose of the unit cost calculation in line with the usual cost accounting practice; VIII. Personnel costs are based on the payroll system and accounting system. IX. Any exceptional adjustments of actual personnel costs resulted from relevant budgeted or estimated elements and were based on objective and verifiable information. *[Please describe the 'budgeted or estimated elements' and their relevance to personnel costs, and explain how they were reasonable and based on objective and verifiable information, present your explanation to the Auditor and annex it to this certificate].* X. Personnel costs claimed do not contain any of the following ineligible costs: costs related to return on capital; debt and debt service charges; provisions for future losses or debts; interest owed; doubtful debts; currency exchange losses; bank costs charged by the Beneficiary's bank for transfers from the Commission/Agency; excessive or reckless expenditure; deductible VAT or costs incurred during suspension of the implementation of the action. XI. Personnel costs were not declared under another EU or Euratom grant	**Procedure:** *The Auditor draws a sample of employees to carry out the procedures indicated in this section C and the following sections D to F.* *[The Auditor has drawn a random sample of 10 employees assigned to Horizon 2020 action(s). If fewer than 10 employees are assigned to the Horizon 2020 action(s), the Auditor has selected all employees assigned to the Horizon 2020 action(s) complemented by other employees irrespective of their assignments until he has reached 10 employees.].* For this sample: ✓ the Auditor reviewed all documents relating to personnel costs such as employment contracts, payslips, payroll policy (e.g. salary policy, overtime policy, variable pay policy), accounting and payroll records, applicable national tax , labour and social security law and any other documents corroborating the personnel costs claimed; ✓ in particular, the Auditor reviewed the employment contracts of the employees in the sample to verify that: i. they were employed directly by the Beneficiary in accordance with applicable national legislation; ii. they were working under the sole technical supervision and responsibility of the latter; iii. they were remunerated in accordance with the Beneficiary's usual practices; iv. they were allocated to the correct group/category/cost centre for the purposes of calculating the unit cost in line with the Beneficiary's usual cost accounting practices; ✓ the Auditor verified that any ineligible items or any costs claimed under other costs categories or costs covered by other types of grant or by other grants financed from the European Union budget have not been taken into account when calculating the personnel costs; ✓ the Auditor numerically reconciled the total amount of personnel costs used to calculate the unit cost with the total amount of personnel costs recorded in the statutory accounts and the payroll system.

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
(including grants awarded by a Member State and financed by the EU budget and grants awarded by bodies other than the Commission/Agency for the purpose of implementing the EU or Euratom budget in the same period, unless the Beneficiary can demonstrate that the operating grant does not cover any costs of the action). <u>If additional remuneration as referred to in the grant agreement(s) is paid</u> XII. The Beneficiary is a non-profit legal entity; XIII. The additional remuneration is part of the beneficiary's usual remuneration practices and paid consistently whenever the relevant work or expertise is required; XIV. The criteria used to calculate the additional remuneration are objective and generally applied regardless of the source of funding; XV. The additional remuneration included in the personnel costs used to calculate the hourly rates for the grant agreement(s) is capped at EUR 8 000 per full-time equivalent (reduced proportionately if the employee is not assigned exclusively to the action). *[If certain statement(s) of section "C. Personnel costs" cannot be endorsed by the Beneficiary they should be listed here below and reported as exception by the Auditor in the main Report of Factual Findings:* *- …]*	✓ to the extent that actual personnel costs were adjusted on the basis of budgeted or estimated elements, the Auditor carefully examined those elements and checked the information source to confirm that they correspond to objective and verifiable information; ✓ if additional remuneration has been claimed, the Auditor verified that the Beneficiary was a non-profit legal entity, that the amount was capped at EUR 8 000 per full-time equivalent and that it was reduced proportionately for employees not assigned exclusively to the action(s). ✓ the Auditor recalculated the personnel costs for the employees in the sample. **Factual finding:** 4. All the components of the remuneration that have been claimed as personnel costs are supported by underlying documentation. 5. The employees in the sample were employed directly by the Beneficiary in accordance with applicable national law and were working under its sole supervision and responsibility. 6. Their employment contracts were in line with the Beneficiary's usual policy; 7. Personnel costs were duly documented and consisted solely of salaries, social security contributions (pension contributions, health insurance, unemployment fund contributions, etc.), taxes and other statutory costs included in the remuneration (holiday pay, thirteenth month's pay, etc.); 8. The totals used to calculate the personnel unit costs are consistent with those registered in the payroll and accounting records; 9. To the extent that actual personnel costs were adjusted on the basis of budgeted or estimated elements, those elements were relevant for calculating the personnel costs and correspond to objective and verifiable information. The budgeted or estimated elements used are: — (indicate the elements and their values). 10. Personnel costs contained no ineligible elements; 11. Specific conditions for eligibility were fulfilled when additional

