

Call: HORIZON-CL5-2024-D4-02
(Efficient, sustainable and inclusive energy use)

Topic: HORIZON-CL5-2024-D4-02-05

Type of Action: HORIZON-IA
(HORIZON Innovation Actions)

Proposal number: 101235369

Proposal acronym: PIM-URBAN

Type of Model Grant Agreement: HORIZON Lump Sum Grant

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Administrative forms

Proposal ID 101235369

Acronym PIM-URBAN

1 - General information

Fields marked * are mandatory to fill.

Topic	HORIZON-CL5-2024-D4-02-05	Type of Action	HORIZON-IA
Call	HORIZON-CL5-2024-D4-02	Type of Model Grant Agreement	HORIZON-AG-LS
Acronym	PIM-URBAN		
Proposal title	Digital empowerment for participatory, innovative, multi-scale urban renovation design, planning and management		
	Note that for technical reasons, the following characters are not accepted in the Proposal Title and will be removed: < > " &		
Duration in months	36		
Fixed keyword 1	Urban planning		
Free keywords	Digital citizen engagement, participatory urban planning, innovative governance models, resilience, energy-efficient renovation, urban mobility planning, nature-based solutions		

Abstract *

PIM-URBAN aims to accelerate the transition of European cities and regions towards climate neutrality, through resilient and inclusive models that promote stakeholder participation, awareness raising and capacity building. The project will achieve this aim by proposing three transformative strategies aligned with and inspired by the ambitious European priorities such as the Green Deal, the New European Bauhaus, the Renovation Wave Strategy, and the collaborative and people-centric principles of the Built4People partnership:

Strategy 1: Establishing innovative governance models and frameworks for citizen-centric, multiscale, and multidimensional urban transformation, supported by digital solutions based on optimal collaborative structures in the physical and digital realms.

Strategy 2: Enhancing citizen and communities participation integrating evidence-based digital tools with interactive and meaningful channels.

Strategy 3: Developing and deploying digital tools for urban transformation processes ranging from individual buildings to entire neighbourhoods and districts.

The three strategies will be deployed and validated in six European cities and regions through PIM-URBAN pilots, organised via City Labs. These labs will design 12 transformation projects as Use Cases.

PIM-URBAN is a 36-month project comprising 17 beneficiaries from nine countries, covering the whole value chain of urban planning and participatory processes. This approach ensures the viability of PIM-URBAN's proposed actions and the future exploitation and sustainability of results at all levels, including the locally co-designed transformation projects. Sustainability is treated as a horizontal priority, encompassing the environmental and socioeconomic impacts of the solutions and tools, as well as the viability of all proposed transformations. This includes an assessment of innovative business models for the project pilots and all tools and solutions.

Remaining characters 46

Has this proposal (or a very similar one) been submitted in the past 2 years in response to a call for proposals under any EU programme, including the current call?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Please give the proposal reference or contract number.	
Previously submitted proposals should be with either 6 or 9 digits.	

Administrative forms

Proposal ID **101235369**

Acronym **PIM-URBAN**

Declarations

Field(s) marked * are mandatory to fill.

1) We declare to have the explicit consent of all applicants on their participation and on the content of this proposal. * ☒

2) We confirm that the information contained in this proposal is correct and complete and that none of the project activities have started before the proposal was submitted (unless explicitly authorised in the call conditions). * ☒

3) We declare:

- to be fully compliant with the eligibility criteria set out in the call
- not to be subject to any exclusion grounds under the [EU Financial Regulation 2018/1046](#)
- to have the financial and operational capacity to carry out the proposed project. *

☒

4) We acknowledge that all communication will be made through the Funding & Tenders Portal electronic exchange system and that access and use of this system is subject to the [Funding & Tenders Portal Terms and Conditions](#). * ☒

5) We have read, understood and accepted the [Funding & Tenders Portal Terms & Conditions](#) and [Privacy Statement](#) that set out the conditions of use of the Portal and the scope, purposes, retention periods, etc. for the processing of personal data of all data subjects whose data we communicate for the purpose of the application, evaluation, award and subsequent management of our grant, prizes and contracts (including financial transactions and audits). * ☒

6) We declare that the proposal complies with ethical principles (including the highest standards of research integrity as set out in the [ALLEA European Code of Conduct for Research Integrity](#), as well as applicable international and national law, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols. [Appropriate procedures, policies and structures](#) are in place to foster responsible research practices, to prevent questionable research practices and research misconduct, and to handle allegations of breaches of the principles and standards in the Code of Conduct. * ☒

7) We declare that the proposal has an exclusive focus on civil applications (activities intended to be used in military application or aiming to serve military purposes cannot be funded). If the project involves dual-use items in the sense of [Regulation 2021/821](#), or other items for which authorisation is required, we confirm that we will comply with the applicable regulatory framework (e.g. obtain export/import licences before these items are used). * ☒

8) We confirm that the activities proposed do not

- aim at human cloning for reproductive purposes;
- intend to modify the genetic heritage of human beings which could make such changes heritable (with the exception of research relating to cancer treatment of the gonads, which may be financed), or
- intend to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.
- lead to the destruction of human embryos (for example, for obtaining stem cells)

These activities are excluded from funding. * ☒

9) We confirm that for activities carried out outside the Union, the same activities would have been allowed in at least one EU Member State. * ☒

10) For Lump Sum Grants with a detailed budget table: We understand and accept that the EU lump sum grants must be reliable proxies for the actual costs of a project and confirm that the detailed budget for the proposal has been established in accordance with our usual cost accounting practices and in compliance with the basic eligibility conditions for EU actual cost grants (see [AGA - Annotated Grant Agreement, art 6](#)) and exclude costs that are ineligible under the Programme. Purchases and subcontracting costs must be done taking into account best value for money and must be free of conflict of interest. * ☒

The coordinator is only responsible for the information relating to their own organisation. Each applicant remains responsible for the information declared for their organisation. If the proposal is retained for EU funding, they will all be required to sign a declaration of honour.

False statements or incorrect information may lead to administrative sanctions under the EU Financial Regulation.

Administrative forms

Proposal ID **101235369**

Acronym **PIM-URBAN**

2 - Participants

List of participating organisations

#	Participating Organisation Legal Name	Country	Role	Action
1	AALBORG UNIVERSITET	Denmark	Coordinator	
2	MTAM LABS LTD	UK	Partner	
3	SMART INNOVATION NORWAY AS	NO	Partner	
4	SMART CONTINENT LT UAB	LT	Partner	
5	UNI SYSTEMS SYSTMATA PLIROFORIKIS MONOPROSOPI AEL		Partner	
6	UNIVERSITAT POLITECNICA DE CATALUNYA	ES	Partner	
7	CENTRE INTERNACIONAL DE METODES NUMERICS EN ENGES		Partner	
8	CENEX - CENTRE OF EXCELLENCE FOR LOW CARBON AND UK		Partner	
9	INESC TEC - INSTITUTO DE ENGENHARIA DE SISTEMAS E CCPT		Partner	
10	ECOTEN URBAN COMFORT S.R.O.	CZ	Partner	
11	KOBENHAVNS KOMMUNE	DK	Partner	
12	MC SHARED SERVICES SA	PT	Partner	
13	WEST MIDLANDS COMBINED AUTHORITY	UK	Partner	
14	STATUTARNI MESTO OSTRAVA	CZ	Partner	
15	NAVARRA DE SUELO Y VIVIENDA SAVIN SA	ES	Partner	
16	VIESOJI ISTAIGA 'ATNAUJINKIME MIESTA'	LT	Partner	
17	BUILDING DIGITAL TWIN ASSOCIATION	BE	Partner	

Organisation data

PIC	Legal name
999904034	AALBORG UNIVERSITET

Short name: AAU

Address

Street	FREDRIK BAJERS VEJ 7K
Town	AALBORG
Postcode	9220
Country	Denmark
Webpage	www.aau.dk

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	13/01/2022 - no
SME self-assessment	13/01/2022 - no
SME validation	31/07/1963 - no

Administrative forms

Departments carrying out the proposed work

Department 1

Department name

Department of Sustainability and Planning (AAU-PLAN)

☐ not applicable

☐ Same as proposing organisation's address

Street

A.C. Meyers Vænge 15

Town

Copenhagen

Postcode

2450

Country

Denmark

Department 2

Department name

Department of Architecture, Design and Media Technology(CREATE)

☐ not applicable

☐ Same as proposing organisation's address

Street

A.C. Meyers Vænge 15

Town

Copenhagen

Postcode

2450

Country

Denmark

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Dr

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Daniel

Last name*

Galland

E-Mail*

dgalland@plan.aau.dk

Position in org.

Associate Professor

Department

Department of Sustainability and Planning

☐ Same as organisation name

☐ Same as proposing organisation's address

Street

A.C. Meyers Vænge 15

Town

Copenhagen

Post code

2450

Country

Denmark

Website

Please enter website

Phone

+45 9940 8282

Phone 2

+45 5048 5189

Other contact persons

First Name	Last Name	E-mail	Phone
Ulla	Egdiussen	uege@adm.aau.dk	+45 9940 7480
Erik	Bech Jakobsen	erikbj@plan.aau.dk	+XXX XXXXXXXXX
Sophie	Røhr Tunstall	srbt@plan.aau.dk	+XXX XXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Daniel	Galland	Man	Denmark	dgalland@plan.aau.dk	Category B Senior resea	Leading	0000-0003-2648-806X	Orcid ID
Dr	Jens	Luel-Stissing	Man	Denmark	jsti@plan.aau.dk	Category B Senior resea	Team member	0000-0003-3535-3773	Orcid ID
Dr	Thomas	Bjørner	Man	Denmark	tbj@create.aau.dk	Category B Senior resea	Team member	0000-0001-9071-7168	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input checked="" type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Freudenthal, M., Galland, D. & Iuel-Stissing, J. 2025. <i>Planning for Urban Sustainability – Doctrines, Disciplines and Practices</i> . Chichester: Edward Elgar Publishing. ISBN: 9781035347476. https://www.e-elgar.com/shop/gbp/planning-for-urban-sustainability-9781035347476.html?srsltid=AfmBOooqJlpKAFGDMlyT_OnN_YTAESCPbHLL7ae_70UT6BxIh2VEQTJE
Publication	Harrison, J., Galland, D., & Tewdwr-Jones, M. 2022. <i>Planning Regional Futures</i> . London: Routledge. ISBN 9780367705756 https://doi.org/10.4324/9781003147008
Publication	Bjørner, T. 2021. <i>The advantages of and barriers to being smart in a smart city: The perceptions of project managers within a smart city cluster project in Greater Copenhagen</i> . https://doi.org/10.1016/j.cities.2021.103187
Publication	Galland, D. & Harrison, J. 2020. <i>Metropolitan Regions, Planning and Governance</i> . Cham: Springer International Publishing. ISBN 978-3-030-25634-0 https://doi.org/10.1007/978-3-030-25632-6
Publication	Iuel-Stissin, J. & Cashmore, M. 2019. <i>The Politics of Urban Sustainability Transitions. Knowledge, Power and Governance</i> . London: Routledge. ISBN 9781138479654 https://doi.org/10.4324/9781351065344

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
POLICYMIX4MOBILITY (2025-2028)	POLICYMIX4MOBILITY evaluates existing policy mixes and develops forward-looking strategies that support sustainable mobility practices in collaboration with city administrations. It co-develops a toolbox to facilitate institutional, procedural, and social innovations alongside political strategies to navigate the complexities of reducing car dependency.
KINETIC (2023-2025)	KINETIC examines the governance conditions that enable citizen participation in energy systems transitions at the building and district levels via living labs designed to mobilize and engage local citizens. It integrates the analysis with the design and implementation of living labs that activate local communities through district-level smart data to drive systemic transformation. KINETIC generates evidence to support the development of integrative and inclusive transition agendas.
FMC (2022–2024)	"The 15-Minute City: Everyday Life in the Living City" addresses how planners can navigate the multi-faceted and complex demands placed on the climate-neutral cities of the future. Based on the idea of the 15-minute city, the project delves into spatial, temporal, and qualitative aspects required.
SIMS (2021–2024)	Sustainable Innovative Mobility Solutions: Future low-carbon mobility integrating shared, electrified and autonomous transport. Its goal is to develop mobility solutions based on various environmentally friendly forms of transport that are cross-integrated through digital solutions.
LANDTIME (2021–2025)	The Planning and Building Act Between Market Demand, Land Policy, Sustainability and Intergenerational Justice. collaborative, trans-disciplinary and knowledge-building project whose primary objective is to investigate the functional capacity of spatial planning systems.

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure or equipment	Short description (Max 300 characters)
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Administrative forms

<i>DIGIPLAN (2020–2022)</i>	<i>DIGIPLAN analyses digital planning approaches across different national planning systems including methods for evaluation with plan data and how planning is actually represented in such data. DIGIPLAN analyses and compares the digitalisation of planning data in Denmark, Norway and Switzerland.</i>
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Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes ☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
874006473	MTAM LABS LTD

Short name: MTAM

Address

Street	205 KINGS ROAD, SUITE B, FAIRGATE HOUSE, TYS
Town	Birmingham
Postcode	B11 2AA
Country	United Kingdom
Webpage	WWW.MTAMGROUP.CO

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	08/01/2025 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Ms

Gender

☒ Woman

☐ Man

☐ Non Binary

First name*

Elizabeth

Last name*

Lawal

E-Mail*

info@mtamgroup.co

Position in org.

Co-founder

Department

MTAM LABS LTD

☒ Same as organisation name

☒ Same as proposing organisation's address

Street

205 KINGS ROAD, SUITE B, FAIRGATE HOUSE, TYSLEY

Town

Birmingham

Post code

B11 2AA

Country

United Kingdom

Website

Please enter website

Phone

07950972594

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Kester	Sleeman	kez@mtamgroup.co	07432109381

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Reconnecting Wolverhampton	Reconnecting Wolverhampton was a transformative transport innovation initiative aimed at designing and implementing net zero neighborhoods in Graisleigh, an underserved community. This project directly engaged local residents through participatory workshops, equipping them with practical skills in sustainability and net zero living, while capturing their aspirations for the future.
Bearwood 2040	Reimagining Bearwood brought together residents and local businesses to collaboratively design a vision for a net zero future. This project emphasized the unique role that small businesses play in achieving sustainability goals while addressing the needs of the local community. Through tailored workshops, participants explored co-benefits, such as fostering economic resilience, reducing carbon footprints, and enhancing local infrastructure.
Beautiful Futures Festival	The Beautiful Futures Festival brought together over 400 attendees, including speakers, artists, and changemakers, for a groundbreaking event exploring the intersections of culture, climate, race, and innovation. With a focus on amplifying underrepresented voices and showcasing bold, creative solutions, the Beautiful Futures Festival provided an inclusive platform to envision and build a just, equitable, and sustainable future for all.

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☐ Yes

☒ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
950648016	SMART INNOVATION NORWAY AS

Short name: SIN

Address

Street	HAKON MELBERGS VEI 16
Town	HALDEN
Postcode	1783
Country	Norway
Webpage	www.smartinnovationnorway.com

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	01/04/2022 - yes
SME self-assessment	unknown
SME validation	31/12/2012 - no

Administrative forms

Departments carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Dr

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Alemu

Last name*

Belay

E-Mail*

alemu.belay@smartinnovationnorway.com

Position in org.

Head of Energy Systems

Department

Energy systems

☐ Same as organisation name

☒ Same as proposing organisation's address

Street

HAKON MELBERGS VEI 16

Town

HALDEN

Post code

1783

Country

Norway

Website

Please enter website

Phone

+XXX XXXXXXXXXX

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Elena	Calzado	elena.calzado@smartinnovationnorway.com	+XXX XXXXXXXXXX
Agnieszka	Haider	agnieszka.haider@smartinnovationnorway.com	+XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Alemu	Belay	Man	Norway	alemu.belay@smartinnovationnorway.com	Category A Top grade re	Leading	0000-0002-9022-9778	Orcid ID
Ms	Elena	Calzado	Woman	Spain	elena.calzado@smartinnovationnorway.com	Category B Senior resea	Team member	0009-0004-9017-5791	Orcid ID
Mr	Aaditya	Dandwate	Man	India	aaditya.dandwate@smartinnovationnorway.com	Category D First stage r	Team member	0009-0001-0248-7655	Orcid ID
Mr	Ahmed Samir	Hedar	Man	Egypt	ahmed.hedar@smartinnovationnorway.com	Category D First stage r	Team member	0009-0002-1615-3848	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input checked="" type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Kubli, M., & Puranik, S. (2023). A typology of business models for energy communities: Current and emerging design options. <i>Renewable and Sustainable Energy Reviews</i> , 176, 113165.
Publication	Hoffmann, M., Puranik, S., Juanpera, M., Martin-Rapun, J. M., Tuiskula, H., & Blechinger, P. (2021). Investment planning in multi-vector energy systems: definition of key performance indicators. <i>CIREN-Open Access Proceedings Journal</i> , 2020(1), 158-161
Publication	Belay, A. M., Puranik, S., Gallart-Fernández, R., Tuiskula, H., Melendez, J., Lamprinos, I., ... & Smolnikar, M. (2021). Developing Novel Technologies and Services for Intelligent Low Voltage Electricity Grids: Cost–Benefit Analysis and Policy Implications. <i>Energies</i> , 15(1), 94.
Publication	F. Farrukh, C. Dunks, M. Hoffmann and P. O. Dypvik, "Assessment of the potential of local solar generation for providing ship shore power in the Norwegian harbour Port of Borg," 2022 18th International Conference on the European Energy Market (EEM), 2022, pp. 1-6, doi: 10.1109/EEM54602.2022.9921031.
Publication	Kunze, C.W., Belay, A.M., Hedar, A.S., Dandwate, A. (2025). Citizen Engagement and Co-creation in a Net-Zero Built Environment Transitions: Challenges and Best Practices. In: Kioumars, M., Shafei, B. (eds) <i>The 1st International Conference on Net-Zero Built Environment. NTZR 2024. Lecture Notes in Civil Engineering</i> , vol 237. Springer, Cham. https://doi.org/10.1007/978-3-031-69626-8_143 .

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
E-LAND	The E-LAND energy community-oriented and modular tool approach including the business model innovation (BMI) tool can be adapted to PIM-URBAN concept and serve as a foundation for the exploitation the project tools including business, social and technology solutions.
Harmonise	The exploitation activities in the Harmonise project particularly the interoperability and the business data collection methods from various digital solution can be used in PIM-URBAN and serve as a reference for benchmarking. This in turn ensure the exploitability of PIM-URBAN project outcomes and solutions for city labs so that they speed up their decarbonisation processes.
SESA	The learnings and experiences from the SESA PV living labs in the rural community including the business model, exploitation and sustainability pathway can be adopted and implemented in the PIM-URBAN project. More over the replication roadmap developed in SESA can easily be adapted to the PIM-URBAN context.
RESOLVD	The RESOLVD business case analysis for various smart digital solutions can be adapted and implemented approach focusing on the value proposition and validated KERs through economic viability test can be used in the PIM-URBAN using its relevant project KPIs and outcomes to ensure the sustainability and long term impact of the project.
AURORAL	The AURORAL scalability and replicability assesement methodology with a set of criterias (covering the business, technology, social and environment) will be adapted and implemented to the PIM-URBAN and ensure the project digital tools and project outcome be sustainability and have a long-term impact.

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes ☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
986357111	SMART CONTINENT LT UAB

Short name: SC

Address

Street	KAREIVIU GATVE 19
Town	VILNIUS
Postcode	09133
Country	Lithuania
Webpage	www.smartcontinent.com

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	31/03/2018 - yes
SME self-assessment	31/03/2018 - yes
SME validation	13/09/2005 - yes

Administrative forms

Departments carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Dr

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Andrius

Last name*

Jarzemskis

E-Mail*

andrius.jarzemskis@smartcontinent.com

Position in org.

General director

Department

SMART CONTINENT LT UAB

☒ Same as organisation name

☒ Same as proposing organisation's address

Street

KAREIVIU GATVE 19

Town

VILNIUS

Post code

09133

Country

Lithuania

Website

Please enter website

Phone

+370 687 54 413

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Ieva	Girdvainienė	ieva.girdvainiene@smartcontinent.com	+370 63585593

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Andrius	JARŽEMSKIS	Man	Lithuania	Andrius.jarzemski s@smartcontinen t.com	Category A Top grade re	Leading	0000-0003-0590- 7536	Orcid ID
Mrs	Ieva	GIRDVAINIENE	Woman	Lithuania	Ieva.girdvainiene @smartcontinent .com	Category A Top grade re	Team member	0009-0002-3585- 4703	Orcid ID
Mrs	Ilona	JARZEMSKIENE	Woman	Lithuania	Ilona.jarzemskien e@smartcontinen t.com	Category A Top grade re	Team member	0000-0003-2361- 1894	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Girvainiene Ieva, Jarzemskis Andrius. Women in transport: Systematic literature review of mobility barriers to women's employment, 2024</i>
Publication	<i>Andree Woodcock; Merja Hoppe; Elena Tavlaki; Andrius Jaržemskis; Georgio Georgiadis. Strategies for integrating and optimising transport systems. Designing mobility and transport services: developing traveller experience tools / edited by Mike Tovey, Andree Woodcock, Jane Osmond, JK, 2017.</i>
Publication	<i>Andrius Jaržemskis; Ilona Jaržemskienė Evolution of traveller experience quality perception in European level policy documents and the case study for Siauliai Transport and telecommunication journal, 2017, Vol. 18, no. 3</i>
Publication	<i>Andrius Jaržemskis; Vytautas Jaržemskis. The research into methodology for evaluation of transport infrastructure investments, Reliability and statistics in transportation and communication (RelStat-09), 21-24 October 2009, Riga, Latvia : abstracts of the 9th international conference / Transport and Telecommunication Institute, Kh. Kordonsky Charitable Foundation (USA), Latvian Transport Development and Education Association, Latvian Academy of Science, Latvian Operations Research Society</i>
Publication	<i>Andrius Jaržemskis; Ilona Jaržemskienė The model to assess the implementation of technical conditions defined in Annex IV of MARPOL convention 73/78: the case of the Baltic sea port of Klaipeda, Riga: Transport and telecommunication journal, Vol. 17, no. 4, 2016.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
CO-SECUR	<i>CO-SECUR aims to improve citizens' security perception and behaviour in public spaces, especially at large events and crowded areas, by actively engaging them to co-create innovative security solutions. CO-SECUR is a call to redefine security, not just as a physical necessity but as a shared perception rooted in citizen engagement and responsible innovation.</i>
DISTENDER	<i>Integrated strategies for climate change adaptation and mitigation involve efforts that simultaneously address the current and expected impacts and reduce greenhouse gas emissions. The EU-funded DISTENDER project will create a methodological framework to respond to the impacts and risks of climate change. Using a participatory process, DISTENDER will develop multi-driver socio-economic climate scenarios that integrate bottom-up knowledge with top-down information. The project will also develop a</i>
SUITS	<i>Innovative transport measures are crucial for addressing the challenges of congestion and pollution while improving the quality of life in urban areas. However, small cities lack the necessary capacity to implement sustainable transport initiatives effectively. The EU-funded SUITS aims to bridge this gap. It will focus on capacity building in local authorities and transport stakeholder organisations, with a particular emphasis on smaller cities.</i>
PORTIS	<i>Port cities are unique urban environments that combine the best of both worlds – sea and land – and are thus ideal testing grounds for multidimensional urban mobility solutions. The project aims to demonstrate that more efficient and sustainable mobility is instrumental in establishing vital and multimodal hubs for urban, regional, national and international mobility.</i>
AIRPORT2050	<i>The 2050+ Airport project has been commissioned by the EU-Commission, DG Research, to explore radical and novel solutions to prepare airports for the year 2050 and beyond. Key to the project is the assumption that the airport of the future must address a wide variety of different, sometimes contradictory objectives.</i>

Administrative forms

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☐ Yes ☒ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
983611914	UNI SYSTEMS SYSTIMATA PLIROFORIKIS MONOPROSOPI ANONYMI EMPORIKI ETAIRIA

Short name: UNIS

Address

Street	AL PANTOU STREET 19-23
Town	ATHINA
Postcode	176 71
Country	Greece
Webpage	www.unisystems.com

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	27/02/1971 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	BUSINESS DEVELOPMENT & RDI	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	AL PANTOU STREET 19-23	
Town	ATHINA	
Postcode	176 71	
Country	Greece	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Mr

Gender

Woman

Man

Non Binary

First name*

Eleftherios

Last name*

Kiamilis

E-Mail*

ifed@unisystems.eu

Position in org.

IFED Manager

Department

BUSINESS DEVELOPMENT & RDI

Same as organisation name

Same as proposing organisation's address

Street

AL PANTOU STREET 19-23

Town

ATHINA

Post code

176 71

Country

Greece

Website

www.unisystems.com

Phone

+302119991952

Phone 2

+306999994422

Other contact persons

First Name	Last Name	E-mail	Phone
Antonios	Cassano	cassanosa@unisystems.gr	+302119991184

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier	
Mr	Ilias	Aliferis	Man	Greece	AliferisI@unisystems.gr	Category C Recognised	Team member	https://www.linkedin.com/in/ilias-aliferis-3742b564/	Other ID	LinkedIn
Mr	Plato	Velonias	Man	Greece	VeloniasP@unisystems.gr	Category C Recognised	Team member	https://www.linkedin.com/in/ilias-aliferis-3742b564/	Other ID	LinkedIn

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Software	Development of a cloud/edge-based platform, with a modular architecture to encapsulate the various developed components/solutions
Software	Development of a digital innovation hub, a cloud/web-based multi-sided market platform to provide an entry point to the offered apps and services and connect users and professionals
Software	Development of a recommendation engine - AI assistant tool to provide personalized recommendations, information and solutions
Software	Creation of open data-banks and guidelines repositories

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
EnerWise	A scalable sociotechnical solution for monitoring & management of energy consumption in public school buildings. Adopting a sociotechnical systems approach, EnerWise will pilot: 1) a toolbox that will deploy IoT tech and a cloud-based Platform with advanced analytics, allowing for centralized, real-time monitoring & analysis of energy consumption patterns, 2) a series of scalable community engagement & behaviour change interventions facilitated via a mobile app enabling stakeholder engagement.
SchoolHeroZ	SchoolHeroZ: A Holistic Roadmap to Net Zero Schools. The project supports the City of Kalamata with its transition to climate neutrality via a holistic approach of sociotechnical components that will support large-scale interventions on school ecosystems & beyond. It will pilot: a Digital Twin for its school buildings, a central digital platform to monitor energy & mobility data and emissions, an app to encourage citizen behaviour change, a novel governance model & a capacity building programme.
ACCESS	Enhancing Accessibility and Sustainability in Smart Cities and Smart Buildings: The Universal Accessibility Suite Initiative. By leveraging advanced technologies like AI, BIM and GIS, AccessS aspires to deliver innovations supporting accessible and inclusive design by providing advanced analytics for life-cycle assessments, optimizing energy, environmental, and user comfort aspects, incorporating simulation-based testing and guidelines for designing user-friendly built environments.
Exploit4InnoMat	An Open Innovation Ecosystem for exploitation of materials for building envelopes towards zero energy buildings. Exploit4InnoMat will make available a high-end Open Innovation Testbed network for building envelopes incl. roofs and facades, enabling the replication of prototypes in different buildings. A semi-automated tool combining BIM analysis, fast track modelling and simulation will enable a digital tool for utilizing building blocks.

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
A highly-available experimental Cloud Infrastructure	60 cores at 2.4GHz (with virtualisation capabilities), supported by a Network Attached Storage (NAS) infrastructure, with an effective capacity up to 25 Tb of data
Cloud Infrastructure	Deployed ESXI-based Hypervisor to part of its computational resources (VMWARE-based cloud) and KVM-based Hypervisor on top Metal-As-A-Service framework (Openstack)
Cloud Infrastructure	Targeting the support of a variety of service provision scenarios based on developments and demonstrations from various Research and Innovation projects
Cloud Infrastructure	Special care is taken for the ease of interconnection with external modules, processing nodes and software components for the extendibility of the test-bed

Administrative forms

<i>Advanced networking and computing infrastructure</i>	<i>Database servers and servers used for software development as well as for subversion purposes</i>
<i>Advanced networking and computing infrastructure</i>	<i>Software for quality assurance purposes of the developed code</i>
<i>Advanced networking and computing infrastructure</i>	<i>Advanced platforms used as sharing and collaborative environments</i>
<i>Advanced networking and computing infrastructure</i>	<i>Certified quality management framework and system, which is compatible with the EN ISO 9001:2008 quality standard, for the "design, development, integration, production, installation, deployment, hosting and technical support of software solutions and information technology systems</i>
<i>Advanced networking and computing infrastructure</i>	<i>Deployed management system for information security in accordance with the ISO 27001:2005 quality standard</i>
<i>Venues for meetings & networking activities</i>	<i>Conference Room (100 seated)</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☐ Yes

☒ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999976202	UNIVERSITAT POLITECNICA DE CATALUNYA

Short name: UPC

Address

Street	CALLE JORDI GIRONA 31
Town	BARCELONA
Postcode	08034
Country	Spain
Webpage	www.upc.edu

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not** an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	12/01/2022 - no
SME self-assessment	12/01/2022 - no
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Statistics and Operations Research	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	CALLE JORDI GIRONA 31	
Town	BARCELONA	
Postcode	08034	
Country	Spain	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Prof.

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Pau

Last name*

Fonseca Casas

E-Mail*

pau.fonseca@upc.edu

Position in org.

Associate Professor

Department

Statistics and Operations Research

☐ Same as organisation name

☒ Same as proposing organisation's address

Street

CALLE JORDI GIRONA 31

Town

BARCELONA

Post code

08034

Country

Spain

Website

Please enter website

Phone

+XXX XXXXXXXXXX

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
International	Projects Unit	cttinfo.europeus@upc.edu	+XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Pau	Fonseca i Casas	Man	Spain	pau@fib.upc.edu	Category B Senior resea	Leading		
Dr	Karina	Gibert	Woman	Spain	karina.gibert@upc.edu	Category C Recognised	Team member	0000-0002-8542-3509	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Corominas i Tabares, J., Fonseca i Casas, A., & Fonseca i Casas, P. (2022). Contribution of Thermal Inertia to the Interior Climate of Girona Cathedral: Feasibility Analysis for the Preservation of Pieces of Art through the Monitoring of Thermal Conditions for 6 Years. <i>Energies</i> , 15(4). https://doi.org/10.3390/en15041571
Publication	Fonseca i Casas, A., Ortiz, J., Garrido, N., Fonseca i Casas, P., & Salom, J. (2018). Simulation model to find the best comfort, energy and cost scenarios for building refurbishment. <i>Journal of Building Performance Simulation</i> , 11(2), 205–222. https://doi.org/10.1080/19401493.2017.1323011
Publication	Fonseca i Casas, P., & Casanovas, J. (2009). JGPSS, An open source GPSS framework to teach simulation. <i>Proceedings of the 2009 Winter Simulation Conference (WSC)</i> , September, 256–267. https://doi.org/10.1109/WSC.2009.5429335
Publication	Fonseca i Casas, P. (2023). A Continuous Process for Validation, Verification, and Accreditation of Simulation Models. <i>Mathematics</i> 2023, Vol. 11, Page 845, 11(4), 845. https://doi.org/10.3390/MATH11040845
Publication	Godoy, A., Pages-Ramon, A., Fonseca i Casas, P., & Cuchi, A. (2024, June 27). Sensitivity analysis of the built stock in Spain. Full factorial experiment and Yates analysis. <i>PLEA 2024: (Re)Thinking Resilience: The Book of Proceedings: Proceedings of 37th PLEA Conference</i> .

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
TED2021-132187B-I00	Scientific coordinator: Pages-Ramon, A.; Fonseca i Casas, P. 01/12/2022 - 31/05/2025. Duration: 02 year/s 06 month/s. Scope: National. Institution in which the research was undertaken: TECNOLOGIA DE L'ARQUITECTURA. Funding body: AGENCIA ESTATAL DE INVESTIGACION
PERIS	Scientific coordinator. Immediate and deferred multidimensional impact of SARS-COV2 syndemic on community health: analysis and modelling in the population served at CAPSBE during the period 2020-2024. Scientific coordinator: Fonseca, P.. 01/04/2022 - 31/12/2024. Duration: 02 year/s 09 month/s. Scope: Regional. Research. Funding body: GENERALITAT DE CATALUNYA.
SURENEXUS	Researcher. Ensure fair NEXUS transition for climate change adaptation and sustainable development implementation based on coupled nature-based systems and bioeconomy. Scientific coordinator: Morato, J.. 01/04/2022 - 31/03/2025. Duration: 03 year/s. Scope: International. Funding body: European Commission.
DIH4CAT	Professor. Catalonia Digital Innovation Hub (DIH4CAT). Scientific coordinator: Romeral, L.. 01/05/2022 - 31/12/2025. Duration: 03 year/s 08 month/s. Scope: European. Digital Hub innovation Catalonia.
VERNE	Scientific coordinator: Fonseca i Casas, P. Duration: 03 year/s Scope: International. The VERNE project aims to transition European tourism towards sustainable and circular models.

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
-------------------------------------	--

Administrative forms

NECADA	<p>https://necada.com</p> <p><i>NECADA is an advanced simulation and optimization software dedicated to achieving sustainable building designs. By leveraging cloud, cluster, and desktop computing power, NECADA conducts comprehensive life-cycle assessments to minimize environmental, economic, and social impacts.</i></p>
SDLPS	<p>https://sdlps.com</p> <p><i>SDLPS is a distributed simulator that employs the SDL (Specification and Description Language) for model definition. This comprehensive definition encompasses both the model's behaviour and structure, enabling direct simulation without the need for explicit implementation.</i></p>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☐ Yes

☒ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999658721	CENTRE INTERNACIONAL DE METODES NUMERICS EN ENGINYERIA

Short name: CIMNE

Address

Street	C GRAN CAPITAN, EDIFICI C1, CAMPUS NORD UP
Town	BARCELONA
Postcode	08034
Country	Spain
Webpage	www.cimne.com

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	19/08/2008 - no
SME self-assessment	unknown
SME validation	19/08/2008 - no

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Building Energy and Environment - BEE Group	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Turó de Gardeny, edifici H3, planta 1ª,	
Town	Lleida	
Postcode	25003	
Country	Spain	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Dr

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Jordi

Last name*

Cipriano

E-Mail*

cipriano@cimne.upc.edu

Position in org.

Director of Department

Department

Building Energy and Environment - BEE Group

☐ Same as organisation name

☐ Same as proposing organisation's address

Street

Turó de Gardeny, edifici H3, planta 1ª, Ala A, oficina 11

Town

Lleida

Post code

25003

Country

Spain

Website

https://www.beegroup-cimne.com/

Phone

+34873991354

Phone 2

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Maite	Sellart	tsellart@cimne.upc.edu	+34873991354
Alvaro	Luna	alvaro.luna@upc.edu	+34873991354
Alex	Berra	preaward@cimne.upc.edu	+34934016344

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Jordi	Cipriano	Man	Spain	cipriano@cimne.upc.edu	Category B Senior resea	Leading	0000-0003-0357-2090	Orcid ID
Dr	Gerard	Mor	Man	Spain	gmor@cimne.upc.edu	Category B Senior resea	Team member	0000-0002-8771-3489	Orcid ID
Dr	Stoyan	Danov	Man	Bulgaria	sdanov@cimne.upc.edu	Category B Senior resea	Team member	0000-0001-8127-6495	Orcid ID
Mr	Jordi	Carbonell	Man	Spain	jordi@cimne.upc.edu	Category B Senior resea	Team member	0000-0002-5476-0000	Orcid ID
Ms	Maite	Sellart	Woman	Spain	tsellart@cimne.upc.edu	Category C Recognised	Team member	0009-0002-6515-2315	Orcid ID
Ms	Núria	Salvador	Woman	Spain	nsalvador@cimne.upc.edu	Category C Recognised	Team member	0009-0002-2405-6159	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Lazzari F; Mor G; Cipriano J; Gabaldon E; Grillone B; Chemisana D; Solsona F. Nov 2022. User behaviour models to forecast electricity consumption of residential customers based on smart metering data. Energy Reports. Vol 8. Pp 3680-3691.
Publication	B. Grillone; G.Mor; S. Danov; J. Cipriano; A. Sumper. A data-driven methodology for enhanced measurement and verification of energy efficiency savings in commercial buildings. Applied Energy. Vol 301. 2021. DOI:10.1016/j.apenergy.2021.117502
Publication	G. Mor; J. Cipriano; E. Gabaldon; B. Grillone; M. Tur; D. Chemisana. Data-driven virtual replication of thermostatically controlled domestic heating systems. Energies. Vol. 14. 17. 2021. DOI: 10.3390/en14175430
Publication	G. Mor; J. Cipriano; G. Martirano; F. Pignatelli; C. Lodi; F. Lazzari; B. Grillone; D. Chemisana. A data-driven method for unsupervised electricity consumption characterisation at the district level and beyond. Energy Reports. Vol 7. p.p 5667-5684. 2021. DOI: https://doi.org/10.1016/j.egyr.2021.08.195
Publication	G. Mor; J. Cipriano; B. Grillone; F. Amblard; R. Parakkal; J. Page; M. Brennenstuhl; D. Pietruschka; R. Baumer; U. Eicker. Operation and energy flexibility evaluation of direct load controlled buildings equipped with heat pumps. Energy and Buildings. Volume 253. 15 December 2021. DOI: https://doi.org/10.1016/j.enbuild.2021.111484

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
DEDALUS	Start 01/05/2023. End 30/04/2026. Program HE. Grant Agreement ID: 101103998. DEDALUS will design, develop and demonstrate multi-value energy carrier-agnostic micro (home/apartment) to macro (building/district) participatory Demand Response ecosystem, aimed to: i) Facilitate and scale up residential energy consumers massive participation to DR; ii) Adapt to a variety of different mono-carrier or multi-carrier synergetic scenarios at building/district scale, while strengthening social interactions.
CR-BCN: Climate Ready BCN	Start 01/05/2023. End 30/06/2025. Program: ICLEI Action Fund 2.0. Climate-Ready Barcelona (BCN) aims to support the Barcelona city council and citizenship in anticipating and adapting to climate change effects and the related energy crisis. It will develop and implement cutting-edge energy awareness services addressed to the Energy Advisory Centers (EACs) users and a data-driven household climate vulnerability map to support the municipal departments' climate-related decisions.
ePLANET	Start 01/09/2021. End 01/09/2024. Program: H2020. Grant Agreement ID: 101032450. The ePLANET project aims to implement a methodology to enhance and facilitate the energy transition multi-level governance of public authorities and the coordinated adoption of Energy Transition Measures for achieving the European sustainability targets. ePLANET platform facilitates and adopts coordinated Energy Transition actions by setting a new framework to share information in a harmonized common language.
BIGG	Start 01/12/2020. End 01/12/2024. Program H2020. Grant agreement ID: 957047. BIGG project aims to demonstrate the application of big data technologies and data analytic techniques for the complete building life-cycle of more than 4000 buildings in 6 large-scale pilots, achieved by: i) the Open Source BIGG Data Reference Architecture 4 Buildings; ii) interoperable buildings data specification, BIGG Standard Data Model 4 Buildings; iii) an extensible, open, cloud-based BIGG Data Analytics Toolbox.

