

D9.4: Report on Intra-Project Collaboration Including Study Visits and Peer-to-Peer Workshops

+CityxChange | Work Package 9, Task 9.1

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List of Acronyms

+CxC	+CityxChange or Positive City ExChange
AIT	Austrian Institute of Technology
API	Application Programming Interface
CIEMAT	Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas
ENEA	Energia Nucleare ed Energie Alternative
EU	European Union
FP7	Seventh Framework Programme, European Union
IREC	International Renewable Energy Conference
ISE	Fraunhofer Institute for Solar Energy Systems ISE
JPI UE	Joint Programming Initiative Urban Europe
KPI	Key Performance Indicator
LCCC	Limerick City and County Council, Ireland
LHC	Lighthouse City
LNEG	State laboratory of the Portuguese Ministry of Environment and Energy Transition
MAI	Municipality of Alba Iulia, City of Romania
MP	Mesto Pisek, City of Czeck Republic
PED	Positive Energy District
SB	Sestao Berri 2010 Sociedad Anonima
SCC01	Horizon 2020 Smart Cities and Communities call
SDG	Sustainable Development Goals
SINTEF	Norwegian Independent Research Organisation
SMO	Obshtina Smolyan, City of Bulgaria
TK	Trondheim Kommune
VORU	Võru Linnavalitsus, City of Estonia
VTT	Technical Research Centre of Finland
WP	Work Package
ZenN	Near Zero Energy Neighbourhoods



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2 Executive Summary

This report (Deliverable 9.4) provides an overview of the study visits, peer-to-peer workshops, and other intra-project learning activities performed by the Lighthouse and Follower Cities in +CityxChange, between 1 May and 31 October 2019 (i.e., Months 7-12 of the +CityxChange project).

These activities form part of Work Package 9 “Inter-Project Collaboration and Clustering”, Task 9.1 “Intra-Project Lighthouse and Follower City Cooperation”. They are designed to address the needs of the participating cities and solution providers in an effective manner, to better align goals and priorities, to promote cross-cultural communication, understanding and collaboration between the partners, and to speed up the learning process and iteration of results across the entire value chain.

This report (Deliverable 9.4) is complemented by Deliverable 9.5: “Report on Attendance at Events Held By Other SCC01 Coordinators”.

This report contains information regarding five main elements of Task 9.1 in Months 7-12 of the +CityxChange project:

- PED Definition Workshop, organised in Brussels on 6 May 2019;
- Vöru’s study visit to Trondheim, on 9-10 May 2019;
- WP3 face-to-face workshop, organised in Trondheim on 20-21 August 2019;
- Consortium meeting, held in Limerick on 22-25 October 2019; and
- Monthly online meetings between the Project Coordinator, Lighthouse and Follower Cities, i.e., the Executive Board.



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3 PED Definition Workshop (6 May 2019, Brussels)

3.1 Scope

The PED Definition workshop was organised by EERA Joint Programme Smart Cities, as the result of the discussions held during the first PED City Workshop in Vienna on 3 April (see Deliverable 9.1). NTNU hosted the workshop in its offices in Brussels. Han Vandevyvere of VITO/NTNU led the workshop.

+CityxChange participated in the workshop with several partners: Pisek and Limerick municipalities, Smart M Power, and NTNU.

In addition the workshop had participants from Joint Programming Initiative Urban Europe, SCC01 projects MAKING-CITY and GrowSmarter, and EERA Joint Programme Smart Cities (Fraunhofer ISE, AIT, LNEG, IREC, SINTEF, Tecnalia, University of Bologna, ENEA, CIEMAT, and VTT).

3.2 Workshop Outcomes

The aim of the workshop was to define a PED as an example for others to follow, a target on which sectors can cooperate (smart grids, buildings, e-mobility etc). The working definition should make sure everyone can be on board in some manner (stepped approach), and to not make an unattainable ideal. The approach would be similar to the one used for near-zero energy buildings some years ago: originally it seemed like blue sky thinking, but the definition was gradually integrated into regulations and certifications.

In the paragraphs below, we provide a brief summary of the key outcomes of the PED definition workshop. For more detailed descriptions, see the introductory presentation and working document in the Annex to this report.

