

D9.3: Report on Attendance at Events Held By Other SCC01 Coordinators

+CityxChange | Work Package 9, Task 9.2

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List of Abbreviations

+CxC	+CityxChange or Positive City ExChange
BMVIT	Austrian Federal Ministry of Transportation, Innovation and Technology
CO2	Carbon Dioxide
EC	European Commission
EERA JPSC	European Energy Research Alliance, Joint Programme on Smart Cities
EIP SCC	European Innovation Partnership on Smart Cities and Communities
EC	European Commission
ERRIN	European Regions Research and Innovation Network
ICT	Information and Communication Technology
IES	Integrated Environmental Solutions
INEA	Innovation and Networks Executive Agency
ISOCARP	International Society of City and Regional Planners
JPI UE	Joint Programming Initiative Urban Europe
LCCC	Limerick City and County Council
MAI	Municipality of Alba Iulia
MP	Mesto Pisek
NTNU	Norwegian University of Science and Technology
OV	Officinae Verdi
PEB/D/N	Positive Energy Blocks / Districts / Neighbourhoods
R&I	Research and Innovation
R2M	Research to Market
RES	Renewable Energy Systems
SB	Sestao Berri 2010 Sociedad Anonima
SCC01	Horizon 2020 Smart Cities and Communities call
SCEWC	Smart City Expo World Congress
SDG CLP	Sustainable Development Goals Cities Leadership Platform
SCIS	Smart Cities Information System
SET	Strategic Energy Plan
SMO	Obshtina Smolyan (Smolyan Municipality)
TK	Trondheim Kommune
VITO	Flemish Institute for Technological Research
VORU	Võru Linnavalitsus (Võru Municipality)
VTT	Technical Research Centre of Finland
WP	Work Package

1 Executive Summary

This report describes the participation and lessons learned by +CityxChange partners in events organised by other SCC01 projects, SET-Plan Action 3.2, EERA Joint Programme Smart Cities, SCIS, EIP SCC, and other European networks during the first six months of the project.

The report is Deliverable 9.3 of +CityxChange Task 9.2 “Extra-Project Cooperation with existing LHCs and FCs through clustering events and workshops run by existing SCC01 projects, EIP SCC, SCIS and other EU platforms”, in Work Package 9 “Inter-Project Collaboration and Clustering”. It complements Deliverable D9.2 “Report on Intra-Project Collaboration, Including Study Visits and Peer to Peer Workshops”.

2 Interaction with other SCC01 Projects

2.1 Scope

+CityxChange partners participate in SCC01-organised events, workshops and Task Groups, and NTNU takes part in the SCC01 Board of Coordinators.

2.2 Smart City Expo (13 -15 November 2018, Barcelona)

The Barcelona Smart City Expo World Congress (SCEWC) is one of the world's leading event on smart cities — and a valuable meeting place for companies, cities and institutions that are engaged in their missions towards becoming a smarter cities while providing solutions for smarter societies, globally.

Trondheim municipality (TK) and NTNU had a joint booth in the Nordic pavilion, in which the +CityxChange project was promoted as part of the TRD3.0 Strategic University-City Agreement, with a delegation of around 15 persons. TK's presence included their CEO, while LCCC participated with a delegation including their deputy Mayor. Some of the +CityxChange solution providers, such as R2M and OV, were represented as well, during the expo in general as well as at the joint European SCIS - EIP SCC - SCC01 stand. We could achieve that +CityxChange would already feature on the infographics displayed at the SCIS - EIP SCC - SCC01 booth, even though the project only started on 1. November 2018. If the SSC01 projects, SCIS and EIP SCC organise a joint booth in 2019, +CityxChange will join them.

Several +CityxChange partners participated in the SCC01 discussion groups that were organised during the expo (including some GrowSmarter General Assembly Workshops), as well as meetings with the other SCC01 project coordinators and partners (informally and as part of the Board of Coordinators), project officers and other EC representatives.

TK and NTNU also organised a discussion table on open urban innovation, based on experiences of the +CityxChange project, during the Nordic programme.