Administrative forms

EN-TRACK	<i>Start 01/11/2020. End 31/10/2023. Program: H2020. Grant agreement ID: 885395. EN-TRACK builds on an existing infrastructure enabling massive data gathering, making the data comparable and interoperable with other existing databases, analyzing this data and offering relevant results to key stakeholders. It enables better decision-making, contributes to the de-risking of energy efficiency investments in buildings and facilitates the closing of investment deals.</i>
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Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
BIGG Ontology	<i>Created in Terse RDF Triple Language, a W3C standard format, over the conceptual base of the BIGG Standard Data Model 4 Buildings. It has a modular structure consisting of a core (three class groups) and extensions (with additional classes and relations). https://github.com/bigproject/Ontology</i>
ENMA	<i>Our big data architecture currently manages energy hourly consumption data from 750000 residents from 6 European countries and 8000 public buildings from 7 EU countries. This architecture follows an API-based scheme, collects weather data, and trains forecasting models offering scalability analysis.</i>
Open Source IoT platform	<i>CIMNE has long experience in IoT platforms addressed to public sector. CIMNE promoted Innergy, a spin-off company commercializing an energy management framework in more than 400 Spanish municipalities. We can get access to this data, including energy consumption and comfort data from 3000 buildings.</i>
BeeGeo	<i>BEE Geo is a geographical benchmarking platform. It's a web application that analyses geographical postal code electricity consumption, enabling characterization and benchmarking of energy consumption indicators. More information can be found at this link: https://www.youtube.com/watch?v=-GadpytNrQE</i>
BeePV	<i>BeePV is a tool to allow the massive prospection and optimization of PV solar systems. It uses optimization algorithms to boost energy communities based on PV collective self-consumption plants selecting potential users and sharing coefficients https://www.youtube.com/watch?app=desktop&v=wn1nah3ua24</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes

☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
974256458	CENEX - CENTRE OF EXCELLENCE FOR LOW CARBON AND FUEL CELL TECHNOLOGIES

Short name: CENEX

Address

Street	HOLYWELL BUILDING HOLYWELL PARK ASHBY R
Town	LOUGHBOROUGH LEICESTERSHIRE
Postcode	LE11 3UZ
Country	United Kingdom
Webpage	www.cenex.co.uk

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	21/02/2005 - yes
SME self-assessment	unknown
SME validation	21/02/2005 - yes

Administrative forms

Departments carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Ms

Gender

☒ Woman

☐ Man

☐ Non Binary

First name*

Beth

Last name*

Morley

E-Mail*

beth.morley@cenex.co.uk

Position in org.

Human Insights Lead

Department

Policy Strategy and Innovation

☐ Same as organisation name

☒ Same as proposing organisation's address

Street

HOLYWELL BUILDING HOLYWELL PARK ASHBY ROAD

Town

LOUGHBOROUGH LEICESTERSHIRE

Post code

LE11 3UZ

Country

United Kingdom

Website

Please enter website

Phone

+XXX XXXXXXXXXX

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Steve	Carroll	steve.carroll@cenex.co.uk	07940 512 609

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Steve	Carroll	Man	United Kingdom	Steve.carroll@cenex.co.uk	Category A Top grade re	Leading		
Ms	Beth	Morley	Woman	United Kingdom	Beth.morley@cenex.co.uk	Category B Senior resea	Leading		
Mr	Matthew	Ward	Man	United Kingdom	Matt.ward@cene x.co.uk	Category B Senior resea	Team member		
Dr	Juliette	Kariuki-Cobbett	Woman	United Kingdom	juliette.kariuki@c enex.co.uk	Category C Recognised	Team member		
Mr	Abdelrahman	Hegazy	Man	Egypt	hegazy.ibrahim@ cenex.co.uk	Category C Recognised	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input checked="" type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Software	National EV Insight & Support (NEVIS) https://nevis.cenex.co.uk/ Local authority area based guidance and modelling tool on EV uptake, charging requirements, investment & ROI, CO2 and Air Quality impacts, best practice, procurement advice (including Heads of Terms, KPIs etc.)
Software	Charging Infrastructure Business Cases Assessment Tool (CIBCAT). Charging Infrastructure Business Case Assessment Tool (CIBCAT) % (cenex.co.uk) Business case of a project to install public charging at a single site in any market across the globe. The tool provides an assessment over a ten-year period (the assumed lifespan of the chargers), providing common financial metrics for the project. The user needs to provide details on the chargers and associated costs for the project.
Software	EIGER. High level, customisable model designed to quickly assess the impact of: Charging hardware, EV use cases, charging algorithms, on-site generation and storage on electricity demand shapes for a single site. The model seeks to reduce the peak demand of the site by using smart charging, V2G and stationary storage. The model runs for a number of user defined 'typical days' in the year and results can be upscaled to produce estimates of annual totals.
Software	VESUVIUS. The Vehicle Emission, Scrappage, & Uptake Values In Usage Scenarios (VESUVIUS) Model has been designed to assess the effects of different strategies to reduce passenger transport emissions from a city. The model quantifies the impacts resulting from different policy strategies.

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Local E-Motion	Personal Electric Transport in Yorkshire project will work with local people and communities to explore the opportunities for local e-transport hub-based schemes, including e-scooters and ebikes, electric cars, and demand responsive transport (DRT). The project will also co-design sustainable and well evidenced proposals that will best meet the need of those in rural communities who want to make affordable low carbon transport choices. The project is supported by the UK Community Renewal Fund
Belper Heritage Site	The Belper Clusters is a community of former mill workers' cottages, built during the 18th & 19th centuries. The area has been designated part of the Derwent Valley Mills World UNESCO Heritage Site. Cenex were commissioned via funding from the Rural Community Energy Fund to undertake a feasibility study to assess how this area (and others like it) can adopt electric vehicle charging and renewable energy generation technologies, while protecting the characteristics most valued by the local community
The LEVI Fund	The LEVI Fund is a £400m capital grant scheme administered by OZEV and supported by the Energy Saving Trust, Cenex and PA. It will support the planning and roll-out of electric vehicle charging infrastructure across the UK through large scale, ambitious and commercially sustainable projects that leverage significant private sector investment. Cenex will deliver expert technical advice and support to ensure that applications to the fund are of a high quality.
WMCA Park and Ride EV Strategy	Cenex was commissioned by the West Midlands Combined Authority (WMCA) and Transport for West Midlands (TfWM) to create an evidence-based Ultra-Low Emission Vehicle (ULEV) Strategy for its Park and Ride sites. The task was to apply the existing TfWM ULEV Strategy produced by Cenex in 2020 to the Park and Ride estate, developing a phased plan prioritising chargepoint installations suitable for the current policy context.

Administrative forms

Sciurus	<i>Project Sciurus combines experts in energy, transport and infrastructure to develop a real-world domestic solution for V2G, install it in hundreds of homes across the UK and smartly control its operation to reduce cost and provide services to the grid. Further the project was to demonstrate the business case for domestic V2G.</i>
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Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes ☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999513706	INESC TEC - INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES, TECNOLOGIA E CIENCIA

Short name: INESC

Address

Street	RUA DR ROBERTO FRIAS CAMPUS DA FEUP
Town	PORTO
Postcode	4200 465
Country	Portugal
Webpage	www.inesctec.pt

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	08/10/2024 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	CPES - CENTRE FOR POWER AND ENERGY SYSTEMS	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	RUA DR ROBERTO FRIAS CAMPUS DA FEUP	
Town	PORTO	
Postcode	4200 465	
Country	Portugal	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Dr

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Filipe

Last name*

Soares

E-Mail*

fsoares@inesctec.pt

Position in org.

Area Manager

Department

CPES - CENTRE FOR POWER AND ENERGY SYSTEMS

☐ Same as organisation name

☒ Same as proposing organisation's address

Street

RUA DR ROBERTO FRIAS CAMPUS DA FEUP

Town

PORTO

Post code

4200 465

Country

Portugal

Website

https://www.inesctec.pt/en

Phone

+351 22 209 4000

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Marta	Barbas	mbarbas@inescporto.pt	+351 222 094 000
Aurora	Teixeira	aurora.l.teixeira@inesctec.pt	+351 222 094 000
Catarina	Oliveira	catarina.oliveira@inesctec.pt	+351 222 094 000
Ricardo	Bessa	ricardo.j.bessa@inesctec.pt	+351 222 094 000

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Filipe	Soares	Man	Portugal	filipe.j.soares@inesctec.pt	Category B Senior researcher	Leading	0000-0002-0750-5058	Orcid ID
Prof	Filipe	Oliveira	Man	Portugal	filipe.oliveira@inesctec.pt	Category D First stage researcher	Team member	0000-0002-0410-4291	Orcid ID
Dr	António	Coelho	Man	Portugal	Antonio.m.coelho@inesctec.pt	Category B Senior researcher	Team member	0000-0002-5448-2856	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>António Coelho, José Iria, Filipe Soares, João Peças Lopes, Real-time management of distributed multi-energy resources in multi-energy networks, Sustainable Energy, Grids and Networks, Volume 34, 2023, ISSN 2352-4677, https://doi.org/10.1016/j.segan.2023.101022. PIM-URBAN will use it as background knowledge to develop the mathematical models and the optimisation algorithms included in DP-Store.</i>
Publication	<i>Iria, J., Fonseca, N., Cassola, F., Barbosa, A., Soares, F., Coelho, A., ... Ozdemir, A. (2020). A gamification platform to foster energy efficiency in office buildings. ENERGY AND BUILDINGS, 2020, https://doi.org/10.1016/j.enbuild.2020.110101. PIM-URBAN will use it as background knowledge to develop the DP-Store architecture.</i>
Publication	<i>Zehir, MA., Ortac, KB., Gul, H., Batman, A., Aydin, Z., Portela, JC., ... Ozdemir, A. (2019). Development and Field Demonstration of a Gamified Residential Demand Management Platform Compatible with Smart Meters and Building Automation Systems. ENERGIES, 12(5 913), 913 (18). https://doi.org/10.3390/en12050913. PIM-URBAN will use it as background knowledge to ensure the DP-STORE compatibility with all the system components.</i>
Publication	<i>Soares, F.; Madureira, A.; Pagès, A.; Barbosa, A.; Coelho, A.; Cassola, F.; Ribeiro, F.; Viana, J.; Andrade, J.; Dorokhova, M.; Moraes, N.; Wyrsh, N.; Sørensen, T. FEEdBACK: An ICT-Based Platform to Increase Energy Efficiency through Buildings' Consumer Engagement. Energies 2021, 14, 1524. https://doi.org/10.3390/en14061524. PIM-URBAN will use it as background knowledge to ensure the DP-Store compatibility with all the system components.</i>
Publication	<i>Dorokhova, M.; Ribeiro, F.; Barbosa, A.; Viana, J.; Soares, F.; Wyrsh, N. Real-World Implementation of an ICT-Based Platform to Promote Energy Efficiency. Energies 2021, 14, 2416. https://doi.org/10.3390/en14092416. PIM-URBAN will use it as background knowledge to guide the deployment of the DP-Store in the demonstration context.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>InterConnect (H2020) Budget: € 29.99 million EUR</i>	<i>InterConnect was set to develop interoperable digital solutions to support energy and non-energy systems to be demonstrated in seven large-scale pilots. It proposed effective energy management using a resilient and practical ecosystem that is user-centric and market-driven. The knowledge in standards and interoperability gathered in InterConnect will be used to assure an effective data-handling in DP-Store.</i>
<i>FEEdBACK (H2020) Budget: € 2.4 million EUR</i>	<i>The core objective of H2020 FEEdBACK project was to promote, stimulate and deliver energy efficiency through behavioural change using an ICT digital platform. This digital platform included a gamification engine to motivate behavioural change integrated in a pervasive mobile application. The DP-Store of PIM-URBAN will include some of the solutions developed in FEEdBACK for data acquisition, treatment and utilization.</i>
<i>ATTEST (H2020) Budget: € 4.0 million EUR</i>	<i>ATTEST aims to develop and operationalise an innovative open-source toolbox with the aim of helping TSOs and DSOs to optimise the operation and planning of energy systems of 2030 and beyond. ATTEST also created a common database embedded in a digital platform to collect real-time data from DSOs/TSOs. This knowledge will be used in PIM-URBAN to build the DP-Store.</i>
<i>AnyPLACE (H2020) Budget: € 3 million EUR</i>	<i>INESC TEC was the project coordinator of the Horizon 2020 AnyPLACE, which had the goal of developing a modular and adaptable platform to allow end-users to better manage their energy and allow them to participate in new energy services. The AnyPLACE digital platform can integrate existing legacy or smart loads as well as smart meters to enable a multi-metering approach. Services like demand response and optimal energy management are leveraged by this platform, where the participation of the end-</i>

Administrative forms

<i>POCITYF (H2020)</i> <i>Budget: € 22.49 million EUR</i>	<i>This H2020 project main goal was to demonstrate solutions at building and district level that enable the increase of energy self-consumption and energy savings, P2P energy management and storage solutions supporting renewables curtailment reduction. To achieve this goal, ICT solutions were studied to integrate building/district level information systems with broader city data platforms.</i>
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Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>GPGPU Cluster</i>	<i>Four rack servers, each one with 32 logic CPU cores, 128 GB of RAM, and 8 GPUs connected through dedicated PCIe Gen3 buses. The installed GPUs are 24 Nvidia GTX 1080Ti, and 8 Nvidia Titan Xp, totalling an aggregate of 360 GB of GDDR5X RAM and 116736 CUDA cores. The optimization algorithms of DP-Stor</i>
<i>Smart Grids and Electric Vehicles (SGEV) Laborator</i>	<i>Experimental infrastructure (https://sgevlab.inesctec.pt/) for feasibility demonstration of specific control and management solutions. The laboratory contains diverse distributed energy resources (e.g. PV and wind generator emulator) that can be used to test the data acquisition approaches that will</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes

☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
888042567	ECOTEN URBAN COMFORT S.R.O.

Short name: ECOTEN

Address

Street	LUBLANSKA 1002/9 VINOHRADY
Town	PRAGUE 2
Postcode	120 00
Country	Czechia
Webpage	https://urban-comfort.eu

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	31/12/2021 - yes
SME self-assessment	31/12/2021 - yes
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Dr

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Jiří

Last name*

Tencar

E-Mail*

tencar@ecoten.cz

Position in org.

CEO

Department

ECOTEN URBAN COMFORT S.R.O.

☒ Same as organisation name

☒ Same as proposing organisation's address

Street

LUBLANSKA 1002/9 VINOHRADY

Town

PRAGUE 2

Post code

120 00

Country

Czechia

Website

Please enter website

Phone

+420 736 630 021

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Sagnik	Bhattacharjee	bhattacharjee@ecoten.cz	+420 776 772 802

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Jiri	Tencar	Man	Czechia	tencar@ecoten.cz	Category B Senior resea	Leading	0000-0001-7857-9508	Orcid ID
Mr	Pavel	Sucharda	Man	Czechia	sucharda@ecoten.cz	Category D First stage r	Team member		
Mr	Sagnik	Bhattacharjee	Man	Czechia	bhattacharjee@ecoten.cz	Category D First stage r	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Chapter Smart City 5.0 as the Digital Ecosystem of Smart Services: Practical Applications https://www.researchgate.net/publication/371449542_Smart_City_50_as_the_Digital_Ecosystem_of_Smart_Services_Practical_Applications
Publication	Lupíšek, A., Sojková, K., Koší, V., Tencar, J., Zakuciová, K., Lain, M., a další. (2017). Potential for Decreasing of Organizational Environmental Impacts Through Improvement of Property Energy Efficiency: A Case Study of Czech Ministry of Labour and Social Affairs. World Sustainable Built Environment Conference 2017 Hong Kong. Hong Kong.
Publication	Tencar, J. (08 2021). Obnova budovy pražské střední školy. Stavebnictví.
Publication	Lightweight timber curtain wall facade ENVILOP https://www.researchgate.net/publication/375667745_Lightweight_timber_curtain_wall_facade_ENVILOP
Publication	Simulation of Urban Microclimate with SOLENE-microclimat - An Outdoor Comfort Case Study https://www.researchgate.net/publication/329856701_Simulation_of_Urban_Microclimate_with_SOLENE-microclimat_-_An_Outdoor_Comfort_Case_Study

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
101096943 — Re-Value. HORIZON EUROPE	HORIZON-MISS-2021-CIT-02-01 Urban planning and design for just, sustainable, resilient and climate-neutral cities by 2030
Project 101121210 — NBSINFRA H2020	Horizon-CL3-2022-INFRA-01-01 – nature-based Solutions integrated to protect local infrastructure
Bubny-Zatory microclimate simulation	Urban Microclimate Simulation for Territorial Study of Bubny-Zatory Prague (2021-2022); Simulations and analyses of the urban microclimate of a new design proposal for the Bubny-Zatory district of Prague produce results for the following physical parameters for the duration of the simulation: <ul style="list-style-type: none"> ● Air Temperature ● Solar Insolation ● Relative Humidity ● Wind Speed & Direction ● Evapotranspiration ● Comfort Index (UTCI)
Revitalization of Ceskobroska school	Concept Design, Energy Efficiency Design, Building Permission and Construction Execution Documentation for revitalization of Ceskobrodská school in Prague into into a Smart, Secure, Sustainable, Operational Energy and Carbon Positive Building incl. post-construction energy management and research on confirmation of operational energy efficiency

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
Solene-microclimat	Simulation software based on SOLENE-MICROCLIMAT. Simulation software is based on code Solene-MICROCLIMATE that has been developed by researchers of the Urban Architecture Nantes Research Centre (CRENAU) which is part of the Architectural and Urban Ambiances Laboratory (AAU) in Nantes, France. Solene

Administrative forms

<i>AWS</i>	<i>Amazon Web Services Cloud</i>
<i>ArchiCad</i>	<i>ArchiCad design software</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☐ Yes ☒ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
974788115	KOBENHAVNS KOMMUNE

Short name: CPH

Address

Street	BORUPS ALLE 177
Town	KOBENHAVN NV
Postcode	2400
Country	Denmark
Webpage	www.kk.dk

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	01/01/1994 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Building Renewal	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Islands Brygge 37	
Town	Copenhagen	
Postcode	2300	
Country	Denmark	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Dr

Gender ☐ Woman ☒ Man ☐ Non Binary

First name* **Erik**

Last name* **Hagelskjær**

E-Mail* **lc2e@kk.dk**

Position in org. Team lead

Department Building Renewal

☐ Same as organisation name

☐ Same as proposing organisation's address

Street Islands Brygge 37

Town Copenhagen

Post code 2300

Country Denmark

Website www.kk.dk

Phone +45 608666610

Phone 2 +45 33663311

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Erik	Hagelskjær	Man	Denmark	LC2E@KK.DK	Category B Senior resea	Team member		
Mr	Eik	Buhl Petterson	Man	Denmark	UT92@KK.DK	Category D First stage r	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input checked="" type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>Copenhagen Deep Demonstration (EIT-Climate-KIC EIT</i>	<i>The City of Copenhagen established a Climate Task Force with the goal of bridging organizational silos between The Climate Department, which coordinates the CPH2025 Climate Plan, and the Urban Renewal department, which develops local projects in the city. The project demonstrates both the potentials, and the challenges involved in bridging traditional divisions, and the importance of building new governance models around concrete work in the city.</i>
<i>Investment Portfolio for Digital Heating Systems (</i>	<i>The City of Copenhagen wants to develop a project that can finance the integration of a large number of digitally remote-controlled heating rooms anticipation of increased energy flexibility at systems level, including peak shaving and utilization of the thermal capacity of the buildings. The project aims to generate an investment program, with a view to developing these to become attractive investment projects for private investors.</i>
<i>Kinetic (JPI Urban Europe 43971918)</i>	<i>Kinetic promotes Positive Energy Districts and Neighbourhoods as an integral part of comprehensive approaches towards sustainable urbanisation including technology, spatial, regulatory, financial, legal, social and economic perspectives. The project develops a process to support interaction and integration between buildings, the users and the regional energy, mobility, and ICT system.</i>
<i>LIFE-BECKON (LIFE21 101076765)</i>	<i>LIFE-BECKON stimulates and boosts the deployment of energy communities by developing and delivering comprehensive support mechanisms for public authorities, promoters and Local Action Groups to equip them to facilitate the creation of energy communities. The comprehensive support mechanism includes a Technical Assistance cookbook to enable the creation of Technical Assistance Offices, a Capacity Building program and integrated services via a One-Stop-Shop platform to facilitate access to</i>
<i>Flexumers4Future (EIT Climate KIC PCP2 - G130195)</i>	<i>Flexumers4Future focuses on how flexible district heating will decrease CO2 emissions and provide essential knowledge and systemic tools that can be replicated across other energy sectors, enhancing district cooling and electricity systems.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes

☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
941124556	MC SHARED SERVICES SA

Short name: SONAE

Address

Street	LUGAR DO ESPIDO, VIA NORTE
Town	MAIA
Postcode	4470-177
Country	Portugal
Webpage	www.sonae.pt

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	20/03/2024 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	<div>R&D and Innovation</div>	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	<div>Av Caluste Gulbenkian 1731</div>	
Town	<div>Senhora da Hora</div>	
Postcode	<div>4460-282</div>	
Country	<div>Portugal</div>	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

TitleMs

Gender

WomanManNon Binary

First name*

Ângela

Last name*

Faria

E-Mail*

angefsantos@mc.pt

Position in org.

Project manager

Department

R&D and Innovation

Same as organisation name

Same as proposing organisation's address

Street

Av Caluste Gulbenkian 1731

Town

Senhora da Hora

Post code

4460-282

Country

Portugal

Website

Please enter website

Phone

+XXX XXXXXXXXXX

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Sergio	Albergaria	ssalbergaria@mc.pt	+XXX XXXXXXXXXX
Catarina	Soares	cnsoares@mc.pt	+XXX XXXXXXXXXX
Ana	Machado Silva	amsilva@mc.pt	+XXX XXXXXXXXXX
Marlos	Silva	mhsilva@mc.pt	+XXX XXXXXXXXXX

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Last saved04/02/2025 22:34

This proposal version was submitted by Daniel Galland on 04/02/2025 11:53:46 Brussels Local Time. Issued by the Funding & Tenders Portal Submission System.

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Probono (H2020)	<i>The PROBONO vision is a people-focused European construction industry working in harmony with the broader community of stakeholders including public authorities and citizens to deliver scalable, sustainable, and viable energy positive and zero-carbon Green Buildings and Neighbourhoods (GBN).</i>
SATO (H2020)	<i>The SATO project aims to (1) Create a new energy self-assessment and optimization SATO platform that integrates all energy consuming equipment and devices in a building; (2) Develop and integrate into the SATO platform a self-assessment framework (SAF) that uses data analysis and machine learning to report energy performance, building behaviour, occupancy and equipment faults.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes ☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
913013374	WEST MIDLANDS COMBINED AUTHORITY

Short name: WMCA

Address

Street	16 SUMMER LANE
Town	BIRMINGHAM
Postcode	B193SD
Country	United Kingdom
Webpage	www.wmca.org.uk

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is unknown (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Transport for West Midlands	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	16 SUMMER LANE	
Town	BIRMINGHAM	
Postcode	B193SD	
Country	United Kingdom	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Mr

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Andrew

Last name*

Page

E-Mail*

andrew.page@tfwm.org.uk

Position in org.

Transport Decarbonisation Lead

Department

Policy, Strategy & Innovation

☐ Same as organisation name

☒ Same as proposing organisation's address

Street

16 SUMMER LANE

Town

BIRMINGHAM

Post code

B193SD

Country

United Kingdom

Website

Please enter website

Phone

07824 547477

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Gurpreet	Randhawa	gurpreet.randhawa@tfwm.org.uk	07342 080984

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input checked="" type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Woodcock, Saunders, Fadden-Hopper, O'Connell (2022) Capacity Building in Local Authorities for Sustainable Transport Planning (SUITS) https://doi.org/10.1007/978-981-19-6962-1

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
690650 SUITS	Supporting Urban Integrated Transport Systems: Transferable tools for authorities
814910 SPROUT	SPROUT provided a new city-led innovative and data driven policy response to address the impacts of the emerging mobility patterns, digitally-enabled operating & business models, and transport users' needs.
824349 TinnGO	The TinnGO project developed a framework and mechanisms for a sustainable game change in European transport using the transformative strategy of gender and diversity sensitive smart mobility.
101064898 SINFONICA	SINFONICA will co-create final decision support tools for designers and decision makers to enhance the CCAM seamless and sustainable deployment, to be inclusive and equitable for all citizens.

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
Local Travel Points	Mobility Hub infrastructure and public realm improvements to encourage sustainable travel and better links to mainstream public transport

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes ☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
997802626	STATUTARNI MESTO OSTRAVA

Short name: SLEZSKA

Address

Street	PROKESOVO NAM 8
Town	OSTRAVA
Postcode	729 30
Country	Czechia
Webpage	http://www.ostrava.cz/

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Statutární město Ostrava, městský obvod Slezská Ostrava	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Těšínská 138/35	
Town	Ostrava, Slezská Ostrava	
Postcode	710 00	
Country	Czechia	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

TitleMs

Gender

WomanManNon Binary

First name*

Karolína

Last name*

Kopecká

E-Mail*

karolina.kopecka@slezska.cz

Position in org.

Head of Strategy and External Finance

Department

Department of Investment and Strategic Development

Same as organisation name

Same as proposing organisation's address

Street

Těšínská 138/35

Town

Ostrava, Slezská Ostrava

Post code

71000

Country

Czechia

Website

Please enter website

Phone

+420 601 297 939

Phone 2

+420 599 410 080

Other contact persons

First Name	Last Name	E-mail	Phone
Tereza	Watzlik	tereza.watzlik@slezska.cz	+420 725 705 634

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	David	Škorňa	Man	Czechia	skornadavid5@gmail.com	Category D First stage r	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input checked="" type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Other achievement	<p>Application of relevant strategic materials at the city level, linking investment projects with the objectives of the strategies mentioned below.</p> <ul style="list-style-type: none"> - Climate change adaptation strategies - Air Quality Improvement Programme - SECAP - Local Energy Concept - EUCF - investment concept (in preparation)
Other achievement	<p>The Investment Department of Ostrava City Hall has already started testing the use of BIM design in its flagship investment projects. This was an innovative approach in the Czech environment, as the effective use of BIM is not widespread among municipalities.</p>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
LIFE23-CET-CETAC (101167684)	<p>LIFE: An international collaborative project to develop and test different forms of Clean Energy Transition Assistance Centres (CETACs), which will contribute to the decarbonisation of cities by being established in municipalities. The centres will become an interface between municipalities and citizens and businesses (and other relevant stakeholders). (under implementation)</p>
SteelCityZen (DRP0301318),	<p>The Danube Region Programme: An international cooperation project to develop a common strategy for labour market diversification in post-industrial cities. The cornerstone is to work with the public, i.e. citizens who will be deprived of their original jobs by the transition to green energy or digitalisation. The link is knowledge of participatory methods and working with the general public. (implementation lunch within 2 months)</p>
FMP/MI/02/001_CZ: Energie pro památky	<p>Interreg Slovensko - Česko 2021-2027 - Fond malých projektov: The international cross-border cooperation project focused on the measurement of the energy performance of buildings, including how to evaluate the data and design measures with regard to the conservation requirements of these historic buildings. (submitted, awaiting evaluation)</p>
FMP/MI/02/006_CZ: Vzduch bez hranic	<p>Interreg Slovensko - Česko 2021-2027 - Fond malých projektov: The international cross-border cooperation project on innovative air pollution measurement including data evaluation (submitted, awaiting evaluation)</p>
LIFE GreenCoCoA	<p>LIFE: Associated partner in an international cross-border cooperation project on Urban Green Space Planning for Climate Change Adaptation based on co-design and co-design approach (under implementation).</p>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
Affiliated organisations or partners that regularl	<p>Městský ateliér prostorového plánování a architektury, příspěvková organizace (MAPPA); Moravskoslezské energetické centrum, příspěvková organizace (MEC); Národní památkový ústav / The National Heritage Institute (NPÚ); Svaz měst a obcí České republiky (SMO); Moravskoslezské Investice a Development,</p>
Background for the pilot experiment	<p>Investment Department, architectural competition prepared including all documents, knowledge of public procurement procedures, suitable building (listed historic town hall).</p>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes

☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
952922666	NAVARRA DE SUELO Y VIVIENDA SAVIN SA

Short name: NAS

Address

Street	AVENIDA SAN JORGE 8 BAJO
Town	PAMPLONA
Postcode	31012
Country	Spain
Webpage	www.nasuvinsa.es

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	02/12/2013 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Energy Transition Area	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	AVENIDA SAN JORGE 8 BAJO	
Town	PAMPLONA	
Postcode	31012	
Country	Spain	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

TitleMs

Gender

WomanManNon Binary

First name*Yael

Last name*Lorea Iriguibel

E-Mail*yloreai@nasuvinsa.es

Position in org.Area Manager

DepartmentEnergy Transition Area

Same as organisation name

Same as proposing organisation's address

StreetAVENIDA SAN JORGE 8 BAJO

TownPAMPLONA

Post code31012

CountrySpain

WebsitePlease enter website

Phone+34 659179835

Phone 2+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Raquel	Zulaica Oroz	rzulaico@nasuvinsa.es	+34 690119296

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Ms	Amaia	Los Arcos	Woman	Spain	alosarcl@nasuvin sa.es	Category B Senior resea	Team member		
Ms	Victoria	Lara	Woman	Spain	vlaragar@nasuvin sa.es	Category B Senior resea	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>ETN (Estrategia Territorial de Navarra). The Territorial Strategy of Navarra (ETN in Spanish) was approved in 2005 and establishes the guidelines for territorial cohesion and sustainable territorial development of Navarra until 2030. From Nasuvinsa, within the section of the Territorial Observatory of Navarra (OTN, in Spanish), follow-up reports are drawn up and reports of application and validity by mandate of the Social Council of Territorial Policy (CSPT, in Spanish).</i>
Software	<i>NASUVINSA platform for building energy performance control. Nasuvinsa has developed a software platform that monitors and controls its buildings. The system, which has functions of monitoring and control, consists of 2 well-differentiated parts: the local management system, located in each of the buildings, and the centralized system, that manages the information of these buildings.</i>
Service	<i>GIS Viewer: physical and social diagnosis of the urban and rural built environments in Navarra. This viewer allows the access to municipalities' data to characterize their level of vulnerability to CC and enables to set criteria for prioritizing energy efficiency actions and monitoring the adaptation results to be achieved in future actions. However, it is still pending to be a public tool.</i>
Publication	<i>Architecture, urban planning and climate change guide. This guide describes an assessment of climate risk and adaptation measures. The adaptation policies are particularly important from a regional and local perspective as, on the one hand, the effects of global warming are transferred to a much smaller area and, on the other, the Autonomous Community and the municipalities have powers that involve an adaptive capacity in areas that are particularly relevant to climate resilience.</i>
Publication	<i>Roadmap of innovative management models to be adapted to the climate change. This Roadmap seeks to implement an energy renovation strategy at the regional level, through policies that respond to the real needs of Navarra's built environments, based on their physical and socio-economic characteristics, as well as the climatic scenarios proposed in the LIFE IP NADAPTA project.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>PRIMAVERA project (ELENA programme)</i>	<i>"Regional Programme of energy efficiency measures and incorporation of renewable energy resources in Navarra residential building stock and their installations", called "PRIMAVERA", is to create a refurbishment and urban regeneration stable framework not only for private residential buildings in Navarra, but also for public residential buildings.</i>
<i>STARDUST (H2020)</i>	<i>STARDUST is an EU Horizon 2020 Smart Cities project, which brings together advanced European cities, thus forming into a constellation of "innovation islands" – exemplary models of smart, highly efficient, intelligent and citizen-oriented cities. Technical green solutions and innovative non-technical solutions will be implemented and validated, enabling them to be bankable and replicable for other cities. Indeed, STARDUST will lighten up the path for cities to relish a more sustainable livelihood.</i>
<i>LIFE-IP NADAPTA-CC</i>	<i>LIFE NAdapta project intends to foresee changes that may occur through the development of adaptation measures that will both limit the negative effects resulting from those changes and take advantage of the positive ones, whenever possible. These early and well planned adaptation measures will guarantee a brighter future and prevent economic losses.</i>
<i>LIFE-2022-CET-Local Plan4CET</i>	<i>Improving clean energy transition planning at local and regional level. The main objective of the project is to support 3 different regions within the EU (Navarre in Spain, South East Sweden and Emilia Romagna in Italy) to develop their capacity and collaborate in developing and/or monitoring their CET plans and strategies, receiving all the necessary assistance and support for this.</i>

Administrative forms

SUSTAINAVILITY (H2020)	Navarra, a region that supports sustainable energy. This project aims to mobilized investments in energy savings and efficiency in Navarre, especially supporting the objective of the Navarre Energy Plan of "Reducing primary energy consumption by 30% compared to the figures projected by the EU for 2020 in energy efficiency."
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Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
GIS Viewer	physical and social diagnosis of the urban and rural built environments in Navarra. This viewer allows the access to municipalities' data to characterize their level of vulnerability to CC and enables to set criteria for prioritizing energy efficiency actions and monitoring the adaptation results.

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes

☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
885483028	VIESOJI ISTAIGA 'ATNAUJINKIME MIESTA'

Short name: VIAM

Address

Street	PANERIU 20
Town	VILNIUS
Postcode	LT03209
Country	Lithuania
Webpage	https://amiestas.lt/en/

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	02/08/2022 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Ms

Gender

☒ Woman

☐ Man

☐ Non Binary

First name*

Lina

Last name*

Bubulyte

E-Mail*

lina.bubulyte@amiestas.lt

Position in org.

Head of EU projects team

Department

EU project management team

☐ Same as organisation name

☒ Same as proposing organisation's address

Street

PANERIU 20

Town

VILNIUS

Post code

LT03209

Country

Lithuania

Website

Please enter website

Phone

+ 370 607 34886

Phone 2

+ XXX XXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Joris	Valatka	joris.valatka@amiestas.lt	+ 370 691 36692
Lukas	Bunkus	lukas.bunkus@amiestas.lt	+ 370 691 36691

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input checked="" type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Shared Green Deal	<i>Funding Programme: EU Horizon 2020 Objective: Implementation of the Green Deal Duration: 2023 April – 2024 July Partner role: Effective renovation leader</i>
RenoWave	<i>Funding Programme: Interreg Objective: Establishing cooperation among homeowners, construction companies, energy agencies and public authorities to initiate more energy-efficiency renovations in multi-apartment buildings in Baltic Sea Region. Duration: 2023 January – 2025 December Partner role: Developing and implementing a prototype digital tool enabling to boost and speed up the multi-apartment building renovation processes in Vilnius.</i>
Energy efficient renovation projects in Vilnius	<i>Funding Programme: funded by the Lithuanian government Objective: Carrying out the renovation projects on Vilnius municipality Neighbourhood territories. Duration: Ongoing Partner role: Amiestas operates as a one-stop-shop for multiapartment renovations</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☒ Yes ☐ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
898929653	BUILDING DIGITAL TWIN ASSOCIATION

Short name: BDTA

Address

Street	BORSBEEKSEBRUG 34 BOX 1
Town	ANTWERPEN
Postcode	2600
Country	Belgium
Webpage	www.buildingdigitaltwin.org

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is unknown (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title

Mr

Gender

☐ Woman

☒ Man

☐ Non Binary

First name*

Pablo

Last name*

Vicente Legazpi

E-Mail*

p.legazpi@buildingdigitaltwin.org

Position in org.

PMO, R&D MANAGER

Department

BUILDING DIGITAL TWIN ASSOCIATION

☒ Same as organisation name

☒ Same as proposing organisation's address

Street

BORSBEEKSEBRUG 34 BOX 1

Town

ANTWERPEN

Post code

2600

Country

Belgium

Website

Please enter website

Phone

+XXX XXXXXXXXXX

Phone 2

+XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Elke	Moors	e.moors@buildingdigitaltwin.org	+XXX XXXXXXXXXX
Eduard	Loscos	president@buildingdigitaltwin.org	+XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input checked="" type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>White Paper 1: Digital Twin Definitions for Buildings (Q4 2019)</i> The concept of "Building Digital Twins" needs to be well defined to avoid another new diffuse and trendy topic. Devised within the scope of the SPHERE EU Project, the fundational Whitepaper of the BDTA proposed a set of definitions aiming to offer a standard framework for future development of Building Digital Twins, providing an environment for Smart, Connected Asset Systems (SCAS) throughout their entire life cycle.
Publication	<i>White Paper 2: From BIM Representation to Functional Simulation and Real Time Advanced Control (Q4 2021)</i> Residential Building Digital Twin functional representation requires a new professional role (BDT Simulation Manager). This functional aspect of the building digital twin covers all phases of the building, from design and concept to commissioning and real time management. It must be well coordinated with BIM and other services of the BDT.
Publication	<i>White Paper 3: Ontologies and Building Digital Twins</i> A review of existing ontologies in construction is presented (updated September 2022). Motivation, alignments and final applications with special interest on methodologies. Software Tools are presented in an Appendix. Some use cases are presented with different orientations.
Publication	<i>Building Digital Twins, Simulation Technical Insight (Q4 2021)</i> Mathematical simulation uses a non congruent or conciliable representation with BIM objects. Important decisions must be taken to ensure the coexistence and cooperation of both environments.
Other achievement	<i>Fourth edition of the Building Digital Twin International Congress, BDTIC 2024, which took place at the COAB in Barcelona. There was a great interest at the workshops. Participation increased by 70% respect the previous year.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>Horizon 2020 – SPHERE (GA 820805)</i>	<i>SPHERE project integrate the AECOO processes under the Digital Twin Concept involving not only the Design and Construction of the Building but including also the Manufacturing and the Operational phases, using an integrated platform that will be achieved through an underlying ICT Systems of Systems infrastructure based on Platform as a Service (PaaS) service to allow large scale data, information and knowledge integration and synchronization thus allowing a better handling and processing.</i>
<i>Horizon EUROPE – DIGICHECKS (GA 101058541)</i>	<i>DigiChecks proposes to build a digital framework that implements the following steps to overcome the challenges mentioned and pave the way to a more streamlined approach to manage and process permits: Step 1: Standardized Permit Ontology. Step 2: Digitizing Permit Processes. Step 3: Building Permit Rules. Step 4: Integration of the previous steps into a Permit Service (API).</i>
<i>Horizon Europe HYCOOL-IT (GA 101138623)</i>	<i>The BDTA and the simulation workgroup is developing a methodology for development of SIMBOTs and new standards towards open simulation. This may have a great importance reducing the implementation cost of simulations in construction.</i>
<i>Horizon Europe DYMAN (GA 101161930)</i>	<i>DYMAN project targets the development of a completely new design of adsorption chillers based on new low-temperature adsorbents, and new type of adsorption heat exchangers made of 3D printed structures. BDTA is developing SIMBOT functional simulation concept applied to the new devices.</i>

Administrative forms

Horizon Europe Heritalise (GA 101158081)	Cultural Heritage is a complex ecosystem, involving institutions and actors that continuously produce and utilised multifaceted data and knowledge of various types of CH objects. The mission of this project is to research and develop advanced digitisation techniques and solutions for documenting and representing diverse CH assets.
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Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
PRIVACY AND CIBERSECURITY LAB	Located at the COITT (c/ Edgar Neville 33, 28020 Madrid SPAIN), this lab is joining efforts between the BDTA and this professional association, looking for developments on privacy, cyber-security and standardization and certification activities.