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
	remuneration was paid: a) the Beneficiary is registered in the grant agreements as a non-profit legal entity; b) it was paid according to objective criteria generally applied regardless of the source of funding used and c) remuneration was capped at EUR 8 000 per full-time equivalent (or up to up to the equivalent pro-rata amount if the person did not work on the action full-time during the year or did not work exclusively on the action).
D. Productive hours XVI. The number of productive hours per full-time employee applied is *[delete as appropriate]*: A. 1720 productive hours per year for a person working full-time (corresponding pro-rata for persons not working full time). B. the total number of hours worked in the year by a person for the Beneficiary C. the standard number of annual hours generally applied by the beneficiary for its personnel in accordance with its usual cost accounting practices. This number must be at least 90% of the standard annual workable hours. <u>If method B is applied</u> XVII. The calculation of the total number of hours worked was done as follows: annual workable hours of the person according to the employment contract, applicable labour agreement or national law plus overtime worked minus absences (such as sick leave and special leave). XVIII. 'Annual workable hours' are hours during which the personnel must be working, at the employer's disposal and carrying out his/her activity or duties under the employment contract, applicable collective labour agreement or national working time legislation. XIX. The contract (applicable collective labour agreement or national working time legislation) do specify the working time enabling to calculate the annual workable hours.	**Procedure (same sample basis as for Section C: Personnel costs):** ✓ The Auditor verified that the number of productive hours applied is in accordance with method A, B or C. ✓ The Auditor checked that the number of productive hours per full-time employee is correct. ✓ If method B is applied the Auditor verified i) the manner in which the total number of hours worked was done and ii) that the contract specified the annual workable hours by inspecting all the relevant documents, national legislation, labour agreements and contracts. ✓ If method C is applied the Auditor reviewed the manner in which the standard number of working hours per year has been calculated by inspecting all the relevant documents, national legislation, labour agreements and contracts and verified that the number of productive hours per year used for these calculations was at least 90 % of the standard number of working hours per year. **Factual finding:** <u>General</u> 12. The Beneficiary applied a number of productive hours consistent with method A, B or C detailed in the left-hand column. 13. The number of productive hours per year per full-time employee was accurate. <u>If method B is applied</u> 14. The number of 'annual workable hours', overtime and absences was

