

D9.19: Report on Intra-Project Collaboration Including Study Visits and Peer-to-Peer Workshops 8

+CityxChange | Work Package 9, Task 9.1

Final delivery date: 27-03-2023



Deliverable version	v.04
Dissemination level	Public
Authors	Annemie Wyckmans, Dirk Ahlers, Elisa Junqueira de Andrade, Shreejana Poudyal (NTNU)
Contributors	Helena Fitzgerald (UL); Bjørn Ove Berthelsen (TK); Tom Jensen (TK); Klaus Livik (TK); Eftima Petkova (SMO); Borislava Spasova (SMO)

Article 29.5 Disclaimer

This deliverable contains information that reflects only the authors' views and the European Commission/INEA is not responsible for any use that may be made of the information it contains.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 824260.

Document Information

Project Acronym	+CityxChange
Project Title	Positive City ExChange
Project Coordinator	Annemie Wyckmans, Norwegian University of Science and Technology
Project Duration	1 November 2018 - 31 October 2023
Deliverable Number	D9.19: Report on Intra-Project Collaboration Including Study Visits and Peer-to-Peer Workshops 8
Dissemination Level	PU-Public
License	CC-BY4.0 Creative Commons Attribution, except where otherwise noted. https://creativecommons.org/licenses/by/4.0/
Status	Completed
Due Date	31-10-2022
Work Package	WP9 – Inter-Project Collaboration and Clustering
Lead Beneficiary	NTNU
Contributing Beneficiaries	LCCC, TK, MAI, MP, SB, SMO, VORU, UL

Revision History

Date	Version	Author	Substantive changes made
02-08-2022	v.01	Elisa Junqueira de Andrade (NTNU)	Report structure
06-12-2022	v.02	Shreejana Poudyal (NTNU)	Inclusion of partners' contributions based on +CxC tracker
22-12-2022	v.03	Shreejana Poudyal, Annemie Wyckmans, Dirk Ahlers (NTNU)	Updates based on feedback from partners, learning experiences, text adjustments
27-03-2023	v.04	Shreejana Poudyal, Annemie Wyckmans, Dirk Ahlers (NTNU)	Final updates and alignments

Table of Contents

Table of Contents	2
List of Acronyms	3
Executive Summary	4
1 Introduction	5
2 Events & Meetings hosted by +CxC partners	5
2.1 Climate-neutral Trondheim (12 May 2022, Trondheim)	5
2.2 Open Citizen Lab, European Week of Youth (16 May 2022, Smolyan)	6
2.3 +CityxChange partner leader group meeting (30 May 2022, Trondheim)	6
2.4 The local energy and flexibility market goes live (4 July 2022, Trondheim)	7
2.5 MIT Senseable City Lab (30 August 2022, Trondheim)	7
2.6 Site visit for EERA and topic discussions (6 October 2022, Trondheim)	8
2.7 Limerick Symposium – Integrating the New European Bauhaus Into Ireland's Climate Transition (13 October 2022, Limerick)	8
3 Events and meetings with +CxC contributions	9
3.1 Nordic Edge Expo, Stavanger city centre (10-11 May 2022, Stavanger)	9
3.2 Norwegian Energy Commission input meeting (15 June 2022, Trondheim)	9
3.3 EEA Grants International Delegation visit (16 June 2022, Trondheim)	10
3.4 Arendalsuka (17-19 August 2022, Arendal)	10
3.5 ONS 2022 (29 - 30 August 2022, Stavanger)	10
3.6 National SmartGrid Conference 2022 - Electrification needs to get back on track! (13-14 September 2022, Stjørdal)	11
3.7 Workshop e-Mobility as a Service – city of Trondheim (22 -23 September 2022, Davos)	11
3.8 Energidagene 2022 (27 - 28 September 2022, Trondheim)	11
4 Next steps	12

List of Acronyms

CINEA	The European Climate, Infrastructure and Environment Executive Agency
EEA	European Economic Area
EERA	European Energy Research Alliance
EU	European Union
LHC	Lighthouse City
MDiR	The Norwegian Directorate for Environment
NEB	New European Bauhaus
NTNU	Norwegian University of Science and Technology
PEB/D	Positive Energy Blocks/Districts
SCC01	Horizon 2020 Smart Cities and Communities
TK	Trondheim Kommune
UL	University of Limerick

Executive Summary

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 2022 and 31 October 2022 (M43-48).

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

This report (D9.19) is complemented by D9.20: Report on attendance at events held by other SCC-01 co-ordinators 8. Some general content is repeated from the previous D9.17: Report on Intra-Project Collaboration, including study visits and peer-to-peer workshops 7.