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

☐ Yes ☒ No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas** to be **covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

Proposal ID **101235369**
Acronym **PIM-URBAN**

3 - Budget

No	Name of Beneficiary	Country	Role	Requested grant amount
1	Aalborg Universitet	DK	Coordinator	753 911.63
2	Mtam Labs Ltd	UK	Partner	425 562.50
3	Smart Innovation Norway As	NO	Partner	462 319.50
4	Smart Continent Lt Uab	LT	Partner	229 293.75
5	Uni Systems Systimata Pliroforikis Monoprosopi Anonymi Emporiki Etairia	EL	Partner	254 450.00
6	Universitat Politecnica De Catalunya	ES	Partner	166 156.25
7	Centre Internacional De Metodes Numerics En Enginyeria	ES	Partner	377 500.00
8	Cenex - Centre Of Excellence For Low Carbon And Fuel Cell Technologies	UK	Partner	285 403.88
9	Inesc Tec - Instituto De Engenhariade Sistemas E Computadores, Tecnologia E Ciencia	PT	Partner	199 060.00
10	Ecoten Urban Comfort S.r.o.	CZ	Partner	418 250.00
11	Kobenhavns Kommune	DK	Partner	330 000.00
12	Mc Shared Services Sa	PT	Partner	153 212.50
13	West Midlands Combined Authority	UK	Partner	163 534.25
14	Statutarni Mesto Ostrava	CZ	Partner	355 255.63

Administrative forms

Proposal ID **101235369**
Acronym **PIM-URBAN**

15	Navarra De Suelo Y Vivienda Savin Sa	ES	Partner	167 500.00
16	Viesoji Istaiga 'Atnaujinkime Miesta'	LT	Partner	137 950.00
17	Building Digital Twin Association	BE	Partner	120 625.00
	Total			4 999 984.89

Administrative forms

Proposal ID **101235369**

Acronym **PIM-URBAN**

4 - Ethics & security

Ethics Issues Table

1. Human Embryonic Stem Cells and Human Embryos		Page
Does this activity involve Human Embryonic Stem Cells (hESCs)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve the use of human embryos?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
2. Humans		Page
Does this activity involve human participants?	<input checked="" type="radio"/> Yes <input type="radio"/> No	18
Are they volunteers for non medical studies (e.g. social or human sciences research)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they healthy volunteers for medical studies?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they patients for medical studies?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they potentially vulnerable individuals or groups?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they children/minors?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they other persons unable to give informed consent?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve interventions (physical also including imaging technology, behavioural treatments, etc.) on the study participants?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve conducting a clinical study as defined by the Clinical Trial Regulation (EU 536/2014) ? (using pharmaceuticals, biologicals, radiopharmaceuticals, or advanced therapy medicinal products)	<input type="radio"/> Yes <input checked="" type="radio"/> No	
3. Human Cells / Tissues (not covered by section 1)		Page
Does this activity involve the use of human cells or tissues?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
4. Personal Data		Page
Does this activity involve processing of personal data?	<input checked="" type="radio"/> Yes <input type="radio"/> No	18
Does it involve the processing of special categories of personal data (e.g.: genetic, biometric and health data, sexual lifestyle, ethnicity, political opinion, religious or philosophical beliefs)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does it involve profiling, systematic monitoring of individuals, or processing of large scale of special categories of data or intrusive methods of data processing (such as, surveillance, geolocation tracking etc.)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve further processing of previously collected personal data (including use of preexisting data sets or sources, merging existing data sets)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Is it planned to export personal data from the EU to non-EU countries?	<input checked="" type="radio"/> Yes <input type="radio"/> No	18
<p>Partners from UK and Norway are part of the consortium, contributing both to technical and demonstration activities with one pilot in the UK, complementing the ones in 5 EU MS. Given the nature of the demonstration activities that are expected from a Built4People topic, the consortium has defined a methodology leveraging on City Labs around the pilots to implement co-design and co-validation activities across the pilots with citizens and local stakeholders. Thus, it is expected that personal data is expected with non-EU countries, specially when considering the cross-pilot learning activities that are foreseen in the project. Non-EU countries follows their own regulation regarding data protection. In the case of United Kingdom and Norway both countries have been granted an adequacy decision regarding personal data protection. Due to this decision the EU considers that the non-EU country is aligned with the GDPR standards, being allowed the exchange without additional measures.</p>		
Is it planned to import personal data from non-EU countries into the EU or from a non-EU country to another non-EU country?	<input checked="" type="radio"/> Yes <input type="radio"/> No	18
See previous answer.		

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Does this activity involve the processing of personal data related to criminal convictions or offences?

☐ Yes ☒ No

5. Animals

Page

Does this activity involve animals?

☐ Yes ☒ No

6. Non-EU Countries

Page

Will some of the activities be carried out in non-EU countries?

☒ Yes ☐ No

18

As mentioned before, the consortium counts with partners from Norway and UK, being the envisioned activities in each country allowed across EU MS.

In case non-EU countries are involved, do the activities undertaken in these countries raise potential ethics issues?

☐ Yes ☒ No

It is planned to use local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)?

☐ Yes ☒ No

Is it planned to import any material (other than data) from non-EU countries into the EU or from a non-EU country to another non-EU country? For data imports, see section 4.

☐ Yes ☒ No

Is it planned to export any material (other than data) from the EU to non-EU countries? For data exports, see section 4.

☐ Yes ☒ No

Does this activity involve [low and/or lower middle income countries](#), (if yes, detail the benefit-sharing actions planned in the self-assessment)

☐ Yes ☒ No

Could the situation in the country put the individuals taking part in the activity at risk?

☐ Yes ☒ No

7. Environment, Health and Safety

Page

Does this activity involve the use of substances or processes that may cause harm to the environment, to animals or plants.(during the implementation of the activity or further to the use of the results, as a possible impact) ?

☐ Yes ☒ No

Does this activity deal with endangered fauna and/or flora / protected areas?

☐ Yes ☒ No

Does this activity involve the use of substances or processes that may cause harm to humans, including those performing the activity.(during the implementation of the activity or further to the use of the results, as a possible impact) ?

☐ Yes ☒ No

8. Artificial Intelligence

Page

Does this activity involve the development, deployment and/or use of Artificial Intelligence-based systems?

☒ Yes ☐ No

8

9. Other Ethics Issues

Page

Are there any other ethics issues that should be taken into consideration?

☐ Yes ☒ No

I confirm that I have taken into account all ethics issues above and that, if any ethics issues apply, I will complete the ethics self-assessment as described in the guidelines [How to Complete your Ethics Self-Assessment](#)

☒

Administrative forms

Proposal ID 101235369

Acronym PIM-URBAN

Ethics Self-Assessment

Ethical dimension of the objectives, methodology and likely impact

The PIM-URBAN project prioritizes ethical integrity, inclusivity, and transparency in all aspects of its implementation, ensuring compliance with Horizon Europe ethical principles and EU legislation, including GDPR. The project's primary objective is to develop digital solutions that facilitate participatory, citizen-driven urban renovations, which inherently involves interactions with diverse stakeholders, including residents, policymakers, businesses, and technology providers.

Citizen engagement and participatory processes are central to the project's objectives and methodology. The activities in WP1 (developing first a comprehensive model), WP2 (governance framework for digitally-empowered citizens and communities) , WP6 (Validation of digital tools and methods in City Labs), and WP8 (Dissemination and engagement) involve co-creation processes where citizens, local authorities, and experts collaborate to design and validate digital tools and urban transformation strategies. These activities include surveys, interviews, focus groups, and workshops designed to ensure inclusive and representative stakeholder participation while upholding strict ethical standards.

Key ethical considerations will be cared as follows:

1. Voluntary participation in surveys, workshops and co-creation activities, with informed consent ensuring that participants understand objectives and data collection.
2. No sensitive personal data will be collected, being the data stored following the GDPR.
3. AI- powered digital tools (Resilience and refurbishment tool- WP4) follow ethical AI principles, ensuring transparency, fairness and bias prevention in decision- making for participatory urban planning.
4. Protection of vulnerable groups and inclusive participation will be boosted through the involvement of NGOs and local organisations also facilitating the participatory engagement (e.g. translations, easy-to-read materials, AR/VR based simulations).
5. The project aligns with New European Bauhaus (NEB) and Built4People principles, prioritising sustainability, inclusivity and resilience while preventing displacement and socio-economic inequalities.

Remaining characters2843

Compliance with ethical principles and relevant legislations

PIM-URBAN fully adheres to the ethical principles outlined in Horizon Europe, the European Charter of Fundamental Rights, and GDPR regulations. To assure this, some compliance measures are described bellow:

- Within the activities in WP9, clear guidelines for ethical data handling, anomysation and informed consent will be provided to all consortium members.
- Only strictly necessary personal data will be collected, and any identifying information (e.g. emails) will be stored separately from survey/ interview responses.
- Any open-access datasets shared for research replicability will be fully anonymised and compliant with GDPR
- PIM-URBAN promotes Open Science by making anonymised datasets and methodologies accessible via trusted repositories in alignment with the FAIR (Findable, Accessible, Interoperable, and Reusable) principles.
- Regular risk assessments will be conducted to prevent data breaches, unauthorized access, or ethical violations.
- The project will implement a GDPR-compliant Data Management Plan (DMP, D9.2) to govern data collection, processing, sharing, and storage.

Remaining characters3901

Administrative forms

Proposal ID 101235369

Acronym PIM-URBAN

Security issues table

1. EU Classified Information (EUCI) ²		Page
Does this activity involve information and/or materials requiring protection against unauthorised disclosure (EUCI)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve non-EU countries which need to have access to EUCI?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
2. Misuse		Page
Does this activity have the potential for misuse of results?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
3. Other Security Issues		Page
Does this activity involve information and/or materials subject to national security restrictions? If yes, please specify: (Maximum number of characters allowed: 1000)	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are there any other security issues that should be taken into consideration? If yes, please specify: (Maximum number of characters allowed: 1000)	<input type="radio"/> Yes <input checked="" type="radio"/> No	

Security self-assessment


N/a

Remaining characters 4997

²According to the Commission Decision (EU, Euratom) 2015/444 of 13 March 2015 on the security rules for protecting EU classified information, “European Union classified information (EUCI) means any information or material designated by an EU security classification, the unauthorised disclosure of which could cause varying degrees of prejudice to the interests of the European Union or of one or more of the Member States”.

³Classified background information is information that is already classified by a country and/or international organisation and/or the EU and is going to be used by the project. In this case, the project must have in advance the authorisation from the originator of the classified information, which is the entity (EU institution, EU Member State, third state or international organisation) under whose authority the classified information has been generated.

⁴EU classified foreground information is information (documents/deliverables/materials) planned to be generated by the project and that needs to be protected from unauthorised disclosure. The originator of the EUCI generated by the project is the European Commission.

Project title:	Digital empowerment for participatory, innovative, multi-scale urban renovation design, planning and management	
Acronym:	PIM-URBAN	
Topic:	<i>HORIZON-CL5-2024-D4-02-05</i> - Digital solutions to foster participative design, planning and management of buildings, neighbourhoods and urban districts (Built4People Partnership)	
Type of action:	Innovation Action	

@APP-FORM-HERIAIA@#

List of participants

Participant	Participant organisation name	Short name	Profile ¹	Country
<i>Urban planning, participation and sustainability experts</i>				
1 (Coord.)	AALBORG UNIVERSITET	AAU	HE	DK
2	MTAM LABS LTD	MTAM	NGO	UK
3	SMART INNOVATION NORWAY AS	SIN	RTO	NO
4	SMART CONTINENT LT UAB	SC	SME	LT
<i>Digital experts and tools owners</i>				
5	UNI SYSTEMS SYSTIMATA PLIROFORIKIS MONOPROSOPI ANONYMI EMPORIKI ETAIRIA	UNIS	LC	EL
6	UNIVERSITAT POLITECNICA DE CATALUNYA	UPC	HE	ES
7	CENTRE INTERNACIONAL DE METODES NUMERICS EN ENGINYERIA	CIMNE	RTO	ES
8	CENEX - CENTRE OF EXCELLENCE FOR LOW CARBON AND FUEL CELL TECHNOLOGIES	CENEX	RTO	UK
9	INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES, TECNOLOGIA E CIENCIA	INESC	RTO	PT
10	ECOTEN URBAN COMFORT S.R.O.	ECOTEN	SME	CZ
<i>Pilot owners: public authorities and other relevant local actors</i>				
11	KOBENHAVNS KOMMUNE	CPH	PA	DK
12	MC SHARED SERVICES SA	SONAE	LC	PT
13	WEST MIDLANDS COMBINED AUTHORITY	WMCA	PA	UK
14	STATUTARNI MESTO OSTRAVA	SLEZSKA	PA	CZ
15	NAVARRA DE SUELO Y VIVIENDA SAVIN SA	NAS	PA	ES
16	VIESOJI ISTAIGA 'ATNAUJINKIME MIESTA'	VIAM	PA	LT
<i>Key horizontal partner ensuring context enabling for exploitation, replication, and scalability</i>				
17	BUILDING DIGITAL TWIN ASSOCIATION	BDTA	ASSOC.	BE

Acronyms: **AR/VR** Augmented/Virtual reality; **BEM** Building Energy Modelling; **BIM** Building Information Modelling; **CB** Coordination Board; **CBA** Cost Benefit Analysis; **CL** City Lab; **DH** District Heating; **DMP** Data Management Plan; **EOSC** European Open Science Cloud; **EOSP** European Open Science Policy; **ESG** Environmental, Social, and Governance; **FAIR** Findability, Accessibility, Interoperability, and Reuse; **GIP** Global Intervention Projects; **GIS** Geographic Information Systems; **GNN** Graph Neural Networks; **IPR** Intellectual Property Rights; **KIP** Key Impact Pathway; **NBS** Nature Based Solutions; **OA** Open Access; **OS** Open Science; **RDM** Research Data Management; **RES** Renewable Energy Sources; **SRL** Societal Readiness Level; **TGs** Target Groups; **TRL** Technology Readiness Level; **UC** Use case; **UI** User Interface; **USP** Unique Selling Proposition; **UX** User Experience.

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¹ **ASSOC** Association; **HE** High education; **LC** Large Company; **NGO** Non-governmental organisation; **PA** Public Authority; **RTO** Research and Technology Organisations; **SME** Small and Medium Enterprises.

1. Excellence #@REL-EVA-RE@#

The transition to a climate-neutral society requires Europe's built environment to become both climate-neutral and climate-resilient across multiple scales. Addressing this complex challenge demands holistic approaches at local level. However, **current urban planning processes and practices often fail to integrate energy, mobility, buildings and citizens**, which results in fragmented approaches that not only inhibit awareness of the costs and benefits but also weaken commitment to the digital and green transition. This fragmentation particularly affects vulnerable communities, which tend to be especially impacted by climate risks, inadequate mobility options, energy poverty and limited internet access.

Cities are at the forefront of the climate crisis, with 75% of Europeans residing in urban areas¹. Yet circa 75% of the built environment is considered energy inefficient², while the deep renovation rate remains below 1% annually. This situation alongside the 10% energy poverty rate³ and the growing recognition of transport poverty⁴, emphasises the urgent need for holistic, scalable, inclusive and effective urban transformation strategies. While an array of methods and tools such as energy planning, mobility or stakeholder participation are available to address these challenges, they often fail to deliver integrated solutions. **Siloed operations leave urban areas and the built environment value chain without the real capacity to drive change**. At the same time, architects and urban planners require digital solutions to model and visualize complex information, translating it into accessible messages suitable for all target groups and supporting co-design processes in urban renovation projects.

To overcome these barriers, **it is essential to strike a balance between environmental objectives and societal needs and expectations, including wellbeing, accessibility, inclusiveness, opportunities and aesthetics**, while also optimising operational efficiency. Thus, all groups within a local context should actively partake in decision-making processes according to their competences, enhancing engagement and strengthening commitment.

PIM-URBAN aims to **accelerate the transition of European cities and regions towards climate neutrality, through resilient and inclusive models that promote stakeholder participation, awareness raising and capacity building**. The project will achieve this aim by proposing **three transformative strategies** aligned with and inspired by the ambitious European priorities such as the Green Deal, the New European Bauhaus, the Renovation Wave Strategy, and the collaborative and people-centric principles of the Built4People partnership:

Strategy 1: Establishing innovative governance models and frameworks for integrated urban transformations.

This strategy focuses on developing citizen-centric, multiscale, and multidimensional urban transformations, supported by digital solutions and aligned with the Built4People's Innovation Clusters principles. It identifies key transdisciplinary local stakeholders as drivers of change, establishes their optimal collaborative structures in both physical and digital realms, and mediates their interactions using data as a common formal language. By overcoming barriers stemming from diverse competences, experiences, and expectations, this strategy enhances cooperation and increases impact while integrating monitoring and quantification measures.

Strategy 2: Enhancing citizen and communities participation in urban planning and regeneration. This strategy promotes active participation in urban planning and the management of the built environment, empowering local actors to drive meaningful and sustainable change. It integrates evidence-based decisions from digital tools (outlined in Strategy 3) with interactive channels such as augmented reality (AR), virtual reality (VR), and serious games. Engaging communities contributes to providing a bottom-up dimension to the local and European ambitions towards achieving climate neutrality.

Strategy 3: Developing and deploying digital tools for urban transformation processes at multiple scales. This strategy develops and deploys a comprehensive suite of digital tools designed to facilitate urban transformation across multiple scales and dimensions within the built environment. These tools include simulations operating at various scales, ranging from individual buildings to entire neighbourhood and districts. They address aspects such as living conditions, mobility and energy planning, environmental quality, thermal comfort, and the management of commercial buildings.

The three strategies will be **deployed and validated in six European cities and regions through PIM-URBAN pilots**, organised via City Labs. These labs will **design 12 real-life urban development and transformation projects as Use Cases**. At least 220 stakeholders will take part of the project pilots, with an estimated contribution to urban resilience of 15-25% across pilots thanks to the variety of measures proposed including a mobilisation of resources ranging from 15.000€ per dwelling in Spain to 14M€ to refurbish a historical building in Czechia. These efforts will benefit over 6.4 million citizens across sites, showcasing the strong potential for short-term replication.

PIM-URBAN is a **36-month project** comprising **17 beneficiaries from 9 countries**, covering the whole value chain of urban planning and participatory processes. This approach **ensures the viability of PIM-URBAN's proposed actions and the future exploitation and sustainability of results** at all levels, including the locally co-designed transformation projects. Sustainability is treated as a horizontal priority, encompassing the environmental and socioeconomic impacts of the solutions and tools, as well as the viability of all proposed transformations. This includes an assessment of innovative business models for the project pilots and all tools and solutions.

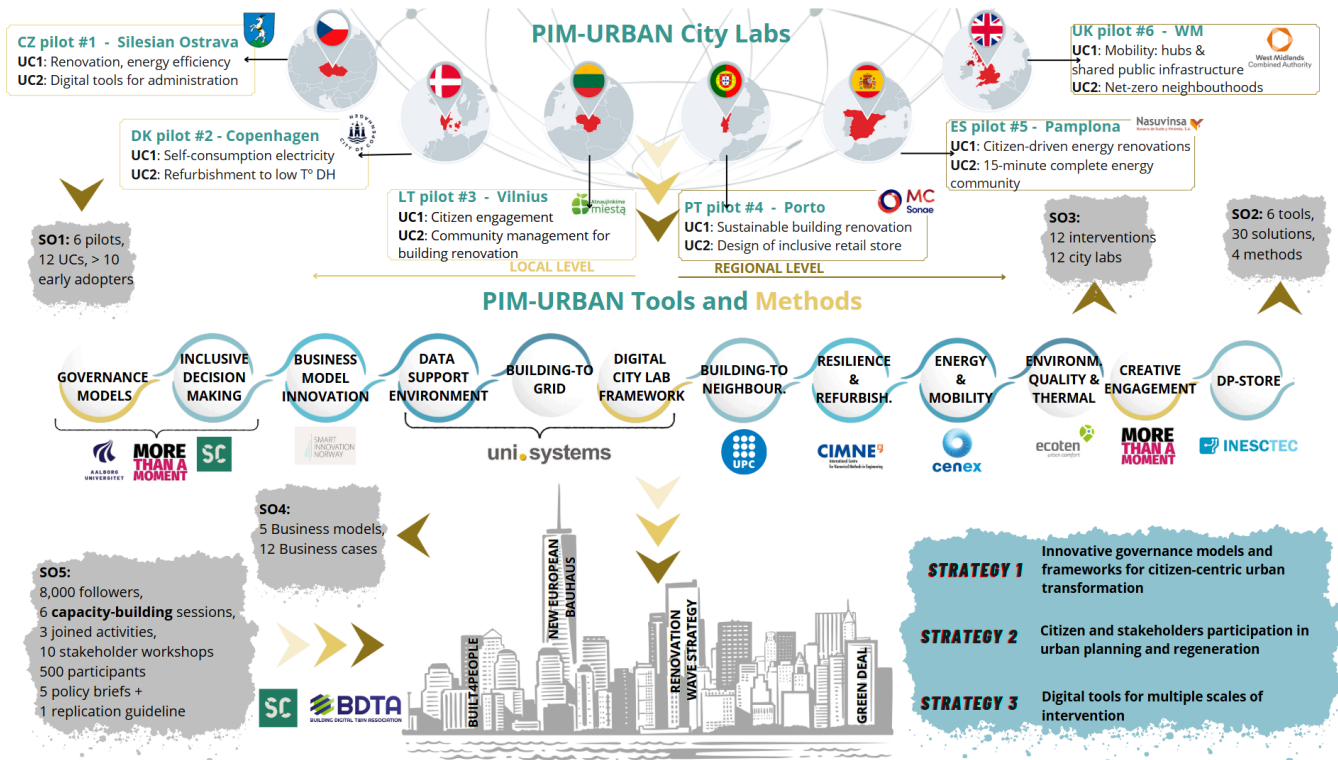


Figure 1.a. PIM-URBAN at a glance.

1.1. Objectives and ambition #PRJ-OBJ-PO@#

1.1.1. Specific objectives of the project

Specific Objective 1: To explore and analyse the existing challenges and potential opportunities in fostering citizen engagement in building and neighbourhood transition processes, and to design and develop digitally enabled strategies to enhance citizen's capacity to govern building-related governance (WP1, WP2; supported by WP6's pilots)

Expected Results:

PIM-URBAN's experts on urban planning, participation, and sustainability will develop a **comprehensive model to identify and coordinate key stakeholders, enablers and barriers influencing citizen participation in the transformation of built environments and neighbourhoods (WP1)**. This model will integrate socio-economic, financial, cultural, technical, and regulatory local engagement factors, paying particular attention to disengagement phenomena and disparities in competences and motivations that prevent inclusive involvement. At the same time, recognising digitalisation as an enabler for transdisciplinary collaboration, project experts in digital tools and modelling will articulate **a governance framework for digitally-empowered citizens and communities (WP2)**. This framework will be co-developed **with local stakeholders across the pilot cities**, who will serve as early adopters and sponsors in the development, deployment, and validation of project strategies. Their active involvement will ensure **context-specific adaptation of these strategies, guiding their implementation across the 6 project pilots and 12 Use Cases**.

Means of Verification:

- Development of an innovative stakeholder engagement and governance model with particular focus on legitimisation of decisions made.
- Development of an innovative framework for digital stakeholder engagement facilitating data and informed-based decision making in the real world.
- Engagement of at least 10 early adopters per pilot before end of M12 to co-design the governance model and framework as well as the 12 tailored plans for each pilot.
- Development of 12 requirement sheets for UCs and tools by end of M12.

Relationship to the scope:

- "Digital solutions that facilitate participative design and planning through visualisation, analysis and engagement with data that is directly relevant to building users as well as citizens in the surrounding urban area [...]"
- "Ensure the digital solution offers different means to exchange information and provide input that are tailored to the specific needs of laypersons, including vulnerable, minority and disadvantaged groups as well as persons with disabilities and older persons."
- "[...] effective contribution of SSH disciplines and the involvement of SSH experts [...]"

Specific Objective 2: To develop comprehensive and replicable co-creation methodologies, tool packages, and data

spaces that engage citizens in building urban transition processes integrating climate neutrality and resilience into digital tools, ensuring compliance with ‘energy efficiency first’ principle while incorporating social innovation methods to enhance participation, acceptance and the overall impact of the proposed tools and interventions (**WP3, WP4, supported by WP6’s pilots**)

Expected Results:

Leveraging on the proposed governance models, **PIM-URBAN** will deliver a **pool of methods and tools** that will directly contribute to the specific UCs renovation projects as use and will emerge as scalable and replicable solutions for planning, integration and multi-scale renovation projects. On one hand, a **transformation package (WP3)** will be delivered including a catalogue of potential solutions (including Nature Based Solutions or Renewable Energy Sources) as well as creative engagement and participation methods, capacity building packages and business modelling tool. On the other hand, a **pool of place specific tools (WP4)** will be delivered upon existing and validated to integrate stakeholders participation on decision making in terms of urban planning, environmental quality, building renovation, energy and mobility planning. The consortium will pay **particular attention to the interaction of tools with stakeholders**, integrating AR, VR and serious games technologies and methods to **maximise awareness and engagement and commitment with environmental and resilience goals**. The relationship between how tools and pilots will be validated across the pilots, is presented in *section 1.1.4*.

Means of Verification:

- Portfolio of at least 30 low-cost low-disruptive solutions for urban transformation.
- 4 Transdisciplinary engagement methods for stakeholders, validated at the pilot sites.
- 6 Tools incorporate climate-neutrality and resilience, validated at the pilot sites.
- Enhanced process efficiency in renovations.
- Technical audits, energy efficiency performance metrics.

Relationship to the scope:

- “Ensure the digital solution complements, builds on and/or uses existing tools (including, where relevant, on conventional, low-tech ones) and standards recognised by the market.”
- “Address aspects of climate-neutrality and climate-resilience, respecting the ‘energy efficiency first’ principle.”

Specific Objective 3: To showcase the practical effectiveness of digital tools and engagement methodologies in empowering citizens to develop economically viable investment and development strategies that aligned with broader urban transition strategies (**WP5, WP6**)

Expected Results:

The pool of tools and methods presented in SO2, will be **deployed, tested and validated across 6 pilots in different European cities and regions** (*Silesian Ostrava - Czech Republic; Copenhagen - Denmark; Vilnius – Lithuania; Porto Metropolitan Area – Portugal; Navarra – Spain; West Midlands - United Kingdom*), according to the **tailored relationship of context challenges and tools** presented in section 1.1.4. Digital tools will follow a **lean-based approach (WP5)** to ensure there is a solid deployment-iteration-validation cycle considering stakeholders feedback that will significantly contribute to assess the impacts of the project and the future exploitation of results. Besides, the **engagement methods will be deployed and validated through transdisciplinary City Labs (WP6, one CL per pilot UC)**. CLs, as real-world and digital environments for experimentation and participation, are the definitive representation of **PIM-URBAN** commitments on active communities for a change co-designing and validating all project outputs, inspired by the principles of the Built4People Innovation Clusters and the New European Bauhaus. The scope of **PIM-URBAN**’s piloting activities will focus only on designing and reaching agreements for implementation of real-world transformations in general. All details are presented in section 1.1.4 (pilots introduction and ambition for change) and 1.2.2 (horizontal piloting methodology and CLs structure).

Means of Verification:

- Active engagement of diverse stakeholders through the creation of 12 City Labs (at least 18 average stakeholders involved, between 220 and 295 in total).
- 12 Inclusive urban planning and decision-making interventions.
- All project tools successfully deployed in pilot projects and refined as part of the local interventions defined.
- Metrics on stakeholder participation (number, diversity), post-project evaluations.
- 6 PIM-URBAN Pilot project reports.

Relationship to the scope:

- “Engage citizens [...], end users of the tools and other relevant stakeholders involved in the design, planning and management of urban development projects in the development process of the digital solution.”
- “[...] report on results to the European Partnership ‘People-centric sustainable built environment’ (Built4People) in support of the monitoring of its KPIs.”

Specific Objective 4: To ensure the sustainability of all tools, methods and local transformations by evaluating the business models (BMs) of these tools and the business cases for local areas considering the situatedness and context-dependency of the solutions (**WP7, supported by demonstration insights from WP5 and WP6**)

Expected Results:

As presented in SO1 to 3, **PIM-URBAN** follows a demand-driven approach illustrated by the participation of communities as CLs throughout project implementation. At the same time, the project partners are aware of the importance of understanding the driving forces of change to make sustainable transformations. This process will be assessed from a three folded perspective. 1) The project will deploy a Business Model Innovation tool to assess the internal synergies at pilot level that will **put sustainability at a preferred position in business models within the local communities**. 2) The continuous stakeholder participation will serve as a way to maximise attractiveness and usage rates of the **PIM-URBAN** tools and solutions. This will **boost significantly the opportunities for project results scalability, replicability and exploitation options**, thanks to the lighthouse effect of the project pilots. 3) and since the project will design and validate tailored local transformations, the viability of such transformations will be assessed and validated at CL level using the renown **Five Cases Business Case methodology**.

Means of Verification:

- An average of 5 business models assessed within local communities.
- 12 business cases developed.
- **PIM-URBAN** solutions prepared for market launch with specific exploitation plans.
- Environmental, social and technical impact assessed using project's tailored methodologies.

Specific Objective 5: To ensure broad visibility of the **PIM-URBAN** project, raise awareness of the local challenges, enhance the impact of citizen participation in decision making processes, and promote a community of digital tool-developers, skilled with competences in participatory and citizens-oriented tools development for urban transitions related to the built environment (**WP8, complemented by piloting activities within WP6**)

Expected Results:

PIM-URBAN will achieve wide visibility and active engagement among diverse stakeholders by implementing a strategic C&D plan (**WP8**). The project aims to drive engagement (including citizens) through its channels achieving at least **10,000 unique website visits** and **8,000 followers** across social media. The **6 capacity-building sessions** and **10 stakeholder workshops** will empower local communities, engage policymakers, and enhance digital competencies, reaching over **500 participants**. Collaborations with other clusters and NEB related initiatives will be boost through, at least, **3 joined activities**. Finally, the creation of at least **5 policy briefs** and **1 replication guideline** will enable the scalability and adaptability of **PIM-URBAN** tools and approaches, supporting the transformation of urban environments across Europe and ensuring the sustainability of project outcomes.

Means of Verification:

- Collaboration evidence: joint publications of co-branded events with collaborating projects.
- C&D and liaison reports (D8.2 and D8.3) showing the metrics.
- Agenda and records of capacity building programmes.

Relationship to the scope:

- *“Ensure the project’s dissemination activities include actions that contribute to the activities of the NEB Community, and to sharing information, best practices and results within the NEB Lab.”*
- *“Contribute to the activities of the Built4People partners and to the Built4People network of innovation clusters.”*

1.1.2. Ambition and progress beyond the state of the art

PIM-URBAN introduces a tripartite strategy to foster participative design, planning and management of buildings, neighbourhoods and urban districts through digital solutions aligned with the project’s objectives and methodology. As mentioned in the introduction, the project’s ambition comprises three transformative strategies:

Strategy 1: Establishing innovative governance models and frameworks for integrated urban transformations

Ambition 1.1: Designing and developing inclusive and adaptive governance models in participatory urban transformations

SotA: Current siloed governance models often fail to bridge the gap between multiple scales and vectors at local level, including community participation in addressing complex problems. These models lack mechanisms to synchronise top-down strategies with bottom-up needs. In addition, the integration of digitised information and tools struggles to accommodate the diverse socio-economic contexts of urban populations, hindering the equitable distribution of the benefits of urban transformations.

Ambition beyond SotA: **PIM-URBAN** acknowledges this issue and aims to develop citizen engagement processes that emphasise the synergies across different groups, moving away from isolated engagement strategies. By simultaneously integrating real-world methods and processes with a framework for digital tools, **PIM-URBAN** will enable synchronisation across multiple governance areas and scales. This approach will address existing challenges in digitalisation and engagement, as outlined in the proposal. The models and frameworks will be validated across the six project pilots and will also serve as scalable and replicable models for other local and regional contexts across Europe, ensuring an equitable distribution of the benefits of urban transition among diverse communities.

Ambition 1.2: Integrating digital solutions into governance frameworks

SotA: Across European cities, citizens are increasingly engaging with digital tools to interact with the built environment, neighbourhoods, and the broader urban systems and services they rely on. However, these tools often frame citizens and other stakeholders as either end-users of systems designed by engineers, planners or architects, or

as customers and service providers within market platforms.

Ambition beyond SotA: To deploy the potential of digital tools in mobilising and empowering citizens as active participants in the renovation, management, and governance of buildings and urban infrastructures, it is fundamental that citizens develop an understanding of the underlying assumptions embedded in digital models. This understanding enables informed engagement and ensures that digital solutions are leveraged in ways that genuinely serve communities and promote sustainable urban development. This requires a graphical approach that visually represents these assumptions, making them more accessible and understandable for a broader audience. By employing low-code modelling frameworks, citizens can actively interact with digital models, modify parameters, and apply insights to real-world scenarios. This approach not only builds trust but also encourages active and more efficient involvement in decision-making processes, allowing citizens to take greater ownership and responsibility for their urban environments.

Strategy 2: Enhancing citizen and community participation in urban planning and regeneration

Ambition 2.1: Enhancing citizen empowerment through awareness and education, promoting inclusive decision making in urban transformation processes

SotA: Urban planning and regeneration often exclude underserved citizens who lack access or skills required to engage in decision-making processes within their neighbourhoods. This is especially evident in urban planning and major regeneration projects, where a lack of representation fosters dissent and erodes trust in governance and environmental decision-making processes. Emerging tools like Augmented Reality (AR) or Virtual Reality (VR) add a new dimension to engagement by using technology to build characters and generate stories that resonate with residents. This narrative-driven approach makes planning more relatable and meaningful, inviting residents to see themselves as integral to the story of their community's future. Even if the application of these tools has shown potential, their application is limited to specific context and require further adaptation to reach broader audiences and address system challenges.

Ambition beyond SotA: **PIM-URBAN** aims to embed co-creation and citizen-led participation at the neighbourhood level, equipping marginalized communities with tools and knowledge to engage in urban planning. The approach builds trust, enabling residents to navigate decision-making systems that have historically excluded them.

Creative placemaking remains a foundational element of this approach, transforming physical spaces into vibrant hubs for dialogue and co-creation. **VR design your neighbourhood workshops**, Pop-up installations, school street workshops, and storytelling events in familiar community hubs like schools, libraries, and faith centres invite residents to share their ideas and aspirations. These trusted spaces lower barriers to participation and create opportunities for residents to engage with planning in ways that are accessible, culturally relevant and enjoyable. Through these initiatives and tailored workshops, **PIM-URBAN** will empower these communities with the knowledge and confidence to participate fully. Training sessions demystify urban planning concepts, providing tools for residents to articulate their needs and evaluate proposals effectively, ensuring that marginalised voices are amplified and prioritised from the outset. As the process evolves, it broadens to include a wider range of stakeholders, creating opportunities for collaboration and solidarity across different groups. By integrating VR and AR into broader engagement activities, it is demonstrated how these digital tools can unite communities around shared goals while respecting and elevating diverse perspectives.

Ambition 2.2: Developing innovative approaches to engage citizens in urban transformation processes

SotA: As mentioned before while tools like AR and VR can enhance visualisation and interaction, they are often applied in a technical manner and disconnected from local culture and stakeholders' emotions. Storytelling and the participatory art, remain underexplored since tools are not prepared in terms of user interfaces (UI) and experiences (UX) to foster collaboration.

Ambition beyond SotA: **PIM-URBAN** will apply multiple creative approaches, complementing the principles presented in Ambition 2.1, to ensure that residents are not just consulted but actively engaged within the pilots' CLs as visionaries and decision-makers, shaping a future that reflects their needs, values, and aspirations through: *i) Experiential Learning*: Use creative placemaking and hands-on workshops to engage citizens in envisioning and designing urban spaces. Tools like VR can replicate neighbourhoods, allowing participants to explore potential transformations interactively; *ii) Systems Literacy Training*: Provide education on governance, policy-making, and decision-making processes through simplified systems mapping frameworks. This enables citizens to understand how decisions are made and identify entry points for their involvement. *iii) Participatory Pedagogy*: Employ co-creation techniques, where citizens and facilitators work collaboratively on projects. This fosters ownership and ensures that educational activities are relevant to local contexts and priorities; *iv) Interdisciplinary Integration*: Combine insights from social sciences, humanities, and urban studies to offer a holistic understanding of urban challenges. Storytelling, participatory art, and cultural narratives can deepen emotional engagement and contextual understanding; *v) Capacity-Building Workshops*: Focus on skills such as negotiation, public speaking, and advocacy to enable citizens to effectively communicate and influence decisions in urban transformations.

This process will help reinforce the UI and UX of the tools presented below as part of the Strategy 3 of the project.

Ambition 2.3: Developing business models for community-driven urban regeneration and sustainable financial

mechanisms for urban transformation projects

SotA: The E-LAND and PEDvolution co-development and pattern-based business model approach is successfully implemented in energy communities and Positive Energy Districts (PEDs) with a set of modular digital tool applied in multi-vector energy systems (including renewable energy sources including PV). This approach provides various tailored business typologies for energy communities and districts with current and emerging business design options that could be customized and adopted to the **PIM-URBAN** concept. Despite the positive results of the E-LAND business model innovation tool, the financial mechanism that ensures the project's sustainability was not studied in the project lifecycle which **PIM-URBAN** aims to fill this gap.

Ambition beyond SotA: **PIM-URBAN** will go beyond the E-LAND and PEDvolution business model innovation tool by adapting and incorporating additional relevant business tools and business model typologies, such as value proposition canvas which help to understand the existing challenges and opportunities that are relevant to the **PIM-URBAN** project context. Typically, **PIM-URBAN** will not only develop a promising business model but also explore a potential financial mechanism for sustainable urban projects by engaging the relevant stakeholders so that project sustainability is ensured. Furthermore, a detailed force field analysis will be conducted to understand the root causes and the driving and resisting forces on the business and financial mechanisms so that tailored mitigation action is made to facilitate the energy transition and speed up the decarbonization process of the energy communities.

Strategy 3: Developing and deploying digital tools for urban transformation processes at multiple scales

Ambition 3.1: Data Support Environment

SotA: The current state of the art in urban data integration and interoperability reveals significant limitations. Existing systems are often fragmented, with siloed data management tools that hinder seamless integration between legacy systems and modern digital twins. These platforms typically lack adherence to unified standards for data modeling, representation, and exchange, resulting in inefficiencies and limited interoperability. While open-source solutions like FIWARE exist, their application remains underutilized, and robust mechanisms for managing data flow and context information are seldom implemented. Scalability is another challenge, as current systems struggle to handle increasing data volumes and diverse urban requirements. Security is often inadequate, with insufficient role-based access management systems to ensure secure collaboration among stakeholders.