2.3 Introduction to the Smart City Guidance Package (15 January 2019, online)

During the online Executive Board meeting of +CityxChange, Judith Borsboom (NTNU) presented the most recent version of the Smart City Guidance Package (SCGP) to the Lighthouse and Follower Cities. In her presentation, she explained how the SCGP has been developed within the European Innovation Partnership on Smart Cities and Communities (EIP SCC), building on the experience of Lighthouse and Follower Cities in SCC01 projects, as well as other smart city initiatives across Europe.

The +CityxChange cities were invited to contribute to the further development of the SCGP. During the official launch of the SCGP in Brussels on 8 May 2019, +CityxChange will take part in the discussion sessions.

2.4 +CityxChange meets MAKING-CITY (18 January 2019, online)

The Project Coordinators and Lighthouse Cities of +CityxChange organised an online meeting to get better acquainted with each others' projects, and to discuss future cooperation. During the meeting, the participants gave a brief introduction of their projects and cities' priorities and organisation, as well as milestones for 2019.

A next, face-to-face meeting will take place on 14 May 2019, back-to-back with the Smart Cities Working Group meeting organised in Brussels by ERRIN (European Regions Research and Innovation Network).

2.5 +CityxChange meets Smart Otaniemi (13-14 February 2019, Trondheim)

A Finnish delegation of Smart Otaniemi, Lighthouse City Oulu, VTT, and Business Finland visited Trondheim to discuss potential cooperation as SCC01 projects and as cities participating in the Sustainable Development Goal Cities Leadership Platform (SDG CLP). In addition to Trondheim municipality, NTNU, Innovation Norway, and the Honorary Consul of Finland participated in the event.

The ambitions for the meeting were:

- Sharing biggest challenges, future plans, best practices and other experiences between the Lighthouse City demonstration projects and Smart Otaniemi ecosystem;
- Can we solve the challenges with tighter collaboration between the countries, projects, cities and institutes?
- Can we align our future plans to do joint demonstrations and pilots simultaneously in Norway and Finland?
- Can we link Norwegian and Finnish funding instruments to these activities? What is the best way to fund, for example, pilot projects?
- Can we connect the Lighthouse City demonstration projects to each other? Can we find synergies between them?

The participants discussed a number of thematic areas in detail:

- Enabling technologies
- Platforms and connectivity
- Smart EV charging
- Aggregator business pilot



- Building level intelligence
- Flexible local market frameworks
- Underground thermal energy storage
- Regulatory sandbox
- Citizen engagement (how to get inhabitants to care about PEBs)

The participants also visited the Brattøra demonstration area, where selected +CityxChange demonstration projects were showcased. Furthermore, they were informed of additional urban innovation activities in the area, such as the new public transport system in Trondheim, and innovative ferry and fast boat solutions.

Trondheim and Oulu have both been invited to join the SDG Cities Leadership Platform, as university cities, as 2 of 25 cities in the world to lead and show the way in fulfilling the SDGs. The cities discussed how to create a global platform for open innovation and sustainable change.

2.6 SCC01 European Smart Projects Summit (26-27 March 2019, San Sebastian)

+CityxChange participated in the SCC01 European Smart Projects Summit in Donostia, San Sebastian. NTNU, R2M and SB attended the keynote speeches and parallel sessions discussing experiences from pre-2018 SCC01 projects, and took part in the study visit to some of the demonstration areas of San Sebastian as a Lighthouse City in the SCC01 project Replicate.

+CityxChange contributed to the Board of Coordinators meeting as well as the Task Group on Replication. NTNU signed the Lighthouse Projects Cooperation Manifesto on behalf of +CityxChange along with all SCC01 Project Coordinators.

During these meetings, the reports on “Why may replication (not) be happening. Two new reports on “Recommendations on EU R&I and regulatory policies” (SCIS, 2018) and “Smart City Guidance Package” (EIP SCC, 2019), to which +CityxChange contributed in late Autumn 2018 and early Spring 2019, were presented. The Smart City Guidance Package will be launched in public in Brussels on 8 May 2019.

2.7 Online SCC01 Meetings

+CityxChange participates in the online meetings of the Board of Coordinators (NTNU), and the Replication Task Group (R2M and NTNU). We will shortly start to participate in other Task Groups, such as the one on Business Models and Finance (OV), Dissemination (ISOCARP) and Data.

