

# Tender Document 1

## AI4Cities Request for Tenders

**This Request for Tenders, designated as Tender Document 1, should be read in conjunction with other documents related to this Pre-Commercial Procurement (PCP), listed hereunder:**

- Tender Document 2: The Functional Specification
- Tender Document 3: The Framework Agreement
- Tender Document 4: The Specific Contract for Phase 1
- Forms A through H

To submit an eligible Tender, the Tenderer shall sign and submit the Forms to the Request for Tender. The use of these Forms is mandatory.

All documents can be downloaded from and uploaded to the AI4Cities website [www.ai4cities.eu](http://www.ai4cities.eu)

## History of Changes

| 12 <sup>th</sup> of January 2021                |  |
|---|--|
| TD1 – Section 3.1                               | The following sentence: “A company can apply only once <b>as a Lead Tenderer only.</b> ” was changed to: “A company can be <b>accepted as a Lead Tenderer only once.</b> ”   |
| TD1 – Section 4.5                               | The name of the requirement FR8): “Deployment”, was corrected to: “Piloting”.  |
| Form E  | The index number of the requirement: “P2.1 Methodology of the Project” was changed to: “P1.4”.   |
| Form E  | The index numbers of Project Team Requirements were changed from “P3” to “P2”.   |
| Form E  | The abbreviation for Project Management requirements was changed from “P” to “PM” to be in line with Tender Document 1.  |
| 27 <sup>th</sup> of January 2021                |  |
| TD1 – Section 3.1                               | In the following sentence: “Suppliers will use a minimum font size of 10.” the font size was corrected to “font size of <b>9</b> ”.  |
| TD1 – Section 1                                 | <i>The following text was added:</i> “*Please be aware that following the entry into force of the EU-UK Withdrawal Agreement on 1 February 2020 and in particular Articles 127(6), 137 and 138, the references to natural or legal persons residing or established in a Member State of the European Union are to be understood as including natural or legal persons residing or established in the United Kingdom. UK residents and entities can therefore perform the activities for the contract in the UK.” |
| TD1 – Section 4.4.3., Appendix 1 and Appendix 9 | <i>The following text was added:</i> “*UK counts as a Horizon2020 associated country. See more on section 1 of this document.”   |
| TD1 – Section 4.4.3                             | <i>The Following text was removed:</i> “Suppliers with suppliers from the UK need to clarify how they intend to keep on meeting the above-mentioned requirement in the case that the UK does not become an associated country to the EU after Brexit.”   |
| 15 <sup>th</sup> of February 2021               |  |
| TD1 – Section 2                                 | The dates on the process schedule picture were corrected.  |
| TD1 – Section 2                                 | “Appendix 11” <i>was corrected to:</i> “appendix 5”  |
| TD1 – Section 2.9.9                             | <i>In sentence:</i> “Therefore, Suppliers are expected to protect their Intellectual Property and commercially exploit the results of the Research and Development undertaken in the PCP within a period of two years after the end of the Framework Agreement.”, <i>the:</i> “two years” <i>was changed to:</i> “four years”.   |

## Preface

This Pre-Commercial Procurement (PCP) call invites entrepreneurs, start-ups, companies, academia, and other relevant stakeholders to present their proposal for designing, developing and testing digital solutions utilizing artificial intelligence (AI) to help reduce CO2 and other GHG emissions in six European cities: Amsterdam, Copenhagen, Helsinki, Île-de-France (Paris region), Stavanger and Tallinn. These six cities form the Buyers group which is responsible for the PCP call.

The proposed solutions must build on highly innovative and not market-ready technologies, and/or concepts. In order to demonstrate their potential for large-scale sustainable deployment after the project completion, and therefore their



added value for the cities, solutions must be tested and validated at a large-scale inside the Buyer group member's cities.

AI4Cities is a research & development (R&D) project, which takes the form of a Pre-Commercial Procurement (PCP).

The PCP is run as a competition where multiple suppliers go through three different R&D phases: Phase 1 – Solution design, Phase 2 – Prototyping, and Phase 3 – Prototype testing. Ownership of the resulting solutions will remain with the suppliers, not the Buyer group. Appendix 1 presents a more detailed overview of the PCP approach.

**Tender document 1 is composed of five chapters:**

- **Chapter 1** Provides an overview of PCP and presents the Lot 1: Mobility and Lot 2: Energy challenge areas and sub-challenges.
- **Chapter 2** Explains the phases and the expected outcomes of the PCP phases.
- **Chapter 3** Describes the content & format of tenders.
- **Chapter 4** Describes the evaluation process and awarding criteria.
- **Chapter 5** Describes general and administrative questions including the monitoring process, results evaluation, and payment conditions.

The most important information about the technical aspect of the challenges and the requirements and awarding criteria are presented in the 'Tender Document 2: Functional Specifications and in the Form E: Technical Offer.

This Request for Tenders should be read in conjunction with other documents related to this Pre-Commercial Procurement (PCP), listed hereunder:

| TENDER DOCUMENTS (TD)  |
|--|
| <p><b>TD1 – Request for Tender, incl. Appendices 1 to 10</b></p> <ul style="list-style-type: none"> <li>- Appendix 1 – General context and background</li> <li>- Appendix 2 – The Buyers Group</li> <li>- Appendix 3 – Scoring Model for the Award Criteria and end of Phases' Evaluation</li> <li>- Appendix 4 – Scoring Model for the Price</li> <li>- Appendix 5 – Time Schedule for Phases 1-3</li> <li>- Appendix 6 – List of Reporting Topics</li> <li>- Appendix 7 – Table of Page Limits</li> <li>- Appendix 8 – Electronic Submission of the Tender</li> <li>- Appendix 9 – End-of-Phase Reporting [sample]</li> <li>- Appendix 10 – Project Abstract for Phase 1 [sample]</li> </ul> |
| <p><b>TD2 – Functional Specifications</b></p>  |
| <p><b>TD3 – Framework Agreement [template]</b></p>   |
| <p><b>TD4 – Specific Contract Phase 1 [template]</b></p>   |

## Contents

|  |    |
|--|----|
| Preface  | 1  |
| Glossary/Definitions   | 6  |
| Abbreviations  | 8  |
| 1. General Context and Pre-Commercial Procurement                  | 9  |
| 1.1 Description of services to be procured                         | 10 |
| The State-of-the-Art   | 10 |
| The PCP challenge areas - Mobility and Energy                      | 10 |
| 1.2 Lot 1: Mobility Challenge                                      | 11 |
| 1.2.1 Mobility sub-challenge 1: Mobility-as-a-Service (MaaS)       | 11 |
| 1.2.2 Mobility sub-challenge 2: Traffic Flow Optimization          | 11 |
| 1.2.3 Mobility sub-challenge 3: Optimization of logistics          | 12 |
| 1.4.4 Mobility sub-challenge 4: Wild Card                          | 12 |
| 1.3 Lot 2: Energy Challenge  | 12 |
| 1.3.1 Energy sub-challenge 1: Flexible Energy Consumption          | 12 |
| 1.3.2 Energy sub-challenge 2: Energy Efficiency                    | 13 |
| 1.3.3 Energy sub-challenge 3: Development of Renewable Energy      | 14 |
| 1.3.4 Energy sub-challenge 4: Wild Card                            | 14 |
| 1.4 Support to the Suppliers                                       | 14 |
| 2. Description of the PCP phases and expected outcomes             | 15 |
| 2.1 Total budget and budget distribution                           | 16 |
| 2.2 Phase 1: Solution Design – overview and expected outcomes      | 16 |
| 2.3 Phase 2: Prototype – overview and expected outcomes            | 17 |
| 2.4 Phase 3: Piloting – overview and expected outcomes             | 18 |
| 2.5 Overview of expected travels by Supplier                       | 19 |
| 2.6 Tender closing time  | 20 |
| 2.7 The Buyers group members and other parties involved in the PCP | 20 |
| 2.8 The Contract Approach  | 21 |
| 2.9 IPR issues   | 21 |
| 2.9.1 Ownership of results (foreground)                            | 21 |
| 2.9.2 Commercial exploitation of results                           | 22 |
| 2.9.3 Declaration of pre-existing rights (background)              | 22 |
| 3. Content & format of tenders                                     | 23 |



|   |    |
|---|----|
| 3.1 Tender documents submission and Administrative section                              | 23 |
| 3.2 Technical section   | 24 |
| 3.3 Financial section   | 25 |
| 4. Evaluation of Tenders  | 26 |
| 4.1 Evaluation criteria – Overview  | 27 |
| 4.2 Exclusion criteria  | 27 |
| 4.2.1 Conflict of interest (A)  | 28 |
| 4.2.2 Criminal offences (B)   | 28 |
| 4.2.3 Bankruptcy and professional misconduct (C)  | 29 |
| 4.3 Selection criteria  | 29 |
| 4.4 Compliance criteria   | 30 |
| 4.4.1 Compliance with the definition of R&D services                                    | 31 |
| 4.4.2 Compatibility with other public financing   | 31 |
| 4.4.3 Compliance with requirements relating to the place of performance of the contract | 32 |
| 4.4.4 Ethics and research integrity   | 32 |
| 4.4.5 Security  | 34 |
| 4.5 Award criteria  | 34 |
| 4.5.1 Weighted award criteria   | 34 |
| 4.6 Evaluation procedure: opening of tenders & evaluation                               | 38 |
| 4.6.1 Opening of tenders  | 38 |
| 4.6.2 Evaluation Process  | 39 |
| 4.6.3 Technical Evaluation Committee and Procurers Steering Committee                   | 40 |
| 4.6.4 Evaluation of Phases 2 and 3  | 40 |
| 4.7 End of Phases evaluation  | 41 |
| 4.8 Eligible tenderers, joint tenders and subcontracting                                | 41 |
| 4.8.1 Joint Tender or Tender submitted by a consortium                                  | 41 |
| 4.8.2 Subcontracting  | 42 |
| 4.8.3 Replacement of a subcontractor  | 42 |
| 5. Miscellaneous  | 43 |
| 5.1 Language  | 43 |
| 5.2 Tender constitutes binding offer  | 43 |
| 5.3 Questions and unauthorized communication  | 43 |
| 5.3.1 Request for Tenders webinars  | 43 |



|   |    |
|---|----|
| 5.4 Confidentiality   | 44 |
| 5.5 Contract implementation   | 44 |
| 5.6 Monitoring  | 44 |
| 5.7 Payments based on satisfactory completion of milestones and deliverables of the phase | 44 |
| 5.8 Payment schedule  | 45 |
| 5.9 Eligibility for the next phase based on successful completion of the phase            | 46 |
| 5.10 Cancellation of the tender procedure   | 47 |
| 5.11 Procedures for appeal  | 47 |
| Appendices  | 48 |
| Appendix 1 - General context & background   | 48 |
| Appendix 2 - The Buyers Group   | 51 |
| Appendix 3 - Scoring Model for the Award Criteria and end of Phases' Evaluation           | 60 |
| Appendix 4 - Scoring Model for the Price  | 61 |
| Appendix 5 - Time schedule for Phases 1 - 3   | 62 |
| Appendix 6 - List of Reporting Topics   | 66 |
| Appendix 7 - Table of Page Limits   | 68 |
| Appendix 8 - Electronic Submission of the Tender  | 69 |
| Appendix 9 - End of Phase Reporting [sample]  | 70 |
| Appendix 10 - Project abstract for Phase 1 [sample]                                       | 76 |



## Glossary/Definitions

Words beginning with a capital letter have the meaning defined either in this 'Request for Tender' (TD1) or in the Framework Agreement (TD3).

| TERMS/ACRONYMS                          | DEFINITIONS   |
|---|---|
| <b>Background</b>                       | Any intellectual property rights, data, software, know-how or information, whatever its form or nature (tangible or intangible), including any attached rights such as intellectual property rights ('background IPRs') that is held by any Buyers Group member or the Supplier prior to the award of the Framework Agreement, which is needed to perform the R&D Services or exploit the Results of the PCP.   |
| <b>Buyers Group</b>                     | The entities procuring the R&D services under the AI4Cities project. The Buyers Group is Forum Virium Helsinki (City of Helsinki), the City of Amsterdam, City of Copenhagen, City of Stavanger, City of Tallinn and Cap Digital (Île-de-France/Paris region). The Lead Procurer is Forum Virium Helsinki, situated in Helsinki, Finland.   |
| <b>Call-off</b>                         | The procedure organised by the Lead Procurer to select the successful Supplier(s) who will participate in the next phase of the Project under the Framework Agreement.  |
| <b>Fair and Reasonable Conditions</b>   | Appropriate conditions, including financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, including in particular the actual or potential value of the Results, Sideground or Background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged.  |
| <b>Foreground Intellectual Property</b> | Any intellectual property created by either party as a result of their involvement in the AI4Cities Framework Agreement.  |
| <b>Framework Agreement</b>              | The contract between the Lead Procurer and the Supplier concerning the delivery of the R&D services under this PCP, covering Phases 1 through 3.  |
| <b>Generated in the PCP</b>             | In activities described in the PCP framework agreement or specific contracts  |
| <b>Intellectual Property</b>            | Patents, inventions (patentable or capable of registration or otherwise), trademarks, service marks, copyrights, topography rights, design rights and database rights (either registered or registerable or otherwise, and including applications for registration, renewal or extension), trade secrets and rights of confidence, trade or business names and domain names and all rights or forms of protection of a similar nature which have an equivalent effect and which may now or in the future exist anywhere in the world. |
| <b>Lead Procurer</b>                    | The entity within the Buyers Group, appointed to coordinate and lead the joint PCP and to award and sign the Framework Agreements and Specific Contracts for all phases of the PCP, on behalf of the <b>Buyers Group</b> . The Lead Procurer is Forum Virium Helsinki, situated in Helsinki, Finland.   |
| <b>Not generated in the PCP</b>         | Not generated in activities described in the PCP framework agreement or specific contracts  |
| <b>Offer</b>                            | The proposal of the Supplier for the following phase  |
| <b>Preferred Partner</b>                | An entity that is not a member of the Buyers Group, but which has a special interest in closely following the PCP and therefore has access to AI4Cities project-related information, as determined by the <b>Buyers Group</b> .   |

|                            |  |
|----------------------------|--|
| <b>Request for Tenders</b> | The AI4Cities invitation to tender on the basis of which the Tenders for the award of the Framework Agreement and the Specific Contract for Phase 1 are submitted, and the subsequently issued invitations to tender for the Phase 2 and Phase 3.  |
| <b>Result</b>              | Any tangible or intangible output such as data, software, knowledge or information generated under the Framework Agreement, whatever its form or nature, whether or not it can be protected, including any intellectual property rights or other rights therein. The Results expected to be generated under the Framework Agreement are identified in the relevant Specific Contract(s).               |
| <b>Sideground</b>          | Any tangible or intangible output, such as data, software, knowhow or information, whatever its form or nature, including any intellectual property rights or other rights therein generated during the timespan of the Framework Agreement but which does not constitute part of the Results expected to be delivered thereunder and is needed to perform the R&D services or to exploit the Results. |
| <b>Specific Contract</b>   | The Contract for each phase of the R&D services under the Framework Agreement to be concluded between the Lead Procurer and the Supplier in addition to the Framework Agreement.   |
| <b>Supplier</b>            | A Tenderer that is awarded a contract to execute the R&D services.   |
| <b>Subcontractor</b>       | A subcontractor is a third party contributing to the provision of the services referred to in the procurement contract.  |
| <b>Tender</b>              | The formal and commercial bid/offer submitted by the Tenderer on the basis of the Tender Documents.  |
| <b>Tender Documents</b>    | The PCP documents on the basis of which a Tenderer submits a Tender. Namely, the Request for Tender documents (TDs 1-4) and their Annexes.   |
| <b>Tenderer</b>            | A company or consortium that is going to or has already submitted a tender but has not yet been awarded a contract to execute the R&D services.  |

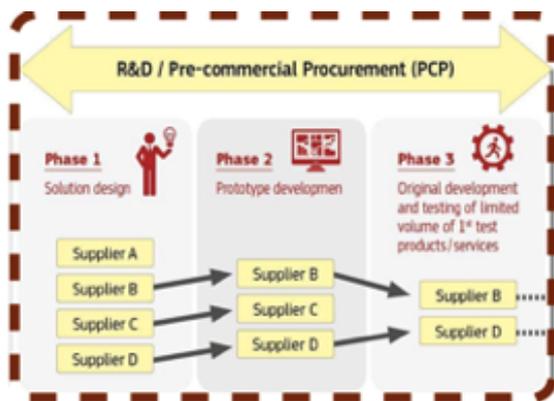
## Abbreviations

| ABBREVIATION     | EXPLANATION   |
|------------------|---|
| <b>AI4Cities</b> | AI accelerating Cities transition to carbon neutrality<br>(Name of this European project)   |
| <b>IPR</b>       | Intellectual Property Rights  |
| <b>PCP</b>       | Pre-Commercial Procurement  |
| <b>PPI</b>       | Public Procurement of Innovative solutions  |
| <b>PSC</b>       | Procurers Steering Committee  |
| <b>AI</b>        | Artificial Intelligence   |
| <b>R&amp;D</b>   | Research and Development  |
| <b>SME</b>       | Small and medium-sized enterprises  |
| <b>TED</b>       | An on-line tool for preparing public procurement notices and publishing them in the Supplement to the Official Journal of the European Union. |
| <b>WTO GPA</b>   | World Trade Organisation Government Procurement Agreement   |



# 1. General Context and Pre-Commercial Procurement

The PCP is split into three phases: (1) solution design, (2) prototyping, (3) prototype testing. Evaluations after each phase progressively identify the solutions that offer the best value for money and meet the customers' needs. This phased approach allows successful suppliers to improve their offers for the next phase based on lessons learnt and on feedback from procurers in the previous phase. Using a phased approach with gradually growing contract sizes per phase also makes it easier for smaller companies to participate in the PCP and enables SMEs to grow their business as each phase advances.



The R&D services eligible under the PCP can cover research and development activities ranging from solution exploration and design, to prototyping, right through to the original development of a limited set of 'first' products or services. This comes in the form of a test series in order to incorporate the results of field-testing and to demonstrate that the prototype solution is suitable for production or supply in quantity and to acceptable quality standards.

The PCP will not fund the solutions production in large quantities to establish the commercial viability or to recover R&D costs. It will also exclude commercial development activities such as incremental adaptations or routine or

periodic changes to existing products, services, production lines, processes or other operations in progress, even if such changes may constitute improvements. See more on the definition of R&D in chapter 4.4.1.

Furthermore, the PCP is also characterised by the following key features:

- **Open, transparent, non-discriminatory approach**

PCP is open to all operators on equal terms, regardless of the size, geographical location or governance structure. There is, however, a place of performance requirement. This means that they must perform a predefined minimum percentage of the contracted R&D services in EU Member States or Horizon 2020 associated countries. In AI4Cities' case this is 50%.\*

\*Please be aware that following the entry into force of the EU-UK Withdrawal Agreement on 1 February 2020 and in particular Articles 127(6), 137 and 138, the references to natural or legal persons residing or established in a Member State of the European Union are to be understood as including natural or legal persons residing or established in the United Kingdom. UK residents and entities can therefore perform the activities for the contract in the UK.

- **Sharing of IPR-related risks and benefits under market conditions**

PCP procures R&D services at market price, thus providing suppliers with a transparent, competitive and reliable source of financing for the early stages of their research and development. Giving each supplier the ownership of the IPRs attached to the results it generates during the PCP means that they can widely exploit the newly developed solutions commercially. In return, the tendered price must contain a financial compensation (in other words, a discount) so to reflect the fact that Suppliers will keep the IPR ownership and be able to commercially exploit the results. The Buyers Group members will only receive rights to use the R&D results for internal use and licensing rights subject to certain conditions.

For more detailed descriptions of the PCP instrument read Appendix 1 and visit the [European Commission PCP webpage](#).

## 1.1 Description of services to be procured

The cities of Amsterdam, Copenhagen, Helsinki, Stavanger, Tallinn, and Île-de-France (Paris region) are like-minded cities committed to become carbon neutral by 2050 at the latest. Their goal has been translated into exhaustive carbon neutrality strategies and plans with action points. AI4Cities was created to support the Cities Climate neutrality goals which are helping to turn their plans into action. These six Cities form the Buyers Group of AI4Cities.

The goals and ambitions of the AI4Cities PCP process and of the Buyers Group are aligned with a larger global and urgent need for effective solutions. In AI4Cities the target is to find new innovative solutions which reduce CO2 and other GHG emissions and utilize the artificial intelligence. If successful, the developed prototypes will be uniquely positioned for massive, rapid scale up.

While the cities have set more specific and measurable goals on carbon neutrality, there is clear evidence that the scale and volumes of the interventions have to be higher. The pilots and interventions are at least district-wide, if not city-wide. This has raised the demand on using data-driven methods to improve resource-efficiency and, while the amount of data increases, big data and AI are seen as playing a significant role in the cities' data platforms.

### The State-of-the-Art

When combined, the Energy and Mobility domains account for approximately 82% of modern European Cities' CO2 and other GHG emissions. AI4Cities is looking for a wide variety of solutions that lower CO2 emissions in these fields. The sub-challenges in AI4Cities (presented in sections 1.2 & 1.3) make the range of possible solutions so vast that it is impossible to define a specific state-of-the-art for the solutions. Therefore, for the purposes of this project the state-of-the-art is defined as what is currently on the market. Beyond state-of-the-art is defined as something that is currently not yet on the market and encompasses novel technologies or applications and/or applies to novel use cases.

### The PCP challenge areas - Mobility and Energy

PCP focuses on radical innovation and is meant for services, tools or products that are not yet on or close to market.