We created the following working definition for Positive Energy Districts:

Positive Energy Districts (PED) are mixed-use energy-efficient districts that have net zero carbon dioxide (CO₂) emissions and actively manage an annual local surplus production of renewable energy (RES). They require interaction and integration between buildings, the users and the regional energy, mobility and ICT system, while ensuring social, economic and environmental sustainability for current and future generations.

We have identified four types of PEDs:

- **Auto-PED (PED_{autonomous}):** 'plus-autarkic', net positive yearly energy balance **within the geographical boundaries** of the PED and **internal energy balance** at any



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moment in time (no imports from the hinterland) or even helping to balance the wider grid outside

- **Dynamic-PED (PED_{dynamic}):** net positive yearly energy balance **within the geographical boundaries** of the PED but **dynamic exchanges** with the hinterland to compensate for momentary surpluses and shortages
- **Virtual-PED (PED_{virtual}):** net positive yearly energy balance **within the virtual boundaries** of the PED but **dynamic exchanges** with the hinterland to compensate for momentary surpluses and shortages
- **Candidate-PED (pre-PED):** no net positive yearly energy balance **within the geographical boundaries** of the PED but energy difference acquired on the market by **importing certified green energy** (i.e. realizing a zero *carbon* district).

We propose the following **boundary definitions**:

- **Geographical boundary:** Spatial-physical limits of the PED in terms of delineated buildings, sites and infrastructures – these may be contiguous or in a configuration of detached patches
- **Functional boundary:** Limits of the PED in terms of energy grids, e.g. the electricity grid behind a substation that can be considered as an independent functional entity serving the PED; a district heating system that can be considered as a functional part of the PED even if the former's service area is substantially larger than the heating sector of the PED in question; or a gas network in the same sense
- **Virtual boundary:** Limits of the PED in terms of contractual boundaries, e.g. including an energy production infrastructure owned by the PED occupants but situated outside the normal geographical PED boundaries (for example an offshore wind turbine owned through shares by the PED occupant community)

As **next steps**, we plan to investigate a range of questions, as formulated below:

- Definition of energy flexibility
- Should we aim for a hard definition or checks-and-balances? (Hard definition + guidelines with checks and balances to help cities get there)
- Is the PED word appropriate?
- Is there a minimum size?
- Performance-based or based on measures? If performance-based, how do we ensure that we are sufficiently technology neutral to enable new technology solutions to fit in?
- What is affordable? For whom?
- Definition of functions and functional boundaries: inclusion of functions such as industry (or other functions), definition of the kind and share of mobility that should be accounted as part of the PED, etc.
- What reference to calculating the "annual local surplus"?



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- What consequences does the inclusion of "ensuring social, economic and environmental sustainability" have for the definition? What if they are not considered, but are still energy positive?
- Is Auto-PED realistic and under which circumstances?

In addition, the plan is to develop a scientific paper to better understand the common parts + differences between the different concepts.

4 Võru's study visit to Trondheim (9-10 May 2019)

On 9-10 May 2019, a delegation from the municipality of Võru visited Trondheim, to exchange competence and experience between the two cities.

The delegation was welcomed by the LHC Coordinator and Manager of Trondheim.

The meeting included presentations and discussions on a broad range of topics:

- Work with Next Generation Green & Smart Citizens
- Biodiversity and environmental protection
- Climate and Energy work, actions and measures
- Greener Trondheim - mobility management and transport
- Vitalization Program for old parts of the city centre (tour & talk)
- Trondheim Smart City
- University City collaboration - Trd3.0
- International Management and Work
- +CxC project replication and actions in Fellow City of Võru. Status, needs and opportunities
- Operational Services on water & roads; what & how
- Municipal Technology Department and their management and operations
- The Ila River; joint action on resilience, nature conservation, and art

In addition, the Võru delegation attended the Europe Day / EU Union Day Celebration with, amongst others, the Mid-Norway EU Office and EU ambassador to Norway, Mr. Thierry Béchet.

The Võru delegation included the FC Coordinator, as well as the mayor, and experts in urban management, readjustment and planning, architecture, juridical matters, greenery and urban design.