1 Introduction

M43 - M48 was a period of delays and uncertainties due to / in the aftermath of COVID, new political upheaval due to the war in Ukraine, rapidly rising energy prices and social unrest. In the project, we prioritised finding practical ways to overcome every-day critical barriers and identifying potential pathways forward, in the local demonstration areas, the monthly Technical Board meetings (all Work Package Leads) and Executive Board (all Lighthouse and Fellow Cities).

Cities discussed and assessed the feasibility of reaching a Positive Energy Block within the project's lifetime, and which alternative learnings we could offer within the consortium to the European SCC community. Other activities within the partners' own networks contributed further to these discussions and understanding of their challenges and accomplishments. A considerable amount of time was dedicated to addressing delays and modifications in the implementation phase, re-budgeting of funding streams in order to make the targets work, and the corresponding need for change requests and amendments in dialogue with CINEA's Project Officer.

In the following sections, we describe some of the core activities discussed in these fora across the partners.

2 Events & Meetings hosted by +CxC partners

2.1 Climate-neutral Trondheim (12 May 2022, Trondheim)

On 12th May 2022, a co-creation agreement was signed between TK, NTNU and SINTEF¹ (one of Europe's largest independent research organisations) "*Climate-neutral Trondheim - phase 1*". For Trondheim municipality, it is desirable to involve staff and students from NTNU and SINTEF in co-creating a climate-neutral Trondheim. Phase 1 involves a series of workshops for co-creation between TK, NTNU, SINTEF and eventually other players in the city. The participants in the first workshops were primarily employees from TK, NTNU and SINTEF, while plans were being made for student-driven courses, workshops and on-site work. The agreement is a concrete pilot within the existing bilateral cooperation agreements these partners already have, more specifically the University Municipality TRD3.0 (TK-NTNU), Cooperation Agreement (TK-SINTEF), and the Gemini Center for climate-neutral and socially innovative cities (NTNU-SINTEF, Better Together). The agreement on phase 1 will last for a year from May 2022 to June 2023, and will then be renewed with updated content for phase 2.

Within the umbrella of this agreement, the Trondheim Region Chamber of Commerce organised an event titled "Climate-neutral Trondheim: Info and input" on 15th June 2022 in the City hall in Trondheim. +CityxChange Project Coordinator Annemie Wyckmans presented on the topic "Trondheim as one of the EU's 112 climate-neutral cities" together with the Climate Advisor of TK. Annemie also participated in the panel discussion. The main objective of the event was to share how Trondheim municipality will work with energy and climate towards 2030 and 2050 and how this can happen in cooperation with local industry partners. In the meeting, the participants received an introduction to the planning program and got to give input to the upcoming energy and climate plan. The climate change activities and needs in the city will provide opportunities for both established businesses and start-ups.

2.2 Open Citizen Lab, European Week of Youth (16 May 2022, Smolyan)

On 16th May 2022, Open Citizen Lab was organised in Smolyan during an outside event with popular singers and influencers dedicated to the European Week of Youth. The event was supported by the +CityxChange team of the Municipality of Smolyan and served as a form of a City Lab to give the young people of the city a voice in the processes of forming local policies to build a better future for the younger generation and creating the Bold City Vision 2050.

In addition to that we have informed all the schools on the territory of the municipality that we would like to make demonstrations with the Horizon Educational Kit as well as that now we have Borislava Spasova from +CityxChange team as a certified facilitator for Climate

¹ [SINTEF - Applied research, technology and innovation](#)

Fresk and we can also organise the game for them at a suitable time. Several schools have already contacted us and expressed their interest and have booked time slots in the end of May and June.

2.3 +CityxChange partner leader group meeting (30 May 2022, Trondheim)

A Management level +CityxChange meeting was organised by NTNU on 30th May 2022 with Norwegian partners engaged in the work in LHC Trondheim. The moderator of the event was Toril Hernes, Vice Rector for Innovation at NTNU. The event was organised at Lager 11 in Sluppen, a converted warehouse with street food stalls, and the location of one of Trondheim's Citizen Observatories. Presentations and discussions were held by +CityxChange partners and TK on what was achieved in Trondheim so far by Trondheim being one of the +CityxChange partners and what has been the added value for our partners from business, the public sector and academia:

