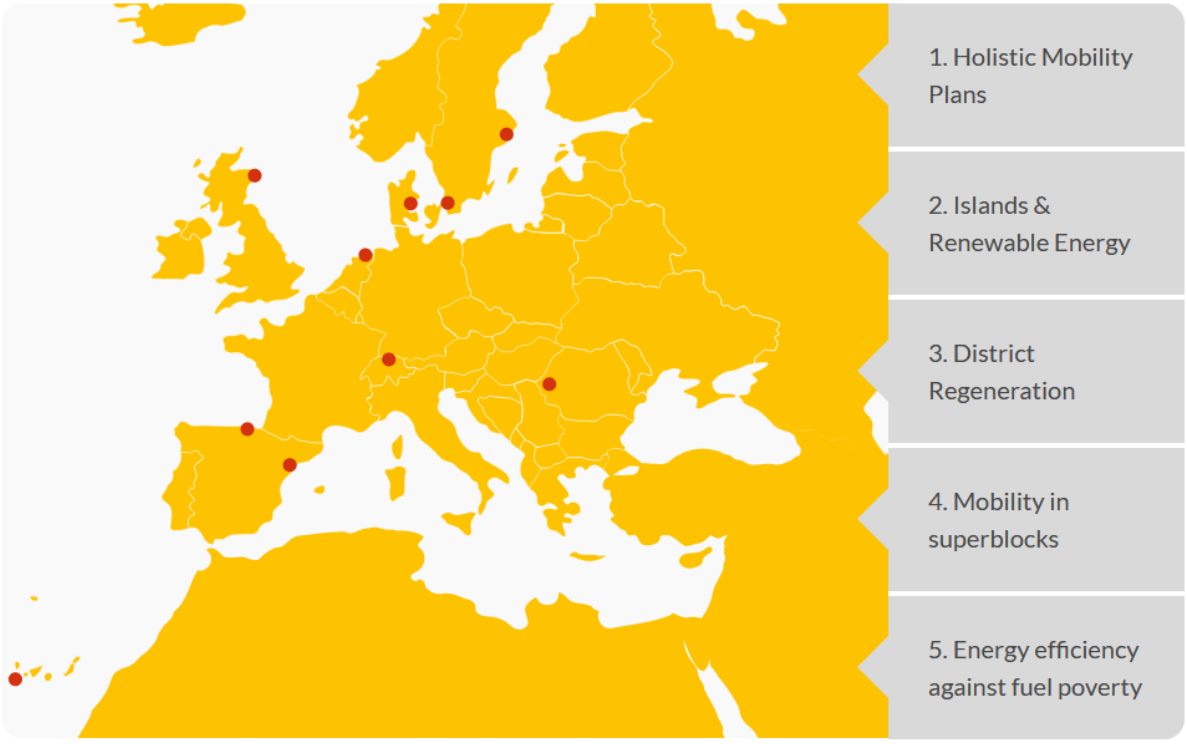
SMARTEES: Deliverable 8.3 (Report)

Documentation report of the results of the Follower Cities workshops

October 2021



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Executive summary

This report summarises a series of ten study visits that were organised and facilitated by ICLEI to share the activities and socially innovative experiences of the SMARTEES reference cases (focusing on the potential of Agent-based Modelling) with the relevant group of Follower Cities and Follower Islands that were mobilised in the project. The events created an opportunity for peer-to-peer knowledge exchange among reference cases and the Follower Cities recruited to follow each of the project's five social innovation clusters and to empower European cities and islands in their mobility and energy transitions. They further included a session that focused on Agent-based Modelling and illustrating its potential for local policy and decision making. The events and the main discussions that resulted are documented in this report.

Some of the study visits, namely those that took place in the main reference cases (Vitoria-Gasteiz, Zürich, Aberdeen, Samsø, and Malmö) were also partially filmed to produce short videos that are available on the project website for interested visitors to view.

Chapter 1 of this report provides an overview of the SMARTEES project and the role of the Follower Cities and Islands workshops. Chapter 2 introduces the main and supporting reference case of the social innovation cluster that focuses on "Holistic Mobility Plans" and reports on the study visits that took place in each. Chapter 3 summarises the study visits that took place in the cases included in the cluster on "Islands and renewable energy." Chapter 4 considers the two study visits that were organised within the "District regeneration" cluster. Chapter 5 provides insights into the knowledge and experience that was shared during the study visits in the cluster on "Mobility in Superblocks." Each of the five cluster chapters further include a sub-section that summarises the work that was carried out with Prime Follower Cities. Chapter 6 concludes with the study visit summaries with a look into the study visits that were organised as part of the "Energy efficiency against fuel poverty" cluster. Chapter 7 lists the names and relevant list of the five videos that were produced to document the study visits in the main reference cases of each social innovation cluster.

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List of abbreviations

Abbreviation	Full word
ABM	Agent-based Modelling
ROSENC	Romanian Sustainable Energy Cluster
SECAP	Sustainable Energy and Climate Action Plan
SI	Social innovation

1. Introduction

In the SMARTEES project, social innovation in energy transition is considered to be "a process of change in social relationships, interactions, configurations, and/or the sharing of knowledge leading to, or based on, new environmentally sustainable ways of producing, managing, and consuming energy that meet social challenges/problems."[1]

Taking the concept of social innovation (SI) as the starting point, SMARTEES aimed at a) building a theoretical framework and cross-case analysis of SI in different thematic clusters, b) carrying out empirical work in the clusters, and c) building social simulations of the cases, using Agent-based Modelling (ABM), in order support policy making. Figure 1 summarises the different activities and work flows in the project.