3 Contribution to SET-Plan Action 3.2

SET-Plan Action 3.2 Smart Cities and Communities aims to create 100 Positive Energy Districts by 2025. +CityxChange contributes to this Action by sharing knowledge regarding definitions, boundary conditions and Key Performance Indicators, as well as experiences from the participating Lighthouse and Follower Cities on planning and implementing Positive Energy Blocks and Districts. SET-Plan Action 3.2 is coordinated by the Austrian Federal Ministry of Transport, Innovation and Technology (BMVIT), and managed by Joint Programming Initiative Urban Europe (JPI UE).

3.1 SET-Plan Conference (20-21 November 2018, Vienna)

NTNU participated in a panel debate in Plenary Session 4 "Transforming Cities and Buildings: what systemic innovation is needed?" with an introductory presentation including +CityxChange, and the panel discussion itself. The main question the panel was asked to discuss, was "What it takes to bring cities and regions on a course towards sustainable energy use and what contribution EU R&I policies and funding can make; and related with it on implementing the relevant SET-Plan Actions that focus on the development and realisation of Positive Energy Districts"

3.2 JPI Urban Europe Policy Conference (12 February 2019, Brussels)

In the morning, plenary sessions invited cities to share their experiences of dilemmas in policy and practice and related knowledge needs on urban challenges, and discussed future research priorities.

Nicolaie Moldovan, the City Manager of the City of Alba Iulia, Romania, and +CityxChange Follower City, presented experiences from his city.

In the afternoon, the parallel session on "Positive Energy Neighbourhoods and Districts for Sustainable Urban Development" featured, amongst others, a presentation by Trondheim municipality on +CityxChange, and by NTNU on a European strategic research agenda for PEDs, currently being developed by EERA Joint Programme Smart Cities, and building on the experiences of +CityxChange, MAKING-CITY and other SCC01 and smart city projects.

The aim of this session was to raise awareness on the PED initiative that will be launched to support SET-Plan Action 3.2 Smart Cities and Communities. City and city network representatives discussed interests, experiences and barriers for implementation, presented good practice cases, and elaborated future possibilities. The session was hosted by JPI Urban Europe, EERA JPSC and ERRIN.

3.3 Positive Energy Neighbourhoods and Districts Programme Stakeholder Meeting (13 February 2019, Brussels)

The invitation-only meeting was hosted by the JPI UE PEN/PED programme management, and held at the premises of the European Energy Research Alliance, organised by NTNU.

During the meeting, the participants discussed specification of the PED concept and framework, organisational clarifications on contributions to the Work Plan 2019, and definition of milestones. Content issues of the breakout session at the JPI Urban Europe Policy Conference on 12 February, were discussed in a strategic view.

The working session on PED concept and definition, included mapping of the positions of stakeholders, specification of the concept, definition of key points, and definition of the framework for discussion with cities and stakeholders.

A second working session included coordination of mapping activities and plans on how to mobilise cities, with the establishment of a city network, communication strategies, conferences and meetings.

In a final working session, the Work Plan 2019 was set, with operationalisation of contributions and milestones by European stakeholder networks.

3.4 Presentation of +CityxChange to SET-Plan Steering Group (13 February 2019, Brussels)

NTNU was invited to present the contributions of the EERA JP Smart Cities to SET-Plan Action 3.2, to the SET-Plan Steering Group of Member States and EC representatives. Included in this presentation, was a brief introduction to +CityxChange, as an example of the on-the-ground demonstration projects that are being implemented in cooperation between European cities, research and solution providers.

3.5 PED City Workshop & Study Visit (3-4 April 2019, Vienna)

3.5.1 Scope

The PED City Workshop¹ was organised by JPI UE, to invite cities and city representatives to develop PEDs together and to lay the basis for further cooperation. About 40 representatives of SCC01 Lighthouse and Follower Cities, European networks and funding agencies participated in this workshop, which was by invitation only. The participants were given an introduction to PEDs in the context of sustainable urban development by JPI UE and BMVIT, including the 2000 Watt concept, near/zero/plus energy/emission neighbourhoods, etc, as well as an introduction to the ambitions of SET-Plan Action 3.2.

