

D7.11: Data Collection and Management Guideline Reports 3

+CityxChange | Work Package 7, Task 7.4

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¹ Future Analytics Consulting Ltd. was acquired by KPMG Ireland in November 2020 through a universal takeover. The company is now known as KPMG Future Analytics (KPMG FA).

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List of Acronyms



API	Application Programming Interface
BCV	Bold City Vision
CEM	Common Energy Market
CC	CommunityxChange
DoA	Deed of Agreement
DP	Demonstration Projects
DPEB	Distributed Positive Energy Block
DST	Decision Support Tool
EC	European Commission
eMaaS	eMobility as a Service
FAC	Future Analytics Consulting Ltd. (now KPMG FA)
FC	Follower Cities
GDPR	General Data Protection Regulation
GHG	Greenhouse Gas
ICT	Information and Communication Technology
IEW	Information Exchange Workshops
IDP	Integrated Planning and Design
IPR	Intellectual Property Rights
ISOCARP	International Society of City and Regional Planners
KPI	Key Performance Indicator
KPMG FA	KPMG Future Analytics
LCCC	Limerick City and County Council
LHC	Lighthouse Cities
M	Month
M&E	Monitoring and Evaluation
MERT	Monitoring and Evaluation Reporting Tool
MP	The Royal Town of Písek
MoUs	Memorandum of Understanding
NTNU	Norges Teknisk-Naturvitenskapelige Universitet
OV	Officinæ Verdi Group

PEB	Positive Energy Blocks
PEC	Positive Energy Champion
POW	Powel AS
QDWG	Qualitative Data Working Group
R&D	Research and Development
RES	Renewable Energy Source
SB	Sestao Berri
SCIS	Smart Cities Information System
SCM	Smart Cities Marketplace
SRT	Self-Reporting Tool
SV	Statkraft Varme AS
TBD	To Be Determined
TE	Trønderenergi AS
TK	Trondheim Kommune
UI	User Interface
UL	University of Limerick
WP	Work Package



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Executive Summary

The objective of Task 7.4, *Developing Practical Recommendations and Guideline Reports based on +CityxChange Results*, is to create practical recommendations and guideline reports which detail, analyse and interpret the aggregated data collected during the M&E process, and deliver recommendations related to the Information and Communication Technologies (ICT), energy, community, mobility, environmental and regulatory interventions implemented in the project. The guidelines and recommendations in this report were produced through a data triangulation process, incorporating qualitative feedback from partners, KPI data² generated by the design and execution of +CityxChange Demonstration Projects (DPs), and by leveraging the knowledge generated through the project (e.g. deliverables, events, storytelling and learning workshops, meeting minutes).

Previous iterations of this deliverable, namely *Deliverable 7.5 - Data Collection and Management Guideline Report 1 (D7.5)*³, and *Deliverable 7.8 - Data Collection and Management Guidelines Report 2 (D7.8)*⁴ have focused on developing and detailing the mechanism for conducting qualitative evaluation. This mechanism includes processes to identify and select interventions, classify them into themes and link them to associated evaluation guidelines, record and facilitate feedback collection (e.g. post-activity interviews, feedback forms), monitor progress and identify lessons learnt through comprehensive M&E processes including: feedback analysis received from partners, review of associated project documentation, alignment to international best practices (e.g. SCC1 M&E task group). All of the above allow Work Package 7 (WP7) to ensure that a robust and conclusive M&E process is set in place and that actionable guidelines and recommendations are being produced as result.

Deliverable 7.11 - Data Collection and Management Guidelines Report 3 (D7.11) offers an update on the functioning of the Evaluation Framework and provides clear recommendations and guidelines that have been produced in the reporting period between June 2021 (submission of D7.8) and October 2021. Five topics were explored, each offering specific recommendations which are built upon in [Section 2.2](#). Table 1 provides a brief overview of recommendations. The central theme of feedback collected from partners within this specific reporting period is Community Engagement (Project Theme 7). This, however, led to the emergence of other key topics for analysis such as the ones listed in Table 1 below. These will be discussed in further detail in [Section 3.1.2](#).

² The quantitative data is captured by partners and modelled according to the measurement requirements of the Key Performance Indicator (KPI) Framework developed in *Deliverable 7.1 - Approach and Methodology for Monitoring and Evaluation*.

³ D7.5 available here: <https://cityxchange.eu/knowledge-base/data-collection-and-management-guideline-report/>

⁴ D7.8 available here: <https://cityxchange.eu/knowledge-base/d7-8-data-collection-and-management-guideline-report/>

Table 1: Overview of Recommendations

Topic	Specific Recommendations
<p>Promoting and sustaining a collaborative culture - Recommendations on how to develop a sensitivity to community perception.</p>	<p>Recommendation 1: Adapt best practices in citizen and professional engagement to enhance cities' agendas within a specific context</p> <p>Recommendation 2: Organise Storybuilding, Storytelling and Learning Workshops that are contextualised, inclusive and diverse, to engage and empower partners and stakeholders</p> <p>Recommendation 3: Establish a Flexible and All-inclusive Methodology to Facilitate Participatory Processes (Timing and Planning):</p>
<p>Data Driven Decision-Making - Recommendations on mechanisms for data collection that are aligned with cities' needs and that promote a cost and time-efficient process, limiting potential administrative delays and inherent data collection risks.</p>	<p>Recommendation 1: Use participatory platforms to establish and maintain trust with local communities by promoting stakeholder consultation results and their implementation.</p>
<p>Regulatory Challenges - Considerations on changes in practices with authority bodies that oversee planning permission and how has this influenced the implementation of data-driven solutions.</p>	<p>Recommendation 1: Adapt to the current energy paradigm shift</p> <p>Recommendation 2: Work towards a meaningful integration of different levels of scale (macro - meso - micro scale RES installations) and establish a process.</p>
<p>Risk management and adaptation to a fast-changing socio-economic landscape - Recommendations on Covid-19 Impact Assessment and Contingency Planning.</p>	<p>Recommendation 1: Cities should be prepared for market volatility and formulate Adaptable Mitigation Actions tailored to their specific context</p> <p>Recommendation 2: Anticipation and Subsequent Analysis of Potential Crisis Scenarios and Formulation of Contingency Plans</p> <p>Recommendation 3: Risk Identification and Regular Risk Reviews in Context of Local Conditions</p>

The deliverable also includes future considerations and upcoming interventions for the next reporting period (October 2021 - September 2022). The topics listed above will inform future discussions and form the basis of lessons learned and recommendations in the next reporting period.



1 Introduction

Market uptake of smart cities' solutions could be accelerated through best practice exchanges among cities, allowing for the application of demonstrated solutions on a broader, geographically spread scale (for further details on replication profiles, see Section 4). This requires thorough monitoring and evaluation of the tested solutions and processes, to support transferability.

D7.11 is the third instalment in a series of annual reports with the aim to provide derived insights and practical recommendations from monitoring and evaluation data and engagement with project partners with regard to the various interventions executed in the Lighthouse Cities (LHC) and Follower Cities (FC). It provides an update on the M&E status and collected KPI data and the implementation of the framework for overall qualitative evaluation of the project and its interventions, based on initial guidelines from D7.5 and D7.8. The following updates have been made in D7.11:

- Methodology and the Application of the Qualitative Evaluation Framework ([Section 2.1](#))
- Lessons Learnt and Recommendations from Qualitative Evaluation Feedback ([Section 2.2](#))
- Steps for Evaluation Implementation ([Section 3.1](#))
- Summary of Theme 7 ([Section 3.1.2](#))
- KPI Data Assessment and Qualitative Evaluation ([Section 3.2](#))
- Upcoming Interventions for Evaluation ([Section 4](#))
- Target Groups ([Section 4.1](#))
- Output Format Development ([Section 4.2](#))

1.1 Reference for Quantitative and Qualitative Monitoring and Evaluation

The following excerpt from the description of the related T7.4 highlights key factors of the deliverables in this series.

Task 7.4: This task will create practical recommendations and guideline reports which detail, analyse and interpret the aggregated data collected during the monitoring and evaluation processes. The reports will act as health checks for the +CityxChange project partners and will be included and added to the SCIS website (T9.2) for further dissemination, as well as translated into policy briefs (T10.4). The reports will include technical recommendations related to Distributed Positive Energy Block (DPEB), Community Grid, eMobility as a Service (eMaaS), storage solutions, Energy Trading and Flexibility Markets; regulatory and legal aspects; socio-economic and gender perspectives; and spatial and urban planning to support roll-out of positive energy blocks, districts and cities. They will also follow up on ICT architecture, ecosystem, and data integration and its implications and feedback from the



DPs and use cases as reusable blueprints with recommendations on digitisation and big data, ICT use, data management, security and protection.

The task description identifies the inclusion of project partners' experience and feedback on the interventions implemented. WP7 continuously collaborates with WP8 to ensure that lessons learnt are shared and fed directly into the replication profiles. This effort has been ongoing and will continue to focus on stakeholder engagement recommendations (including methodologies, dissemination materials and target groups), regulatory challenges and other emerging themes.

Recommendations and guidelines play a critical role in Work Package 4-5-6, and are a necessary input for Work Package 8 (WP8), where they serve as significant data for replication tasks. For more details on the co-created Evaluation Framework developed, please refer to D7.8). To assist with the process, T7.4 will feed into the development of replication profiles (Task 8.1, Replication Assessment of +CityxChange solutions) as cities will have the opportunity to refer to lessons learned and recommendations to inform replication processes from one city to another. This approach will be instrumental within +CityxChange, but ultimately, could be used by other smart city projects.

The Evaluation Framework equips partners with a *guideline* to refer to and follow in order to effectively report on qualitative data related to their project interventions and activities. WP7 substantiates and contextualises the data that has been received through an ongoing review of deliverables and other relevant sources (both within and outside the project) to ensure a thorough data collection and analysis of project outcomes. The engagement and collaboration with LHCs, FCs, and other project partners as well as the identification, sourcing, and analysis of quantitative and qualitative data is an ongoing process. The application of the framework has ensured a collaborative methodology to analyse and interpret the evaluation of project activities to enable the extraction of useful insights and recommendations to inform future decision-making in the project.

The collaborative reflection on, and assessment of data and information received through these processes will inform practical and technical recommendations, and highlight lessons learnt and insights that can be shared with a wider community. Key insights and recommendations drawn from the qualitative feedback are detailed in [Section 2.2](#).



2 Implementation of the Qualitative Evaluation Framework

2.1 Methodology

The evaluation of activities and interventions implemented through the +CityxChange project is being undertaken through a combination of quantitative and qualitative measures to ensure that project impact is maximised throughout its lifespan and beyond. Further information on how the two datasets interact has been described in [Section 3.2](#).

WP7, in collaboration with other partners, has developed and implemented an engaging, co-creative Evaluation Framework that aims to boost the collection of qualitative feedback, aiding efficient evaluation of the project. Through the working of the *Qualitative Data Working Group (QDWG)*, WP7 has refined and implemented the Qualitative Framework (as reflected in D7.8).

To optimise project resources, WP7 analyses the Event and Dissemination tracker, as well as other project documentation, to ensure that as M&E lead, KPMG FA has an overall grasp of which interventions are taking place and how they are linked. WP7 relies on quality data obtained through feedback forms, interviews, learning sessions, informal discussions, review of relevant project documentations, and engagement with partners should clarifications be needed. Insights are then discussed during the QDWG meetings and reported within each period. As such, the QDWG serves as a platform which interlinks feedback experiences across different cities and allows for a comparative analysis to be corroborated. It also ensures that input received is relevant to other cities and validated through the project's knowledge pool. The QDWG adapted its approach based on the social science methodology of Action Research, as depicted in Figure 1.





Figure 1: Action Research Methodology⁵

2.1.1 Application of the Evaluation Framework at Activity Level

As detailed in D7.8, the application of the evaluation process was discussed and refined within the QDWG. The following figure showcases the process that was implemented for the evaluation of project interventions:

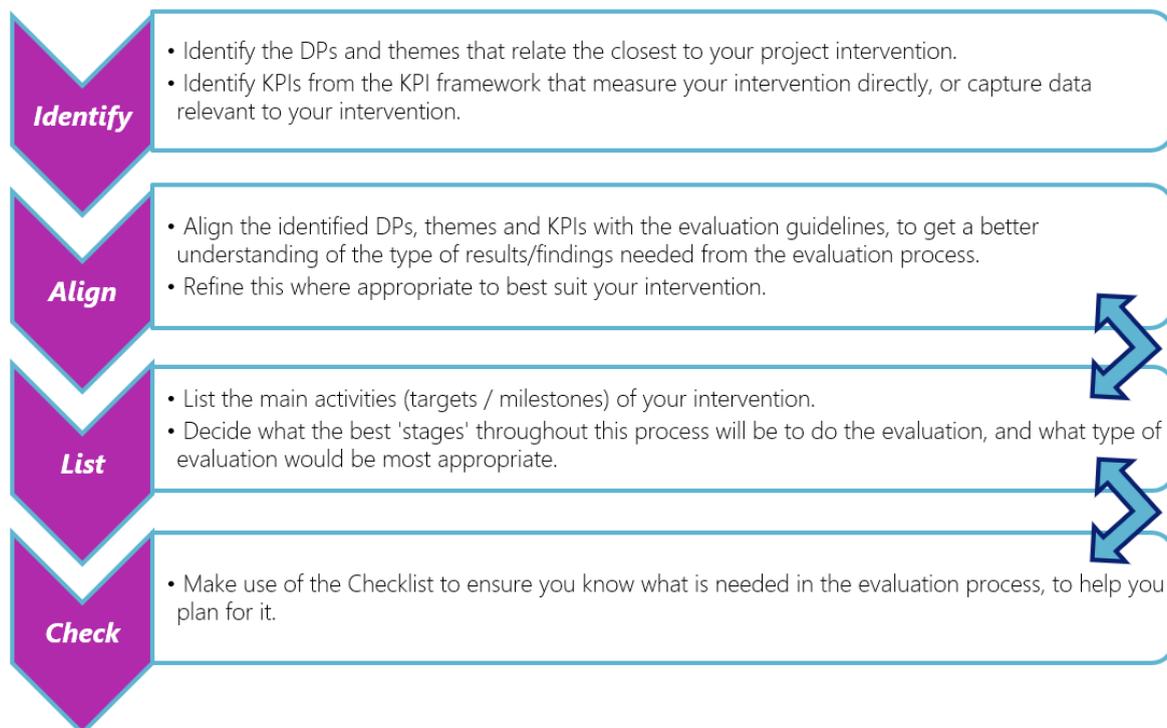


Figure 2: Evaluation Process at Activity Level

⁵ Source: Education Research in the Canadian Context. International Journal of Education Policy and Leadership. (2019). Laitsch, D., et al.

Through the development of the Evaluation Framework, consideration was given to the 11 Demo Projects and the themes mentioned in the T7.4 description. As seen in D7.8 and presented in [Annex 2](#), the Demo Projects and themes were used as the main categorisation to develop evaluation guidelines.

For the purpose of delineating guidelines and recommendations, WP7 used the following assessment mechanisms:

Evaluation and Review Workshops: The main aim of these workshops was to review qualitative data and cross-check if potential gaps existed in the context and information that was to be evaluated. Engagements such as post-activity interviews with partners from WP4 and WP6, learning sessions⁶, informal discussion sessions, and similar workshops have been used as a source of data and information, and their subsequent review. Evaluation workshops enabled partners to conduct evaluation and validation of interventions and elaborate on feedback. These workshops also served to build on insights and comments received from partners and their contextualisation within other +CityxChange cities. This further enabled WP7 to elaborate and enhance guidelines and recommendations in order to confirm a clear and concise message that will inform decision-making on future replication of similar project activities. The results from all these discussions feed directly into respective deliverables for each reporting period.

Qualitative Assessment Feedback Form: The online editable feedback form served as a medium to gather comprehensive feedback on the activity or intervention which was then assessed collectively (as a whole or grouped) to gain insights. This form included guiding questions and notes on how to report qualitative data related to project activities, and was co-developed with project partners. Feedback forms collected for this evaluation period and analysis can be found in [Annex 4](#). For more information on the format of the qualitative assessment feedback form, please refer to D7.8.

Review of Project Documentation: In order to provide a thorough analysis of the interlinkages between WP 7 and other work packages, FAC (now KPMG FA) undertook a review of relevant deliverables that had been submitted in the reporting period. The deliverables were reviewed in accordance with the requirements highlighted in the *Deliverable 7.1 - Approach and Methodology for Monitoring and Evaluation (D7.1)*⁷ and the need to evaluate other project tasks and deliverables that report on qualitative assessment of project activities (as described in Deliverable 7.8). For the purpose of this report, project deliverables from WP 4, 5, 9 and 10 were reviewed to identify interlinkages with Task 7.4 and bring out recommendations, lessons learnt and relevant information. The following table provides a list of deliverables reviewed. Links to the reviewed deliverables can be found in [Annex 3](#).

Table 2: WP Deliverables Reviewed

⁶ See examples in D9.9 and similar on intra-project collaboration and lessons, <https://cityxchange.eu/knowledge-base/d9-9-report-on-intra-project-collaboration-including-study-visits-and-peer-to-peer-workshops-4/>

⁷ D7.1 available here: <https://cityxchange.eu/knowledge-base/approach-and-methodology-for-monitoring-and-evaluation/>



Relevant Deliverables Reviewed	
WP 4	D4.6 - Limerick Project Documentation Repository including Project Status Reports 2
WP 5	D5.1 - Trondheim Project Documentation Repository including Project Status Reports 1
	D5.8 - +Trondheim Citizen Observatory
	D5.9 - Playbook of Regulatory Recommendations for Enabling New Energy Systems
WP 9	D9.7 - Report on Intra-Project Collaboration Including Study Visits and Peer-to-Peer Workshops 3
	D9.9 - Report on Intra-Project Collaboration, Including Study Visits and Peer to Peer Workshops 4
	D9.11 - Storytelling workshops, inviting other LHCs and FCs 2
	D9.12 - Report on Intra-Project Collaboration Including Study Visits and Peer-to-Peer Workshops 5
WP 10	10.8 - Plan for Dissemination and Exploitation of +CityxChange Project Results 3

Please find a detailed review of deliverables in [Annex 3](#).