- A climate-neutral, beautiful and inclusive district on Sluppen, Trondheim - Ole Petter Bjørseth, Managing Director, [R.Kjeldsberg](#)
- New mobility solutions/ Mobee - Tor Rune Skoglund, Managing Director, [FourC](#)
- The road to climate-neutral cities - Thomas Havsberg, Local account manager, [ABB](#)
- TrønderEnergi's market, Ella-Lovise Rørvik, [Trønderenergi](#)
- Dialog with the Nakstad committee, Marit Myrstad, [Trondheim Kommune](#)
- Market opportunities within REPowerEU, REPlanEU, Klaus Livik, Chief Strategist, [Volve](#)
- Significance for the Norwegian electricity market, Bernhard Kvaal, Head of Development, [TrønderEnergi](#)
- Significance for the construction industry, Svein Nassvik, Senior Project Developer, [Skanska](#)

Furthermore, new opportunities for value creation were discussed in light of Trondheim, Stavanger and Oslo having been selected as Norwegian participants in the EU Cities Mission and the NetZeroCities platform.

2.4 The local energy and flexibility market goes live (4 July 2022, Trondheim)

On 4th July 2022, the first trades in +CityxChange's local energy and flexibility market took place in Trondheim. Something completely unique was done on that day, after 4.5 years of work, when for the first time there were two suppliers at the same measuring point. The event took place online as well as physically at Trønderenergi in Trondheim. The innovation was funded through the +CityxChange project, in cooperation with the Norwegian Energy Agency-funded "Brattørkaia Mikronett - An Energy Positive Renewable Community".

In the Brattørkaia Mikronett project, a selected area of the grid at Brattørkaia in Trondheim will be defined as a separate power system, a microgrid. Then the participants will join forces to ensure efficient utilisation of local resources across energy carriers and to

increase flexibility in the power system. This project has provided excellent opportunities for testing future-oriented market models and new technical and administrative solutions that are relevant both in a national and international context. The establishment of a microgrid with local production is in itself new development in Norway. Another interesting fact about this project is that there are several buildings in an area with solar energy production, combined with emission-free transport in the form of electric buses, electric cars and eventually also electric boats. The project is in progress and the regulatory issues are being worked on together with the +CityxChange project.² The initial trading is also highlighted as an important project result on the project website³ and by Trondheim in a Norwegian post.⁴

2.5 MIT Senseable City Lab (30 August 2022, Trondheim)

NTNU organised a workshop with a visiting MIT delegation at City Hall in Trondheim on 30th August, where the participants exchanged information regarding strategic projects, including +CityxChange, and to look for possible collaboration opportunities.

MIT Senseable City Lab⁵ held a presentation on interaction with cities and research institutes around the world, the Digital City Workshop class at MIT, and the new Data Slots project.

NTNU and TK presented results from the +CityxChange project, including the mobility app, flex market, digital twins, citizen labs, and the Bold City Vision, as concrete outcomes from the project. Furthermore, NTNU presented how the project organises cooperation processes across partners and sectors in order to achieve these results, as a base for potential cooperation with the MIT American and global network of cities.

2.6 Site visit for EERA and topic discussions (6 October 2022, Trondheim)

In October, the Secretary General of the European Energy Research Alliance visited the LHC Trondheim. TK hosted the visit and presented the +CityxChange project activities and outcomes, together with a general overview by NTNU. The visit was an opportunity for TK to showcase their work within the project and discuss the outcomes. NTNU leads a Joint Programme on Smart Cities within EERA, including universities and research institutes from other Smart Cities and Communities Lighthouse projects, and has on multiple occasions presented the work of +CityxChange. As such, it was very useful for the Secretary General to experience Trondheim's work first-hand.

² [Brattørkaia Mikronett - An energy-positive renewable society | Enova](#)

³ <https://cityxchange.eu/new-energy-market-in-trondheim-is-now-being-tested/>

⁴

<https://www.trondheim.kommune.no/aktuelt/nyhetssaker/barekraft-nyheter/plussbyen-nyheter/nytt-energimarked-i-trondheim-testes-na/>

⁵ MIT Senseable City Lab, <https://senseable.mit.edu/>

2.7 Limerick Symposium – Integrating the New European Bauhaus Into Ireland's Climate Transition (13 October 2022, Limerick)

Limerick City and County Council together with the University of Limerick held a learning exchange symposium in the Citizen Innovation Lab. The [Citizen Innovation Lab](#)⁶ established through +CityxChange is viewed by the Government of Ireland's Department of Housing, Local Government and Heritage as embodying the New European Bauhaus (NEB) values of sustainability, beauty and inclusion. They supported the symposium to amplify the Citizen Innovation Lab approach.