In this PCP, competing companies and developers will be given the opportunity to come up with innovative ideas for new digital-based solutions, built on AI and related key enabling technologies including 5G, IoT, Cloud computing and big data applications, with the goal of helping Cities become carbon-neutral.

**The commonly identified procurement need shared by all procurers in the Buyers Group is for solutions that support Cities' transition to carbon neutrality via AI and related enabling digital technologies.**

**Based on this, two domains linked to the Cities' strategies and carbon-positive goals have been identified: mobility and energy. They will form the two lots of the Pre-Commercial Procurement action, hereon referred to as Lots:**

**Lot 1 – Smart Mobility**

**Lot 2 – Smart Energy**

**Each lot include three sub-challenges (plus a wild card) that the suppliers can try to solve with their solution.**

Within these sub-challenges, Cities describe and give examples of their current needs. It is not expected that a solution would cover every issue mentioned under a sub-challenge. However, if a solution solves only one of the issues listed, it may not be enough to advance to the later phases of the PCP.

Thus, it is encouraged that a Tenderer tries to address several problem areas mentioned under one or multiple sub-challenges. If the solution can be used to solve problems in both challenges (Mobility and Energy) it can also be



considered as an advantage. However a solution/Tender can only apply to one lot, i.e. the Tender must clearly identify for which lot it is applying, and that solution cannot be included in another parallel Tender submitted to the remainder Lot.

## 1.2 Lot 1: Mobility Challenge

Transport is responsible for nearly 30% of the EU's total CO2 emissions, of which 72% comes from road transportation. The EU has set an ambitious goal of reducing these emissions by 60% by 2050. AI4Cities PCP project is looking for solutions helping us to reach this goal with the help of advanced AI technologies.

### 1.2.1 Mobility sub-challenge 1: Mobility-as-a-Service (MaaS)

The aim of MaaS is to provide an alternative to the use of private cars, and thus help to reduce traffic congestion and volume constraints in urban transport capacity. MaaS is the integration of various forms of transport services into a single mobility platform accessible on-demand with real-time predictive information concerning multimodal itineraries and multimodal positioning. Hence, MaaS by definition is a) multimodal, because it has to include more than one mode of mobility service and b) it is user-centric, whereby a tailor-made service suggests the most suitable solutions based on the user's travel needs.

Although at present many MaaS initiatives developed are only at a local level, the coexistence of MaaS platforms of different geographic footprints is likely to become a reality as we move towards larger convergence platforms across technology domains.

#### Addressable problem areas (non-exhaustive list):

- The usage of private vehicles within city boundaries is too high
- The attractiveness of public transportation is relatively low
- The engagement in active mobility activities is relatively low
- The placement of city bike terminals and e-scooters is sub-optimal
- The placement of parking spaces is not well-integrated with public transport network
- Lack of accessibility in transportation systems and public space (i.e. for citizens with disabilities, senior citizens etc.)
- Lack of real-time multimodal information for citizens, integrating public transport, user-specific routing, on-demand parking, active mobility and unified payment systems
- Lack of understanding and real-time prediction of passenger behaviour
- Citizens have poor awareness of their carbon footprint resulting from their mobility choices and hence lack motivation to change their habits.

### 1.2.2 Mobility sub-challenge 2: Traffic Flow Optimization

The continuous growth in traffic, while a positive economic indicator, has created severe problems for city authorities. Many cities across the world have layouts that were planned decades ago – or in some cases, centuries ago. The rate of growth in vehicle use has exceeded the most optimistic planning assumptions, and led to congestion, which in turn has increased fuel consumption and CO2 emissions. Cities with busy ports also need to look for novel solutions in maritime transport. Meanwhile a razor-sharp focus is required for optimizing new alternative transportation options like drone traffic. Since changing the city infrastructure in conjunction with these challenge domains is both resource and time-intensive, we must look elsewhere for innovative smart solutions.

#### Addressable problem areas (non-exhaustive list):

- Sub-optimal usage of existing road infrastructure
- Integration of different infrastructure domains such as road, air and water
- Predictive traffic planning (e.g. taking into account the effect of major public events)
- Quantitative traffic data analysis as input for long-term traffic planning and real-time traffic control
- Using hyperlocal air quality measurements to support public space design and user-specific travel planning



- Shortage of reliable data sources and under-utilization of existing ones
- EV charging stations are often located in places where there is little demand, absent in locations where they are required the most and are often used inappropriately (i.e. by non-EVs or by exceeding necessary charging time)
- Lack of understanding of the potential demand for new modes of travel and a necessity to develop a predictive usage model for these emerging mobility domains (e.g. e-scooters, e-bikes, personal vehicle sharing etc).

### 1.2.3 Mobility sub-challenge 3: Optimization of logistics

An important aspect of moving towards climate neutrality in addition to curbing the use of private vehicles is the streamlining of commercial transport and urban logistics. Commercial delivery fleets cause large amounts of traffic congestion, particularly in urban city centres. E-commerce, restaurant deliveries and parcel deliveries are on the rise. Local transport is not optimized, raising costs and making local markets less effective. This leads to a shift towards long distance sales and a subsequent rise in CO2 emissions.

#### Addressable problem areas (non-exhaustive list):

- Too many logistics deliveries are being made by half-empty vehicles
- Bad routing optimization, when making deliveries
- Very little or no task coordination between transport suppliers (all optimization happens within a fleet)
- It is difficult for consumers and producers to get a unified perspective on the CO2 emissions created by local and long-distance trade
- Too many deliveries are made during peak traffic hours leading to increases in congestion
- Too many deliveries are made by cars using fossil fuel
- Local goods are not accessible based on rational and optimized transport
- Poor mapping and usage of potential data sources
- All of the above increases cost to all parties in the logistics supply chain
- Maritime and river transportation is used and coordinated inefficiently
- People still often use their private cars for shopping trips, when coordinated and efficient logistics solution would cause less CO2 emissions and save time

### 1.4.4 Mobility sub-challenge 4: Wild Card

The Cities have also reserved a possibility for the suppliers to independently propose a solution for a mobility challenge that we have not defined. In their bid, the supplier must outline the specific sub-challenge that they have identified and the proposed solution. The solution must still satisfy the general criteria: CO2 and other GHG emissions reduction and the use of AI technologies.

## 1.3 Lot 2: Energy Challenge

Energy production (including heating and electricity) is responsible for around 50%-70% of CO2 emissions in many European cities. We see three main strategies for reducing CO2 emissions in the field of energy: 1) Flexible energy usage limiting peak loads 2) Reducing energy consumption through more efficient use of energy (in buildings, industry, by citizens etc.) and 3) meeting the energy needs with renewable energy sources.

### 1.3.1 Energy sub-challenge 1: Flexible Energy Consumption

More renewable energy with fluctuating production patterns and increasing electrification of e.g. vehicle fleet and heat production pose challenges to the current electrical grid. If cities are to make use of renewable energies, energy consumption patterns need to shift to accommodate for the fluctuations as well as flatten the peak loads during the day. This supports the wider grid in using renewable energy when it is abundant and reduces consumption when electricity (or heat) is produced using fossil fuels. This means there is a substantial need for

renovation and upgrades in the current electrical grid across Europe to adapt to this new reality: the grid should match flexible energy use by turning energy consuming equipment on and off based on signals from the energy market. Solutions to reduce investments in electrical infrastructure and to better use fluctuating energy production can both promote green energy transition and save energy costs.

**Addressable problem areas (non-exhaustive list):**

- **Flexible electricity supply and usage**  
Locally produced renewable energy could be used in the smart grid, allowing excess energy to be fed to other parts of the city, thereby reducing the need for major energy providers to produce energy based on fossil fuels.
- **Energy flexibility in buildings**  
Energy usage (e.g. lighting and heat) should take into account how and when a building is used. Too often buildings are illuminated and heated at a standard that does not fit the actual usage or even when the building is vacant. Flexible heat and electricity consumption are relevant instruments to avoid consumption peaks while at the same time avoiding negative effects to the comfort levels of the users.
- **Flexibility in electric vehicle charging stations**  
The use of a flexible energy consumption can also affect electric vehicle charging infrastructure in terms of charging patterns and charging locations without compromising comfort of having the vehicles charged when needed. This also impacts the Mobility challenge of AI4Cities.
- **Interaction with market stakeholders**  
Using predictive user behaviour market, stakeholders (such as utility suppliers and assets owners) become knowledgeable about the needed energy supply at given times, which they can then forecast in terms of probable exceedances of renewable energy production. At these times the stakeholder could then incentivize the users (such as workers and citizens) to shift their usage to other times thus limiting the production of energy through fossil fuels. This should run alongside analyses of the effects on comfort levels (e.g. indoor air temperature) and structural integrity of the assets (e.g. the building construction not suffering damages).

### 1.3.2 Energy sub-challenge 2: Energy Efficiency

It is hard to meet cities' current energy needs through only renewable energy sources in a timeframe given by cities' climate goals. Therefore, it is essential that cities use energy more efficiently by enabling deeper analysis for all technical systems at a city scale. The idea of energy efficiency is to make better use of energy without decreasing quality of life by prioritizing essential energy needs and reducing amounts in order to satisfy current needs. Solutions to improve energy efficiency in building portfolios and similar large energy consuming assets can lower the overall energy consumption and reduce the usage of peak power plants that produce CO<sub>2</sub>.

**Addressable problem areas (non-exhaustive list):**

- **Energy refurbishment prioritization**  
It can be hard to prioritise strategies for the refurbishment of buildings in terms of the most effect created. Using existing data on the building materials and various other data of the actual usage of buildings could provide a prioritization tool of efforts with regard to energy savings, including physical climate screening such as windows, roofs and walls.
- **Optimizing energy usage of buildings and assets**  
Every technical installation within a building uses energy. While most receive scheduled maintenance, this maintenance does not consider different needs based on activity levels and actual usage. At the same time, energy consumption from public or private assets (e.g. computers or mobile phones) is not taken into consideration in the energy profiles of buildings. The consequence of inefficient maintenance and unaccounted energy-consuming assets is higher CO<sub>2</sub> emissions and greater economic costs. Using

AI, it may be possible to define indicators that can inform of and engage energy-use optimization or redefine buildings' energy profiles by including unaccounted for assets.

- **Predictive maintenance**

Every larger technical installation and building has its own Management System, which gathers large amounts of operational data. When these send signals that various equipment is failing to operate it can be hard to pinpoint where the problem is. Smart maintenance procedures could define indicators on specific installations for when maintenance is needed, and automatically engage a maintenance procedure which reduces energy consumption to the planned levels.

- **Lack of energy efficient construction of buildings**

Construction of new buildings (including materials used) uses huge amounts of energy and could often be much more energy efficient.

- **Citizens and other private building owners are not aware how and/or lack motivation to use energy more efficiently**

The majority of the estates and houses in the cities are privately owned, and energy consumption optimization solutions are needed which are light and easily maintained. Social acceptance of interventions and maximal environmental impacts can be enhanced by raising public awareness and engaging people in the low-carbon city transition.

- **Industries are not aware of how to use energy more efficiently, or it is not profitable for them.**

Industries use vast amounts of energy and they might not always have incentives or be aware how to be more energy efficient.

### 1.3.3 Energy sub-challenge 3: Development of Renewable Energy

Merely increasing energy efficiency and reducing energy consumption is not enough for cities to reach carbon neutrality. It is important to also develop and integrate renewable energy sources into the grid in order to gradually replace fossil fuels.

#### Addressable problem areas (non-exhaustive list):

- Insufficient storage of renewable energy
- Renewable energy isn't optimally integrated within cities' buildings and other assets
- Often high costs of renewable energy (including the investment costs of building and installing RE facilities) and long term return on investment
- Lack of mapping of potential renewable energy sources
- Help in creating adaptive strategy for integration of renewable energy in the city
- Lack of opportunities for renewable energy trading at a small scale (e.g. buildings, private energy producers)

### 1.3.4 Energy sub-challenge 4: Wild Card

The Cities have also reserved a possibility for the suppliers to independently propose a solution for an energy challenge that we have not defined. In their bid, the supplier must outline the specific sub-challenge that they have identified and the proposed solution. The solution must still satisfy the general criteria: CO2 and other GHG emissions reduction and the use of AI technologies.

## 1.4 Support to the Suppliers

Depending on the nature of the solution The Buyers Group can possibly support the Suppliers by:

- Defining the pilot areas with input from the relevant units in the local authority



- Support with procedural matters including required city clearances
- Providing data and integration opportunities to the city's software system APIs
- Offering local support in matchmaking and outreach to stakeholders, as well as communication and media outreach

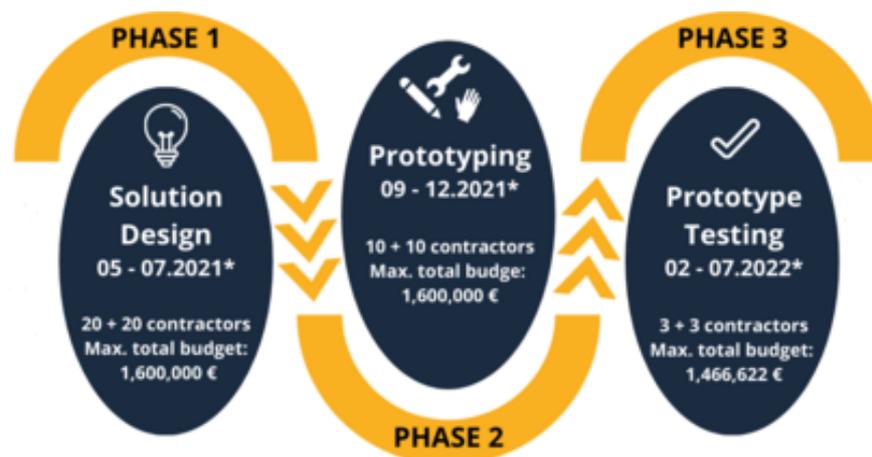
## 2. Description of the PCP phases and expected outcomes

The PCP Request for Tender will be launch on the 1.12.2020 and be closed on the 28.2.2021 at 17:00 CET

Short overview of timing following closure of the tender:

- Phase 1: May - July 2021 (3 months)
- Phase 2: September - December 2021 (4 months)
- Phase 3: February - July 2022 (6 months)

A more detailed time schedule can be found in appendix 5.



This chapter covers the three PCP phases goals and describes the expected Deliverables and Milestones to be fulfilled by the Suppliers for each phase. The Buyers Group and external evaluators will evaluate all the proposals using the same criteria.

In order to stimulate the possibility of more radical approaches being proposed and out-of-the-box thinking being used, the initial challenge description is phrased as more of an open challenge without a detailed specification of a sought-after product. A great emphasis will be given on the proposed solutions' impact, ease of deployment and scalability.

There is no predetermined requirement for developing and delivering under a specific model, but in general it is expected that the solutions will be provided following proper planning and definition of internal tasks and stages, as an example in the following manner: 1) Define business opportunities and needs, 2) Deliver data requirements, 3) Data Integration and Data Modelling, 4) Analytical modelling, 5) Deploy analytical model, and 6) Business integration.

The tenderers must propose their process steps according to the requirements of each of the three PCP stages. The professional approach and understanding the whole lifecycle of the process are important elements in the Tender evaluation.

## 2.1 Total budget and budget distribution

The chart below summarizes the expected minimum number of Suppliers, the estimated Phase duration, the maximum budget per Phase, and the maximum budget per Phase and per Supplier. Budgets exclude 24% VAT.

The total budget for the PCP is 5.786.611 Euro incl. 20% VAT and 4.666.622 Euro excl. 24% VAT.

Suppliers that participate in all three Phases can receive a total budget of up to 364.437 Euro.

| Expected minimum number of suppliers (LOT 1 & LOT 2) | Max. budget per phase, excl. 24% VAT | Max. budget per supplier, excl. 24% VAT | Maximum duration of phase |
|--|--------------------------------------|---|---------------------------|
| Phase 1:40 (20+20)                                   | 1.600.000€                           | 40.000€                                 | 3 months                  |
| Phase 2: 20 (10+10)                                  | 1.600.000€                           | 80.000€                                 | 4 months                  |
| Phase 3: 6 (3+3)                                     | 1.466.622€                           | 244.437€                                | 6 months                  |
| <b>Total</b>   | 4.666.622€                           | 364.437€                                |                           |

For Phases 1 and 2, contracts will be financed until the remaining budget is insufficient to fund the next best tender. The exact number of contracts finally awarded will thus depend on the prices offered and the number of tenders passing the evaluation.

As any leftover budget from the previous phase will be transferred to the next phase, the total budget available for Phases 2 and 3 may eventually be higher than stated here (but the maximum budget per supplier for Phases 2 and 3 will in principle remain the same). The lower the average price of tenders, the more Suppliers can be awarded. However, the total value of the contracts awarded can also be lower than initially expected if there are fewer tenders than expected that meet the minimum evaluation criteria.

Since all suppliers will be paid by the Lead Procurer (centralised payments), and as Forum Virium Helsinki is the Lead Procurer in the AI4Cities PCP, the valid Finnish and EU VAT legislation will be applied in the project.

## 2.2 Phase 1: Solution Design – overview and expected outcomes

**Duration: 3 months. Estimated procurement budget: 1.600.000 Euro in total, and 40.000 Euro maximum per Supplier (Expected minimum of 40 funded Suppliers and 20 per Lot).**

Expected Phase 1 results: Fully developed Solution concept design, including prototype development plan and a sustainability and/or business model for its future large scale usage.

The Phase 1 selection process is part of the overall Request for Tenders.

Phase 1 (Solution design) will be a feasibility study of the proposed solutions and technologies. It aims to verify the conceptual, technological, organisational, regulatory, safety and budgetary feasibility of the solution. The duration of Phase 1 is three (3) months.

During Phase 1 an innovative process is put forward and suppliers will receive in-depth information and insights from various Buyers Group member cities on the 'real' end-user experiences, needs and work environment to allow the

refinement of their concepts into a fully developed solution design. Depending on the specific supplier solution concept, customized ‘tours’ and interactive workshops with specific city departments or actors may be organized.

Due to the high number of suppliers and for fairness and equal treatment, all suppliers will be given access to these sessions and communication channels. This will be virtual interaction and mostly consist of recordings to be disseminated to all suppliers.

The expected outputs from participating companies are:

- a report with an upgraded concept design,
- a description of the results of their feasibility studies,
- a plan for how to develop the prototype, the sustainability and the scalability in following phases, and
- their conclusions for the continuation of development activities in Phase 2.

### EXPETED OUTCOMES Phase 1: Solution design

|                                   |  |                  |  |   |
|-----------------------------------|--|------------------|--|---|
| Objective:                        | The supplier will refine the solution design and perform research to<br>1) elaborate the solution design and determine the approach to be taken to develop the new solution, and<br>2) demonstrate the technical, financial and commercial feasibility of the proposed concepts and approach to meet the procurement need.   |                  |  |   |
| Output and results:               | All suppliers have achieved the milestone and deliverables successfully and they present a more detailed solution design report and conceptual design description.   |                  |  |   |
| Milestones and deliverables       |  | By when?         | How?   | Outputs and Results   |
| Milestones                        | M1.1 Kick-off meeting  | Start of Phase 1 | Presentation of the coordinator (webinar)            | Briefing for the selected suppliers and Q&A                             |
|                                   | M1.2 End of the Phase review   | End of Phase 1   | Video presentation of the results                    | Evaluation of the suppliers' solution design                            |
| Deliverables                      | D1.1 Project abstract and list of Pre-existing IP (for EU). See Appendix 10.   | Start of Phase 1 | Document (format required by the EU for publication) | Project abstract and list of background IPs                             |
|                                   | D1.2 End of Phase report   | End of Phase 1   | Document and video (templates)                       | End of Phase 1 report (see Appendix 9)                                  |
|                                   | D1.3 Phase 2 offer   | End of Phase 1   | Document   | Phase 2 proposal after the call-off documentation (implementation plan) |
| Points to be addressed in report. | <ul style="list-style-type: none"> <li>- Abstract of the main Results achieved and conclusions from Phase 1 (EU-format, Appendix 9 and 10)</li> <li>- Summary of the main results</li> <li>- Detailed report covering all the results in Phase 1</li> <li>- Description of functional and nonfunctional requirement that shows how the solution will meet the must-have criteria and nice-to-have criteria</li> <li>- IPR and commercialization plan (progress)</li> <li>- Assessment of the R&amp;D efforts for the prototype and lab testing</li> <li>- Measures taken to protect Results (IPR)</li> <li>- List of names and location of personnel that carried out the R&amp;D activities</li> <li>- Cost reporting</li> <li>- Video (max 5 min.) - will be scored</li> </ul> |                  |  |   |

## 2.3 Phase 2: Prototype – overview and expected outcomes

**Duration: 4 months. Estimated procurement budget: 1.600.000 Euro in total, and 80.000 Euro maximum per Supplier (Expected minimum of 20 funded Suppliers from Phase 1, 10 per Lot).**

Expected Phase 2 results:

- the delivery of a working prototype,



- a lab demonstration,
- a plan for the original development of a limited volume of first solutions,
- a roadmap for piloting, and
- an updated cost/benefits evaluation including a refined business and/or sustainability plan.

During this phase, the supplier will develop a working prototype capable of being tested in a lab environment setting. The aim is to evaluate to which extent the prototype's features meet the requirements as described in the challenge. The Prototype Development phase will have 4 (four) months' duration, during which there will be an emphasis on a co-creation and iterative model which maximizes dialogue and collaboration between the City actors and the Suppliers. For that purpose, the prototype development should be built around lean principles and agile methods, be well-defined and functional, and accompanied by the applicant's design, roadmap and budgetary estimate.

The table below presents the expected outcomes for Phase 2 in more detail. These are indicative and to be further refined with more detailed information to be provided with the Phase 2 Call-off.