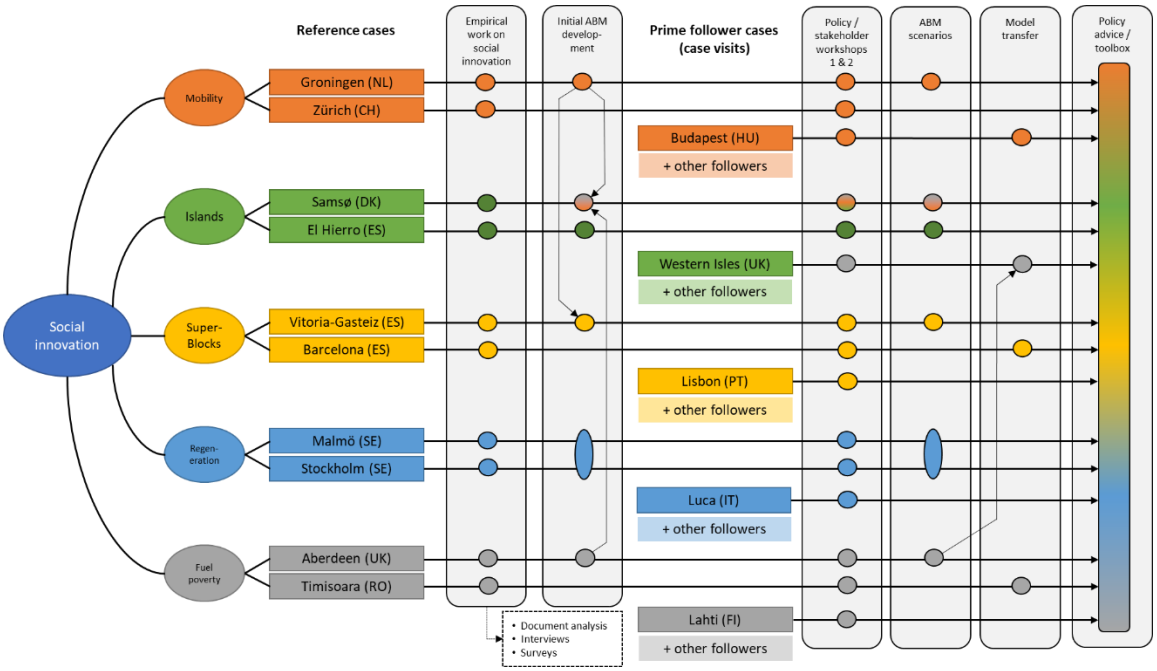


Figure 1: Overview of project activities and work flows, © Christian Klöckner

There are five thematic clusters, which represent the five types of energy- and mobility-related local social innovation that were researched in ten front-runner cities and islands across Europe (i.e. those depicted as reference cases in Figure 1). The five clusters are:

1. **Holistic, shared and persistent mobility plan**

   A defining feature of this social innovation is the participatory development and adoption of a holistic and persistent mobility plan, in which all city development and planning follows a coordinated approach focussed on making mobility efficient and sustainable.

   The reference cases that were analysed as part of this cluster were Zürich (Switzerland) and Groningen (the Netherlands).

[1] See Caiati, G., Marta, F. L., & Quinti, G. M. (2019) *D3.1 - Report about profiles of social innovation "in action" for each cluster*. Retrieved from https://local-social-innovation.eu/fileadmin/user_upload/Deliverables/SMARTEES-D3.1_SI_in_Action_R1.pdf.

2. **Island renaissance based on renewable energy production**

   This social innovation centres around the mobilisation of island residents and public and private stakeholders to achieve energy independence through renewable energy production and energy efficiency measures, thus becoming a means to revive island communities.

   The reference cases that were analysed were Samsø (Denmark) and El Hierro (Spain).

3. **District regeneration**

   This social innovation triggers district regeneration through hard and soft measures, such as local energy production and energy efficiency measures, urban green spaces, transport system transition measures and citizen participation.

   The reference cases that were analysed within cluster #3 were Malmö and Stockholm (Sweden).

4. **Urban mobility in superblocks**

   Superblocks are an urban innovation that introduce low-carbon mobility practices through the reorganisation of urban space, which minimises the use of motorised modes of transportation. Superblocks help to reorganise urban space into car-free areas that are aimed at maximising public space and fostering social and economic interactions at the street level while keeping private cars and public transport outside of neighbourhoods.

   The reference cases that were analysed within cluster #4 were Vitoria-Gasteiz and Barcelona (Spain).

5. **Fighting energy poverty through energy efficiency**

   This social innovation is characterised by public authorities that work in coordination with supply companies and civil society organisations to implement energy efficiency measures for houses and buildings, as part of an effort to fight fuel poverty using a tailored and inclusive approach.

   The reference cases that were analysed were Aberdeen (Scotland) and Timişoara (Romania).

The data that was collected as a result of the case research fed into the development of computer simulated models for the cases, using Agent-based Modelling (ABM). The models simulated the real events that occurred in the cases, in an effort to highlight the factors that had an impact on social behaviour and the resulting situation in the relevant case. Understanding these factors is helpful for another city or island that is interested in achieving a similar end result or pattern of social behaviour.

Following the development of the base simulations and models, workshops were carried out to define alternative policy scenarios that were of interest for the representatives of the reference cities and islands. These scenarios were also simulated, in order to generate insights into the predictability of social behaviour vis-à-vis energy and mobility policies. One of the project's key outputs, which summarises these efforts, is the SMARTEES Policy Sandbox Tool (PST). The PST is publicly available online on the project website: https://local-social-innovation.eu/policy-sandbox-tool/.[2]

Follower City/Island engagement in the project

[2] Cf. figure 1; see Meskovic, E. & Mischkowski, N. (2021) D8.2 SMARTEES Policy Sandbox IT tool and workshop concept. Retrieved from https://local-social-innovation.eu/fileadmin/user_upload/Deliverables/SMARTEES_D8.2_PST_final.pdf

Whereas the above-mentioned activities concerning case research and model development were carried out exclusively with the reference cases, SMARTEES mobilised a large number of cities and islands (referred to as the SMARTEES Follower Cities and Islands) within each thematic cluster to hear about the experiences of the reference cases and learn about project results. Within each cluster, one city or island was further invited to get potentially involved in fast data collection and in the modelling process; these are referred to as Prime Follower Cities and Islands.