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5 Face-to-face WP3 workshop (20-21 August 2019, Trondheim)

5.1 Scope

The WP3 workshop was held in Trondheim on 20-21 August 2019, with participants from +CxC partners University of Limerick, SpaceEngagers, Limerick City and County Council, Trondheim municipality, and NTNU.

The aim of the workshop was to review the work of the first 10 months that had been performed in WP3, to prepare for the next steps, and to connect new partner representatives to this work, to ensure good transfer of knowledge towards the demonstration phases in Trondheim and Limerick.

The 20 August meeting was held at Bytorget, the joint working space and citizen observatory of +CxC, with a site visit to the Brattøra PEB. On 21 August, the meeting was held at the “City & Books” (By & Bøker) innovation space, with site visits to the Zero Emission Building Living Lab and the Sluppen PEB.

Several of the Irish guests were offered accommodation at the ZEB Living Lab, so they could experience first-hand what it would be like to live in such a house.

5.2 Outcomes

“Bold City Vision” presentation and discussion (led by TK)

The meeting started with a presentation by TK of the first WP3 deliverable: D3.1 Bold City Vision, and a discussion on what we learned from the process. Task 3.1 is about creating a framework that will support cities to create their bold city vision. One of our KPIs is that 7 cities need to get their bold city visions approved. How do we deal with the complexity of urban systems in creating such a vision? How do we link what is happening in the project, to policy development and engagement, SDGs and global policies? And, how do we link the operationalisation of the Bold City Vision to the other tasks of this project?

Stakeholder groups are not moving at the same time. Some are more advanced, or there might be more windows of opportunity for other stakeholder groups at the moment. It is important to know, however, how each stakeholder group is going to move forward. We need to sort the activities we do into a system, into a strategic level. Planners tend to look at this process top down, with long-term processes, and formal processes bound by law. To sort out how the different sectors in a public organisation understand each other, is quite a



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big task, with a lot of negotiations. If you then add a layer of participation, this makes the process much more complicated. Using digital tools can help to make things more tangible.

The Bold City Vision matrix (Figure 1, from D3.1: Framework for Bold City Vision) will be very helpful to bridge between the development of the framework in Work Package 3, the lighthouse city demonstrations in WPs 4-5, and follower city replication in WP6. The next step now will be to translate the framework towards local communities.

	Engage	Design	Activate	Accelerate	Support
 Standardisation	Evaluation	Visualisation	Simulation	Funding	Sharing
 Policy development	Review	Revision	Planning	Budgeting	Analysis
 Innovation partnerships	Appointment	Linking	Collaborating	Prioritising	Portfolio management
 Organisational development	Identification	Leadership	Intrapreneurship	Self organisation	Twinning
 Citizen engagement	Acknowledgement	Deliberation	Localisation	Connection	Amplification
 Project development	Pitching	Prototyping	Delivering	Capitalising	Storytelling

BOLD CITY VISION FRAMEWORK FOR 2050

Figure 1: The Bold City Vision Framework - Source: D3.1: Framework for Bold City Vision

“Understanding the users” workshop (led by UL)

The workshop started with a tour of the table, where everyone contributed with at least one quality that “Next Generation Smart Citizens” should have. Then, the participants were divided into two groups, and asked to each develop one example of a citizen persona and their level of involvement in the +CityxChange project.

This workshop will be run at different locations, with different participants and in different formats, e.g. online, and will collect a range of personas over time. The work will be connected to the stakeholder mapping that has already been performed in the PEB demo



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areas in the Lighthouse and Follower Cities of +CityxChange, and will create a standardised manner in which to gather and analyse the information.

“Development of Citizen Participation Playbook and Platform” workshop (led by COL)

Some cities have a long history of participation, others are quite new. Some do not have a structured process for citizen participation in place. The objective is to create an integrated framework that can deliver towards these different groups, merging the best of digital tools and traditional methods. There is not one single digital platform, the tools, systems and infrastructure will change continuously. It is very important that these are open source whenever possible. This work will be connected to the frameworks and vocabulary developed in the “Bold City Vision”.