### EXPETED OUTCOMES: Phase 2: Prototyping

|                                   |  |                  |  |   |
|-----------------------------------|--|------------------|--|---|
| Objective:                        | Develop, demonstrate and validate prototypes in lab conditions in three months.  |                  |  |   |
| Output and results:               | Suppliers have produced working prototypes which allows the Buyers Group to understand how the solutions can be implemented in their cities. |                  |  |   |
| Milestones and deliverables       |  | <b>By when?</b>  | <b>How?</b>  | <b>Outputs and Results</b>                                  |
| Milestones                        | M2.1 Kick-off meeting  | Start of Phase 2 | Online meeting + presentation                        | Briefing of the phase 2 and Q&A                             |
|                                   | M2.2 Mid-term follow-up  | Week 8           | Online meeting + presentation                        | Project progress update<br>First prototype iteration update |
|                                   | M2.3 End of the Phase review   | End of Phase 2   | Video presentation of the results                    | Evaluation of the suppliers' solution design                |
| Deliverables                      | D2.1 Project abstract and list of Pre-existing IP (for EU, Appendix 10).   | Start of Phase 2 | Document (format required by the EU for publication) | Project abstract and list of background IPs                 |
|                                   | D2.2 First prototype iteration   | Week 8           | Demonstration  | Prototype progress assessment                               |
|                                   | D2.3 End of Phase 2 report and demonstration   | End of Phase 2   | Document and online presentation (templates)         | Demonstration of prototype<br>End of Phase 2 report         |
|                                   | D2.4 Phase 3 offer   | End of Phase 2   | Document   | Phase 3 proposal after the call-off documentation           |
| Points to be addressed in report. | Points to be addressed in end-of-phase report: see description in Appendix 6, Phase 2 Call-off, and Appendix 9 for sample report.            |                  |  |   |

## 2.4 Phase 3: Piloting – overview and expected outcomes

**Duration: 6 months. Estimated procurement budget: 1.466.622 Euro in total, and 244 437 Euro maximum per Supplier (Expected minimum of 6 funded Suppliers from Phase 2, 3 per Lot).**

Expected Phase 3 results: Successful completion of piloting periods at least in two Buyers Group cities and realistic understanding of potential use cases and future markets.

At the end of the Prototype Development, a limited number of suppliers will be selected for PCP Phase 3, the piloting. They have to have successfully completed the previous phase, and will be selected and funded to do a prototype testing phase in a minimum of two (2) cities.

This is the longest of the 3 phases, as it is intended to verify and compare the full feature set and performance of each solution, in operational conditions, and provide meaningful feedback to the Suppliers for their prototype's continuous development. It will also offer the opportunity to all Buyer Group members to interact with and test the various solutions.

The table below presents the expected outcomes for Phase 3. These are indicative and to be further refined with more detailed information to be provided with the Phase 3 Call-off.

### EXPETED OUTCOMES: Phase 3: Piloting

|                                   |   |                      |  |   |
|-----------------------------------|---|----------------------|--|---|
| Objective:                        | Pilot and demonstrate the solution  |                      |  |   |
| Output and results:               | Working prototype in real-life environment.   |                      |  |   |
| Milestones and deliverables       |   | By when?             | How?   | Outputs and Results   |
| Milestones                        | M3.1 Kick-off Phase 3   | Start of Phase 3     | Online meeting                                       | Briefing of the phase 3 and Q&A                             |
|                                   | M3.2 Prototype deployment completed   | Week 4               | Prototype is installed in the selected cities        | Installation checked and pilot starts                       |
|                                   | M3.3 Mid-term follow-up   | Week 16              | Meeting and demonstration                            | Project progress update<br>Solution iteration update        |
|                                   | M3.4 End of the Phase review  | End of Phase 3       | Meeting and final demonstration                      | Evaluation of the suppliers' solution and pilot performance |
| Deliverables                      | D3.1 Project abstract and list of Pre-existing IP (for EU). See Appendix 10.  | Start of Phase 3     | Document (format required by the EU for publication) | Project abstract and list of background IPs                 |
|                                   | D3.2 Updated Piloting plan per the city   | Start of Phase 3     | Document   | Approved pilot plan per city                                |
|                                   | D3.3 Progress reports   | Week 16              | Document   | Piloting reports  |
|                                   | D3.4 End of Phase 3 report  | End of Phase 3       | Document and demonstration                           | End of Phase 3 report and demonstrations of the pilots      |
|                                   | D3.5 Participation in AI4Cities final conference  | After end of Phase 3 | Presentation and/or a stand                          | Prototype demonstration                                     |
| Points to be addressed in report. | Points to be addressed in end-of-phase report: see description in Appendix 6, Phase 3 Call-off, and Appendix 9 for sample report. |                      |  |   |

## 2.5 Overview of expected travels by Supplier

This table below gives an overview of the envisaged travels that the Suppliers need to plan for in their financial offer. The timing and locations for the physical meetings in all phases, particularly in the Phases 2 and 3, are indicative at this stage and could be subject to change. The AI4Cities Buyers Group reserve the right to adjust the duration of the

iteration periods, meetings frequency and locations if necessary. This will be communicated in a timely manner to all Suppliers.

| Phase              | What?  | When?          | Where?   |
|--------------------|--|----------------|--|
| Phase 2            | M2.3 Demonstration of solution prototype.            | End of Phase 2 | Meeting in Helsinki, if travelling is allowed due to covid-19.                       |
| Phase 3            | M3.4 Final review                                    | End of Phase 3 | Meeting in Helsinki or in piloting cities, if travelling is allowed due to covid-19. |
| Phase 4 (optional) | D3.5 Participation in the AI4Cities final conference | 2022           | TBC  |

## 2.6 Tender closing time

The official tender closing time will be: 28 February 2021 at 17:00 CET

## 2.7 The Buyers group members and other parties involved in the PCP

This is a joint pre-commercial procurement (PCP) encompassing several procurers, here referred to as the Buyers Group. The Buyers Group is the group of procurers that contribute to the procurement budget. The PCP is led by a lead procurer: Forum Virium Helsinki. The lead procurer is appointed to coordinate and lead the joint PCP, and to sign and award the framework agreement and the specific contracts for all phases of the PCP, in the name and on behalf of the following Buyers Group:

1. FORUM VIRIUM HELSINKI OY, the Lead Procurer, member of the Buyers Group, hereinafter referred to as 'Forum Virium Helsinki';
2. GEMEENTE AMSTERDAM, a Procuring member of the Buyers Group, hereinafter referred to as 'Amsterdam';
3. CAP DIGITAL, a Procuring member of the Buyers Group, representing the Paris region, hereinafter referred to as 'Cap Digital';
4. KOBENHAVNS KOMMUNE, a Procuring member of the Buyers Group, hereinafter referred to as 'Copenhagen';
5. TALLINNA LINN, a Procuring member of the Buyers Group, hereinafter referred to as 'Tallinn';
6. STAVANGER KOMMUNE, a Procuring member of the Buyers Group, hereinafter referred to as 'Stavanger'.

In the PCP the Buyers Group is the decision-maker and drivers of the Request for Tenders challenge setting and key users of the PCP results. Each member of the Buyers Group has one representative and voting right in the Procurers Steering Committee (PSC). The PSC will validate all key steps to be taken in the preparation of the request for Tenders, and in the performance of the 3 stages of the PCP process.

Appendix 2 provides the background of the Buyers Group in relation to for example their role with regard to mobility, energy, and open data are described. Additional information such as their cities backgrounds and data resources will be published on the AI4Cities website (<https://ai4cities.eu>).

## 2.8 The Contract Approach

The PCP will be implemented by means of a framework agreement with specific contracts for each of the 3 R&D phases (altogether 'contracts'). The law governing the contracts is the Finnish law, because the Lead Procurer is based there.

Following the tendering stage, a framework agreement and a specific contract for Phase 1 will be awarded to an expected minimum of 40 suppliers divided per Lot 1 and Lot 2.

**The framework agreement** will set all the framework conditions for the entire duration of the PCP (covering all the phases). There will be no renegotiation. The framework agreement will remain binding for the duration of all phases for which suppliers remain in the PCP. Suppliers that are awarded a framework agreement will also be awarded a specific contract for Phase 1 (evaluation of tenders for the framework agreement and Phase 1 are combined). Suppliers therefore need not only submit their detailed offer for Phase 1, but also to state their goals and outline their plans (including general price conditions) for Phases 2 and 3. They thus give specific details of the foreseen steps that would lead to commercial exploitation of the R&D results at the end of the Framework agreement.

A call-off will be organized for Phase 2, with the aim of awarding an expected minimum of 20 Phase 2 specific contracts. Only offers from suppliers that successfully complete Phase 1 will be eligible for Phase 2. The procurers will validate the Phase 2 prototypes.

A second call-off will be organized for Phase 3, with the aim of awarding an expected minimum of 6 specific contracts. Only offers from suppliers that successfully completed Phase 2 will be eligible for Phase 3. Phase 3 field-testing is expected to take place, per Supplier, in a minimum of 2 of the following cities: Helsinki (Finland), Tallinn (Estonia), Amsterdam (Netherlands), Stavanger (Norway), Ile de France (Paris, France), Copenhagen (Denmark).

The offers for the next Phases (2 and 3) will be requested together with the end-of-phase deliverables for the previous Phase. However, the successful completion of the previous phase is evaluated before evaluating the offers for the next phase, to determine which offers are eligible to proceed to the evaluation of offers for the next phase. Consequently, if a supplier's phase results are not considered successful, its offer for the next phase will not be evaluated.

## 2.9 IPR issues

### 2.9.1 Ownership of results (foreground)

Each Supplier will keep ownership of the IPRs attached to the results they generate during the PCP implementation. The tendered price is expected to take this into account.

The ownership of the IPRs will be subject to the following:

- the Buyers Group have the right to:
  - access results, on a royalty-free basis, for their own use
  - grant (or to require the suppliers to grant) non-exclusive licences to third parties to exploit the results under fair and reasonable conditions (without the right to sub-license)
  - exploit the results under reasonable and fair conditions (without the right to sub-license)

- the Buyers Group have the right to require the Suppliers to transfer ownership of the IPRs if the suppliers fail to comply with their obligation to commercially exploit the results (see 2.9.2. below) or if they use the results to the detriment of the public interest (including security interests).

## 2.9.2 Commercial exploitation of results

Commercial exploitation is an important part of a Pre-Commercial Procurement process. The Suppliers need to make a credible plan to secure access for the Buyers Group to the solutions resulting from the R&D work done within AI4Cities. It should be ensured that the Buyers Group can continue to benefit from the solutions after the project has ended. Therefore, Suppliers are expected to protect their Intellectual Property and commercially exploit the results of the Research and Development undertaken in the PCP within a period of four years after the end of the Framework Agreement.

With respect to this, the Buyers Group invites Suppliers to explore several innovative approaches and propose them with a future proof business model and commercialisation plan.

The business and commercialisation plan should explain the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service to market. A more detailed description for the business and commercialisation plan can be found in the Form E.

Suppliers need to foresee future requirements such as the implementation of “Fair AI or MyData”, that will likely be required by local authorities for piloting the solutions during Phase 3. Suppliers need to consider specific activities beyond product development to commercially exploit the results, e.g. certification of solutions or contribution to standardization.

The feasibility of the business plan to commercially exploit the R&D results (Form E, section 5) will be assessed as part of the award criteria. Furthermore, the commercialisation plan will be part of the End-of-Phase reports of all three phases, as well as of the offers for the Phases 2 and 3.

In addition to the commercialisation activities performed by the suppliers, the AI4Cities Buyers Group will promote the R&D results via its network of Preferred Partners<sup>1</sup>, which consists of several other public procurers and related organisations. The Buyers Group will also actively disseminate the suppliers’ results at the end of each phase via relevant public and industry related events. It is the goal of the Buyers Group to help develop a working market for such types of solutions in order to ensure their usability and sustainability and to help to overcome possible, commonly defined deployment barriers.

One larger final event organised by the Buyers Group is foreseen. During the event all end solutions will be presented and potential follow-up initiatives will be discussed at that time with the extended network of Preferred Partners. The pandemic situation in Europe may affect the event planning.

## 2.9.3 Declaration of pre-existing rights (background)

The ownership of pre-existing rights will remain unchanged by the PCP.

In order to be able to distinguish clearly between results and pre-existing rights (and to establish which pre-existing rights are held by whom):

- Suppliers are requested to list the pre-existing rights for their proposed solution in their offers

<sup>1</sup> <https://ai4cities.eu/cities/preferred-partners>

- Suppliers will be requested to establish a list of pre-existing rights to be used before the start of the contract.

The Buyers Group does not hold any pre-existing rights relevant to the PCP contracts.

The framework agreement will contain a provision that describes in more detail the rights and obligations of the different parties regarding the pre-existing rights and results.

### 3. Content & format of tenders

The general conditions of the Tender are presented in Tender Document 1.

Technical requirements are provided in the Tender Document 2: Functional Specifications and in Form E: Technical Offer.

Tender Document 3 is the framework agreement for AI4Cities PCP and Tender Document 4 is the specific contract for Phase 1.

More detailed information regarding Phases 2 and 3 will be provided at the Phase 2 and 3 Call-offs.

#### 3.1 Tender documents submission and Administrative section

Tenders shall be received at no later than the closing date: **28.2.2021 17:00 PM CET**.

All Tenderers must use the AI4Cities Tender forms, which can be accessed along with all of the other Tender Documents by following the instructions in the Contract Notice on [TED](#). The Tender documents are published on and can be downloaded from the [AI4Cities website](#).

All Tenders must be submitted as follows:

1. Tenders **have to be submitted electronically** via the [AI4Cities website](#) ("Request for Tenders" page)
2. Tenders **shall contain an administrative, a technical and a financial section**, see Forms A through G;
3. The Tender, i.e. the Tender Submission Forms (Forms A through G) and all attachments, mandatory or not, will be **signed by the Supplier/Lead Tenderer**, electronically or in "blue ink".
4. Tenderer can **select only one Lot**, either Lot 1: Mobility or Lot 2: Energy.
5. One Tenderer **can submit multiple Tenders**, as long as the solutions are different, but can be **selected only once**.
6. A company can be a partner in several consortiums, if the other consortiums accept it too, but a company can be **accepted as a Lead Tenderer only once**.

More information on the electronic submitting of the Tenders in Appendix 8 – Electronic submission of the AI4Cities Tender.

Each Supplier carries the sole responsibility for the accurate, timely and complete uploading of its unique and only tender. Tenders which are not compliant to the above-mentioned conditions will be regarded as irregular and will not be retained. The Supplier is by its Tender bound by a validity period of 120 calendar days, starting from the ultimate deadline for submission.

**In order to be eligible, Tenderers must submit the following documents and declarations as listed in the indicated order below:**



| Document                                    | Content   |
|---|---|
| Form A - General Tender Submission Form     | Legal information and signatures of the consortium and subcontractors   |
| Form B - Exclusion Criteria (declaration)   | Evaluate the individual situation of a Tenderer   |
| Form C - Selection Criteria                 | Determine whether a Tenderer has the financial, technical and professional capacity necessary to carry out and perform the work.                    |
| Form D - Compliance Criteria (declaration)  | Evaluate if the submitted Tender is compliance with the principles of PCP, public financing, place of performance, research integrity and security. |
| Form E - Technical Offer                    | The main tender document, the description of execution  |
| Form F - Financial Offer and Cost Breakdown | Description of financial offer covering Phases 1 - 3  |
| Form G - Financial Offer Phase 1            | Confirmation of the financial offer for Phase 1   |
| Form H – Executive Summary                  | Summary of the solution for possible pre-evaluation   |

Responses to the questions in the Forms B (Exclusion Criteria), C (Selection Criteria), and D (Compliance Criteria) will be assessed as pass/fail. Only Tenderers achieving a “pass” for all criteria will be put forward for further evaluation.

Only one Tender from a Supplier as main contractor will be accepted. Tenders should not submit the Tender on paper or submit more than one electronic Tender. The submission of a backup copy in any form is not allowed.

Tenders must be submitted in PDF format. Visuals can be added in attachment at JPG or PNG. Attached publications like brochures and promotional material are allowed, but will not be taken into account as part of the evaluation.

If the Tender exceeds a page limit then all words and/or pages in excess of the specified limit may not be considered further. Suppliers will use a minimum font size of 10. For the table with page limits per Annex (Tender Submission Forms), see Appendix 7 - Table of Page Limits.

The Lead Procurer may request clarification or additional evidence or amplification of details provided. In accordance with the principle of equal treatment, no alterations to Tenders are to be sought or accepted through requests for clarifications. In case the provided clarification is found not compliant with what was requested, the Tender will be excluded from further evaluation.

Where it is stated that Suppliers are to comply with the administrative instructions, those that do not comply will be excluded from further participation in the Tender procedure. Tenders that do not comply with the selection and compliance criteria will automatically be rejected. The Lead Procurer’s decision as to whether or not a Tender complies with these instructions will be final.

More specific information about the requirements for the Phase 2 and 3 Tenders will be provided in the Phase 2 and 3 call-offs.

## 3.2 Technical section

Tenders must include a detailed Technical Offer for Phase 1 (Form E) containing:



- A technical plan that outlines the Tenderer's idea for addressing all the requirements given in the PCP challenge description, relating both to functionality and performance; and the technical details of how this would be implemented. This technical plan must include an explanation of the method, a work plan including time schedule, deliverables and milestones as detailed in the Request for Tenders and the Functional Specification.  
The Tender must specify the plans and objectives of the subsequent Phases 2 and 3 and beyond.
- A draft business plan that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market, including a market analysis and a risk assessment and risk mitigation strategy.

Tenders failing to meet these requirements will be excluded.

More detailed information for the Phase 2 and 3 offers (in particular on the technical implementation plan, the updated business plan and the list of IPRs) will be provided in the Call-offs.

### 3.3 Financial section

The tender must include a detailed **financial offer** specifying:

- binding **unit prices** for all items needed for carrying out Phase 1 and for items that are expected to be needed for Phases 2 and 3 (*given in euros, excluding VAT but including any other taxes and duties*)
- a fixed **total price** for Phase 1 and an estimated total price for Phases 2 and 3, broken down to show unit prices and the number of each unit needed to carry out Phase 1 (*given in euros, excluding VAT but including any other taxes and duties*).

In addition, the financial section must include:

- a **price breakdown** that shows the price for R&D services and the price for supplies of products (to demonstrate compliance with the definition of R&D in on/off award criterion A (Form D))
- a **price breakdown** that shows the location or country in which the different categories of activities are to be carried out (*e.g. x hours of senior researchers in country L at y euro/hour; a hours of junior developers in country M at b euro/hour*) (to demonstrate compliance with the requirement relating to place of performance in on/off award criterion C (Form D))
- the **financial compensation** valuing the benefits and risks of the allocation of ownership of the **IPRs** to the supplier (*i.e. IPRs generated by the supplier during the PCP*), by giving an absolute value for the price reduction between the price offered in the tender compared to the exclusive development price (*i.e. the price that would have been quoted were IPR ownership to be transferred to the procurers*) in order to ensure compliance with the [EU R&D&I state aid framework](#).

The unit prices quoted for each category of items (*e.g. hourly rates for junior and senior researchers, developers and testers*) remain binding for all phases (*i.e. for the duration of the framework agreement*).

The information provided in the financial section of the tender will be used to evaluate the tenders on the basis of the price award criteria and the on/off award criteria A and C.

More detailed information for the Phase 2 and 3 offers will be provided in the call-offs. The price for Phase 2 and 3 offers must be based on the binding unit prices in the tender and the price conditions set out in the framework agreement. Where new units/unit prices (*e.g. for new tasks or equipment*) are subsequently added to the Phase 2 or 3 offers, they will become binding for the remaining phases.

Similar price breakdowns will be requested for the call-offs for Phase 2 and 3.

The financial compensation for IPRs must reflect the market value of the benefits received (i.e. the opportunity that the IPRs offer for commercial exploitation) and the risks assumed by the supplier (e.g. the cost of maintaining IPRs and bringing the products onto the market).

To ensure that a fair market price is offered, Tenderers must state two prices:

- The hypothetical price that they would have quoted if all Intellectual Property Rights, including the ownership of Results under the PCP, would have been fully retained by the Buyers Group and Tenderers would not have the possibility to exploit the Results (the “Virtual Price”); and
- The price that takes into account the fact that they keep ownership of the Intellectual Property Rights attached to the Results under PCP, in accordance with the provisions of the contracts, and that they can exploit these Results (the “Actual Price”).

The Actual Price will be evaluated according to the formula:

$$\text{Weight awarded to Price} * (\text{Price lowest tender}/\text{Price Tender})$$

The unit prices quoted for each category of items (e.g. hourly rates for junior and senior researchers, developers and testers) remain binding for all phases (i.e. for the duration of the framework agreement).

Since all suppliers will be paid by the Lead Procurer (centralised payments), and as Forum Virium Helsinki is the Lead Procurer in the AI4Cities PCP, valid Finnish and EU VAT legislation will be applied in the project.

In the Tenders for Phases 2 and 3, the Tenderers must also provide a breakdown of price, as in Phase 1.

The AI4Cities financial Section of the Tender has to be submitted by means of Annexes F and G. The information provided in this Section of the Tender will be used to evaluate the Tenders on the basis of the price award criteria and of the compliance criteria.

The Lead Procurer may reject a Tender if it has determined that the submitted price, in combination with other constituent elements of the submission, is abnormally low in relation to the subject matter of the procurement and raises concerns with the Lead Procurer as regards the ability of the Tenderer to perform the contracts. If the Lead Procurer considers that a Tender may be abnormally low, he will request the Tenderer to provide, in writing, details of the constituent elements of the tender, in particular with respect to:

- The economy of the services provided;
- The technical solutions chosen;
- Potential exceptionally favourable conditions available to the Tenderer for the execution of the work;
- The compliance with the provisions relating to employment protection and working conditions in force at the place where the work is performed.