As Work Package leader for communication and dissemination, ICLEI organised events in 2018 and 2019 in close collaboration with the local partners in each of the SMARTEES reference and supporting cases. Study visits and workshops played an important role in the project, especially when it came to the dissemination of reference and supporting case experiences in social innovation and the energy and mobility transition. The events created an opportunity for a peer-to-peer knowledge exchange between Follower Cities and Islands of each cluster. Furthermore, it allowed cities and islands to provide feedback on the Policy Sandbox Tool and its development.

The study visits aimed to inspire Follower Cities and Islands by showing them one or more sites that illustrated coordinated, tailored, and inclusive social innovation experiences in the SMARTEES reference and supporting cases. Technical, social, political and institutional aspects were highlighted and barriers, tools, success factors, lessons learnt and results of interventions were explored. The co-creation workshops that followed the site visits aimed to encourage reflection on the experiences of the relevant reference cases and how cities and islands could support one another in their energy and mobility transition efforts, as well as to foster peer-to-peer knowledge exchange. The workshops were also used to gather qualitative research data for the SMARTEES project and in some cases were used for the production of site visit videos as additional means of communication (see Chapter 7, video reporting).

Two rounds of study visits took place: the first round of events took place in the SMARTEES main reference cases of Zürich, Vitoria-Gasteiz, Samsø, Malmö, and Aberdeen. Besides inspiring field trips that enabled meeting key local stakeholders and seeing the results from ongoing or finalised projects, the co-creation workshops covered the following points:

1) the understanding of what social innovation is;
2) the most relevant/interesting/innovative aspects of the reference and supporting cases;
3) similarities and differences between cities and the transferability potential of the reference and supporting case projects;
4) the main encountered barriers/difficulties and ways to overcome them; and
5) concrete steps/roadmaps for tailoring and replicating the pioneer experience to another context (having both technical/urban planning and social/political/institutional innovations).

The second round of events took place in the SMARTEES supporting cases (i.e. Groningen, Vitoria-Gasteiz, El Hierro, Stockholm, and Timisoara) to continue the discussion on both technical and social innovation elements and the contextual factors that placed a role in each city's transition experiences. Additional space for exchange was provided to the Follower Cities and Islands to share a specific method or approach for social innovation interventions in more detail. Furthermore, in some of the workshops during the second round, a session about the Policy Sandbox Tool was included to gather expectations and feedback for its conceptual development.

Following the study visits, during the 2020 to 2021 period, some research activities were carried out with the Prime Follower Cities and Islands, in order to understand how the models developed for the reference cases could be adapted to the Prime cases as well as to collect their feedback related to the Policy Sandbox Tool.

2. Cluster 1: Holistic, shared and persistent Mobility Plan

2.1 Zürich

Overview and participants

The Follower City study visit to Zürich took place on the 25th of October 2018. The purpose of the visit was to share learnings linked to the mobility plan that was developed in Zürich over the previous 30 years with the cluster #1 Follower Cities (i.e. Burgas [BG], Trondheim [NO], Izmir [TR], and BKK Centre for Budapest Transport [HU]). Overall, four representatives of the city of Zürich, two of the city of Burgas, one of BKK Centre for Budapest Transport, one of the city of Izmir, one of the city of Trondheim, one project partner from Knowledge and Innovation (K&I), and three from ICLEI European Secretariat took part in the visit. During the visit, examples of social innovation linked to Zürich's holistic mobility plan and the role the played in making the plan a success were explained.

In the morning, the concept of social innovation and the SMARTEES project were introduced to familiarise participants with their relevance for local policy making and planning. This was followed by a presentation by a representative of the city of Zürich, during which different dimensions of social innovation in holistic mobility planning in Zürich were explained. Afterwards, a guided city tour brought participants to three different locations (see below), each of which illustrated elements of social innovation related to Zürich's mobility plan. In the afternoon, a knowledge co-creation workshop took place and aimed to foster knowledge sharing between the cities and to encourage them to reflect on how Zürich experiences compared to their own.

Discussion of social innovation

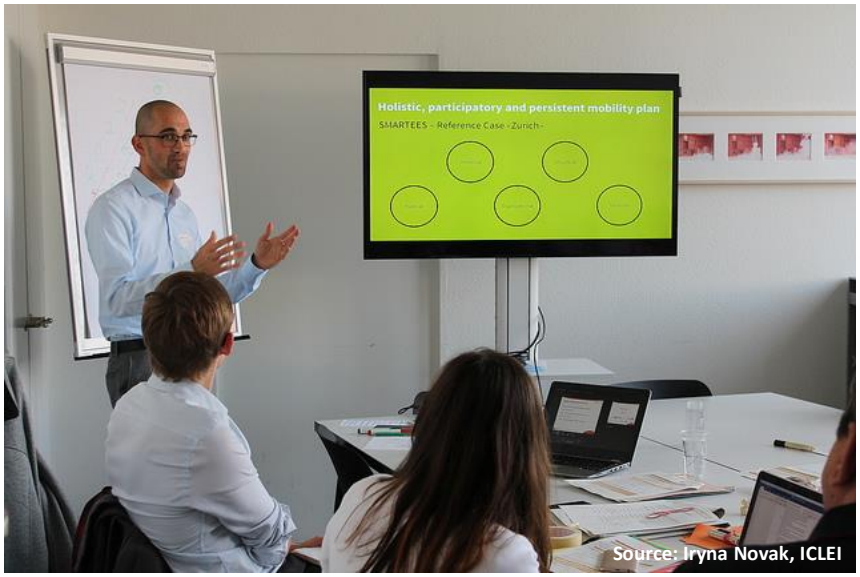
Since the term 'social innovation' can at first appear abstract to more technical staff in local governments, a short exchange was facilitated in the morning session concerning the question, *"What do you understand by social innovation in the context of energy and mobility transitions?"* The aim was to increase the relevance of the term by creating a clear link between it and the participants' local context, before explaining the term as it is used in the SMARTEES project. The Follower Cities connected a range of aspects with social innovation, including the promotion of cycling or walking, the provision of car sharing services for commuters, and digital applications that support certain mobility behaviours.

To summarise, the experiences and examples that participants had with the term "social innovation" ranged from behaviour change, to new business models related to the sharing economy, to methodological processes associated with social innovation.