The symposium focused on three themes:

- New European Bauhaus – It's not just that we decarbonise that is important, how we do it is important too. The New European Bauhaus (NEB) policy aims to connect plans to become climate-neutral to people's living spaces and day-to-day lives. This panel presented perspectives and projects relevant to the New European Bauhaus in Ireland and included contributions from Limerick's +CityxChange Positive Energy Champions.
- +CityxChange – A Limerick story of the climate-neutral transition. The Positive City Exchange (+CityxChange) project explores the development of a structured approach to decarbonising cities. Members of the +CityxChange implementation team presented infrastructural demonstrators, insights and learning from +CityxChange implementation in Limerick to date.
- City Collaboration and The Climate Neutral Cities Mission in Ireland. This panel explored perspectives on city collaboration in the transition to climate-neutrality with contributions from Thomas Osdoba as coordinator of the Net Zero Cities Consortium and its EU Cities Mission Platform, Julio Lumbreros as national coordinator of Spain's CitiES2030, and representatives from Ireland's Mission Cities, Dublin and Cork.

The event – invitation only, due to the limited capacity of the Citizen Innovation Lab – was attended by policy makers from local and national government, academics, +CityxChange consortia members, and people from Limerick who had participated in the +CityxChange or the Citizen Innovation labs programme of events. In addition, the event was attended by Ireland's Mission Cities – Dublin and Cork – and the Irish cities that had applied but were not selected. The event was recorded.⁷

⁶ [Citizen Innovation Lab](#)

⁷ Recording is available here: <https://vimeo.com/user/7797998/folder/14272232>

3 Events and meetings with +CxC contributions

3.1 Nordic Edge Expo, Stavanger city centre (10-11 May 2022, Stavanger)

+CityxChange partner Trondheim Kommune (TK) participated and gave a presentation in the Nordic Edge Expo⁸, organised in the city of Stavanger, which is the Nordic event for future cities and communities. Participants could experience smart cities and take part in demonstrating the technology live in the city centre as Stavanger will be a living lab for cutting-edge innovation. Furthermore, the participants also learned about different methodologies for public private partnerships, new technology and citizen engagement which led to meetings with Prague City and some business providers.

3.2 Norwegian Energy Commission input meeting (15 June 2022, Trondheim)

The National Energy Commission invited TK as LHC to provide input to future energy policies and strategies in Norway. The main focus of the visit was on regulatory issues. This visit created an opportunity for TK to influence policy directly on a national level, in particular related to required changes in energy regulations in order to enable Positive Energy Blocks, Districts and Cities. The most important factors contributing to Trondheim's success with a green energy shift were presented by TK. The event showed that the topics that +CityxChange is working on are important and relevant on a national scale. TK's experiences and findings were given as input to hopefully be included by national authorities as a part of the National Commission policy recommendations.

3.3 EEA Grants International Delegation visit (16 June 2022, Trondheim)

A Czech and Latvian delegation to Trondheim visited TK and project office premises for presentation of +CityxChange project and interventions. The Norwegian Directorate for Environment (MDir) organised the visit with TK as the local host for the delegation. In addition to the visit being a networking event creating possibilities for future cooperation, TK had the opportunity to promote +CityxChange and Trondheim as a true frontrunner city. Furthermore, TK also learned that the innovations and interventions through +CityxChange in Trondheim are considered as advanced and are in many cases far ahead of others.

3.4 Arendalsuka (17-19 August 2022, Arendal)

Arendalsuka⁹ is the biggest annual gathering of R&D, politicians, and industries in Norway. TK held two presentations and attended a national panel debate on energy and business

⁸ <https://nordicedge.org/expo/nordic-edge-expo-2022/>

⁹ <https://www.arendalsuka.no/>

opportunities. Volue presented +CityxChange and the work that TK has performed towards regulation and dispensation for local energy trading. The event was a good networking occasion with the possibility to influence national politics and government and to have new projects and new collaboration opportunities.

3.5 ONS 2022 (29 - 30 August 2022, Stavanger)

The ONS Foundation had invited TK to be a speaker at ONS 2022, on the venue Net Zero Markets which took place in Stavanger, Norway, from 29th of August to 1st of September 2022.

The ONS Foundation is a world-leading, non-profit organisation facilitating discussions and collaboration on energy, technology, and innovation. Through decades, ONS has developed into a leading international energy event, with royal dignitaries, ministers and distinguished guests present for vibrant discussions on energy, at nine different conference venues over four days. His Majesty King Harald V of Norway is the Royal Patron of ONS and was invited to formally open the conference.