Following the collection of feedback forms and along with data and information delineated from the review of other deliverables, reports, documents, and monitoring data, the information was assessed and evaluated. Initial evaluation of the information was conducted by WP7 to highlight important trends and key points. Points highlighted from the initial review were then discussed with partners to identify additional insights and co-develop guidelines and recommendations. Lessons learnt and recommendations from the Qualitative Evaluation Feedback are presented in the next section.

2.1.2 Limitations of this reporting period

During the data collection and analysis of this deliverable, WP7 encountered a number of challenges, which led to several limitations within the report.

The main objective of D7.11 is to collect feedback from partners and to establish recommendations and lessons learned from the project, which can be shared internally and within the Smart City community. The foundation of this Monitoring and Evaluation process is substantiated by the Qualitative Evaluation Framework (introduced in the previous section), which has been co-created with the Consortium to ensure flexibility and relevance for the project’s interventions.

This framework has been established as part of the previous iteration of this deliverable; therefore, D7.11 is the first report gathering and analysing information through the proposed methodology. This raised specific issues with regard to the quality and quantity of data received, as partners were still adopting the approach. In addition, the data collection for this period was restricted to 4 months (June 2021 - September 2021) due to the delayed approval of the framework. As a result, only 3 partners submitted the completed evaluation forms, which were further contextualised through post-activity interviews and other informal meetings. To mitigate the lack of data obtained directly through the partners, the



WP7 lead has carried out a literature review of project deliverables and other documentation, ensuring that key themes were embedded into the report.

Another critical issue the project encountered during this period was the Covid-19 pandemic, which had significant implications for the delivery of certain tasks. Trends across cities and partners focused on stakeholder engagement, tools to strengthen data-driven decision-making in a virtual setting, supply chain-related delays, regulatory bottlenecks and complications (partially due to public health prioritisation over other agenda items from local and national authorities), and overall risk management and the adoption of mitigation measures concerning the above. These topics have been addressed within the recommendations below.

2.2 Lessons Learnt and Recommendations from Qualitative Evaluation Feedback

Throughout this reporting period, WP7 has worked to connect everyday challenges to broader trends, informed by the socio-economic and regulatory landscape. These reflections will help establish an effective process in formulating recommendations and identifying roadblocks.

Insights drawn from the qualitative evaluation feedback enable the delineation of guidelines and recommendations for direct and indirect project stakeholders. At this stage, these insights will aid project partners to draw on lessons learnt from similar interventions, branched under a particular theme, and implement the associated guidelines and recommendations. The following insights and associated recommendations have been related to partners' experience of project interventions and associated to different target groups as outlined in *Deliverable 10.8 - Plan for Dissemination and Exploitation of +CityxChange Project Results 3 (D10.8)*⁸ (Dissemination and Exploitation Plan):

Table 3: Lessons Learnt and Recommendations from Feedback Collected

Lessons Learnt and Recommendations from Feedback Collected and Corroborated	Associated Target Group
Promoting and sustaining a collaborative culture	
<p><i>Context:</i> Widely recognised by partners, collaborative engagement is a crucial element of +CityxChange for the sustainability of solutions, their uptake and development of strategies and action plans that take into consideration stakeholders' perspectives and opinions. Intra-project collaboration between work packages and partners is considered equally consequential in the development and/or implementation of project interventions and their subsequent successes.</p> <p>Particularly, within this report, the feedback enabled WP7 to understand the partners' take on independent citizen engagement activities as well as progress</p>	<p>Core Group Partners; Directly Involved Stakeholders; Indirect Local Context</p>

⁸ D10.8 available here: <https://cityxchange.eu/knowledge-base/d10-8-plan-for-dissemination-and-exploitation-of-cityxchange-project-results-3/>



of tasks associated with engagement and buy-into solutions provided by the project. It was understood that this aspect was considered a prominent success measure and factor by partners. Partners are actively involved in engagement activities to ensure co-created, well-informed and citizen centric developments as the project progresses. However, as mentioned in the previous QDWG meetings, due to challenges and restrictions posed by Covid-19, face-to-face interaction through workshops, engagement activities and meetings have been completely halted. Hence, to work around the difficulties posed by restrictions, partners are upgrading methodologies to include virtual consultations, webinars, and focus groups as measures for continuous engagement. With virtual consultations, newer ways of data collection, storage and management are being established.

Recommendations:

Some of these are best practices that have been deployed by the +CityxChange partners, others are direct recommendations from the project's collective experience.

Recommendation 1: Adapt best practices in citizen and professional engagement to enhance cities' agendas within a specific context

I. **Adopt interactive engagement techniques which foster a bottom-up approach to stakeholder participation and prompt new ideas/perspectives from citizens.**

Throughout the CityxChange project, LHC and FC have adopted different practices in engaging with citizen and professional stakeholder to ensure an increased level of involvement and to enhance a bottom-up approach in line with cities' agendas and their specific contexts. Such techniques include narrative tours such as Playable Trondheim, gamifications and mapping sessions utilised in the SDG Clinics and Innovation Playground. Stakeholders are more eager to engage when they have a greater ability to interact as part of the event. These events are also more memorable than online events due to their unique interactive elements and lead to improved project and subject-matter awareness. This type of engagement allows for impactful stakeholder outreach, resulting in an increased citizen involvement and streamlined bottom-up engagement. The creation and design of interactive events is directly linked to citizen demographics, target groups and overall involvement when it comes to the topics being discussed (e.g. recycling, green energy initiatives, building retrofitting). To ensure successful stakeholder engagement, cities are encouraged to consider best practice and how these are fit for purpose. Some examples have been given below:

- Narrative tours - these are tours through a neighbourhood focused on the capturing of observations and the exchange of ideas. Taking place on foot or by bicycle. These tours allow citizens to contribute their own views on the places they live and the ideas they have to improve them.
- Gamifications - These are effective in bringing together a wide variety of groups and explaining complex concepts in an engaging way through the use of formats such as board, digital and family games.
- Mapping sessions (such as community auditing) - mapping sessions gather citizens and record their observations of an area. These are useful in assessing what aspects of a neighbourhood the community wants to change.

These events are key to fostering a bottom-up approach to citizen engagement and idea generation. Narrative tours, gamifications and mapping sessions offer a better alternative to

online/in-person workshops conducted and led by CxC partners, as they empower citizens and professional stakeholders to take the lead in offering ideas and solutions to energy and sustainability related issues. This approach also enables stakeholders to participate in a structured process which has been established by the project partners to support cities' agendas.

Whilst the overall stakeholder engagement was required to move online due to restrictions implemented during the Covid-19 pandemic, the level of interaction with stakeholders was able to be sustained through the use of technology platforms such as Zoom, Microsoft Teams. This allowed for the continuation of stakeholder engagement and idea generation despite restrictions. The use of techniques such as breakout rooms, polls, surveys and platforms such as mentimeter enabled CxC partners to gather feedback in real time, maintain relationships within the community and enhance a bottom-up approach to citizen engagement.

- II. **Adapt to in-person and online engagement requirements.** In-person engagements need to be supported by suitable materials that are ready to be disseminated, easy to understand (e.g. *infosheets, flyers, leaflets, etc.*) and elicit participation. The dissemination materials used need to be fit for purpose and target audience. A mixture of electronic and hard copies of leaflets, posters, infographics, factsheets, videos, newsletters, podcasts, and other communication materials is needed in order to align with different demographic groups. For example, using only electronic versions will impede elderly residents' involvement and may create negative association for the projects (as being insensitive, non-inclusive). In-person attendees, especially older demographics, are also more likely to retain physical copies of materials for future review, rather than electronic companies. Whereas, the project is more likely to make an impact with a younger audience by utilising social media and video materials. It is recommended to consult the best practice identified by the European Commission, accessible [here](#).⁹

Keep engagement to manageable group sizes to ensure focused attention, support and efficient feedback collection by allowing participants to feel more comfortable voicing their opinions/concerns. When engaging *online*, make sure that sessions are not too long as this can limit the ability of participants to actively engage for extended periods of time. Maintaining a high level of interaction through polls, breakout rooms, and similar measures which encourage increased interactivity will help avoid participant boredom.

Adapting a blended approach (integrating in-person engagement with digitised interactions through online tools, for instance the hybrid City Engage Week held in 2022) toward community engagement allows partners to increase participation and strengthen the project's reputation and stakeholder perception of the project. For example, [MagicInfo](#), is a content and device management solution, was utilised to adapt content on screens in the Citizen Observatories in Trondheim¹⁰ to enable businesses to easily create, schedule and play content across a signage network and tailor pre-made content or create content from scratch. In addition, regarding both in-person and online meetings, partners are advised to ensure that meeting spaces are equipped with the correct technology to grant participants the same opportunities for participation. Also, to make sure that the space used is fit for purpose (allow ease of movement if focus groups are required, good visibility of screen, etc.) and that personnel are trained to navigate the challenge of hybrid events smoothly.

⁹ https://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/grant-management/communication_en.htm

¹⁰ D5.8 available here: <https://cityxchange.eu/knowledge-base/d5-8-trondheim-citizen-observatory/>

One of the most challenging aspects of involving different groups remains on how to start building a compelling narrative on the project's solutions and innovations, to both demonstrate progress and to garner further interest and support. More recently, hybrid events have emerged as the new way forward with stakeholder engagement. These events present a separate set of challenges that project organisations will face in the next 12 months and will be addressed in-depth in the next iteration of this deliverable.

Partners are encouraged to study the recommendations developed for citizen engagement in further detail in Deliverable 3.2 - Delivery of the Citizen Participation Playbook¹¹. The deliverable provides best practice guidelines for partners on the development of citizen engagement activities from a top-down (by organisations) and bottom-up (citizen proposals/participatory planning) approach. The Citizen Participation Playbook is supported by six best practices for effective citizen participation distilled after an analysis of other smart city projects, related European Commission Initiatives and other organisations. These best practices are: (1) Define the community, (2) Clear purpose and front-loading, (3) Continuous engagement: capacity building and feedback, (4) open process, open-source and open data, (5) Co-design, co-create and co-produce, and (6) Privacy by design.

Recommendation 2: Organise Storybuilding, Storytelling and Learning Workshops that are contextualised, inclusive and diverse, to engage and empower partners and stakeholders:

Storytelling is one of the methods and tools for enabling Open Innovation 2.0 inside the consortium, with other smart city projects, and in collaboration with suitable stakeholders and partners, e.g., prospective cities seeking to replicate developed solutions, as further elaborated in the framework for intra-project collaboration. By using the right language, simplifying complex ideas and addressing personal and social characteristics and emotions of the audience we can expand the effective impact of the project by including more participants.

The workshops shall raise the awareness and sensibility towards the opportunities and potential, as well as providing practical guidelines, approaches and techniques to integrate storytelling in the respective local communication and citizen engagement strategies. The workshops can also provide opportunities for local stakeholders to be involved in the process of +CityxChange through collaboration and group discussions which, through proper and sufficient training from +CxX partners, can empower them to take ownership and grant them recognition of the work they have done. These city-specific Storytelling workshops are a pioneering approach, as they allow for a fruitful cross-fertilisation across tasks and work packages and articulate context-specific opportunities and challenges, which could be replicated across different cities. These can help build on the historical story-telling practices within a region's culture, especially within Ireland. In addition, lessons learnt from the Storytelling workshop can also be used as other project-specific best practice (details can be found in *Deliverable 9.11 - Storytelling workshops, inviting other LHCs and FCs 2 (D9.11)*¹², related to the Limerick Storytelling workshop).

+CityxChange also utilises Learning Workshops as a device to support Follower Cities in developing Positive Energy Blocks. WP9 reports that subtle differences in collaboration cultures, communication routines and internal quality assurance procedures, amongst others, come to light more easily in informal discussions, enabling more open meetings that are taken into

¹¹ D3.2 available here: <https://cityxchange.eu/knowledge-base/delivery-of-the-citizen-participation-playbook/>

¹² D9.11 available here: <https://cityxchange.eu/knowledge-base/d9-11-storytelling-workshops-inviting-other-lhcs-and-fcs-2/>

account for the continuation of the project. For those that actively participate, it was reported that it is not always clear what they have learned until prompted for specific information - and experiences of one event will vary among the participants. Due to the success of the overall learning and storytelling workshop approach, it is recommended that partners actively utilise this methodology for increased collaboration and transparency.

Recommendation 3: Establish a Flexible and All-inclusive Methodology to Facilitate Participatory Processes (Timing and Planning):

Effective event planning is critical for the organisation and deployment success of stakeholder intervention. Some pointers have been highlighted below, addressing efficient planning (to avoid technical issues) and effective time planning (to avoid delays and subsequent setbacks). All of these elements are key for the delivery of impactful engagements.

Frequent meetings with a focused message are recommended when engagement takes place online due to the ease of attendance. Planning meetings to consider people's work and personal schedules to avoid clashes and ensure maximum engagement/attendance is essential and needs to take into account the different ways people live and work. For instance, evening events can be excellent for people with busy work schedules, but likely to be unsuitable for professionals with families.

Promote diversity and inclusivity - Securing a diversity of viewpoints and experiences is crucial to the success of the project. Ensuring the inclusion of minority voices to include equal representation of age, gender, ethnicity etc. requires additional planning. To guarantee an equal representation amongst those demographics it is recommended to set a quota in order to ensure this equality. In regards to including those with disabilities, the requisite assistive technologies, and resources need to be provided so that those with disabilities can fully participate. It is also essential to ensure that all demographic groups are included when communications of the event are being made, taking into account issues including the digital divide of older people, as well as issues with literacy from some sections of the community.

Key takeaway recommendations coming from this process are summarised below:

- I. **Adopt a contextualised method to workshops which avoids a 'one size fits all' approach** - Workshops are discreet events with differing characteristics because of the variability present in each iteration (audience composition, location, time of day, etc). As a result of this variability, what works at one place does not necessarily work at another and formerly effective approaches can prompt adverse reactions. Cultural differences are a factor that +CityxChange continues to consider when adopting different practices from LHC to FC. The differences between the socio-economic contexts between Norway and Ireland (the two LHC) have shown that the same approach cannot be replicated and that specificities need to be considered prior to attempting adoption. Therefore, effective engagement requires that we listen, observe, and adapt our approaches; to establish what practices were efficient and why.

As part of the monitoring and evaluation process, WP7 has sought to implement a comprehensive methodology, which could be used across different tasks and partners. To that end, WP7 have co-created a feedback and evaluation form that is utilised as the basis of post-activity interviews with partners in order to bring out tacit knowledge about the intervention in a standardised manner. The evaluation form is, however, only a starting point of discussion - WP7 follows up with partners to ensure that knowledge is being captured and that lessons are being linked to broader themes within the project.

The results are also linked to project deliverables and other documents (internal and external), thus ensuring triangulation of information and a tailored approach towards specific project interventions. This process allows us to capture the details on what practices worked and didn't work and provide an explanation (whether logistical, cultural etc) as to why from the perspective of the audience.

II. **Citizens are not a homogenous group but constituted of a variety of different sub groups and need to be seen as such;** In order to ensure effective engagement due to this variation in the population of citizens , it is recommended that smaller/individual group workshops are conducted while also ensuring equal representation of voices amongst the community and local stakeholders especially from communities which may be minority voices.

- **To support the capturing of individual citizens or small groups perspectives is significant and should be enabled, empowered, and connected with.** If and when possible; creating/utilising programs such as the 'Go and Find Citizens' that will help improve citizen perception since they show a concrete interest in local citizens views¹³. For example, "Go and Find Citizens" activities improve citizen perception and trust in public institutions since they show a proactive attitude and real interest in getting in touch with them. These kinds of actions last a day or so and are based on going directly to find citizens instead of waiting for them to come to us (public institutions). They could be implemented using different methods, such as: (1) street stalls installed into another event, pop-up installation or the street; (2) voting stations located in lively public spaces where people pass by everyday; (3) mobility points such as busses stopping in strategic places around the city; (4) proposal submission desk installed on the street or inside a public space or event; and lastly, (5) voting by postal post. Even though such an activity was not trialled within the project to date, activities and programs such as this encourage local stakeholders to feel involved in the process of the project will lead to better, more inclusive and accurate work in depicting these communities improving the work of the project. +CxC had various other interventions such as Mapping Sessions, Positive Energy Champion Campaigns, City Engage Weeks, Climathons, amongst many others, that enabled, empowered and connected with stakeholders. These initiatives were instrumental in capturing different perspectives and contributed to overall citizens' involvement in the development +CityxChange solutions.
- **Ensuring continuous promotion of the project and utilising communication tools to highlight progress .** Trust in these projects is fragile, and especially so in cases where a project promises a lot but lacks implementation or observable results. Failure to deliver or to be seen to deliver can contribute to a loss of support for the project and foster a sense of apathy towards the project's work and goals. One way of doing so is by finding opportunities to showcase the project's results, such as a regular newsletter summarising previous meetings/events, highlighting work carried out and what has been achieved within +CxC, citizens who may be unable to attend workshops/events up to date on what was discussed in previous meetings and remain engaged over the longer term. Whereas these methods can be useful for overall communication and dissemination purposes, citizens are keen to see tangible results, which is when initiatives such as participatory budgeting are well

¹³ D3.2 available here: [D3.2-Delivery-of-the-citizen-participation-playbook.pdf \(cityxchange.eu\)](https://cityxchange.eu/D3.2-Delivery-of-the-citizen-participation-playbook.pdf)



perceived by the audience. Focusing on the dissemination of these is critical for the successful promotion of the project across different target groups.