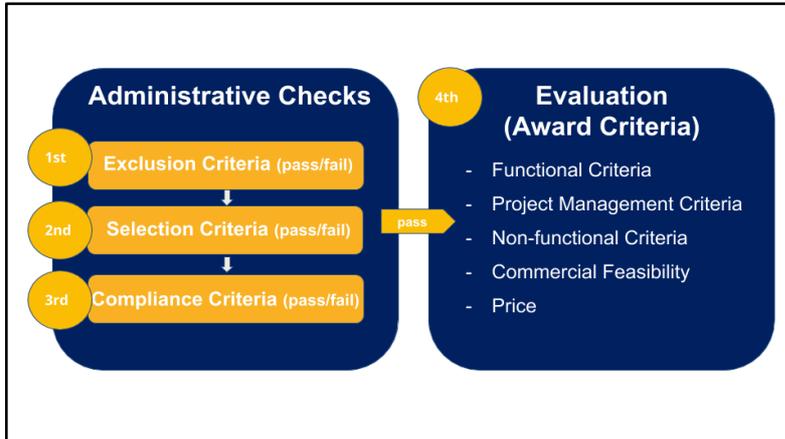
## 4. Evaluation of Tenders

Participation in the tendering procedure is **open** on equal terms to **all types of organizations from any country**, regardless of their geographic location, size or governance structure.

Tenders may be submitted by a single entity or in collaboration with others. The latter can involve either submitting a joint tender or subcontracting, or a combination of the two approaches.



## 4.1 Evaluation criteria – Overview



The process to award the Framework Agreements and the Specific Contracts is based on four main categories:

- The **exclusion criteria**: evaluate the individual situation of a Tenderer;
- The **selection criteria**: determine whether a Tenderer has the financial, technical and professional capacity necessary to carry out and perform the work;
- The **compliance criteria**: evaluate if the submitted Tender is compliant with the principles of PCP, public financing, place of performance, research integrity and security;
- The **award criteria**: award contracts to the best-ranked Tenders.

## 4.2 Exclusion criteria

The purpose of the exclusion criteria is to determine the situation of the Suppliers and subcontractors. The situation of the economic operator will be assessed based on responses to questions in Form B on a pass/fail basis.

A Supplier will be excluded from further participation in the AI4Cities PCP if it, or any subcontractor on whose resources it relies upon in this procurement, does not meet one or several of the exclusion criteria.

The exclusion criteria are as follows:

| EXCLUSION CRITERIA                        | REQUIRED EVIDENCE   |
|---|---|
| A) Conflict of Interest                   | A) a declaration of honour stating the absence of Conflict of Interest, Bankruptcy and professional misconduct or Criminal offences<br><br>(Form B) |
| B) Criminal offences                      |   |
| C) Bankruptcy and professional misconduct |   |

Suppliers must confirm, by signing a declaration of honour, that they are not subject to any of the exclusion criteria listed below.

Suppliers that do not comply with these criteria will be excluded.

#### 4.2.1 Conflict of interest (A)

Suppliers that are subject to a conflict of interest may be excluded. If there is a potential conflict of interest, Suppliers must immediately notify the lead procurer in writing.

A conflict of interest covers both personal and professional conflicts.

Personal conflicts are any situation where the impartial and objective evaluation of tenders and/or implementation of the contract is compromised for reasons relating to economic interests, political or national affinity, family, personal life (e.g. family of emotional ties) or any other shared interest.

Professional conflicts are any situation in which the Supplier's (previous or ongoing) professional activities affect the impartial and objective evaluation of tenders and/or implementation of the contract.

If an actual or potential conflict of interest arises at a later stage (i.e. during the implementation of the contract), the Supplier must contact the lead procurer, who is required to notify the EU and to take steps to rectify the situation. The EU may verify the measures taken and require additional information to be provided and/or further measures to be taken.

Suppliers shall - for each of the PCP phases - explicitly confirm that they are not subject to any of the exclusion criteria listed above and shall sign a declaration of honour stating the 'absence of a conflict of interest'.

See Declaration confirming the absence of any conflict of interest in Form B, Part B.

#### 4.2.2 Criminal offences (B)

Suppliers must confirm, by signing a declaration of honour, that they are not subject to any of the exclusion criteria listed below, see Form B, Part A1:

- Criminal offences referred to in Article 2 of Council Framework Decision 2008/841/JHA of 24 October 2008 on combating organized crime;
- Corruption as defined in Article 3 of Council Act of 26 May 1997 preparation on the basis of Article K.3.2 c Treaty on European Union, the Convention on the fight against corruption involving officials of the European Communities or officials of Member States, and Article 3.1 Council Joint Action 98/742/JHA of 22 December 1998 adopted by the Council on the basis of Article K.3 of the Treaty on European Union, on corruption in the private sector;
- Fraud within the meaning of Article 1 of the Convention drawn up on the basis of Article K.3 of the Treaty on European Union for the Protection of the Communities' financial interests;
- Money laundering as defined in Article 1 of Council Directive 91/308/EEC of 10 June 1991 on measures to prevent the financial system for money laundering, amended by European Parliament and Council Directive 2001/97/EC;
- Terrorist offences or offences linked to terrorist activities as defined in Articles 1 and 3 of Council Framework Decision of 13 June 2002 on combating terrorism;
- Child labour and other forms of trafficking in human beings as defined in Article 2 of Directive 2011/36/EU of the European Parliament and of the Council of 5 April 2011 on preventing and combating trafficking in human beings and protecting its victims, and replacing Council Framework Decision 2002/629/JHA;
- Declared guilty of serious misrepresentation in supplying the information required under this Section or has not supplied such information.

If the Buyers Group becomes aware that a Supplier or a representative of the Supplier or subcontractor, under a judgment that has entered into final legal force has been sentenced for a criminal offence listed above, such Supplier or subcontractor, will be excluded from the AI4Cities PCP.



### 4.2.3 Bankruptcy and professional misconduct (C)

A Supplier will be excluded from participation if they:

- Are bankrupt or being wound up, are under compulsory administration or are the subject of a composition or have indefinitely stopped its payments or are subject to a prohibition on conducting business;
- Are the subject of proceedings for a declaration of bankruptcy, for an order for compulsory winding up or administration by the court or composition or any other similar proceedings;
- Have been convicted by a judgment which has the force of res judicata for an offence relating to professional practice;
- Have been guilty of grave professional misconduct and the procuring agencies can prove this;
- Have not fulfilled its obligations relating to social insurance charges or tax in its own country;
- In some material respect has failed to provide information requested or provided incorrect information required pursuant to this invitation to tender document.

## 4.3 Selection criteria

The purpose of the selection criteria is to determine whether a Supplier has the financial, economic, technical and professional capacity necessary to carry out and perform the work.

Each Supplier shall - **for each of the PCP phases** - describe, present and confirm the required references and competences in Form C. Should there be any doubt as to any of these criteria, the Supplier may be requested to provide additional information.

These selection criteria will be evaluated on a pass/fail basis.

“Fail” means that the evidence given does not provide sufficient indication of the Supplier’s expertise, ability and/or equipment to meet the project’s objectives. Any Supplier that cannot meet all requirements in this Section will not be selected.

The selection criteria are as follows:

#### **Ability to perform R&D up to original development of the first products or services and to commercially exploit the results of the PCP, including intangible results in particular IPRs**

Suppliers must have:

- the capacity, tools, material and equipment to:
  - carry out research and lab prototyping
  - produce and supply a limited set of first products or services and demonstrate that these products or services are suitable for production or supply in quantity and to quality standards defined by the procurers
- the financial and organisational structures to
  - manage, exploit and transfer or sell the results of the PCP (*including tangible and intangible results, such as new product designs and IPRs*)
  - generate revenue by marketing commercial applications of the results (*directly or through subcontractors or licensees*).

To do so, he is asked to provide the following evidence:



**A description of relevant reference and/or previous projects** which reflect the competences and capacity of the Tenderer in the different phases and domains of the AI4Cities project (cfr. research, development, prototyping, testing and commercialisation).

These references can be provided based on previous projects of the Supplier or one or several of the consortium partners and/or subcontractors who will be working on the project. These projects should be completed in the last 5 years. Examples of areas in which references can be provided: energy projects, mobility projects, AI and large scale data projects.

In describing these reference projects Suppliers will provide:

- Proof of the capacity, tools, material and equipment to carry out research, development, testing and lab prototyping, as well as proof of the capacity to produce and supply a limited set of first products or services, and demonstrate that these products or services are suitable for production or supply in quantity and to quality standards defined by the procurers (cfr. a prototype)
- Proof he is able to manage, exploit and transfer or sell the results of the PCP (including tangible and intangible results, such as new product designs and IPRs) and generate revenue by marketing commercial applications of the results (directly or through subcontractors or licensees)
- Proof he is able to provide the necessary competences to complete this project.

Therefore, each Supplier will provide a number of **CVs of key personnel and competences** which he deems necessary to complete the project.

**Confirm that the Supplier has a Business Continuity / Disaster Recovery / Risk Management plan** that ensures that the described services are delivered in the event of a disruption affecting its business, and ensures continuity of supply / service from its critical suppliers.

**Confirm whether the Supplier will take the appropriate level of insurance cover** if he is to be successful in winning the contract.

The Supplier needs to keep in mind that the submitted CVs and references will have to showcase their abilities in all domains and phases of the AI4Cities project.

## 4.4 Compliance criteria

The purpose of the compliance criteria is to determine whether the Tender is compliant with the principles of PCP, public financing, place of performance, research integrity and security.

These compliance criteria will be evaluated on a pass/fail basis, according to the responses to the questions in Form D. The offers for each phase will be evaluated against these criteria.

Suppliers and their Tenders must comply with all of the following on/off award or compliance criteria (this also applies to the call-off for Phases 2 and 3):

| COMPLIANCE CRITERIA  | EVIDENCE              |
|--|-----------------------|
| A) Compliance with the definition of R&D services                                      | See explanation below |
| B) Compatibility with other public financing   | See explanation below |
| C) Compliance with the requirements regarding the place of performance of the contract | See explanation below |
| D) Compliance with ethics requirements   | See explanation below |

|  |                       |
|--|-----------------------|
| E) Compliance with security requirements | See explanation below |
|--|-----------------------|

Tenders that do not comply with these criteria will be excluded.

#### 4.4.1 Compliance with the definition of R&D services

Tenders must be defined solely within the scope of R&D activities (see definition below). Tenders that go beyond the provision of R&D services will be excluded.

R&D covers fundamental research, industrial research and experimental development, as per the definition given in the [EU R&D&I state aid framework](#)<sup>2</sup>. It may include exploration and design of solutions and prototyping up to the original development of a limited volume of first products or services in the form of a test series. Original development of a first product or service may include limited production or supply in order to incorporate the results of field-testing and to demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards<sup>3</sup>.

R&D does not include quantity production or supply to establish commercial viability or to recover R&D costs. It also excludes commercial development activities such as incremental adaptations or routine or periodic changes to existing products, services, production lines, processes or other operations in progress, even if such changes may constitute improvements. The purchase of commercial volumes of products or services is not permitted.

The definition of services means that the value of the total amount of products covered by the contract must be less than 50 % of the total value of the PCP framework agreement.

The following evidence of compliance is required:

- the financial part of the offer for the framework agreement must provide binding unit prices for all foreseeable items for the duration of the whole framework agreement
- the financial part of the offer for each phase must give a breakdown of the price for that phase in terms of units and unit prices for every type of item in the contract, distinguishing clearly the units and unit prices for items that concern products
- the offers for all 3 phases may include only items needed to address the challenge in question and to deliver the R&D services described in the request for tenders
- the offers for all 3 phases must offer services matching the R&D definition above
- the total value of products offered in Phase 1 in respect to Phase 2 must be less than 50 % of the value of the Phase 1 in respect to Phase 2 contract. The total value of products offered in Phase 3 must be so that the total value of products offered in all phases (1,2 and 3) is less than 50% of the total value of the PCP framework agreement.

Suppliers shall - for each of the PCP phases - provide a financial offer. See Form F.

#### 4.4.2 Compatibility with other public financing

Tenders that receive public funding from other sources will be excluded if this leads to double public financing or an accumulation of different types of public financing that is not permitted by EU legislation, including EU state aid rules.

Suppliers shall - for each of the PCP phases - sign a declaration of honour stating the 'absence of other incompatible public financing'. See Form D.

<sup>2</sup> See Point 15 of the [Commission Communication on a framework for state aid for research and development and innovation](#) (C(2014) 3282).

<sup>3</sup> See Article XV(1)(e) [WTO GPA 1994](#) and the Article XIII(1)(f) of the [revised WTO GPA 2014](#).



### 4.4.3 Compliance with requirements relating to the place of performance of the contract

Tenders will be excluded if they do not meet the following requirements relating to the place of performance of the contract:

- at least 50% of the total value of activities covered by each specific contract for PCP Phase 1 and 2 must be performed in the EU Member States or in H2020 associated countries. The principal R&D staff working on each specific contract must be located in the EU Member States or H2020 associated countries.\*

\*UK counts as a Horizon2020 associated country. See more on section 1 of this document.

- at least 50% of the total value of activities covered by the framework agreement (*i.e. the total value of the activities covered by Phase 1 + the total value of the activities covered by Phase 2 + the total value of the activities covered by Phase 3*) must be performed in the EU Member States or H2020 associated countries. The principal R&D staff working on the PCP must be located in the EU Member States or H2020 associated countries.

This 50% rule applies per Supplier. If suppliers apply as a consortium, the 50% rule applies thus to the consortium as a whole, not to each individual supplier within a consortium.

The percentage is calculated as the part of the total monetary value of the contract that is allocated to activities performed in the EU Member States or in other countries associated to Horizon 2020. All activities covered by the contract are included in the calculation (*i.e. all R&D and operational activities that are needed to perform the R&D services, e.g. research, development, testing and certifying solutions*). This includes all activities performed under the contract by suppliers and, if applicable, their subcontractors.

The principal R&D staff are the main researchers, developers and testers responsible for leading the R&D activities covered by the contract.

The countries associated to Horizon 2020 are those listed as associated countries in the Participant Portal [Online Manual](#).

The following evidence of compliance is required:

- the financial part of the offer must provide binding unit prices for all foreseeable items for the duration of the whole framework agreement and give a breakdown of the price for the current phase in terms of units and unit prices (*hours and unit price per hour*), for every type of item in the contract (*e.g. junior and senior researchers*)
- a list of staff working on the specific contract (*including for subcontractors*), indicating clearly their role in performing the contract (*i.e. whether they are principal R&D staff or not*) and the location (*country*) where they will carry out their tasks under the contract
- a confirmation or declaration of honour that, where certain activities forming part of the contract are subcontracted, subcontractors will be required to comply with the place of performance obligation to ensure that the minimum percentage of the total amount of activities that has to be performed in the EU Member States or in countries participating in Horizon 2020 is respected

Suppliers shall - for each of the PCP phases - provide a financial offer. See Form F.

### 4.4.4 Ethics and research integrity

Tenders will be excluded if they:

- do not comply with the following rules:



- ethical principles (including the highest standards of research integrity, notably as set out in the European Code of Conduct for Research Integrity<sup>4</sup>, and, in particular, avoiding fabrication, falsification, plagiarism and other research misconduct)
- applicable international, EU and national law
- include plans to carry out activities in a country outside the EU if they are prohibited in all Member States
- include activities that do not focus exclusively on civil applications

In Phase 3, tenderers will need to comply, if applicable, with the following ethics requirements:

- The procedures and criteria that will be used to identify/recruit research participants must be provided.
- Detailed information must be provided on the informed consent procedures that will be implemented for the participation of humans. The applicant should also detail measures to ensure that, in the case of company employees taking part as participants in testing, their consent is fully voluntary and informed, and not unduly influenced by concerns for their future employment.
- Templates of the informed consent forms and information sheet must be submitted.
- The applicant must clarify whether children and/or adults unable to give informed consent will be involved. If so, justification for their participation must be provided as well as clarification how consent/assent will be ensured.
- The applicant must clarify whether vulnerable individuals/groups will be involved. Details must be provided about the measures taken to prevent the risk of enhancing vulnerability/stigmatisation of individuals/groups.
- Copies of ethics approvals for the research with humans of the relevant Ethics Committee or Body must be submitted on request.
- Copies of opinion or confirmation by the competent Institutional Data Protection Officer and/or authorization or notification by the National Data Protection Authority must be submitted (whichever applies according to the EU Data Protection Laws (EC Directive 95/46, Regulation (EU) 2016/679, Directive (EU) 2016/680) and the national law).
- Detailed information must be provided on the procedures that will be implemented for data collection, storage, protection, retention and destruction and confirmation that they comply with national and EU legislation (including the new data protection laws that came into force in May 2018 (Regulation (EU) 2016/679 and Directive (EU) 2016/680).
- Templates of the informed consent forms and information sheet must be submitted.
- The applicant must ensure that appropriate health and safety procedures conforming to relevant local/national guidelines/legislation are followed for staff involved in this project and provide detailed descriptions on the safety protocols and methods (incl. technical) to be applied during the testing activities.
- Respective certificates/authorisations should be provided, where relevant, for any dual-use items used in the final solution.
- A risk assessment with elaboration on the applicable legal requirements and measures to prevent misuse must be provided.
- The applicants should give details of how they will address the possible social and economic impacts of the research and its results on future employment patterns for workers in the sector and what measures could be proposed to mitigate possible loss of jobs for them. Such considerations can be included in works within task T5.3 Policy roadmap and procurement guide for future uptake of AI4Cities results and be summarised

<sup>4</sup> The [European Code of Conduct for Research Integrity](#) of ALLEA (All European Academies).



as a part of deliverable D5.6: Policy paper. They can also be incorporated in the management/dissemination and communication activities of the project.

Before starting the particular task that raises ethical issues, Suppliers must provide a copy of any ethics committee opinion required under national law, and any notification or authorisation for activities raising ethical issues required under national law. In addition, if the tender involves activities that raise ethical issues, the Supplier must submit an ethics self-assessment (see the guidance for EU grant beneficiaries [How to complete your ethics self-assessment](#)).

Call-offs for Phases 2 and 3 may request that this information be updated in the offers submitted for these phases.

#### 4.4.5 Security

Tenders will be excluded if they do not comply with EU, national and international law on dual-use goods or dangerous materials and substances.

Tenders and the results of the executed work must not contain any classified information.

If the output of activities or results proposed in the tender raise security issues or use EU-classified information, the Supplier must show that these issues are being handled correctly. In such a case, Suppliers are required to ensure and to provide evidence of the adequate clearance of all relevant facilities. They must examine any issues (*such as those relating to access to classified information or export or transfer control*) with the national authorities before submitting their offer. Tenders must include a draft security classification guide (SCG), indicating the expected levels of security classification.

If necessary for the tender procedure or for performing the contract itself, Suppliers will be requested to ensure appropriate security clearance for third parties (*e.g. for personnel*).

Call-offs for Phases 2 and 3 may request that this security information be updated in the offers submitted for that phase.

Before starting the particular task that raises security issues, Suppliers must provide a copy of any export or transfer licences required under EU, national or international law.

The framework agreement and/or the specific contracts contain a provision on security.

For information on security, see the guidance for EU grant beneficiaries: [Guidelines for the handling of classified information in EU research projects](#).

Should there be any doubt as to any of these criteria, Suppliers may be requested to provide additional information.

## 4.5 Award criteria

### 4.5.1 Weighted award criteria

In Tender Document 2, the Functional and non-functional Specifications for each phase of the PCP are described in chapters 3 and 4.

The AI4Cities partners do not expect Suppliers to already have all these features in place when submitting their tender; this work is part of the R&D process. In the Technical Offer (via Form E), Suppliers need to make clear how they intend to achieve the must haves and (if any) how they will implement the nice to haves. These explanations will be appraised by the Technical Evaluation Committee, assisted by a panel of external experts.

The Technical offer will not be evaluated on a pass/fail basis: failure to (sufficiently) describe the “must haves” are therefore not a reason to be excluded from this tender, but will merely lead to lower evaluation scores.

The evaluation will be assessed based on the following criteria. The model Appendix 3 “Scoring Model for the Award Criteria” will be used to assess and score the extent to which a Tender meets the award criteria.