Ambition beyond SotA: The ambition of **PIM-URBAN** goes beyond this state of the art by introducing an open-access dataspace that ensures seamless interoperability between digital twins, legacy systems, and IoT sensors. Leveraging FIWARE's open-source platform tools, relevant standards for digital and sustainable urban environments, accepted solutions like BIM and DTs as well as APIs, it enhances interoperability with existing urban planning and renovation tools recognised by the market and authorities, as well as data reliability, integrity, and scalability. Data transactions are standardized through NGSI-LD, enabling consistent data modelling and updates. By employing IoT agents and context brokers, the system unifies data flows, efficiently managing and distributing context information. Additionally, a robust identity and access management system ensures secure, role-based access and authorized information exchange, addressing critical gaps in the current landscape and setting a new benchmark for scalable, secure, and interoperable urban data platforms.

Ambition 3.2: Building-to-Grid Energy Simulation Tool

SotA: Simulation methods currently operate in silos, focusing on specific variables such as energy demand patterns. Tools like *EnergyPlus* and *Modelica* provide valuable insights but are often applied independently, limiting their adaptability to complex urban systems. These methods typically lack interoperability, real-time capabilities, and the ability to incorporate stochastic variables like occupant behaviour or extreme weather events.

Ambition beyond SotA: **PIM-URBAN** will enhance simulation methods by integrating dynamic and interactive frameworks such as the **Building-to-Grid Energy Simulation Framework**. This approach combines *EnergyPlus*, *Modelica*, and Spawn of EnergyPlus to enable scenario-based analysis across building and district levels. These advancements will provide real-time, multi-variable simulations incorporating citizen input, renewable energy integration, and demand-side management, offering actionable insights for urban energy optimisation.

Ambition 3.3: Building to Neighbourhood Planning Tool

SotA: Current urban planning tools predominantly address building-level optimisation, often neglecting the interactions between buildings, infrastructure, and green spaces at the neighbourhood scale. Tools like NECADA focus on building-level performance but require enhancements to address broader neighbourhood-scale planning needs. This limitation prevents holistic and scalable urban transformation.

Ambition beyond SotA: **PIM-URBAN's Building to Neighbourhood Planning Tool** will extend NECADA's capabilities to optimise building interactions within neighbourhoods. By incorporating the quadruple nexus (water, energy, food, and waste), the tool will support integrated planning across scales, ensuring environmental and social sustainability. This approach will enable seamless transitions from building-level insights to neighbourhood-scale strategies, promoting resilient and inclusive urban development.

Ambition 3.4: Resilience and Refurbishment Tool

SotA: Current resilience and refurbishment planning approaches leverage data-driven tools and frameworks for assessing urban vulnerabilities and energy efficiency. Existing platforms integrate climate risk assessment

methodologies, energy modelling, and large-scale data analytics, focusing on localized analyses of buildings and neighbourhoods. However, these tools often lack scalability, interoperability, and predictive capabilities, making them insufficient for comprehensive, city-wide planning. Efforts in standardizing data formats and integrating advanced analytics are paving the way for more adaptive urban planning solutions, but significant gaps remain in addressing complex urban challenges at scale.

Ambition beyond SotA: The **PIM-URBAN's Resilience and Refurbishment Tool** will build upon technologies like the ENMA Big Data Analytics platform⁵, BIGG Ontology⁶, and BIGG R AI toolbox⁷. Its ambition is to become a cutting-edge platform for urban resilience and refurbishment planning. The tool will leverage advanced data integration and analytics to evaluate vulnerabilities to urban heat and climate-related risks while enabling large-scale assessments of energy retrofitting actions. By addressing scalability, interoperability, and predictive analytics, the tool will bridge critical gaps, supporting adaptive planning for sustainable, resilient cities. Some of the key features that the tool is going to incorporate are *i) Energy and vulnerability Key performance indicators*: The tool will calculate several KPIs at building scale basis based on a wide diversity of datasets. Graph Neural Networks (GNN) will be trained to extend the KPIs assessment to those buildings with incomplete data and to provide mid-term forecasting of them. The KPIs will be combined to get more complex KPIs to guide the prioritization of retrofitting and climate adaptation actions; *ii) Graph-based data representation*: a knowledge graph framework will structure data at various administrative levels (building, neighbourhood, district), to enable holistic analysis and extrapolation, even in areas with partial data coverage; *iii) Scenario analysis for urban refurbishment*: Using simulation-based forecasting, the tool will model the impact of potential refurbishment strategies on KPIs; *iv) Integration of inspire-compliant cadastral data*: If cadastral data from other potential pilot areas are available in Inspire format, it can serve as highly detailed input for Building to Neighbourhood Planning tool; *v) Stakeholder-driven decision support*: An interactive visualization interface framework (geo-referenced map) will empower decision-makers to identify high-priority zones and evaluate the potential benefits (social, energy and financial) of the refurbishment scenarios.

Ambition 3.5: Energy and Mobility Modelling Tools

SotA: Energy and mobility models currently operate independently, focusing on specific aspects such as energy demand, transportation patterns, or grid stability. Tools like REVOLVE⁸ and EIGER by CENEX offer detailed insights but lack integration, which limits their ability to address interdependencies between energy use and mobility systems. Current e-mobility models and tools are not integrated into wider neighbourhoods or building tools, therefore limiting the holistic approach towards climate neutrality. There are tools and models that assist transport planning of active and clean mobility in neighbourhoods, but these are currently distinct from wider net zero neighbourhood developments and integration with e-mobility and energy.

Ambition beyond SotA: **PIM-URBAN** will integrate and expand energy and mobility modelling tools, creating a unified framework that captures the interdependencies between energy systems, mobility patterns, and grid stability. Tools such as REVOLVE and EIGER will be adapted to analyse neighbourhood-scale data, enabling optimised renewable energy adoption, smart mobility solutions, and low-carbon urban planning. Mobility tools will be developed to provide better CBA shifts in mobility patterns and how this integrates with wider net-zero urban development. This integration will provide stakeholders with actionable strategies for achieving climate-neutral and resilient cities.

Ambition 3.6: Environmental quality and thermal comfort simulation tools

SotA: Environmental quality data for urban planning is mainly derived from remote sensing via ground stations and earth observation satellites. On a city scale, earth observation offers broad coverage but is limited by scene availability, frequency, and cloud cover. Ground instruments provide precise neighbourhood-scale urban microclimate data but are costly and applicable only to existing urban scenarios. Current models for urban microclimate phenomena incorporate few parameters and assumptions, restricting their predictive capabilities for potential developments. Additionally, there is no established methodology for applying such data to benefit building designers directly or indirectly.

Ambition beyond SotA: **PIM-URBAN** will create a simulation framework integrating climate vulnerability assessment on the city scale using earth observation and geoinformatics technologies with thermal comfort assessment on a neighbourhood scale using microclimate simulation technologies to support climate resilient urban transformations and providing more accurate atmospheric conditions for energy efficiency calculation on a building scale. In the city scale, the framework will incorporate satellite, census and meteorological data to evaluate urban vulnerability to climate change impacts, like extreme heat. This will be used to analyse climate vulnerable neighbourhoods in the city, helping stakeholders to devise adaptation strategies and urban design guidelines. In the neighbourhood scale, the framework will involve data-driven co-creation and scenario building with stakeholder engagement through a series of capacity building and consultations. These scenarios focus on designing urban neighbourhoods for optimal outdoor thermal comfort using blue, green, and white infrastructure (nature-based urban design) which will be tested and validated through urban microclimate modelling and simulations. This process of scenario building through stakeholder engagement and data-driven cocreation will be iterated to produce the optimum urban transformation design for the neighbourhood. Simulation results will provide necessary atmospheric conditions

for energy efficiency calculations, mainly for building cooling demand assessments. This, in turn, will contribute to the development of energy-efficient building designs.

Ambition 3.7: Digital Platform for Retail Renovations (DP-Store)

SotA: Leveraging knowledge gathered in previous EU-funded projects, such as FEEDBACK, where INESC TEC developed an energy model of its headquarters along with advanced algorithms like an occupancy forecaster and a user behavior predictor, INESC TEC will develop the DP-Store tool.

Ambition beyond SotA: This innovative tool will integrate adapted versions of previous algorithms under a single, unified platform. DP-Store is designed to create a digital replica of a selected retail store, simulating and optimizing sustainable renovation strategies. The process begins with **input collection**, gathering building layout, energy consumption, IoT sensor data, and environmental parameters. A **mathematical model of the store** is then created, capturing its components, energy flows, and the integration of systems like HVAC, lighting, renewable energy sources, EV charging infrastructure and energy storage devices, including electrochemical batteries and thermal storage systems like PCMs.

Through **workshops with stakeholders**, including building owners, sustainability teams, employees, and clients, **renovation scenarios** are co-created to ensure renovation strategies align with real-world needs and priorities. These scenarios are optimized for operational efficiency, maximizing the performance of controllable assets. The tool then **computes results**, providing detailed analysis of energy performance, cost savings, and sustainability impacts.

1.1.3. Summary of proposed work maturity and TRL positioning

PIM-URBAN will address the gap to urban transformations and participatory processes and will use its outputs to boost resilience, climate neutrality and efficiency in the built environment, maximising the benefits sharing and opportunities for citizens and stakeholders. As the starting point, the innovations of **PIM-URBAN** score 4-5 on the Technology Readiness Level (TRL)/Societal Readiness Level (SRL) scale. All the project methodologies and tools will be **tested and validated in relevant environments (PIM-URBAN's pilots) with relevant stakeholders (through City Labs)** in real scenarios, achieving a maturity level of **TRL/SRL 7** by the end of the project. The key ambitions and their maturity at the beginning and end of the project (where applicable), are shown in *Table 1.1.a*:

Table 1.1.a. PIM-URBAN's ambitions and corresponding TRL/SRLs at project start/end (if applicable)

PIM-URBAN Ambitions	Δ TRL/SRL
Ambition 1.1 - Models for inclusive and adaptive governance in participative urban transformations (AAU, MTAM, SC)	SRL3 to 7
Ambition 1.2 - Integration of digital solutions into governance practices (UNI, AAU)	SRL3 to 7
Ambition 2.1 - Empowering citizens by raising their awareness and educating them for inclusive decision making in urban transformations (AAU, MTAM, SC)	SRL3 to 7
Ambition 2.2 - Creative approaches for connecting citizens to urban transformations (MTAM)	SRL3 to 7
Ambition 2.3 - Business model innovation tool (SIN)	SRL5 to 8
Ambition 3.1 - Data support environment (UNI, UPC)	N/A
Ambition 3.2 - Building-to-Grid Simulation Tool (UNI)	TRL5 to 7
Ambition 3.3 - Building to neighbourhood planning tool (UPC)	TRL6 to 8
Ambition 3.4 - Resilience and refurbishment tool (CIMNE)	TRL5 to 7
Ambition 3.5 - Energy and mobility modelling tools (CENEX)	TRL6 to 8
Ambition 3.6 - Environmental quality tool (ECOTEN)	TRL6 to 7
Ambition 3.7 - Digital Platform for Retail Renovations (DP-Store) (INESC)	TRL6 to 8

1.1.4. Introduction to PIM-URBAN's pilots transformation projects

PIM-URBAN engages with **six real life urban development and transformation projects, serving as pilots** located across diverse European cities and regions: Slezská Ostrava (Czechia, CZ), Copenhagen (Denmark, DK), Vilnius (Lithuania, LT), Porto (Portugal, PT), Navarra (Spain, ES), and West Midlands County (United Kingdom, UK). These pilot environments function as city labs with a dual objective:

- **To ensure effective transdisciplinary collaboration to address complex local challenges through participatory, data-informed approaches.** By integrating innovative governance models and digital tools, the project aims at empowering citizens, public authorities, and key stakeholders. These governance models are designed to prevent siloed decision-making, ensure awareness raising and commitment, and explore financial mechanisms to support proposed renovation projects.
- **To design built environment transformation projects that enhance local resilience, climate neutrality and improve energy efficiency.** This involves identifying cost-effective, minimally disruptive solutions and leveraging modelling tools to facilitate informed stakeholder decision-making concerning the future of their communities.

The pilots have been selected to reflect diverse contexts and scales, ensuring adaptability to diverse urban realities. At the same time, the pilots were selected **based on their strong potential for implementation**, as preliminarily outlined in section 2.2.4 using the Five Cases Business case methodology.

By fostering both local and cross-pilot cooperation, **PIM-URBAN** aims to establish a replicable model for participatory transformation of local, urban, and regional environments across Europe. This section provides an overview of the pilots and the leading consortium partners, while the following figure illustrates the relationship between the pilots and the tools, detailed as use cases (UCs) for each pilot:

Pilot	CZ pilot	DK pilot	LT pilot	PT pilot	ES pilot	UK pilot	
Interventions							
Tool owners involved	UNIS, UPC, CIMNE, CENEX, ECOTEN	CIMNE, UPC, UNIS, CENEX	UNIS, CIMNE, ECOTEN	UNIS, INESC, ECOTEN	UPC, CIMNE, CENEX, ECOTEN	UNIS, UPC, CIMNE, CENEX, INESC	
Scale	Building	Local	Local	Regional	Regional	Regional	
Processes	Design & Management	Design & Planning	Planning and Management	Management & Planning	Design, Planning & Management	Design, Planning & Management	
Potential citizens represented	23.000	570.000	600.000	1.720.000	654.000	2.900.000	

Figure 1.b. Summary of the different intervention tools that will be deployed across the pilots to validate the findings of the project.

The importance of the pilots is reflected throughout the document, however:

- **Section 1.2.2** provides details of the horizontal organisation of the pilots and the plan for demonstration.
- **Section 2.1.1** provides a list of expected indicators for the pilots linked to project's KPIs and contribution to expected outcomes.
- **Section 2.2.4** provides preliminary business cases for the pilots' viability during and beyond **PIM-URBAN**.

CZ pilot:

The **CZ pilot** is located in Silesian Ostrava, it is one of the city districts of the Statutory City of Ostrava, which is the third largest city in the Czech Republic. With a population of 21,161 inhabitants, the city district is now on the path of energy and climate transformation. The pilot, **led by the district public authority** (partner SLEZSKA) focuses on the City Hall building, **a historical building built in 1897** that currently consumes 23 MWh of electricity, 231 MWh of natural gas. The building itself represents one of the few extant relicts of urban ambitions and modernization tendencies in the era of democratic municipal, and later urban self-government of Silesian Ostrava in the first half of the 20th century. At the same time the complex extension of the building almost by half of volume is foreseen and the architectural competition is planned soon.

Figure 1.c. Old picture of the city hall building.



The CZ pilot focuses on the following local challenges:

- o **CZ-UC1: Renovation of a public heritage building** (Silesian Ostrava Town Hall) and design of a modern extension with energy efficient solutions while maximising the usage of the building.
- o **CZ-UC2: Increasing preparedness and digital literacy** and digital tools in local administration.

The expected components of the whole project encompass the following aspects:

- Accessibility, energy and heritage balanced approach to the extension and renovation (construction part).
- Installation of clean energy technology (photovoltaics, heat pumps).
- Additional energy measures in the building (environmentally friendly lighting, functional controls, adequate and modern thermal management including end points in rooms, replacement of windows, insulation, etc.).
- Building Digital Twin.
- Intelligent elements for monitoring and control of energy media in the building.
- Active and clean mobility elements - cycling, charging stations for electric cars and electric.
- Adequate blue-green infrastructure including green spaces in the surroundings.
- Managed participation with stakeholders, including the professional public.
- (Digital) Planning and communication tools for renovation and management of building operations.

PIM-URBAN tools that are expected to be deployed in this pilot are: **UNIS's** Building-to-Grid Energy Simulation Tool - *optimizes energy efficiency in historical renovation*-; **UPC's** Building to Neighbourhood Planning Tool - *supports integration of modern extensions with heritage conservation*-; **CIMNE's** Resilience and Refurbishment Tool - *enhances climate adaptation and renovation strategies*-; **CENEX's** Energy Modelling Tools - *enhances sustainable mobility and district energy management*-; **ECOTEN's** Environmental Quality and Thermal Comfort Simulation Tool - *monitors environmental conditions for improved outdoor and indoor comfort*-.

The **Unique Selling Proposition (USP)** of these tools for this pilot is: *Combining energy simulation, urban planning, and resilience tools to balance historical building renovation with energy efficiency and sustainability.*

The CZ pilot leverages on **already available participation tools**, such as meetings with citizens, meetings of expert committees (e.g. on MA21), festivals and other events. The municipality uses the tools of the City of Ostrava

Municipality (e.g. Clean Owa app, GIS questionnaires) to involve the general public and professionals. The municipal district also has, for example, a monthly magazine which it distributes to all citizens or organises TV reports.

The **typology of stakeholders** that are expected to be mostly involved are: i) *Policy makers and public authorities*: Statutární město Ostrava (SLEZSKA) – The local authority leading the pilot, responsible for urban planning, building renovation, and climate transition strategies; Ministry of Regional Development (MRD) – Provides legal frameworks and funding opportunities for historical building renovations and energy-efficient urban planning; National Heritage Institute (NPU) - The main national body for state heritage protection, ensuring compliance with conservation regulations and policies in the Town Hall renovation; SLEZSKA - The Association of Cities and Municipalities of the Czech Republic supports legislative processes, policy advocacy, and knowledge transfer between municipalities; Moravian-Silesian Region Administration – Responsible for implementing regional climate and sustainability strategies, ensuring alignment with national and EU policies; ii) *Administrators*: MAPPA – A specialized urban planning and architecture institute supporting the popularization of architecture and citizen education on sustainable urban design; MSID – Regional development agency that promotes climate resilience, sustainable construction, and environmental awareness; iii) *Energy consultants and service providers*: MEC – An energy consultancy organization supporting energy management, strategic planning, and climate resilience initiatives

The ambition of the pilot is to **take participation to a higher level of digitalisation** and thus help to increase and streamline participation in the development planning of the urban district (**CZ-UC2**). Besides, **PIM-URBAN** will serve as a major opportunity to **integrate renovation and management principles in historical buildings with stakeholder engagement activities (CZ-UC1)**, which is why this particular pilot will undertake part of the buildings renovations as part of project scope (beyond the focus on design only of the rest of the pilots).

DK pilot:

The **DK Pilot** is situated in Copenhagen, a metropolitan region comprising 34 municipalities. **Copenhagen municipality** (CPH), the lead partner in this pilot, is committed to archiving climate positivity by 2035 and reducing per capital global CO2 emissions by 50% also by 2035. The pilot will **tackle these challenges at both the individual building and neighbourhood levels**. Solutions will be developed in close collaboration between building owners, housing associations, municipal authorities and energy utilities.

The DK pilot focuses on the following key challenges, defined as use cases:

- **DK-UC1: Enabling self-consumption of self-generated renewable electricity** through roof mounted systems.
- **DK-UC2: Refurbishing buildings** originally designed for high-temperature District Heating (DH) to transition towards low temperature DH.

The main targets and possible solutions envisioned for the DK pilot include:

- Developing an innovative citizen empowerment concept that leverages heat data and data sharing to cultivate greater citizen and community awareness and drive motivation for transitioning buildings to low temperature DH.
- Creating a digital model at both the building and neighbourhood levels focusing on the interaction between the building stock and the DH system. The model will identify key interventions such as (a) building-level investments (e.g. installation of digital heat systems), and (b) concepts for smart operation of buildings (e.g. heat flexibility services).
- Actively empowering and mobilising citizens, including building dwellers, building owners, and housing association boards, to participate in urban transformation processes.

PIM-URBAN tools that are expected to be deployed are: **UNIS's** Building-to-Grid Energy Simulation Tool - *optimizes building energy performance*;- **UPC's** Building to Neighbourhood Planning Tool -*integrates district heating transition into urban planning*;- **CIMNE's** Resilience and Refurbishment Tool -*assesses climate resilience and renovation pathways*;- **CENEX's** Energy Modelling Tools -*enhances sustainable mobility and district energy management*-.

The **Unique Selling Proposition (USP)** of these tools for this pilot is: *Combining energy simulation, urban planning, and resilience tools to balance historical building renovation with energy efficiency and sustainability.*

The DK pilot **builds upon previous efforts with AAU, including a series of co-creation workshops** that engaged citizens, public authorities and utility companies. In addition, participatory activities inspired by the Copenhagen Municipal Plan 2024-32 focus on co-production, empowering residents to actively participate in the design and implementation of neighbourhood-scale interventions. Ongoing joint projects of AAU and Copenhagen municipality, such as KINETIC and BEACON, provide a solid foundation for this pilot. These initiatives have already demonstrated the potential of collaborative approaches to decarbonising heating across multiple scales (building, district, and city), positioning **it a frontrunner example of heating decarbonisation in Europe**.

The **typology of stakeholders** mostly involved in the pilot include: i) *Policy makers*: Ministry of Energy (establishes the legal framework for PV installations), Ministry of Buildings (provides legal framework for building management data), and Copenhagen Municipal Administration (develops the energy strategy and roadmap within the climate plan, formulates urban regeneration policy, and provides city grants for building renovations); ii) *Administrators*: Building Administrators (coordinate the implementation and financing of building renovation projects); iii) *Financial Institutions*: Play a critical role in providing the funding needed to support the renovation of multi-apartment

buildings; iv) *Building consultants and service providers*: Play a central role in leveraging new solutions and approaches for building renovation projects; v) *Active community leaders and homeowner associations*: Initiate and make final decisions on apartment building renovations, shaping neighbourhood climate agendas).

The ambition of the DK pilot is to empower and **mobilise building owners, housing boards and associations to prepare buildings to transition to low temperature district heating**, fostering awareness of the interaction between the building stock and the district heating system (both **DK-UC1** and **DK-UC2**).

LT pilot:

The **LT pilot** will focus on Vilnius, which is the Capital of Lithuania, and the biggest city in the country with the current population of 607 404 inhabitants. Vilnius is the economic heart of Lithuania and is the largest contributor to national GDP in the country (it generates 42.4% of the national GDP). The pilot is **led by partner VIAM, a public, non-profit institution** established in 2007 by Vilnius City Municipality administration. In December 2019, the institution started **operating as an advanced One-Stop-Shop (OSS) model where residents can find all information and services they require to implement deep renovation projects from a single source**. In the course of its activities, VIAM has found **that there is a low interest of residents in carrying out renovations** despite the poor performance of buildings in terms of energy efficiency, as demonstrated by the assessment of the technical condition of buildings carried out every year (the majority of the buildings fall into energy efficiency classes D-F). These buildings consume more energy resources and require regular maintenance and routine repairs. This pilot focuses on the following local challenges:

- **LT-UC1**: Citizen engagement for **affordable housing projects**.
- **LT-UC2**: Complex **community management strategies** for optimising building renovation value chain.

Renovation processes are hindered by slow progress, largely due to social challenges. Currently in Lithuania more than half of the owners (50% + 1 vote) must agree to renovations. However, many lack trust and knowledge regarding the benefits and quality of renovations, making them difficult to engage. Insufficient communication tools and limited community involvement further complicate the process. There is a clear need for data-driven insights and optimization strategies to support energy-efficient renovations. Additionally, innovative solutions must be developed to create sustainable, healthy, climate-resilient, and intelligent built environments, while fostering greater community engagement.

PIM-URBAN tools that are expected to be deployed are: **UNIS's** Building-to-Grid Energy Simulation Tool - *optimizes energy consumption at district scale-*; **CIMNE's** Resilience and Refurbishment Tool -*supports deep renovation for energy efficiency-*; **ECOTEN's** Environmental Quality and Thermal Comfort Simulation Tool - *monitors urban climate conditions for enhanced liveability-*.

The **Unique Selling Proposition (USP)** of these tools for this pilot is: *Combining the exceptional position of VIAM as OSS for renovation projects with digitally enhanced participation and engagement. This will help remove barriers to energy efficient renovations and empower communities to take ownership of their built environment.*

VIAM has extensive experience in engaging communities in multi-apartment building renovations in Vilnius. As an advanced OSS, it facilitates informed decision-making through workshops, digital tools, and streamlined communication, addressing barriers like lack of awareness and trust. By actively involving residents and stakeholders, VIAM ensures a participatory approach that fosters community-led decisions and long-term engagement.

The **typology of stakeholders** that are expected to be mostly involved are: i) *Policy makers*: Ministry of Environment of the Republic of Lithuania (Creates favourable conditions for homeowners to modernize multi-apartment residential buildings), Vilnius City Municipality administration (Develops energy efficiency improvement programs, VIAM is directly accountable to Vilnius City Municipality for all their actions); ii) *Administrators*: Building Administrators/Managers (Organizes the implementation of apartment building modernization projects.) APVA (Environmental Project Management Agency) Supervises the implementation of apartment building modernization projects.); iii) *Financial Institutions*: Play a critical role in providing the necessary funding and financial expertise to support the renovation of multi-apartment buildings, helping to facilitate the successful completion of these projects. iv) *Contractors, service providers*: They play a central role in the success of multi-family building renovations, leveraging their skills, experience, and resources to deliver high-quality results on time and within the budget. v) *Active community leaders and homeowners* (Initiate and make final decision on the modernization/renovation of an apartment building).

VIAM ambitions to **accelerate renovations in Vilnius by enhancing citizen engagement and optimizing community management**. It tackles two key challenges: (1) Citizen engagement for affordable housing, using digital tools and education to boost participation, especially in vulnerable communities (**LT-UC1**); and (2) Complex community management, coordinating stakeholders to streamline the renovation process (**LT-UC2**). Through innovation and collaboration, VIAM seeks to make Vilnius a model for sustainable urban renewal.

PT pilot:

The PT pilot is unique among the pilots as it is led by SONAE, the owner of the CONTINENTE retail brand, instead of a public authority. As a significant land user in local environments, CONTINENTE operates over 350 stores across

Portugal, ranging from hypermarkets to convenience stores. This pilot will focus on two main areas: sustainable building renovation and inclusivity. Solutions will be developed in collaboration with various stakeholders, including building owners, sustainability teams, employees, and clients. The pilot addresses the following local challenges:

- **PT-UC1:** Implementing digital solutions for **sustainable building renovations**.
- **PT-UC2:** Designing an **inclusive retail** store.

The PT pilot targets the metropolitan area of Porto. Potential solutions to be explored through co-creation methodologies include:

- Analysing consumption patterns to prioritize buildings.
- Enhancing physical accessibility to the store.
- Optimizing waste management and circular economy initiatives.
- Fostering a culture of feedback from employees and clients.
- Monitoring environmental and social quality.
- Developing solutions to interact with different stakeholders.
- Investigating climate solutions in commercial buildings.

PIM-URBAN tools that are expected to be deployed are: **UNIS's** Building-to-Grid Energy Simulation Tool - *optimizes energy consumption at district scale*;- **INESC's** Digital Platform for Retail Renovations (DP-Store) - *optimizes building renovation decisions using data-driven insights*;- **ECOTEN's** Environmental Quality and Thermal Comfort Simulation Tool -*enhances outdoor and indoor environmental conditions for retail spaces*-.

The **Unique Selling Proposition (USP)** of these tools for this pilot is: *Pioneering data-driven sustainable retail renovations, leveraging digital simulations to optimize energy efficiency, building smartness, customer comfort and accessibility, and operational sustainability.*

The PT pilot is **built upon MC SONAE's experience in engagement tools and participatory activities**. In fact, under the CONTINENTE brand, there are initiatives such as Co-lab and Food Lab, platforms where the client has a participative role in deciding the products that will be available on CONTINENTE stores. In addition, CONTINENTE owns the loyalty app the most widespread filiation initiative in Portugal. MC SONAE integrates Environmental, Social, and Governance (ESG) criteria into their management and decision-making processes, ensuring that sustainability and inclusiveness are central to their operations. They have set ambitious sustainability targets, including achieving carbon neutrality by 2040. Following the recent digital project of building the largest smart store⁹, CONTINENTE aims to understand the principles driving the design and construction of future retail stores in terms of digitalization, sustainability, and social impact.

The ambition of the PT pilot is to **create a multistakeholder approach, leveraging digital tools to raise awareness, engage, and empower citizens to participate in the co-creation of more sustainable and inclusive store buildings**. The key innovation is DPStore, a digital platform developed by INESC TEC. This platform creates a model of a retail store, allowing the simulation of renovation strategies and the evaluation of their impact on energy efficiency, accessibility, and inclusivity. DP-Store helps stakeholders collaborate effectively by providing insights into proposed designs and ensuring that renovation efforts meet the highest standards of sustainability and inclusiveness (**PT-UC1**). To ensure the renovated store achieves full inclusivity, the active participation of people with disabilities will be a central focus throughout the process. Workshops and focus groups will enable them to share experiences, co-create design strategies, and provide valuable insights. Accessibility audits will identify barriers and practical improvements. Broader participation will be encouraged through surveys to capture diverse perspectives. This participatory approach reinforces the PT pilot's commitment to inclusivity, fostering a space that is accessible, equitable, and reflective of all user needs (**PT-UC2**).

ES pilot:

The **ES pilot** is located in the **metropolitan area of Pamplona**, which includes peri-urban municipalities such as Ansoáin, Barañain, Berriozar, Burlada, Pamplona-Txantrea, and Villava. This region faces significant socioeconomic and climatic challenges, characterized by energy poverty, outdated building stock, and poor connectivity between residential areas and the city centre. **Leading partner NASUVINSA**, is one of the main regional players to address these challenges and support the energy transition. The ES pilot focuses on the following use cases:

- **ES-UC1:** To deliver an integrated digital solution based on AI, digital twins and virtual reality to support **citizen-driven energy renovations**.
- **ES-UC2:** Transformation of a given neighbourhood into a **15-minute complete energy community**.

ES pilot targets neighbourhoods across the metropolitan area of Pamplona that demonstrate the highest levels of climate vulnerability and energy inefficiency. Possible solutions which will be part of the models and co-creation with residents include:

- Digital twins to simulate energy renovation scenarios.
- Creation of 15-minute neighbourhoods with integrated energy and mobility solutions.
- Neighbourhood-scale renewable energy systems such as solar panels and battery storage.
- Shared mobility solutions to address mobility poverty.
- Climate adaptation measures for private buildings and public spaces.

PIM-URBAN tools that are expected to be deployed are: **UPC's** Building to Neighbourhood Planning Tool -

*supports participatory urban planning for sustainable communities-; **CIMNE's** Resilience and Refurbishment Tool -enhances retrofitting and climate resilience in vulnerable districts-; **CENEX's** Energy Modelling Tools -integrates sustainable mobility and energy efficiency strategies-; **ECOTEN's** Environmental Quality and Thermal Comfort Simulation Tool -assesses urban climate conditions for improved liveability-.*

The **Unique Selling Proposition (USP)** of these tools for this pilot is: *Tackling urban vulnerability and energy poverty through an integrated approach, combining participatory urban planning, mobility-energy modelling, and climate resilience strategies for long-term sustainability.*

The ES pilot is **built upon NASUVINSA's experience in activities such as the One-Stop-Shop model for neighbourhood-level energy renovations**. This model includes participatory competitions and Global Intervention Projects (GIPs), which promote collective actions to improve energy efficiency and climate resilience. Additionally, NASUVINSA has established **a network of advisory offices that actively support the development of energy communities and shared mobility initiatives**, including partnerships with KarKarCar, a cooperative for shared electric vehicles.

The **typology of stakeholders** that are expected to be mostly involved are: architects, Homeowners' associations; Local entities; Property managers; Construction companies; ORVEs (Navarre Government aids process technicians); KarKarCar (electric vehicle sharing initiative); Energy communities; Engineering offices.

The ambition of the ES pilot is to **leverage innovative digital tools and participatory methodologies to drive the transformation of climate-vulnerable neighbourhoods into resilient, sustainable communities (ES-UC2)**. This approach aligns with regional, national, and European policy frameworks. The pilot focuses on **empowering citizens—especially vulnerable populations—through awareness-raising initiatives and active participation in the clean energy transition through built environment renovations (ES-UC1)**. By developing scalable technical solutions, such as AI-driven digital twins and optimization tools for energy communities, the Navarra pilot aims to create replicable models for other regions across Europe. These efforts will not only improve energy efficiency and mobility but also foster local partnerships and enhance the role of public authorities in citizen-led initiatives, contributing to long-term social, technical, and economic benefits.

UK pilot:

The **UK pilot** is located in the **West Midlands region**, a diverse and largely urban area composed of seven local authorities, three major cities, including (Birmingham, Coventry and Wolverhampton) and multiple towns and neighbourhoods, with a population nearing three million. Pilot **leading partner WMCA**, as the authority for the West Midlands County, has set a target reaching net zero by 2041. The UK pilot focuses on the following challenges as use cases:

- **UK-UC1: Mobility hubs and shared mobility public infrastructure.**
- **UK-UC2: Net-zero neighbourhoods ambition** including buildings retrofit and decarbonisation.

PIM-URBAN's UK pilot targets a number of different neighbourhoods across the region, covering a variety of building types and urban forms. Possible solutions which will be part of the models and co-creation with residents include:

- | | |
|---|---|
| - Modal filters and low-traffic neighbourhoods | ventilation |
| - Green infrastructure: urban tree planting and 'rain gardens' for sustainable drainage | - Solar panels and battery storage |
| - Shared mobility options | - Heat pumps or other zero-carbon heating solutions |
| - Improved active travel infrastructure and better access to public transport networks | - Local heat networks |
| - Building fabric improvements: insulation and | - Electricity micro-grids |
| | - P2P trading options |

PIM-URBAN tools that are expected to be deployed are: **UNIS's** Building-to-Grid Energy Simulation Tool -*optimizes energy efficiency in urban infrastructure-; **UPC's** Building to Neighbourhood Planning Tool -facilitates smart urban design for net-zero neighbourhoods-; **CIMNE's** Resilience and Refurbishment Tool -supports sustainable building retrofits-; **CENEX's** Energy Modelling Tools -enhances e-mobility and transport-energy integration-; **INESC's** Digital Platform for Retail Renovations (DP-Store) -optimizes building renovation decisions using data-driven insights-.*

The **Unique Selling Proposition (USP)** of these tools for this pilot is: *Integrating energy-efficient building retrofits, smart mobility solutions, and holistic urban planning to drive climate-positive urban transformation towards net-zero neighbourhoods and sustainable transport.*

The UK pilot **builds upon existing participatory activities** in the region, such as the "Net Zero Neighbourhoods" initiative. This initiative emphasizes co-production, empowering residents to collaborate in the design and implementation of neighbourhood-scale interventions. Additionally, ongoing projects like the Local Travel Point Mobility Hub sustainable transport initiative and the "Places for People" low-traffic neighbourhood initiative provide a solid foundation for this pilot. These initiatives have already demonstrated the potential of collaborative approaches to urban challenges, making the UK pilot a valuable opportunity to expand and deepen these efforts.

The **typology of stakeholders** that are expected to be mostly involved are identified in terms of the segment groups

used by WMCA for households (apart from other relevant local actors), this includes: i) Households with traditional lifestyles and routines; ii) Individuals and families striving for economic and social progress; iii) Families experiencing financial or time-related pressures; iv) Community-oriented households prioritizing stability and well-being; v) Progressive and socially engaged families; vi) Mature households seeking flexibility and autonomy; vii) Tech-savvy and security-conscious residents; viii) Affluent households with focus on convenience and quality of life. **The ambition of the UK pilot is to support the vast array of existing work being undertaken by the WMCA in the pursuit of decarbonisation** (both **UK-UC1** and **UK-UC2**), by transforming the way in which citizens are engaged, and taking a more holistic approach in order to stress the many co-benefits of place-based sustainable transport projects, which allow for a broad domain beyond transport when engaging with citizens. The focus will be on the many co-benefits of decarbonisation interventions, such as quieter neighbourhoods, better transport accessibility and many more, which WMCA knows from experience are often much greater motivators of citizens than decarbonisation #SPRJ-OBJ-PO\$#

1.2. Methodology #@CON-MET-CM@##@COM-PLE-CP@#

1.2.1. Concept pillars and methodology

PIM-URBAN's primary goal and main mission is to empower citizens and communities for participatory, innovative and multiscale design, planning and management of urban renovations, using digital tools for citizen engagement and informed decision making. This will be accomplished thanks to the implementation of a methodology organised by sequential steps linked to project ambition as well as the key milestones organising the implementation plan, being depicted in Figure 1.d below.

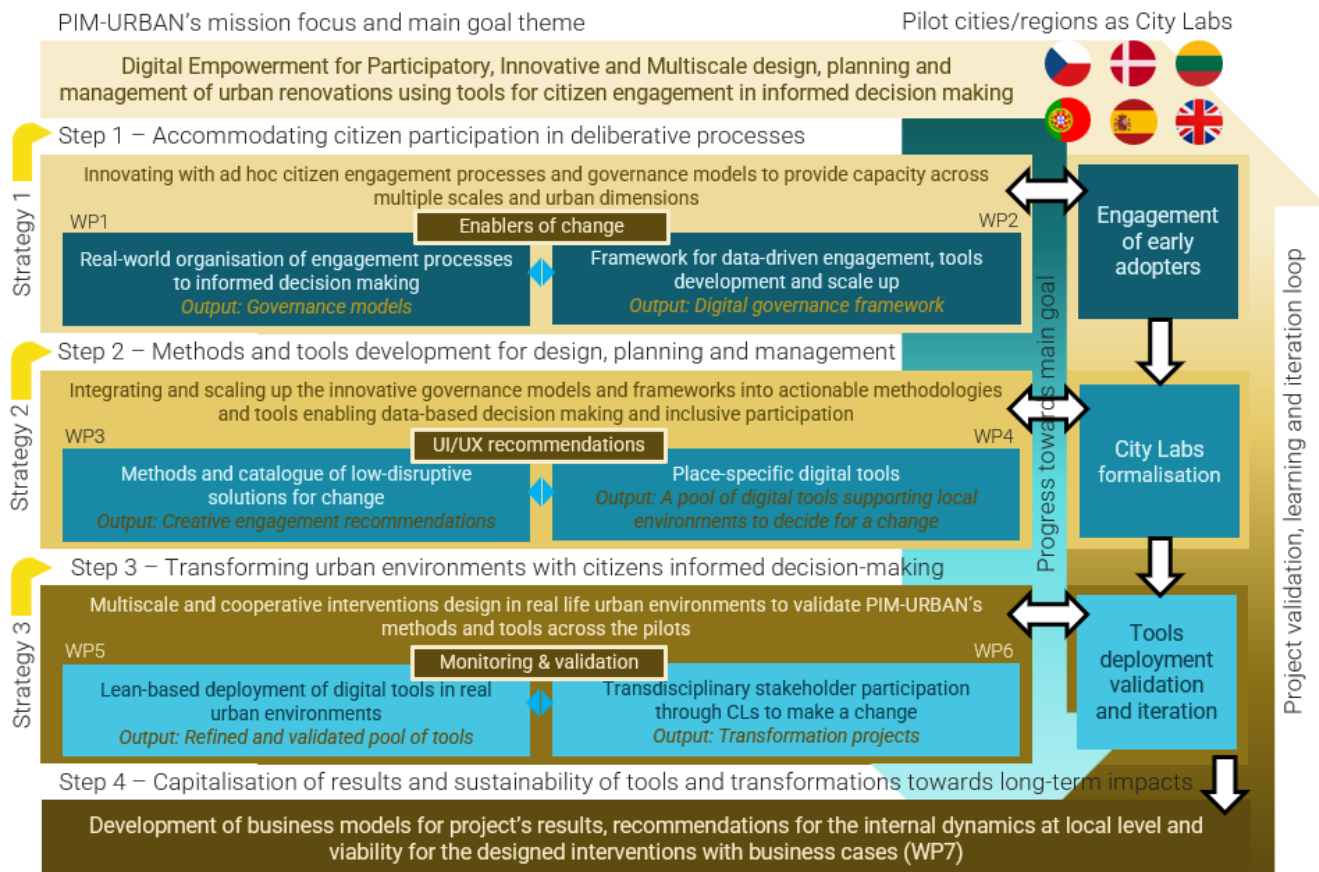


Figure 1.d. PIM-URBAN Concept

Step 1 (linked to Strategy 1) – Serves as the cornerstone for tools development, deployment and stakeholder engagement, by developing governance models and data frameworks that will be tailored to the pilot needs and futureproof for further replication across Europe. **Step 2 (linked to Strategy 2)** – Leverages on the outputs of step 1 to integrate the learnings in specific creative methodologies and digital tools, both connected by the UI and UX. **Step 3 (linked to Strategy 3)** – Partners will deploy the methods and tools across the pilots to demonstrate their performance in real life transformations to support transdisciplinary agreements towards sustainability and aesthetics. **Step 4 (linked to the Measures to Maximise impact, section 2.2)** – Seamlessly introduce the sustainability of project outputs (methods, tools and pilots' transformations) to maximise the potential to scale up, replicate and exploit all achievements and findings. This section focuses on the presentation of the four steps. Project **pilots, structured through the City Labs, will act as dynamic hubs to integrate and validate project activities, ensuring iterative learning and awareness raising. As key enablers for participatory engagement, CLs will provide a structured yet tailored environment serving as guiding thread for the project implementation steps.** Pilots have already been introduced in section 1.1.4, and the specific methods for their organisation are presented in section 1.2.2.