- **Facilitate communication between the stakeholders to foster clarity and openness surrounding expectations, promises and plans.** A clear line of communication between stakeholders and project leaders/coordinators is critical as it helps to maintain trust in the project from stakeholders and ensures that the expectations, promises and plans of the project are developed in co-creation with stakeholders and aligned to their feedback and recommendations.
- **Citizen empowerment should form part of engagement training** - Citizen engagement is a powerful element that if utilised well can contribute to stronger support, increased participation, co-funding, and continuation of efforts after the conclusion of the project. Decidim, as mentioned in Recommendation 1, can also be used in this scenario to foster citizen empowerment by formulating processes for planning, participatory budgeting and public consultation. A further recommendation is that a member of the organisation can also be trained to facilitate communication, allow specific groups to voice concerns, suggest ideas and ensure a continuation of efforts through the adoption of particular facets by the local community.

Data Driven Decision-Making

Context:

Understanding how to get the data that identifies the cities needs and provides answers is critical for the success of the project. Ensuring high quality, relevance, and the creation of good pathways for the data to inform decision-making has been a paramount for LHC and FC.

The mechanisms for data collection should take into consideration automated and streamlined approaches to promote a cost and time-efficient process, limiting potential administrative delays and inherent data collection risks. This approach would best encourage sustainability, provide longitudinal data and provide a basis for future work. However, continued engagement is also needed to engage the community.

The responsibility of translating complex concepts to the general public lies with the organisers and is a key element of effective data collection; stakeholders need to understand what questions are being asked in order to provide valid and relevant feedback. It is also paramount for the partners to define and format questionnaires in the right manner in order to get well-informed, factual and transparent information from stakeholders and audience. It is also critical that organisers use data capturing software to ensure that comprehensive data is being gathered and analysed after each event as a means of maximising impact and allowing organisers to continually improve their events. Ensuring data driven decision-making is vital to the success and sustainability of the project objectives’.

This information captured from both local stakeholders and partners, contributes to transparent discussions on concerns of the community, and subsequent decisions on the implementation of corrective measures where there is a need for improvements.

Core Group
Partners;
Directly Involved
Stakeholders;
Indirect Local
Context.



Recommendation 1 : Use participatory platforms to establish and maintain trust with local communities by promoting stakeholder consultation results and their implementation.

This effort was carried out by Lighthouse Cities, Limerick (mypoint.limerick.ie) and Trondheim (Decidim), in order to collate the consultations and surveys conducted in one location.

Decidim is a free open-source platform for citizen engagement. In Trondheim, Decidim was used to facilitate different processes with a focus on generating ideas, writing proposals and voting. Decidim was used in the different initiatives in Trondheim such as Playable Trondheim, Borgerkraft (Citizen Power) and Trondheim Katedralskole. Decidim was successful, particularly for widespread dissemination, by providing a platform for sharing information with the public and an avenue for stakeholders to offer proposals for local projects. Decidim's use was also successful in Trondheim Katedralskole, a local high school, as it had a clear objective of capturing proposals for projects that could be implemented in the school and a defined target group.

Similarly, MyPoint is a public collaboration and consultation portal of Limerick City and County Council. Stakeholders can utilise this portal to participate in public consultations, public surveys and view statutory notices. Stakeholders are required to register for an account to make a submission, with the registration process being a one-time process. A registered account can be used for all of the Council's online public consultations and those public surveys where registration is available/required. Stakeholders will be able to record submissions across multiple consultations and save the progress of partially completed submissions to complete at a later date. Complementing in-person stakeholder consultations processes, this platform has been implemented to make participation even more straightforward and accessible.

Regulatory Challenges

Context:
 One of the main scopes of +CityxChange is to demonstrate local energy systems as part of the development and operation of positive energy blocks (PEB) and districts (PED). As stated in D5.9, testing and implementing technology within the domains of energy transition are a challenge for the energy regulatory framework internationally. Regulatory barriers hinder the development and/or implementation of new technologies, new business models and new entrants in the space of commercial opportunities linked to the green transition.

The legislative roadblocks experienced in Limerick when it came to installations of turbines are a good example of the types of challenges that were faced by other LHCs and FCs in the project. The installation of the turbines in Limerick have been drawn out due to severe delays caused by Covid-19. The planning body in Ireland, An Bord Pleanala, has seen severe backlogs in meetings and planning approval for infrastructure. There were two options for applications, a shorter, internal, consultation and application or a longer, external consultation and application. The shorter, internal application was estimated to take up to eight months whilst the external application was estimated to take up to fifteen months. These forms of delays which prevented addressing any regulatory roadblocks have hampered the implementation of +CxC interventions. These types of delays and backlogs will be common in nations regardless of differing

All Local Audiences



regulatory landscape and need to be considered when evaluating the implementation of CxC interventions and the success in navigating regulations.

These challenges highlight the importance of a stepwise regulatory process, as created by Trondheim in *Deliverable 5.9, Playbook of regulatory recommendations for enabling new energy systems*¹⁴ that can be applied across the project.

Equally important will be the consideration of regulatory bottlenecks that will come up when developing the prosumer/flexibility market, combined with the broader regulatory landscape, e.g. on spatial and urban planning regulations, EU market directives, and GDPR. It must also be considered that regulatory fixes that are successful in one LHC/FC are unlikely to be applicable due to context-specificities, including geographical, demographic and cultural differences across other LHC/FCs in +CityxChange. This topic will be further analysed in the next version of this deliverable.

Recommendation 1: Adapt to the Current Energy Paradigm Shift:

Europe's energy supply and consumption is experiencing a profound paradigm shift with rapid advancements in technology and cities transitioning towards a decentralised energy market structure. However, existing regulatory and legal frameworks are acting as obstacles in the transition towards positive energy cities¹⁵. The challenges of an energy paradigm shift is something the LHCs and FCs are experiencing directly as burdensome legal frameworks and incumbent business models dominate the energy landscape. As a result:

Lighthouse cities could consider calling for **regulatory dispensations** (depending on local settings) as established by Trondheim as an alternative to legal sandboxing to use the economic and social benefit of such dispensations to break open markets. Trondheim's step-by-step guide, as described in D5.9, includes six steps focusing on national mobilisation action to achieve regulatory dispensations and get regulations around renewable energy modified.

- i) Establish dialogue with the regulator
- ii) Clarify the needs for dispensations from the current regulations
- iii) Send applications for dispensations to the regulator
- iv) Receive dispensation from the regulator
- v) Status and plans: report to the regulator
- vi) Proposal for changes in the regulatory framework to the regulator

Replicating and adapting these activities in Limerick and FCs can be explored as a recommendation in order to navigate regulatory roadblocks which hinder progress of the project. It is critical to highlight, however, that what constitutes a successful model in one municipality may not be successful in another. Regulatory challenges are a big concern within the project and further updates will be made in the next iteration of this deliverable.

Recommendation 2: Work towards a meaningful integration of different levels of scale (macro - meso - micro scale RES installations) and establish a process

Interdisciplinary innovations need a diverse team able to see the task from several angles and contribute with valuable insight. The work is not linear, and different areas and topics must be attended simultaneously to strengthen performance and promote resource-efficiency.

¹⁴ D5.9 available here:

<https://cityxchange.eu/knowledge-base/d5-9-playbook-of-regulatory-recommendations-for-enabling-new-energy-systems/>

¹⁵ EIP-SCC-Initiative-Regulation-Framework-finished1.pdf (cityxchange.eu) - Page 1

Cooperation with experienced insurance companies and regulatory authorities is vital so as to be able to support experimental solutions such as the flexibility market which are defined in D2.3 as ‘markets that enable various stakeholders to purchase flexibility from within a given area. In this context, buying flexibility means paying another party to shift their pattern of energy production or consumption, either in time or between energy carriers¹⁶ and to enable the development of viable business cases for these experiments. Due to the lack of regulations/implementation of EU directives in relation to smart cities, prosumers, energy trading and energy trading platforms, it is incredibly difficult to create a viable business model which contains a bottom-up approach that empowers citizens while also being attractive to investors. With a solid regulatory structure in place which clearly defines the roles of prosumers, the social and environmental objectives of smart cities for a community, whether local or national and the financial-economic model which provides investors with a clear return, regulations can help achieve a viable business model.

It should be realised that where smart city projects want to make changes, the status quo tends to benefit actors who are already involved in the local energy market. This scenario includes the dilemma of service providers whose primary aim is to make a profit and aren’t incentivised through local/national policy to reduce their clients’ energy consumption¹⁷. **Smart Cities should try to identify ways of making agreements that are adapted to the concrete needs of the solutions providers and building owners.**

Risk Management and Adaptation to a fast-changing socio-economic landscape

Context:

The Covid-19 pandemic and its unpredictability emphasised the need for adaptable risk management, preparedness and contingency planning in an unprecedented manner. Project and external stakeholders are all adapting to the new situation, which has subsequently influenced the timing and process of intervention implementation and the generation of project data. The delays in shipping of equipment due to supply chain issues and labour shortages have had a knock on effect on the implementation of +CxX initiatives, public events and integration of technologies.

The CxC Risk Management Strategy, developed as part of *Deliverable 11.6 - Risk Mitigation Registry 2 (D11.6)*¹⁸ will ensure the identification of risks within the project implementation, monitoring and replication. Risk management will be informed by avoidance, transfer, mitigation, adaptation and acceptance by partners. The processes and structure of CxC’s risk management is based on best practices, continuous screening and updating of risk management processes in other Smart City Projects. Risk reviews are conducted at least yearly. The risk management process follows default processes, for example five general steps:

- i) Project Context
- ii) Risk Identification
- iii) Risk Analysis
- iv) Risk Evaluation
- v) Risk Treatment

All Local Audiences

¹⁶ D2.3 available here: [D2.3-Report-on-the-Flexibility-Market-v06-final.pdf \(cityxchange.eu\)](https://cityxchange.eu/D2.3-Report-on-the-Flexibility-Market-v06-final.pdf)

¹⁷ Smart City Guidance Package (researchgate.net) - H2020 SCC1 Smarter Together - Page. 60

¹⁸ D11.6 available here: <https://cityxchange.eu/knowledge-base/d11-6-risk-mitigation-registry-2/>



Risk mitigation preparedness and contingency planning:

Ensuring the existence of predefined mitigation actions allows for a more flexible crisis management and may reduce exposure to external factors. As defined by Stephenie Duchek, in her work on organisational resilience¹⁹, the first step for effective organisation resilience is the anticipation of risks and implementing preventive measures relative to the disruption anticipated and reinforces the need for proactive adaptations.

The COVID-19 pandemic brought with it a new set of challenges that required quick resolutions, such as recognising benefits and limitations of virtual working; completion of project objectives through the integration of virtual measures of engagement and implementation, amongst many others. This enabled the project to establish a long-term strategy to cope with potential barriers. In the following section, we explore the use of Adaptable Mitigation Actions, Contingency Planning and Risk Impact Assessment as means to address market's uncertainty, complexity and ambiguity.

Recommendation 1: Cities should be prepared for market volatility and formulate Adaptable Mitigation Actions tailored to their specific context

Through the mitigation actions highlighted in the project's Covid-19 Risk Impact Assessment (WP11) and the lessons learnt as an experience of the pandemic, best practice would be that partners formulate a thorough and detailed contingency plan in order to identify potential future developments which may influence the implementation and operation of the project or a given initiative.

Make use of Risk Impact Assessment tools, alongside other risk management/mitigation practices, to predict risks and subsequently address concerns and limit exposure to arising issues. Assessment and analysis measures are recommended to be deployed for **comprehensive situational awareness** - both from an internal organisational risk impact assessment and external collaboration perspective. Implementing a methodology within a city context comes with obstacles, such as regulatory challenges, stakeholder engagement, market volatility, and one size does not fit all. Conducting an in-depth analysis of a smart city context is a starting point toward developing a robust, city-specific Impact assessment.

Recommendation 2: Anticipation and Subsequent Analysis of Potential Crisis Scenarios and Formulation of Contingency Plans

Due to the onset of the pandemic, public site visits, supply chains and deliveries were all affected to varying degrees. In contingency planning, project partners should factor in these delays. For instance, partners need to factor in delays when ordering necessary equipment for installations, when applying for approval of installations whether with building owners or local authorities and carrying out surveys of buildings and local sites. Partners usually utilise a time planning tool such as a Gantt Chart which spells out the timeline of the implementation of initiatives/installation of equipment from the first step of procuring the equipment, detailing the time it will take to be delivered, installed and be working at full capacity in order to capture data. It should have a built-in buffer for potential delays in the delivery and installation of equipment.

It is also recommended to **carry out internal organisational sessions to identify strengths, weaknesses and lessons learnt from particular tools, planning, operations** etc. that may have been implemented during previous challenging periods (for instance, the Covid-19 pandemic). This exercise would be useful to establish effective and key measures as contingencies in the face of new challenges. By utilising the energy trading measures (such as Volue Digital Marketplace) and implementing regulations proposed by +CxC partners, communities won't be as negatively affected by downturns in global energy markets. By enabling citizens to trade and sell

¹⁹ Duchek, S. "Organizational Resilience: A Capability-Based Conceptualization - Business Research." SpringerLink. Springer International Publishing, January 14, 2019. Available here: <https://link.springer.com/article/10.1007/s40685-019-0085-7#citeas>

energy which is produced by RES on a local level, the external factors that can cause volatility in the energy market will be significantly diminished. Similarly, energy storage will help cities in preparation for market volatility where there may be a cut off of energy storage reserves that can be tapped into to ensure that local energy demands are met.

Contingency planning and working through crisis scenarios allows for building standardised response plans for certain types of situations, identifies gaps in current crisis response capabilities, and helps prioritise the types of crises that would be most important to prepare for. The Covid-19 pandemic strong-armed local communities into a crisis management mindset. Still, it was also instrumental for developing crisis responses and helped strengthen understanding of supply chains and environmental concerns, which are important lessons to carry forward.

Recommendation 3: Risk Identification and Regular Risk Reviews in Context of Local Conditions: +CxC's Risk Identification considers individual risk and overall risk to the project. Risks are to be raised by project members but are advised to go through the task leaders as risk owners. The Project Manager is then tasked with assessing the risk(s) and its status with those who originally raised it.

The risk evaluation step assigns a risk owner, defines appropriate risk response strategy, and discusses and defines mitigation actions²⁰. New risks need to be presented to the Technical Board for WPs and cities to coordinate a response. It is advised that the addressing of the risk be managed locally by the cities for Demonstration Projects as well as by WP leaders.

The risk reviews must include possible scenarios in the future, to better understand influence factors and possible cross-dependencies, and to understand potential changes in environmental and context conditions.

This approach is consistent for all classes of risk and includes the identification of new risks, review of existing risks, adaptation of risk level assessments and adapting risk response strategy. Furthermore, identifying best practices for implementation of mitigation actions and follow up of mitigation results so far as well as learning from other smart city projects and external factors. The reporting of risks to the relevant bodies, escalation of risks when needed, and consistent and structured tracking with a detailed risk table is a crucial element in risk management in +CxC.

In order to guarantee the consistent tracking and managing of risks in line with the approach described above, the project coordinator can appoint a risk manager who will follow the project risks and potential risks raised by partners and update the risk strategy annually.

The information from the qualitative feedback has been collated by WP7 through the QDWG and individual meetings and compiled appropriately to deliver the above mentioned results, findings, insights and recommendations according to the categorisation of DPs, project themes and topics of evaluation. The collated information will be presented in the annual iterations of this deliverable in a format that can be extracted for different uses.

Through discussions with the QDWG it was decided that the information should be made available in a simple standardised, readable, and visual format that can be shared with internal and external stakeholders (as reiterated in [Section 4.2](#)). Format options for the delivery of the guidelines and recommendations include the use of fact sheet elements, solution booklets, and pocket book structure and presentation, and elements that can be

²⁰ D11.9 available at: [D11.9: Risk Mitigation Registry 3 - +CityxChange](#)

shared online through platforms such as the Monitoring and Evaluation Reporting Tool (MERT), SCM, and +CityxChange website. Further refinement of the format options are underway through the QDWG. WP7 will collate all inputs and suggestions from partners and provide a draft template to be used for reporting in following deliverables, D7.14.



3 Data Analysis and Partner Engagement

The following section provides an overview of the process of data capturing implemented by partners to collect qualitative evaluation data that contributed towards the drawing of lessons learnt and recommendations presented in [Section 2.2](#).

Since the submission of D7.8, regular QDWG meetings have been held to discuss and refine the evaluation process. WP7 has implemented a robust data-collection process and the Evaluation Framework to ensure the involvement of the entire Consortium; thus securing high-quality deliverables. WP7 is consistently seeking to foster collaborative effort, and aims at minimising the impact of the inherent risk of work being siloed.

Through this ongoing process, WP7 received evaluations from three partners - LCCC, Mesto Pisek (MP), ISOCARP. Further investigation with the wider consortium is planned for the next deliverable; after this pilot phase amongst the three partners. Individual interviews with LCCC and University of Limerick (UL) (May 7, 2021) and MP (August 26, 2021) took place in the months before the submission of D7.11 for QA, which were further substantiated by QDWG meetings, WP monthly meetings and electronic communication. In addition to the insights gathered through this process, WP7 has reviewed relevant deliverables produced by the +CityxChange Consortium and have cross-referenced lessons learnt to create a comprehensive overview of the collective effort at M36.

For the next iteration of this deliverable, WP7 will continue to work with partners towards strengthening the existing framework, ensuring comprehensive city-specific perspectives and learnings leading to the determination of constructive and detailed recommendations and guidelines.

3.1 Qualitative Evaluation Feedback - Steps for Evaluation Implementation

D7.8 reflected on WP7's collaboration with project partners, from WP (4, 5, 6, 7, 8 and 9), through the QDWG and the development of the Evaluation Framework. This approach has facilitated the collection and analysis of input from partners through a plethora of processes. Namely, *feedback forms, interviews, learning sessions, informal discussions, and the review of relevant project documentation* (please refer to [Annex 3](#) of this deliverable).