## Award criteria Phase 1: Solution Design

| WEIGHTED AWARD CRITERIA  | MAX. POINTS | THRESHOLDS | WEIGHTING  |
|--|-------------|------------|------------|
| <b>Functional criteria</b>   |             |            | <b>40%</b> |
| FR1): CO2 Emissions Reduction  | 55          | 30         |            |
| FR2): Use of AI  | 30          | 18         |            |
| FR3): Technical Innovativeness   | 15          | 7          |            |
| <i>Total</i>   | <i>100</i>  |            |            |
| <b>Project management criteria</b>   |             |            | <b>20%</b> |
| PM1): Feasibility of the Project plan and schedule, including methodology, risk management and quality assurance                 | 50          | 25         |            |
| PM2): Composition of the project team  | 50          | 25         |            |
| <i>Total</i>   | <i>100</i>  |            |            |
| <b>Non-functional criteria</b>   |             |            | <b>20%</b> |
| NFR1): Impacts on City and Citizens  | 80          | 20         |            |
| NFR2): Disruptiveness  | 20          | 0          |            |
| <i>Total</i>   | <i>100</i>  |            |            |
| <b>Commercial feasibility</b>  |             |            | <b>10%</b> |
| CF1): Completeness, sense of management. Sense of reality and feasibility of the principles for licensing, pricing, distribution | 100         | 50         |            |
| <i>Total</i>   | <i>100</i>  |            |            |
| <b>Price</b>   |             |            | <b>10%</b> |
| P1): Binding contract price for carrying out the work in the present phase   | 25          |            |            |
| P2): Indicative price for the work in all three PCP phases, incl. the present phase (total price)                                | 75          |            |            |
| <i>Total</i>   | <i>100</i>  |            |            |

## Award criteria Phase 2: Prototyping and Lab testing

| WEIGHTED AWARD CRITERIA   | MAX. POINTS | THRESHOLDS | WEIGHTING  |
|---|-------------|------------|------------|
| <b>Functional criteria</b>  |             |            | <b>50%</b> |
| FR1): CO2 Emissions Reduction   | 20          | 12         |            |
| FR2): Use of AI   | 20          | 12         |            |
| FR3): Technical Innovativeness  | 10          | 5          |            |
| FR4): Scalability   | 10          | 5          |            |
| FR5): Interoperability  | 15          | 8          |            |
| FR6): Usability   | 5           | 2          |            |
| FR7): Support and Maintenance   | 10          | 5          |            |
| FR8): Piloting  | 10          | 5          |            |
| <i>Total</i>  | <i>100</i>  |            |            |
| <b>Project management criteria</b>  |             |            | <b>15%</b> |
| PM1): Feasibility of the Project plan and schedule, including methodology, risk management and quality assurance  | 60          | 35         |            |
| PM2): Composition of the project team   | 40          | 20         |            |
| <i>Total</i>  | <i>100</i>  |            |            |
| <b>Non-functional criteria</b>  |             |            | <b>15%</b> |
| NFR1): Impacts on City and Citizens   | 60          | 10         |            |
| NFR2): Disruptiveness   | 20          | 0          |            |
| NFR3): Safety and Technical Maturity  | 20          | 10         |            |
| <i>Total</i>  | <i>100</i>  |            |            |
| <b>Commercial feasibility</b>   |             |            | <b>10%</b> |
| CF1): Completeness, sense of reality and feasibility of the commercialisation plan including the market analysis and risk management. Sense of reality and feasibility of the principles for licensing, pricing, distribution | 100         | 50         |            |
| <i>Total</i>  | <i>100</i>  |            |            |
| <b>Price</b>  |             |            | <b>10%</b> |
| P1): Binding contract price for carrying out the work in the present phase  | 25          |            |            |

|   |            |  |  |
|---|------------|--|--|
| P2): Indicative price for the work in remaining PCP Phases, incl. the present phase (total price) | 75         |  |  |
| <i>Total</i>  | <i>100</i> |  |  |

### Award criteria Phase 3: Piloting

| WEIGHTED AWARD CRITERIA   | MAX. POINTS | THRESHOLDS | WEIGHTING  |
|---|-------------|------------|------------|
| <b>Functional criteria</b>  |             |            | <b>40%</b> |
| FR1): CO2 Emissions Reduction   | 5           | 2,5        |            |
| FR2): Use of AI   | 5           | 2,5        |            |
| FR3): Technical Innovativeness  | 5           | 2,5        |            |
| FR4): Scalability   | 15          | 9          |            |
| FR5): Interoperability  | 15          | 9          |            |
| FR6): Usability   | 20          | 12         |            |
| FR7): Support and Maintenance   | 10          | 6          |            |
| FR8): Piloting  | 25          | 15         |            |
| <i>Total</i>  | <i>100</i>  |            |            |
| <b>Project management criteria</b>  |             |            | <b>10%</b> |
| PM1): Feasibility of the Project plan and schedule, including methodology, risk management and quality assurance  | 80          | 40         |            |
| PM2): Composition of the project team   | 20          | 10         |            |
| <i>Total</i>  | <i>100</i>  |            |            |
| <b>Non-functional criteria</b>  |             |            | <b>20%</b> |
| NFR1): Impacts on Society   | 50          | 10         |            |
| NFR2): Disruptiveness   | 10          | 0          |            |
| NFR2): Safety and Technical Maturity  | 20          | 10         |            |
| NFR3): Legal Maturity   | 20          | 10         |            |
| <i>Total</i>  | <i>100</i>  |            |            |
| <b>Commercial feasibility</b>   |             |            | <b>20%</b> |
| CF1): Completeness, sense of reality and feasibility of the commercialisation plan including the market analysis and risk management. Sense of reality and feasibility of the principles for licensing, pricing, distribution | 100         | 50         |            |
| <i>Total</i>  | <i>100</i>  |            |            |

| Price  |            |  | 10% |
|--|------------|--|-----|
| P1): Binding contract price for carrying out the work in the present phase | 100        |  |     |
| <i>Total</i>   | <i>100</i> |  |     |

See Tender Document 2: Functional Specifications for more details on each weighted award criterion.

#### Calculation example:

As per Appendix 3, Suppliers can receive the following scores for each of the criteria mentioned above:

If in Phase 1 the score is “good” (i.e. 7) on FR1, the supplier receives  $7 \text{ (score)} \times 55 \text{ (max. points)} / 10 \text{ (max score)} = 38,5$  points. This is above the 30-point threshold. The same approach is applied to FR1-FR3. Then all scores are added, leading to a total number of points for Functional Criteria. This is multiplied by the weighting percentage - in this case 40% - leading to a final score for that section. All sections are dealt with in this same way and all scores per section are added to come to one final end score.

The criteria list for Phases 2 and 3 can be subject to change. For example, additional sub-criteria may be added for the call-offs for Phases 2 and 3, as a way of making the award criteria more precise. The final list of criteria for these phases will be provided with the call-off documentation. Weight scores per selection criterion for Phases 2 and 3 are also subject to confirmation in the call-off documents.

Should there be any doubt as to any of these criteria, Suppliers may be requested to provide additional information.

Note:

The weighted award criteria must ensure that the procurer gets the best value for money. It is therefore not permitted to use either lowest price as the sole criteria, without taking quality into account, or highest quality as the sole criteria, without taking price into account.

All the award criteria will be evaluated by examining the written tender.

## 4.6 Evaluation procedure: opening of tenders & evaluation

### 4.6.1 Opening of tenders

Tender submission takes place electronically, via the [AI4Cities website](#). The Tenders will be opened on 1.3.2021 at 09:00 CET. Tenderers cannot be present.

For the opening of the Tenders, the Lead Procurer will appoint an **Administrative Evaluation Committee** composed of two representatives of Forum Virium Helsinki.

The Administrative Evaluation Committee will be in charge of opening the Tenders and checking their general administrative compliance with the conditions on the content and format of the Tender.

The Lead Procurer will receive the proposals filed before the corresponding deadline in each phase of the AI4Cities PCP Procedure, opening them in the term described in this Request for Tenders, as well as in the Specific Contract call-offs.

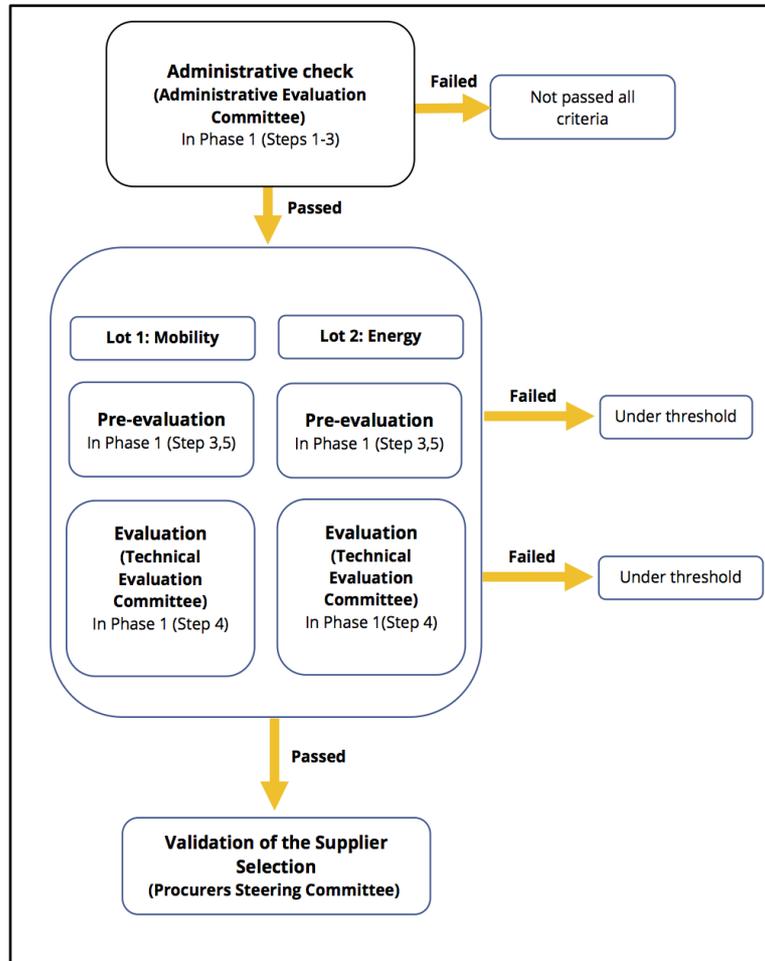
A report is compiled of this opening session. This report contains all the information about the opening. All submitted Tenders are automatically included in the report. The report is then signed by at least two representatives of the Administrative Evaluation Committee.

Tenders not complying with the formal and procedural requirements will be excluded from the Tender evaluation.



## 4.6.2 Evaluation Process

The evaluation process in Phase 1



**The evaluation process in Phase 1 will be conducted as follows:**

**Step 1** — Checking whether the exclusion criteria apply to the tenderer (pass/fail; based on Form B)

**Step 2** — For tenderers passing Step 1, assessing whether the tenderer has the capacities necessary to perform the contract, on the basis of the selection criteria (based on Form C)

**Step 3** — For tenderers passing Step 2, evaluating the tender based on the compliance criteria (pass/fail; based on Form D)

**Step 3.5** — If after step 3 there are more than 50 tenders left in a Lot (Mobility or Energy), the tenders in that Lot will be first evaluated by a pre-evaluation committee consisting of Buyers Group members. In pre-evaluation every Buyers Group member city will evaluate the solution based on the Executive Summary (in Form H) and give the solution a single score from 1 to 10. An average will be calculated from the scores and those passing the threshold of 5, (but a maximum of 45 tenderers per Lot, ranked based on their scores), will move on to step 4.

In case of a large number of tenders received, steps 1-3 and 3.5 can be done in parallel.

If after step 3, there are 50 or less tenders left in a Lot, the tenders in that Lot will move straight to step 4.

**Step 4** — For tenders passing Step 3 (and if necessary step 3.5), evaluating the tender based on the weighted award criteria by the Technical Evaluation Committee (Technical Offer, Form E).

Members of the Technical Evaluation Committee will independently and individually assess all Tenders. The more points a Tender scores in total, the higher it is ranked. Based on the evaluators' individual assessments, which are all equally weighted, a ranking of the Tenders will be made.

Tenders to the PCP Request for Tender, as well as the Tenders for the Phase 2 and 3 call-offs, will preferably be assessed and ranked by the same Technical Evaluation Committee. The Buyers Group and the Lead Procurer must evaluate the tenders and offers for the call-offs for Phases 2 and 3 jointly and must make a joint award decision. The AI4Cities Buyers Group holds the right to replace evaluators during the project provided that the replacement evaluator has the necessary skills and represents the same member of the Buyers Group.

The Buyers Group have the right to ask external experts with specific expertise on (elements of) the AI4Cities challenges for support. They will, for example, have special expertise in Artificial Intelligence, energy, transportation and traffic, and business development.

The **Procurers Steering Committee (PSC)** will validate the successful tenderers to be awarded a contract in each of the three phases.

### 4.6.3 Technical Evaluation Committee and Procurers Steering Committee

For the evaluation of the Tenders, the Lead Procurer will appoint the **Technical Evaluation Committee**, composed of an odd number of people, to evaluate the Tenders based on the award criteria. The Technical Evaluation Committee will be composed by representatives of all AI4Cities' Buyers Group in an equal and balanced way.

The evaluation of the Technical Offer will be done based on technical and non-technical award criteria and according to the scoring model (see Appendix 3 - Scoring Model for the Award Criteria to this Request for Tenders).

The Financial Section of Tenders will be evaluated if the tender passes the thresholds of the Award Criteria. The Financial Offer (Form F) will be assessed on the basis of the formula foreseen in the scoring model (Appendix 4 - Scoring Model for the Price of the Request for Tenders). The price that will be evaluated is the Actual Price.

If deemed necessary, an online hearing will take place, where Suppliers will be asked to clarify aspects of their Tender.

The **Procurers Steering Committee (PSC)** will validate all key steps to be taken and make all decisions concerning the R&D pilots - such as deciding:

- a) the specific challenge in the invitation to tender documents, and
- b) which companies to awarding contracts and which companies to move into next phases

### 4.6.4 Evaluation of Phases 2 and 3

The tenders will be evaluated on the weighted award criteria (Technical Offer, Form E). The Form E for Phases 2 and 3 will be published in the call-offs of those Phases.

The criteria for evaluating the tenders in Phases 2 and 3 are shown in the award criteria tables in the section 4.5.1 of this document and elaborated in TD2. The method for evaluating the tenders in Phases 2 and 3 will be the same as the method used in evaluating the original tenders as set out in this chapter, but may be elaborated or developed in further detail within those frames. The weighting of each award criterion may differ from the initial weight in Phase 1 or Phase 2.

For Phase 2 and Phase 3, the composition of the Evaluation Committee and evaluation process up to the award decision will, as much as possible, remain the same as for Phase 1. Nonetheless, the evaluation process may be described in more detail in the Call-offs of Phase 2 and 3.

## 4.7 End of Phases evaluation

Solutions will be evaluated in a non-discriminatory and transparent manner. In order to achieve this, the AI4Cities project structure has foreseen a Technical Evaluation Committee of the Buyers Group.

The Buyers Group will evaluate the technical and non-technical milestones and deliverables comprised in the End of Phase Reports. All Milestones and Deliverables will be scored according to the stipulations in TD1 - Conditions of the contracts, TD2 Functional Specifications, and the Scoring Model for the Award Criteria and end of Phases' Evaluation in Appendix 3. The weights for the evaluation of the Phase 1 are the same as those of the Contract Awarding. The weights in Phase 2 and Phase 3 will be determined in the Call-offs.

The End-of-Phase evaluation is intended to assess and score the developed solutions. The End-of-Phase evaluation will decide upon the Satisfactory and/or Successful completion of the Phase. A consolidated End-of-Phase Evaluation Report and a final Supplier ranking will be approved by the Procurers Steering Committee and will be delivered to the European Commission.

The AI4Cities consortium will provide the end of Phase templates to all selected Suppliers within 1 month after the start of each phase. These elaborate on the Specific Deliverables and Evaluation of phases. They provide guidelines to the Suppliers in order to prepare for a successful delivery of the Phase Results and the consequent Evaluation process.

**All** competing Suppliers will receive the call-off for the next phase and are expected to provide an offer based on these call-off documents as a part of the End-of-Phase report. However, the **successful** completion of the phase, including the final report validation and the solution approval, is a **prerequisite** to have your tender for the next phase evaluated.

Payments corresponding to each PCP phase will be subject to the **satisfactory** completion of the deliverables and milestones for that phase. Satisfactory completion will be assessed by the Technical Evaluation Committee. They will take the final decision on the acceptance or rejection of the milestones/deliverables/tests. Satisfactory completion in each of the phases does not mean successful completion. For more explanation on and the difference between **satisfactory** completion and **successful** completion, please see sections 5.7 – 5.9 of this document.

## 4.8 Eligible tenderers, joint tenders and subcontracting

Participation in the tendering procedure is **open** on equal terms to **all types of organisations from any country**, regardless of their geographic location, size or governance structure.

Tenders may be submitted by a **single entity** or in collaboration with others. The latter can involve either submitting a **joint tender** or subcontracting, or a combination of the two approaches.

Participation in the **open market consultation** is not a condition for submitting a tender.

**Attention:** There will, however, be a requirement relating to the place of performance of the R&D services (see *below*).

For Phases 2 and 3, participation is limited to Suppliers that successfully completed the preceding phase.

Where it is stated that Suppliers are to comply with administrative instructions, those that do not will be excluded from further participation in the AI4Cities PCP.

### 4.8.1 Joint Tender or Tender submitted by a consortium

A Consortium (a combination of entities) may submit a joint Tender. Any type of natural or legal person (including non-profit entities properly registered such as universities) shall be entitled to submit a Tender either individually or by way of an association or consortium comprising several Suppliers, set up temporarily for the purposes of the AI4Cities PCP.

A joint Tender must specify the role, qualification and experience of each member of the consortium. A single authorized representative of the association or consortium, with sufficient powers to exercise the rights and comply with the obligations that arise from the AI4Cities PCP procedure shall be appointed and be mandated as the Lead Tenderer (further named as Tenderer). The Lead Tenderer shall sign the Tender and the contracts in the name and on behalf of all members, and shall be responsible for all aspects and execution of the contracts without prejudice to the existence of joint powers that they may grant for receiving and making payments of a significant amount.

All members of the consortium shall be jointly and separately bound to fulfil the terms of the contracts. The Lead Tenderer shall be mandated to act on behalf of the consortium for the purposes of the contracts and shall have the authority to bind the consortium. The composition of the consortium shall not be altered without the prior consent of the Lead Procurer. Any alteration in the composition of the consortium without the prior consent of the Lead Procurer may result in the termination of the contracts.

A consortium statement should be signed by all suppliers who have agreed to set up a team to participate jointly in the AI4Cities procedure, and to form a temporary Consortium of Suppliers which will comply jointly with the purposes of the PCP procedure and with the contracts. This should provide a statement from the supplier declaring that it is aware of the provisions set out in the Tender Documents (in particular in relation to IPRs).

Contact details of the Lead Tenderers must be stated in Form A. The names, circumstances and participation of the members of the association or consortium should be properly described.

## 4.8.2 Subcontracting

A subcontractor is a third party which has entered into an agreement on business conditions with one or more beneficiaries, in order to carry out part of the work of the project without the direct supervision of the beneficiary and without a relationship of subordination.

Subcontracting is permitted in each phase of the AI4Cities PCP procedure. No essential parts of the contracts can be subcontracted, nor the management of the PCP. According to Finnish legislation, the Act on the Contractor's Obligations and Liability when Work is Contracted Out (1233/2006) will apply. This implies that the service provider must supply to the customer during the contract period, at twelve months intervals, a certificate of tax payment or a tax liability certificate, as well as a certificate on the taking out of pension insurance and the payment of pension insurance premiums.

The Supplier shall state in the Tender Submission Form (Form A) which part of the PCP obligations and contract performance, if any, is intended to be subcontracted to other Suppliers. The Supplier shall describe its approach in selecting and managing its subcontractors. Also in this form, the Supplier will identify who the subcontractor(s) is/are and which services they will deliver in the project. The Supplier shall provide a statement from the subcontractor declaring that it is aware of the provisions set out in the Tender Documents, that it meets the qualification requirements for the subcontracted service, and that it has its resources at the Supplier's disposal for the full duration of the contract.

The Suppliers remain fully liable to the procurers for the performance of the contract. This is the reason why subcontracts must reflect the rules of the H2020 grant agreement, including as relates to the place of performance, the definition of R&D services, confidentiality, results and IPRs, the visibility of EU funding, conflicts of interest, language, obligation to provide information and keep records, audits and checks by the EU, the processing of personal data, liability for damages and ethics and security requirements.

## 4.8.3 Replacement of a subcontractor

If, subsequently, the Supplier needs to change or add new subcontractors (Phases 1 through 3), these new subcontractors must provide a statement with the same content described in the above section and following the same form. Nevertheless, no change in subcontractor shall be possible if:

- It leads, according to an independent legal report, to IPR/confidentiality issues (i.e. if associated participants selected for Phase 1 decide to continue as subcontractor for another Supplier)
- It does not allow the Supplier to maintain the technical and financial capacity required



Notwithstanding the grant of any subcontract, the Supplier remains responsible to the Buyers Group for the performance and observance of all its obligations under the Framework Agreement and the Specific Contracts and for the consequences of any negligent acts of the subcontractors.

The execution of the tasks assigned to a subcontractor shall not be the subject of further subcontracting.

## 5. Miscellaneous

### 5.1 Language

All communication (relating to either the tender procedure or the implementation of the contract) must be carried out in English.

Tenders as well as offers for Phases 2 and 3 call-offs must be submitted in English.

Deliverables must be submitted in English.

Currently, no special language requirements are foreseen for the field testing in Phase 3. Possible changes in this will be communicated in the call-off documents for Phase 3.

### 5.2 Tender constitutes binding offer

A signed tender will be considered to constitute a firm, irrevocable, unchangeable and binding offer from the tenderer.

The signature of an authorised representative will be considered as the signature of the tender (and will be binding on the tenderer or, for joint tenders, the group of tenderers).

### 5.3 Questions and unauthorized communication

The official channel for questions is [info@ai4cities.eu](mailto:info@ai4cities.eu). The Q&A from the open market consultation can be found on <https://ai4cities.eu>.

For further questions, you may contact the lead procurer Forum Virium Helsinki via email ([info@ai4cities.eu](mailto:info@ai4cities.eu)) in English up until 10.2.2021 at 17:00 CET. Any questions received after this deadline will not be answered. . With each question the correct document reference (Tender Document 1; Form E...) and page number should be clearly stated.

Questions and answers will be presented in an anonymised Q&A document that will be published on <https://ai4cities.eu> in English (final version planned for 15.2.2021).

Unless otherwise instructed, please do not use any other contact addresses or means or contact any other persons in connection with this procurement.