Step 1 - Accommodating citizen participation in deliberative processes (WP1-WP2)

In the context of participatory urban renovation, the implementation of **different competences, motivations and expectations from complex audiences requires a structured approach**. This involves **clear role definition, multi-stakeholder coordination, and effective data management** to support evidence-based decision-making. Transformation data and decision flows, will help overcoming diverse perspectives, enhancing the potential for urban transformations. This step focuses precisely on **developing the governance model and framework for both the real world and the digital realm that enable active and effective citizen and communities' participation in urban transformation processes**, fostering replicable and scalable models across different European contexts. Thus, organisation is crucial to extend transformation strategies to 3 key directly related stakeholder groups: i) Local and regional authorities; ii) Local communities; iii) Citizens.

- **Local and regional authorities:** play a vital role to actively create and make decisions to integrate sustainable strategies, plans and actions. Authorities must act as catalysts for change, fostering an ecosystem where sustainability is a priority, without overlooking the different interests of all groups and hearing, considering their voices and providing guidance and confidence navigating the complexity of the ambitious transitions.
- **Local communities:** including all these actors like businesses, associations, services and micro-actors operating in a certain environment that can become instrumental agents of change. Making them part of the transition to sustainable neighbourhoods and districts requires learning how they operate and endowing them a comprehensive understanding of their own activity. Beyond strictly financial considerations, they need to comprehend the costs and benefits associated to their activity.
- **Citizens:** End-users of the built environment and urban spaces, need to be represented and involved to make sure that project's tools and methods are inclusive, accessible and representative of real needs.

Considering these groups as the key drivers for change, with the support of indirect stakeholder groups (like energy providers, infrastructure owners, financial institutions, etc.), it is crucial for PIM-URBAN to deliver the already mentioned governance model and framework due to:

- The inherent complexity of local environments and the current siloed practices.* A **cohesive governance model based on best practices and tested methodologies for citizen mobilisation and participation, that considers at the same time all dimensions of sustainability** (social, economic and environmental as well as digitalisation, inclusiveness and equality) **and context-specific challenges** will help identify drivers of change, gaps and barriers to overcome the complexity of local environments. This holistic perspective is fundamental for future informed-based decisions and will be delivered in WP1.
- The different languages that local stakeholders speak due to their different background and realities.* Digital tools and formal languages can enable transdisciplinary dialogue towards active and effective participation of key drivers of change. However, a **unified governance framework is needed to integrate real-world models, enhancing accessibility and transparency while ensuring interoperability between tools and methodologies**. PIM-URBAN governance framework will establish data-driven decision-making processes for built environment design, planning and management. The framework will leverage on interactive digital tools (including e.g. Digital Twins, GIS, BIM and BEM) and standards to help simulating transformation scenarios. This cornerstone for effective participation will be delivered in WP2 and will help creating stronger local links.
- The need for solid references in multiple contexts of the benefits of participative models.* PIM-URBAN's CLs (WP6) will act as living demonstration scenarios to the participation model and framework developed for the project. The approach will be tailored to each local environment, working with early adopters in this phase leveraging on their commitment and reduced risk of participation fatigue. This demonstration will be seamlessly bringing the organisational models to the next activities. During this step, the envisioned distribution of tools across pilots, as presented in section 1.1.4, will be progressively refined to optimise their alignment with real-world implementation needs as validated with early adopters. This iterative approach will enhance the effectiveness of tools development (Step 2), deployment and validation (Step 3), and the formulation of strategies for scalability and replicability (Step 4), ensuring that solutions are adaptable to diverse urban contexts.
- The importance of long-term perspectives to understand the sustainability of interventions and project outcomes.* Both WP1 and WP2 that have been design in a way that integrates the replicability, adaptability and scalability principles. The main goal here is to ensure models can be institutionalised beyond project lifecycle. To this end, awareness raising, capacity building activities, co-design and co-validation, impact monitoring, top-down and bottom-up approaches to policy design and deployment and financing schemes; ensure these elements to be systematically integrated into design roadmaps to ensure long-term institutional adoption and impact.

Contributing to the overall sustainability of the outcomes of this WP and supporting the integration of these outputs in the upcoming tasks, the project integrates a feedback loop considering their measured effectiveness and the lessons learned from them.

Step 2 - Methods and tools development for design, planning and management (WP3 – WP4)

Building upon the governance model and framework developed and established in Step 1, this step focuses on developing innovative engagement methodologies and digital tools that enable the participatory decision-making

processes that will take place within the project pilots as UCs within the CLs. The goal is to **bridge the gap between policy, technology, communities and empowering citizens, especially historically undeserved communities playing an active, effective and meaningful role in shaping urban transformations**. During this step, emotional connections will be sought, leveraging on storytelling, immersive experiences and creative participatory methods will be integrated in order to enhance engagement. Even if the project leverages on tools to facilitate interaction with the UCs, **engagement is about experiences, which is why the project will pay significant attention to UI/UX building bridges from the participation methods (WP3) to the simulation place-specific tools (WP4)**, to not only accommodate users with different levels of digital literacy, but to facilitate visioning experiences (AR/VR), serious games and sensory-based engagement. Besides, during this step the project will also **tackle participation fatigue and disengagement** by designing methods and tools not as places for consultation but as generous spaces for continuous, dynamic engagement that bring accountable tangible impact from their involvement. Thus, all these components will be seamlessly integrated in the methods behind WP3 and WP4 that will implement this step:

- i) *Creative engagement as a driver for participatory decision making*. In order to enhance trust and engagement, immersive and relatable methods will be developed to ensure citizen and communities participation is not only an obligation but a meaningful and empowering experience. As mentioned above, **multiple strategies will be integrated, always from a context-sensitive perspective, ensuring low-disruptiveness and promoting accessibility and inclusiveness**. This aspect will be tackled during WP3, that encompasses also the bridges required between step 1 and the tools under this step 2 by exploring the optimal experiences for interacting with models and data.
- ii) *Fostering adoption of innovative governance models through data-driven design, planning and management tools*. PIM-URBAN leverages on previously validated tools, as introduced in the ambition section to **support decision making by allowing stakeholders to visualise, assess and contribute to urban transformations**. During this component of the methodology, the tools will be developed to integrate the methods and framework of the project, ensuring interoperability among tools and the links to the pilots. The details of the tools (developed under WP4) is presented in the following table: *Table 1.2.a. Relationship of tools deployed across PIM-URBAN's pilots.*

Tool: Building-to-Grid Energy Simulation Tool; Owner(s): UNIS; Typology: Modelling framework; **Applies to:** Built environment and energy system; **Related pilots:** CZ, DK, LT, PT, UK; **Requirements:** Building characteristics, Occupancy status, Electricity/gas consumption data, Aggregated electricity consumption - production data, Electrical grid topology, Historical weather data; **Contribution to outcomes:** *Reduced energy and e-mobility poverty. Enhanced climate change adaptation and resilience in built environments.*

Tool: Building to neighbourhood planning tool; Owner(s): UPC; Typology: Simulation; Optimization; Digital Twin; **Applies to:** Built environment; **Related pilots:** CZ, DK, ES, UK; **Requirements:** BIM models, Cadastre information, climate data, real time data; **Contribution to outcomes:** *Increase in plans for climate neutral and sustainable, aesthetic and inclusive built environments with enhanced climate adaptation and resilience (e.g. based on nature-based solutions).*

Tool: Resilience and refurbishment tool; Owner(s): CIMNE; Typology: App; **Applies to:** Built environment; **Related pilots:** CZ, DK, LT, ES, UK; **Requirements:** Cadastre; Building characteristics; Electricity/gas consumption; Aggregated electricity consumption; Climate data; Historical weather forecast; Socioeconomic conditions; Demographics information; Mobility matrices; EPCs; Vegetation indexes; Technical inspections (or similar); **Contribution to outcomes:** *Acceptability and uptake of sustainable deep renovation.*

Tool: Energy modelling tools; Owner(s): CENEX; Typology: App; **Applies to:** Energy and mobility; **Related pilots:** DK, ES, UK; **Requirements:** Electricity consumption/demand distributions; Mobility and transport data; Socioeconomic conditions; Air quality data; Economic output of area; Social indices of community cohesion and loneliness; Transport access; Mobility patterns; **Contribution to outcomes:** *Reduced energy and mobility poverty.*

Tool: Environmental quality and thermal comfort simulation tools; Owner(s): ECOTEN; Typology: Framework; **Applies to:** Outdoor comfort air quality; **Related pilots:** CZ, LT, PT, ES; **Requirements:** 3D model, surface profiles, meteo data; **Contribution to outcomes:** *Increase in plans for climate neutral and sustainable, aesthetic and inclusive built environments with enhanced climate adaptation and resilience (e.g. based on nature-based solutions). Enhanced climate change adaptation and resilience in built environments.*

Tool: Digital Platform for Retail Renovations (DP-Store); Owner(s): INESC; Typology: Digital platform and simulation tool available online; **Applies to:** Retail building renovations, energy efficiency, accessibility optimization; **Related pilots:** PT, UK; **Requirements:** Building data, IoT sensor inputs, energy meter data, stakeholder engagement sessions; **Contribution to outcomes:** *Greater engagement of representative groups of end users as well as citizens of the impacted urban context; Increased acceptability and uptake of sustainable deep renovation solutions in the built environment while using digitalized and participatory approaches.*

Also continuing the work already presented during step 1, step 2 will also **make use of PIM-URBAN CLs as experimental hubs to refine the tools and adapt them to the local environments**. This will **maximise adoption rates and effectiveness, when both the creative engagement and the objective data-based tools are brought together** in the feedback loops that have been also mentioned and presented in Figure 1.d. At the same time, this will

enhance the long-term replicability and scalability of results by reinforcing the demand-driven dimension of the tools, while also contributing to the assessment of policy frameworks and their alignment with ambitious EU climate goals. Through the structured development of participatory methodologies (WP3) and data-driven decision-support tools (WP4), PIM-URBAN ensures that urban transformation processes are not only inclusive but also backed by scalable and interoperable digital solutions, fostering a long-term impact beyond project pilots.

Step 3 - Transforming urban environments with citizens informed decision-making (WP5-WP6)

During Step 3, the consortium will bring together all the insights generated by the project in order to validate in the real-world PIM-URBAN's methods and tools. The CLs will finally emerge during this phase dynamic experimentation environments to ensure that all project outputs are effectively tailored to the local environment. This specific work will follow an iterative learning loop inspired by lean development principles as presented in Figure 1.e. Step 3 ensures that PIM-URBAN's methodologies and tools move beyond theoretical frameworks into real-world application across all processes considered (*design, planning and management*, as presented in Figure 1.b, Section 1.1.4). Through iterative testing in City Labs, participatory decision-making and digital tools will be fine-tuned to maximize usability, accessibility, and impact. The insights gained in this phase will directly inform the replication and scalability strategies outlined in Step 4, ensuring that validated solutions can be effectively adopted in diverse urban contexts across Europe.

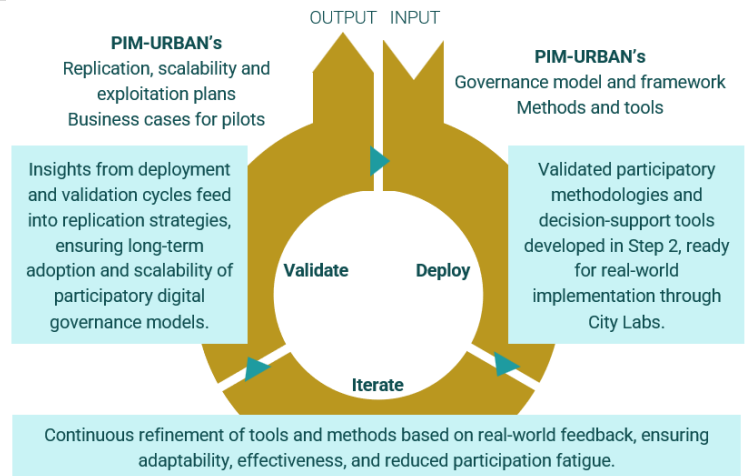


Figure 1.e. Deployment and validation loop that will take place during the 2nd half of the project in real-world environments (Step 3).

Step 4 - Exploring transformations sustainability at micro (local communities) and macro (local to national strategies and policies) level

Step 4 connects PIM-URBAN's methodology presented in this section, more specifically the outputs generated during Step 3, towards **ensuring the long-term adoption, replicability, scalability and sustainability; with due consideration of the bottom-up contributions to stakeholder awareness and capacitation, as well as bottom-up contributions to European policies and strategies**. This will pave the way to formalise the proposed governance models, support the financial sustainability and results exploitation, contributing significantly to EU transformation goals. This work will be further presented in section 2.2, since it refers directly to the project measures for dissemination and exploitation.

1.2.2. PIM-URBAN pilot cases methodology

Concepts

To provide further clarity on key terms used throughout this section and the proposal, the following definitions are relevant to the **PIM-URBAN** context, particularly in relation to governance models and frameworks (WP1 and WP2):

- **Pilot Cases (PCs, assets)** – cities acting as real-life demonstration environments for the proposal, organised through City Labs to explore and discuss the different Use Cases.
- **City Lab (CLs, methodology)** – physical and digital environment designed to foster stakeholder participation dedicated to co-creation and co-validation of digital and engagement tools that bring the Use Cases to life. CLs will be further elaborated upon in section 1.2.4, focusing on multidisciplinary approaches and SSH methodologies.
- **Use Cases (UCs, processes)** – Specific interventions defined for the project (e.g. building refurbishment in Navarra or district heating concepts in Copenhagen), tailored to address specific challenges identified within the pilots. UCs were introduced in the ambition section and will be refined during project implementation.
- **Coordination board (CB, roles, internal to the Consortium)** – **PIM-URBAN**'s consortium partners involved in piloting activities, responsible for overseeing the implementation of the CLs.
- **Pilot Owners (roles, internal to the Consortium)** – **PIM-URBAN**'s consortium partners that represent the local environment and act as the main link between the project and local stakeholders. They monitor the tailoring of methods and tools to the local environment. *Namely: CPH, SONAE, WMCA, SLEZSKA, NAS, VIAM.*
- **Methods and Tools Owners (roles, internal to the Consortium)** – **PIM-URBAN**'s owners of the different methods and tools developed during WP3 and WP4. These will be used to design transformation projects across CLs, responding to the respective UCs. *Namely: AAU, MTAM, SIN, SC (methods); UNIS, UPC, CIMNE, CENEX, INESC, ECOTEN (digital tools)*
- **Early Adopters (roles, beyond the Consortium)** – Local stakeholders engaged in the preliminary consultation and co-creation process prior to establishing the CLs. Their involvement will help ensure broader local community participation throughout the project while preventing participant fatigue. Early Adopters will act as ambassadors and sponsors for the project in collaboration with pilot owners.

- **Citizens and Local Stakeholders (roles, beyond the Consortium)** – These include individuals and relevant local networks, associations, and local multiplier actors such as schools, sports clubs, and community organizations. Their involvement ensures the representation of diverse perspectives and fosters broader community engagement in urban transformation processes.

Demonstration structure

The demonstration phase of **PIM-URBAN** is designed to **translate the project’s methodologies, tools, and governance models into actionable interventions across six diverse pilot locations in Europe**. These pilots, as introduced in section 1.1.4, reflect unique socio-economic, environmental, and urban challenges, serve as real-life laboratories for testing and refining the project’s outputs. The structure ensures a seamless integration of the tools and frameworks developed in early project phases while fostering participatory engagement and real-world validation. The demonstration activities are **structured around iterative phases**, each aligned with the project’s overarching objectives and tailored to address local priorities. These phases **progressively advance from the co-creation of governance models to the deployment and validation of digital tools, culminating in the development of scalable business cases and actionable recommendations**. This stepwise approach ensures that each pilot contributes not only to its local environment but also to the collective knowledge base of **PIM-URBAN**. By **leveraging the CLs as hubs for stakeholder interaction and fostering dynamic participation processes**, the demonstration structure aims to maximize the impact of interventions while maintaining scalability and replicability. This multi-phased strategy ensures that the project aligns with its ambitions to support climate-neutral, resilient, and socially inclusive urban transitions across Europe.

*Table 1.2.b. Summary of **PIM-URBAN**’s demonstration strategy.*

Phase	Timeline	CLs status	Engagement Activities	Expected Outputs (detailed KPIs Related WP in Section 2.1.1)	WP & MS
Establishment of Governance Models and Frameworks and UCs requirements	M1-M12	Early adopters only (at least 5 per CL)	Co-design workshops	Co-design of governance models and refinement of the proposed UCs and tools requirements.	WP1, WP2 MS2
Development and Deployment of Digital Tools	M13-M18	Formalization of city labs (engagement in Section 2.1.1)	Tool testing, participatory simulations (Early adopters)	Initial deployment of digital tools and iterative refinement based on early feedback from stakeholders.	WP3, WP4 MS6
Tool Deployment	M19-M26	Fully operational city labs	Pilot-specific deployment workshops	Deployment of tools tailored to local challenges and preliminary feedback collection.	WP5 MS8
Tool Validation and Iteration	M23-M30	Fully operational city labs	Multi-stakeholder co-creation sessions	Validation of tools and methodologies through real-life interventions. Cross learning activities.	WP5, WP6 MS9
Conclusions and Business Cases	M31-M36	Fully operational city labs	Consultations	Final refinement of tools, conclusions, and development of scalable business cases.	WP6, WP7 MS10

1.2.3. Related research and innovation activities

PIM-URBAN’s rationale, methodology and ambition have robust foundation on knowledge, expertise and networks that have been developed by partners in finalised or ongoing national/EU projects and initiatives. Notably, the following table presents a selection of R&D projects – whose results will feed this proposal – considered particularly relevant for the **PIM-URBAN** concept.

*Table 1.2.c. R&I initiatives related to **PIM-URBAN**.*

Project (Partner involved) and related results integrated in PIM-URBAN
KINETIC (AAU): KINETIC examines the governance conditions that enable citizen participation in energy systems transitions at the building and district levels through living labs designed to mobilise and engage local citizens. It integrates the analysis with the design and implementation of the living labs while generating evidence to support the development of integrative and inclusive transition agendas, ensuring that they contribute to climate neutrality and promote social justice. Through close collaboration with city administrations, housing associations, and energy utilities, KINETIC co-develops inclusive action plans that coordinate systems transitions across apartments, buildings, districts and cities.
POLICYMIX4MOBILITY (AAU): PIM-URBAN will leverage on the inter- and transdisciplinary insights of POLICYMIX4MOBILITY’s conceptual-analytical frameworks, which integrate qualitative (case studies), quantitative (modelling) and transdisciplinary (urban labs, forums) methodological approaches. This innovative research design seeks to evaluate existing policy mixes and develop forward-looking strategies that support sustainable mobility practices. In collaboration with city administrations, the project co-develops a toolbox to

facilitate institutional, procedural, and social innovations alongside political strategies to navigate the complexities of reducing car dependency. The outcomes will provide a robust evidence-base for shaping integrative and transformative policy mixes that are socially just and drive progress towards climate neutrality.

Reconnecting Wolverhampton (MTAM) aimed to co-develop a VR neighbourhood in collaboration with residents of Graiseley, Wolverhampton City Council, and Uber, envisioning a 2040 net-zero community. Through a year-long series of workshops, we upskilled residents using a place-based approach, enabling them to contribute meaningfully to the project while visualizing designs through VR technology. By building a network of community leaders and collaborating closely with the council, we identified low-cost, high-impact co-benefits that aligned with both residents' aspirations and broader urban planning goals. This process demonstrated the power of participatory design and technology in creating sustainable, inclusive urban futures.

E-LAND (SIN): The E-LAND business model innovation (BMI) tool which follow a structure business model development process that is successfully applied in a multi-vector energy-systems can be adopted to **PIM-URBAN** project. This co-develop and co-validate approach will enable to explore promising business case and develop business models for the **PIM-URBAN** digital tools and solutions.

PEDvolution (SIN): **PIM-URBAN** will capitalize the learnings and experiences of similar digital tools developed in PEDvolution including its business model innovation tool for positive energy districts (PEDs). The PED business model tool developed in PEDvolution can be adapted to provide various typologies of business model options for **PIM-URBAN** demos and tool developers considering the emerging business design options that will serve various **PIM-URBAN** use cases.

EnerWise (UNIS): The development of a sociotechnical solution for monitoring & management of energy consumption in public school buildings. The solution consists of an IoT, cloud-based platform with advanced analytics and a series of scalable community engagement and behaviour change interventions.

SchoolHeroZ (UNIS) Supporting cities with their transition to climate neutrality via a holistic sociotechnical approach for school ecosystems and beyond. The solution provides a building digital twin, a centralized platform for monitoring energy and mobility data and emissions and a citizen behaviour change app.

Climate Ready Barcelona (CIMNE) CR-BCN aims to support the Barcelona city council and citizenship in anticipating and adapting to climate change effects and the related energy crisis. It will develop and implement cutting-edge energy awareness services addressed to the Energy Advisory Centers (EACs) users and a data-driven household climate vulnerability map to support the municipal departments' climate-related decisions. Furthermore, Climate-Ready BCN will gather, process, and enrich many data sets to help local policymakers implement multidimensional, cross-departmental climate inequality interventions.

CLIMRES (CIMNE): aims to foster a 'Leadership for Climate Resilient Buildings', by addressing the identification and systematic profession of buildings' vulnerabilities and estimating their impact in the buildings' ecosystem considering the interlinkages within the urban context. The project will deliver vulnerability assessment and impact evaluation methodologies along with an inventory hub of measures for building materials and design against climate risks and a decision support toolkit addressing three levels of decision making at strategic, tactical and operational levels.

FEEDBACK (INESC): Energy model of INESC's headquarters along with advanced algorithms like an occupancy forecaster and a user behavior predictor, that will serve to develop the DP-Store tool.

Solene Microclimate II (ECOTEN): it aims for delivering outdoor comfort assessment using Solene Microclimate 2 for selected urban neighbourhoods in the city. SOLENE Microclimate 2 produces hourly results for air temperature, humidity, wind speed and direction and solar radiation for every area of a neighbourhood in 3D. These results are used to compute the universal thermal climate index (felt temperatures) which can be used to assess the thermal comfort level of a given neighbourhood. This assessment can provide guidelines for the city planners and urban development stakeholders to develop design scenarios for the city to become more resilient to extreme heat the effective implementation of blue green and white infrastructure (such as green areas, green roofs, green walls, water bodies, high albedo materials). The results can be provided in open standardized data model CityGML to be integrated to 3D models of cities and landscapes.

GreenSCIES (CENEX): GreenSCIES (Green Smart Community Integrated Energy System) aims to deliver a solution which can provide low carbon and low cost transport, power and heat to a total of 12,500 homes in the London Borough of Islington and Sandwell in the West Midlands. CENEX worked on integrating mobility into this local energy network, by assessing future mobility scenarios for the regions and analysing the value of V2G through our REVOLVE modelling simulation tool. The GreenSCIES systems delivers low carbon heat, mobility and power to an estimated 33,000 residents and nearly 70 local businesses in Islington. The new smart energy grid helped to reduce carbon emissions by an estimated 80% (against conventional systems) while addressing fuel poverty by providing a significant reduction on consumer bills. The system also delivered air quality improvements by reducing pollutants while improving provision of local skills training and job prospects, helping to invigorate local economies.

The table above only indicates a selection of the most relevant projects from which the results will be directly incorporated into **PIM-URBAN**. In addition to this, it should be noted that the **partners are involved in a much broader range of R&I national and international activities that display synergies with PIM-URBAN** (in terms of topics, technologies, or significant networks), with which it will be important to establish **cross-collaboration**. Finally, **PIM-URBAN** shows complementarity, but does not overlap, with other ongoing EU-funded projects and other initiatives (a non-exhaustive list is reported below). These R&I initiatives will represent an interesting opportunity for collaboration and synergies creation. Therefore, the project will **proactively promote interaction**

and cohesion with other relevant projects and networks (a dedicated task for liaison activities have been included, T8.2). This will be reflected across all activities of the project and for the broad range of topics covered by urban planning and sustainable local development. The consortium has already made a preliminary analysis on possible relevant activities to be contacted for this scope (using the proprietary search tool WheesBee), considering running projects at European level. The preliminary list of projects identified are: i) *Participatory urban processes*: **CULTUURCAMPUS** (HORIZON-MISS-2021-NEB-01); **PROBONO, ARV** (LC-GD-4-1-2020); **PACT-NBS** (HORIZON-MSCA-2023-PF-01); **WeGenerate** (HORIZON-CL5-2022-D4-02); ii) *Digital solutions for urban transformations*: **CLIMABOROUGH** (HORIZON-MISS-2021-CIT-02); **GreenInCities** (HORIZON-MISS-2023-CLIMA-CITIES-01); **AI4CCAM** (HORIZON-CL5-2022-D6-01); **BUILDSPACE** (HORIZON-EUSPA-2021-SPACE); **AMIGOS** (HORIZON-MISS-2022-CIT-01); iii) *Governance models for climate-resilient cities*: **CitiObs**, **GREENGAGE** (HORIZON-CL6-2022-GOVERNANCE-01); **C-NEWTRAL** (HORIZON-MSCA-2022-DN-01); **ReGreeneration** (HORIZON-MISS-2023-CLIMA-CITIES-01).

PIM-URBAN will stand out among all these initiatives by showcasing how governance models for the real world and the digital realm can synergistically work together towards effective stakeholder participation and local transformations. The cooperation among those projects and initiatives will grant a strong cohesion that facilitate not only future adoption and replicability of project results, but also a proper way towards its ambitious environmental objectives.

Furthermore, the consortium envisions the creation of an **International Advisory Board** (IAB, T9.4) comprising 12 internationally recognised experts and networks spanning the entire value chain. In forming the IAB, the consortium will engage key organisations associated with Built4People and the New European Bauhaus, and other relevant domains, including ECTP, WGBC, the Covenant of Mayors, BPIE, and EU-wide companies. Beyond offering strategic guidance throughout the project's implementation, the IAB will play a pivotal role in enhancing the uptake and impact of the project's outcomes.

1.2.4. Multidisciplinary approach and social sciences and humanities integration

PIM-URBAN operates at the confluence of technological methods and deep citizen engagement to overcome the challenges of sustainable urban transition. The synergy of digital tools and citizen-led participation needs innovative approaches to transform the data-rich environments of academia and government into true citizen empowerment. Bridging theory and practice, this process **requires a deeply transdisciplinary approach, integrating science, technology, humanities, and practical engagement strategies and methods.** PIM-URBAN's proposed demonstration addresses this challenge by presenting a comprehensive structure of pilots and CLs. These **CLs serve as both real-world and digital platforms for multistakeholder collaboration, tackling complex, context-sensitive issues and challenges.** Their establishment and integration into project activities align with the principles of Built4People Innovations Clusters and are seamlessly integrated into the methodology outlined in section 1.2.1. A key priority is **ensuring that different competences, motivations and opportunities** are meaningfully reflected in the project discussions. This will be achieved through ad hoc governance models and frameworks (WP1, WP2), data-driven assessment tools (WP4), innovative mechanisms for community participation and interaction with data and models (WP3), and iterative validation processes (WP5). Throughout the implementation phase, continuous monitoring and impact maximisation will be guided by the New European Bauhaus (NEB) principles, **fostering aesthetically engaging and socially inclusive urban transformations**, which will enhance scalability and replicability.

1.2.5. Gender dimension and equality

The citizen engagement methods will take **active consideration of the impact of participants diversity on their interest and ability to both engage with the process, and on their views on the proposed interventions.** The methods are built specifically to account for variety of characteristics (gender, age, race, disability etc.) of the citizens, and ensure that these are built into the proposed solutions for the area. Gender of participants will be representative of the population of the areas of the pilots, as will other characteristics. Issues which typically intersect with gender such as work and care responsibilities will also be specifically considered to ensure that the outcomes will be positive for all citizens.

1.2.6. Open science approach

PIM-URBAN is committed to advancing Open Science (OS) by fostering transparency, collaboration, and accessibility in research, fully aligned with the European Open Science Policy. The project ensures early and open sharing of research results, reinforcing high-quality, impactful, and reusable knowledge for society. The key OS practices in PIM-URBAN are:

- **Early access to research outputs:** All peer-reviewed scientific publications and research outputs will be made openly accessible through Open Access (OA) repositories, respecting GDPR and IPR principles. The project will leverage European Open Science Cloud (EOSC) services for data sharing, ensuring interoperability and long-term availability.
- **Data management and FAIR principles:** Research data will be handled following the FAIR (Findable, Accessible, Interoperable, and Reusable) principles. A structured Data Management Plan (DMP, D9.2) will be

maintained throughout the project, ensuring responsible data governance.

- **Research integrity and best practices:** PIM-URBAN partners adhere to responsible research practices, fostering inclusion, openness, and shared responsibility. Administrative procedures will enforce compliance with research integrity standards, preventing issues like publication pressure or power imbalances.
- **Capacity building & skills development:** Project's capacity building activities foreseen (T3.5 and 8.4) will integrate OS best practices in both technical and non-technical activities.
- **Citizen science and multi-stakeholder engagement:** PIM-URBAN's **OS commitment goes beyond the academic outputs and complementing the integration in capacity building activities**, OS will also be fostered across citizen participation through the CLs. OS will also become a practical tool for sustainable built environment and urban development, fostering real-world knowledge transfer and replicability.

All PIM-URBAN research results, including data, methodologies, and scientific publications, will be Managed, Protected, Shared, and Exploited in alignment with Horizon Europe's OS Policy and the Key Impact Pathway (KIP) on knowledge diffusion.

1.2.7. Research data management and management of other research outputs

PIM-URBAN will follow a robust Research Data Management (RDM) strategy, already outlined at proposal stage to align all envisioned project outputs and the metadata associated (with particular attention to the project CLs, but also methodologies and workflows) are documented, managed and shared in accordance with Horizon Europe's OS and FAIR principles. RDM is guided by the following principles:

- **Data governance and compliance:** the research data and output generated in the project will consider all actions established in Article 17 of the Model Grant Agreement, always ensuring the compliance with the GDPR, IPR and ethical considerations during the whole project. Besides, the project DMP already mentioned before, will be developed in early phases of the project and updated to account for internal changes. DMP will define data collection methods, exchange protocols, storage, security, and long-term curation strategies.
- **Data collection, processing and infrastructure:** PIM-URBAN will establish a secure and scalable data-sharing environment linked to the usage of tools within the project based on FIWARE frameworks to ensure interoperability while leveraging on standardized formats for seamless integration in urban planning processes (like BIM or GIS).
- **Workflow integration and data outputs:** **The project data sharing environment is, as mentioned above, tailored to the project WPs so that data can be seamlessly and securely exchanged across the project.** Expected data outputs per WP (technical WPs Step 1 to 3 presented in Section 1.2.2) include: WP1 (Governance models & stakeholder engagement): Stakeholder participation metrics & decision-making frameworks. WP2 (Digital governance framework & interoperability): Data-sharing protocols & interoperability guidelines. WP3 (Transformation solutions & stakeholder engagement tools): AR/VR interaction datasets & citizen engagement insights. WP4 (Urban simulation tools): AI-driven urban modelling & climate adaptation datasets. WP5 (Tools deployment real-world testing): Sensor-based monitoring of energy use, mobility, and environment. WP6 (Replication & scalability strategies): Benchmarking datasets & upscaling feasibility analyses. This structured data-sharing environment will ensure that all project results remain accessible, interoperable, and scalable for future urban transformations, that links to the work on CDE (WP7 and 8) and management overall (WP9)
- **Long-term sustainability and knowledge transfer:** The proposed strategy ensures that research outputs are managed responsibly, shared transparently and the alignment with policy frameworks and standardisation efforts support a long-term impact beyond the project lifecycle for urban transformations across Europe.

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2. Impact @@IMP-ACT-IA@#

2.1. Project's pathway towards impact

2.1.1. Contribution to the Expect Outcomes (Eos) set out in the call topic

EO1: Greater engagement of representative groups of end users as well as citizens of the impacted urban context.

Current urban planning processes often fail or do not intent to actively involve citizens and other actors of the local context. This is particularly noticeable in case of vulnerable populations, minorities, people with disabilities or individuals with limited technical literacy or resources. Besides, local decisions are often siloed, with minimal connections or integration presenting an ineffective fragmented governance. As presented in section 1.1.4, **PIM-URBAN** will address these challenges by combining context-specific and experience-based inclusive and innovative engagement processes with participatory digital tools that will enable the **participation of at least 20 actors per city lab (at least 220 in total, including individuals, local networks, associations and other relevant multiplier actors such as schools) that will take part in at least 2 UCs interventions in every city lab (12 in total, T6.1).** Engagement and participation will be enabled by solutions such as VR and AR and *what if* scenarios modelling for energy, mobility and renovation dimensions that will be deployed in the cities involved supporting the multi-scale urban innovation. **PIM-URBAN** will also introduce **12 tailored innovative governance frameworks** (one for each of the 12 CLs across the 6 cities/regions involved in the project, **T1.2**), that integrate citizen and stakeholders' inputs

into decision makings, ensuring interventions are context-sensitively and widely accepted, as will be mentioned below under EO2. Proposed governance models will be **deployed, monitored and validated across CLs towards enabling the rest of PIM-URBAN expected impacts in multiple spatial and temporal scales, establishing a strong foundation for scalability and replicability** and broader adoption of participatory processes across Europe (see 2.2.4 below).

EO2: Increased acceptability and uptake of sustainable deep renovation solutions in the built environment while using digitalized and participatory approaches.

Deep renovation projects in the built environment and local context are often misaligned with stakeholders' competences, perceived opportunities and motivations as presented in the methodology section. This creates resistances of different natures like costs, disturbances and other discrepancies with expected benefits. The participative methods/tools and governance models proposed by **PIM-URBAN** will address accessibility of complex concepts so that all groups can visualise and understand the benefits of the green and digital transition for the built environment. **5 co-design and validation workshops (30 in total across all CLs, see section 1.2.2) throughout project lifecycle will align the priorities of 20-100 stakeholders at local/regional level (at least 220 in total) with the already mentioned 12 interventions across the project**, contributing to acceptability of results. Besides, this will be accompanied by **tailored and dedicated capacity building activities** (at least 6 linked to project strategies, T8.4) to both inform and train local authorities, citizens and other local stakeholders that will reinforce the acceptability of renovation solutions and processes. During the project, **satisfaction surveys and engagement metrics will be measured** by directly interviewing pilot owners to provide inputs to the synthesis and integration. Engagement fatigue is also a challenge that the project will tackle by refining or pivoting the communication strategy, so it does not interfere with this particular outcome of the project. Replicability plans for the methods and the capacity building activities will contribute to increasing acceptability. As will be mentioned in section 2.2, project methods will be proposed to revise urban related policies and strategies that will further contribute to increasing acceptability and make a real sustainable change.

EO3: Reduced energy and mobility poverty.

Energy and mobility poverty are complex phenomenon that combine dimensions like demographic challenges, high costs, options availability or poor efficiency. As stated by the European Parliament briefing: *in 2022, over 41 million Europeans were unable to keep their homes adequately warm*¹⁰. In the case of transport poverty, the concept is not solidly defined, but it is recognised to be linked to lack of availability, accessibility, affordability, lack of options or inadequate conditions¹¹. **PIM-URBAN's KPIs validated during the project (linked to the UCs presented in section 1.1.4) will be:**

Table 2.1.a. Summary of expected achievements in PIM-URBAN City Labs (for the sake of comparability, the figures related to 'urban resilience' consider same weight for all the components analysed here).

City Labs	CZ	DK	LT	PT	ES	UK
Mobilised stakeholders	30-40	30-40	20-25	40-50	30-40	80-100
Increased energy efficiency (%)	20%	20%	70%	30%	30%	20%
Estimated costs reduction for households (%)	N/A	15%	57%	N/A	15%	N/A
Increased access to transport (%)	5%	N/A	N/A	5%	5%	5%
Increased adoption of electric mobility and shared transport systems (%)	5%	N/A	N/A	15%	15%	15%
Mobilised resources for urban renovation projects directly related to PIM-URBAN (€)	14M€ for the intervention as a whole	40.000€ per dwelling involved	+2M€ (20 buildings refurbishment planned)	N/A	15.000€ per dwelling involved	N/A
Estimated contribution to urban resilience (%)	15-20%	15-20%	15-20%	20-25%	15-20%	10-15%

In the long term, this is estimated to lead to reducing the percentage of energy-poor households by 10-15% (with an average 20-30% efficiency increase in households¹²) and cut transport-related emissions by 10-20% (with a 5-15% increase of sustainable mobility options¹³).

EO4: Increase in plans for climate neutral and sustainable, aesthetic and inclusive built environments with enhanced climate adaptation and resilience (e.g. based on nature-based solutions).

As mentioned before, urban transformations are complex processes that often lack participation of multiple stakeholder groups providing multi-dimensional solutions towards climate-neutral built environment. Despite the efforts on sustainable development, as presented in the ambition section, there are few projects that include a holistic approach that takes into consideration at the same time all dimensions of sustainability (economic, environmental and social), with resilience, aesthetic and inclusiveness in mind at all scales of local/regional environments. This leads to increasing vulnerabilities and linear use of resources, which hinders the capacity to reach the ambitious

climate neutrality goals. **PIM-URBAN's** takes inspiration from Built4People's human-centred approach to functional built environment and will use realistic communication methods like the NEB Compass. The tools proposed by the project will help identifying solutions and risks that can prioritise deployment of NBS or RES to contribute to urban resilience by 10-25% (thanks to a dedicated catalogue integrated in decision making processes, T2.1). At least a renovation plan in each UC (12 in total) will be developed and agreed at local level to be implemented by 2030 increasing a green space coverage by 10% across pilot locations, and the scale up plan targets to involve 50 cities across Europe with a replication potential to more than 100 cities by 2040 (supported by measures to maximise impact under WP7 and WP8, with the support of the IAB-T9.5).

EO5: Enhanced climate change adaptation and resilience in built environments.