Through the series of scheduled QDWG meetings facilitated by WP7, the application process of the Evaluation Framework had been discussed between partners prior to the selection of specific interventions to be evaluated by partners. The Positive Energy Champion (PEC) campaign is one such intervention that LCCC evaluated over time. In April 2021, LCCC hosted a City Engage Week, with the PEC campaign making up part of the week's activities. Prior to the week, FAC (KPMG FA) and LCCC discussed ways in which the PEC activities could be evaluated, and how details could be reported. Similarly, discussions were had with MP on how to evaluate their involvement in a community engagement event

in which Smart Písek took part in showcasing projects and initiatives, including +CityxChange. Further details of these evaluations are provided below.

LCCC opted to use the Evaluation Framework for the evaluation of various aspects of the PEC campaign. Prior to the +CityxChange City Engage week, various discussions were held between FAC (KPMG FA) and LCCC on the process of evaluation, what evaluation tools are available, and what to evaluate. A similar process was followed with MP, where they opted to evaluate their participation and impact at a local community engagement event in which +CityxChange and other smart initiatives were presented to the public. ISOCARP also made use of the Evaluation Framework feedback form to report qualitative data on their respective project intervention.

3.1.1 Steps for Evaluation:

Step 1: Identify

Partner	Project Intervention	Related DP/Themes	
		Demo Project	Theme
LCCC	Positive Energy Champion Campaign	3	7
MP	Festivities in the City of Písek (Smart Písek Representative Stall)	5; 11	7
ISOCARP	Storytelling Workshop Smolyan: Integrating Storytelling for Youth Engagement	11	7

Step 2: Align

Demo Project	Theme (Task 7.4)	KPI	Partners Involved	Which topics match (as best possible) what you will want to know from your intervention? ²¹
Project Intervention: Positive Energy Champion Campaign				
3	Co-Create Positive Energy Blocks through Citizen Participation	Th 7: Community Engagement Activities (socio-economic perspectives)	KPI 22, 27 - 32	LCCC, UL, SE, IES, MPower, OV, - Lessons learnt and challenges faced in getting sustained public participation and buy-in - Behaviour change, around project objectives. - How are citizens directly/indirectly contributing to the establishment of DPEBs? - Most effective CE tools - Most effective CE interventions implemented to date - Open calls to promote innovations and solutions driven by the community - Governance structure issues between stakeholders (formal) and the community - mindshift

²¹ These topics formed the basis of our discussion through the interview process with partners. These were established while co-creating the Evaluation Framework and have been included here to reiterate that.



Project Intervention: Festivities of the City of Písek (Smart Písek Representative Stall)

3	Co-Create Positive Energy Blocks through Citizen Participation	Th 7: Community Engagement Activities (socio-economic perspectives)	KPI 22, 27 - 32	Smart Písek, The city of Písek, The cultural centre of Písek	<ul style="list-style-type: none"> - Lessons learnt and challenges faced in getting sustained public participation and buy-in - Behaviour change, around project objectives. - How are citizens directly/indirectly contributing to the establishment of DPEBs? - Most effective CE tools - Most effective CE interventions implemented to date - Open calls to promote innovations and solutions driven by the community - Governance structure issues between stakeholders (formal) and the community - mindshift
11	Enable consumers to invest in their buildings, which is critical to the creation of a PEB	Th 7: Community Engagement Activities (socio-economic perspectives)	KPI 22, 27 - 32	Smart Písek, The city of Písek, The cultural centre of Písek	<ul style="list-style-type: none"> - How are citizens directly/indirectly contributing to the establishment of DPEBs? - Motivations for participation in engagement activities - Understanding by stakeholders of key project concepts - Level of buy-in by community - Behaviour change, around project objectives. - Level of empowerment felt by citizens to influence/shape a clean energy future in their city - Overcoming psychological impact of Covid-19 and getting investment into buildings - Perception of the difficulties of realising RES solutions - How to make sure that RES are top of mind for new investment? - How to get convince community stakeholders on adopting irregular or out-of-the-box solutions' - How to extract knowledge from partners? (wp7 & 9)

Project Intervention: Storytelling Workshop Smolyan: Integrating Storytelling for Youth Engagement

3	Co-Create Positive Energy Blocks through Citizen Participation	Th 7: Community Engagement Activities (socio-economic perspectives)	KPI 22, 27 - 32	ISOCARP, the city of Smolyan and youth city representative	<ul style="list-style-type: none"> Lessons learnt and challenges faced in getting sustained public participation and buy-in - Behaviour change, around project objectives. - How are citizens directly/indirectly contributing to the establishment of DPEBs? - Most effective CE tools - Most effective CE interventions implemented to date - Open calls to promote innovations and solutions driven by the community - Governance structure issues between stakeholders (formal) and the community - mindshift
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Step 3: List

Activity list	Timing	How?
PEC Campaign	M34	Feedback Form; Post Activity Interview
Festivities in the City of Pisek (Smart Pisek Representative Stall)	M34	Feedback Form
Storytelling Workshop Smolyan: Integrating Storytelling for Youth Engagement	M36	Feedback Form

Through discussions, all partners opted to make use of the feedback form developed through the QDWG, and have follow-up meetings (if and where relevant) to discuss further details. From the topics derived from the partner’s experiences and desire to improve, these aspects will be included in our future work with D7.14.

Through engagement in the QDWG, the various approaches and options of using the DPs and Themes were discussed and it was mentioned that the use of the themes (from T7.4) as the main categorisation for reporting might be suitable. It is, however, acknowledged that some of the themes are cross cutting, like ‘Regulatory and Legal aspects’, ‘Community Engagement’, ‘Environmental Impact/Solutions’ and ‘ICT’, and would have an influence on interventions and the guidelines and recommendations derived through evaluation. These can be included as cross cutting elements when collating information for other themes, but can be a main category as well if enough specific content/feedback is available for it. The following figure provides a visual representation of the proposed categorisation of the outputs. These are currently undergoing refinement by the QDWG, which will be reported on in following iterations in this series of deliverables.

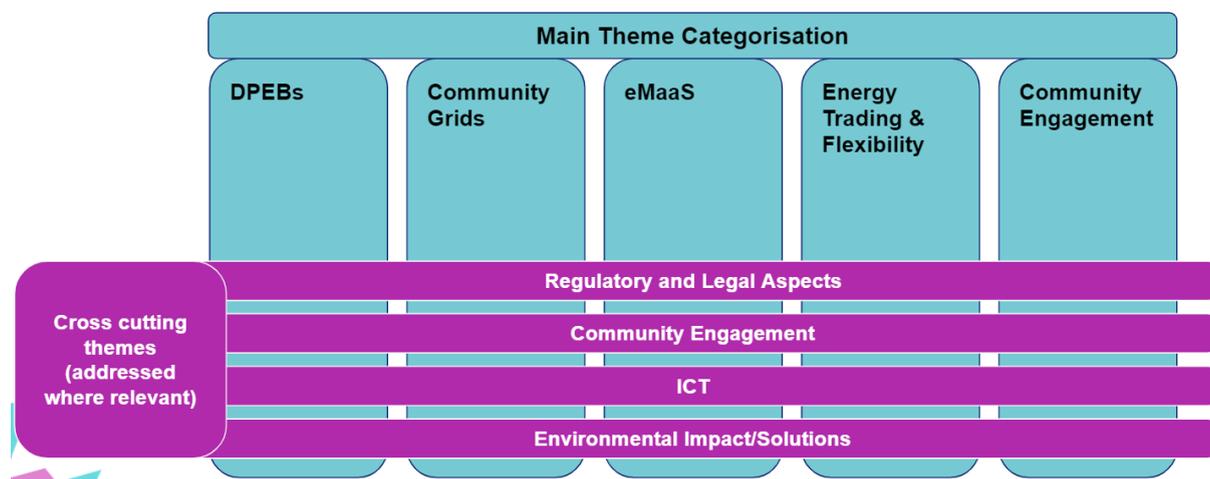


Figure 3: Proposed Output Categorisation (under development)

3.2 KPI Data Assessment and Qualitative Evaluation

The functioning of the framework process allows for quantitative data collection and reviews to occur alongside the qualitative process. This ensures that results from both processes are considered in the finalisation of guidelines and recommendations on the

defined project themes. These will be shared online via the +CityxChange websites and dashboards and through condensed reporting formats such as pocket books, or fact sheets (discussed in [Section 4.2](#)).

The figure below further illustrates the framework.

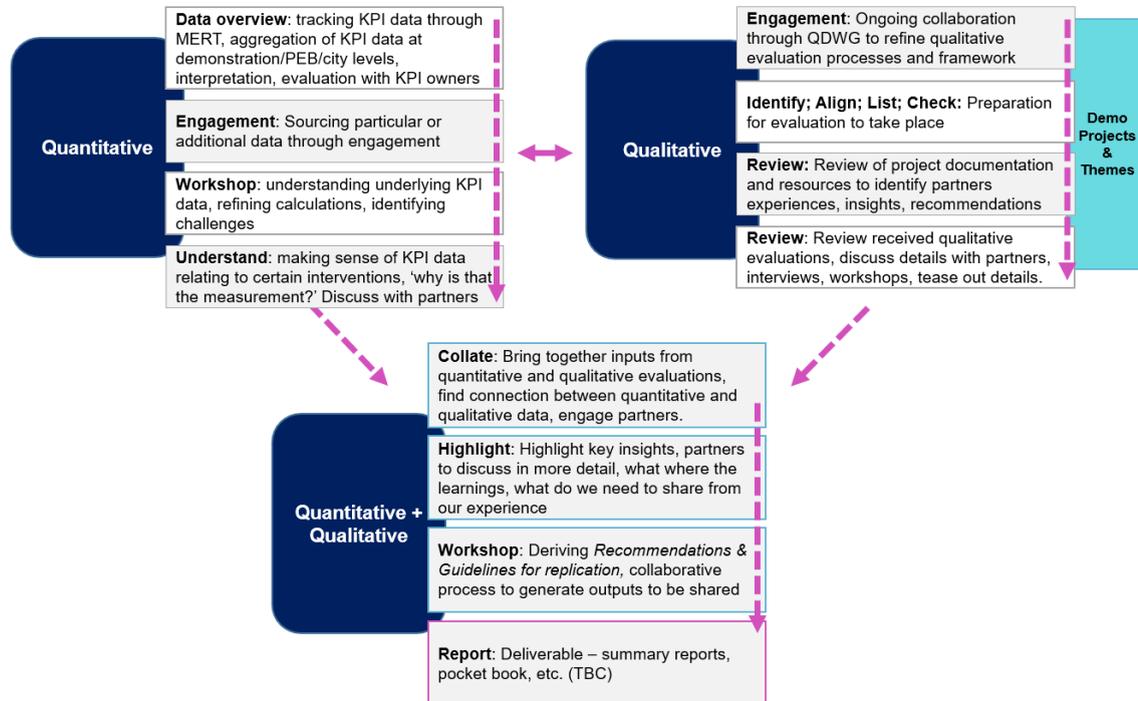


Figure 4: Evaluation Framework Process.

In reference to the figure above, the following sets out the understanding of the framework process in terms of the quantitative and qualitative elements.

Table 5: Quantitative and Qualitative Evaluation

Quantitative Evaluation	Qualitative Evaluation
Considers KPI data and other quantitative datasets produced in the project and reported by partners.	Considers engagement with partners and stakeholders regarding the evaluation of project activities, interventions, and insights into quantitative data.
KPI data is captured, aggregated and tracked through the MERT, while ongoing engagement with partners will identify other quantitative data points to take into consideration. As described in D7.12, the MERT and SCM provide platforms where contextual information that relates to project activities can be captured and shared. The MERT provides KPI owners with the option to add qualitative commentary on the data submitted, while the SCM provides an 'Insights' section where qualitative information on project interventions can be shared. The insights, guidelines and recommendations derived from the evaluations	Ongoing QDWG collaboration ensures the implementation of the Evaluation Framework processes for project activities and interventions. WP7 focuses on data collection and analysis from different sources to ensure a comprehensive overview of project outcomes and uses various data collection techniques to support ongoing effort of LHCs and FCs.

<p>and KPI data can then be shared through these platforms to a wider audience.</p>	
<p>For evaluation, the quantitative data is assessed with input from partners and KPI owners (through workshops, discussions, and other engagement) to clearly understand and interpret data collected.</p>	<p>Qualitative data includes the evaluation of activities/interventions received from partners (through feedback forms, interviews, informal discussions, group workshops) and the review of relevant project documentation (deliverables, meeting notes, learning sessions, etc.).</p>

The quantitative and qualitative inputs are reviewed and discussed in conjunction, in collaboration with relevant partners to refine guidelines and recommendations from the inputs provided. These inputs are then collated and reported in the most suitable format and shared internally and publicly through the WP7 T7.4 deliverables, until the development of the finalised output format for which collaboration and decision-making is ongoing (further detailed in [Section 4.2](#) of this document).

Qualitative evaluation will continue to be carried out through analysis of KPI data. It has been proposed in the QDWG that an evaluation exercise can be performed with KPI owners who have reported reaching their KPI targets. The evaluation can then reflect on the processes, activities, challenges, solutions, and outputs of the interventions monitored, and what insights and recommendations KPI owners can share from their experience on the interventions.

As of Month 36, KPI data for 15 of the 33 KPIs have been submitted to the MERT through its manual data capturing process, and are displayed in each KPI's individual interface. Users of the MERT are able to see the data captured, and view the overall performance of the KPI compared to its expected/targeted impact. This data is shown on the interface, illustrated using graphs, and is also downloadable in a summary PDF format.

The interaction between qualitative and quantitative data is critical for the successful implementation of the M&E. WP7 collates inputs from separate datasets and seeks interlinkages to build a holistic approach towards evaluation and to leverage project knowledge developed under each strand (qualitative and quantitative). For instance, delays in confirming KPIs are linked to specific challenges outlined and discussed through the QDWG. By having a comprehensive overview of these issues, WP7 works with partners towards finding tailored recommendations and offers international best practice guidance.

To ensure that the activities from both KPI confirmations and qualitative evaluations are aligned, WP7 uses a roadmap, which highlights upcoming interventions and linkages between them. A screenshot of the roadmap in existence may be found in [Annex 5](#).



4 Upcoming Interventions for Evaluation

Using the Evaluation Framework developed with the QDWG, WP7 will continue facilitating regular engagement with project partners in order to determine which project interventions in specific demo projects and associated themes should be evaluated and the appropriate way in which the evaluation can take place. This will be facilitated by the Event Planning and Tracking CxC Calendar. Recent engagement with WP4, WP8 and WP9 have highlighted various opportunities where WP7 can collaborate with these work packages to have project interventions evaluated.

Table 6: Upcoming Interventions for Evaluation

WP Collaboration	Upcoming Interventions
WP4	Interact with WP4 to strengthen the outcomes from stakeholder engagement to deliver high-quality formal evaluation of project interventions. Support WP4 with best practice recommendations and lessons learnt.
WP8 (as outlined in T7.4 and T8.1)	WP7 is engaging with WP8 and WP9 on the collection and sharing of qualitative, learning, and experience data and information. WP7 will collaborate with WP8 to determine appropriate, simple themes according to which information can be collected and reported. Content for these reports will be created to share technical and descriptive information on characteristics of specific initiatives, how those initiatives work, their aims, complications, and learnings. WP8 would work towards creating a simple story to disseminate information on the project, for which it would require simplified guidelines and recommendations on complex processes. WP7 will assist WP8 by providing guidelines and recommendations on the qualitative feedback received to inform replication profiles. These guidelines and recommendations would be discussed in monthly meetings between WP7 and WP8, also shared through work package specific mini reports and discussions in the QDWG meetings. Further collaboration between WP7 and WP8 will be conducted in the next reporting period regarding the collection and analysis of qualitative data and to set up a process of sharing relevant information and insights.
WP9	WP7 will collaborate with WP9 to determine which opportunities are available to share information between WP7's evaluation outputs and the learning sessions conducted through Task 9.1, and storytelling workshops conducted through Task 9.3. Feedback collected from these will be presented on an ongoing basis and will be recorded in the next iterations of this deliverable going forward.



As part of WP7 updated roadmap, the following engagement with individual WP lead will be taking place:

Table 7: Specific Engagement and Expected Results

WP	Specific Engagement and Expected Results
WP4	City-specific engagement to take place over the next few months Feedback workshops and collection (informal post-activity interviews) Confirm guidelines and recommendations from project interventions and submitted deliverables with respective partners
WP5	
WP6	
WP8	Understanding replication requirements and tasks and how can we strengthen the effort through recommendations and lessons learned; Focus on the interlinkages between WP7 and WP8.
WP9	Learning workshops feedback and recommendations Story telling workshops feedback and recommendations
WP10	Output format development and relevant target groups (with contributions from all partners)
WP11	Feedback and recommendations from Consortium Meeting City Sessions

In the table below, a **list of topics** for future and/or expected recommendations have been compiled based on discussions with +CxC partners and the experiences they had under four broad themes.

Table 8: Future/Expected Recommendations

Future/Expected Recommendations
<p>Regulatory successes and challenges (ongoing) Regulatory affairs have played a prominent role in +CxC and are one of the key discussion points to date. LHCs and FCs alike have raised concerns around their underlying local/national policy frameworks and have been sharing lessons learnt and step-by-step approaches (some of which have been discussed in Section 2.2). As the conversation evolves, WP7 will be reporting on regulatory successes and continued issues encountered by +CxC.</p>
<p>Hybrid citizen and community engagement (adjusting to a post-Covid-19 reality) Events are expected to take a hybrid form going forward and such arrangements come with their own challenges. WP7 will work with partners to support that effort and provide best practice and tangible recommendation around event organisation to guarantee successful community engagement.</p>
<p>Long-term Sustainable Business Models for Smart Cities (in collaboration with WP8) A long term, sustainable business model for smart city projects is difficult to create due to economic feasibility over a sustained period. The economic payback for stakeholders is generated over a long-term period rather than short to medium term which creates barriers for the project as the majority of people wish to gain benefits in the immediate future. As mentioned in <i>Deliverable 5.13, +Trondheim eMaaS Demonstration</i>²²Trondheim's Electric Vehicle sharing scheme is a potentially commercially viable business model that can potentially be replicated across other LHCs and FCs. This EV scheme is a core part of the CxC project in</p>

²² D5.13 available here: <https://cityxchange.eu/knowledge-base/d5-13-trondheim-emaas-demonstration/>



Trondheim. The discharging of EVs will contribute to energy, capacity and flexibility to local markets. This may boost the business case and provide an increase in cash flow. Creating and implementing a long term, sustainable business model such as the EV scheme across the project would be a significant breakthrough and allow for less reliance on public funding for the running of the project. Other examples will be discussed in the upcoming version of this deliverable.