The main theme for the ONS Conference 2022 was *Trust*. The energy industry is not unaccustomed to change, but is now facing new expectations far more complex – and at an unprecedented pace. Facing the big challenges of the energy transition, trust is ever more important. Across countries, industries and cultures, trust and a common ground are needed to secure a just transition and the realisation of the net zero future¹⁰.

At the Net Zero Markets conference, in a session called “Solar Energy – relevant for Norway and the Nordics?”, on 30th August, TK was invited to share their reflections on the +CityxChange project (smart city – share electricity with buildings and community). TK held a presentation regarding +CityxChange and its solutions at one of the world's largest energy events. New knowledge from the event on PV financing schemes and future prices for PV was used as input to +CxC and what our new investment models look like.

3.6 National SmartGrid Conference 2022 - Electrification needs to get back on track! (13-14 September 2022, Stjørdal)

TK attended the National Smartgrid Conference 2022¹¹ organised by Energy Norway, in cooperation with the Norwegian Smart Grid Centre. One of the main topics discussed in the conference was “Utilization of flexible resources in the distribution grid - what prevents us?”. +CityxChange was nominated for the Smart Grid Centre's Innovation Prize 2022 and won third place ([LHC Trondheim wins third place for Smartgrid center's innovation prize - +CityxChange](https://www.energinorge.no/lhc-trondheim-wins-third-place-for-smartgrid-centers-innovation-prize-cityxchange))¹². The event provided outreach for +CityxChange solutions as well as the learning opportunity from other nominees and participants in the field, for potential further replication in the Norwegian market.

¹⁰ [HOME - ons.no](https://www.ons.no)

¹¹ <https://www.energinorge.no/kurs-og-konferanser/2022/konferanser/smartgridkonferansen-2022/>

¹² <https://cityxchange.eu/lhc-trondheim-wins-third-place-for-smartgrid-centers-innovation-prize/>

3.7 Workshop e-Mobility as a Service – city of Trondheim (22 -23 September 2022, Davos)

LHC Trondheim shared and discussed eMaaS and energy solutions based on +CityxChange's work and outcomes with Swiss decision makers and companies at a workshop¹³ organised by the Davos Digital Forum. The city of Trondheim (winner of EU-Innovative City 2021) has built a new eMaas (eMobility as a Service) ecosystem together with car rental companies and car/scooter/bicycle manufacturers (including Avis), entrepreneurs like Ikea, ABB, and city institutions like universities and public parking garages. TK was responsible for the workshop and also held presentations in the event. The event was important for +CityxChange and TK because Switzerland can potentially be an interesting replication area and market for our partners.

Details of the solution can be found in D5.13: +Trondheim eMaaS Demonstration.¹⁴

3.8 Energidagene 2022 (27 - 28 September 2022, Trondheim)

Energidagene or "Energy Days" in Trondheim are part of an annual renewable energy conference that brings together key players who strive towards solving and implementing the challenges and ambitions of the green shift – from business and industry to research, public authorities, finance and policy instruments¹⁵. The Energy Days are organised by the national RENERGY cluster on renewable energy. TK gave a presentation on Positive Energy Blocks at Brattøra and Sluppen. The event was an opportunity to influence and discuss with regional experts and also opened doors for new projects and collaborations.

¹³ <https://davosdigitalforum.ch/e-mobility-as-a-service/>

¹⁴ <https://cityxchange.eu/knowledge-base/d5-13-trondheim-emaas-demonstration/>

¹⁵ <https://renergycluster.no/arrangement/energidagene2022/>

4 Next steps

In M49 - M54, political upheaval due to the war in Ukraine, rapidly rising energy prices and social unrest will continue to have a large impact on the +CityxChange project and its partners, combined with the aftermath of COVID-19.

In the project, we will continue to strengthen activities within the cities' and other partners' own networks to further a joint understanding of their accomplishments (also process-related innovations). We will furthermore continue to nurture the replication potential between Lighthouse and Fellow Cities within and beyond the project, supported by re-budgeting of funding streams in order to make these prioritised activities work.

In the last year of the project, we will execute on-site learning sessions in each of the Fellow Cities Písek, Sestao, Alba Iulia, Smolyan, and Võru. In these learning sessions, WP9 will cooperate closely with WP6, WP7, WP8 and WP10 to harvest as many learnings and outcomes as possible and start to summarise these in a "How to PEB" cookbook to be released during the final event of the project in Trondheim, to be held during the 1st week of October 2023.