Presentation of the reference case

To allow participants to better understand Zürich's holistic, shared and persistent mobility plan, a representative of the city explained the political, historical, organisational, structural, and technical dimensions that ultimately enabled Zürich to achieve the goals set out in its mobility plan. Regarding the political dimension, the influence and power of direct democracy was emphasised and the role of citizens as a control element in Zürich was highlighted. Citizens, for example, corrected the city administration's policies through referenda when they felt that the city was too ambitious in its mobility plan or, on the contrary, was too hesitant in its actions. Illustrating this point, it was explained that a referendum that was held in the 1970s allocated 200 million Swiss francs for the promotion of public transportation. Shortly thereafter, the 1980s saw the start of holistic mobility with the development of a "blue book" of principles, which was followed by a mobility strategy in the 1990s.

While the city of Zürich was said to have a high ability to act in developing solutions, the organisational setup nonetheless requires that all solutions are kept in line with both the cantonal as well as the national level legal frameworks. The importance of having a clear vision, goals and an action plan was emphasised. During the presentation, interlinkages with a range of activities were also highlighted, including the monitoring of traffic behaviour, communication about situations and how they are addressed by the city, the setting up of infrastructure (e.g traffic lights) so that they are in favour of public transport, and development of pedestrian zones.



Source: Iryna Novak, ICLEI

Site visit

The participants were taken on a tour to visit three sites, each of which allowed them to see first-hand the different practical measures that were part of Zürich's holistic, participatory and persistent mobility plan. For the first of the three sites, Zürich representatives brought participants to a traffic intersection to illustrate the traffic light priority that is given to public transport throughout the city.

Source: Iryna Novak, ICLEI

The second site concerned a public square that was previously a space that was dominated by parking lots but was then transformed into a pedestrian zone. As part decision that was made in the 1990s to limit parking spaces in the city centre to 7.600, all parking spaces in the square were removed and car drivers were asked to park in new, underground parking spaces, instead. The overall number of parking spaces remained unchanged. Following the visit to the square, participants were brought to one of the piazza pop-ups that were piloted throughout the city at the time. The pop-ups, decorated with new benches, seats, and plants offered residents new locations to gather and discuss with one another. Residents were heavily involved in decisions regarding whether to keep the piazza pop-ups permanently or not, since they were able to vote on whether they liked them. Based on the feedback that was received, it was decided whether a pop-up would be kept permanently in a particular location.


Source: Iryna Novak, ICLEI

Lastly, participants visited a redesigned square, the development of which involved a three-year process that was characterised by a strong involvement of local citizens. Formerly only a junction where several streets met, the area was redesigned to include one traffic-restricted car lane and a new public square.


Source: Iryna Novak, ICLEI

Knowledge co-creation workshop

The knowledge co-creation workshop was moderated by ICLEI and allowed the Follower City participants to share information related to holistic mobility planning in their cities, reflect on the strategies and examples of mobility planning in Zürich, and compare Zürich's experiences with those of their local contexts. The cities were first asked to share their views on the most interesting aspects

related to the Zürich case. Overall, there was agreement that the significant influence and participation of citizens through referenda was interesting, but also specific to the Swiss political system.

The participants were then divided into two groups and asked to think about similar or other opportunities and barriers they experienced in their respective cities when compared to the case of Zürich. The role of participation and referenda in the political system of Zürich, and Switzerland more generally, was again highlighted as a key factor when participants considered the transferability of Zurich's experience to other cities. The representative of Budapest expressed seeing more differences than similarities with the case of Zürich, whereas the representative of Trondheim pointed out several similarities related to the technical aspects of mobility planning.

In the last round of group discussions, participants brainstormed steps they could take to implement a holistic, shared and persistent mobility plan. Different ideas were discussed, such as the introduction of reduced public transport ticket prices, the possibility of cross-subsidisation through increased parking fees, and maintenance aspects related to bicycle infrastructure. It was also suggested that the legal environment is a barrier to or driver of measures such as those implemented in Zürich, and the need for well-grounded analysis of the legal options and limits of measures was emphasised. In Burgas or Izmir, for example, the legal framework would not allow for referenda on mobility plans.


Source: Iryna Novak, ICLEI

2.2 Groningen

Overview and participants

The Follower City study visit to Groningen took place on the 27th of February 2019, and represented the second study visit in the cluster on holistic mobility planning. The purpose of the visit, similar to the second round visits of the other clusters, was threefold:

a) For the reference cities to share with the four Follower Cities of cluster #1 the learnings linked to holistic, shared and persistent mobility planning, with a particular focus on the cycling that has taken shape in Groningen since the 1970s. An emphasis was put on social innovation aspects in making mobility planning in Groningen a success.
b) For the Follower Cities to share the lessons learnt of concrete interventions in their cities related to holistic, shared and persistent mobility planning and to receive input from the other Follower Cities and the reference city.

c) For Groningen to share one concrete approach it has taken to foster social innovation in holistic, shared and persistent mobility planning and enable Follower Cities to learn from the concrete approaches.

One representative of the city of Groningen, one of the city of Burgas, one of BKK Centre for Budapest Transport, one of the city of Izmir, one of the city of Trondheim, two project partners from the University of Groningen, three from the Norwegian University of Science and Technology (NTNU), and two from ICLEI European Secretariat took part in the visit. As an internal SMARTEES working meeting took place in Groningen on the two days prior to the study visit, several members of the SMARTEES consortium were, therefore, also able to join the visit.

In the morning, a representative of the city of Groningen explained how Groningen became a cycling city by consistently applying the concept of holistic mobility planning. Study visit participants were subsequently taken on a cycling tour to five different locations, each of which exemplified elements of holistic mobility planning in Groningen. In the afternoon, a knowledge co-creation workshop took place and aimed to foster knowledge sharing between cities concerning holistic mobility planning in Groningen and concrete interventions that were implemented in the Follower Cities.