#### 5.3.1 Request for Tenders webinars

Two webinars will be organised (on 15.12.2020 and 15.1.2021) to clarify the Call for Tender Documents, the procedure and to answer potential Suppliers' questions or requests for clarification.

All questions or requests for clarification must be received by Forum Virium Helsinki no later than 10.1.

In addition to the webinars there will be a tender writing webinar in January 2021.

For Phases 2 and 3, the answers will not be published, but distributed to all suppliers that successfully completed the previous phase.



All other contacts (or attempted contacts) will be considered unauthorised and may lead to the exclusion of your tender.

## 5.4 Confidentiality

Tenderers must keep confidential any information obtained in the context of the tender procedure (*including EU-classified information*)<sup>5</sup>.

## 5.5 Contract implementation

Successful Suppliers will be requested to sign both a framework agreement and specific contracts for Phases 1, 2 and 3.

## 5.6 Monitoring

During each phase, contract implementation will be monitored periodically and reviewed against the expected outcomes (*milestones, deliverables and output or results*) for the phase (see 'Expected Outcomes' in sections 2.2 - 2.4 and in Appendix 6).

Each Supplier will be assigned a main contact person (their supervisor) from the monitoring team appointed by the procurers. The supervisor of each Supplier will be communicated with after the award of the Contract.

There will be regular monitoring meetings between supplier and the supervisor/monitoring team. The supervisor will receive the support of a monitoring team if needed with the necessary expertise. Each meeting or visit will follow the same evaluation criteria and procedures.

For the number of monitoring meetings and the locations see Table of Expected Outcomes in sections 2.2 - 2.4. The supervisor, or any party designated by it, is entitled to visit the premises of the Supplier and his subcontractor(s).

Each Supplier must cover its own costs and thus foresee appropriate personnel and travel budgets in its offer for these monitoring meetings.

The monitoring team will provide feedback to Suppliers after meetings or visits. Detailed information on the role of the supervisor will be provided after the awarding of the contract.

## 5.7 Payments based on satisfactory completion of milestones and deliverables of the phase

Satisfactory completion will be assessed according to the following requirements:

- if the work corresponding to that milestone/deliverable has been carried out
- if a reasonable minimum quality has been delivered
- if the reports have been submitted on time
- if the monies/resources have been allocated to the planned objectives

<sup>5</sup> Commission Decision [2015/444/EC, Euratom](#) of 13 March 2015 on the security rules for protecting EU-classified information.

- if the monies/resources have been allocated and the work has been carried out according to the on/off award criteria (place of performance, public funding and R&D definition criteria) and
- if the work has been carried out in compliance with the provisions of the contract (including in particular verification if the Supplier has duly protected and managed IPRs generated in the respective phase).

'Reasonable minimum quality' of a report means that:

- the report can be read by somebody who is familiar with the topic, but not an expert
- the report gives insight in the tasks performed in and the results
- the report is made using the end of phase report form or (if applicable) the milestone report form and the requirements of this form have been met

'Reasonable minimum quality' of a demonstration (for Phase 2 or 3) means:

- the demonstration can be understood by somebody who is familiar with the topic, but not an expert (for instance, somebody with operational but not technical knowledge)
- the demonstration shows how the innovation works, how it can be used and (if applicable) how it is operated and maintained
- the demonstration is accessible to parties appointed by the procurers, unless these are direct competitors of the Supplier

Satisfactory completion in each of the phases does not mean successful completion. A PCP could, for instance, be satisfactorily completed even if it concludes that the innovation is not feasible. See also Section 5.9 on "Eligibility for the next phase based on successful completion of the phase".

The assessment will consider the efforts made by Suppliers to take into account the feedback from the supervisor or the monitoring team. The Lead Procurer will approve or reject the submitted deliverables as 'satisfactory' within 30 calendar days of their submission.

Where the Evaluation Committee judges the completion of deliverables or milestones to be unsatisfactory, the Lead Procurer may decide to reduce or withdraw payments for that deliverable and/or may terminate the Contract.

Invoices must be submitted to the Lead Procurer. The details regarding the payments by the Lead Procurer are set out in the Framework Agreement.

Suppliers' invoices must provide:

- a **price breakdown** showing the price for R&D services and the price for supplies of products (in order to demonstrate compliance with the definition of R&D in on/off award criterion A, Form D)
- a **price breakdown** showing the location or country in which the different categories of activities were performed (e.g. *x hours of senior researchers in country L at y euro/hour, a hours of junior developers in country M at b euro/hour*) (in order to demonstrate compliance with the requirement relating to the place of performance in on/off award criterion C, Form D).

## 5.8 Payment schedule

Payment for the Supplier's Services for each phase will be made according to the following provisions:

### (i) Payment schedule for Phase 1 will be:

100% of the price offered by the Supplier shall be paid by the date in which the Lead Procurer declares the satisfactory completion of Phase 1, as described in Expected outcomes of the Request for Tenders Expected Outcomes.



**(ii) Payment schedule for Phase 2 will be:**

25% of the price offered by the Supplier shall be paid after signing the contract for Phase 2.

75% of the price offered by the Supplier shall be paid by the date in which the Lead Procurer declares the satisfactory completion of Phase 2.

**(iii) Payment schedule for Phase 3 will be:**

25% of the price offered by the Supplier shall be paid after signing the contract for Phase 3.

25% of the price offered by the Supplier shall be paid when the Lead Procurer declares the satisfactory completion of the Phase 3 Mid-term follow-up, as described in Expected outcomes of the Request for Tenders (section 2.2 – 2.4): M3.3) Mid-term follow-up and D3.3) Progress-report (document and demonstration).

50% of the price offered by the Supplier shall be paid by the date in which the Lead Procurer declares the satisfactory completion of Phase 3.

Payments will be made to the bank account provided by the Supplier within 30 days from the date of receipt, by the Lead Procurer, of a correct and approved invoice.

## 5.9 Eligibility for the next phase based on successful completion of the phase

Eligibility for participation in the next phase will be subject to *successful* completion of the current phase.

Successful completion of a phase will be assessed by the assessment committee against the following requirements:

- if all milestones have been successfully completed
- if the R&D results meet the minimum functionality/performance requirements of the challenge description (i.e. the minimum quality/efficiency improvements which the procurers set forward for the innovative solutions to achieve)
- if the results of the R&D are considered to be promising

'Promising' means:

- for Phase 1, that the feasibility is convincing
- for Phase 2, that the feasibility, the applicability in an operational setting and the potential impact of the solution are convincing

Note that there is a difference between **satisfactory completion** (requirement for payment) and **successful completion** (prerequisite for advancing from one phase to the next).

**Finalisation of Phase 3: Possible follow-up PPI procurements**

Follow-up PPI procurements for a *limited* set of prototypes and/or test products developed during this PCP procurement (*'limited follow-up PPIs'*) may be awarded by negotiated procedure (*with invitation to at least 3 potential providers, including those that successfully completed this PCP*).

Follow-up PPI procurements for a *commercial volume* of the innovative solutions developed in this PCP procurement will be subject to a new call for tenders.



## 5.10 Cancellation of the tender procedure

The procurers may, at any moment, cease to proceed with the tender procedure and cancel it. The procurers reserve the right not to award any contracts at the end of the tender procedure. The procurers are not liable for any expense or loss the tenderers may have incurred in preparing their offer.

## 5.11 Procedures for appeal

Decisions taken with regard to the selection of Suppliers, awarding them with Phases 1, 2 or 3 or excluding them from the AI4Cities PCP Procedure can be challenged by means of an administrative remedy within a period of 5 days upon the formal notification of the decision.

A decision dismissing the appeal could be challenged before the District Court of Helsinki.

Any dispute or claim arising out of or in connection with the execution of the Framework Agreement or of the Phases contracts entered into between the Buyers Group and the Supplier shall be heard by the District Court of Helsinki.

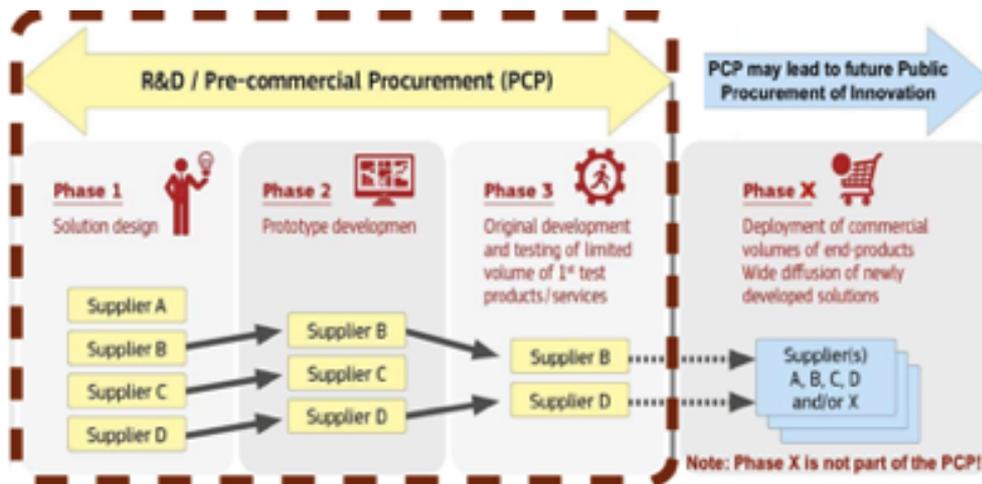


## Appendices

### Appendix 1 - General context & background

This procurement is a **pre-commercial procurement (PCP)**.

PCP means that public procurers challenge innovative players on the market, via an open, transparent and competitive process, to develop new solutions for a technologically demanding mid- to long-term challenge that is in the public interest and requires new R&D services.



PCP is characterised by the following **features**:

#### **Competitive development in phases to identify the solutions offering the best value for money.**

PCP targets situations that require radical innovation or R&D and for which there are typically no solutions on or close to the market yet. Different competing providers may have different ideas for solutions to the problem. As R&D is yet to take place, there is not yet any proof as to which of these potential alternative solutions would best meet customers' needs.

PCP, therefore, awards R&D contracts to a number of competing suppliers at the same time, in order to compare different approaches to solving the problem. It thus offers innovators an opportunity to show how well their solution compares with others. It also allows a first customer test reference to be obtained from countries of the procurers that will test the solutions.

The R&D is split into **3 phases** (1-solution design, 2-prototype development, and 3-Field testing of a limited set of 'first' products or services). Evaluations after each phase progressively identify the solutions that offer the best value for money and meet the customers' needs. This phased approach allows successful suppliers to improve their offers for the next phase based on lessons learnt and feedback from procurers in the previous phase. Using a phased approach with gradually growing contract sizes per phase also makes it easier for smaller companies to participate in the PCP and enables SMEs to grow their business step-by-step with each phase.

Depending on the outcome of the PCP, procurers may or may not decide to follow-up the PCP with public procurement to deploy the innovative solutions (PPI), represented in the figure above as Phase X.

#### **Public procurement of R&D services**

PCP addresses mid- to long-term public procurement needs for which either no commercially stable solutions yet exist on the market, or existing solutions exhibit structural shortcomings that it requires further R&D to resolve. PCP is a way for procurers to trigger the market to develop new solutions that address these shortcomings. PCP focuses

on specific identified needs and provides customer feedback to businesses from the early stages of R&D. This improves the likelihood of commercial exploitation of the newly developed solutions.

PCP is explained in the PCP communication COM/2007/799 and the associated [staff working document SEC/2007/1668](#). The R&D services can cover research and development activities ranging from solution exploration and design, to prototyping, right through to the original development of a limited set of 'first' products or services in the form of a test series. The original development of a first product or service may include limited production or supply in order to incorporate the results of field-testing and demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards. R&D does not include quantity production or supply to establish the commercial viability or to recover R&D costs<sup>6</sup>. It also excludes commercial development activities such as incremental adaptations or routine or periodic changes to existing products, services, production lines, processes or other operations in progress, even if such changes may constitute improvements.

### **Open, transparent, non-discriminatory approach — No large-scale deployments**

PCP is open to all operators on equal terms, regardless of the size, geographical location or governance structure. There is, however, a place of performance requirement that they must perform a predefined minimum percentage of the contracted R&D services in EU Member States or Horizon 2020 associated countries. In the case of AI4Cities this is 50%.\*

Any subsequent public procurement of innovative solutions (PPI) for the supply of commercial volumes of the solutions will be carried out under a separate procurement procedure. Providers that did not take part in this PCP (or were not chosen to go through as far as the last phase) will thus still be able to compete on an equal basis in any subsequent procurement looking for suppliers to provide a solution on a commercial scale.

\*UK counts as a Horizon2020 associated country. See more on section 1 of this document.

### **Sharing of IPR-related risks and benefits under market conditions**

PCP procures R&D services at market price, thus providing suppliers with a transparent, competitive and reliable source of financing for the early stages of their research and development. Giving each supplier the ownership of the IPRs attached to the results it generates during the PCP means that they can widely exploit the newly developed solutions commercially. In return, the tendered price must contain a financial compensation for keeping the IPR ownership compared to the case where the IPRs would be transferred to the procurers (the tendered price must be the 'non-exclusive development price'). Moreover, the procurers must receive rights to use the R&D results for internal use and licensing rights subject to certain conditions.

For more information, see *PCP on the [Europa website](#)*.

### **Exemption from EU public procurement directives, the WTO Government Procurement Agreement (GPA) and EU state aid rules**

PCP procurements are exempted from the **EU public procurement directives** because the procurers do not retain all the benefits of the R&D (the IPR ownership stays with the suppliers).<sup>7</sup>

They are also exempted from the **WTO Government Procurement Agreement (GPA)** because this Agreement does not cover R&D services<sup>8</sup> (the PCP being limited to such services — and any subsequent PPI procurements relating to commercial-scale supply of such solutions are not part of the PCP procurement).

<sup>6</sup> See also Article XV(1)(e) [WTO GPA 1994](#) and the Article XIII(1)(f) of the [revised WTO GPA 2014](#).

<sup>7</sup> See Article 16(f) of Directive [2004/18/EC](#) (Article 14 of Directive [2014/24/EU](#)), Article 24(e) of [Directive 2004/17/EC](#) (Article 32 of Directive [2014/25/EU](#)) and Article 13(f)(j) of Directive [2009/81/EC](#).

<sup>8</sup> See the EU's Annex IV of Appendix I to the [WTO GPA](#).



PCP procurements do not constitute state aid under the **EU state aid rules**<sup>9</sup> if they are implemented as defined in the PCP communication<sup>10</sup>, namely by following an open, transparent, competitive procedure with risk- and benefit-sharing at market price. (The division of all rights and obligations (*including IPRs*) and the selection and award criteria for all phases must be published at the outset; the PCP must be limited to R&D services and clearly separated from any potential follow-up PPI procurements; PCP suppliers may not be given any preferential treatment in a subsequent procurement for provision of the final products or services on a commercial scale.)

### Open market consultation

The start of this PCP procurement was preceded by an open market consultation (see summary and Q&A on the website <https://ai4cities.eu>)

### EU funding

This PCP procurement is part of a project that is funded by the European Union's Horizon 2020 Research and Innovation Programme, under grant agreement No 871914 — AI4Cities (see <https://ai4cities.eu>).

The contracts will therefore be subject to additional rules that come from the EU grant(s).

For more information, see 'innovation procurement' and 'links to regional policy' in the [Participant Portal Online Manual](#)<sup>11</sup>.

The EU is not participating as a contracting authority in this procurement.

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<sup>9</sup> See Point 33 of the [Commission Communication on a framework for state aid for research and development and innovation](#) (C(2014) 3282).

<sup>10</sup> [Commission Communication: Pre-Commercial Procurement: driving innovation to ensure sustainable, high quality public services](#) (COM(2007) 799) and [PCP staff working document](#) (SEC(2007)1668).

<sup>11</sup> [List of H2020 associated countries.](#)



## Appendix 2 - The Buyers Group

### City profiles and current situation

This appendix provides information about the Buyers Group, which is relevant to the potential suppliers. The Buyer Group consists of six cities with the same kind of approach to become carbon neutral during the time period from 2025 to 2050. At the same time, they are diverse in terms of geographic location, population, or local conditions of energy production.

**Depending on the maturity of each city, there are open data and APIs available for the Suppliers needs. A list (no-exhaustive) of data and other related materials from each city are gathered on the AI4Cities website.**

**Mobility:** <https://ai4cities.eu/challenges/mobility/data-sources>

**Energy:** <https://ai4cities.eu/challenges/energy/data-sources>

These pages will be updated throughout the project, as more data becomes available. Data and other technology related questions can be asked by email [tech@ai4cities.eu](mailto:tech@ai4cities.eu).

### Helsinki

Helsinki's formal policy is to be a city that exploits Digitalization and Design best in the world. The city has been ranked one of the top three smart cities in the world in the Smart City Index 2020 among the 109 total cities (<https://www.imd.org/smart-city-observatory/smart-city-index/>).

Helsinki aims to be a leading player in the transition to a low carbon economy. Its goal is to be carbon neutral by 2035, which means it has to reduce greenhouse gas (GHG) emissions by at least 80% from 1990 levels. The remaining 20% will be offset by climate action outside the city borders and by increasing carbon sinks. The city is on the right track. In 2018 it noted a reduction of 28% - as its population increased by 150,000 from 1990, this meant a reduction of 45% per resident. While this is significant progress, to reach its 2035 goal Helsinki will need to cut emissions faster.

Helsinki has already been experimenting with AI to reduce traffic- and heating-related emissions. The Helsinki Jätkäsaari Mobility Lab has used AI to enhance transport flows with a generic algorithm controlling traffic lights. This has led to 15-30% better traffic flows. The AI-enhanced Heat Demand Response, piloted in the EU Smart City Lighthouse project Mysmartlife, has saved 10-30% of building energy use in a building that was already very energy-efficient.

#### Mobility - Sustainable traffic solutions

Regarding traffic, Helsinki wants to reduce traffic emissions 69% from the 2005 level by 2035. It aims to achieve this by reducing the amount of kilometres its citizens travel by car, and encouraging them to choose low-emission transport alternatives.

Among the mobility and traffic the procedures are:

- Promoting the use of electric cars by means such as extending the charging network
- Reducing emissions from port operations
- Implementing new vehicle traffic pricing and parking fee models and extending parking fee zones
- Promoting walking, cycling and the use of public transport
- Implementing new mobility services
- Developing traffic and city planning

#### Energy - More energy-efficient buildings and clean energy production

The heating of buildings causes more than half of Helsinki's emissions. The greatest emission reduction potential lies in energy renovations: for example, when a building is renovated, it can be made significantly more energy-



efficient than before. Emissions from buildings can be reduced by 80%. Because only a small percentage of all buildings located in Helsinki are owned by the City, it is important to encourage residents and organisations to take part in reducing emissions. The buildings owned by the City hold 11% of the emission reduction potential of the entire building stock of Helsinki. The majority of the measures to reduce emissions are financially attractive to building owners in the long term. They often improve liveability as well.

The development programme of Helen Oy, the energy company owned by the City, is responsible for emission reductions in energy production. Helen Oy's procedures will reduce Helsinki residents' district heating emissions by 74% by 2035.

Among the energy lot procedures are:

- Providing advisory services to support Helsinki residents' energy renovations and increased use of renewable energy
- Steering district planning towards carbon neutrality
- Steering people towards energy-efficient solutions and renewable energy through Building Control Services
- Improving energy efficiency and increasing the use of renewable energy in the City's service and residential buildings
- Replacing outdoor lights with more energy-efficient alternatives
- Making provisions for emission-free thermal and wind energy
- Replacing fossil fuels by building heating plants that run on renewable energy (e.g. wind and solar)
- Utilising waste heat and using electricity storage facilities
- Implementing heat pumps
- Utilising the demand response for heat and electricity
- Applying energy solutions of the future

These will improve by automating the cities' open data value chains in order to create machine learning - compatible open data sets. Examples include better algorithms for smart grid in the context of heat response; integrated approaches combining transport and energy and making open data sets (including metadata), such as the ones provided by [www.HRI.fi](http://www.HRI.fi), into a format that would be immediately of use as annotation for ML algorithms; long-term machine learning systems for traffic control, helping identify, categorise and manage specific patterns in time and place (the current systems only work on single intersections and single optimisation).

Forum Virium Helsinki is the City of Helsinki innovation company founded 2006. We make Helsinki the most functional smart city in the world in cooperation with companies, universities, cities and residents.

## Amsterdam

The legendary footballer Johan Crujff once said: "There is just one moment when you can be exactly on time". That moment is now. If we want to retain the same pleasant city that we have today, we must start acting now on reducing the city's CO2 footprint.

Currently, Amsterdam is at risk from the changes that climate change will bring over the following decades: think of more rainfall, higher sea levels, more hot days and nights and a rising temperature throughout the city. Therefore, Amsterdam aims to be **climate neutral by 2050**. To achieve that, the City will work to reduce its greenhouse gas emissions by 55% from 1990 levels in 2030 and by 95% by 2050. Following dialogues with the public and private sector, in 2019 the city presented the Amsterdam Climate Accord outlining how it wants to achieve these goals. This '[Roadmap](#)' to climate neutrality identified the four main sectors in which the city needs to take action: the built environment, traffic & mobility, electricity, and industry & harbour. The built environment currently contributes 25%, traffic & mobility 18%, electricity needs 39% and the industry and harbour 18% of total CO2 emissions.

For each of these sectors, the City has set up ambitious sustainability goals. **All buildings in Amsterdam must be natural-gas free by 2040** and be sustainably heated. **In 2030, all local traffic in Amsterdam must be emission-free**, with the city providing enough space for pedestrians and cyclists. A further aim is to produce



renewable energy at maximum capacity. This means that by 2030, 80% of electricity consumed by households should be produced by wind or solar power. Finally, the harbour aims to become a “sustainable battery for the city, the region and Europe.”