Municipalities need capacity and capability to run systems in-house, which they often do not have. Everyone wants to implement digital tools, but it is difficult to start in-house. Even the threshold of starting with it is really high. Municipalities are used to buying competence, and for open source they need to have capacity in-house. Functionality is an important part of the discussion - which tools provide the best user experience and user interface?

This type of process of engaging the citizens and selecting the best tools, also requires a lot of capacity from the citizens, it demands a lot of attention. Some interfaces are so simple that people have a hard time understanding them. People are expecting things to look nice, glossy and attractive to use.

“The Research Centre on Zero Emission Neighbourhoods in Smart Cities” presentation and discussion

ZEN Citizen Participation & Living Labs (Thomas Berker & Ruth Woods, ZEN, NTNU)

The ZEN Centre does a lot of research, giving us the privilege to ask questions, not take concepts for granted. The ZEN Centre also organises pilot projects and living labs, related to new as well as existing neighbourhoods. Living labs allow us to be present on site. Even if something does not work, we learn from it.

Recently, ZEN has introduced a new mechanism cases. Cases are introduced by user partners from public and private sector - they suggest topics on which they would like to see more research, and define a small project around that case together with the research partners.

Some pilot projects suffer from “synoptic planning”, where everything is assumed controlled through clearly defined goals, quantitative analysis and prediction of system effects, search for optimal technology and policy options, and evaluation of effects. However, such a synoptic approach is often blind to local concerns and politics, and leads to weak engagement in relation to abstract infrastructural zero emission goals. Local contingencies may be difficult to predict, and citizen engagement might lead to the process stalling.



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Mediation, negotiations with different kinds of stakeholders, and storytelling are very important in ZEN and +CityxChange alike.

Interviews with/by school children (Brita Fladvad Nielsen & Ruth Woods, NTNU)

The key question of this work was how to break down planning instruments for smart energy communities to something that engages school children. As part of their project, the researchers showed the children how to perform interviews and film them using a cell phone. This type of research is time-consuming, you have to get consent from all parents, pick up the videos in person (cannot be sent by mail) etc.

The interviews did have an effect on the children, they started to demand more of their parents and challenge behaviour. The parents also wanted to know what happens next - not just a one-time event. In order to organise this process more smoothly, connect the action research to the regular class schedules, making it fit with their learning goals, and look into which influencers to use.

The mediation, the in-between people, and the translation are important. There are no fixed roles for this kind of mediation. Sometimes it is a university, sometimes an organisation; it can be difficult as municipality. In addition, it is important to be able to follow up these first steps with more long-term action. Researchers are good at asking questions, document what happens, and make recommendations for a next time. Once the interviews have been performed, who will help the school or community to actually implement changes? The element of time is very important. Planning decisions are being made in response to local pressure.

“Framework for an Innovation Playground” workshop (Led by Space Engagers)

In this workshop session, the participants discussed what the concept of Innovation Playground means to their city. Space Engagers explained how participatory mapping can be used as a manner in which to help people to make sense of their surroundings, and to create a shared understanding of how the different elements might work and interact.

Site visits to PEB demonstration areas Brattøra and Sluppen

The participants visited PEB demonstration areas Brattøra and Sluppen, and received updates from the +CxC partners involved in these.

“Citizen Observatories” presentations by NTNU and TK

For the citizen observatories, TK uses physical spaces, digital platforms, and processes and activities. The latter are described in more detail in the Bold City Vision deliverable (D3.1: Framework for Bold City Vision). Citizen observatories in Trondheim include the visitor centre at Powerhouse Brattøra, Bytorget, Campus, and Sluppen.

Current activities include developing concepts that can be prototyped in labs, and that can be used as foundations for what will become the citizen observatories in Trondheim. One



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of the challenges to be discussed, is the potential conflict between play and data collection, in particular where commercial companies are involved. Data collection will not be linked to individuals, but people do modify their behaviour when they are being observed. Data collection, privacy and consent are very important. As a project, we need to be aware of which data we really need, and which data we are collecting because it is easy. Our role is to ensure that the data and data collection are trustworthy.