Output Formats for Dissemination of Guidelines and Recommendations (ongoing)

Forms for guidelines and recommendations are to be city specific with lessons learnt by the consortium. These forms can be shared with anyone with an involvement in the project who can offer useful insights/recommendations which can then be collated into the overall output formats. It is recommended that these forms are filled out precisely with short, concise information that allows for easy collation of guidelines and recommendations.

4.1 Target Groups

To enhance the replication activities carried by WP8, WP7 and WP8 had a preliminary meeting on August 24, 2021, to discuss how to avoid replication of effort and to ensure ongoing collaboration between the two WPs. The first step towards an integrated approach requires a review of the contingencies between T7.4 and Task 8.1" *Replication Assessment of +CityxChange solutions*", followed by steady cooperation between the two WP leaders. Going forward, WP7 will continue to engage with WP8 to ensure that information is provided promptly and that any recommendations deriving from the Qualitative Evaluation Framework (approved in this reporting period) have been taken into account.

To further substantiate this effort, WP7 has linked the work carried out by WP10 in terms of target groups and will further be collaborating with WP8 and WP10 to secure a robust stakeholder engagement and streamline the target groups for dissemination of project recommendations and lessons learnt.

WP7 refers to the target groups identified through D10.8²³, as a starting point for the dissemination of recommendations and guidelines through the finalised output format.

Table 9: Target Groups

Target Group	Details
Local Audiences	<p>Includes the relevant stakeholders of the +CityxChange cities who are:</p> <ul style="list-style-type: none"> (1) partner, contributor, or stakeholder involved in creating and implementing the project, (2) occupy the area of the positive energy block, and (3) are or can get otherwise involved in the co-creation of positive energy districts and blocks. <p>This will include:</p> <ul style="list-style-type: none"> 1. Core Partners (+CityxChange project partners and associated stakeholders), 2. Directly Involved Stakeholders (local stakeholders), and 3. Indirect Local Context (the business community, experts, etc.).

²³D10.8 available at: <https://cityxchange.eu/knowledge-base/d10-8-plan-for-dissemination-and-exploitation-of-cityxchange-project-results-3/>



Broader Community Practice	of	<p>Includes stakeholders relevant to the international context of the project. These include:</p> <ul style="list-style-type: none"> • Other urban authorities (local councils and municipalities, city networks, etc.), • Experts in energy, mobility and smart cities (technology and service providers, research networks, etc.), and • Market influencers (EU institutions, policymakers, think tanks, etc.).
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The list of targeted audiences will be further defined to cater to the specific requirements of the Qualitative Evaluation output formats and the necessary levels of detail. The process is ongoing and will be showcased in the next iteration of this deliverable (D7.14). A key success factor of the +CityxChange project will be its capacity to extend awareness to improve project interventions and activities internally and to disseminate recommendations, guidelines, feedback and activities captured through the QDWG process to a wide range and selection of stakeholders. To achieve this goal WP7 will collaborate with WP10 to facilitate the establishment of communication channels and/or mechanisms tailored to the specific needs of the audience.

4.2 Output Format Development

WP7 is now collaborating with partners to select an output format for the dissemination of guidelines and recommendations.

Part of the process in the collection of qualitative information to drive the development of guidelines and recommendations for replication, is the format in which findings are presented. There are multiple options to consider in the preparation of documents that will contain the various highlights, insights, guidelines and recommendations gathered from partners. As mentioned in D7.8, information should be made available in a simple standardised, readable, and visual format that can be shared with internal and external stakeholders.

Format options for the delivery of the guidelines and recommendations include the use of fact sheet elements, solution booklets, and pocket book structure and presentation, and elements that can be shared online through platforms such as the MERT, SCM, and +CityxChange website. Through engagement with the QDWG, it was highlighted that there are multiple factors to consider in the development of the most suitable output format. These considerations are listed below:

Table 10: Output Format Questions & Considerations

Questions	Key considerations
Who is the target group for this information?	<ul style="list-style-type: none"> • E.g. - Will it be viewed by experienced people in the RES industry, or will it be viewed by the general public? • What is the primary message that needs to be presented, and how much supplementary information/description is needed to back it up?



<p>What is the purpose of the document?</p>	<ul style="list-style-type: none"> ● In what way will the information be presented to stakeholders? ● Informal, open gatherings vs. formal, structured engagement ● What level of detail is actually required? ● Where/how will the information be shared?
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The recommendations, guidelines, feedback and experiences captured through the QDWG process will be useful to a wide range of stakeholders, including the ones listed in Section 4.1 (above). A further breakdown of stakeholders in ongoing and would include further distinction on the basis of the following:

- Internal and external stakeholders (within our project and other similar projects)
- Technical and non-technical stakeholders (some might want all the specifications and detailed breakdowns, while others just want an overview)
- Younger and older stakeholders
- Experienced and inexperienced stakeholders (some might have heard about PEBs and community grids and want more detail, while to others this might be something completely new)

Taking these considerations into account might warrant a balanced approach in the collation of outputs, to include some of the (interesting) technical data/descriptions, while providing a clear overall perspective of the findings. Discussions with the QDWG have identified three potential formats in which the evaluations can be presented - fact sheets²⁴, pocket books²⁵, and solution booklets²⁶. Ongoing engagement with the QDWG will review the output options to determine what the most suitable format will be. At the time of writing this deliverable, the QDWG was reviewing examples and working on a list of ‘pros’ and ‘cons’ for each of the proposed formats, which is listed below.

These are options at the moment, no format has yet been selected for any specific results.

4.2.1 Fact Sheet (Leaflet)

Pros of the Format	Cons of the Format	Potential Target Groups
Concise and to the point info	Smaller format does not accommodate detailed text/tables very well	Broader Community of Practice: <ul style="list-style-type: none"> ● Other urban authorities (local councils and municipalities, city networks, etc.), ● Experts in energy, mobility and smart cities (technology and service providers, research networks, etc.), ● Market influencers (EU institutions, policymakers, think
Good format if content not very detailed		
Easier to replicate (from a template) for multiple themes/topics		

²⁴ Fact sheet example: <https://smart-cities-marketplace.ec.europa.eu/sites/default/files/HumbleLamppost.pdf>

²⁵ Pocket book example: <https://drive.google.com/file/d/1L7c-FEUOfvWQE3am35SYk-4bvPz7RH/view>

²⁶ Booklet examples: Example: https://nws.eurocities.eu/MediaShell/media/2020_Booklets_E-Logistics_Final2.pdf, <https://smart-cities-marketplace.ec.europa.eu/insights/solutions/solution-booklet-citizen-engagement>



		tanks, etc.).
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4.2.2 Pocket Book

Pros of the Format	Cons of the Format	Potential Target Groups
Visually pleasing (images, infographics, layout/design elements)	If not structured well, it can come across as 'messy' / disorganised / hard to figure out what is being presented	All Target Groups
Balance between text and images/infographics.		
Mix of detailed descriptions, tables, and visual representations		
Can work in long or short versions, i.e. can be 2 or 10 pages long and structure/design will still work		

4.2.3 Solution Booklet

Pros of the Format	Cons of the Format	Potential Target Groups
Very detailed	Can become quite text heavy	Local Audience: <ul style="list-style-type: none"> • Core Partners (+CityxChange project partners and associated stakeholders) • Directly Involved Stakeholders (local stakeholders) • Indirect Local Context (the business community, experts, etc.)
Easy to use format, well known	A lot to read through	
Enough space provided to give more detailed explanations	Can be perceived as 'another report' instead of a usable tool	
Structured, formal looking document		



5 Conclusion

Building on D7.8, this report highlights aspects of the Evaluation Framework developed and its methodology implemented.

Insights gained from the review of the qualitative data (partner-specific feedback and project documentation) enabled the identification of the following five topics, focusing primarily on community engagement (Theme 7):

1. **Promoting and sustaining a collaborative culture** - specifically aimed at how to develop a sensitivity to community perception through the utilisation of best practice in citizen engagement, storytelling and learning workshops, and establishing robust methodology to facilitate citizen participation.
2. **Data-driven decision-making** - ensuring high quality, relevance and the creation of efficient pathways for the data to inform decision-making.
3. **Regulatory Challenges** - identifying issues hampering large and small scale innovation implementation, and adapting to the current energy paradigm shift.
4. **Risk management and adaptation to a fast-changing socio-economic landscape** - recognising the impact of COVID-19 pandemic and the need for adaptive risk mitigation and associated contingency planning.

This report outlines how the Qualitative Evaluation Framework is implemented in practice and through which the above lessons learnt and recommendations were drawn by WP7 in collaboration with project partners. It details the process of data capturing implemented by partners to collect qualitative evaluation data, based on the steps for evaluation developed in D7.8. It summarises the key points highlighted from partner feedback that fall under the broader umbrella of Theme 7 (Community Engagement).

Using the Evaluation Framework developed with the QDWG, WP7 will continue facilitating regular engagement with project partners to determine which project interventions in specific demo projects and associated themes should be evaluated (also facilitated by the Event Planning and Tracking CxC Calendar) and the appropriate way in which the evaluation can take place.

Through the QDWG process, WP7 has continued its collaboration with partners to further manage and improve the evaluation process, including qualitative feedback collation. WP7 received evaluations from three partners through this ongoing process - LCCC, ISOCARP and MP. The feedback was captured in a standardised format (as proposed by the framework in D7.8) presented in Annex 4.

After collecting feedback data and information gathered from the review of other deliverables, reports, documents, and monitoring data, the information was assessed and evaluated. WP7 conducted an initial evaluation of the data to highlight important trends and key points. These points were then discussed with partners to identify additional insights and co-develop guidelines and recommendations.

WP7 will continue to work with partners to ensure the successful evaluation of project interventions. In addition, we will strengthen our interaction with WP8 to enhance replication activities, to ensure that information is provided promptly, and that any

recommendations deriving from the Qualitative Evaluation Framework (approved in this reporting period) have been taken into account.

Lastly, WP7 is now collaborating with partners to select an output format to disseminate guidelines and recommendations. Part of the qualitative data collection process, which drives the development of guidelines and recommendations for replication, is the format in which findings are presented. There are multiple options to consider in preparing documents that will contain the various highlights, insights, guidelines and recommendations gathered from partners.

WP7 will continue working with partners through the QDWG and implement the Evaluation Framework developed to guide the provision of insights and recommendations through later iterations of this deliverable (the next deliverable is due in October 2022). To that end, WP7 will be adopting a more city-centric approach for data collation and evaluation as we advance.



References

Anette Beate Sørum., Bjørn Ove Berthelsen., Tor Rune Skoglund., Erik André Bratseth., Tom Nørbech. [2022]. +CityxChange Project. Deliverable 5.13: +Trondheim eMaaS Demonstration. [PDF File]. Retrieved from: [D5.13: +Trondheim eMaaS Demonstration - +CityxChange](#)

Astrid Haugslett., Silja Rønningsen., Kelly Riedesel., Cole Matthew Grabinsky. (2021). +CityxChange Project. Deliverable 5.8: Trondheim Citizen Observatory. [PDF File]. Retrieved from: [D5.8: +Trondheim Citizen Observatory - +CityxChange](#)

Borsboom, J., Gindroz, B., Costa, S and Georgiev, G., (2019). Smart City Guidance Package. EIP-SCC. Retrieved from: [\(PDF\) Smart City Guidance Package \(researchgate.net\)](#)

Duchek, S. "Organizational Resilience: A Capability-Based Conceptualization - Business Research." SpringerLink. Springer International Publishing. (2019). Retrieved from: <https://link.springer.com/article/10.1007/s40685-019-0085-7>.

Fosslien, L. and West Duffy, M., 2020. How to Combat Zoom Fatigue. Harvard Business Review. [Article] Retrieved from: [How to Combat Zoom Fatigue \(hbr.org\)](#)

Gall, T. (2019). +CityxChange Project Deliverable 9.6: Storytelling workshops, inviting other LHCs and FCs 1. [PDF File]. Retrieved from: <https://cityxchange.eu/knowledge-base/storytelling-report-1/>

Haxhija, S., Gall, T. (2020). +CityxChange Project Deliverable 9.11: Storytelling workshops, inviting other LHCs and FCs 1. [PDF File]. Retrieved from: <https://cityxchange.eu/knowledge-base/d9-11-storytelling-workshops-inviting-other-lhcs-and-fcs-2/>

Haxhija, S., Gall, T. (2020). +CityxChange Project Deliverable 10.8: Plan for Dissemination and Exploitation of +CityxChange Project Results 3. [PDF File]. Retrieved from: <https://cityxchange.eu/knowledge-base/d10-8-plan-for-dissemination-and-exploitation-of-cityxchange-project-results-3/>

Hynes, W., Sweeney, J., Lynch, S., Rood, D., Chiddarwar, A. (2019). +CityxChange Project. Deliverable 7.1: Approach and Methodology for Monitoring and Evaluation. [PDF File]. Retrieved from: <https://cityxchange.eu/knowledge-base/approach-and-methodology-for-monitoring-and-evaluation/>

Javier Burón García., Magdalena Sánchez Mora. (2020). +CityxChange Project. Deliverable 3.2: Delivery of the Citizen Participation Playbook. [PDF File]. Retrieved from: [D3.2-Delivery-of-the-citizen-participation-playbook.pdf \(cityxchange.eu\)](https://cityxchange.eu/D3.2-Delivery-of-the-citizen-participation-playbook.pdf)

Laitsch, D., MacKinnon, G., Young, D., Paish, S., LeBel, S., Walker, K., Kutsyuruba, B., Patten, S., Faubert, B., Le, A., Swamp, D., Wakim, G., Watson, K., Rodway, J., Auclair, J., Winton, S., Jervis, L., Shanahan, T., Handford, V., Leithwood, K. (2019). Education Research in the Canadian Context. *International Journal of Education Policy and Leadership*. 14. 10.22230/ijep.2019v14n10a887. Retrieved from: <https://journals.sfu.ca/ijep/index.php/ijep/article/view/887>

Myrstad, M., Livik, K. and Wyckmans, A. A new EIP-SCC Initiative on Regulatory Frameworks within the Integrated Planning, Policy and Regulation Action Cluster. EIP-SCC. [EIP-SCC-Initiative-Regulation-Framework-finished1.pdf \(cityxchange.eu\)](https://cityxchange.eu/EIP-SCC-Initiative-Regulation-Framework-finished1.pdf)

Myrstad, M., Livik, K., Huagslett, A. (2021). +CityxChange Project. Deliverable 5.9: Playbook of Regulatory Recommendations for Enabling New Energy Systems. [PDF File]. Retrieved from: <https://cityxchange.eu/knowledge-base/d5-9-playbook-of-regulatory-recommendations-for-enabling-new-energy-systems/>

Ntafalias, A.; Papadopoulos, G.; Papadopoulos, P.; Huovila, A. A Comprehensive Methodology for Assessing the Impact of Smart City Interventions: Evidence from Espoo Transformation Process. *Smart Cities* 2022, 5, 90–107. <https://doi.org/10.3390/smartcities5010006>

Rood, D., Hynes, W., Lynch, S. (2019). +CityxChange Project. Deliverable 7.5: Data Collection and Management Guideline Report. [PDF File]. Retrieved from: <https://cityxchange.eu/knowledge-base/data-collection-and-management-guideline-report/>

Rood, D., Hynes, W., Singh, M. (2021). +CityxChange Project. Deliverable 7.8: Data Collection and Management Guideline Report (2). [PDF File]. Retrieved from: <https://cityxchange.eu/knowledge-base/d7-8-data-collection-and-management-guideline-report/>

Stein Danielsen., Ola Hendseth., Klaus Livik., Bjørn Ove Berthelsen., Gleb Sizov. (2021). +CityxChange Project. Deliverable 5.5: Energy Trading Market Demonstration. [PDF File]. Retrieved from: [D5.5: Energy Trading Market Demonstration - +CityxChange](https://cityxchange.eu/D5.5:EnergyTradingMarketDemonstration-+CityxChange)

Wyckmans, A., Karatzoudi, K., Brigg, D., Ahler, D. (2020). +CityxChange Project. Deliverable 9.7: Report on Intra-Project Collaboration Including Study Visits and Peer-to-Peer Workshops 3. [PDF File]. Retrieved from: <https://cityxchange.eu/knowledge-base/d9-7-report-on-intra-project-collaboration-including-study-visits-and-peer-to-peer-workshops-3/>

Wyckmans, A., Karatzoudi, K., Brigg, D., Ahler, D. (2020). +CityxChange Project. Deliverable 9.9: Report on Intra-Project Collaboration Including Study Visits and Peer-to-Peer



Workshops 4. [PDF File]. Retrieved from:

<https://cityxchange.eu/knowledge-base/d9-9-report-on-intra-project-collaboration-including-study-visits-and-peer-to-peer-workshops-4/>

Wyckmans, A., Ahler, D., Birkeland, N. (2021). +CityxChange Project. Deliverable 9.12: Report on Intra-Project Collaboration Including Study Visits and Peer-to-Peer Workshops 5. [PDF File]. Retrieved from:

<https://cityxchange.eu/knowledge-base/d9-12-report-on-intra-project-collaboration-including-study-visits-and-peer-to-peer-workshops-5/>



Annex

This Annex contains the following parts:

- [Annex 1 - KPI performance as of M36](#)
- [Annex 2 - Alignment of DPs and Task Themes](#)
- [Annex 3 - Review of Deliverables](#)
- [Annex 4 - Summary of Evaluation Feedback Received](#)
- [Annex 5 - M&E Roadmap](#)