Presentation of supporting city case

After an introduction to the SMARTEES project and its conceptual approach, a presentation was given by a representative of the city of Groningen on how Groningen became a cycling city over a period of 50 years through persistent, shared and holistic mobility planning. As a result of this process, 60% of all journeys inside the city are made by bicycle. Various factors that played a role in fostering cycling in Groningen were illustrated.[3]

Three milestones of social innovation in holistic mobility planning, which continue to play a key role in changing the mobility behaviour in Groningen, were further explored:

a) The Traffic Circulation Plan;

[3] See Caiati, G., Marta, F. L., & Quinti, G. M. (2019) *D3.1 - Report about profiles of social innovation "in action" for each cluster*. Retrieved from https://local-social-innovation.eu/fileadmin/user_upload/Deliverables/SMARTEES-D3.1_SI_in_Action_R1.pdf.

b) Closing a large park ("Noorderplantsoen") to traffic;
c) Reconstruction of a crossing for cyclists.

The presentation concluded with a mentioned of some of the most recent mobility-related measures, such as a new cycling roundabout that benefits cyclists.[4]

First cycling roundabout. Source: City of Groningen

Site visit

The participants were taken on a cycling tour of Groningen, stopping at five points of interest that exemplified the holistic, shared and persistent mobility planning that Groningen pursued over a period of 50 years. The first two points of interest were the central road that was closed to cars in the city park "Noorderplantsoen" and a crossing at the Wilhelminakade that was reconstructed as it was previously considered to be unsafe.

Route:
0: City Development - Start
1: Noorderplantsoen
2: Wilhelminakade
3: A-straat
4: Emmabrug
5: Stadsbalkon

Cycling tour. Source: City of Groningen

The site participants visited was one of the main streets in downtown Groningen, which was closed for main bus routes in 2018 and transformed into a shared space for cyclists and pedestrians. It was explained that the city of Groningen was experimenting with the mixed use of the space with limited

[4] For details of the case, see Caiati, G., Marta, F. L., & Quinti , G. M. (2019) *D3.1 - Report about profiles of social innovation "in action" for each cluster*. Retrieved from https://local-social-innovation.eu/fileadmin/user_upload/Deliverables/SMARTEES-D3.1_SI_in_Action_R1.pdf.

regulations. The fourth point along the cycling tour was at the Emmabridge, a major junction at the inner ring road, where cyclists are given priority – in all directions – through the traffic light system. It was explained that the intention in giving priority in all directions, rather than a single direction, was to foster the code of conduct "to solve it together" and ensure that cyclists would need to pay close attention to each other at the junction.

All directions Green for Bicycles. Source: City of Groningen

The last stop on the tour was a large underground bicycle parking that was located directly in front of the main train station. The parking can be reached via a bicycle lane in two directions as well as stairs from the train station. Bicycle storage is free, monitored 24/7, and has space for about 4,000 bicycles.


Source: Ralph Ripken, ICLEI

Knowledge co-creation workshop

The knowledge co-creation workshop was divided in two main parts: firstly, the four Follower Cities presented a concrete intervention related to holistic mobility planning that was implemented in their city; Secondly, a representative of Groningen provided a more in-depth explanation of the approach the city took with regard to participation and area-oriented cooperation.

For the first part, representatives from the Follower presented their cases:

- The representative from Budapest presented the city's Sustainable Urban Mobility Plan for 2030, and expressed interest in understanding the modal split in Groningen and measurement;

- The representative from Izmir spoke about the conversion of a two-lane car street into a one-lane street with a new tramway, as part of an effort to increase access to public transport and increase public space.
- The representative from Trondheim presented on the city's zero-growth goal for car traffic and the conversion of a street, which is tangential to the city centre and one of the traffic arteries into the centre, from a four-lane to a two-lane street for a six-month trial period. The intention behind the conversion of the street was to increase public space, improve conditions for cyclists and pedestrians and try out a new traffic situation and then evaluate the project as a permanent solution. For Trondheim, the interest was in understanding planning design to improve the safety of pedestrians and cyclists.

- The representative of Burgas presented on interventions in the harbour area that were designed to increase public space, rehabilitate the area and improve mobility transport connections. For Burgas, the main interest was the link of sustainable mobility in legislative frameworks for cycling infrastructure, which led to a discussion of subsidiarity in multi-level governance and national differences between the countries represented in the workshop.

For the second part of the workshop, the city of Groningen's approach to area-oriented cooperation for different neighbourhoods and its social innovation potential to positively impact the mobility transition was presented. It was shown how, starting from the ruling parties' coalition agreement, to cross-departmental cooperation and the creation of so-called area teams a new form of local, neighbourhood-level, governance was created.[5] All participants positively commented on the presented insights and the approach Groningen had taken.

[5] It was explained that the area teams have been operating for four years and several aspects which contribute to their success were highlighted: proximity to the municipal administration through a local council member; a visible and easily approachable team; deployment of expertise from the city in the process; the area team is the link for cooperation in the neighbourhood and works according to a local logic. On the other side, the challenge for the area teams is to reach a large variety of people and to fully give authority to citizens on matters that concern their direct environment. The city council sets the framework, budget and policy objectives for the area programs each year and contributes to the development and implementation of area agendas.

2.3 Activities carried out with the Prime Follower City: Budapest

Modelling activities with Budapest occurred in 2021, when the model for the Groningen case was ready to be tested with a different context. In the first half of the year, two representatives from Budapest participated in the policy scenario workshops that were held with Groningen and Zürich.[6] The following paragraphs give an overview of the work that was achieved related to the modelling of the Budapest case.

The Budapest case focuses on plans to close down a road (Kós Károly street), which runs through a park, to car traffic; this reflects the Groningen case, where the closure of a park to car traffic was also investigated. The park can be seen in the middle of the map below (Heroes' Square), and the Kós Károly street runs from where the M3 connects with the Hungária ring road around the city centre.