Built environment lacks the flexibility to adapt rapidly to changing conditions which makes urban areas particularly vulnerable to climate change and prioritise mitigation and reaction over adaptation and prevention. Moreover, existing and aging infrastructure in many European cities is dimensioned to outdated needs and will not suffice in the foreseeable future of cities. This will significantly generate stressors, costly damages and reduced quality of life which affects especially vulnerable populations and lower-income areas. **PIM-URBAN** will contribute to the **development of data-driven regeneration plans by combining at the same time the usage of advanced tools and satellite imagery (WP5, via lean-based rollout of digital tools) with multi-stakeholder participation towards monitoring climate impacts and adjusting or pivoting urban plans accordingly (WP6, via CLs)**, which as mentioned above, highlights the priorities in terms of opportunities and risks, with due consideration of vulnerable groups. Complementing what has been expressed in previous EOs and in section 1, in order to have a stronger impact, **PIM-URBAN** will also consider and implement other recommendations like the one's emerging from the experts of the IAB (T9.5) or other recognised references like EIB's Climate strategy or the Climate-ADAPT services on buildings, land planning or the urban realm. This will help to maximise the impact of the project thanks to the support of the measures presented in section 2.2 and the KPIs presented in this section (Table 2.1.a).

2.1.2. Contribution to Built4People's implementation and the NEB Community

Bridging the description of how PIM-URBAN contributes to the expected outcomes, and the wider contributions to the Destination (directly linked to HEU KSOs, EU strategies and UN's SDGs), it is important to highlight as well how the project contributes to the specific expected impacts of Built4People partnership and the NEB.

Contributions to the partnership specific implementation KPIs

- ***Established innovation clusters:*** PIM-URBAN pilots learn from existing examples like PROBONO's Innovation Clusters that also are linked to Built4People network of Innovation Clusters thanks to partner SIN. Regions represented in the network like Navarra are also present. The project contributes by integrating participatory digital solutions for urban renovation within these networks, strengthening cross-collaboration and replicability potential. The experience gained through PIM-URBAN's CLs and pilots will serve as a foundation for their potential transition into Built4People Innovation Clusters, maximizing impact, scalability, and replication beyond the project's duration.
- ***Increase of inclusion of building users and occupants:*** PIM-URBAN ensures inclusivity by actively engaging **between 220 and 295 stakeholders** across pilot sites, ensuring that building users and occupants (with particular attention to underrepresented groups) are involved in decision-making processes. The participatory tools, such as serious games and VR-based simulations, provide accessible formats for diverse user profiles, including vulnerable communities.
- ***Innovative solutions and packages for sustainable construction and renovation:*** PIM-URBAN delivers a portfolio of at least **30 low-cost, low-disruptive solutions** for urban transformation, integrating **Nature-Based Solutions (NBS), Renewable Energy Sources (RES), and circular economy principles**. This will feed the 6 digital tools that will be further developed deployed and validated across the project pilots.
- ***Certification & verification tools:*** The project will consider references like ISO 37100 and ISO 19650 from a top down and bottom-up perspectives (see section 2.2.3 for details). Besides, all data management environment will leverage on open standards to maximise interoperability, scalability and replication potential.
- ***Training capacity (in hours per year):*** PIM-URBAN will deliver at least **6 capacity building programs** engaging over **200 participants**, with a total training capacity of **600+ hours per year upon project findings**.
- ***New skills creation:*** The project fosters capacity-building in urban digitalization, with at least **6 new capacity building programmes** in areas such as **digital transformation, sustainability, resilience, and connectivity**.
- ***Sustainable neighbourhoods:*** By designing and reaching agreements for **12 urban renovation projects** across **6 pilot locations**, PIM-URBAN contributes to the transformation of built environments into sustainable, climate-neutral districts.
- ***Healthy Built Environment:*** The project deploys advanced simulation tools to assess **thermal comfort, air quality, and urban resilience** across pilots, aiming to improve living conditions through targeted renovation strategies.
- ***Cultural heritage safeguard:*** PIM-URBAN integrates **digital solutions that will be demonstrated as well for heritage buildings refurbishment**, with a flagship intervention in **Silesian Ostrava, Czechia**, where 14M€ is

expected to be attracted for renovating a historic public building while ensuring **energy efficiency and accessibility improvements**.

Contributions to the NEB Community

PIM-URBAN aligns with the NEB principles by integrating sustainability, aesthetics, and transdisciplinary in its urban renovation processes. The project contributes to the NEB Lab by sharing best practices from pilot cities, fostering transdisciplinary collaboration, and co-developing policy recommendations for participatory urban planning. At least 5 policy briefs will be delivered that will adhere to the NEB guidelines, that are expected to be linked to liaison activities with NEB Community related projects and initiatives.

2.1.3. Wider contribution to the impacts specified in the Destination

As outlined before, PIM-URBAN directly contributes to Horizon Europe's Key Impact Pathways, but it is particularly represented by how the project contributes to the expected impacts specified in Destination *Efficient, sustainable and inclusive energy use* as presented below:

To support the built environment as contributor to European ambitions with stronger links between science, technology, practitioners and policy drivers

PIM-URBAN employs a multidisciplinary approach that is presented in the consortium and the methodology across the proposal. Through its **multi-stakeholder participatory model with a tailored local vision and the engagement and digital tools**, the project will demonstrate across the pilots **how to bridge existing gaps in collaboration and urban planning towards climate neutrality**, which will be valuable learnings for future exploitation in other urban contexts. **PIM-URBAN** city labs are aligned with the Built4People Innovation Clusters principles and connects to other concepts such as PROBONO's GBNs Innovation Clusters. This participation networks will facilitate a top-down implementation of European ambitions on climate neutrality and the generation of bottom-up recommendations for policy making, standardisation and investment.

To contribute to building stock's continuous evolution towards efficiency, climate neutrality, resilience and energy independency

PIM-URBAN will demonstrate across the 6 pilots, scalable solutions (at least 8 specific methods and tools within the consortium and not restricted to other locally sources solutions) to transform the building stock and urban areas towards energy efficiency, climate neutrality, resilience and independency; within the pilots and beyond at broader European level. This will be **achieved through advanced building retrofitting, building-to-neighbourhood models and energy and mobility modelling tools**; in combination with participatory governance models for urban planning that will help integrate novel systems towards the ambitions of the building stock.

To enhance constructed and renovated buildings performance with lower environmental impacts by promoting deep and holistic renovations adapting to user needs, efficient use of spaces and integration in the grid

In order to tackle challenges of buildings, neighbourhoods and cities to achieve higher efficiency levels; **PIM-URBAN** will **demonstrate how holistic renovation by prioritising from a collaborative perspective the identification of opportunities, needs and risks**. The alignment with the Renovation wave strategy will significantly contribute to the building stock evolution towards achieving the efficiency and environmental goals.

To increase quality, affordability and inclusiveness of the built environment; considering at the same time sustainability, circularity, aesthetics and better living conditions

As mentioned before, **PIM-URBAN** will integrate the NEB principles in combination with Built4People's people centred approach so that sustainability, aesthetics and transdisciplinary collaboration are represented in all built environment to neighbourhood renovation. Participatory processes will contribute to improving living conditions for diverse communities while aligning these local environments to EU priorities for sustainable and equitable local areas.

2.1.4. Requirements and potential barriers

PIM-URBAN's consortium has examined potential factors that could hinder the expected impacts of the project and considered effective mitigation strategies to ensure a successful project exploitation. The key barriers are presented using a PESTLE assessment, which dimensions are presented below: *Table 2.1.b. Main barriers and framework conditions.*

Political	Misalignment between policies between from European to local level: The proposed transdisciplinary approach at CL level will help the understanding of the European policies and ambitions at local level (inc. Built4People and the NEB), that will revert back as recommendations and scalability plans. Atomisation of decision-making profiles which leads to lack of clarity in priorities and allocation of resources for regeneration: PIM-URBAN will provide objective and data-based decisions and consensus upon a participative governance structure and usage of digital tools. The project activities will act as lighthouse to consolidate this approach, which will help to demonstrate the value for public investment.
Economic	Limited economic attractiveness of investment in sustainable solutions: PIM-URBAN tools will promote transparent decision making with clear cost-benefit conclusions while facilitating private-public collaboration. Besides, the project will assess the internal synergies in the CLs and how to promote sustainability as part of value proposition within the communities as well as to exploit the results. Lack of funding models and business models for clean technologies: The pilots of the project will showcase

	inclusive solutions and models that prioritise risks and opportunities for sustainable cities and communities' wellbeing and can be scaled across Europe.
Social	Engagement and representation of vulnerable communities which may hinder the access to digital tools and information and create resistance to change and lack of awareness of sustainable practices: PIM-URBAN will employ the city labs to engage and represent the communities with tailored and adapted communication to local languages and diverse competences present in the pilots. Inclusivity and equitable plans to access digital resources will be considered, as well as capacity-building programs for stakeholders. The project will apply the 'nothing about us without us' principle to maximise engagement.
Legal	Complex regulatory frameworks for multi-actor projects and other new economy methods: PIM-URBAN will provide clear recommendations based on the governance models developed by the project that will help the creation of links between local realities and EU directives. Lack of harmonised sustainability standards: PIM-URBAN will leverage on existing certification schemes, standards and best practices to provide a holistic view of participatory regeneration processes.
Environ	Urban vulnerability to climate risks and lack of resilience and preparedness: PIM-URBAN will incorporate solutions that promote digital and sustainable built environment and infrastructure across the pilots, which as mentioned before, will support urban regeneration with due attention to sustainability and resilience.
Technical	Fragmented tools and methods and lack of consensus on objective and evidence-based framework to assess environmental performance of local transformations: PIM-URBAN will focus on providing different means to exchange information building upon standards and certifications through a common digital governance framework. This will help data collection and validation mechanisms, that will contribute to improve the effectiveness and replicability potential of this project as well as other related initiatives' impacts. High costs and uncertainty to scale up innovative and emerging technologies: The project will demonstrate the cost-effectiveness of solutions that can contribute to the complex goals of the urban environments, contributing to the creation of a trust environment for further RDI projects.

2.2. Measures to maximise the impact – Dissemination, exploitation and communication

#@COM-DIS-VIS-CDV@# The impact of **PIM-URBAN** will not be ensured not only by the significance of the participatory methods and solutions introduced to regenerate neighbourhoods, but also by the proactive measures the consortium will take to promote its results, engage with key actors in the field and ensure the successful integration of project's outcomes into the future of the urban realm. The Communication, Dissemination and Exploitation (CDE) strategy aims to achieve several specific objectives: establishing a project identity and communicating **PIM-URBAN**'s primary goals and potential outcomes; ensuring the realization of the expected outcomes and impacts by tailoring actions to meet the needs of target audiences; facilitating the involvement of relevant stakeholders to ensure successful implementation and delineating post-project activities that partners will undertake collectively or independently. CDE strategy is included in WP8 and will be delivered by SC and SIN, as C&D and exploitation managers respectively with the due support and collaboration of the whole consortium.

2.2.1. Target groups

The strategy for CDE aims to be particularly flexible and adaptable, with activities tailored to incorporate aspects that align with the project's development, in accordance with the interests and requirements of the specific target audience groups (TGs). The main categories of TGs relevant for **PIM-URBAN** include:

- **TG1 Civil society:** That can be empowered by project activities to be part of the change while understanding in their own language the costs and benefits of the transition to sustainable and resilience models.
- **TG2 Local stakeholders:** Complementing citizens as the main actors in urban areas to make a change. **PIM-URBAN** can help them align their operation with overall sustainable goals contributing at the same time to the transformation of local environments.
- **TG3 Local to regional authorities:** That will benefit from bolstered dialogue with their local communities and make evidence-based decisions selecting priority areas of intervention based on risk and opportunities.
- **TG4 National to European authorities:** Decision-makers at higher-level that can pave the way for transformation setting up the right legislative framework for the built environment and communities.
- **TG5 Professionals from the built environment sector and other technology providers:** That own the knowledge and resources to facilitate the change in built environment design, construction, operation, management and end-of-life.
- **TG6 Infrastructure owners and operators and other service providers (inc. the finance community):** Major change-drivers given their capacity in terms of resources and outreach, with a strong potential in terms of future scalability, replicability and sustainability of project results.

- **TG7 Associations, clusters and other multiplier actors:** That can help maximise the impact of the project by attracting their networks with **PIM-URBAN** results that will be relevant to them.
- **TG8 Research community:** Looking for opportunities to connect their work with real-world applications, enhancing their capacity to create scalable solutions for cities.

2.2.2. Communication activities

PIM- URBAN communication activities are designed to inform, create interest and raise awareness across all relevant stakeholders and civil society about project activities and results. Thus, creating a robust identity for the project and fostering dialogue on urban transformations through participatory and digital methods. The outlined communication activities include:

Table 2.2.a – **PIM-URBAN** communication activities and related KPIs.

Communication	KPIs
Creation and regular updating of the project website, central hub for conveying information on project objectives, activities, public results, and updates	Website online at M4 ; ≥ 8,000 website hits by the project ends; bi-monthly updates
Project visual identity: logo, template designs (deliverables, PPT, Word, agenda), and gadget design.	1 logo; 1 design per template.
Creation and active management of PIM-URBAN project channels on social media (LinkedIn, Twitter and YouTube). Contents highlighting participatory governance, urban resilience, and climate neutrality.	3 Channels; ≥150 posts; 8,000 followers;
Mailing lists: e- Newsletters providing information on past and upcoming project activities	N° of newsletters: 2/ year ; N° receivers: at least 500
Use of partners' communication channels, including individual webpages, social media, and other platforms.	≥25 news & press releases on partners channels per year
Press release distributed to major European outlets, highlighting project breakthroughs and showcasing City Lab milestones.	1 press release/year
Awareness raising campaigns through social media, to engage target groups in PIM-URBAN objectives. One campaign for built sector professionals through Built4People initiatives and New European Bauhaus related events. The other campaign will be targeting civil society and citizens with social media.	2 awareness raising campaigns completed reaching ≥10,000 stakeholders across social media.
Networking and clustering supporting awareness raising with related projects or initiatives	≥3 collaborative activities with other EU-funded initiatives, Built4People and NEB
Promotional video illustrating project aims, objectives, foreseen results, and impact on the urban areas.	6 promotional videos (≥1,500 cumulative views)

2.2.3. Dissemination activities

Dissemination plan and capacity building

Dissemination activities are intended to inform all relevant stakeholders (categories reported above) about project outcomes and ensure the accessibility of results for further exploitation. The dissemination activities in **PIM-URBAN** will be crucial for: ➤ **Facilitating the communication, information exchange and synergy** amongst relevant stakeholders and policy makers, supporting knowledge transfer and favouring the knowledge sharing amongst all the relevant actors, to promote the development and implementation of new sustainable products, services and its associated business models in the building and renovation ecosystem; ➤ **Clustering and networking with other relevant R&D&I projects and initiatives**, including New European Bauhaus initiative, and supporting a mutual knowledge transfer and active cooperation; ➤ **Ensuring widespread uptake of project results, scalability and replicability**, upon project completion, contributing to the transition of neighbourhoods towards more sustainable and resilient practices across Europe; ➤ **Supporting capacity building activities** to improve the capacity of the businesses and individuals for implementing accessible, inclusive and sustainable solutions.

Table 2.2.b – **PIM-URBAN** dissemination activities and related KPI (target groups refer to the ones presented in section 2.2.1).

Dissemination	Target groups	KPIs
Design of dissemination materials (posters, flyers, roll-ups, etc.)	All	≥1 posters; ≥1 flyers; ≥1 roll-ups; t at M6. Distributed to 1,500 persons
Organisation of workshops to co-create actionable insights and validate findings.	TGs 1, 2, 3, 4 and 5.	≥10 workshops; ≥500 stakeholders engaged.
Showcasing project results at global urban planning and sustainability fairs, conferences and other external events	TGs 3, 4, 5 and 8.	PIM-URBAN Representation in ≥12 external events.
Publication of findings in open-access peer-reviewed journals and policy briefs aimed at EU policymakers.	TGs 3, 4, 5 and 8.	≥8 scientific publications and ≥5 policy briefs ready at M36
Replication guidelines (D6.5). Development of practical guides	TGs 3, 4 and 5.	Guidelines published by M30 ,

for replicating project solutions in other cities, supported by webinars and pilot case studies.		distributed at least to 500 stakeholders .
Capacity building programmes: Development and delivery of training modules to adopt PIM-URBAN methods.	TGs 1, 2, 3, 4 and 5.	≥6 training programs; ≥200 participants.

Contribution to policy measures and standards

Particular attention will be given to how the project can contribute to European policies and international standards related to the topics of built environment renovation, participatory processes, urban planning and sustainable development. The following table summarises that may be suited for the proposed dissemination actions listed in the previous subsection and activities that will be performed under Task 8.3:

*Table 2.2.c. Preliminary identification of relevant **PIM-URBAN** topics towards contributing to EU policy and international standards.*

Background	Expected findings from projects	Expected recommendations from pilots (WP6)
Energy Performance of Buildings Directive (EPBD)	Enhanced building energy performance using digital tools for retrofitting projects.	Integrate participative and cohesive strategies with digital tools for data-driven decision making in multiple scales of the built environment (WP1, WP2).
Renovation Wave Strategy	Increase rate of deep renovations.	Provide guidelines to identify hotspots for renovation using low-cost scalable solutions (WP3, WP4).
Urban Agenda for the EU	Strengthened multi-level governance for urban transitions.	Governance models for multi-scale collaboration towards urban sustainability and resilience (WP1)
Energy Efficiency Directive	Improved energy efficiency through planning and digitalisation	Performance integration of energy performance monitoring tools into urban planning frameworks (WP1, WP2, WP4, WP5)
Digital Decade Policy	Improved access to digital tools for urban planning and renovation.	Use standards that enhance interoperability and inclusivity in complex transformation projects (WP2, WP4, WP5).
New European Bauhaus (NEB)	Integration of sustainability, aesthetics and transdisciplinary approaches.	Guidelines to align participatory processes with NEB principles, using the Compass or the guidelines for investors (WP1).
ISO 37100 Sustainable Cities and Communities	Demonstration of the guidelines usage across local environments.	Provide practical bottom-up guidelines to adopt standardised governance models (WP1).
ISO 19650 BIM for Information Management	Integration of BIM into the digital tools used.	Ensure alignment of proposed frameworks and tools with relevant standards (WP2, WP4 and WP5)
ISO 14090 Climate change adaptation	Integration of adaptative strategies to mitigate climate risks.	Development of catalogue of low-disruptive sustainable solutions to integrate NBS, RES and others according to international standards. Linked to ISO 50001 as well

2.2.4. Exploitation activities

To ensure the effective exploitation of **PIM-URBAN** project results, the leader of exploitation activities (WP7), SIN, will work closely with all consortium partners to develop and continuously refine the project's Exploitation Plan, regularly updating it over the whole project lifecycle. **PIM-URBAN**'s exploitation plan. This strategic framework will be instrumental in: **1) Identifying Key Exploitable Results (KERs), systematically mapping the anticipated outcomes of the project while clarifying ownership rights to ensure clear pathways of utilisation; 2) Assessing exploitation potential, evaluating the market and societal relevance of each KER and designing tailored business and exploitation models** that facilitate seamless transition towards the full adoption of the solutions developed in the project; **3) Identifying and analysing target groups, their needs and requirements**, and benchmarking against existing competitive solutions to position PIM URBAN's innovations effectively; **4) Ensuring long-term sustainability**, developing a roadmap that secures the viability of project outcomes at the local level, outlining the necessary resources and support mechanisms for widespread adoption; **5) Assessing and mitigating risks, anticipating potential economic and operational risks associated with** new services and products, while defining robust mitigation strategies to safeguard impact; **6) Developing a plan for scalability, adaptability, and replication**, crafting a structured approach to ensure that PIM-URBAN's solutions can be scaled, adapted and transferred to diverse urban contexts across Europe.

Strategic orientation to the market: PIM-URBAN's value proposition

PIM-URBAN has been designed with a demand-driven mindset beyond the call text, Built4People SRIA and NEB ambitions, but paying attention to the specific requirements of the project TGs. As a preliminary step, the consortium has analysed the relationship between project activities and:

- The context using a **Strengths-Weaknesses-Opportunities-Threats (SWOT)** assessment:

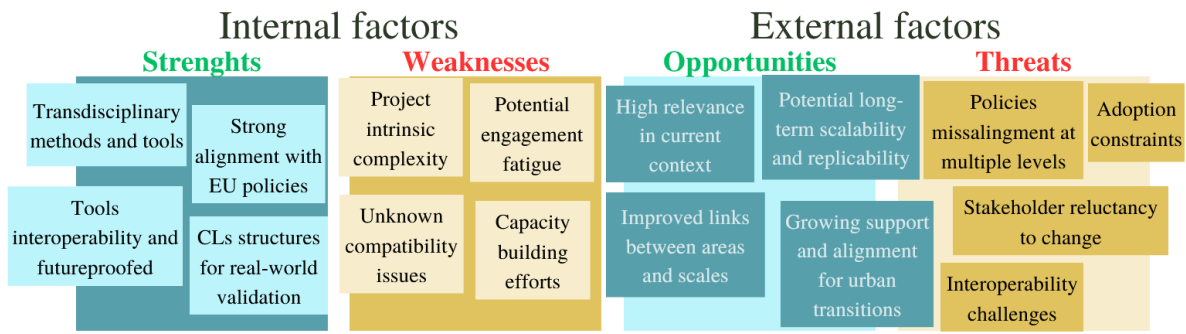


Figure 2.a. Preliminary SWOT analysis for PIM-URBAN.

- The demand of two main TGs: local communities and public authorities (see Figure 2.b below).

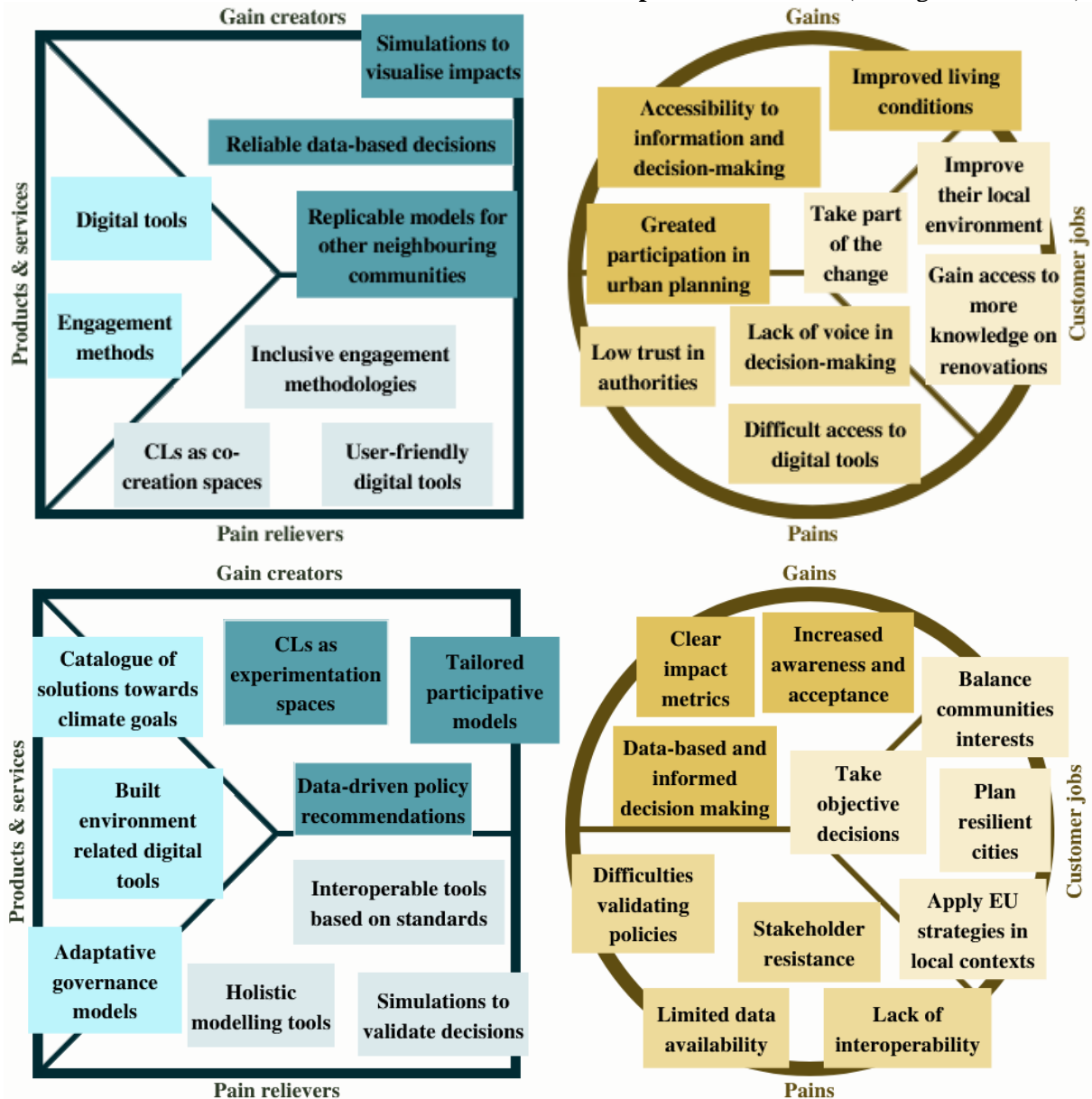


Figure 2.b. PIM-URBAN's preliminary Value Proposition Canvas. The upper side illustrates the value proposition for local communities, while the bottom canvas presents the tailored value proposition for urban planners and public authorities.

This strategic component outlines the principles of exploitation activities towards the sustainability of project results and all proposed transformations. **PIM-URBAN's Unique Selling Proposition is: Empowering communities and decision-makers with cutting-edge digital tools to co-create sustainable, climate-resilient, and citizen-driven urban spaces—scalable, inclusive, and ready for real-world impact.**

Preliminary exploitation plan of key exploitable results

PIM-URBAN's sustainability and replicability of results is one of the cornerstones of the project. The following table provides an overview of the Key Exploitable Results:

Table 2.2.d. Key exploitable results of the project (aligned with the ambition section and TGs presented in 2.2.1).

KER description (Type)	IPR/Exploitation path	Owners	Target groups
Governance models for participative city transformations (<i>methods</i>)	Increasing public knowledge	AAU, MTAM, SC	TG1, 2, 3 and 4.
Digital city lab framework for citizen engagement processes (<i>methods</i>)	Increasing public knowledge	UNIS	TG3, 4 and 5.
Catalogue of solutions for urban transformations (<i>dataset</i>)	Increasing public knowledge	Tool owners	TG1, 2, 5, 6 and 8.
Creative engagement methods and UI/UX guidelines (<i>methods</i>)	Increasing public knowledge	AAU, MTAM	TG3, 4 and 5.
Business Model Innovation (BMI) Tool (<i>tool</i>)	Increasing public knowledge	SIN	All
Data support environment (<i>infrastructure</i>)	Increasing public knowledge; licensing	UNIS	All
Building-to-grid planning tool (<i>tool</i>)	New services; Licensing	UNIS	All
Building to neighbourhood planning tool (<i>tool</i>)	New services; Licensing; Further R&I	UPC	All
Resilience and refurbishment tool (<i>tool</i>)	New services; Licensing; Further R&I	CIMNE	All
Energy and mobility modelling tools (<i>tool</i>)	New services; Licensing; Further R&I	CENEX	All
Digital Platform for Retail Renovations (DP-Store) (<i>tool</i>)	New services; Licensing; Further R&I	INESC	TG1 and 2
Environmental quality and thermal comfort simulation tools (<i>tool</i>)	New services; Licensing; Further R&I	ECOTEN	All
Capacity building packages (<i>knowledge</i>)	Increasing public knowledge; New services; Further R&I	SC	All

Preliminary sustainability plans for the **PIM-URBAN** pilot cities

PIM-URBAN's six pilots are uniquely positioned to serve as living laboratories where testing and validating the digital tools, methods and governance approaches and configurations developed in the project. Each pilot addresses different local challenges while contributing to broader European goals (e.g. climate neutrality, resilience and inclusivity). These **six pilots span diverse urban contexts and scales, thus ensuring the replicability and scalability of PIM-URBAN outputs**. However, **the consortium acknowledges the importance of ensuring the viability of the proposed transformations** as presented in the ambition section during project implementation (T7.4). Thus, preliminary sustainability plans for **PIM-URBAN**'s six pilot cities using the Five Case Business Case Methodology has been developed already at proposal stage to ensure the future viability of all proposed interventions across UCs.

Pilot #1 – Czechia (Slezská Ostrava City)

Strategic case: Focused on renovating a public heritage building while integrating modern energy- efficient extension and construction and technological solutions. Pilot #1 combines historical preservation with sustainable urban development. The strategic aim is to demonstrate scalable solutions for decarbonising municipal and/or historical buildings in medium-sized cities. **Economic case:** Significant energy savings by installing clean energy technologies, such as photovoltaics and heat pumps, alongside advanced digitalized energy management. These measures are expected to reduce energy consumption by 20-30%, providing long-term operational savings and environmental benefits while it demonstrates a specific model combining a structurally and architecturally sound approach to building expansion and modern public space use needs for city representatives and citizens as service clients. **Commercial case:** The project will demonstrate the potential of integrating digital tools, such as a building digital twin, with sustainable renovation practices. Silesian Ostrava Town Hall renovation could act as a showcase for local businesses and developers, promoting the adoption of similar solutions. Local construction firms and technology providers can benefit from increased demand for sustainable renovation practices. **Financial case:** Combination of municipal budgets, EU grants, and private investment through green financing mechanisms. The pilot might use innovative funding models, such as energy performance contracting, to ensure financial sustainability. **Management case:** A dedicated City Lab will integrate the management principles in historical buildings with stakeholder engagement activities, including local and national authorities (incl. National Heritage Authority), citizens, and technical experts. Regular monitoring and participatory feedback sessions and communication will ensure alignment with community needs and project objectives.

Pilot #2 – Denmark (Copenhagen City)

Strategic case: Danish pilot aligns with Copenhagen's ambition to achieve climate positivity by 2035, focusing on retrofitting buildings for low-temperature district heating and maximizing self-consumption of solar energy. It aligns

with the city's broader decarbonization and energy transition strategies. **Economic case:** PIM-URBAN solutions will reduce heating costs for building owners by transitioning to low-temperature DH and improving energy efficiency. These savings are expected to encourage wider adoption of similar interventions. **Commercial case:** The pilot will stimulate demand for innovative energy solutions, including smart heating systems and rooftop solar installations as part of integrated digital building management systems as a service. Local energy utilities and technology providers will play a key role in delivering these solutions. **Financial case:** Public-private finance partnerships will underpin the financial sustainability of the pilot together with municipal budgets, utility companies and green bonds. The financial plan includes leveraging energy savings to attract further investment. **Management case:** Partner CPH will coordinate the project, supported by a participatory governance framework. Collaboration between building owners, housing associations, and energy providers will be facilitated through regular co-design workshops.

Pilot #3 – Lithuania (Vilnius City)

Strategic case: VIAM seeks to accelerate the renovation wave of multi-apartment buildings in Vilnius, revitalizing local neighbourhoods, advancing the clean energy transition, and mitigating energy poverty. Through a comprehensive and strategic approach, the Institution aims to enhance energy efficiency, improve living conditions, and foster sustainable urban development. **Economic case:** VIAM will advance the clean energy transition in Vilnius by enhancing energy efficiency, reducing household consumption, and lowering utility costs. The Institution will also stimulate local economic growth and improve long-term financial sustainability for residents and stakeholders. **Commercial case:** Contractors and service providers will benefit from the growing demand for renovations, playing a key role in delivering high-quality, cost-effective projects on time. Their expertise and resources will be essential to the success of multi-apartment building renovations. **Financial case:** VIAM will cooperate with local financial institutions which play a critical role in providing the necessary funding and financial expertise to support the renovation of multi-apartment buildings, helping to facilitate the successful completion of these projects. **Management case:** VIAM will leverage integrated digital solutions to enhance awareness and engagement in energy-efficient renovations among Vilnius residents. By organizing workshops and educational sessions, the initiative will foster inclusive participation, ensuring that citizens and communities are actively involved in the renovation process.

Pilot #4 – Portugal (Porto Metropolitan Area)

Strategic case: The Portuguese pilot, led by SONAE, focuses on sustainable retail renovations and inclusive decision-making, aligning with SONAE's ESG objectives and regional sustainability goals. The use of DP-Store highlights a commitment to digital innovation in achieving these aims. **Economic case:** Sustainable renovations will reduce energy costs and improve environmental performance. DP-Store ensures cost-effective decision-making, strengthening SONAE's market position as a sustainability leader. **Commercial case:** The pilot will showcase innovative, sustainable retail designs and promote green practices across the sector, fostering partnerships with local suppliers of sustainable technologies. **Financial case:** The project combines SONAE's internal sustainability budget with EU grants and tax incentives. DP-Store's optimization will ensure rapid payback periods for implemented measures. **Management case:** SONAE will lead governance with support from a cross-sector advisory board. Stakeholder consultations, facilitated by DP-Store, will engage employees, customers, and people with disabilities through workshops to ensure renovation designs are inclusive and align with social and environmental goals.

Pilot #5 – Spain (Pamplona, Navarra region)

Strategic case: The Navara pilot aims to transform climate-vulnerable neighbourhoods into resilient, sustainable communities. It focuses on integrating renewable energy systems and creating 15-minute neighbourhoods. **Economic case:** Pilot #5 will enhance local energy efficiency, reducing household energy costs and boosting economic resilience. The improvement of mobility infrastructure will also reduce transport expenses for residents with a direct impact on mobility poverty. **Commercial case:** Local SMEs and cooperatives will benefit from the deployment of renewable energy systems and mobility solutions. **Financial case:** The pilot will utilize regional funding mechanisms, including grants from NAS, complemented by EU cohesion funds. Community-based funding models, such as cooperative financing, will also be explored. **Management case:** NAS will lead the coordination of the pilot, delivering an integrated digital solution to support citizen-driven energy renovations, that will be also fostered by a network of advisory offices. Citizen empowerment will be central, with workshops and co-design sessions ensuring inclusive decision making.

Pilot #6 – UK (West Midlands region)

Strategic case: Pilot #6 aligns with the region's goal of achieving net-zero emissions by 2041. Focused on retrofitting building, WM will enhance mobility infrastructure, creating net-zero neighbourhoods. **Economic case:** Retrofitting initiatives will reduce energy costs for households' outcomes. Enhanced mobility infrastructure will boost regional economic connectivity, reaching a population nearing three million. **Commercial case:** The pilot will stimulate local businesses in the construction, energy and mobility sectors. It could also attract the investment in innovative mobility solutions and low-carbon technologies. **Financial case:** Secured funding from regional authorities, green bonds and private investors. Long-term financial sustainability will be supported by energy cost savings and economic co-benefits. **Management case:** Experience of WMCA in implementing initiatives in the pursuit of decarbonisation. WM

will assure the alignment with regional strategies. A participatory governance model will engage residents and local stakeholders in decision-making processes.