Annex 1

KPI performance as of M36, as cited in Table 8, Deliverable 7.12 - Reporting to the SCIS System (6)

Table 11: Captured KPI data and overall KPI performance

KPI ID	KPI Definition	Expected Impact (Target) / KPI Owner	Measured data	Performance vs Target (%) per partner	Overall Target	Overall Achievement	Overall Performance
1	No. of APIs and systems connected to the Decision Support Tool (DST)	IESRD: 20	IESRD: 20	IESRD: 100%	20	20	100%
2	No. of use case stories in the ICT Ecosystem repository	NTNU: 15	NTNU: 17	NTNU: 113%	15	17	113%
3	No. of municipal staff trained to use the DST	LCCC: 15; TK: 15; MAI: 2; MP: 2; SB: 2; SMO: 2; VORU: 2	LCCC: 20; TK: 29; MAI: 0; MP: 0; SB: 0; SMO: 0; VORU: 0	LCCC: 133.33%; TK: 193.33%; MAI: 0; MP: 0; SB: 0; SMO: 0; VORU: 0	40	49	122.50%
4	No. of new DPEB/DPED-enabling prototypes	LCCC: 13; TK: 13; MP: 2; SMO: 2	LCCC: 11; TK: 7; MP: 0; SMO: 0	LCCC: 84.62%; TK: 53.85%; MP: 0; SMO: 0	30	18	60%
5	No. of study visits by regulatory authorities	LCCC: 20; TK: 20; MAI: 4; MP: 4; SB: 4; SMO: 4; VORU: 4	LCCC: 22; TK: 9; MAI: 0; MP: 0; SB: 0; SMO: 0; VORU: 0	LCCC: 110%; TK: 45%; MAI: 0; MP: 0; SB: 0; SMO: 0; VORU: 0	60	31	51.67%
6	No. of politically-approved Bold City Visions (BCV) with guidelines, roadmaps, and action plans	LCCC: 1; TK: 1; MAI: 1; MP: 1; SB: 1; SMO: 1; VORU: 1	LCCC: 1; TK: 1; MAI: 0; MP: 0; SB: 0; SMO: 0; VORU: 0	LCCC: 100%; TK: 100%; MAI: 0; MP: 0; SB: 0; SMO: 0; VORU: 0	7	2	28.57%
7	No. of changes in regulation	LCCC: 5; TK: 6; MP: 2; SMO: 2	LCCC: 5; TK: 0; MP: 0; SMO: 0	LCCC: 100%; TK: 0; MP: 0; SMO: 0	15	5	33.33%

KPI ID	KPI Definition	Expected Impact (Target) / KPI Owner	Measured data	Performance vs Target (%) per partner	Overall Target	Overall Achievement	Overall Performance
8	Tonnes of CO ₂ -equivalent emission reduction per year	LCCC: 1.188; TK: 11.613	LCCC: 0; TK: 564	LCCC: 0; TK: 4.86%	12,801	564*	4%*
9	Tonnes per year Nitrogen Oxides (NOX) emissions reduction	LCCC: 1.5; TK: 4.7	LCCC: 0; TK: 0.62	LCCC: 0; TK: 13.2%	6.2	0.62*	10%*
10	The percentage of total Renewable Energy Sources (RES) self-supply	LCCC: 100%; TK: 75%	LCCC: 0; TK: 34%	LCCC: 0; TK: 45%	-	-	LCCC: 0; TK: 45%*
11	Increase in new renewable energy system integration	MPOWER: 1.29GWh; SV: 1.99GWh; TE: 1.28GWh	MPOWER: 0; SV + TE: 1.17GWh	MPOWER: 0; SV + TE: 36%	4,538	1.170063*	26%*
12	Percentage district level production versus total energy consumption	MPOWER: 24.7%; SV: 46.5%; TE: 28.8%	MPOWER: 0; SV: 27%; TE: 7%	MPOWER: 0; SV: 58.1%; TE: 24.3%	47.7%	17.0%*	36%*
15	Net useful thermal recovery/year (GWh)	MPOWER: 0.143GWh ²⁷ ; SV: 1.99GWh	MPOWER: 0; SV: 0.510	MPOWER: 0; SV: 25.6%	2,134	0.510*	24%*
23	Total new investments generated (€M)	Total contribution from multiple partners: 40	Sum of total contributions: 98.5	246%	40	98.5	246%
27	No. community participation events organised across all +CityxChange cities	LCCC: 8; TK: 7	LCCC: 5; TK: 4	LCCC: 63%; TK: 57%	15	9	60%
28	No. citizen observatories established	LCCC: 1; TK: 5	LCCC: 1; TK: 6	LCCC: 100%; TK: 100%	5	7	140%

²⁷ Clerical error corrected. Expected impact (target) for MPOWER was previously stated as 1.43GWh, but now corrected to 0.143GWh. Overall KPI target is not affected.



KPI ID	KPI Definition	Expected Impact (Target) / KPI Owner	Measured data	Performance vs Target (%) per partner	Overall Target	Overall Achievement	Overall Performance
29	No. of community participation events/actions	LCCC: 30; TK: 25	LCCC: 38; TK: 41	LCCC: 126.67%; TK: 164%	55	79	143.64%
30	No. of innovation labs/playgrounds contributing to the creation of DPEB	LCCC: 1; TK: 4	LCCC: 1; TK: 11	LCCC: 100%; TK: 275%	5	12	240%
31	No. of Positive Energy Champions trained	LCCC: 20	LCCC: 20	LCCC: 100%	20	20	100%
32	No. of organisations with new sustainable energy approaches	LCCC: 30; TK: 30	LCCC: 24; TK: 15	LCCC: 80%; TK: 50	60	39	65%

*** Data as reported by Month 36, but since the initial report, the KPIs calculations are undergoing another review and refinement process, and therefore are subject to change once calculations have been confirmed. Hence they are not actively shown or visualised in the Online System - MERT.**



Annex 2

Table 12: Alignment of DPs and Task Themes

DP #	Demonstration Projects	Task 7.4 Themes
1	Record data and provide integrated decision support to cities	Th 8: ICT architecture, ecosystem, and data integration, recommendations on digitisation and big data, ICT use, data management, security and protection
2	Co-create a Bold City Vision, to Plan, Implement, Replicate & Scale-up to Positive Energy Districts & Cities	Th 6: Regulatory and legal aspects, Spatial and urban planning to support roll-out of DPEBs
3	Co-Create Positive Energy Blocks through Citizen Participation	Th 1: DPEB/Ds
		Th 7: Community Engagement Activities (socio-economic perspectives)
4	Enable innovation through regulatory mechanisms	Th 6: Regulatory and legal aspects, Spatial and urban planning to support roll-out of DPEBs
5	Foster Innovation and Accelerate Disruptive Technologies to Market	Th 7: Community Engagement Activities (socio-economic perspectives)
		Th 8: ICT architecture, ecosystem, and data integration, recommendations on digitisation and big data, ICT use, data management, security and protection
6	Create PEBs through improved energy performance and integration with the energy system	Th 1: DPEB/Ds
7	Creating the +CityxChange Approach to Community Grids	Th 2: Community Grid, Storage solutions
8	Integrate seamless e-mobility within the PEB	Th 3: eMaaS
9	Enable Peer-to-Peer trading within the DPEB	Th 5: Energy Trading and Flexibility Markets
10	Enable a fair deal to all consumers through a flexibility market	Th 5: Energy Trading and Flexibility Markets
11	Enable consumers to invest in their buildings, which is critical to the creation of a PEB	Th 7: Community Engagement Activities (socio-economic perspectives)



Annex 3

The following table provides an overview of the public deliverables reviewed, and highlights lessons learnt and key insights drawn from the interventions reported in the deliverables. The full text is referenced and is available online. The knowledge generated by the Consortium was then substantiated with the feedback received through the Qualitative Evaluation form in order to deliver comprehensive conclusions for this reporting period.

Table 13: Review of Deliverables

Review of Deliverables	
5.9 ²⁸	<p>Overview of Deliverable:</p> <p>Objective: This report discusses in detail how regulatory issues premise the development of a PEB/PED (Positive Energy Block/District) focused on the Trondheim, Norway case, but with application on the EU level. The dispensation applications for the local demonstrations, which ask for permissions to demonstrate local energy markets in a way that strengthens the incentives to develop and operate PEB/PED, are the outcome of the discussion with the national regulator for Norway.</p> <p>Methodology: To fully cover all local energy system issues and market actions, a methodology was chosen that decomposed the energy system operation in a list of simplified actions. The issues and actions were then analysed and recommendations were given for changes of the regulatory framework. Key issues discussed in detail were the fast growth of installed distributed renewable energy resources, energy/capacity storage, and customers' flexibilities. In addition, an analysis on how the existing power market construction with roles and actions could – and should – be transformed to markets tailored to serve all local renewables and flexibilities was undertaken. Regulatory barriers that may stop and slow down the energy transition were identified. As a result, the +CityxChange project in Trondheim has applied to the regulator for dispensations from existing Norwegian rules regarding market operation and settlement/accounting. The process to overcome regulation obstacles had been managed stepwise and ended with the realisation of the PEB/PED. The process had been supported by a joint understanding of what will be the situation in a post-energy transition phase.</p> <p>Regulatory Barriers: Using the strategic approach, regulatory barriers had been defined both for the demonstrations and more generally for local energy systems. The barriers were identified as critical both when it comes to investments in renewables and flexibility and to how their value shall be justified in operational phases in a PED/PEB, including local market set-up. A critical factor of success for all well functioning markets - including the energy market - was that they follow a regulatory framework that promotes innovation, intended incentives and scope of market operation and participation. The European Green Deal and the energy transition are considered significant forces that will entice reorganisation and change, and well functioning markets would be a prerequisite.</p> <p><u>Barriers that influence the demonstrations in Trondheim</u> - The experienced barriers were extracted from major parties in the development of demonstration areas in Trondheim. They represent investments, city planning, construction, energy supply, energy trade, eMobility and realisation of flexibility. Out of the six experienced regulatory key-stones</p>

²⁸D5.9 available at: <https://cityxchange.eu/knowledge-base/d5-9-playbook-of-regulatory-recommendations-for-enabling-new-energy-systems/>



presented, attention has been on number three (send applications for dispensations to the regulator) and four (receive dispensation from the regulator) in the Trondheim case. These two areas proved to be the most challenging and controversial due to the groundbreaking work needed done and conflict of interest. They are both focusing on how to get dispensations for demonstrations rather than how to move for an operative PEB.

The barriers are especially faced by the involved parties in dialogues with the local grid operator. In addition, discussions were caused by unclear responsibilities when dispatch of flexible resources were detailed and set in operative plans. In the investment phases it had been difficult to estimate the value of the resources because the energy system freedom to maximise value is unclear for the entities involved. During the process of understanding how to cope with regulations that are not future-proof, there were many lessons learnt.

Paradox at System Level - Multiple states have ratified the Paris agreement on climate goals that obligate them to take sustainable actions and reduce their emissions. Norway's Parliament has set even more ambitious targets and provides financial support for emissions reductions projects in all sectors of the economy. Partners in this project have been benefactors of several supported projects in addition to the +CityxChange project.

- Clean energy lies to a large extent in decentralised and distributed renewable energy solutions. Laws and regulations, however, are customised solely to large-scale centralized energy systems. Some key actors directly involved in this case are more or less public owned bodies, that one should expect to have a perspective on the greater good, expediting needed innovations, emphasizing new business opportunities and models, rather than fearing loss of monopoly.
- The EU Taxonomy for Sustainable Activities, which was established to help companies and investors navigate the transition to a low-carbon, resilient and resource-efficient economy by defining which economic activities are environmentally sustainable, is yet to roll out. In absence and in anticipation of a possible EU green support factor, the general impression is that an overall pending approach is taking place.
- A lot of time and money are invested in R&D, testing, piloting and trying out innovations in sandboxes, but solutions and results tend to fail at an easy implementation and use of results at a scaled level. The distance between those wanting and financing testing, those who conduct it and the decision-making authorities seem to reinforce the paradox
- Innovation and development processes are not straightforward, and when planning demonstrations, it was not thought that getting dispensations should become so difficult.
- The vulnerability in application rule, set up by the regulatory body, has caused delays, frustrations and even threatened the whole implementation of the demonstration.

The reason and need for an energy transition is well founded and argued for by the EU and national governments. However, the regulatory implications and consequences for the different stakeholders are complex, not fully evaluated or understood. The consequences of not taking part in the energy transition can be as blunt as loss of opportunities; financially both for the present opportunity but also future innovations, spin-offs, market positions and relevance.

Themes:

Theme 1: DPEB/Ds

Theme 5: Energy Trading and Flexibility Markets

Theme 6: Regulatory and legal aspects, Spatial and urban planning to support roll-out of



DPEBs

Lessons Learnt and Key Insights:

- Norway is a frontrunner when it comes to eMobility with 64% of all new cars sold in August 2021 being electric, and electric personal car share constituted 10% in 2020. Vehicle to grid (V2G) chargers are installed in the demonstration area and electrical buses with fast chargers are parts of the demonstration. Sadly, it is experienced that from the regulatory framework perspective, this is looked upon as upcoming problems rather than local energy resources. This reality perception is a hinder for new technology, new business models and new entrants in the space of commercial opportunities linked to the green transition. The lessons learnt are presented in the deliverables as a list of regulatory barriers with negative influences to actions crucial to take and manage, in the attempt to realise a green transition characterised more or less like the Trondheim demonstration cases. Some regulatory barriers in Trondheim case include:
 - Invest in local renewables (required actions) - (i) Not adjusted to local production and local use of renewables - increased risk; (ii) Regulation does not include an energy system approach; (iii) Regulation not in favour of renewables; (iv) Lack of knowledge of the energy transition complexity and related opportunities - increased risk; (v) Upper limits for buildings' own generation.
 - Connect renewables to grid (required action) - (i) Generation capacity limits call for a production licence; (ii) Extra grid connection costs for renewables; (iii) Metering procedures must be in line with existing regulation.
 - Operate local market-place (required action) - (i) No existing regulation for how to operate local market-places with local energy resources and digitised metering; (ii) Local market operators' licence is not made for settlement and invoicing.
- Consequences of experienced barriers in the Trondheim case include:
 - Legal barriers and consequences
 - Investment and incentive barriers and consequences
 - Communication barriers and consequences
 - Sector coupling and consequences
 - Lack of, and consequences
 - Cultural differences and consequences
 - Socio-economic barriers and consequences
 - Loss of
 - Failing to
 - Ripple effects
- Some of the general recommendations in the process of setting up and demonstrating local energy markets - focusing the involvement with the regulator include:
 - All parties involved must be heard, seen and taken into consideration.
 - Documents, plans, meetings etc. must be available for parties involved. Honesty and realistic expectations of why and what the partners want from the participation is important
 - The work is not linear, and different areas and topics must be attended simultaneously to reinforce one another, save time and to find solutions.
 - Interdisciplinary innovations need a diverse team able to see the task from several angles, and to contribute with valuable insight.

D9.7²⁹	<p>Overview of Deliverable: Objective: This report (Deliverable 9.7) 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 November 2019 and 30 April 2020 (i.e., Months 13-18 of the +CityxChange project).</p> <p>The Learning Sessions are organised with the aim to support Follower Cities in their development of Positive Energy Blocks, including a wide range of topics. The sessions further support the alignment of expectations among partners, Tasks and Work Packages, more informally. WP9 reports that subtle differences in collaboration cultures, communication routines and internal quality assurance procedures, amongst others, come to light more easily in informal discussions, enabling more open discussions that are taken into account for the continuation of the project. The deliverable reports on (i) Learning Sessions on “Getting building owners on board and getting agreements in place for the work to take place” for both Lighthouse Cities, Limerick and Trondheim; (ii) multiple PED Talks; and (iii) other Collaborative events organised by partners.</p> <p>The presentations and discussions made it clear that a PED definition needs to be viable in practice, but at the same time supported by evidence and able to be monitored and compared to others. For +CityxChange, this means that we need to define what kind of added value a PEB or PED label would bring to make it attractive for developers, energy companies, investors, politicians, local communities and other decision makers, and how it will be supported by appropriate KPIs. These concepts and KPIs need to be tested in local and European conditions, monitored, compared, analysed and their results iterated back towards relevant projects. This is the reason why +CityxChange invests a considerable amount of time and resources in cooperation with the other SCC01 projects.</p> <p>It needs to be clarified in which cases PED is the correct ambition. Working at the district scale gives a lot of new possibilities that do not exist at the building scale. However, the most likely best level of optimisation is at the city and regional level, including all demand and supply. Balancing out the regional energy system is most likely the most optimal.</p> <p>Equally important will be the regulatory bottlenecks that will come up when developing the prosumer / flexibility market, combined with the wider regulatory landscape, e.g. on spatial and urban planning regulations, EU market directives, and GDPR. In +CityxChange, we are currently mapping the challenges and barriers in Norwegian and European regulations towards creating PEBs and PEDs.</p> <p>The main point of focus is scale up and replicate. This means that as a project, +CityxChange has a large responsibility for not only developing and testing novel PEB concepts, but above all, to extract experiences, discuss and share them, and in turn learn from others. We need to showcase how PEBs and PEBs can be directly supportive towards cities’ long-term urban development and energy ambitions, and how cities can use the different complementary initiatives into an integrated framework.</p>
	<p>Themes: Theme 1: DPEB/Ds Theme 7: Community Engagement</p>
	<p>Lessons Learnt and Key Insights:</p> <ul style="list-style-type: none"> ● It was reported that the challenge of getting building owners on board and putting

²⁹ D9.7 available at: <https://cityxchange.eu/knowledge-base/d9-7-report-on-intra-project-collaboration-including-study-visits-and-peer-to-peer-workshops-3/>