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
<u>If method C is applied</u> XX. The standard number of productive hours per year is that of a full-time equivalent. XXI. The number of productive hours per year on which the hourly rate is based i) corresponds to the Beneficiary's usual accounting practices; ii) is at least 90% of the standard number of workable (working) hours per year. XXII. Standard workable (working) hours are hours during which personnel are at the Beneficiary's disposal preforming the duties described in the relevant employment contract, collective labour agreement or national labour legislation. The number of standard annual workable (working) hours that the Beneficiary claims is supported by labour contracts, national legislation and other documentary evidence. *[If certain statement(s) of section "D. Productive hours" cannot be endorsed by the Beneficiary they should be listed here below and reported as exception by the Auditor:* - *…]*	verifiable based on the documents provided by the Beneficiary and the calculation of the total number of hours worked was accurate. 15. The contract specified the working time enabling to calculate the annual workable hours. <u>If method C is applied</u> 16. The calculation of the number of productive hours per year corresponded to the usual costs accounting practice of the Beneficiary. 17. The calculation of the standard number of workable (working) hours per year was corroborated by the documents presented by the Beneficiary. 18. The number of productive hours per year used for the calculation of the hourly rate was at least 90% of the number of workable (working) hours per year.
E. Hourly rates The hourly rates are correct because: XXIII. Hourly rates are correctly calculated since they result from dividing annual personnel costs by the productive hours of a given year and group (e.g. staff category or department or cost centre depending on the methodology applied) and they are in line with the statements made in section C. and D. above. *[If the statement of section 'E. Hourly rates' cannot be endorsed by the Beneficiary they should be listed here below and reported as exception by the Auditor:* - *…]*	**Procedure** ✓ The Auditor has obtained a list of all personnel rates calculated by the Beneficiary in accordance with the methodology used. ✓ The Auditor has obtained a list of all the relevant employees, based on which the personnel rate(s) are calculated. For 10 employees selected at random (same sample basis as Section C: Personnel costs): ✓ The Auditor recalculated the hourly rates. ✓ The Auditor verified that the methodology applied corresponds to the usual accounting practices of the organisation and is applied consistently for all activities of the organisation on the basis of objective criteria irrespective of the source of funding. **Factual finding:**

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	19. No differences arose from the recalculation of the hourly rate for the employees included in the sample.
F. Time recording XXIV. Time recording is in place for all persons with no exclusive dedication to one Horizon 2020 action. At least all hours worked in connection with the grant agreement(s) are registered on a **daily/weekly/monthly** basis *[delete as appropriate]* using a **paper/computer-based system** *[delete as appropriate]*; XXV. For persons exclusively assigned to one Horizon 2020 activity the Beneficiary has either signed a declaration to that effect or has put arrangements in place to record their working time; XXVI. Records of time worked have been signed by the person concerned (on paper or electronically) and approved by the action manager or line manager at least monthly; XXVII. Measures are in place to prevent staff from: i. recording the same hours twice, ii. recording working hours during absence periods (e.g. holidays, sick leave), iii. recording more than the number of productive hours per year used to calculate the hourly rates, and iv. recording hours worked outside the action period. XXVIII. No working time was recorded outside the action period; XXIX. No more hours were claimed than the productive hours used to calculate the hourly personnel rates. *[Please provide a brief description of the time recording system in place together with the measures applied to ensure its reliability to the Auditor and annex it to the*	**Procedure** ✓ The Auditor reviewed the brief description, all relevant manuals and/or internal guidance describing the methodology used to record time. The Auditor reviewed the time records of the random sample of 10 employees referred to under Section C: Personnel costs, and verified in particular: ✓ that time records were available for all persons with not exclusive assignment to the action; ✓ that time records were available for persons working exclusively for a Horizon 2020 action, or, alternatively, that a declaration signed by the Beneficiary was available for them certifying that they were working exclusively for a Horizon 2020 action; ✓ that time records were signed and approved in due time and that all minimum requirements were fulfilled; ✓ that the persons worked for the action in the periods claimed; ✓ that no more hours were claimed than the productive hours used to calculate the hourly personnel rates; ✓ that internal controls were in place to prevent that time is recorded twice, during absences for holidays or sick leave; that more hours are claimed per person per year for Horizon 2020 actions than the number of productive hours per year used to calculate the hourly rates; that working time is recorded outside the action period; ✓ the Auditor cross-checked the information with human-resources records to verify consistency and to ensure that the internal controls have been effective. In addition, the Auditor has verified that no more hours were charged to Horizon 2020 actions per person per year than the number of productive hours per year used to calculate the hourly rates, and verified that