2.2.5. Intellectual Property management

The IPRs, both pre-owned by the consortium members (i.e., background IP) and developed during project implementation (i.e., foreground IP), will be managed according to the prescriptions of the Consortium Agreement (CA), signed at the project's start. The CA will cover background know-how licensing, foreground IP ownership and confidentiality aspects related to the dissemination of project results. IPRs will be managed ensuring the reusability of results. The overall philosophy is sharing and open access to all the results of the project, i.e., all tools and methodologies developed. In particular, for **Background knowledge**: partners will define their Background IP, i.e., pre-existing IP at the beginning of the project. The Background IP of each project partner will remain the property of that partner. Access rights to the Background IP will follow the rules set out in the HEU rules for participation. During the execution of **PIM-URBAN**, all partners shall provide a limited non-exclusive royalty free non-assignable license on their Background IP to another partner if it is necessary for the other partner for the completion of his own work in this project. Such license shall not be sub-licensable and shall be for the sole purpose of jointly completing the project, especially with regards of the pilots implementation. Access rights to Background needed for use of own Foreground will be granted on fair and reasonable conditions. **Foreground knowledge**: 1) Each partner will be owner of the IPR developed during the project. Joint developments will lead to joint ownership, especially in relation to the pilots' implementation and future exploitation. 2) Exploitation rights of the foreground knowledge will be given to the partners in line with their commercial interest and on fair and reasonable conditions. #§COM-DIS-VIS-CDV§#

2.3. Impact summary

Specific needs	Expected Results	D&E&C Measures
<ul style="list-style-type: none"> Limited citizen engagement in urban planning and renovation. Low adoption of sustainable renovation solutions due to lack of awareness and decision-making tools. Reduce energy and mobility poverty in vulnerable communities. Fragmented decision-making in urban planning Need for long-term sustainability and replicability of urban solutions. 	<p>Development of innovative governance models for participatory urban transformations · Implementation of 6 CLs fostering inclusive, data-driven decision-making · Deployment of 6 digital tools and 4 engagement methods to increase citizen participation</p> <p>12 real-life urban transformation Use Cases implemented</p> <p>Portfolio of >30 scalable, cost-effective solutions for sustainable urban planning</p> <p>Energy efficiency increased by 20-30% across pilot sites · Increased adoption of shared mobility and clean energy systems · Smart community- driven planning · Deployment of interoperability frameworks · Establishment of a DT ecosystem for urban planning · Use of open-data platforms for improved governance.</p> <p>5 business models assessed for scaling digital tools and participatory methods · Use of financial models for urban transformations · Creation of a network of digital tool developers.</p>	<ul style="list-style-type: none"> >10 stakeholder workshops, > 500 stakeholders engaged 5 policy briefs and 1 replication guideline 2 targeted awareness campaigns 6 promotional videos 6 capacity building sessions, > 200 participants Presence in more than 12 international urban sustainability events/fairs Open-access reports for municipalities and urban developers. Integration of results into EU policies Strong connections through 3 joined activities with Built4People Innovation Clusters. Coordination with standardisation bodies (ISO, CEN) Exploitation, scalability and replicability assessments for all results. Business cases for the CLs transformation sustainability will be assessed.
Target Groups	Outcomes	Impacts
<p>Civil society · Local stakeholders · Local to regional authorities · National to European authorities · Professionals from built environment sector and other technology providers · Infrastructure owners and operators and other service providers · Associations, clusters and other multiplier actors · Research community</p>	<p>Strengthened citizen participation in urban planning. Greater engagement in decision-making processes.</p> <p>30% increase in acceptability of deep renovation solutions.</p> <p>Technical upskilling of +500 urban planning professionals.</p> <p>Enhanced energy efficiency and access to sustainable transport. Reduction of transport-related emissions by 10-20%.</p> <p>Increased used of AI-powered decision-making tools by urban planners.</p> <p>Improved cross-sector collaboration in urban planning.</p> <p>Scalable and replicable urban solutions implemented across 50 cities by 2040</p>	<p>Higher social inclusivity in urban governance · Increased commitment to urban resilience and climate neutrality · Accelerated transition towards people-centric sustainable built environments</p> <p>Improved urban energy efficiency</p> <p>Reduction of carbon footprint in urban areas by 20-30%</p> <p>Stronger climate resilience and adaption strategies</p> <p>Reduction of siloed planning approaches</p> <p>Greater economic viability of sustainable urban projects · Increased alignment with EU climate neutrality and resilience goals</p>

#§IMP-ACT-IA§#

3. Quality and efficiency of the implementation # @QUA-LIT-QL@# # @WRK-PLA-WP@#

The PIM-URBAN project is designed with a clear, efficient, and results-driven work plan to ensure the successful delivery of its objectives. The work plan spans over 36 months and integrates interdisciplinary approaches, stakeholder engagement, and advanced digital solutions across 9 interconnected work packages (WPs). These WPs address all aspects of the project, from governance frameworks to tool development, deployment, and exploitation. The Gantt chart, visually representing the timing of WPs and tasks, showing the overlap and dependencies between them, is presented below:

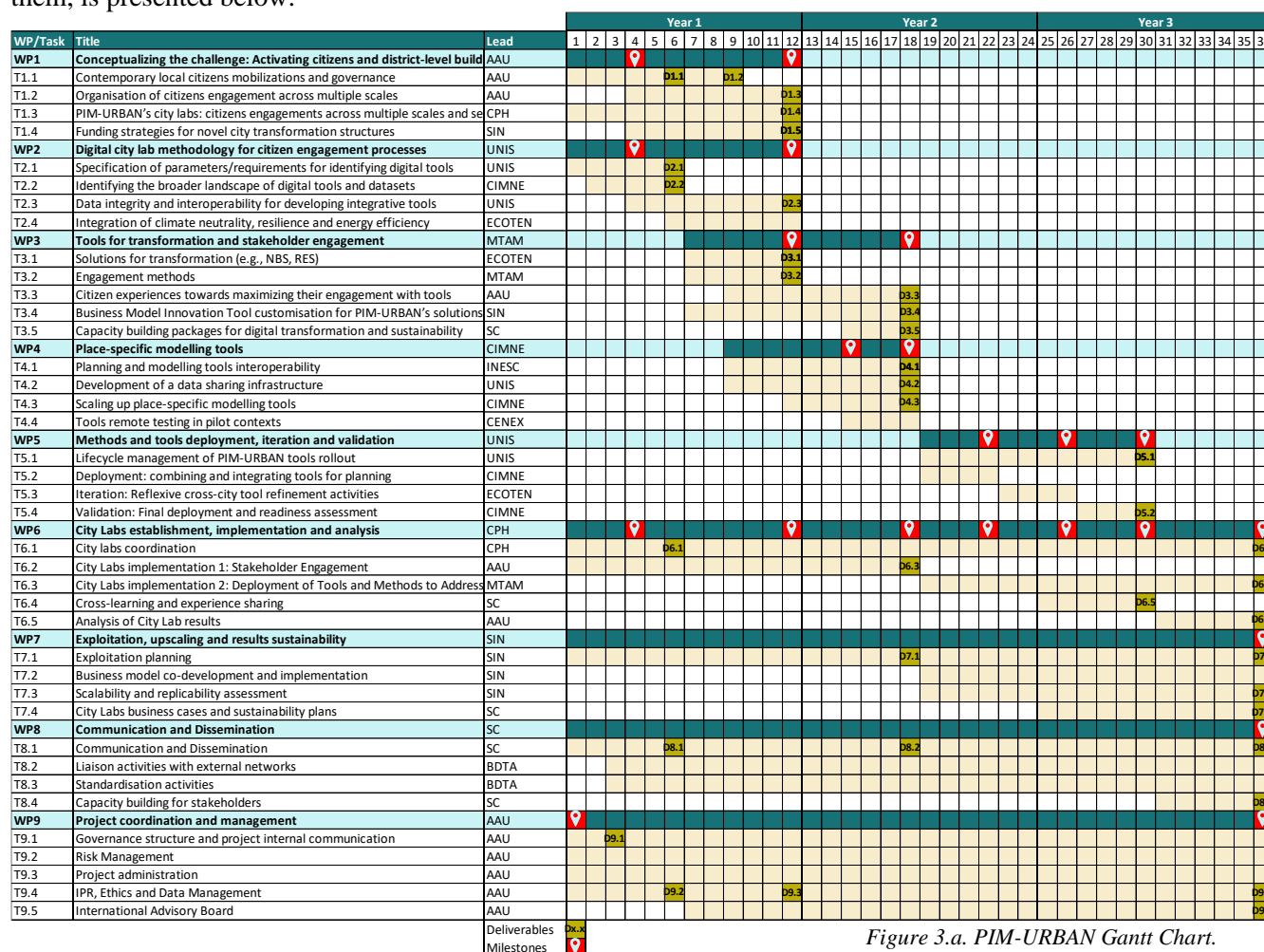


Figure 3.a. PIM-URBAN Gantt Chart.

3.1. Work plan and resources

PIM-URBAN work plan has been designed with strong connections and synergies among its activities, being structured in the following WPs: **WP1** develops innovative governance models to activate citizen engagement, supporting participatory urban transformations. It provides foundational frameworks and insights for the digital

methodologies developed in **WP2** and engagement tools and methods from **WP3**, that are interconnected to create data-sharing infrastructures tailored to support citizen-driven decision-making. **WP4** is focused on the development and scale-up of modelling tools for energy, mobility, resilience and environmental quality at multiple scales, ensuring interoperability and supporting **WP5** in the deployment and validation of PIM-URBAN tools in real-life pilot contexts using lean development principles and feedback loops. At this stage, in

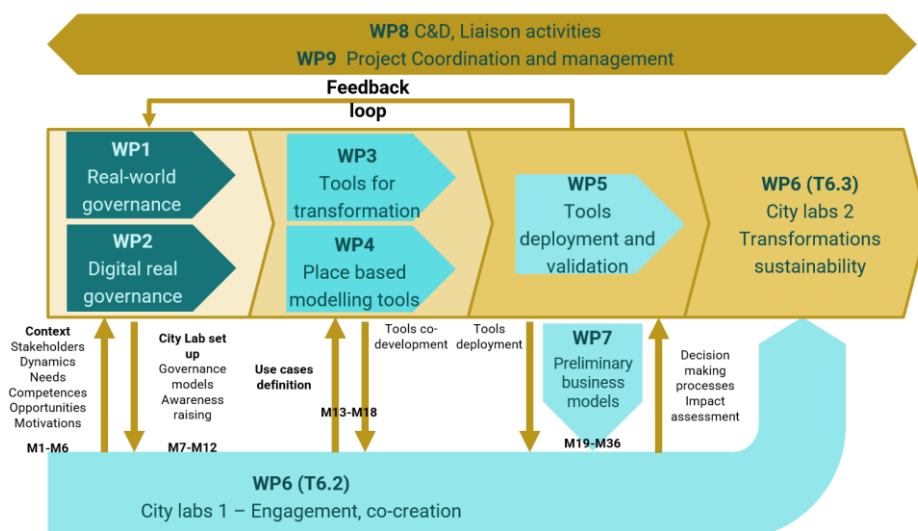


Figure 3.b PIM-URBAN Pertt diagram with connections among WPs

WP6, validated solutions will be implemented across six pilots, managing City Labs as hubs for testing tools and fostering stakeholder collaboration in diverse urban contexts. Insights generated will be deployed for developing business models, assessing scalability and ensuring long-term sustainability for project outputs in **WP7** (exploitation). **WP8** (C&D) and **WP9** (Project management and coordination) play a horizontal role for the whole project by i) amplifying outputs from all WPs; ii) ensuring effective stakeholder engagement, iii) providing operational support and iv) facilitating collaboration and progress monitoring. These synergies are illustrated in Figure 3.b.

Table 3.1.a. Work package descriptions.

WP number	WP1	WP title	Conceptualizing the challenge at hand: Activating citizens and district-level building renovation for coordinating city transformation
Objectives <ul style="list-style-type: none"> - Analyse current participatory governance frameworks and their effects on citizen engagement, highlighting key actors and competences, challenges, gaps and best practices. - Develop dynamic governance models that facilitate participatory urban transformation processes. These governance models will be tailored and deployed across project pilots to set up PIM-URBAN City Labs. - Address financial challenges that hinder scalable urban transformations, completely aligned with the novel participation structures that the project is proposing. - Clarifying the real-world governance conditions for digitally-enabled citizens participation in each pilot. 			
Description of work <p>T1.1: Contemporary local citizens mobilizations and governance (Lead: AAU; Partners: MTAM, SIN, SC, CPH) (M1-M9)</p> <p>This task will conduct a comprehensive review of contemporary local citizen mobilisation and participation and governance mechanisms in the context of built environment and urban management and renovation. It will analyse multi-factor, multi-scale and multi-temporal complex governance configurations (AAU), focusing on citizens and stakeholder empowerment towards local decision making (MTAM). At the same time, all dimensions of sustainability will be considered (social, economic and environmental as well as digitalisation, inclusiveness and equality; CPH, SIN). The analysis will focus on identifying key roles (actors, position and competences) and context enablers and the governance frameworks and internal synergies to integrate energy and mobility transitions (AAU, SC). As a guiding framework to root the analysis in recognised methods and standards and facilitate replicability and alignment with existing best practices, the review will incorporate relevant and validated references like the ISO 37100 for sustainable communities, the NEB Compass and other EU funded projects (as mentioned in section 1.2.3). <u>Outputs:</u> Comprehensive report on at least 20 governance and citizen mobilisation mechanisms (D1.1) and stakeholder mapping strategies and relationships graphs (D1.2)</p> <p>T1.2: Organisation of citizens engagement (local and dynamic governance capacity) across multiple scales (Lead: AAU; Partners: MTAM, SC) (M4-M12)</p> <p>By synthesising best practices, gaps and opportunities identified under T1.1 as a foundation, this task will provide dynamic and inclusive governance models and the guidelines to tailor them to local environments across multiple spatial and temporal scales (AAU). It will focus on bridging gaps in current practices and individual competences (MTAM), and also how to explore local governance frameworks to ensure future adaptability and inclusiveness (SC). This task will be complemented by T1.3 -tailoring the governance model to PIM-URBAN's pilots- and T1.4 -paying specific attention to the financial challenges of urban transformations-. It is important to highlight that the outputs of this task will be refined after the CLs implementation under T6.5 (also led by AAU). <u>Output:</u> Blueprints and guidelines for citizen engagement and participation strategies and dynamic local governance models (D1.3).</p> <p>T1.3: PIM-URBAN's city labs: citizens engagements across multiple scales and across sectors (Lead: CPH; Partners: pilot owners) (M1-M12)</p> <p>This task will operationalise the context analysis and governance models developed under T.1 and T1.2 respectively and tailor and implement them in the pilot sites to formalise the city labs that will implement the project use cases in WP6 during the second half of the project. Beginning at M1, as preliminary work the task will identify local early adopters and project sponsors in parallel to T1.1 activities, who will play a pivotal role supporting the development of the governance model, the links between the general model and the local context (in order to ensure a proper connection between the past and the envisioned future of local environments, including all elements related to policies as well as institutional and structural reality), the establishment of the city labs (including the tailored participation measures) and general awareness raising on key PIM-URBAN topics (sustainability, digitalisation, inclusiveness and equality; as well as the particular local challenges of the use cases). Early adopters will take part of multiple activities across the workplan during the first year of the project, as summarised in Section 1. This task will ensure that city labs governance practices are aligned with the specific needs of each pilot and integrate transdisciplinary and multi-scale approaches paving the way for future sustainability of results. By M12, city labs governance will be fully operational, to be part of project validation activities. <u>Output:</u> Engagement of 36 early adopters in total (MS1, M4), Report on the 12 city labs established for PIM-URBAN (D1.4).</p>			

T1.4: Financing strategies for novel city transformation structures (Lead: SIN; Partners: pilot owners) (M4-M12)

Since it is considered a critical risk for the city transformation projects, this task will pay particular attention to address the financial challenges associated to them. In parallel to the development of the governance models of T1.2, this task will focus on identifying scalable and replicable financing strategies to help balance public and private sector contribution when combined with bolstered participation of stakeholders in transformation projects. The analysis will explore innovative mechanisms such as green bonds or risk-sharing agreements, that attract private investment with a clear understanding of the benefits and expected returns for all bankers and investors. Special attention will be given to the alignment of **PIM-URBAN**'s funding strategies to existing recommendations at EU level like the NEB investment or public procurement guidelines. Strategies will be reinforced with mechanisms to identify barriers and failure risks at different scales (like analysing macroeconomic trends, financial ratios or the specific CBA-based methods of T2.4), as well as proactive monitoring measures on them to maximise reaching successful agreements. To ensure the practical applicability, the funding strategies will be integrated in **PIM-URBAN**'s use cases, ensuring their compatibility with the governance models (T1.2 and T1.3) and data protocols (T2.3), as well as the business models (T1.4) and business cases (T7.4). Output: **PIM-URBAN**'s financing strategies for participatory urban transformations, supporting pilots' viability beyond the project (D1.5).

WP number	WP2	WP title	Digital city lab methodology for citizen engagement processes
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Objectives

- Co-create a citizen-oriented methodology and protocol for developing integrative digital tool-packages integrating sustainability principles and a CBA-based assessment method.
- Define parameters and requirements to identify and/or develop user-friendly, flexible and adaptable tools for local contexts.
- Map and assess existing tools and datasets.

Description of work

T2.1: Specification of parameters/requirements for identifying and prioritizing relevant digital tools (Lead: UNIS; Partners: tool owners, pilot owners) (M1-M6)

This task will define the key parameters for digital tools, focusing on open data standards, modularity, user-centric design, possible integrations, type of data-needs and flexibility to respond multiple local contexts. To achieve this, early adopters from the pilot's CLs will be engaged between M1 and M4 (1 workshop per pilot, at least 5 early adopters involved in each workshop) to make them participate on mock-ups creation to foster an effective development of tools. This will help define the roadmap and step-by-step feedback loops for modelling tools development, deployment, interaction and validation in the following project phase under WP3 (T3.3), WP4 and WP5. Output: Report on key parameters and requirements for digital tools (D2.1).

T2.2: Identifying the broader landscape of digital tools and datasets (Lead: CIMNE; Partners: tool owners) (M2-M6)

This task aims to create a comprehensive catalogue of digital tools and assets currently in use in the local context of **PIM-URBAN**'s pilots and understand their value proposition towards the proposed use cases from the project. This will start by desktop research with pilot owners to map existing platforms, tools and datasets; such as citizen engagement tools, urban planning applications, digital twins and databases (all partners involved, distributed according to their tools). The catalogue will provide references of which kind of inputs uses, outputs that are generated, links to pilot's ambitions, alignment with local needs and challenges and viability to be integrated as part of the governance methods proposed by **PIM-URBAN** both for the real world and the digital realm. Output: Catalogue of 30 digital tools and datasets relevant to **PIM-URBAN**'s objectives (D2.2)

T2.3: Data integrity and interoperability for developing integrative tools for multi-stakeholder processes: **PIM-URBAN governance framework for the citizen-oriented digital realm (Lead: UNIS; Partners: tool owners, BDTA) (M4-M12)**

This task focuses on ensuring data integrity, quality and interoperability to facilitate exchanges between tools and stakeholder collaboration. The consortium will create a protocol on roles, permissions and data access and exchange (*UNIS*, supported by all tool owners). The protocol will be built upon relevant standards and common sectorial practices, integrating key functional aspects such as security, privacy, data governance and incorporation of open-source solutions (like FIWARE). Besides, a common ontology and data quality framework (*CIMNE*, *BDTA*) will be established to harmonise inputs from various sources, including data formats commonly used in BIM (Building Information Modelling), BEM (Building Energy Modelling), GIS (Geographic Information Systems), and Digital Twins. The integration of Digital Twins will enable dynamic and predictive modelling, ensuring real-time interaction and simulation capabilities for urban environments, enhancing decision-making processes and stakeholder collaboration. Finally, it will explore the integration of data spaces to enhance scalability and future-proofing the data-sharing infrastructure. The protocol will emerge as **PIM-URBAN**'s governance framework for the digital realm, complementing and integrated in WP1's governance model for the real-world

neighbourhoods. Particular attention will be given to ensure inclusiveness and participation of vulnerable groups, facilitating participation with minimal access to devices or connectivity, and minimal competences on digital technologies. Output: **PIM-URBAN** protocols and integration framework for sustainability-focused digital tools (D2.3).

T2.4: Integration of climate neutrality, resilience and ‘energy efficiency first’ principle into digital tools (Lead: ECOTEN; Partners: tool owners, pilot owners) (M6-M12)

This task aims to homogenise and integrate the criteria to assess climate neutrality, resilience, and energy efficiency across the tools represented by the project’s beneficiaries and those identified as part of this WP2. Building upon T2.3’s protocol, this task will pay particular attention to how an advanced monitoring methodology based on a Cost Benefit Analysis (CBA) will help the further development of the tools in terms of assessing the environmental, economic and social costs, trade-offs and impacts (*ECOTEN*, supported by all partners involved). This process will involve the pilot owners in order to ensure alignment with real-world urban challenges. Furthermore, this task will provide guidelines to operationalise the impact assessment in other tools and platforms, ensuring flexibility and scalability; as well as dedicated guidelines for use cases adoption. Output: CBA-based impact assessment operational guidelines, including details for integration in **PIM-URBAN**’s tools and use cases (integrated as part of D2.3).

WP number	WP3	WP title	Tools for transformation (e.g. NBS) and stakeholders engagement (e.g. AR, VR and gamification)
Objectives <ul style="list-style-type: none"> - Foster citizen and local stakeholder engagement by designing creative participation processes based on PIM-URBAN governance models that address motivations, competences and disengagement, ensuring inclusivity and representativity. - Develop a catalogue of potential solutions for transformation projects in urban environments including NBS, RES, etc. - Explore the sustainability of PIM-URBAN tools and engagement with specific citizen experiences and tailored business models. - Provide tailored capacity building packages to raise awareness and strengthen skills and competences. 			
Description of work <p>T3.1: Solutions for transformation (Lead: ECOTEN; Partners: pilot owners, methods/tool owners) (M7-M12)</p> <p>This task aims to identify and develop a portfolio of low-cost, low-disruptive solutions (such as NBS, RES, etc.) that could be selected as part of the transformation processes to be evaluated with PIM-URBAN’s tools and beyond the project digital and engagement solutions (<i>ECOTEN with the support of all partners involved to narrow down the integration across tools</i>). The portfolio will focus on scalable and replicable solutions, and will include technical specifications, cost-effectiveness and impact on citizen engagement and wellbeing. By a participatory design approach, this task WP will involve diverse professionals at all stages to ensure that digital solutions that aims to communicate responses to the user's needs and generate engagements and impacts on citizens' quality of life in built environments with a significant real-world impact. Besides, this will not be a work from scratch, but leverage on partners’ experience and the relationship with relevant networks and projects from T8.2. The catalogue will serve as a decision-making framework to support the integration of WP3 and WP4 tools, enabling the pilots to adopt the most suitable approach tailored to the specifications of each use case and will include clear conditions and guidelines for its future expansion in the future using validated experts profiles defined together with the IAB (T9.5). <u>Output:</u> Portfolio of at least 30 low-cost, low-disruptive solutions for urban transformation (D3.1).</p> <p>T3.2: Engagement methods (Lead: MTAM; Partners: AAU, CPH, SC) (M7-M12)</p> <p>This task will focus on designing and implementing innovative engagement methods to foster active participation from citizens and stakeholders in the transformation processes as well as the monitoring of success indicators. The approach will go beyond the technologies themselves, exploring the engagement before-and-after usage phases for meaningful involvement (<i>MTAM</i>), understanding motivations, competences and opportunities as well as disengagement (<i>CPH, SC</i>). This task leverages on the main governance model defined in WP1 and WP2 protocols to develop creative participation processes such as co-creation workshops and participatory simulations, that will help build trust, stimulate motivations and align community priorities with the needs for renovation in the built environment from small scale (buildings) to the broader neighbourhood level (<i>AAU</i>). Emphasis will be given to inclusivity, ensuring all communities needs are represented and addressed, as well as different level of digital competences. These methods will be built upon the methodology for PIM-URBAN’s CLs and will serve as a foundation for the engagement layer of WP4 tools, presented in T3.3 below. <u>Output:</u> Methodological framework for citizen and stakeholder engagement (D3.2)</p> <p>T3.3: Citizen experiences towards maximizing their engagement with PIM-URBAN’s tools (Lead: AAU; Partners: tool owners) (M9-M18)</p> <p>Proposed engagement tools (WP3) only make sense when data is obtained from modelling tools (WP4), while modelling tools only make sense when successfully interacting with citizens and stakeholders. This task will</p>			

address this challenge by developing citizen experience methods using AR, VR and gamification solutions to support participatory design, planning and management processes using **PIM-URBAN**'s WP4 modelling tools (*AAU guiding tool owners to integrate the UI/UX into the tools within WP4*). These solutions will be designed to visualise on a citizen-friendly way the scenarios modelled and simulated. Interactive and immersive experiences will be integrated to enhance citizen engagement. This will be in a participative design process with professionals (such as project developers, architects, engineers, building owners, planners, and statutory authorities). AR will be used as an interactive technology for improved engagement and enhanced climate change adaptation, emphasizing improved quality of life in built environments. VR will provide virtual walkthroughs of transformed spaces, enabling the re-imagination of renewed urban designs. Gamification will introduce incentive-based mechanisms building upon the creative methods of T3.2. Outputs: Guidelines to citizen experiences for participatory planning and design (D3.3).

T3.4: Business Model Innovation Tool customisation for **PIM-URBAN's solutions commercialisation in the urban context** (Lead: SIN; Partners: -) (M7-M18)

The Business Model Innovation (BMI) tool developed by SIN for multi-vector energy systems developed in E-LAND¹⁴ project will be adapted and evolved for the **PIM-URBAN** aim, so to be implemented later to co-develop business models and co-validate those during demonstration. The E-Land community-based business model innovation tool will be adapted and customized to the urban context and needs which will provide a set of building blocks, known as 'business model patterns,' that have been proven successful in various communities. The BMI tool's process will enable the adaptation of business model patterns to the local context and combine them to create promising business models. Thus, all necessary tools will be ready to understand the pains and gains, driving and restraining forces and the integrations in the urban context (e.g., customized value proposition tool, force field analysis, SWOT analysis, etc.). Outputs: BMI tool adapted to **PIM-URBAN** context (D3.4)

T3.5: Capacity building packages for digital transformation and sustainability (Lead: SC, Partners: All WP3 and WP4 participants) (M15-M18)

This task aims to develop and deliver capacity building packages to raise awareness and strengthen competencies among citizens, stakeholders and local authorities in areas such as digital transformation, sustainability, resilience, and connectivity (*SC with the support of all partners involved*). The packages will build upon the learnings from WP1 to WP4 up to this stage of the project. The packages will include tailored modules, practical guidelines and interactive materials oriented to multiple knowledge levels. Key topics will focus on digital literacy, as well as the benefits and applications of the project tools, climate-friendly solutions and participation models. These packages will be disseminated with specific sessions and campaigns, both in pilot cities and beyond to maximise outreach and impact. Output: Capacity building packages for digital transformation and sustainability (D3.5).

WP number	WP4	WP title	Place-specific modelling tools (e.g. modelling of city structures and city fabrics)
Objectives <ul style="list-style-type: none"> - Integrate PIM-URBAN's participatory governance models and frameworks to scale up the pool of solutions to be deployed across the pilots. - Ensure that PIM-URBAN tools can feed from pilots' inputs, work in multiple scales and dimensions and interact amongst them; while integrating impact monitoring and participation principles. - Integrate user friendliness recommendations to maximise citizen engagement and develop user manuals for them. - Validate the tools in a controlled environment with pilot owners before deployment in real world across the CLs. 			
Description of work <p>T4.1: Planning and modelling tools interoperability (Lead: INESC; Partners: all tool owners and pilot owners) (M9-M18)</p> <p>This task aims to integrate WP2's governance framework into the different tools that will be further developed and deployed under this WP4. This will enable the interoperability amongst the tools as well as the modelling and simulations for participatory urban planning and decision making. Besides, this task will also coordinate the links of the tools functionalities and the interactions with stakeholders as defined in T3.3 and the work at CLs level. Interoperability standards will be ensured by establishing dedicated data flows and operational protocols between specific tools according to the pilots' UCs that will align functionalities with the expected stakeholders that will be involved. Besides, criteria for user-friendliness interfaces will be established as well. This task will evolve to the coordination of deployment, iteration and validation as WP5. <u>Output</u>: Interoperability framework for planning tools, at least 1 per UC (D4.1).</p> <p>T4.2 Development of a data sharing infrastructure for PIM-URBAN and future urban planning processes (Lead: UNIS; Partners: all tool owners) (M9-M18)</p> <p>This task will focus on designing and implementing a modular and scalable data-sharing infrastructure to enable secure and seamless exchange of information among stakeholders according to WP1's governance models, WP2's</p>			

protocols and T4.1 operational standards internal to **PIM-URBAN** UCs. The architecture (as presented in section 1) will integrate open-source solutions to ensure the adaptability and compatibility with existing tools and systems and facilitate tool development and deployment. A pilot infrastructure will be implemented to support real-time data access and interoperability to enable the effective multi-stakeholder collaboration in the urban context. This data sharing infrastructure will be maintained during WP5 implementation and will emerge as a One-Stop-Shop for future data management, citizen participation and local governance. Output: Operational data-sharing infrastructure (D4.2).

T4.3: Scaling up place-specific modelling tools (Lead: CIMNE; Partners: tool owners) (M12-M18)

During this task, tool owners will enhance and expand all the tools across the multiple urban domains to break siloed approaches and align their functionalities to the UCs. Thus, during this task the guidance of T4.1 will be combined with the specific data and models available in the local environments to ensure the usability in the CLs. Development will tackle particularly their functionality, interoperability, accessibility and usability for diverse stakeholders and in the multiple scales and scenarios that **PIM-URBAN** represents (including the potential solutions from T3.1 catalogue). Besides, impact monitoring principles defined in T2.4 (in terms of costs and benefits) will be integrated as well. Finally, validation loops will be implemented in order to measure engagement and success rates in WP5. User manuals will be developed before deployment across CLs. The ambition on tools development is presented in section 1. Output: **PIM-URBAN** pool of solutions for urban transformations (D4.3).

T4.4: Tools remote testing in pilot contexts (Lead: CENEX; Partners: all tool owners and pilot owners) (M15-M18)

This task will focus on performing a remote validation test of tools with the pilot owners and early adopters to ensure the readiness for deployment and validation under WP5 and WP6 across the different CLs to respond the multiple project UCs. The agile test will cover all aspects of a real-world deployment: presentation and training, access, usage and analysis of metrics according to T4.3 specifications. Remote collaboration and technical support will be offered. Output: report integrated as part of D4.3.

WP number	WP5	WP title	Methods and tools deployment, iteration and validation
Objectives WP5 covers the rollout lifecycle of PIM-URBAN tools across the project CLs to respond the UCs, applying lean development principles to ensure a proper monitoring and learning process that maximises engagement and impactful transformations. The process builds upon WP3 and WP4 results and is divided in three main components: deployment, iteration and validation. During the WP, appropriate monitoring measures will be defined, complementing the implementation of the CLs in WP6 and contributing to sustainability of transformations and exploitation and replication of project tools and methods.			
Description of work			
T5.1: Lifecycle management of PIM-URBAN tools and methods rollout (Lead: UNIS; Partners: methods/tool owners) (M19-M30)			
This task builds upon the principles of T4.1 but translated into real world rollout of PIM-URBAN tools (including both WP3 and WP4 outputs) across the CLs to address the proposed UCs (<i>led by UNIS, similar structure to T4.1</i>). This task will ensure that tools are operational in line with the expectations that have been defined during the first half of the project. T5.2 to T5.4 cover the lifecycle of tools rollout, namely: deployment, iteration and validation; with 6 months dedicated to each phase. T5.1 will monitor the success of the rollout process by establishing and monitoring metrics like user engagement, operation, errors, satisfaction and environmental achievements in the design of transformation projects. This task will also contribute to general project impact monitoring under T9.2, as well as with the CLs implementation (that will be the source of data for T5.1). <u>Output:</u> Report on PIM-URBAN tool rollout (D5.1).			
T5.2: Deployment: combining and integrating tools for planning at the local level (Lead: CIMNE; Partners: all methods/tool owners and pilot owners) (M19-M22)			
This task will expand the test from T4.4 to the real-world CLs to deploy WP3 and WP4 methods and tools across the fully established CLs (<i>Led by CIMNE, which tool is expected to play a predominant role across UCs</i>). Tools will be configured to align with the specific UCs, ensuring seamless integration with data workflows and to ensure stakeholder participation. Interaction with stakeholders will be ensured based on the piloting methodology of WP6 completely tailored to PIM-URBAN 's governance methods. Tool performance will be monitored according to T5.1 planning. Minor adjustments are foreseen under this task, while major iteration (if needed) would take place under T5.3. <u>Output:</u> Integrated as part of the rollout report D5.1.			
T5.3: Iteration: reflexive cross-city tool refinement activities (e.g. urban mobility as a by-product of energy transformations) (Lead: ECOTEN; Partners: all methods/tool owners and pilot owners) (M23-M26)			
During this task, lean principles will be applied to maintain/refine/pivot tools based on T5.2 experiences and according to T5.1 quantitative/qualitative success factors (with due attention to stakeholder engagement <i>-led by MTAM-</i> and contribution to climate neutrality, efficiency and resilience <i>-led by ECOTEN-</i>) to iterate the tools towards a second validation deployment under T5.4. Particular attention will be given at ensuring that the learnings			

obtained during this phase contribute to develop solid business models for the tools as well as business cases for the UCs, considering already the maximisation of acceptability, adoption rates and sustainability at all level of all project components. Cross-learning between pilots will be analysed in order to maximise the project impact. Outputs: **PIM-URBAN**'s updated pool of methods and tools (D5.2).

T5.4: Validation: gives an overview of what is needed to make the tools scalable and manageable - inter alia survey to measure citizens' engagement success and what is needed to scale and manage (Lead: CIMNE; Partners: all methods/tool owners and pilot owners) (M27-M30)

During this task, partners will conduct a final deployment of **PIM-URBAN** tools across the CLs, with particular attention to validating their usability, scalability and readiness for replication (*Led by CIMNE, same reasoning as T5.2*). This task focus thus on tools' performance according to T5.1 monitoring methods while delivering the responses to the project UCs. Stakeholder feedback will as well be considered towards providing inputs to business modelling and exploitation for project results as well as the business cases for the transformation projects. Outputs: Integrated as part of the rollout report D5.1.

WP number	WP6	WP title	City Labs establishment, implementation and analysis
Objectives			
<ul style="list-style-type: none"> - Coordinate the implementation of project pilots through City Labs as transdisciplinary hubs to address the local challenges represented by PIM-URBAN's Use Cases. - Facilitate stakeholder engagement across all project phases, to make them an effective part of the project inspired by Built4People and NEB's approaches. - Develop integrated site-specific renovation plans co-created with digital tools across the 12 project UCs. - Promote cross-learning and experience sharing between and beyond the CLs, contributing to maximise the project impact. - Analyse the results of the CLs to evaluate the effectiveness of the tools and methods for stakeholder participation in management, design and planning processes. 			
Description of work			
T6.1 City labs coordination (Lead: CPH; Partners: all methods/tool owners and pilot owners) (M1-M36)			
This task focuses on developing and overseeing a concrete plan for CLs implementation across all pilots upon the preliminary description from section 1.2.2. The plan will establish a coordination board (CB, <i>with the partners involved in this WP led by CPH</i>) for engagement activities, data collection, tool deployment phases and stakeholder interaction and participation; with due attention to how methodologies are particularly tailored to the context-specific UCs and the different processes considered (design, planning and management). This CB will also be responsible for monitoring the impacts of CLs implementation in the physical world, in terms of: stakeholder engagement, participatory decision making and positive effects in the built environment and neighbourhoods (leveraging on WP5 data specially for the tool deployment phase). <u>Outputs:</u> CL methodology for transformative projects based on stakeholder participation (D6.1). Report on CLs implementation (D6.2).			
T6.2: City Labs implementation 1: Stakeholder Engagement (Lead: AAU; Partners: all methods/tool owners and pilot owners) (M1-M18)			
This task focuses on the first 2 phases defined for stakeholder engagement within the project:			
<ol style="list-style-type: none"> 1. M1-M12: Engagement of early adopters in co-design workshops to develop the project's governance models and frameworks as well as identifying the specific requirements for the project UCs and the tools. Links to the implementation of WP1 and WP2. 2. M13-M18: Formalisation of the city labs and preliminary validation test of PIM-URBAN's tools before the official rollout during the second half of the project. Links to the implementation of WP3 and WP4. 			
These two phases will have a significant impact on project's tools rollout, thus, on the project capacity to generate a huge impact (<i>led by AAU, creating stronger synergies with tools UI/UX under T3.3</i>). Besides, it will pave the way for upcoming activities on tools deployment and validation (WP5 and T6.3). <u>Outputs:</u> First stakeholder engagement report (D6.3).			
T6.3: City Labs implementation 2: Deployment of Tools and Methods to Address UCs (Lead: MTAM; Partners: all methods/tool owners and pilot owners) (M19-M36)			
This task focuses on the last 3 phases defined for stakeholder engagement within the project:			
<ol style="list-style-type: none"> 3. M19-M26: Deployment of PIM-URBAN's tools across the pilots through pilot-specific deployment workshops that will work towards stakeholder awareness and participation. Links to WP5 implementation. 4. M23-M30: Iteration and validation of the tools after a round of co-creation sessions that will result on deciding specific solutions for the different UCs across the project. Dedicated online cross-learning activities will be organised at this stage. Links to WP5 and T6.4 implementation. 5. M31-M36: Consultations to validate the conclusions of the assessment that will contribute to future scalability, replicability and sustainability of project results. Links to T6.5 and business cases (T7.4). 			
These phases will have more emphasis on designing specific transformation projects across the pilots for the			

specific UCs, as well as generating conclusions that will help to assess the sustainability of project results (*led by MTAM, to capitalise on the work of T3.2*). Output: Second stakeholder engagement report (D6.4).

T6.4: Cross-Learning and Experience Sharing (Lead: SC; Partners: all methods/tool owners and pilot owners) (M25-M30)

This task complements CLs implementation phase 4 and will be focused on defining structured exchanges between CLs to promote cross-learning, share best practices and maximise project impact through awareness, capacity building and engagement. A dedicated stakeholder exchange will be organised as well as the organisation of one virtual speed dating event with CLs stakeholders to share lessons learned, challenges, and success stories. Besides, an ‘experience package’ will be developed, capturing insights generated across all phases from the perspectives of the different target groups (urban planners, policy makers, communities, etc.) as replication guidelines, feeding directly WP8 and its capacity building task for broader dissemination. Output: **PIM-URBAN**’s experience package and replication guidelines (D6.5).

T6.5 Analysis of City Lab Results (Lead: AAU; Partners: all tool owners and pilot owners) (M31-M36)

This task complements CLs implementation phase 5 and will be focused on analysing the results of the CLs contributing to: i) the sustainability of project results through exploitation plans (T7.1) and ii) the transformation projects designed within the UCs through the business cases (T7.4). The analysis will take into consideration all the indicators developed in both T6.1 and T5.1, in order to clearly understand how **PIM-URBAN** has contributed to the sustainability, efficiency and resilience of the built environment and our local areas (*led by AAU, closing the feedback loop from T1.2*). The visualisation methods from WP2 and WP3 will be considered to maximise usability and accessibility. The analysis will respond to all barriers and constraints found across the execution, including for example the challenging disengagement dimension that has been mentioned in WP2 description. Output: **PIM-URBAN**’s City Labs analysis and iteration of **PIM-URBAN**’s governance models (D6.6).

WP number	WP7	WP title	Exploitation, upscaling and results sustainability
<p>Objectives The overarching goal of this WP is to derive integrated conclusions from all PIM-URBAN activities, aiming at maximizing the scalability and replicability potential of the developed tools and methods, as well as all the co-developed transformation projects in the pilots involved. The objective is to make, in collaboration with C&D activities (WP8) a significant contribution to the overall transition of urban environments towards a digital and sustainable built environment. This will be supported by the projects’ exploitation plans (including business models and replicability/scalability plans for the tools and methods) and business cases assessments for all CLs.</p>			
<p>Description of work</p>			
<p>T7.1 Exploitation planning (Lead: SIN; Partners: All) (M1-M36)</p> <p>SIN will continuously guide partners throughout the project lifecycle to identify, update and characterise the Key Exploitable Results (KERs) including the exploitation intention by the owner/s, and considering the IPR strategy defined in T9.3. As a result, joint and individual exploitation pathways will be defined for the most promising KERs. PIM-URBAN annual exploitation workshops (at least 3) will provide essential support to partners in their endeavours. The business models crafted in T3.4 will serve as a blueprint for defining commercialization routes based on the outcomes of the demonstration phase. The final update of the Exploitation Plan consolidates all pertinent information for submission at the conclusion of the project. <u>Output</u>: Internal exploitation plan (reported as D8.1 together with C&D plan). Exploitation Plans, including most promising KERs and exploitation pathways (2 versions D7.1 and D7.2).</p>			
<p>T7.2. Business model co-development and implementation for PIM-URBAN tools (Lead: SIN; Partners: Tool owners) (M19-M36)</p> <p>This task provides the opportunity for commercialization strategies and evaluation of the evidence of digital tools and paves the way for sustainability of the transformation processes, building upon the dedicated learnings generated under T1.4. In a co-development process, the customised BMI tool developed in T3.2 will be implemented to assess the value proposition of WP4 solutions for local stakeholders, identify gains and pains for better exploitation of the values identified, including best implementation approach, key partners, potential impact, etc. This co-developing approach will help to identify the most promising business models that shape the internal dynamics of the urban environments, considering their efficiency and resilience, as well as their potential exploitation strategies (linked with WP7) to ensure the sustainability of PIM-URBAN solutions. The proposed business models will be validated in the city labs implementation applying ‘lean startup model’ principles (<i>build, measure, learn and persevere/adjust/pivot</i>). <u>Output</u>: Co-developed Business models for scalable and sustainable urban transformations (integrated as part of D7.2 presented before).</p>			
<p>T7.3. Scalability and replicability assessment (Lead: SIN; Partners: All) (M19-M36)</p> <p>Scale up and replication pathways will be analysed as well, with due attention to local governance structures (integrating WP1 outputs) and economic conditions. The work will be carried out in following steps: (1) Identify key success criteria for making PIM-URBAN solutions work efficiently in the urban environments, (2) set-up a dataset of the identified criteria across diverse typologies of urban contexts; as far as data is available; data gaps</p>			

will be closed by literature and experts interview based assumptions, followed by an uncertainty analysis; (3) assess the possible evolution of these criteria in coming years and decades e.g. based on urban related scenarios and modelling work; (4) assess the potential to replicate the **PIM-URBAN** solutions under the variety of conditions and assess the potential impacts (environmental, energy, economic, social indicators). Output: Scalability and replicability assessment (D7.3).

T7.4. City Labs business cases and sustainability plans (Lead: SC; Partners: Pilot owners) (M25-M36)

This task is built upon the preliminary assessment presented at proposal stage in section 2.2.4 to assess the viability of the transformations designed during the pilot's implementation in WP6. During the task a complementary summary of T6.5's will be developed, with particular attention to strengths and weaknesses experienced in every specific CL. SC will complement such assessment a methodology to assess that all actions are scoped, planned and estimated correctly and efficiently, to assess the sustainability of the responses to the UCs in the long term. For this scope, the Five Cases Model Business Case methodology, will be adopted exploring: *i*) strategic *ii*) socio-economic *iii*) commercial *iv*) financial and *v*) management cases in the targeted UCs. Pilot owners will provide strong support developing the business cases and a first version will be submitted and validated across CLs (T6.3). Output: PIM-URBAN's business cases for transformations across CLs (D7.4).