	<p>agreements in place for the work to take place, is shared across all cities that are participating in +CityxChange.</p> <ul style="list-style-type: none"> • Feedback on Learning Sessions - For those that actively participate, it is not always clear what they have learned until prompted for specific information - and experiences of one event will vary among the participants. For this reason, WP9 would initiate the organisation of collecting a review for each workshop, event or similar activity which they organise, or in which WP9 participates as a project. This will enable the participants to better reflect on the potential impact of a collaborative event, discuss it with others, and feed it back into +CityxChange. • Partners need to be able to test PEDs and to be able to invest in resources for them; this requires a good regulatory framework. • In order to keep project activities going, and to spur on communication and sharing of experiences across partners, all meetings and talks have shifted to digital formats. This in fact enabled WP9 to open up their activities to additional stakeholders (requiring no travel), which in turn has provided WP9 with more inspirational content both from +CityxChange project partners and from peer projects and platforms.
<p>D9.9³⁰</p>	<p>Overview of Deliverable: This report provides an overview of the study visits, peer-to-peer workshops, and other intra-project learning activities performed by the Lighthouse and Follower Cities and the other partners in +CityxChange, between 1 May 2020 and 31 October 2020 (M19-24). The Learning Sessions are an internal forum for +CityxChange cities and solution providers to discuss cross-cutting challenges, exchange experiences, and develop solutions. They form a valuable source of information for T7.4 Guidelines and recommendations and feed into drawing lessons learnt for this deliverable (D7.11).</p> <p><u>Pathways to PEBs Learning Sessions</u> - One of the main challenges discussed was anchoring with building owners, regulatory authorities, and any other stakeholder that needs to be on board in order to make the PEB solution a long-term success. Anchoring includes how to align project requirements with the priorities and needs of the building owners, in particular when the PEB buildings are not owned by the municipality. While some building owners are official beneficiaries in the EU-funded +CityxChange project, others are associated with the project through contractual agreements or MoUs. While MoUs are easier to accomplish when the cooperation is experimental and the outcomes are not sufficiently concrete to enable a contractual agreement, MoU might for example create challenges as they might not be accepted by insurance companies.</p> <p><u>Investment Workshop</u> - An online Investment Workshop was hosted by Officinæ Verdi Group (OV), that aimed to review +CityxChange investment strategies in the light of the ongoing Covid-19 crisis and consequent economic fallout. The workshop was intended to investigate and mitigate the impacts on investment strategy and potential new funding sources within European and national economic recovery plans. Main risks related to investments in cities were discussed, some including business/financial impacts to partners' companies; reduced availability of public funds for energy transition investments at local, national or EU scale; reduced investment capacity for private investors, such as building owners and local SMEs; amongst many others. OV presented a proposal for providing support to FCs in the project for their financial process toward the implementation of PEBs.</p>

³⁰ D9.9 available here: <https://cityxchange.eu/knowledge-base/d9-9-report-on-intra-project-collaboration-including-study-visits-and-peer-to-peer-workshops-4/>



As an example, an open call for financial intermediaries for PF4EE (Private Finance for Energy Efficiency) was presented. All cities have been invited to look into the call and website in order to check for financial institutions in their countries already present in the scheme. Alternatively, city representatives could prepare with their banks to apply for the scheme in order to be able in the near future to help them in financing their projects. Comments and questions were focused on investment alternatives like crowdfunding.

Pathways to PEBs Learning Session for Follower Cities - Võru presented its main challenges on how to bring the city centre back to life by providing vision, analyses and plans for the historical area. This is a challenge that is shared by other cities as well and may lead to joint approaches. Sestao identified political and regulatory challenges for district heating opportunities through sustainable local sources and for a potential solar farm. Further discussions and considerations need to be done in order to see this issue from an economic point of view. A main concern for Smolyan is to have the necessary minimum building area, since the city comprises mostly small buildings. Písek started the learning session by presenting different scenarios of PEBs creation in Písek. As the district is in the city centre, the area is sensitive to any emissions and therefore Písek has to work with emission constrained technologies. Písek presented as a main challenge the energy overproduction during the summer and they consider batteries as a solution to this challenge to redistribute or sell energy to improve the financial balance. Alba Iulia presented its two PEBs and pointed out that the challenge is the additional need for gas-based heating is expensive (high costs in the winter). Alba Iulia already has a Sustainable Energy Action Plan (SEAP), which guides some of the options.

Launch of the SCM Initiative on Regulatory Frameworks - This Initiative aims to support the transition regulatory frameworks that better support the ambitions for positive energy blocks and districts (PEBs/PEDs) and climate neutral cities laid out in the European Green Deal. The Initiative is based on the experiences of +CityxChange and other SCC01 Lighthouse projects. 11 main challenges were identified regarding regulatory frameworks in order to achieve Positive Energy Blocks and District, and climate-neutral cities.

Replication and Knowledge Transfer Workshop - R2M and EAP hosted a session on Replication and Knowledge transfer from WP1-2-3 to WP 4-5-6 to provide a progress update of the DP implementation per FC, to clarify for each FC what the next steps in the implementation of the different DPs are and to exchange experiences and, finally, to update the replication table included in the DoA.

Associated Themes:

Theme 1: DPEB/Ds

Theme 6: Regulatory and legal aspects, spatial and Urban Planning to support roll-out of PEBs, districts and cities, and

Theme 7: Community Engagement

Lessons Learnt and Key Insights

- Cooperation with experienced insurance companies and regulatory authorities is vital in order to support experimental solutions such as the flexibility market, and to enable development of viable business cases for these experiments. As the project moves forward, we will try to identify ways of making agreements that are adapted to the concrete needs of the solutions providers and building owners.
- Several of the +CityxChange cities have good experiences with crowdfunding, these could be shared with other partners and cities who are interested. This could be an important knowledge transfer, benefitting several tasks in the project, as this



	<p>is a cross-cutting theme. OV added that they could research platforms that can be used in different countries and support the cities in their tasks.</p> <ul style="list-style-type: none"> • The feasibility study and DST will help to estimate whether/how to proceed with the Smolyan plans. While finances are an issue, some investors are interested for example in investing in roof PV. • In relation to the Learning Sessions for Follower Cities, overall comments and discussions in the session were around organisational and regulatory aspects, but also included a number of detailed technical discussions and exchanges of ideas and experiences from the cities on how solutions may be adapted for a better fit. • The presentations and discussions clearly emphasised the need for better regulations in order to de-risk energy investments and to enable better cooperative business models. Coordinated cooperation towards influencing regulations was welcomed, and the Initiative was urged to investigate upcoming opportunities in 2021 where we can make a concrete difference already in the short term. While waiting for regulatory changes, it is important that regulatory sandbox activities cooperate more with each other in order to learn faster and to avoid common pitfalls. There was also a clear link to the SCM Initiatives on Standardisation as well as Business models that should be explored.
<p>D9.11 31</p>	<p>Overview of Deliverable: This deliverable describes the approach for the Storytelling workshops and then reports on the Storytelling workshop in Limerick in October 2019, the structure for the Storytelling workshop in Písek and the structure for the virtual Storytelling workshop which took place on the 20th of October 2020. Storytelling is one of the methods and tools for enabling Open 3 Innovation 2.0 inside the consortium, between other projects, and in collaboration with, e.g., prospective cities to replicate developed solutions, as further elaborated in the framework for intra-project collaboration. The overarching goal is the exchange of experiences on how to support local authorities and stakeholders, create impact, manage complexities, build networks, support capacities, assess strengths and weaknesses, mobilise demonstration and research partners, develop Intellectual Property (IPR) agreements, distribute responsibilities, create an appropriate storyline, vision and profile for their city, and arrange successful partner workshops between LHCs and FCs. The workshops contribute to and build at a later stage on the replication profiles which are created as part of Task 8.1: Replication Assessment of +CityxChange solutions.</p> <p>A particular focus is laid on three elements: First, storytelling has an important role in generating support for a project and translating complex ideas or technologies, which are prevalent in +CityxChange, in a communicable format. Secondly, storytelling can and should be seen as a strong tool to facilitate citizen engagement and foster co-creation. Lastly, a particular type of storytelling – transmedia storytelling – has been introduced as a concept and framework. Transmedia storytelling, while being a quite recent concept, gains increasing attention in academia as well as practice.</p> <p><u>Storytelling Workshop 1:</u> The first storytelling workshop in Vienna, Austria, was organised as part of the Learning Workshop. The workshop itself was already reported on in D9.6: Storytelling workshops, inviting other LHCs and FCs 1.</p> <p><u>Storytelling Workshop 2:</u> Building on discussions of current needs and the available external parties in Limerick, the workshop was focused on learning from other cities and international as well as local actors which have been part of early projects related to energy (grid) transitions and community-led developments, and can share their successes, their</p>

³¹ D9.11 available here: <https://cityxchange.eu/knowledge-base/d9-11-storytelling-workshops-inviting-other-lhcs-and-fcs-2/>



challenges, and even failures, as well as answering open questions from public and private actors which are just starting the process. It became evident at various occasions that effective citizen engagement and societal support are both crucial for a project's success, primarily after its formal end, as well as very challenging to achieve. While most younger projects such as +CityxChange attempt to integrate citizen engagement from the beginning and across topics, the implementation remains a difficult task. Objective was to shine some light on the different types of engagement and to explore commonalities, challenges, and learned lessons from various perspectives. Furthermore, comparing citizens' perspectives with project perspectives, collecting ideas and tools on how to create an enabling environment for sustainability transitions and citizen-led initiatives in the context of the project, and formulating a strategy with a set of actions was intended by the workshop.

Storytelling Workshop 3: This workshop that was to be held in Písek, Czech Republic was cancelled due to the Covid-19 outbreak. Instead, a series of online learning sessions were organised. The topic to be treated in this Storytelling Workshop was meant to target the Bold City Vision process and communication strategies in order to involve the citizens and decision-makers in the process. The most challenging aspect of involving these two groups remains on how to start building a compelling narrative on the project's solutions and innovations, to both demonstrate progress and to garner further interest and support. The workshop intended to provide an overview of citizen engagement examples from other SCC01 projects and discuss with the FCs on more sophisticated communication practices vis-à-vis the general public. The planned activities for the Storytelling Workshop aimed at conveying the role of the storyteller (the municipality staff), as a translator of complex information into something that humans react to on a personal level.

Storytelling Workshop 4: By localising citizen engagement, the main idea behind this Storytelling Workshop 4 in Sestao, Spain was to tell stories of places. While using storytelling as a tool WP9 aimed at exploring innovative local communication strategies in order to reach out to the general public. Three main questions are the cornerstone upon which we built up our workshop: (i) Starting point for citizen engagement: how to get people initially involved in projects?; (ii) How to get people to interact with the PED, visit, learn, etc.? (iii) How to create PEDs which build upon the past and current identity of the area?

Themes:

Theme 1: DPEB/Ds

Theme 7: Community Engagement

Lessons Learnt and Key Insights:

- By using the right language, simplifying specific complex ideas in a particular way and addressing personal and social characteristics and emotions of the audience, stories can be easily misused to manipulate the audience and generate support for causes which are not aligned with the individual's actual interests. The workshops shall raise the awareness and sensibility towards the opportunities and potential, as well as providing practical guidelines, approaches and techniques to integrate storytelling in the respective local communication and citizen engagement strategies. The outcomes of the Storytelling workshops are therefore less directly produced materials but instead the project-spanning development of an alternative approach which can be used across a range of fields and tasks in the project and can simultaneously contribute to a variety of the broader objectives of +CityxChange.
- The observations of the interest and active engagement of the workshop participants proved that the storytelling format could generate interest, new



	<p>insights and perspectives, as well as acting as a welcome change to typical workshops. And while the virtual participation was considered as a risk prior to the (pre-Covid-19) workshop, the personal format of the presentations, and the breakout working groups did eliminate any concerns – except the importance of the right audio setup in case of several groups in a small space.</p> <ul style="list-style-type: none"> ● From the facilitator’s perspective, the virtual/physical hybrid format did not constitute a significant challenge and therefore enlarged the list of potential contributors to future events. However, the challenge of combining input presentations, in-depth discussions, and a presentation of the results within a short session is highly challenging if one wants to avoid the interruptions of interesting exchanges of ideas. ● This was further complicated by the change of location, overrunning prior workshops and time constraints at the end. In regard to the content of the workshop of citizen-led transformations and the guiding questions, a few key statements can be made: <ul style="list-style-type: none"> ○ Citizen-engagement does not happen only in a project but requires a strong integration in the overall processes across departments; ○ What works at one place does not necessarily work at another. Effective engagement requires to listen, observe, and adapt with the approaches; ○ Citizens are not a homogenous group but constituted of a variety of different personas and need to be seen as such; ○ The power of individual citizens or small groups is significant and should be enabled, empowered, and connected with if and however possible; ○ Long-lasting projects with many promises but lacking implementation or observable results can lead to a loss of support and overall tiredness of the society; ○ Trust between the stakeholders and clarity and openness of expectations, promises and plans is crucial to create projects jointly; ○ Citizen engagement is a powerful element if utilised well and can contribute to larger support, increased participation in activities, co-funding, and continuation of efforts over the formal project durations. ● Understanding the power of places and how it can be utilised in order to involve people was among the main intended outcomes that Workshop 4 aimed at. Furthermore, through examples and case studies WP9 aimed at exploring the power of localised strategies by combining spatial and non-spatial elements (events, art installation, guerilla urbanism, small scale interventions, parklets, urban prototyping, etc).
<p>9.12³²</p>	<p>Overview of Deliverable: This report provides an overview of the study visits, peer-to-peer workshops, and other intra-project learning activities performed by the Lighthouse and Follower Cities and the other partners in +CityxChange, between 1 November 2020 and 30 April 2021 (M25-30).</p> <p><u>Pathways to PEBs Learning Sessions Online</u> - It was noted that the online sessions have the added benefit that they can reach more participants, and that WP9 can organise regular sessions throughout the entire year, one feeding into the other. Many challenges were discussed in order to brainstorm solutions and next steps. To begin with, partners discussed the challenges of an energy paradigm shift, as it currently exists in an</p>

³² D9.12 available here:

<https://cityxchange.eu/knowledge-base/d9-12-report-on-intra-project-collaboration-including-study-visits-and-peer-to-peer-workshops-5/>



“in-between” state. This is something the lighthouse projects are experiencing directly, as existing legal frameworks and incumbent business models dominate the current landscape. As a consequence, lighthouse projects need to establish “legal sandboxes” and use experimental value propositions to break open markets. Meaningful integration of different levels of scale (macro - meso - micro-scale RES installations) is often lacking. Energy landscape design is very much an interdisciplinary exercise, requiring the integration between energy and urban/landscape planning, and requiring interventions of urban planners, architects, landscape planners etc. There is not sufficient data on these types of solutions in order for them to become more widespread.

The energy consumption component of the energy bill can give an incentive, if it gives savings to avoid peak times. Grid tariffs are a second option. However, here +CityxChange has a societal challenge: the overall grid is still necessary, but energy communities can opt out in order to create their own solutions. This means that only those with lower resources/competency will stay in the overall grid and will need to bear the costs. Maximising self-consumption is another option. Even a small town of 20 000 inhabitants can implement these kinds of solutions. What's required are good drivers, and authorities that can remove the barriers. However, the project does have a head start to tackle these challenges promptly. Local authorities are being asked to establish decarbonisation zones by the Irish government. The advantage of being part of +CityxChange is that we know what a decarbonisation zone is, and we can expand our +CityxChange demonstration area into a decarbonisation zone. Learnings and lessons from +CityxChange can be applied quickly to this request by the government. In +CityxChange, we have pre-existing relationships with most of the building owners in the LCCC demonstration areas. We established MoUs with them to specify the interaction related to this project and discuss expectations.

The sustainable energy community programme is organised nationally (the Sustainable Energy Authority of Ireland). LCCC wants to help create such communities - but having created it, +CityxChange cannot control it. Asset ownership is definitely an issue. What is the additional attraction of owning a local energy community grid? Local authorities are sometimes concerned with being involved in local community projects that might end up in the local authorities needing to support them with substantial funding.

Trondheim PEB Sluppen Sessions - The sessions were hosted by RK and co-coordinated by NTNU, in cooperation with WP5 lead TK and all involved solution providers. The sessions include, amongst others, discussions on updated targets, ambitions and strategies for the development of the district, the status of the PEB, which changes are necessary in terms of technologies, financial or other resources, timelines for implementation, planned improvements, dialogue with the regulatory authorities on regulatory barriers for energy sharing, and support structures for cross-partner cooperation in order to identify optimal solutions and processes.