We need to figure out how to build on what is already happening by the citizens and local stakeholders, and build on it – then have the citizens run the observatories by themselves. For example, the visitor center at Powerhouse is not part of the project (it is not designed as a citizen observatory), and it is up to us to have a discussion with the owner of how to tweak it towards an observatory. It is also important to do this on a neighbourhood scale, it makes it easier for people to react and feel ownership. One of the things we need to discuss further, is whether we can use these spaces as external teaching spaces, to be able to take youth there to learn.

In addition, we are running summer schools with students, the main goal of which is to increase participation. We also include art in these activities. During the first week of September 2019, for example, 35 students from Europe were working on the topic of the innovation playground.

Workshop session on “Development of a learning framework targeting the Next Generation of Smart Citizen” (UL)

During this first mobilisation phase, it is very important to know what kinds of human resources we have available. Several +CxC partners are developing games related to Positive Energy Blocks and Districts, these will be discussed and compared for potential cooperation. Some of these games are based on more than 10 years of working with the city, and they can contribute to shared understanding and collaboration among the local stakeholders.

One example of the games we are developing in Limerick is an intergenerational workshop, developed as a Monopoly-like game, with different user groups such as “business”, “occupiers”, “curious” and “owner”.

TK organised a full-day next generation event during Nordic Edge Expo in Stavanger in September 2019 (<https://www.nordicedgeexpo.org/>). Organisations from across Norway were joining this event, as well as international organisations. One of the main intended outcomes, was to discuss how we can accelerate the work of these organisations without us having to stay involved later.



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Workshop session “Creation of a Framework for Positive Energy Champions” (led by UL)

Among the +CxL Lighthouse Cities, it will be Limerick in particular that is going to work with the Positive Energy Champions. This is mainly due to the ownership structures of the PEB in Limerick, with individual homeowners. This work will draw heavily on the Bold City Vision, with processes tailored around particular stakeholder groups. Earlier examples include FP7 project ZenN (Near Zero Energy Neighbourhoods) in which we worked with “non-technical” drivers such as governance, economy, aesthetics, facility management, and end user engagement (The ZEN Research Centre <https://fmezen.no/>).

Workshop session “Framework for Innovation Labs towards DPEB Solutions” (led by UL)

Within +CxL, we have started to develop some activities towards entrepreneurs creating prototypes, hackathons, etc. In its Engagement Week (replace with correct title), Limerick is going to use sensors where people can get started to measure city conditions themselves, which during the next years can become an extension of UL’s fab lab. These are quite diverging types of activities and target groups. One of the next steps will be to map these activities onto the Bold City Vision framework, as a structuring exercise. The Bold City Vision has a statutory level, an operationalisation, and a tactile & tactical space in between where the translation takes place (in both directions).

Additional presentations by NTNU

The additional presentations were intended to provide potential new contributions to WP3. They included, amongst others:

- Urban Facility Management / Public-Private-People Partnerships, working with residents to upgrade local neighbourhoods;
- Collaborative game development for the planning of smart energy communities, creating an environment in which it is possible to create a PEB; taking concepts such as citizen observatories and breaking them down into steps to make them operational. The intention is to create a process towards a game, where the development process will provoke discussions on how to balance the technical, citizens etc. Limerick, on the other hand, is developing a game that will support cooperation;
- Spatial analysis, modelling, geographic visualisation, and spatial crowdsourcing. The intention is to make the effects of scenarios visible, using citizen observatories with 3-dimensional physical models and potential to connect to virtual/augmented reality. In addition, such techniques can be used for participatory and emotional mapping - in a map of the city, citizens can add comments about what they feel or what they would like to do in a specific area (e.g. nice to walk along the riverside);



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+CxC Afternoon Talk: WP3 presents workshop results & updates to local and visiting +CxC partners

The +CxC Afternoon Talk was open to local stakeholders and partners, and was held in the new “Bøker & Bylab” innovation space, a cooperation between the municipality and the student welfare organisation. This will be a citizen engagement building for +CityxChange.

How to co-create the common vision and how to make the Bold City Vision politically accepted and operationalised, is going to be lots of hard work. This is just the start and the operational part of it needs to be further developed. One of the main elements that came through during the 2-day WP3 workshop, was in fact the idea of taking abstract concepts and operationalising them.