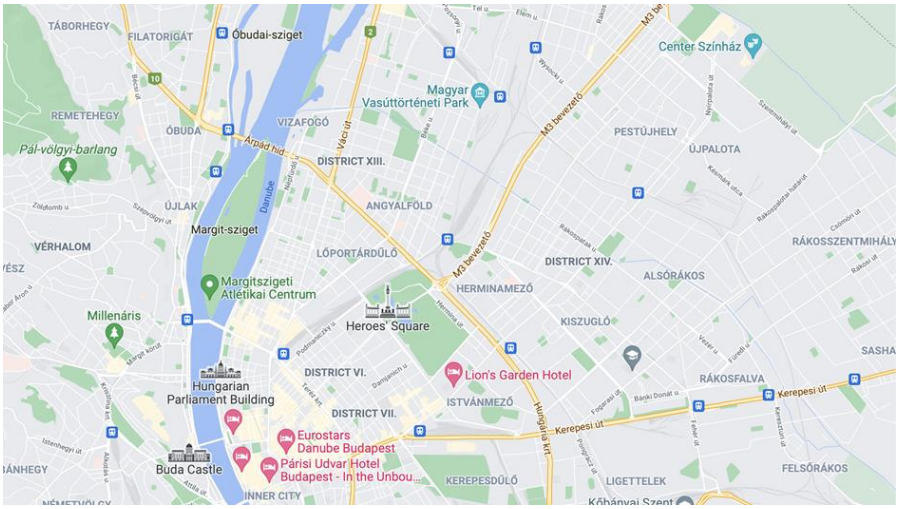


Figure 2: map of the city centre of Budapest

The municipality of Budapest is striving towards a more sustainable and green city, and hence the closing of the park to car traffic fits within its wider policies. With elections approaching, however, it is possible that this policy course may change if a new mayor with different policy priorities is elected.

The road that runs through the park is primarily used by people from the north eastern parts of Budapest to enter the city centre. For the Budapest model, the Groningen model will be adapted using basic statistical and city date related to the behaviour of Budapest's population around the park. Specific attention will be directed at the relation between spatial location (neighbourhoods) and socio demographic data and motives concerning the opening or closure of the road through the park; information that was available due to surveys that were carried out by the city.

[6] These workshops were carried out as part of WP5, see D5.2 "Policy recommendations for each cluster of case studies and an online tool for the co-production of energy policy and simulations" (due in October 2021).

3. Cluster 2: Islands & Renewable Energy

3.1 El Hierro

Overview and participants

The Follower island visit to El Hierro took place on the 16th of November 2018 with the aim to share learnings of the success and difficulties of El Hierro in striving for 100% renewable energy self-sufficiency through the combination of hydro and wind power. The windy climate and mountainous landscape on the volcanic island provide the physical conditions to achieve this goal. The trigger, however, was the political will and consensus to tackle water and energy vulnerability through developing and implementing a sustainability plan early on. Following the plan, the public-private partnership "Gorona del Viento" was set up for developing and realising this hydro-eolic project. El Hierro is a reference case for islands striving for sustainable energy self-sufficiency. The visit was coordinated by Gorona del Viento. The Follower Islands that were included as part of this cluster were Ameland (NL), Lemnos (EL), Traena (NO), and the Western Isles (Scotland).

Two representatives of Gorona del Viento, two of the island of El Hierro, one of the island of Ameland, one of the island of Traena, one of the Western Isles (participated virtually), one project partner from A Coruña, and two from ICLEI European Secretariat participated in the visit.

After an introductory session on the concept of social innovation and SMARTEES project, led by ICLEI, a representative of El Hierro introduced the Gorona del Viento project and its aims, and explained the technical set-up, resident engagement and the intervention's outcomes. The site visit, guided by a representative of Gorona del Viento, featured wind turbines, water reservoirs, a pumping station and water turbines. During the afternoon, ICLEI facilitated a knowledge co-creation workshop, which aimed at fostering knowledge exchange between the islands and reflect on the experiences of El Hierro.

Discussion of social innovation

As in previous workshops ICLEI facilitated a short exchange on concept of social innovation. Participants from the three follower islands connected a wide variety of elements to the concept. Points collected were, amongst others, the provision of free energy advice to citizens, public meetings with the population, provision of ownership options in renewable energy infrastructure, business incubators, or also political consensus making.

The common themes that emerged linked to social innovation were strong community and citizen involvement, new inspirations via people from the outside, and behaviour change through advice and different models of co-funding. The importance of involving the community through ownership options and participatory processes stood out in all follower islands as a key feature for success.

Presentation of the Supporting Island case

The councillor of El Hierro presented the case of El Hierro, starting from its geography, wind conditions, and energy demand, to the history of El Hierro's sustainability plan. The council of El Hierro had decided to choose a more sustainable development path back in 1997. The sustainability plan was developed and covers agriculture, marine protection, land protection, tourism development and energy. The sustainability plan was the starting point for developing the Gorona del Viento hydro-eolic project. Based on a strong political consensus, support by the Spanish government and the European Union, the project was developed and started operating in 2015. One of the biggest risks for El Hierro has always been the lack of drinking water; providing renewable electricity to three desalination plants thus also constituted an incentive to guarantee the water security on the island.

A challenge that was explained to remain was the conviction of the population about the benefits of the project, because many people had expected that it would significantly lower their energy costs – what was not the case. The Gorona del Viento project involves a mixed public-private ownership, where the council of El Hierro holds the largest share and thus holds a veto power. Currently, the financial revenues of the project are invested in an electrical vehicle park, including charging stations, as well as solar panels for farmers' self-consumption.

Site visit

The participants were taken on a two-hour site visit of the various locations of the Gorona del Viento project. It entailed a water reservoir on top of a mountain slope (700m of altitude in difference), the water turbines with a total capacity of 11.5MWe, and five wind turbines (with 2.3MWe each). The setup was explained to hold sufficient water for 2-3 days of electricity production, in case of technical problems with the wind turbines or absence of wind. In 2017, the project covered almost 50% of El Hierro's electricity consumption. The trip finished with a visit to the main control room, the lower water reservoir, the lower part of the water pipelines (see picture), the water turbine hall as well as the water pumping hall. It was stated that in theory the island could be energy self-sufficient.

The total project costs were 80€ million, financed by the Spanish government, the regional and local government as well as additional bank loans. One of the key constraints to increase the share of renewable electricity production was explained to be the size of the lower reservoir, which had to be constructed smaller than originally planned due to seismic risks (limiting the water storage capacity to 2-3 days of electricity production).