+CityxChange BCV Workshop on processes and challenges with FCs and LHCs - ISOCARP held a Bold City Vision workshop, aiming at exchanging knowledge between Lighthouse Cities and Follower Cities. Work on the BCV by the FCs, especially on local engagement has been partly hindered by the COVID19 pandemic. LHCs and FCs shared their experiences and knowledge on implementing the BCV framework in practice; what challenges are being faced in each local context, etc. Trondheim discussed more in detail how the BCV has been used internally in the municipality. The FCs presented their approach towards data collection and citizen engagement events so far. The following elements were covered in the presentations: data collection process, citizen engagement events, municipal staff



	<p>engagement, visions, roadmaps, link to SDGs, etc.</p> <p>Themes: Theme 1: DPEB/Ds Theme 7: Community Engagement</p> <p>Lessons Learnt and Key Insights:</p> <ul style="list-style-type: none"> • FCs are using the U4SSC³³ key performance indicators to assess the achievement of SDGs in their local context. • There is a clear understanding of sustainability. The work at LCCC in this area will also be informed by the +CityxChange Bold City Vision. +CityxChange will be added to LCCC's smart city brand to demonstrate local authority leadership. • Covid-19 has had a greater impact than we would originally have foreseen. Digital platforms are fine but are not the same as on-site meetings in order to develop interpersonal relations. You have to keep in contact with people and to make sure they are aware of what is going on. The establishment of the Positive Energy Champions was highly productive and enjoyable in that respect. And, cooperating with UL as an engagement task, WP4 organised the third Citizen Engage Week in April. Partners also have to set up new citizen-related initiatives - whether this is done by a citizen cooperative or others, is still open. • There is also a requirement for an infrastructure of integrated digital and built environment monitoring systems and an evaluation capacity at the local level that allows citizens knowledge of the city to become knowledge for the city.
<p>10.8³⁴</p>	<p>Overview of Deliverable: This annual deliverable comprises 1) the outline of the communication goals; 2) the context in which the goals have to be implemented; 3) the formulation of a strategy and a detailed plan; 4) the organisation, tasks and roles; and 5) the means or delivery channels. The deliverable provides an overview of the communication activities of the first two years, the achieved outreach through different channels, and a compilation of the preparatory internal and external activities which aim at supporting the further process of communicating and disseminating the project and its progress and outcomes. This deliverable was particularly reviewed in order to draw insights on the potential target groups recommendations and guidelines can be disseminated to. <u>Target audiences of the communication:</u> have been divided into two clusters: 1. Local audiences and stakeholders in the +CityxChange cities; 2. The broader community of practise, research, governance. <u>Target Audiences (website):</u> The website aims at a variety of audiences, building upon the stakeholders derived from the overall target groups identified. Building upon these and in order to operate the site according to the various needs, five user experiences are developed as guidance.</p> <ul style="list-style-type: none"> • User experience 1: General public • User experience 2: Academia • User experience 3: Public sector • User experience 4: Private sector • User experience 5: EU-wide Smart City/H2020 community <p>Themes: Theme 7: Community Engagement</p>

³³ Collection Methodology for Key Performance Indicators for Smart Sustainable Cities: <https://unece.org/housing-and-land-management/publications/collection-methodology-key-performance-indicators-smart>

³⁴ 10.8 available here: <https://cityxchange.eu/knowledge-base/d10-8-plan-for-dissemination-and-exploitation-of-cityxchange-project-results-3/>



Lessons Learnt and Key Insights:

- The goal of the communication activities will change over the course of the project: first to inform, then to engage to collect and validate, then knowledge transfer and finally dissemination of results.
- The target audiences of the communication have been divided into two clusters: 1. Local audiences and stakeholders in the +CityxChange cities; 2. The broader community of practise, research, governance.
- Local Audiences - The first category, the local audience, includes the relevant stakeholders of the +CityxChange cities who are either (1) partner, contributor, or stakeholder involved in creating and implementing the project, (2) occupy the area of the positive energy block or (3) are or can get otherwise involved in the co-creation of positive energy districts and blocks.
- Broader Community of Practice - the second category includes stakeholders which are relevant in the international context of the project (as listed in Section 2.4 of this document)



Annex 4

A summary of the feedback received is presented in the following subsection below. The following section provides a summary of the evaluation feedback received from LCCC, MP and ISOCARP.

Table 14: Summary of Evaluation Feedback Received

Partner		Evaluation Feedback
Title and abstract		
Project activity title	LCCC	Positive Energy Champion Campaign
	MP	Festivities of the city of Písek take place every year and they last three days. The city is filled with music, dance, theatre, stalls, history, performances, funfair, and other entertainment. The participation is huge and, therefore, we thought it would be a great opportunity to use this event to present the concept of Smart Písek with our stall.
	ISOCARP	Storytelling Workshop Smolyan: Integrating Storytelling for Youth Engagement
Activity description	LCCC	Description: Positive energy Champion Campaign Initiation and Launch Context: Implementation of the D3.5 Positive Energy Champion framework in Limerick to enable to creation and replication of DPEBs Goals: to recruit 20 Positive Energy Champions to undertake the PEC training module, to co-create and implement positive energy actions and to share their experience with their communities over 20 weeks of change. Rationale: to introduce +CityxChange concepts into the day-to-day lives of people in Limerick
	MP	To show the public what our office deals with, what projects we are working on and how the citizens could get involved. We were (and still are) interested in the citizens' opinions and we wanted to hear their suggestions and ideas so that we could create and improve our city together. Activities presented: Nextbike, MPLA, EPARKOMAT, +CityxChange, "PODNIKNI TO!", Climathon, The Stockholm Solution For Planting Trees, PARO, SDGs, and SECAP.



	ISOCARP	Storytelling plays a fundamental role in facilitating human communication, meaning and contextualization of ideas and emotions. Telling stories individuals are most likely to feel related to the idea and moral. This results in a higher understanding deriving momentum for behaviour change. This storytelling session aims at developing stories throughout the topic of youth engagement. Through the reflection of our memories, participants will be creating short stories that will be interpreted by youngsters from Smolyan.
Partners involved	LCCC	LCCC, UL, SE, IES, MPower, OV,
	MP	Smart Písek, The city of Písek, The cultural centre of Písek
	ISOCARP	ISOCARP, the city of Smolyan and youth city representative
Related Demo Project / Theme / Topic	LCCC	DP03: Co-Create Distributed Positive Energy Blocks through Citizen Engagement Th 7: Community Engagement Activities (socio-economic perspectives)
	MP	DP03: Co-Create Distributed Positive Energy Blocks through Citizen Engagement DP11: Enable consumers to invest in their buildings, which is critical to the creation of a PEB Th 7: Community Engagement Activities (socio-economic perspectives)
	ISOCARP	DP03: Co-Create Distributed Positive Energy Blocks through Citizen Engagement Th 7: Community Engagement Activities (socio-economic perspectives)
Methods		
Data collection instruments and technologies	LCCC	MyPoint Application Forms available as .csv file Video recorded Positive Energy Advice Zoom sessions Meeting attendance numbers recorded Positive Energy Champion Diary Phone interview with PECS – 'How are things going' recorded by note taking Google Forms questionnaire to project partners participating in the campaign
	MP	Instruments: QR codes, interview guides, blackboard to learn SDGs, discussions, Devices: laptop, phones, our marketing team recording and taking pictures
	ISOCARP	Meeting Notes: Meeting notes were taken throughout the activity to summarise key takeaways for future events Short Stories: Short stories were used as a way to understand the participants' relationship between their youth and their



		<p>surrounding spaces and services that enabled growth and/or changes in life. We have established an existing structure of key words to facilitate story-creation</p> <p>MIRO: The MIRO visual board was used to allow participants to illustrate their short stories and as well used as a basis for discussion.</p>
Quantitative data collection	LCCC	<p>Recorded number of Positive Energy Champions at the Training Event</p> <p>Recorded number of attendees (+CityxChange Partner + Members of Public) at online events</p>
	MP	N/A
	ISOCARP	N/A
Qualitative data collection	LCCC	<p>Questionnaire to +CityxChange Partners</p> <p>Phone call survey to PECs</p>
	MP	<p>Many people downloaded the Nextbike app on their phones and got familiar with our office. They also learnt about the SDGs and created their own priorities according to the SDGs. The age range was very rich - from children to seniors - the oldest was 79 years old.</p>
	ISOCARP	<p>The relationship of participants between their youth and their respective surrounding environment. Each participant shared experiences of when they were young and the priorities back in time in relation to spatial development and city involvement.</p>
Data processing	LCCC	<p>Data is stored on My Point including responses to the Positive Energy Champions Campaign Open Call, PEC diary entries. Questionnaires responses from project partners stored on Google Drive. A questionnaire to the PECS will be stored securely on MyPoint. Attendance at events is recorded in a spreadsheet on the LCCC system.</p> <p>Some champions have interacted with project digital tools e.g. community mapping tools (no personal data stored on the GIS cloud) and the DST/Energy Model (IES are data controllers of the data stored in the energy model).</p>
	MP	<p>Feedback collected via the SDGs blackboard, saved to Sharepoint, feedback evaluated and included in deliverables.</p>
	ISOCARP	<p>A large amount of input was conducted via conversation and dialogue that was not formally recorded. Minutes and notes have been created which will serve to reproduce D9.16 storytelling workshops, inviting other LHCs and FCs 3.</p>
Results/findings		



Synthesis and interpretation	LCCC	At this interim stage we have no finding to record
	MP	<p>What are your priorities from the SDGs ones? 4 most important, 4 medium important, the rest - usually the most important goals were health and wellbeing, quality education, decent work and economic growth, peace, justice, and strong institutions</p> <p>What doesn't work in the city ? - main findings: not enough parking spots, damaged pavements</p> <p>Have you used the nextbike app yet? - main findings: many people have, but usually in the evening hours, many citizens find it very convenient as it is cheap, fast and also good for one's health.</p> <p>Do you know what the concept of Smart Cities is? - main findings: many people associate the concept with modern technologies but not with the environment, for example</p>
	ISOCARP	Various findings from the break out sessions: some participants experience a pivotal moment in their life that was influenced by their physical and emotional surroundings
Links to empirical data	LCCC	At this interim stage we have not yet completed analysis of the data gathered.
	MP	Related deliverables and photographs taken
	ISOCARP	Not available at this moment
Activities completed successfully	LCCC	<p>PEC Group was divided into three strands, Low Carbon Transport, Understanding Energy Retrofit and Invest, Empowering Communities. PEC's received overall training regarding the project and Campaign and then thematic sessions depending on which strand they chose. Activities to date include; Recording experiences through monthly diary; Community mapping sessions on transport and energy; Using building data build +city model and better understanding energy use to enable decision-making regarding retrofits and maximising energy savings. We also have three Champions who are taking part in the +Cityxchange Open Call 2, and implementing small citizen innovation projects; Solar Allotment, Microgeneration, Heat exchange projects.</p>
	MP	<p>Respective groups discussed what problems could occur in the future world. Now we're not that much concerned about the quality of water or zero hunger because we're accustomed to having enough clean water or not being hungry. Even the climate action does not worry many people in Písek yet according to our findings. However, people do realise that these things might become "luxurious" in the near future, and therefore, immediate action is necessary to maintain our living standards.</p>



	ISOCARP	The principle of using storytelling; as means to express and further understand people's life course, within the perspective of youth engagement and their surrounding support network and environment, was successful because the participants were able to discuss issues/aspects of their experiences from their past in a more personal and less technical way.
Challenges faced	LCCC	<p>Covid: Restrictions in Ireland due to Covid-19 have presented a significant challenge to the Positive Energy Champions Campaign. It meant there could be no in person meetings, no drop in sessions and the Champions could not connect in person.</p> <p>Timing. Covid-19 restrictions also led to a delay in commencing the Campaign. This meant activities took place over the summer, giving less opportunities for domestic energy savings on heat / light etc</p> <p>Length of campaign. Difficult to complete a Campaign over twenty weeks particularly for busy property and business owners, given the difficulties owners experienced locating energy bills etc.</p> <p>Funding: Good to have small funding available to support the champions</p> <p>20 is too many champions: 6-8 would be a more manageable number, as once engaged there is a responsibility to meet their needs. Also, more likely to be able to select champions from those that applied which could create more impact and targeted results.</p>
	MP	<p>People were shy to take a look in our stall at the beginning and we had to encourage them. The QR codes weren't working on some mobile devices, or some people didn't have smartphones. Some people didn't have credit cards either so they couldn't register for the nextbike app. Also, some people confused us with the city council and wanted to discuss issues not connected to our office such as the city pool.</p>
	ISOCARP	<p>Due to the online nature of the activity, there was a challenge with fostering organic conversation on the digital platform (Teams) which became mostly directional dialogue between participant and facilitator. In between, ISOCARP Institute had to switch to Zoom to allow monitoring of breakout rooms. Storytelling sessions are most effective on-site. Hopefully it will be possible to do so in the near future.</p>
Solutions developed (or under development)	LCCC	<p>Due to Covid-19, all activities took place online, LCCC utilised MyPoint engagement platform for monthly diary.</p> <p>Timing: campaigns focused on transport, using IES model and DST to empower owners, use SE mapping tools.</p> <p>Length of Campaign: Champions on the Retrofit and Invest strand are being given the option to extend their campaign as inputting data into the DST has taken longer than anticipated.</p>



		Funding: Given free time to support the Champions, Go Car have agreed to offer Champions two free car share journeys.
	MP	-
	ISOCARP	To ensure a fruitful discussion among the group, participants were put into smaller breakout rooms which aimed to enable a more intimate setting for discussion and sharing experiences. Moreover, a visual tool such as MIRO was used to express the exercise in an attractive, clear and engaging way.
Next steps	LCCC	Campaigns are to be closed out so that they can be communicated effectively to the community. We are developing a template for this.
	MP	For the next time, preparing some games or funnier activities or even something more appealing that could help with more involvement from the citizens- some of them considered the activities too difficult or serious. We also need to present our office more so that people would not confuse us with the City Council.
	ISOCARP	Operationalizing the results into usable inputs for the general project development could be further improved.
Discussion		
Key insights highlighted	LCCC	Volume and frequency of communications to PECs - feel they may be overwhelmed 24 people is too many in one session We are asking quite a lot of the PECs and not giving much in return Range of understandings of +CityxChange concepts amongst PECs is broad
	MP	General observations included: not enough knowledge about the Smart City concept, but at the same time an urge to know more about us and an interest to get involved and to help. Sometimes people mention that they don't use nextbike because they're too comfortable and they prefer cars instead - it would be helpful to inform them that it is actually faster, cheaper and environmentally-friendly to use bikes for transportation in the city.
	ISOCARP	The value of artistic modes of engagement such as storytelling serves as a useful tool to qualitatively understand human-related values with space and generally the city. However, due to the novelty of the method it is not widely recognized within citizen engagement and collaborative processes which limited the comfort and ability to contribute from participants.



Key recommendations for replication of activity	LCCC	Reduce the number of Champions and extend the length of the campaign. In person events would create a sense of community and purpose between Champions. Some funding to support champions, events, printing, signage.
	MP	We could organise a workshop beforehand next year which would be dedicated to information about CityxChange and what it means, what are its objectives and what is its impact on citizens and Písek. So that citizens would understand more about the consequences of their actions. Many people do not care about the future and that should change. Some kind of discussions after the event would help with the feedback next time.
	ISOCARP	Build awareness on the value of artistic modes of engagement and collaboration such as storytelling, ensure methods deployed can be understood cross-generationally and across disciplines, digital literacy is an important aspect that contributes to the success of collaboration. Other versions of storytelling could be applicable at a physical setting. For example, using walk-talks, or fish-bowl sessions.



Annex 5

M&E Roadmap:

Month	Phase	Next Steps (MERT) Task 7.3 Data collation and management	Next Steps (Qualitative Evaluation) Task 7.4 Developing practical recommendations and guideline reports based on +CxC results
M39	Preparation for M&E	KPMG FA will carry out KPI workshops to facilitate KPI data submission and completion (currently 9 KPIs left to confirm). KPMG FA will also engage with partners to collect notes for SCIS deliverables and will work collaboratively with partners to ensure the successful initiation of the M&E phase.	KPMG FA will carry out QDWG workshops with a specific focus on individual cities - the first one being to take place after the City Engage Week in Limerick (taking place 31/01-04/02). By allocating time to cities and drawing upon lessons learned, in conjunction with the Learning and Story Telling workshops, we will ensure that CxC knowledge pools are properly exploited by consortium members.
M40		1. KPI 12, KPI 14, KPI 15, KPI 16, KPI 17, KPI 18, KPI 19, KPI 20, KPI 21, KPI 26 to be discussed and confirmed with partners through workshops and one-on-one meetings (roadmap will be uploaded to the drive to facilitate access and promote transparency) - ONGOING/ Support in endorsing action needed from project coordinator.	Calendar collation. QDWG - Limerick City Engage Week - lessons learned and feedback (TBC).
M41		2. MERT Roadmap implementation.	
M42		3. Data Validation activity.	
M43	M&E Phase	4. Collective validation of KPI ahead of entering the M&E phase.	
M44		5. Engagement with LHCs for adjustment to KPI targets.	
M45		Data Validation activity. Preparation for D7.13 submission/ further engagement with partners.	QDWG - Trondheim - lessons learned and feedback (TBC). Output format development (TBC) and relevant target groups. Learning workshops feedback and recommendations (TBC).
M46		Q&A and Deliverable submission.	QDWG - Alba Lulia - lessons learned and feedback (TBC) Story telling workshops feedback and recommendations (TBC)
M47			QDWG - Sestao - lessons learned and feedback (TBC)
M48		1. Monitoring and Evaluation of KPI data and ensuring that no issues/discrepancies are present.	QDWG - Pisek - lessons learned and feedback (TBC).
M49		2. Engagement with partners to secure data accuracy and relevance.	QDWG - Smolyan - lessons learned and feedback (TBC). Review of Relevant deliverables.
M50		3. Liaise with WP8 to outline replication tasks.	QDWG - Voru - lessons learned and feedback (TBC).
M51		Data Validation activity. Preparation for D7.15 submission/ further engagement with partners.	Output format confirmation (TBC) and relevant target groups. Preparation for D7.14 submission/ further engagement with partners.
M52		Q&A and Deliverable submission.	Q&A and Deliverable submission
M53		1. Monitoring and Evaluation of KPI data and ensuring that no issues/discrepancies are present	QDWG initiation and calendar creation. Final M&E goal setting and planning, preparation for project-end deliverables.
M54		2. Engagement with partners to secure data accuracy and relevance	QDWG - Limerick - lessons learned and feedback (TBC).
M55		3. Liaise with WP8 to implement replication actions	QDWG - Trondheim - lessons learned and feedback (TBC).
M56		Data Validation activity Preparation for D7.16 submission/ further engagement with partners	QDWG - Alba Lulia - lessons learned and feedback (TBC).
M57		Q&A and Deliverable submission.	QDWG - Sestao - lessons learned and feedback (TBC).
M58		1. Monitoring and Evaluation of KPI data and ensuring that no issues/discrepancies are present.	QDWG - Pisek - lessons learned and feedback (TBC).
M59	2. Engagement with partners to secure data accuracy and relevance.	QDWG - Smolyan - lessons learned and feedback (TBC). Review of Relevant deliverables.	
M60	3. Ongoing engagement with WP8 to finalise replication effort.	QDWG - Voru - lessons learned and feedback (TBC). Final engagement and workshops reporting on overall lessons learned.	
	Data Validation activity. Preparation for D7.17 submission/ final engagement with partners.	Preparation for D7.17 submission/ final engagement with partners.	
	Q&A and Deliverable submission.	Q&A and Deliverable submission.	