Many pilots that are great, don't affect daily practice. We need to test something in a manner that makes it easier to implement. We need to find other cases that are already ongoing in the city, and on which the city / project can build. We should not start from scratch, not reinvent the wheel.

The results of the workshop will be used to develop a joint scientific publication among the project partners, as part of WP10.



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6 Second Consortium Meeting (23-25 October 2019, Limerick)

6.1 Scope

The second consortium meeting of the +CityxChange project took place on 23-25 October 2019, in Limerick, with 70 representatives of the project partners, and additional local stakeholders present.

The intended meeting outcomes were to use the opportunity of a face-to-face partner meeting, to dive deep into the key challenges and to develop joint outcomes. Going into the second year of the project, the consortium meeting also marks the transition from the development to the deployment phase, with updated roles and activities. In total, we organised 8 in-depth workshops, each with a moderator, a problem owner, a clearly defined problem statement and an intended outcome. The outcomes were documented and will directly flow into ongoing work and Deliverables. During the coffee breaks, partners organised short hands-on demo showcases of apps, tools, sensors, and smart meters.

In addition, we held the 2nd General Assembly, and organised PEB Walks of the Limerick demo areas and demo sites. On the final day, we organised an excursion to the ESB Ardnacrusha Hydroelectric Power Station, as well as the Cliffs of Moher. There was also a possibility to engage in the Climathon held in Limerick, hosted by LCCC and Space Engagers.

The consortium meeting was held back-to-back with the All Ireland Smart Cities Forum in Dublin on 22 October 2019¹ with presentations and participation by the +CxC consortium partners.

6.2 In-depth Workshops

After an update of the project's status, progress, financial reporting and upcoming activities for year 2, four sessions of 2 parallel workshops each were kicked-off.

Parallel workshop 1: Glossary / Pictionary

The workshop was owned by ISOCARP, and moderated by UL. The aim of this workshop was to develop a common understanding and definitions of central project terms, discussing contested definitions, aligning different usage of terms across project and laying foundation for citizen-friendly definitions and visual descriptions.

1

<https://smartcitiesireland.org/events/sustainable-places-connected-communities-3rd-annual-conference-of-the-aisct/>



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The workshop aimed at achieving three primary goals: 1) Distinguish and agree upon crucial glossary and terms which have to be defined; 2) Reviewing existing or duplicated definitions and trying to develop common definitions if not existing yet; 3) Define terms which require visual representation, conceptualise their content, and define responsibilities for way forward.. The workshop also had a goal to develop a common understanding and definitions of central project terms, discussing contested definitions, aligning different usage of terms across project and laying foundation for citizen-friendly definitions and visual descriptions. The workshop was a starting point to establish and further develop the project glossary, as well as making relevant elements publicly available on the project website.

Parallel workshop 2: Monitoring & Evaluation

The workshop was owned by FAC, and moderated by UL. Discussion points during the workshop were the Introduction to WP7 & M&E, Overview of deliverables (focus on D7.1, D7.3, D7.4), M&E in +CxC, Importance and application in +CxC, KPI Framework M&E Reporting Tool (MERT) dashboard, Development and Design Considerations, Demonstration, and Q&A .

The development of a standardised framework for the M&E, development of a data collation, management and analysis methodology, development of an interactive web based dashboard, and providing an early-warning scoring system were the main issues to work upon.

Parallel workshop 3: Privacy and Smart City Data Model Structure

The workshop was owned by LCCC, and moderated by MP. The challenges discussed in this workshop, were related to IT architecture and data, open data portals, APIs, data protection impact assessment, informed consent, the Data Management Plan, and open research data.

A big issue discussed was the open data development: how it can provide the data in a sustainable way so that people can trust its quality and availability. The workshop members concluded that there is high need of interoperability between different applications and to have discussions around developing an API catalog to access data. Details are discussed in D11.7: Data Management Plan 2.

Parallel workshop 4: Exploring and sharing ways towards citizen-led energy transitions (Storytelling Workshop)

This workshop was held in cooperation with and with participation by local stakeholders and potential positive energy champions, and led by LCCC and ISOCARP. The workshop had online contributions from community representatives from Tallaght project, Dublin, the city of Utrecht and community-led initiatives in the energy sector in Rotterdam.