Knowledge co-creation workshop

The knowledge co-creation workshop aimed to allow the participants to share background information on their island, their efforts in achieving 100% renewable energy production, to reflect on the renewable energy production project on El Hierro and to exchange on learnings from El Hierro and their own islands.

For the sharing of background, the following inputs were shared:

- For the Western Isles (Scotland), the challenges discussed were an aging and declining population, an overdependence on the public sector for employment and very high levels of fuel poverty. At the same time the wind resources on the islands were said to be significant. Community owned wind farms are in operation and a planned new electricity line from the main land provides an opportunity for significant expansion of onshore wind development while maximising social and community benefits from the new wind turbines. The initiative for new windfarms was not only driven by the council, but community groups were equally very active.
- In the case of Traena (Norway), a masterplan for the island was developed in a participatory process. The island won an award for being the most innovative community in Norway and the company “Osram” carried out a pilot with energy-efficient public lightening installations that also involved consulting citizens.
- The island of Ameland shared about its aim to become fully energy self-sufficient by 2035. The island considers itself as an energy-transition pilot site, signing a project with several larger companies to implement the project and to become a front runner in the energy transition. The council was explained to have involved citizens very regularly in various parts of the projects and even fears that it might have over-engaged with citizens, leading to an engagement fatigue. Citizens were also financially engaged, through shares in a solar park, installation of heat pumps at home and fuel cells for small businesses. As a particularly interesting case, a local energy cooperative was presented that is selling locally produced renewable energy and reinvests profits into further renewable energy projects on the island.

The cooperative owns one third of the island's solar park, giving every citizen the option to become a member through a 50€ membership fee.

The Follower Islands were subsequently asked to share with the larger group what they thought were the most interesting aspects of the El Hierro example. The following aspects stood out:

- The combination of wind and hydro power to make the island self-sufficient
- Political consensus and agreement to move ahead on environmental aspects: the island government is proud of this. It has been the main force that the project continues over time
- Innovative grid balancing: combination of flywheels with a generator
- Reshaping the identity of the island through renewable energy self-sufficiency
- The "let's do it" approach of the El Hierro council

The exchange between El Hierro and the three island representatives highlighted the similar issues and experiences they had. Participants from El Hierro indicated that in the process of the project, the council and Gorona del Viento had difficulties to involve citizens in the right way and to overcome the common belief that wind energy would be free. Ameland's experience suggested employing an energy officer explaining potential energy savings to citizens and incentivising energy efficiency investments. The participant from the city of Traena's had the idea to train "climate and renewable energy" ambassadors among the citizens of El Hierro to increase the awareness for the project and trust into the project through unpolitical ambassadors.


Source: Sara de Maio, ICLEI

In a second step in the workshop participants were asked to share the challenges, they experienced on their islands related to renewable energy projects. Available finance, inconsistent regulation for sustainable energy and regulation which is hindering development on islands were all mentioned as considerable challenges. The electricity price for instance is similar on El Hierro as in other parts of Spain which makes it impossible to charge lower electricity tariffs on El Hierro. El Hierro, in particular, expressed a need to be able to communicate to citizens in the right way and involve them actively.

To close the workshop, ideas for future steps on El Hierro were collected by the participants. They entailed:

- identifying influencers in the community,
- turning them into ambassadors to communicate the project and its positive message in a clear and unpolitical way,
- inviting researchers,
- participatory budgeting,
- making citizens responsible for investment priorities considering the common good.

3.2 Samsø

Overview of the day and participants

The second study visit of cluster #2 took Follower Islands to Samsø, where participants were welcomed at the Samsø Energy Academy on 23 April 2019. The purpose of the day was to allow the Follower islands to discuss main energy transition drivers, to learn from methods Samsø used directly with its population and to discuss accomplishments and key learnings of 20 years of energy transition to become a green, carbon-negative island, as wells well as barriers and replicable solutions. The importance of shared-ownership and community building were particularly underlined to understand the success of Samsø's transition. Furthermore, the afternoon workshop was facilitated by the Energy Academy in the same way as when engaging with the island inhabitants. For the Follower Island representatives, it was also the opportunity to share their main challenges and discuss with all participants the possible processes and concrete steps that could be undertaken to move forward in their local energy transition for their island renaissance.

Three representatives of Samsø Energy Academy, one of the island of Lemnos (participated virtually), two of the island of Traena, and two representatives from ICLEI European Secretariat participated in the visit.

The Energy Academy shared an online Pioneer Guide, in preparation for the workshop before the site visit, which brings new concepts used on the island.

The first session consisted of the introduction to the SMARTEES project and a short getting to know each other. The three visitors expressed their special interested in the problems that Samsø encountered and the level of problem-solving power found in the local community. They also hoped to know how their community can benefit from such a successful experience by replicating and adapting it.

After this introduction, the representative of the Energy Academy gave a presentation on the Samsø island profile, identity and history, as well as its main challenges, milestones, achievements and upgraded visions over the last 20 years. In only 10 years, Samsø was transformed from an energy-dependent and energy-importing island into an energy self-sufficient and renewable energy-exporting island. This was achieved mainly thanks to the population developing ownership of the energy production. Following the introductory session, participants were taken on a tour around the island, on an electrical municipality-owned minibus, to see and learn about the various energy production sites. The sites were:

- wind turbines,
- PV and thermal solar stations,
- biomass district heating systems.

During the afternoon session, participants debriefed what they had seen and shared what they found especially interesting. Then, a workshop by the Energy Academy was held under the title of "live the process behind local ownership, engagement and participation".

Local Energy in Samso
Source: Samsø Energy Academy

Presentation of the Reference Island case

Samsø is an example of a successful energy transition that had been relatively quickly embraced by the local inhabitants via participatory approaches, community/citizen ownership models and pioneering leadership in the renewable energy transition.[7]

Following rationalisation measures and being completely dependent on fossil fuels (with 10 million euros spent each year) the energy sector became a focus for future development ideas. Following ideation in a small circle of people, eventually the Danish Energy Agency supported the project to become the first energy self-sufficient island in Denmark with advice and technology. A Danish fund provided a half-time salary the first year to move the project forward and eventually the Samsø Energy Company was created, funded and owned by about 150 island inhabitants as a non-profit association. Later on, the Energy Academy, as a physical meeting space, was created to welcome visitors eager to learn from Samsø experience on community development and their energy transition. The building became an umbrella hosting the Samsø Energy association and the Environment Office as well as the Samsø Energy Company under the same roof.