Amsterdam emphasises that this energy transition should be a **just transition**, in which the costs and benefits are distributed fairly and each citizen has equal access to the decision-making process. That is also visible in the way the City aims to employ AI and other new technologies. It has set up a Digital Agenda, striving to make Amsterdam a “**free, inclusive and creative digital city**.” To that end, the city has become part of a worldwide digital rights coalition, aiming to give citizens a say on their data and the way it is collected.

### The Mobility Challenge:

Below are some example mobility projects that Amsterdam amongst others aims to work on during AI4Cities:

*Low-car city:* Amsterdam wants to increase the use of shared bikes. AI can be used to determine where there is space available for hubs and which spaces are the most logical from a user perspective. A greater and more convenient availability of shared bikes should lead to an increase in zero-carbon traffic (biking, walking).

*Mobility as a service:* This national project will increase the options for mobility users, so they can more easily choose the carbon-neutral option. AI can help make certain transport options (such as trams or bikes) more attractive to users by showing all options and connecting them in a user-friendly environment.

*Advising a route based on air quality and/or local CO2 emissions:* Amsterdam already has an advanced traffic flow system, but this system is based on congestion, rather than air quality. AI can help plan a smarter route based on real-time air quality measurements and geo-fencing. This will help reduce emissions and keep air quality at acceptable levels.

### The Energy Challenge:

Below are some example mobility projects that Amsterdam amongst others aims to work on during AI4Cities:

*Smart charging:* In order to improve efficiency and balance the electricity grid, we want to know where to place charging stations and batteries. AI can be used to plan and coordinate charging moments throughout the city in order to improve efficiency and balancing of the electric grid.

*BRAKE!:* The BRAKE! project will take power that is otherwise lost from the brake action of trains and store it into batteries so it can be reused, rather than wasted. AI can help deal smartly with large fluctuating energy flows, for instance at stations where large energy demand arises.

*Quay walls as an ‘energy factory’:* In the upcoming years 200 km of quay and 850 bridges must be renovated. Amsterdam is considering to install heat poles in the quay walls to win aqua thermal energy from surface water. AI can help with smart sharing and integration of energy. Specifically, it could optimize the energy system based on the requested use and the available heat as well as the load on the local electricity grid.

*From ‘spaghetti’ to Internet-of-energy:* Amsterdam is a historical city as well as a leading data center hub with a glass-fiber network which form vast amounts of cables and a vulnerable network. AI can be used to improve energy efficiency of data use and help with grid optimization for Internet of Energy. This can be achieved by connecting the different systems and “usage moments” and by making peak predictions in relation to network capacity.

Amsterdam’s progressive policies on clean air and inner city traffic and parking, on electrical vehicles and waste/energy/water systems, serve as successful examples, combined with a long tradition in urban development and planning. In 2011 the City was awarded the ISOCARP Award for Excellence 2011 for its Structural Vision 2040, mainly for the innovative stakeholder process and quality of the vision. Amsterdam was awarded the iCapital of Innovation award by the EU in 2016, because of its holistic approach towards innovation.



## Île-de-France Region (Paris, France)

The Île-de-France Region covers 2% of the French territory, includes 12 million inhabitants representing 19% of the French total population and accounts for 30% of the national GDP.

Sustainable development is a priority for the Region: from the Air Plan to better waste management, support for renewable energies and the preservation of natural areas. Spatial planning is also concerned, with the creation of innovative and ecological neighbourhoods and the construction of new housing. The proposed strategy is based on two horizons, 2030 and 2050, and three principles: sobriety, production of renewable energy and reduction of our dependence.

For the horizon 2030, the goal is to reduce Île-de-France's dependence on fossil fuels and nuclear power by half compared to 2015, thanks to a twofold effort:

- a reduction of nearly 20% in regional energy consumption
- a doubling of the amount of renewable energy produced in the Paris Region. In 2030, renewable energy sources will account for 40% of Paris Region's consumption, compared to 13% today, half of which will be imported.

For the horizon 2050, the goal is to tend towards a 100% RE and zero carbon region thanks to:

- a 40% reduction in regional energy consumption
- a 4-fold increase in the amount of renewable energy produced in the Paris Region, with a forecast of 50% imported renewable energy.

This trajectory represents an unprecedented shift. To lead this revolution, the Region intends to take up the role of leader on energy, air and climate that the law has entrusted to it. It intends to create the framework for bringing the players together and to create the conditions for collective success for the energy transition in Ile de France, notably through the creation, as of 2020, of a Regional Conference, COP Energie Climat Île-de-France.

The Ile-de-France region strategy maps out the path towards:

- clean mobility in Ile-de-France
- a carbon-free Ile-de-France mobilizing all its renewable energies
- a Region that encourages territories and citizens to get involved
- a new governance at the service of the regional energy transition
- an exemplary Region
- a Region that is a driving force for proposals to accelerate the national transition

Because the stakes are high, the Region will mobilize €150 million over the period 2018-2021 for the implementation of this new strategy for energy and climate in Île-de-France and €500 million by 2030.

The mobility and energy sectors are key sectors to be further developed:

In the transportation and mobility sector, the Île-de-France Region targets a more comfortable, greener, more accessible and safer transportation. The Region strengthened its structuring policies, notably with the extensions of RER and metro lines, the renewal of rolling stock with 115 new trains delivered in 2020, the development of reserved lanes for buses, cabs and, eventually, carpooling on freeways.

In the environment and energy sector, the Ile-de-France Region targets a breathable, greener, cleaner, more sustainable ecological Region, with more and better protected natural areas so that every Paris Region resident can access a green space in less than 15 minutes on foot from his or her home. The launch of a major plan to develop renewable energies with €46 million (solar, photovoltaic, biomethane, biomass, hydrogen, etc.), the acceleration of aid for the acquisition of clean vehicles (€10 million) for shopkeepers and craftsmen and the launch of a regional participatory budget.

In terms of sustainable development, the Region devoted €98 million to continue the construction of 100 new, innovative and environmentally-friendly neighbourhoods (47 winners since 2016), support the equipment of Paris Region local authorities through regional development contracts, and launch the plan to reclaim brownfield sites in the Paris Region and the preparatory work for the second Biennial Architecture and Landscape Exhibition to be held in 2021.



Moreover, as part of its Smart Region strategy, the Region will notably support high schools in their transition to digital technology, accelerate the development and deployment of Very High Speed Broadband for all, support incubators (major innovation centres and world-class technology platforms) and finance new third locations and new micro-working spaces in train stations.

### Cap Digital

Cap Digital is the French hub for digital and ecological transformation in the Paris Region and the largest cluster in Europe with more than 1000 members. It was created as a non-profit organisation in 2006 as part of the national industrial policy with the aim of generating employment by developing a more competitive economic dynamic. Awarded by the State with a "competitiveness cluster" label, Cap Digital is one of the pillars of the innovation and economic development policy of both the State and Ile-de-France Region. Cap Digital has a long experience in participating and coordinating European-funded projects (the cluster has been involved in +40 EU projects since 2006 and is currently running 12 of them). Cap Digital is also a member of powerful European networks such as the NEM initiative (European Technology platform dedicated to digital content) with responsibilities in its Steering Board and two KICs: EIT Digital and EIT Health.

As procurer representing the interests of local authorities Île-de-France Region, Cap Digital's mission in AI4Cities project is to gather and integrate the challenges of the different territories of the region into the Call for Tender and to accompany the Ile-de-France local authorities during the different phases of the project. Thanks to its network of experts and innovators, Cap Digital will bring its expertise on the issues of data, AI and the Sustainable City.

### Project Ambition

In the Mobility Lot of the AI4Cities project, Cap Digital, representing territories of the Ile-de-France region, proposes the following challenges:

- Inclusive and Accessible Transportation System and Public Space
- Mobility as a Service: Real-time multimodal information for citizens, including public transit, roads, parking, new modes of transportation and ticketing option
- Understanding passenger behaviour through disaggregated models
- Develop, promote and encourage cycling and active mobility
- Better understand the potential demand for new modes of travel and develop a model of these emerging transport methods

In the Energy Lot of the AI4Cities project, Cap Digital, representing territories of the Île-de-France region, proposes the following challenges:

- Energy retrofitting and energy efficiency of buildings
- Integration of renewable energies within buildings
- Definition of the strategy for the development of renewable energies in the territory
- Smart-Grid
- Raising citizens' awareness of their energy consumption and motivating them to reduce it

## Copenhagen

### Background and partners:

Copenhagen is a global frontrunner in sustainable urban development, aiming to become *the first carbon neutral capital in the world by 2025*. It is a holistic plan that includes specific targets and initiatives in the four key areas – energy consumption, energy production, mobility and city administration initiatives. The targets set for all four pillars are critical to the overall objective of carbon neutrality. Climate plan: [link](#)

While mobility is a climate plan pillar which aims to provide easy, healthy and efficient movement around Copenhagen, it also presents challenges. These are not a focus in terms of AI4Cities. However, there is still interest in solutions that can help reduce CO2 through an optimization and conversion of road traffic. The goals of this pillar are: 75% of all trips take place on foot, by bicycle or in public transport; 50% of trips to work or education



take place by bicycle; 20% more passengers use public transport compared to 2009; public transport is CO<sub>2</sub>-neutral; 20-30% of all light vehicles use new fuels; 30-40% of all heavy vehicles use new fuels.

In terms of AI4Cities the pillar of Administration Initiatives is the focus. This has a set target of reducing energy consumption in municipal buildings by 40%, among other goals. The work put in by the city administration may only represent a small proportion of the total CO<sub>2</sub> reduction but it has huge significance as a source of inspiration for others.

However, these initiatives have to be considered in relation to the pillar of Energy Production as this is currently the biggest source of CO<sub>2</sub> emissions. As such, it is absolutely critical that coal, oil and natural gas are replaced in the production process by wind power, sustainable biomass, geothermal energy and solar power. Efforts in this pillar will account for 80% of the total reduction in 2025.

Copenhagen Properties and Procurement are responsible for the achievement of the Administration Initiatives and therefore the one of the partners of Copenhagen in AI4Cities. Their building portfolio includes 2.6 million m<sup>2</sup> spread over approximately 3500 buildings, thus making them one of Denmark's largest property administrators with responsibility for around 830 properties. These include, among others: Administration buildings, Copenhagen City Hall, cultural centers, libraries, institutions, nursing homes, schools and sports facilities.

Copenhagen Solutions Lab is the other partner of Copenhagen in AI4Cities. This is a unit known for its smart city work, including market dialogue and testing of specific solutions. The unit also has extensive knowledge in terms of public-private partnerships, and uses a quadruple helix approach to engage companies/organisations, universities and citizens.

#### **Project ambition:**

Generally, it is the ambition of Copenhagen that the use of sensors and public data can be used to build AI modules that provide digital and data-driven tools which can optimize the energy consumption of buildings.

As stated above Copenhagen is interested in working with "LOT2" of AI4Cities. The main focus areas are optimisation of energy flow and retrofitting/refurbishment of buildings as these are seen as the next step in energy efficiency development related to the overall carbon neutral strategy.

#### Optimisation of energy flows

Improves two areas of the Carbon Neutral strategy pillars in Administration Initiatives and Energy Production. The focus is to make use of the existing data-driven energy monitoring system for buildings (the EnergyKey platform by KMD) and centralized Building Management Systems to combine this with fluctuating green energy production. By doing so it allows peak energy loads to be flattened and/or shifted to negate the use of fossil fuels by enabling building installations to switch on and off based on signals.

#### Retrofitting/Refurbishment of buildings

Improves the Administration Initiatives. The focus is to eliminate misguided maintenance of building installations and equipment, which is caused by predetermined schedules. Having maintenance based on actual need allows for the least amount of energy to be used while also providing economic savings.

## Tallinn

Tallinn has joined other European capitals' target to achieve carbon neutrality by 2050. In order to achieve this goal it has implemented two complementary strategies: Alleviation Plan 2030 and Adaptation Plan 2030.

Alleviation Plan 2030 aims to lower greenhouse gas emissions by 40% in 2030 compared to the baseline of 2007. In Tallinn's case, this means the annual GHG emission value has to remain below 2360 kt CO<sub>2</sub>. The key domains are mobility and housing as these account for almost all of the GHG emissions, with housing causing 78% and transportation 21% (as of 2015). Within Tallinn's energy consumption a total of 57% comes from the use of fossil fuels of which 65% is caused by the transportation sector.



Adaptation Plan 2030 aims to strengthen Tallinn's ability to combat climate change effects and lower the city's vulnerability in key domains, as climate change effects and their scale will most likely expand going forward.

There are several Tallinn-specific climate risks, which arise from the city's geographical location and urban planning. The primary risks are coastal regions' vulnerability to floods and storms, expansion of urban thermal islands and rainwater flooding. The secondary risks include the increase of periods with road glaze, the decrease of days with snowfall and elevated wind speed.

To combat these risks Tallinn has committed itself to:

- manage pre-emptively the risks associated with coastal erosion
- avoid extensive floods and minimize their effects
- decrease the number of thermal islands and mitigate their scale
- lower the usage of private cars by increasing pedestrian and bicycle traffic.

The total budget of the aforementioned two 2030 plans amounts to 1.75 billion euros in total.

**Project ambition:** Tallinn focuses on the Mobility Lot and has set a goal that at least 75% of its citizens in the future will use either carbon neutral public transportation, bicycle or will move by foot and can travel between city hubs in fewer than 20 minutes. With the help of AI suppliers, we would like to develop a real-time travel information system (traffic congestion, travel time, transport availability, parking availability) and macro-scale multimodal transport model with origin-destination matrices and travel behaviour analysis.

## Stavanger

Stavanger is the fourth largest city in Norway, with 140,000 inhabitants. Stavanger is the administrative, economic and cultural centre of Rogaland county and seat for the University of Stavanger, the county governor, county administration and several national, and international businesses. The city has residents from over 180 nationalities.

Stavanger is a city with ambitious goals for city development, leading it to become one of the first Smart City Lighthouse Cities through the Triangulum Project. In 2019, Stavanger was declared to be "The smartest city" in Norway by the Norwegian Road Authority for its work on smart and sustainable mobility. Through the AI4Cities project we aim to build further on this by challenging business to develop AI based solutions to reduce CO2 emissions focusing on mobility.

### From petroleum to future business

Stavanger is known as "the oil capital" of Norway. Most of the value creation in the region's business community comes from the extraction companies and the companies that supply them. The city relies on a competitive and well-functioning business community with "more legs to stand on". Stavanger has a growing aquaculture industry and technology sector, both of which stand on their own two feet and draw on knowledge from the petroleum industry. Other companies in the region, many located in the industrial area of Forus, supply advanced technology in the form of engineering and production to the petroleum industry. These industries have the potential to turn to new markets by increasing value creation and resource use, strengthening value chains, and developing more products based on good raw materials.

Energy is the region's main industry today. Stavanger has great potential for further development within renewables in the form of, for example, offshore wind and hydrogen from both the operator and supplier side. The city is also Norway's 4th largest fish farming municipality and the region is already well developed in terms of technology and research on aquaculture. In fact the region has a nascent environment in research and use of technology that supports all industries: so-called enabling technology. Examples are digitization, automation, robotization, artificial intelligence (AI) based on the use of large amounts of data, machine learning etc. The technologies will be able to help solve challenges when it comes to restructuring, health and energy.



In addition to these investments, the region has natural advantages that facilitate various forms of natural resource-based industrial development. Examples include mining, power-intensive industry and data centres.

## Geography

In 2020, Stavanger merged with two neighbouring municipalities. There is an old urban part where most of the inhabitants are living, and new areas with a much more rural character spread out on a variety of islands. Beyond this, other surrounding municipalities connect to the larger city area. The transport challenges in both areas are naturally different.

## Goals for development

Stavanger has ambitious goals regarding the climate and environment. It aims to cut greenhouse gases by 80% by 2030 compared with 2015, and to be a fossil-free municipality by 2040. The city gets most of its energy from sustainable hydro power.

For these reasons, the City has a special focus on the development of the road transport sector. It wants to change travel habits, hoping to reduce the amount of transport for everyday activities. It also wants to promote renewable fuel and technology, including electric vehicles, develop public transport, electrification of and sharing-solutions for the car fleet, along with a focus on solutions for local goods transport. Stavanger is aiming to make use of technology developed during the AI4Cities project to help achieve these goals.

Stavanger is already actively looking for new ways of organising city centre logistics, including running a test of cargo hubs and cargo e-bikes and trialling testing mobility hubs. A new booking system for taxis aims to make electric vehicles much more accessible for the municipality to use for its employees. Stavanger also has a strong focus on the development of the city, to make it more friendly to soft mobility, like biking and walking. The Stavanger area is also focusing on exploring new modes of transport like electric ferries / sea transport, and drones.

## Project focus

Stavanger is focusing on the mobility challenge in this project. Due to the energy mix in Norway, this is where the biggest CO2 reductions are to be made. However, it has been and will be also actively seeking new solutions for energy efficiency, energy flow and alternative energy sources.

The municipality will also look at the solutions in the field of energy. Testing of solutions could be a possibility, but most likely not within the AI4Cities framework. Solutions developed through the project will be studied by the municipality and could represent future solutions for the municipality.

## A solution for coordinated and optimized logistics

Local goods and parcel deliveries are being made by cars with a clear potential for optimization. We believe there is potential in a solution where optimization happens by combining the capacity from different suppliers of transport in one pool. Too many cars today are too empty. This creates extra CO2 emissions, as well as extra costs, for both producers and consumers. It also makes local markets less attractive: with large amounts of local food produced, local markets could benefit from such trade. But without optimized and sustainable transport, the potential climate effect that could come from creating an effective alternative to long distance transport is missing. It is therefore also a goal to investigate, develop and test a solution for local logistics that uses AI to reduce emissions from both long and short distance transport.

## MaaS

At the same time, we would like to enforce the ability of our citizens to travel without using cars. Public transport and soft modes of mobility, along with new mobility solutions could make up an attractive alternative, if these were merged via a seamless MaaS solution, based on a digital AI - driven framework. Testing this type of solution would have to be in close cooperation with Kolumbus, the local public authority for the region.



### **Other solution areas**

Stavanger could also be interested in testing other solutions that could influence behaviour and emissions. The solutions could be directed towards the municipality, inhabitants, other relevant actors, or a combination.



## Appendix 3 - Scoring Model for the Award Criteria and end of Phases' Evaluation

### Overall scoring model

This Appendix contains the scoring model that will be used by the evaluators to assess and score the extent to which a Tender is meeting the award criteria.

| Assessment            | Description   | Score |
|-----------------------|---|-------|
| <b>Outstanding</b>    | The response exceeds the requirement providing significant added value to it, which is described very convincingly.   | 10    |
| <b>Excellent</b>      | The response fully meets the requirement and the provided explanation is very convincing.   | 9     |
| <b>Very good</b>      | The response addresses the requirement very well, but a small number of inconsistencies, or minor shortcomings are present.   | 8     |
| <b>Good</b>           | The response addresses well the requirement in most respects and provides certain information which is relevant, but a small number of shortcomings are present.  | 7     |
| <b>Fairly good</b>    | The response meets the requirement in certain material respects and provides certain information which is relevant, but which is lacking or inconsistent in material respects, or a number of shortcomings are present. | 6     |
| <b>Fair</b>           | The response addresses multiple aspects of the requirement, but the provided explanation is not fully convincing, and a number of shortcomings are present.   | 5     |
| <b>Poor</b>           | The response broadly addresses the requirement, but there are multiple shortcomings.  | 4     |
| <b>Fairly poor</b>    | The response inadequately addresses the requirement, or it contains significant shortcomings.   | 3     |
| <b>Very poor</b>      | The response significantly fails to meet the requirements, or it contains serious shortcomings.   | 2     |
| <b>Extremely poor</b> | Multiple important aspects of the requirement are missing.  | 1     |
| <b>Unacceptable</b>   | No response is provided, or none of the aspects of the requirement are met.   | 0     |

## Appendix 4 - Scoring Model for the Price

### 1. Total PCP Price overview

Tenderers are required to submit an overview of their foreseeable costs for the all 3 PCP phases (Form F). The total PCP costs provided by the Tenderer is an estimate only and will not be used for the tender scoring. Only the Phase specific price and budget breakdown presented is binding (see Form F and G). However, all unit prices presented by the Tenderer are binding for the duration of the Framework Agreement, i.e. they may not be changed in between phases.

### 2. Scoring of the Price for PCP Phase 1

The Price will be evaluated using the formula below:

**Points awarded = Weight awarded to Price \* (Price lowest tender/Price Tender Phase 1)**

**Note: Price Tender Phase 1 = the Actual Price (not the Virtual Price!) that the Tenderer has submitted for Phase 1.**

Weight awarded to Price = the maximum points the Tenderer can get on the Price award criterion (see Overview of the award criteria of the Request for Tenders in Section 4.5)

## Appendix 5 - Time schedule for Phases 1 - 3

All the dates are indicative and they will be confirmed in each phase. The rights to changes are reserved.