¹<https://jpi-urbaneurope.eu/news/short-review-ped-programme-cities-workshop-towards-a-european-positive-energy-cities-network/>

+CityxChange had organised its first Learning Workshop back-to-back with this event (as described in D9.2: Report on Intra-Project Collaboration, Including Study Visits and Peer to Peer Workshops), in order to enable all of our Lighthouse and Follower Cities, as well as interested Solution Providers, to participate in the PED City Workshop.

The workshop included several group discussions, amongst others to sketch a common vision of what PEDs would represent, what kind of action would be needed in terms of definitions, barriers and support frameworks, and what kind of pathways would need to be developed within research and innovation. The participants further identified their interest in participating in the PED programme, as well as the added value and requirements for future engagement.

In preparation of their participation, the cities were asked to fill out a template with information regarding their current PED development projects. The results were gathered in a booklet, and a working paper copy of this booklet was distributed among the participants in Vienna. The digital, final approved version is not yet publicly available.

A panel discussion with representatives from different stakeholder organisation types around PEB/D approaches rounded up the day, which Dirk Ahlers from NTNU highlighting the research perspective and the contribution of universities and research institutions.

The workshop was combined with a site visit on 4 April, to the brownfield urban development of the former Vienna Northwest railway station, including discussions with representatives of the city of Vienna.

3.5.2 Group Discussion on PED Definitions

Han Vandevyvere (VITO/NTNU) led a discussion table on PED definitions, with participants from the +CityxChange Lighthouse and Follower Cities as well as representatives of other cities and networks.

The discussion started from the European working definition² of Positive Energy Blocks and Districts, which, amongst others, forms the foundation of SCC01 projects +CityxChange and MAKING-CITY:

- Consist of several buildings (new, retro-fitted or a combination of both) that actively manage their energy consumption and the energy flow between them and the wider energy system;
- Have an annual positive energy balance;
- Make optimal use of elements such as advanced materials, local RES, local storage, smart energy grids, demand-response, cutting edge energy management (electricity, heating and cooling), user interaction/involvement and ICT;
- Are designed to be integral part of the district/city energy system and have a positive impact on it. Their design is intrinsically scalable and they are well embedded in the spatial, economic, technical, environmental and social context of the project site.

² https://ec.europa.eu/inea/sites/inea/files/02_20171024_-_bartholmes_-_scc1_info_day_-_jb.pdf

Assessing Positive Energy Blocks/Districts: as Primary Energy Factors used for energy balance calculations differ substantially depending on the framework, we evaluate

- Energy need;
- RES produced locally and
- Energy flows through test site boundaries.

The SET Plan Definition³ was also taken into account: Positive Energy Districts (PED) are energy efficient districts that have net zero carbon dioxide (CO₂) emissions and work towards an annual local surplus production of renewable energy (RES).

As there is no fixed, clear and elaborated (technical-environmental) standard, the group started to discuss proposing one, with the following elements:

- System boundaries? No elaborations – EC talks about ‘site boundaries’ which hints towards a geographic limitation;
- Primary energy or end energy? The EC seems to propose the use of end energy figures, see also BEST tables

From a technical point of view, a PED is characterized by achieving a positive energy balance within a given boundary. All actors operating within these boundaries need to come together to define the PED. Such boundaries can be:

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

The group proposed to consider PED types according to the manner in which the energy balance is achieved, thus providing for system flexibility and operational optimisation potential in the manner in which the PED is realised:

- Diamond: ‘plus-autarkic’, net positive yearly energy balance within the geographical boundaries of the PED and internal energy balance at any moment in time (no imports from the hinterland) or even helping to balance the wider grid outside;

³ https://setis.ec.europa.eu/sites/default/files/setis%20reports/setplan_delivering_results_2018.pdf



- Platinum: net positive yearly energy balance within the geographical boundaries of the PED but dynamic exchanges with the hinterland to compensate for momentary surpluses and shortages;
- Gold: net positive yearly energy balance within the virtual boundaries of the PED but dynamic exchanges with the hinterland to compensate for momentary surpluses and shortages;
- Silver: no net positive yearly energy balance within the geographical boundaries of the PED but energy difference acquired on the market by importing certified green energy (i.e. realizing a zero carbon district).

The word 'hinterland' is used here instead of 'grid' in order to include electricity, heat and cold plus any other energy carriers (biomass, biogas, syngas,...).