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The workshop aimed at exploring ways of creating a better understanding of the experiences, challenges, failures and successes of similar projects in engaging citizens as well as fostering interactive and progressive exchanges between external participants and the +CityxChange team.

What techniques/tools/approaches are effective to inform citizens, how can effective collaboration between a representative group be achieved, and how do behavioural changes evolve, these were the three main questions raised and answers explored amongst the workshop participants..

Parallel Workshop 5: Common Energy Market

This workshop was owned by POW, LCCC and TK, and moderated by NTNU. Contributions were made by EAP, R2M and OV, as well as the Follower Cities. During the workshop, the participants reviewed status and learning points from the first year, what to expect in year 2, and how to improve learning between Lighthouse and Follower Cities. In addition, important new knowledge was discussed of how to organize a local energy market so it stimulates the PEB process, principles for the flexibility markets and community grid, as well as replication and investment / financial models and joint funding opportunities.

Questions which were discussed: What are the critical factors in your city in order to really succeed? Which technical enablers need to be established? How to approach and work with local/national partners concerning solutions and energy market systems? Possible/ Viable funding opportunities? Opportunities already identified or/and working on?

To realize the project, the importance to define the project first and the investment necessary, and the possible funding sources was highlighted. Information on potential investments and the volume of the financial investments are necessary.

Parallel Workshop 6: CommunityxChange

This workshop was owned by UL, LCCC and TK, moderated by NTNU, and with contributions by ISOCARP. Discussion themes were to examine developed and developing frameworks, including BCV, to explore the transition to implementation; investment, scaling & replication; monitoring & evaluation, to share learning from Year 1 activities in Limerick and Trondheim and to discuss how to keep framework/BCV development going in LHCs and FCs. Tasks and timeline for completion and implementation in LHCs and FCs were reviewed and the workshop format outlined.

The workshop included, amongst others, an overview of learnings from the first year, how to transition from the development to the deployment phase, as well as first experiences with monitoring and evaluation, and opportunities for investment, scaling and replication.

Tasks worked upon during the first year were discussed: T3.1 Support Framework for Bold City Vision, Guidelines and Incentive Schemes, T3.2 Development of a Citizen Participation Playbook and Platform, T3.6 Framework for an Innovation Playground, T3.3 Development of



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a learning framework targeting the Next Generation of Smart Citizen, T3.4 Creation of a Framework for Energy Champions, T3.5 Framework for Innovation Labs towards DPEB Solutions.

Discussion focussed on the question 'How do LHCs and FCs wish to participate in the design of these frameworks? Discussion focussed also on how engagement events could be integrated into the Bold City Vision framework as components within different layers of activity, all contributing to the realisation of the Bold City Vision. During a session on the Bold City Vision, the participants discussed how to bring it into all the cities, and keep the framework development going. The participants also showcased what has already been done in terms of citizen observatories.

Parallel workshop 7: City Modelling

This workshop was owned by IES, and moderated by R2M. Current modeling on building level is not sufficient, and needs to be able to easier and faster work on community/neighborhood level for better scale-up into a neighborhood.

This is needed to be addressed to any community for its operational performance. That will help to understand the performance of the community, possibly integrating BIM models as architectural models and digital twins. A demo of the model/simulation was given.

For the integrated ability to model the grid IES needs input, they need people to test the model. IES wishes to give license to access the model to members of +CityxChange to try the model. The wish to emphasise on the soft measures more than to the hard measures should be included in the monitoring as well.

Parallel workshop 8: Transport/Mobility

This workshop was owned by FourC and AGB, and moderated by MAI. The workshop worked on different approaches to transport and mobility in Europe, depending on size, geographies, etc. The project is trying to define the basic topics firsts and then have breakout discussions. It is important to offer better services to citizens. Bring new ideas from the perspective of municipalities and private sector. The municipalities need to intervene and create an environment of cooperation. We don't have all the answers yet and all the ideas are not yet presented in the right way. The private sector needs to understand the landscape around this sector. Increase the interest of the public? Possibility to offer some social benefits can achieve good results.