### First tender procedure (framework agreement and Phase 1 contracts) (indicative timeline)

| DATE       | ACTIVITY  |
|------------|---|
| 01.12.2020 | Publication of contract notice in <u>TED</u> . Tender documents for download on <a href="https://ai4cities.eu">https://ai4cities.eu</a> |
| 15.12.2020 | Q&A session and presentation of the Tender (webinar)  |
| 15.1.2021  | Q&A overview and final clarification session (webinar)  |
| 10.2.2021  | Deadline for submitting questions about tender documents via <a href="mailto:info@ai4cities.eu">info@ai4cities.eu</a>                   |
| 18.2.2021  | Deadline for lead procurer to publish replies to questions (Q&A document)   |
| 28.2.2021  | Deadline for submission of tenders for the framework agreement and Phase 1  |
| 1.3.2021   | Opening of tenders  |
| 31.3.2021  | Tenderers notified of decision on awarding contracts  |
| 12.4.2021  | Signing of Framework Agreements and Phase 1 Specific Contracts  |
| 15.4.2021  | Publication of contract award notice in TED   |

### Implementation of Phase 1 (indicative timeline)

| DATE      | ACTIVITY   |
|-----------|--|
| 1.5.2021  | Names of winning Phase 1 contractors and their project abstracts (D1.1.) to be sent to EU ( <a href="#">template</a> ) and published on AI4Cities PCP project website. |
| 1.5.2021  | Start of Phase 1 work by suppliers (3 months)  |
| 1.5.2021  | Kick-off and briefing for Phase 1 suppliers:<br>A common moment to learn about the operational boundary conditions governing the design of the solutions.              |
| 15.7.2021 | Deadline for Phase 1 final milestone(s)/final report/deliverable(s), including phase 2 offers.   |
| 30.7.2021 | End of Phase 1   |
| 6.8.2021  | End of Phase 1 review and assessment (online meeting + presentation)   |
| 15.8.2021 | Phase 1 suppliers notified as to whether they have completed this phase satisfactorily and successfully.   |
| 20.8.2021 | Summary of the results and conclusions achieved by each contractor during the phase sent to EU ( <a href="#">template</a> ).   |
| 27.8.2021 | Suppliers whose performance is considered satisfactory and successful are to submit the final invoice for Phase 1.   |

|           |   |
|-----------|---|
| 10.9.2021 | Payment of balance for Phase 1 to suppliers that completed this phase satisfactorily made as soon as notified of winners. |
|-----------|---|

### Second tender procedure (indicative timeline)

| DATE      | ACTIVITY  |
|-----------|---|
| 30.6.2021 | Launch call-off for Phase 2 (only offers from contractors that successfully completed Phase 1 are eligible) |
| 15.7.2021 | Deadline for submitting questions on Phase 2 call-off documents   |
| 20.7.2021 | Deadline for lead procurer to circulate replies to questions to Phase 2 tenderers                           |
| 30.7.2021 | Deadline for submitting Phase 2 offers  |
| 2.8.2021  | Opening of Phase 2 offers   |
| 25.8.2021 | Contractors notified of decision on awarding Phase 2 contracts  |
| 30.8.2021 | Signing of Phase 2 specific contracts   |

### Implementation of Phase 2 (indicative timeline)

| DATE           | ACTIVITY   |
|----------------|--|
| 1.9.2021       | Start of Phase 2 (4 months)  |
| 1.9.2021       | Names of winning Phase 2 contractors and their project abstracts to be sent to EU ( <a href="#">template</a> ) and published on AI4Cities PCP project website and updated list of pre-existing IP. |
| 15.9.2021      | Suppliers whose performance is considered satisfactory and successful are to submit the pre-financing (25% of the total budget) invoice for Phase 2.   |
| 4.10.2021      | Deadline for Phase 2 interim milestones/deliverables (M2.2)<br>First prototype iteration and demonstration (by week 8)   |
| 26.-27.10.2021 | Mid-term follow-up and demonstration   |
| 1.12.2021      | Phase 3 call-off specifications to Suppliers   |
| 10.12.2021     | Deadline for submission of Phase 2 final milestones/final report /deliverables, including Phase 2 offers   |
| 20.12.2021     | Demonstration and assessment of Phase 2 final milestones/final report/deliverables and Phase 3 offers of prototype of Phase 2 (EU reviewers can be invited)  |

|            |  |
|------------|--|
|            | Phase 2 contractors notified as to whether they have completed this phase satisfactorily and successfully.                                   |
| 31.12.2021 | End of Phase 2   |
| 2.1.2022   | Summary of the results and conclusions achieved by each contractor during the phase sent to EU (template)                                    |
| 5.1.2022   | Suppliers whose performance is considered satisfactory and successful are to submit the final invoice (75% of the total budget) for Phase 2. |

### Third tender procedure (indicative timeline)

| DATE      | ACTIVITY  |
|-----------|---|
| 1.12.2021 | Launch call-off for Phase 3 (only offers from contractors that successfully completed Phase 2 are eligible) |
| 7.12.2021 | Deadline for submitting questions on Phase 2 call-off documents   |
| 2.1.2022  | Opening of Phase 3 offers   |
| 10.1.2020 | Suppliers notified of decision on awarding Phase 3 contracts  |
| 20.1.2020 | Signing of Phase 3 specific contracts   |

### Implementation of Phase 3 (indicative timeline)

| DATE         | ACTIVITY  |
|--------------|---|
| 1.2.2022     | Start of Phase 3  |
| 1.2.2022     | Names of winning Phase 3 suppliers and their project abstracts to be sent to EU ( <a href="#">template</a> ) and published on AI4Cities PCP project website |
| 10.2.2022    | Winning suppliers are to submit the pre-financing (25% of the total budget) invoice for Phase 3.  |
| 1.3.2022     | Prototype deployment completed at least in two cities and pilots starts   |
| 28-29.4.2022 | Mid-term follow-up (pilot and prototype refinement update)  |
| 10.5.2020    | Winning suppliers are to submit the mid-term financing (25% of the total budget) invoice for Phase 3.   |
| 30.6.2022    | Piloting ended at least in two cities of the Buyers Group.  |
| 25.7.2022    | Deadline for submission of Phase 3 final milestone(s)/final report/ deliverable(s)  |
| 5.8.2022     | Final demonstration and assessment of products/services developed during Phase 3 (including to EU representatives)  |

|           |   |
|-----------|---|
| 15.8.2022 | Phase 3 contractors notified as to whether they have completed this phase satisfactorily and successfully.  |
| TBC       | Participating in AI4Cities final conference   |
| 30.8.2022 | End of Phase 3  |
| 15.9.2022 | Summary of the results and conclusions achieved by each contractor during the PCP sent to EU for publication purposes ( <a href="#">template</a> ). |
| 15.9.2022 | Suppliers whose performance is considered satisfactory are to submit the final invoice (75% of the total budget) for Phase 3.                       |



## Appendix 6 - List of Reporting Topics

### Quality of the End-of-Phase report of Phase 1, 2, and 3

For the End-of-Phase report, each of the following areas is assessed:

- There is evidence that the work has been carried out completely and diligently;
- The results are good and consistent with the original Tender;
- There is a clear potential for further development;
- The report is well written with the appropriate level of detail.

The tenderers propose their process steps according to the requirements on each stage. The professional approach and understanding the whole lifecycle of the process are important elements of the evaluation of the results.

### Phase 1 - Detailed deliverables

#### 1A) End of Phase 1 Report

- Abstract of the main results achieved and conclusions from Phase 1 (EU-format, Appendix 9 and 10)
- Summary of the main results
- Detailed report covering all the results in Phase 1
- Description of functional and non-functional requirements that shows how the solution will meet the must-have criteria and nice-to-have criteria
- IPR and commercialisation plan (progress)
- Assessment of the R&D efforts for the prototype and lab testing
- Measures taken to protect Results (IPR)
- List of names and location of personnel that carried out the R&D activities
- Cost reporting

#### 1B) Video (max 5 min.) - will be scored

#### 2) Phase 2 offer

The requirements will be defined in Phase 2 Call-off.

- Innovativeness of the solution
- Advantages of the solution: how to reduce CO2 and how AI is utilised
- Demonstration of the planned prototype and lab testing in Phase 2
- Implementation plan overview

### Phase 2

Milestones and Deliverables for the Phase 2 are indicative at this stage and could be subject to change. Any changes will be included in the respective phase's call-off stage.

#### End of Phase 2 report

Points to be addressed in the End-of-Phase 2 report:

- Abstract of the main results achieved and conclusions from Phase 2 (EU-format, Appendix 9 and 10)
- Summary of the main results
- Description of the state-of-the-art versus innovation gap
- Results of Prototyping Phase
- Conclusions and findings
- Innovativeness of the solution
- Advantages of the solution: how to reduce CO2 and how AI is utilised

- Implementation plan overview
- See Appendix 9 for sample End-of-Phase report.

### **Phase 3 offer**

- Detailed time schedule and implementation plan field testing in Phase 3
- Re-assessment of the R&D efforts for the field testing
- Commercialisation plan and

### **Phase 3**

Milestones and Deliverables for the Phase 3 are indicative at this stage and could be subject to change. Any changes will be included in the respective phase's call-off stage.

### **End of Phase 3 report**

Points to be addressed in end of Phase 3 report:

- Abstract of the main results achieved and conclusions from the PCP in the format required by the EU for publication
- Abstract of the main results achieved and conclusions from Phase 3 (EU-format, Appendix 9 and 10)
- Description of the state-of-the-art versus innovation
- Measures taken to protect Results (IPR)
- List of names and location of personnel that carried out the R&D activities
- Commercialisation plan
- End-user feedback

## Appendix 7 - Table of Page Limits

Follow the page limits specified below for the submission forms of your Tender, unless otherwise specified.

| SUBMISSION FORMS                           | PAGE LIMITS OF SUBMISSION FORMS  |
|--|----------------------------------|
| Form A - General Tender Submission Form    | 15                               |
| Form B - Exclusion Criteria (declaration)  | 5                                |
| Form C - Selection Criteria                | 20                               |
| Form D - Compliance Criteria (declaration) | 5                                |
| Form E - Technical Offer                   | 30 (Phase 1) / 45 (Phases 2 & 3) |
| Form F - Financial Offer & Cost Breakdown  | 25                               |
| Form G - Financial Offer Phase 1           | 3                                |
| Form H – Executive Summary                 | 5                                |

Tenderers will use a minimum font size of 9. Use a minimal line spacing of 1.

Tenders exceeding a page limit: words and/or pages in excess of the specified limit may not be considered further. (The cover page is **not** counted as a page for page limit purposes.) Tenders not complying with the minimal font and spacing size may be eliminated.

## Appendix 8 - Electronic Submission of the Tender

Tenders have to be submitted electronically via the AI4Cities.eu website. On the Request for Tenders page, all documents will become available on TED and for download on the <https://ai4cities.eu> website as of 1.12.2020.

There will be a separate page where Suppliers can submit their offers by uploading them. No pre-registration or logging in is needed for this. No special software is needed.

- The total size for all files together cannot exceed 100MB
- Give files a clear name (e.g. [TENDERER IDENTIFIER] AI4Cities\_FormA\_...)
- Make sure to follow the instructions on the designated page
- Make sure your upload is complete

**When in doubt, contact the helpdesk via [info@ai4cities.eu](mailto:info@ai4cities.eu), but be sure to do this reasonably in advance.**



## Appendix 9 - End of Phase Reporting [sample]

Below is a sample template of an End-of-Phase Report to be used throughout the project to document progress. It is provided here as an example for your information. The actual form will be provided with the requirement specification of the relevant phase.

### Buyers Group

*Complete this box only one time with the joint conclusions from all procurers in the Buyers Group*

#### 1. Procurement need

*Describe briefly (in a way that is suitable for publication purposes):*

**The problem / challenge** you were trying to address with the procurement

**What type of innovative solutions and which functionality / performance / price requirements** you requested in the tender specifications (specify the minimum and target quality / efficiency improvements that you wanted the innovative solutions to achieve).

#### 2. Impact on public sector modernization

*Describe briefly (in a way that is suitable for publication purposes):*

**To what extent the innovative solutions managed to meet the procurement need so far (which tender requirements were the innovative solutions not able / able / more than able to meet)?** For PCPs, specify whether all participating contractors managed to complete the previous phase successfully. Did their solutions all meet the procurement need / the tender requirements? What is the current impact of the innovative solution on end-users?

**What level of quality / efficiency improvements do the innovative solutions enable to achieve** (use measurable indicators to quantify the impact achieved on the operation of your public service, e.g. 25% reduction in maintenance costs, 30% reduction in mortality rate of patients in your hospital)



### 3. Other benefits obtained

*Describe briefly any other benefits obtained from the procurement, not only for the public procurers involved but also wider benefits for society (in a way that is suitable for publication purposes), e.g.:*

**Reducing vendor lock-in:** e.g. the procurement delivers more open (standardised) solutions and/or opens a route to the market for new innovative players which creates a more competitive supply chain.

**Wider benefits to society:** e.g. contribution to CO2 reduction, improved public safety / health

**Contribution to growth and jobs:** For PCPs, specify the percentage of the R&D that the contractors actually performed in the Member States or countries associated with Horizon 2020. For PPIs, specify the percentage of the total PPI contract value that was awarded to contractors from Member States or countries associated with Horizon 2020.\*

\*UK counts as a Horizon2020 associated country. See more on section 1 of this document.

**Triggering other innovation procurements:** This PCP/PPI triggered management commitment to start new innovation procurements in the future in organisations xyz.

**Other benefits / lessons learnt:** *complete if applicable*



#### 4. Scalability — Wider deployment

*Describe briefly (in a way that is suitable for publication purposes):*

**How easy it would be for other procurers to deploy the solutions resulting from the procurement** (which parts of the solution are generic / can be replicated by other procurers across Europe versus which parts would still need adaptation / modification to other markets etc.)

**What actions did you already take to help diffuse the innovative solutions to wider markets e.g.**

- did you / the suppliers in your procurement contribute to standardisation
- did you / the suppliers publish results / lessons learnt of the procurement
- did you require the solutions for your procurement to be based on open interfaces / open source?
- did your dissemination activities promote results / impacts achieved to other procurers?
- did you help the suppliers to go for wider commercialisation of the innovative solutions (*e.g. via joint supplier-procurer presentations of the solutions/impacts at trade fairs, actively acting as first customer reference to other customers, introducing the suppliers to investors, etc.*)
- at the end of the project: did you update the initial tender specifications with the lessons learnt during the procurement and did you publish these updated tender specifications so that other procurers can use them in future procurements?

**Which aspects of the initial tender specifications (in particular functionality / performance / price requirements) you would change / update after this procurement based on the lessons learnt, to make sure that later procurements that go for wider deployment would run as smoothly as possible.**



**Contractors**

*For PCPs: complete this box for each contractor that was awarded a PCP Phase 1, 2 or 3 contract.*

*For PPIs: complete this box for each contractor that was awarded a PPI contract*

**1. The innovative solution**

*Provide a short description (that is suitable for publication purposes) of:*

**The innovative solution (in its current form)**

**Where exactly lies the innovativeness in the solution:** In which ways and to which extent does the solution go beyond what existing solutions can achieve.

**The degree of innovation:** indicate if your innovative solution is (a) a totally new product / service / process / method; (b) an improvement to an existing product / service / process / method; (c) a new combination of existing products / services / processes / methods (d) a new use for existing products / services / processes / methods).

**2. Commercialisation success**

*Provide a short description (mark parts that are not suitable for publication purposes) of:*

**How mature is the innovative solution in terms of its readiness to commercialise widely:** Which steps towards wide scale commercialisation have been completed by now (*don't forget: IPR protection, certification, CE marking, attracting additional investors to grow the business, setting up sales / distribution channels / marketing activities to expand sales to other countries etc.*).

**What is the current commercialisation success of the solution:** *e.g. awards / other forms of recognitions obtained, sales / increase in market share already achieved, licensing agreements already concluded, collaboration agreements with other partners (e.g. retailers) to commercialise the solutions already signed, additional investments attracted to further commercialise the solution.*



### 3. Other benefits obtained

*Provide a short description (mark parts that are not suitable for publication purposes) of any other benefits that you obtained from participating in the procurement, e.g.*

**Getting easier access to (a new segment of) the public procurement market** (did the procurement enable you to work with procurers/end-users that you were not working with beforehand).

**Growing your business across borders and/or to other markets** (e.g. private markets) thanks to the first customer references provided by the procurement.

**Shortening the time-to-market for your innovation thanks to early customer/end-user feedback**

**Other benefits / lessons learnt:** complete if applicable

### 4. Business growth

*Provide a short description (mark parts that are not suitable for publication purposes) of:*

**How much has your business already grown during the procurement**

In terms of (a) personnel growth; (b) turnover growth; (c) growth in market share etc.

**What are the prospects to grow your business via wider commercialisation of the solution:**

- how large is the potential market for your solution? is it a growing / steady / declining market?
- by when can commercialisation start (now / in 1 / in 3 / in 5 / in more than 5 years)
- is competition patchy (no major players) / established (but no comparable offering) / fierce

**Which future steps do you plan to take to further grow your business** (e.g. attracting additional investors to grow your business, mergers / acquisitions / joint ventures / spin-offs / IPO, setting up sales / distribution channels / marketing activities, expanding to other countries etc.)

**5. Final remarks (not for publication purposes, to assess how further EU support could best help you)**

**What are remaining bottlenecks to commercialise your solution** (e.g. certification, legislation etc.)

**What type(s) of assistance do you need to address those bottlenecks and grow your business / commercialise your solution more widely** (e.g. EU regulation on x, finding investors, IPR help etc.)

**How important was the procurement for your business** (w/could you have done it on your own?)



## Appendix 10 - Project abstract for Phase 1 [sample]

| Contactor Details   | Type / size of legal entity  | Place of performance of contract activities  | Logo                               |
|---|--|--|------------------------------------|
| <p><u>Main contractor</u></p> <p>Name legal entity</p> <p>Address legal entity</p> <p>Name contact person</p> <p>Phone number contact person</p> <p>E-mail address contact person</p>                         | <p>SME, larger company, natural person, university / research institute, other</p> | <p>% of contract value allocated to main contractor: [complete] %</p> <p>% of activities for the contract performed by the main contractor in EU Member States or countries associated with Horizon 2020: [complete] %</p> | <p>Main contractor logo</p>        |
| <p><u>Other consortium member(s) (if applicable)</u></p> <p>Name legal entity</p> <p>Address legal entity</p> <p>Name contact person</p> <p>Phone nr. contact person</p> <p>E-mail address contact person</p> | <p>SME, larger company, natural person, university / research institute, other</p> | <p>% of contract value allocated to contractor [x]: [complete] %</p> <p>% of activities for the contract performed by contractor [x] in EU Member States or countries associated with Horizon 2020: [complete] %</p>       | <p>Other contractor(s) logo(s)</p> |

|  |  |   |                                 |
|--|--|---|---------------------------------|
| <p><u>Subcontractors (if applicable)</u></p> <p>Name legal entity</p> <p>Address legal entity</p> <p>Name contact person</p> <p>Phone nr. contact person</p> <p>E-mail address contact person</p> <p><i>Complete as many times as there are subcontractors</i></p> | <p>SME, larger company, natural person, university / research institute, other</p> | <p>% of contract value allocated to subcontractor [x]:</p> <p>[complete] %</p> <p>% of activities for the contract performed by subcontractor [x] in EU Member States or countries associated with Horizon 2020: [complete] %</p> | <p>Subcontractor(s) logo(s)</p> |
| <p><b>Project abstract</b> (+/- 1000 characters maximum)</p> <p>[Add an abstract of the winning tender, giving a brief project description agreed with the contractor that is suitable for publication purposes]</p>   |  |   |                                 |
| <p><b>Previous EU funding</b></p> <p>Is the project based on / a continuation of R&amp;D activities that were previously funded by the EU?: YES/NO</p> <p>If yes, identify this EU funding: [name EU funding programme] — [project name] — [grant number]</p>      |  |   |                                 |

|  |
|--|
| <p>Measures to protect Results (IPR)</p> <p>Provide a current list of the pre-existing rights (Background) relevant to the Tenderer's proposed solution, in order to allow IPR dependencies to be assessed.</p> <p><b>Explain the measures, if any, you are still implementing internally (towards your own employees) and</b></p> |
|--|

externally (towards business and competitors) to protect the Results during the project.

**Our company:**

- just started with the identification of potential IPRs
- made a Patent search to make sure the innovation is new
- set-up Employee Internal Controls
- submitted Confidentiality policy to employees and described the policy in a company manual
- drafted non-disclosure agreements with employees
- signed non-competition agreements with employees

*By means of an example - External Measures:*

- Non-competition agreements with contractors, consortium members or subcontractors
- Apply for a Trademark, Copyright, or Patent

**See also Clause 7.1.2 of the Framework Agreement. The Contractor shall, within 30 days of the signature of the Framework Agreement, provide Forum Virium Helsinki with a list of its Background, including but not limited to, a list of the software necessary for the operation of the prototype and pilot services that will be developed as part of the R&D Services, specifying which software is closed source software, as well as a list of prior obligations that may apply to Results. The Contractor shall provide an updated list of its Background at each Phase.**

|   |  |
|---|--|
| Supplier Identification                               |  |
| Declaring companies/entity                            | <ul style="list-style-type: none"> <li>- Lead Supplier:</li> <li>- Other supplier(s):</li> <li>- Subcontractor(s):</li> <li>-</li> </ul> |
| Contact person of the declaring companies/entity      | <p>Name:</p> <p>E-mail address:</p>  |
| List of items included in this Background declaration | <ol style="list-style-type: none"> <li>1. Item #1</li> <li>2. Item #2</li> <li>3. Item #3</li> </ol> <p>...</p>                          |

|   |   |
|---|---|
| <p>List of Confidential items included in this Background declaration</p>   | <ol style="list-style-type: none"> <li>1. Item #1</li> <li>2. Item #2</li> <li>3. Item #3</li> </ol> <p>...</p> |
| <p>In case there would be no Background Intellectual Property to be declared</p>  | <p>I declare that I have no background intellectual property to declare for this PCP Phase 1 contract</p>       |
| <p>Signature of the present Background declaration by the Lead Supplier</p> <p><b>Signature:</b></p> <p><b>Name and position of the Undersigned:</b></p> <p><b>Date and place of the signature:</b></p> |   |