WP number	WP8	WP title	Communication and Dissemination (inc. liaison activities and contributions to the Built4People network of Innovation Clusters)
<p>Objectives WP8 aims to raise public awareness about the project, identifying and implementing diverse strategies capable to maximize such an awareness and optimise the go-to-market potential of the Key Exploitable Results (KERs) in cooperation with WP7. Thus, WP8 aims at: <i>i</i>) undertaking actions for broad dissemination of the project results to the relevant stakeholders; and <i>ii</i>) establishing collaborations with relevant projects related to PIM-URBAN to set up synergies.</p>			
<p>Description of work</p>			
<p>T8.1. Communication and Dissemination (Lead: SC; Partners: All) (M1-M36)</p> <p>This task deals with the development of an ambitious project branding and communication and dissemination plan (CDP) -aligning internal and external vision about PIM-URBAN and digital solutions for climate-neutral neighbourhoods-, executing it and monitoring the effects on the targeted audiences and general population. SC will act as PIM-URBAN C&D manager as part of project management structure.</p> <p><i>Subtask 8.1.1. PIM-URBAN Communication and Dissemination Plan</i> Design of a strategic CDP (D8.1, led by SC but agreed with all the consortium) as outlined in the proposal phase to guide C&D actions during project execution. PIM-URBAN achievements and learnings during the project will allow to refine the plan to maximise the project impact. This plan will include: <i>i</i>) A solid definition of PIM-URBAN audiences and potential users to reach, in cooperation with T3.2 (Engagement methods) and T7.1/2 (exploitation and business modelling). <i>ii</i>) Ambitious and challenging yet realistic quantified objectives for C&D actions. <i>iii</i>) A clear definition of project branding, including the core messages for targeted audiences in close cooperation with T7.1 based on PIM-URBAN value proposition as a project and its results. <i>iv</i>) A roadmap of channels (conventional media, social-networks, dedicated actions, magazines, etc.) and actions, including which messages are more appropriate to be transmitted on each format. <i>v</i>) Comprehensive schedule of actions and resources for the consortium, including calendar, partners involved, audiences to be targeted, tools to be used, etc. <i>vi</i>) Besides the CDP, a C&D kit will also be generated to ease partners involvement in these actions and to ensure that a cohesive vision of the project is shared beyond the consortium. This kit will be integrated and iterated as part of the CDP.</p> <p><i>Subtask 8.1.2. PIM-URBAN Communication and Dissemination (All partners)</i> This ST is devoted to the actual implementation of the CDP, measure its effectiveness and ensure the iteration of the plan in line with the evolution of the PIM-URBAN project. All variables of effective communication towards the entire ecosystem of the project will be addressed. All participants in the consortium are responsible of being part of C&D activities, coordinated by SC. Activities include: <i>i</i>) development of project identity/brand (logos, colours, font sets, banners, etc.), brochures, press releases, infographics, flyers and similar resources to support partners in publicizing the project; <i>ii</i>) the creation of the project's public website and material sharing portal; <i>iii</i>) social media groups setup and activities (e.g. promotional videos, LinkedIn, Twitter, YouTube) (ALL); <i>iv</i>) Newsletters and publications in trade and scientific journals, <i>v</i>) gathering feedback from stakeholders through networking events. All activities, including liaison activities will be reported as D8.2 and D8.3.</p>			
<p>T8.2. Liaison activities with external networks (Lead: BDTA; Partners: All) (M3-M36)</p> <p>This task aims to establish robust connections with relevant projects, initiatives, networks and partnerships (see section 1.2.3). This will align PIM- URBAN outputs with broader strategies and frameworks in urban planning, participatory governance and sustainability with special focus in neighbourhoods. The work developed in WP1, WP3, WP6 (T6.2) and WP7 (T7.2) will facilitate having a rolling identification of new initiatives in this field, while at the same time can benefit from the interaction with key initiatives. This task will be led by BDTA, since the expected work to be executed here is completely aligned with the existing working group CWN442 WG9 and the Building Digital Twin International Congress (BDTIC) celebrated annually. BDTA will emerge as the contact</p>			

point for stakeholders interested in participatory planning and regeneration of neighbourhoods, through key networks such as Built4People Network of Innovation Clusters, and other sister projects. The main result of this task will be the **participation and/or organisation of at least 3 collaborative events** with sister projects to share lessons learned, align methodologies and disseminate findings. PIM- URBAN representation in external events are described in section 2.2. A dedicated task (T9.5) has been designed to complement this one, with a focus on the IAB the project will establish. Reported as part of C&D activities as mentioned in T8.1.

T8.3. Standardisation and policy recommendations (Lead: BDTA; Partners: All) (M3-M36)

This task aims to align **PIM-URBAN** methodologies, tools and outputs with existing standards, while identifying gaps and contributing to the development or improvement of existing standard where relevant (mainly at CEN442 WG9, Digital Twins in the built environment). This process will be held on three main steps, that will be assessed during the execution of other parts of **PIM-URBAN**. All activities executed will be reported as part of T8.1.

ST8.3.1. Existing legislation and standards (BDTA, All) This ST will deal with: i) an exploratory knowledge of participants of the standards and legislation linked to the background involved in PIM-URBAN; ii) a desktop analysis of existing standards, labels, certifications, etc.; that are connected to **PIM-URBAN** topics. The desktop analysis will take advantage of the first exploratory assessment with all partners and the work developed in T1.1, which will ease a seamless discussion on standardisation concepts throughout the project duration.

ST8.3.2. Implementation of new standards and technical codes (BDTA, All) This task will focus on monitoring and ensuring that applicable standards are integrated in the different parts of the project, from the concepts of WP1 and digital environment described in WP2, to digital tools assessed in WP4 and further deployed in WP5. This will be made by direct participation at CEN442 WG9 standardization working group, led by experts of BDTA. Activities of this working group are in constant execution, which is a warranty of finishing a clear proposal during the time frame of the project, with particular attention to quantifying the benefits of participatory urban governance, citizen engagement, and digital modelling tools.

ST8.3.3 Management of new standards towards approval (BDTA, All) This ST concludes the findings from ST8.3.1 and ST8.3.2 and also complements the exploitation routes defined in T7.2. Thus, it will focus on managing the standardisation processes related to **PIM-URBAN** drafts, projecting results even after the end of the project. The links during this ST with the liaison activities will be relevant as part of the proactive cohesion vision with other networks and projects that **PIM-URBAN** will follow. Besides, policy briefs will be generated for each phase of CLs implementation, as presented in section 2.2.

T8.4. Capacity Building (Lead: SC; Partners: All) (M30-M36)

T8.4 is dedicated to enhancing the capacity of relevant stakeholders in the built sector environment to effectively adopt and replicate best practice in sustainable urban planning. SC will lead the development and delivery of a training programme emphasising a “measure and manage” approach to urban planning inputs and impacts, thereby supporting local governments, citizens and built sector professionals to act sustainably and transition to a climate-neutral society. To do that, **≥6 training programs** (D8.4) are planned to train key stakeholders in the built environment sector (including urban planners, local authorities, associations, etc) on the principles and benefits of digital solutions in participative design, planning and management at building, neighbourhoods and urban level. The training will take place in each pilot in a combination of online and in-person sessions with a key focus on creating roadmaps for the development of action plans and encouraging the adoption of business models that embrace the opportunities of the community-driven urban regeneration.

WP number	WP9	WP title	Project coordination and management
Objectives WP9 aims to ensure correct coordination and management of the project to guarantee that: <i>i)</i> the project is carried out according to the established schedule and budget; <i>ii)</i> objectives are efficiently achieved; <i>iii)</i> appropriate operational tools are set up to provide continuous evaluation and constant project monitoring; <i>iv)</i> activities are carried out in accordance with the contract signed between the EC and the consortium; <i>v)</i> data created under the project is successfully managed. AAU will act as project coordinator and will ensure a correct execution of activities under this WP and facilitate partners’ participation for a successful project implementation.			
Description of work			
T9.1 Governance structure and project internal communication (Lead: AAU (Manager support team (MST)); Partners: All) (M1-M36)			
This task will be focused on: <i>i)</i> implementing the planned governance structure: General Assembly (GA), Executive Board (EB), Project Coordinator (PC), MST, and Advisory Board (AB)); <i>ii)</i> Organising the meetings of the GA (twice a year), EB (e.g., four times a year), consortium meetings (twice a year) and AB (e.g., once or twice a year) and scheduling of relevant internal meetings; <i>iii)</i> Setting up a shared communication and cooperation platform with private access for all participants and setting up the repository for consortium’s open access publications and other results.			
T9.2 Risk Management (Lead: AAU (PC); Partners: All) (M1-M36)			
Implementing the progress management and risk contingency planning for Acronym. Any minor deviations from			

the plan will be reported to the PC, who will, where appropriate, make recommendations for implementing the contingency plan(s) associated with the WP(s) or partner(s) in question. In the event of more serious problems, the PC will convene the GA to determine the best route forward and will advise the EC's Project Officer of the problem and seek their approval for the proposed solution.

T9.3 Project administration (Lead: AAU; Partners: All) (M1-M36)

This task will deal with **PIM-URBAN**'s financial and project administration, including also general management and reporting. This activity will be executed by experienced personnel from AAU and will deal with monitoring project activities and resources. Activities include: *i)* Overseeing reporting schedule and duties, preparing periodic reports based on material prepared by the PC and WPLs; *ii)* Overseeing the detailed work plan and project schedule, collecting deliverables, identifying delays in deliverables, and coordinating the development of contingency plans; *iii)* Handling day-to-day business, processing external and internal requests, amendments, and overseeing all tasks related to management; *iv)* Defining clear responsibilities and implement efficient reporting structures in the project; *v)* Monitoring project expenditure and handling financial management at a consortium level; *vi)* Providing various project templates and producing procedures for archiving and file naming. A Project Management Plan (PMP, D9.1) will be delivered by M3 to define the project's internal procedures and monitoring measures in order to facilitate participants' engagement with the project.

T9.4 IPR, Ethics, Gender equality and Data Management (Lead: AAU; Partners: All) (M1-M36)

AAU will develop a specific IPR, ethics, gender equality and Data Management Plan (D9.2) that will serve to support partners in how the data managed by the project should be handled. This includes the kind of data collected, how it should be processed or generated, what methodologies and standards will be followed, whether and how this data will be shared and/or made open, and how it will be curated and preserved, including at the termination of the project, with emphasis on ensuring GDPR and ethical principles compliance during the project. Specifically, data collected for analysing stakeholders and business models will be pseudonymized. Moreover, this will seamlessly integrate the background of project partners involved in the **PIM-URBAN** project, and will, in coordination with WP7, manage the foreground of the project's outputs, ensuring proper usage of the results after the **PIM-URBAN** EU-funded project. Besides, during this task will be monitored ethical issues, overseeing that gender perspectives are integrated into all aspects of **PIM-URBAN**.

T9.5 International Advisory Board management (Lead: AAU; Partners: All) (M7-M36)

As presented in section 1.2.3 and complementing T8.2, this task will focus on the appointment and steering the project's IAB. The IAB will be invited to join the regular project meetings, in particular the kick-off (M1), mid-term (M18) and final (M36) review meetings. The board will include 12 members and will meet in-person or on-line in conjunction with the GA meetings. The objective of these meetings will be the validation of **PIM-URBAN** methods and results; access to relevant networks for scalability and maximise replication. Insights and recommendations arise from this Advisory Board will be periodically reported and collected as D9.3.

3.1.1. List of work packages

WP	Work Package Title	Lead #	Lead	PMs	Start	End
1	Conceptualizing the challenge: Activating citizens and district-level building renovation for coordinating city transformation	1	AAU	38,30	1	18
2	Digital city lab methodology for citizen engagement processes	5	UNIS	49,00	1	12
3	Tools for transformation and stakeholder engagement	2	MTAM	71,67	7	18
4	Place-specific modelling tools	7	CIMNE	64,40	9	18
5	Tools deployment, iteration and validation	5	UNIS	63,83	19	30
6	City Labs establishment, implementation and analysis	11	CPH	133,50	1	36
7	Exploitation, capacity building and upscaling	3	SIN	51,10	1	36
8	Communication and Dissemination	4	SC	45,40	1	36
9	Project coordination and management	1	AAU	35,80	1	36

3.1.2. List of deliverables

#	Deliverable name	Short description	WP	Lead	Type	Diss. level	Due date
D1.1	Comprehensive report on governance mechanisms	Detailed analysis of governance experiences.	WP1	AAU	R	PU	M6
D1.2	Stakeholder mapping strategies and graphs	Stakeholder mapping strategies for all pilots	WP1	AAU	R	PU	M9
D1.3	Blueprints and guidelines for citizen engagement	Citizen engagement guidelines based on governance models	WP1	AAU	R	PU	M12
D1.4	City labs governance models	Tailored governance models for pilots.	WP1	CPH	R	PU	M12
D1.5	Financing strategies	Includes tailored recommendations	WP1	SIN	R	PU	M12

		for pilots' viability.					
D2.1	Report on key parameters and requirements for digital tools	Key parameters for digital tools across pilots	WP2	UNIS	R	PU	M6
D2.2	Catalogue of 30 digital tools and datasets	Comprehensive catalogue of digital tools relevant to PIM-URBAN	WP2	CIMNE	R	PU	M6
D2.3	Protocols and integration framework for sustainability-focused digital tools	Framework ensuring data integration and quality	WP2	UNIS	R	PU	M12
D3.1	Portfolio of 30 low-cost, low-disruptive solutions for urban transformation	Portfolio of solutions for urban transformation evaluated in pilots	WP3	ECOTEN	R	PU	M12
D3.2	Methodological framework for citizen and stakeholder engagement	Framework to engage citizens in urban transformation	WP3	MTAM	R	PU	M12
D3.3	Guidelines to citizen experiences for participatory planning and design	Guidelines for participatory planning using immersive tools	WP3	AAU	R	PU	M18
D3.4	Business models framework for scalable urban transformations	Business models for urban transformation projects	WP3	SIN	R	PU	M18
D3.5	Capacity building package for digital transformation and sustainability	Practical guidelines for capacity building on digital transformation	WP3	SC	R	PU	M18
D4.1	Interoperability framework for planning tools	Framework for interoperability of planning tools	WP4	INESC	R	PU	M18
D4.2	Operational data-sharing infrastructure	Data-sharing infrastructure for pilot operations	WP4	UNIS	OTHER	PU	M18
D4.3	PIM-URBAN pool of solutions for urban transformations	Validated solutions for urban transformations	WP4	CIMNE	OTHER	SEN	M18
D5.1	Report on PIM-URBAN tool rollout	Lifecycle report on tools deployed in pilots	WP5	UNIS	R	SEN	M30
D5.2	PIM-URBAN 's updated pool of methods and tools	Iterative methods and tools updated from pilot results	WP5	UNIS	OTHER	SEN	M30
D6.1	CL methodology for transformative projects	Methodology for stakeholder participation in CLs	WP6	CPH	R	PU	M6
D6.2	Report on CLs implementation	Overview of CL implementation activities	WP6	CPH	R	PU	M30
D6.3	First stakeholder engagement report	Summary of stakeholder engagement outcomes	WP6	MTAM	R	PU	M18
D6.4	Second stakeholder engagement report	Final stakeholder engagement outcomes	WP6	UNIS	R	PU	M36
D6.5	PIM-URBAN 's experience package	Insights and lessons learned across CLs as replication guidelines	WP6	SC	R	PU	M30
D6.6	PIM-URBAN 's City Labs analysis	Comprehensive analysis of CL results and outcomes and iteration of the governance models	WP6	AAU	R	PU	M36
D7.1	Exploitation Plan I	Plan including KERs and exploitation pathways	WP7	SIN	R	SEN	M18
D7.2	Exploitation Plan II	Plan including KERs and exploitation pathways	WP7	SIN	R	SEN	M36
D7.3	Scalability and replicability assessment	Assessment of the potential for scaling PIM-URBAN tools and solutions	WP7	SIN	R	PU	M36

D7.4	PIM-URBAN business cases	Viability analysis of the UCs	WP7	SC	R	PU	M36
D8.1	CDE plan	C&D Strategy and C&D Kit, including exploitation plan	WP8	SC	R	PU	M6
D8.2	C&D and liaison report I	Mid- term update and final report of D&C and liaison activities	WP8	SC	R	PU	M18
D8.3	C&D and liaison report II	Mid- term update and final report of D&C and liaison activities	WP8	SC	R	PU	M36
D8.4	Capacity building programmes	Agenda and description of contents.	WP8	SC	R	PU	M36
D9.1	Quality and Project Management Plan (PMP)	Project Handbook, Risk Management and Quality Assurance Plan. Guidelines on deliverables, deadlines, reviews.	WP9	AAU	R	SEN	M3
D9.2	Ethics, Data and IPR Management Plan (DMP)	Guidelines for managing project data and ethics, ensuring FAIR principles and GDPR compliance	WP9	AAU	DMP	SEN	M6, M24
D9.3	Advisory Board recommendations Report	Insights and recommendations from the International Advisory Board	WP9	AAU	R	PU	M36

3.1.3. List of milestones

#	Milestone name	WPs	Due date	Means of verification
MS1	<i>Kick-off Meeting</i>	WP9	M1	Meeting minutes, consortium agreements, and confirmed roles and responsibilities of all partners.
MS2	<i>Early adopters engaged</i>	WP1, WP2, WP6	M6	First interaction with early adopters completed (M4) and findings integrated (M6). CLs phase 1.
MS3	<i>Governance Models and Frameworks Completed and requirement sheets for UCs</i>	WP1, WP2, WP6	M12	WP1 and WP2 successfully completed.
MS4	<i>Catalogue of tools developed.</i>	WP3	M12	T3.1 completed and catalogue of solutions available.
MS5	<i>Data sharing infrastructure available</i>	WP4	M15	Infrastructure required for tools rollout set up and available for testing.
MS6	<i>City Labs Fully Operational and methods and tools ready for rollout process</i>	WP3, WP4, WP6	M18	CLs phase 2. Establishment of City Labs, with stakeholder engagement reports and preliminary deployment of tools (D6.1, D6.3).
MS7	<i>Initial Tool Deployment Completed</i>	WP5, WP6	M22	Successful deployment of tools in pilot sites, with stakeholder involvement confirmed through reports.
MS8	<i>Tool Iteration and Cross-Learning Activities</i>	WP5, WP6	M26	CLs phase 3. Completion of tool refinements and cross-pilot knowledge exchange activities, documented in updated tools (D5.2).
MS9	<i>Tools validated</i>	WP5, WP6	M30	CLs phase 4. Stakeholder engagement report, including lessons learned and participation metrics.
MS10	<i>Final Exploitation Plans, Business Cases and Capacity Building Outputs</i>	WP6, WP7, WP8	M36	CLs phase 5. Completion of exploitation plan, capacity-building programs, and dissemination outcomes (D7.1, D7.4, D8.3).
MS11	<i>Project Results Validated and Consolidated</i>	WP6, WP7, WP9	M36	Submission of final project progress report, City Labs analysis, and overall validation of project outputs (D6.6).

3.1.4. Critical risks for implementation @@RSK-MGT-RM@@

Description of risk (Likelihood, Severity) (H: High, M: Medium, L: Low)	WP(s) involved	Proposed risk-mitigation measures
Delayed engagement and lack of attraction of stakeholders (M, H)	1,6	Initiate early stakeholder engagement through preparatory workshops in M1–M6; Leverage local networks of pilot partners for outreach; Use digital platforms for broad communication; The wide presence of partners representing local environments, opens the door to alternative routes for stakeholders engagement.

Difficulty in interoperability of Digital tools and platforms (M, H)	2, 4, 5	Conduct interoperability testing early in WP4 (M9–M12); Ensure alignment with open standards (e.g., FIWARE) to facilitate integration; Allocate buffer time in WP5 for adjustments. The responsible partners will embed risk-reduction measures in the architecture to that end.
Data required to feed the models is not available, insufficient, incomplete, or is not received on time, making a not correct development of the Validation and Verification methods (M, H)	2, 4	Leverage pilot owners' datasets and open-source resources; enhance data collection from Internet-of-Things where gaps exist; Collaborate with stakeholders (e.g., municipalities) for data access and offer insights without hindrances and eventually enable the regeneration consultation processes to unleash new contexts and reach new realities.
Low participation in Capacity-Building sessions (L, M)	3, 8	Tailor capacity-building content to audience needs; Use hybrid (online and in-person) delivery modes for accessibility; Engage local champions to promote sessions
Delays in City Lab implementation (L, H)	6	Establish an Executive Board (EB) to oversee City Lab progress; Develop a detailed implementation plan early in WP6 (M1–M6); Monitor milestones regularly.
Financial Barriers for Local Transformations (M, M)	7	Deploy the Business Model Innovation (BMI) Tool to explore scalable financial solutions; Identify alternative funding sources (e.g., green bonds); Engage local governments.
Project management issues (a partner leaving the consortium, partners not contributing as planned, resource allocation issues, etc.) (L, M)	9	The wide experience and compromise of all participants, and the periodical progress assessment and reporting will smooth the tension and promote effective communication among partners. AAU and C&D Manager SC will facilitate interaction and a common understanding of the project.

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3.1.5. Summary of staff effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
1-AAU	15,10	0,00	11,57	0,00	6,23	15,50	2,10	2,10	19,80	72,40
2-MTAM	5,00	1,50	19,00	0,00	0,00	15,00	1,00	1,00	2,00	44,50
3-SIN	1,00	0,00	3,00	0,00	2,00	1,00	22,00	2,00	1,00	32,00
4-SC	4,00	0,00	6,00	0,00	0,00	2,00	5,00	18,50	0,50	36,00
5-UNIS	1,00	13,50	1,00	15,00	8,00	8,00	2,00	1,00	2,00	51,50
6-UPC	2,00	3,00	3,00	2,00	4,20	2,00	1,00	1,00	0,50	18,70
7-CIMNE	0,00	8,00	5,00	15,00	11,00	5,00	2,00	2,00	2,00	50,00
8-CENEX	1,00	2,00	1,80	12,40	2,90	5,00	1,10	1,80	0,50	28,50
9-INESC	0,00	1,00	1,00	5,00	8,50	8,00	1,00	1,00	0,50	26,00
10-ECOTEN	0,00	12,80	14,80	8,30	10,00	3,00	1,00	1,00	0,50	51,40
11-CPH	4,00	2,00	0,50	1,00	2,00	15,00	2,50	1,00	2,00	30,00
12-SONAE	2,00	2,00	3,00	2,30	4,00	4,50	2,40	1,00	0,50	21,70
13-WMCA	0,50	0,30	0,50	0,70	1,00	7,50	2,00	1,00	0,50	14,00
14-SLEZSKA	1,00	1,50	0,50	1,00	2,00	27,00	2,00	1,00	0,50	36,50
15-NAS	0,50	0,30	0,50	0,70	1,00	7,50	2,00	1,00	0,50	14,00
16-VIAM	1,20	1,10	0,50	1,00	1,00	7,50	2,00	1,00	0,50	15,80
17-BDTA	0,00	0,00	0,00	0,00	0,00	0,00	0,00	8,00	2,00	10,00
Total PMs	38,30	49,00	71,67	64,40	63,83	133,50	51,10	45,40	35,80	553,00

3.1.6. Subcontracting costs

14-SLEZSKA	Cost (€)	Justification
Subcontracting	60,000.00	WP6: Development of climate and energy passport for the extension of the Slezská Ostrava Town Hall, including energy savings analysis and climate proofing of the existing building. This requires specialized architectural, energy assessment, and historical conservation expertise.

3.1.7. Purchase costs items (travel and subsistence (TS), equipment, and other goods, works and services (OGWS))

2-MTAM	Cost (€)	Justification
TS	20,000.00	WP3, 6: Participation in WPs meetings/events and WP9: 3 in-person GAs
Equipment	49,000.00	WP6: Organization of participatory events for citizens: VR/AR headsets, pop up screens for outdoor events

OGWS	43,700.00	WP6: Organization of participatory engagement events, citizen co-creation workshops, catering, WP8: brochures, promotional materials.
Total	112,700.00	
4-SC	Cost (€)	Justification
TS	20,000.00	WP8: Travel for dissemination activities, participation in activities with other related projects and initiatives; WP9: 3 in-person GAs
OGWS	46,050.00	WP8: 1K Promotional materials; 2,5K capacity building activities; 25,5K design services, website, participation fees in events; 4,5K publication fees
Total	66,050.00	
10-ECOTEN	Cost (€)	Justification
TS	21,000.00	WP5, 8: Travel to pilot site activities, fairs and events; WP9: 3 in-person GA
OGWS	200,000.00	WP5: Consumables for environmental and thermal comfort monitoring.
Total	221,000.00	
12-SONAE	Cost (€)	Justification
TS	9,000.00	WP6, 8: pilots events, fairs and events; WP9: 3 in person GA (x2)
OGWS	25,000.00	WP5, 6: consumables for pilot demonstrations and stakeholders' engagement
Total	34,000.00	
13-WMCA	Cost (€)	Justification
TS	9,000.00	WP6, 8: pilots' events, fairs and events; WP9: 3 in person GA (x2)
Equipment	10,000.00	WP6: 10K (Monitoring devices for resilience and refurbishment tool)
OGWS	6,000.00	WP6: 3K meetings/ seminar; 3K dissemination activities
Total	25,000.00	
14-SLEZSKA	Cost (€)	Justification
TS	9,000.00	WP6, 8: pilots' events, fairs and events; WP9: 3 in person GA (x2)
Equipment	60,000.00	WP6: 10K (Monitoring devices for resilience and refurbishment tool) + 50K (smart metering and technologies, energy devices/equipment, SW solutions)
OGWS	20,000.00	WP6: 5K organization of 5 meetings/seminars with stakeholders; 5K translation; WP8: 10K events and services for dissemination activities
Total	89,000.00	
15-NAS	Cost (€)	Justification
TS	12,000.00	WP6: pilots' events; WP8: fairs/ conferences; WP9: attendance to 3 in person GA (x2)
Equipment	10,000.00	WP6: 10K (Monitoring devices for resilience and refurbishment tool)
OGWS	35,000.00	WP6: 10K Consumables for pilot implementation; 25K awareness campaigns, and community engagement activities.
Total	57,000.00	
16-VIAM	Cost (€)	Justification
TS	9,000.00	WP6: pilots' events; WP9: attendance to 3 in person GA (x2 persons)
Equipment	10,000.00	WP6: 10K (Monitoring devices for resilience and refurbishment tool)
OGWS	25,000.00	WP6: External facilitation and technical assistance for community engagement activities and One-Stop-Shop integration in Vilnius
Total	44,000.00	
3.1.8. 'Other costs categories' items (e.g. internally invoiced goods and services, IIGS)		
13-WMCA	Cost (€)	Justification
IIGS	19,000.00	WP6: Internally invoiced costs for facilitating citizen engagement and mobility pilot activities in the UK pilot.

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3.2. Capacity of participants and consortium as a whole

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PIM-URBAN's consortium is composed of **17 beneficiaries** from **9 countries** (with 6 City labs represented with red pins and rest of partners in green in *Figure 3.2.a*), representing a multidisciplinary team of experts in diverse sectors such as built environment, urban planning, digital technologies, sustainable energy, energy systems, climate resilience, citizen engagement and business model innovation. The consortium covers the entire urban renovation value chain and the links between science to society, ensuring a balanced integration of **research institutions** (AAU, SIN, UPC, CENEX, CIMNE); **technology providers** (UNI, INESC, ECOTEN); **local and regional authorities** (CPH, WMCA, SLEZSKA, NAS, VIAM), **industry stakeholders** (SONAE); **private agencies** (MTAM, SC) and **building associations** (BDTA). This structure ensures that research and innovation outputs can be effectively used, developed, deployed, validated, scaled and exploited. Partners' background, added value for the project and own expectations are presented in the following subsections according to their own role in the project.

3.2.1. Urban planning, participation and sustainability experts

AAU (1-Coordinator): Internationally university renowned for its pioneering problem-based, project-oriented research, integrating interdisciplinary and transdisciplinary collaboration. With a strong legacy of partnerships with urban authorities, public utilities, businesses, research institutions, and citizens, **AAU stands at the forefront of transformative urban regeneration**, driving innovations across multiple sectors and spatial scales. AAU leverages its expertise and track record in research contributions focused on, (i) reconfiguring governance models to accelerate renewable energy transitions and green urban mobility in the regeneration of the built environment; (ii) visualizing, analysing, and advancing urban concepts like the 15-minute city, fostering sustainable and accessible urban living within and across municipal boundaries and (iii) reimagining the role of urban bureaucracies in shaping integrated policy frameworks that drive holistic and sustainable urban transformation. Through PIM-URBAN, AAU is set to develop, integrate, and implement a state-of-the-art suite of methods and digital tools to advance citizen engagement, empowering participatory planning, design and management of buildings, neighbourhoods, and urban districts.

MTAM (2): Createch agency and innovation lab with a **mission to end civic, cultural and economic inequality in the 21st century and build a beautiful future** in the process. MTAM's experience put them at the forefront of community engagement activities on the project and supporting the need of taking place-based approaches – where they excel. **SIN (3):** Research and innovation institute specializing in digital transformation, energy systems, smart cities, and business model innovation. **SIN supports industry-driven and applied research**, particularly in energy communities, smart grids, and positive energy districts (PEDs). In PIM-URBAN, SIN leads WP7, implementing the Business Model Innovation (BMI) tool to ensure that the project's digital tools, methods and governance models and commercially viable, scalable and replicable. **SC (4):** Research institute focusing on **public policy analysis, evidence-based government advisory, and data-driven business analytics** on various topics, including transport, mobility, energy, sustainability. Past several years, SC has been working with several EU Horizon projects related with transport, climate change adaptation and mitigation, public security, etc. Gained experience will contribute to various tasks of the project, including stakeholder engagement, analysis of strategic documents as well as case study leading and management. This perspective will also be embedded within C&D activities of the project, with a differential perspective of social scientists on the lead. The expectation is to develop new knowledge on stakeholder engagement and to have city labs as pilots where the project-related innovations could be tested.

3.2.2. Digital experts and tool owners

UNIS (5): One of the **most reliable ICT solutions providers in South-East and Central Europe**, with more than 1450 specialized ICT professionals, operating in more than 20 countries through its business entities in Athens, Brussels, Bucharest, Luxembourg, Milan and Barcelona. UNIS will focus on the development of an energy tool and ensuring the seamless and secure exchange of data, by utilizing its extended technical expertise, as well as its experience in research/funding projects proven by the involvement in more than 40 approved and successful European and National proposals. The company intends to exploit the project's results in order to enhance its technical and scientific capabilities and strengthen its presence in the digital energy market through the commercialization of the outcomes and the collaboration with the other partners of the project. **UPC (6):** Technical university **specialised in engineering, architecture and sustainable urban development**. UPC is responsible for developing and validating the Building-to-Neighbourhood Planning Tool that will be tested and refined through pilot implementations in City Labs. **CIMNE (7):** Autonomous research and development centre focused on promoting and fostering advances in the development and application of numerical methods and computational techniques for the solution of engineering problems. Within CIMNE, the Building, Energy and Environment (BEE) Group is an independent research group that meets the challenge of employing their **knowledge and experience to help stakeholders to get the best possible use out of the energy that they consume**. CIMNE will focus on the development of a resilience and refurbishment tool for urban planning, particularly in relation to integrating climate neutrality, resilience, and energy efficiency principles into digital tools. Leading the efforts in WP4, CIMNE will oversee the scaling of place-specific modelling tools and ensure their interoperability with existing urban planning frameworks. **CENEX (8):** Established by the UK Government as the UK's Centre of Excellence for Low Carbon and Fuel Cell technologies in 2005. Today, CENEX lowers emissions through **innovation in transport & associated energy infrastructure** and operates as an independent, not-for-profit RTO and consultancy. Working in e-mobility for over 20 years, CENEX has unparalleled experience in developing models and tools for internal and industry use to aid the planning of the transition to zero-emission transport. Our ambition within this project is to develop these



Figure 3.c Geographical coverage of PIM-URBAN.

tools and models in line with citizen engagement to be used more effectively to foster support and action for achieving climate neutrality. **INESC (9):** Leading research institute in Portugal, specialised in advanced computing, digital transformation, and AI-based energy systems. With a **strong focus on data-driven decision-making, optimization, and energy efficiency**. In PIM-URBAN INESC is developing DP-Store (Digital Platform for Retail Renovations) for sustainable renovation in retail buildings. This tool will be piloted in 2 City Labs. **ECOTEN (10):** SME with broad experience in improving lives through **pioneering innovative practice in building climate-resilient cities and sustainable architecture solutions** with a proven track record in public and private ventures. The team consists of broad variety of collaborative experts such as energy specialists, architects, civil engineers, environmental engineers, data analysts and IT specialists. The expectations from the project is to create a robust framework for urban climate resiliency for city planners and urban development's stakeholders through wide variety of collaborative, accessible and application ready tools and technologies.

3.2.3. Pilot owners: public authorities and other relevant local actors

CPH (11): Copenhagen Urban Renewal Department is closely linked to the ambitious city climate plan. CPH will provide governance for citizen engagement and city labs across the pilot cities, based on **extensive experiences in participatory approaches to involve citizens for more than 20 years**. Bringing the projects tools into the ongoing practices of urban renewal will provide real life testing and feed-back to the tools developed in the project. **SONAE (12):** Portugal's largest food retailer, owning the *Continente* supermarket chain and operating over 350 stores across the country with an extensive e-commerce operation. SONAE is leading the Portuguese pilot, focusing on sustainable building renovations and inclusive retail design. The pilot will also engage employees and customers in co-designing inclusive retail spaces. **WMCA (13):** Headquartered in Birmingham, UK and it **drives inclusive economic growth to build a region where people thrive in the places they live and work**, that's focused on people as well as place. The ambitions for this project directly align with our mandate for better engagement with citizens as we move towards a net zero carbon future. Our ambition is to support the delivery of an effective UK pilot that helps us to develop and design future transport that meets the needs of our communities. **SLEZSKA (14):** Plays an important role in city development since it **leads a public affair, provides a public service, and is a leader in energy and urban transformation**. The city office is well experienced in many areas – they generally manage energy management and investment planning within its buildings and assets, and they have proper knowledge in the fields of urbanism, architecture, climate, construction, and participation. The significant contribution to the decarbonization of the city and coal region by demonstrating an innovative approach would be an essential showcase and bring high potential for replication. **NAS (15):** Public company dependent on Navarra Government, whose role is to provide technical and operational support to the regional Government in the implementation of its policies, most notably its Housing and urban planning Service. Since 2009, NAS has carried out several projects to promote refurbishment and urban renovation through neighbourhood offices and citizen support and participation. These projects began at a neighbourhood level, but the service and scale of work in the area has expanded to the entire territory and realities of Navarre. Since 2020, NAS has been working in **several projects to promote energy communities and has developed a net of offices to advise and promote energy communities**. The project will help to improve the capacity to foster participative process for urban renovations and energy communities by providing digital tools. **VIAM (16):** Leading OSS in Vilnius dedicated to promoting and facilitating multi-apartment building renovations through community engagement and innovative solutions. VIAM's contribution to the project focuses on leveraging digital tools to enhance citizen awareness, participation, and decision-making in the renovation process, making us the ideal partner due to our expertise as an **advanced OSS and extensive experience in stakeholder coordination and urban renewal initiatives**. VIAM expect the project to provide new insights, best practices, and scalable digital solutions that will accelerate the renovation wave and strengthen citizen involvement in Vilnius.

3.2.4. Key horizontal partner ensuring context enabling for exploitation, replication, and scalability

BDTA (17): Non-profit organization **dedicated to promoting Digital Twin technology in the built environment**. BDTA brings together leading research institutions, technology developers, and policymakers to advance interoperability, data sharing, and standardization in digital twins for urban planning, energy management, and smart city applications. BDTA leads T8.3 on Standardisation and Policy recommendations, ensuring the alignment of PIM-URBAN solutions with the existing standards. They will also coordinate project's liaison activities. #§CON-SOR-CS§# #§PRJ-MGT-PM§#

¹ European Urban Initiative.

² European Commission, In focus: Energy efficiency in buildings.

³ European Commission, Energy poverty.

⁴ European Parliament, Understanding transport poverty.

⁵ https://github.com/BeeGroup-cimne/ENMA/tree/master/enma_code

⁶ <https://github.com/BeeGroup-cimne/biggontology>

⁷ <https://github.com/BeeGroup-cimne/bigger>

⁸ <https://cenexgroup.nl/revolve/>

⁹ <https://www.portugalresident.com/largest-smart-shop-in-world-opens-in-leiria/>

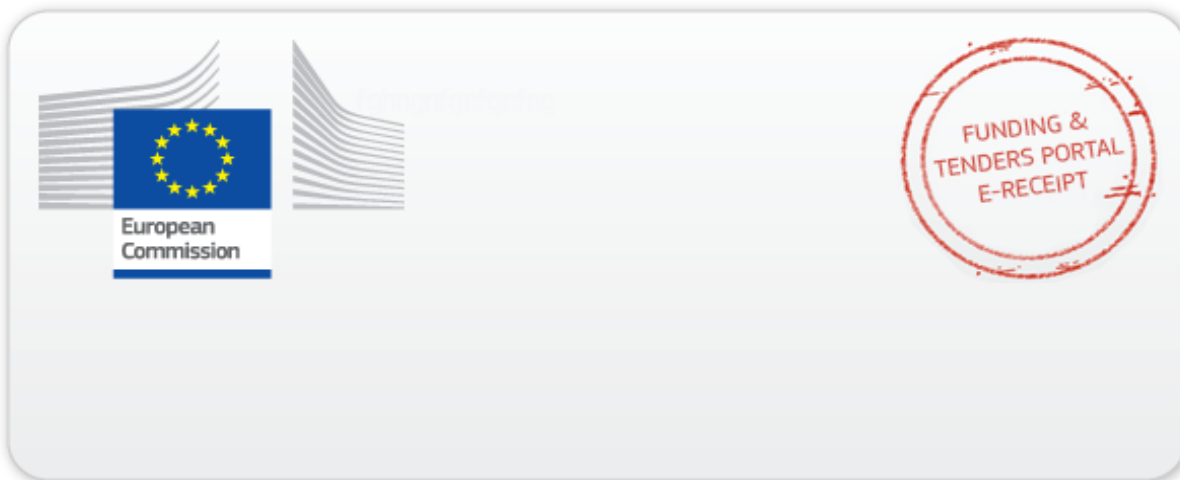
¹⁰ European Parliament, Energy poverty in the EU.

¹¹ European Parliament, Understanding transport poverty.

¹² Roberto Barrella, José Carlos Romero Mora: Evaluación del impacto de la rehabilitación exprés en la pobreza energética: análisis de casos reales.

¹³ <https://www.iea.org/reports/global-ev-outlook-2024/outlook-for-emissions-reductions>

¹⁴ <https://www.sciencedirect.com/science/article/pii/S1364032123000217>



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