Ad-hoc workshops

We left a few hours open to enable ad hoc workshops among partners. The ad hoc workshops organised dealt with Follower City collaboration (led by EAP), replication and scaling up (led by R2M), and ICT use cases and user journeys (led by NTNU and UL).



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The ICT workshop presented the +CxC Enterprise Architecture and current examples, API catalogue and standards. It organised clarifications and discussions regarding case selection, modeling exercises, next steps and challenges, as well as capturing more use cases. The workshop led to improved common understanding of the +CxC Enterprise Architecture and its purpose, identification of further use cases.

Climathon

The Limerick Climathon was running in parallel to the Friday meeting, and in the morning of Saturday. Representatives from SE, NTNU, and LCCC were present and LCCC and NTNU were part of the jury.



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7 URBACT III

The cities of Alba Iulia (lead partner), Limerick, and Võru are further collaborating in an Urbact III Phase 1 project called FindYourGreatness. The Kick-off meeting for this project took place in Alba Iulia from the 29th to the 31st of October 2019. "Find your Greatness" is a concept that reflects the challenges addressed by AIM together with other EU local communities. The partners identify their needs locally regarding urban development, and enhancing the potential of the city. By combining a strategic marketing approach with innovative smart city tools, these needs can be explored and resolved. Other partners in this project are Bragança, Wrocław, Lanzarote, Perugia, and Budafok-Tétény Budapest XXII. Meetings between the partner cities will take place between November and February with the aim to complete a Phase 2 proposal in early 2020.



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9 URBANGUARD

In September 2019, two LightHouse Cities from two projects: Limerick (+CityxChange) and Tempere (Stardust) submitted pilot projects as part of the call H2020-SU-INFRA-2019 (Protecting the infrastructure of Europe and the people in the European smart cities). This call also involved the +CityxChange partner Future Analytics Consulting Ltd. This proposal, called Urbanguard, aims to serve as a catalyst for the development and establishment of a novel and disruptive paradigm for smart cities and public spaces security, which will be characterized by increased automation, integration of physical and cyber security aspects, as well as the seamless and effective collaboration of security and safety stakeholders.



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10 Monthly Executive Board Meetings (Light)

According to the Project Management Structure in the Description of Action, the Executive Board, composed of the Project Coordinator and all Lighthouse and Follower Cities, will meet online or face-to-face on a quarterly basis.

During the project kick-off meeting, the members agreed to start with monthly meetings, to support better interaction between the cities, to get a good rhythm going, to ensure that all cities would be fully engaged and included in the project, and to make sure that the Follower Cities would have the support they need to be successful in early replication.

The additional monthly meetings have a limited scope mostly around information and coordination, such as monthly updates from the Project Manager and the cities and upcoming events.

After half a year, the Project Coordinator, Lighthouse and Follower Cities agreed that such monthly meetings are very useful, and will be upheld for the time being.

The monthly meetings have a standing agenda of updates from the Technical Board, updates from the Lighthouse and Follower Cities, and discussion of upcoming consortium meetings or Learning Workshops.



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10 Conclusions

During the second six months of the +CityxChange project, we have confirmed our initial experience that regular interaction between the cities, beyond the formal consortium bodies and Work Packages, is very fruitful. At the same time, we did not want to increase the workload due to additional meetings. Hence, the project has set up several informal meeting structures by and with the cities, to exchange experiences and keep a good flow of communication. After half a year, we think we have reached a good equilibrium.

Face-to-face time during partner meetings and Learning Workshops will be used as much as possible for interactive discussions based on current progress in the demonstration projects, as well as study visits to local demonstration projects and interaction with local stakeholders - the most recent example is the consortium meeting in Limerick in October 2019, in which we held 8 workshops as well as ad hoc meetings between partners. During these workshops, it became clear that we need to emphasise more the interaction between the Follower Cities and with the Lighthouse Cities. These opportunities will as a starting point be embedded in the monthly Executive Board Light meetings, in cooperation with the corresponding Task Leads.

The first External Expert Advisory Board meeting and first review meeting will take place on 14-15 January October 2020, in Brussels, hosted by the NTNU Brussels office. The next Learning Workshops will take place in Spring 2020, hosted by Písek, and in Spring 2021, hosted by Alba Iulia.



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