The group further suggested (inspired by the Swiss example) that energy-wise the PED must provide for 50% of its occupants' mobility energy (the challenge remains in defining which mobility energy as e.g. airplane trips of occupants shall not be included – probably all occupants' transport means reaching the PED shall be the norm?)

This work will be followed up by a face-to-face PED definition workshop on 6 May at the NTNU Brussels office, with participants from +CityxChange and MAKING-CITY, EERA Joint Programme Smart Cities, and JPI Urban Europe. The group will then continue to fine-tune the PED definition until the PED Definition Workshop, to be held on 25 June 2019 in Copenhagen, during the EERA JP Smart Cities partner meeting. After that, it will be presented to JPI Urban Europe, most likely on the 27th of June in Copenhagen.

3.6 Online IWG Stakeholder Meetings

NTNU participates in the online meetings of the SET-Plan Action 3.2 Implementation Working Group (IWG) Stakeholder Meetings, which are organised once every 1-2 months. NTNU originally participated in its capacity as Coordinator of the EERA Joint Programme Smart Cities, but now contributes in a dual role as +CityxChange Coordinator as well. During these meetings, the working structure of the IWG is discussed, and plans are made to set the Implementation Plan into action, with labs, tools, replication, monitoring and evaluation activities. The first step has been to organise a first PED City Workshop to engage cities in the cooperation.

3.7 Interaction with EERA and EERA JP Smart Cities

EERA JP Smart Cities is an official stakeholder in the SET-Plan Action 3.2, and EERA JPSC partners are involved in all SCC01 projects. Both Project Coordinators of the 2018-funded SCC01 projects, +CityxChange (NTNU) and MAKING-CITIES (CARTIF), are EERA JPSC partners, and NTNU leads the EERA JPSC. VITO as coordinator of SCIS is also an EERA JPSC partner.

EERA JPSC is currently developing a strategic research agenda to support cities in developing Positive Energy Blocks, Districts and Cities, within the framework of SET-Plan Action 3.2. As a concerted effort between European universities and RTOs, the strategic

research agenda will provide a scientifically valid and practically viable methodology (bridging science and practice), a systemic dimension (merging technical, spatial, regulatory, innovation, economic, social and other perspectives), and a mixture of participatory, practice-based, transformative, experimental and technical research, to support the real-time and future challenges European cities experience in their ambitions to develop, scale up and replicate Positive Energy Blocks, Districts and Cities.



4 Conclusions and Next Steps

During the first six months of the +CityxChange project, we have experienced that regular interaction with other SCC01 projects and cities, and cooperation towards SET-Plan Action 3.2 with European networks such as EIP SCC, EERA, and SCIS, is very fruitful. At the same time, we need to make sure to not overload the Project Coordinator, Cities and Solution Providers with too many additional meetings and travels.

While the first six months have been a period of experimentation towards extra-project cooperation towards other relevant EU platforms and projects, the next period will be used to fine-tune collaboration and exchange of good practices. +CityxChange will seek to participate as an actively contributing member of EIP SCC to:

- Get an overview of what already has been done by others when starting the detailed implementation of the demonstration projects and use this information to adjust the detail plans accordingly, if needed, for example from Action Cluster Positive Energy Blocks;
- Use specific methods and solutions which have proven to be successful, for example as shared by the Action Cluster Citizen Focus on engagement of citizens;
- Contribute to and learn from the Smart City Guidance Package, by developing tailor made Bold City Vision roadmaps for implementation;
- Participate in the “Small Giant” initiative;
- Disseminate +CityxChange results to other interested cities and urban stakeholders, for example at the General Assembly of the EIP-SCC, by organizing joint workshops with EIP SCC Action Clusters, by publications in the Newsletter and special issues on the website.

In addition, +CityxChange will contribute to updating the Smart City Information System, and will participate in SCC01-related activities upon the invitation of INEA. This offers additional possibilities for dissemination and knowledge sharing and exchange.

Partners will further leverage on their existing commitments in other EU programmes such as the EERA Joint Programme on Smart Cities, the Urban Europe Research Alliance and the Covenant of Mayors, effectively linking +CityxChange to these EU-wide initiatives.