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present certificate[1]]. *[If certain statement(s) of section "F. Time recording" cannot be endorsed by the Beneficiary they should be listed here below and reported as exception by the Auditor:* - *…]*	no time worked outside the action period was charged to the action. **Factual finding:** 20. The brief description, manuals and/or internal guidance on time recording provided by the Beneficiary were consistent with management reports/records and other documents reviewed and were generally applied by the Beneficiary to produce the financial statements. 21. For the random sample time was recorded or, in the case of employees working exclusively for the action, either a signed declaration or time records were available; 22. For the random sample the time records were signed by the employee and the action manager/line manager, at least monthly. 23. Working time claimed for the action occurred in the periods claimed; 24. No more hours were claimed than the number productive hours used to calculate the hourly personnel rates; 25. There is proof that the Beneficiary has checked that working time has not been claimed twice, that it is consistent with absence records and the number of productive hours per year, and that no working time has been claimed outside the action period. 26. Working time claimed is consistent with that on record at the human-resources department.

[1] The description of the time recording system must state among others information on the content of the time records, its coverage (full or action time-recording, for all personnel or only for personnel involved in H2020 actions), its degree of detail (whether there is a reference to the particular tasks accomplished), its form, periodicity of the time registration and authorisation (paper or a computer-based system; on a daily, weekly or monthly basis; signed and countersigned by whom), controls applied to prevent double-charging of time or ensure consistency with HR-records such as absences and travels as well as it information flow up to its use for the preparation of the Financial Statements.

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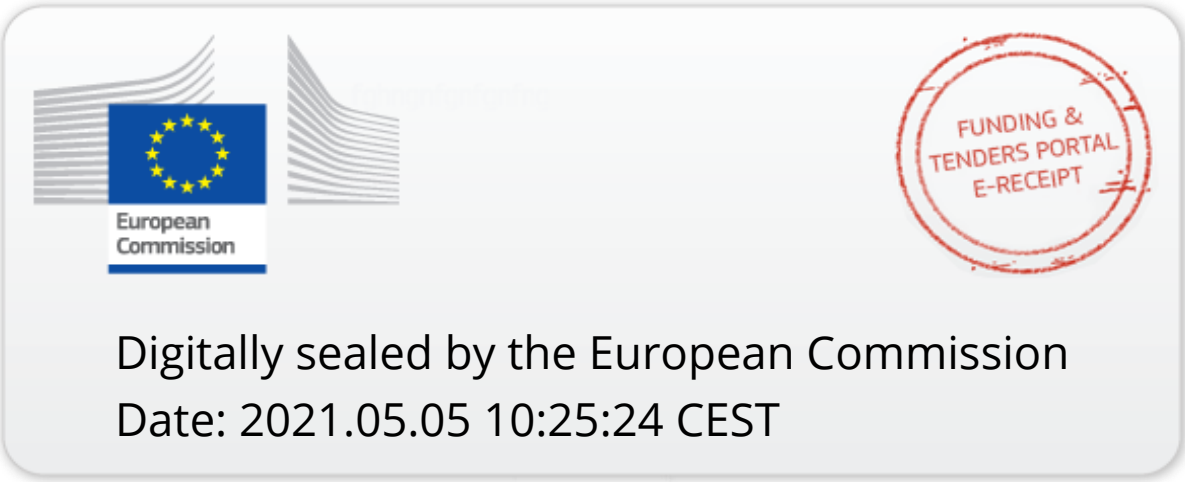
[official name of the *[Beneficiary] [Linked Third Party]**]*** ***[name and title of authorised representative]*** ***[dd Month yyyy]*** ***<Signature of the*** *[Beneficiary] [Linked Third Party]>*	***[official name of the Auditor]*** ***[name and title of authorised representative]*** ***[dd Month yyyy]*** ***<Signature*** *of the Auditor>*



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