Bank loans and direct investments made by the population and the municipality into wind mills led to a functioning business, a new source of income for the entire island. This profit allowed the local government to invest further in solar panels to power municipal electrical cars, as well as the first hybrid car ferry that was ran with biogas. The next step identified for the energy transition would be to change the mobility sector through a wide transition to electric cars and become hence fossil free by 2030 on the whole island.

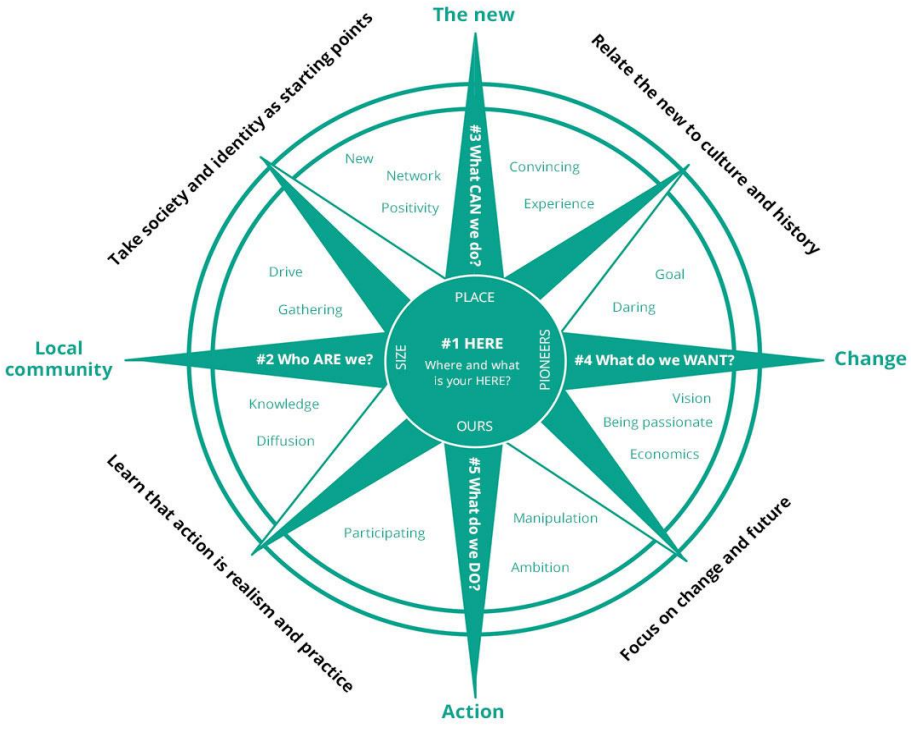
[7] For details of the case, see Caiati, G., Marta, F. L., & Quinti , G. M. (2019) *D3.1 - Report about profiles of social innovation "in action" for each cluster*. Retrieved from https://local-social-innovation.eu/fileadmin/user_upload/Deliverables/SMARTEES-D3.1_SI_in_Action_R1.pdf.

Site visit

The participants were guided by the Energy Academy hosts on a tour across the island to see the different energy installations. The first stop was in front of the freshly inaugurated solar station and solar battery in the yacht harbour – where up to 150 boats can be connected. Secondly, a straw-fired combined heat and power plant was visited. A lot of the inhabitants in the surrounding area signed up to be connected to the system, in exchange of a fair monthly fee of 15 euros for the delivered heat for the first ones served. The third visit spot was at the municipal solar station which is powering 30 electrical cars. It also supplies electricity to the public buildings such as the secondary school and the health centre. The fourth stop was at the thermal solar field combined with sheep pasture. This solar thermal system is backed-up with a wood pellet district heating system. Last but not least, a wind turbine 100%-owned by the neighbouring farmer was visited. The barn of this same farmer was covered with PV and his straw was used to feed one of the district heating systems.

Knowledge co-creation workshop

For the afternoon workshop, the Energy Academy's approach for community engagement was explored, starting around the key concepts of ownership and trust. The importance of building up a mentality of change and transparent communication work with the population were emphasised: "What are we risking if we do something? Is it worse than doing nothing? What can you directly benefit from this as an individual?" It was stated to have been essential to explain that renewable energy can make the island more self-sufficient and economically healthy, that being the owners of the energy could create jobs and income for the island. Carrying out such a community mobilisation was explained to take considerable time; it concretely meant sitting down with fishermen and farmers and openly discussing the advantages and disadvantages of the project. The existence of agricultural cooperatives on Samsø as an organisation form already known was said to have helped in translating the idea of common ownership to the energy sector. In the following, three concrete methods that were used on Samsø were shared. Amongst others the so-called Leadership Compass, which was seen as a useful resource for NGOs, local governments and citizens to define next steps of action (cf. image below).



Source: Samsø Energy Academy

Each participating island developed an analysis for its own context using the three different methods introduced and produced a problem structuring table, and potential solutions that can be used, as developed by the Energy Academy.

At the end of the workshop, the lessons learned of the day were summarised and all participants shared their personal take home message. The Samsø site visit was seen as an inspiring example of persistence in working with the local community to shape a vision for a sustainable future and for maintaining a closely connected dialogue process. The blended ownership model, either as private-public ownership or 100% cooperative ownership had both never been developed before in the Danish energy sector. What started from a one-person idea had eventually grown into one of the most successful and socially innovative bottom-up energy transitions.

3.3 Activities carried out with the Prime Follower City: Western Isles

The Western Isles were the Prime Follower Island to be engaged with by The James Hutton Institute team as an exercise in what could be done with the "Out of the (Sand)box" option detailed in the SMARTEES Exploitation Business Plan.[8] Members of the research team were given a limited amount of time to develop a model by reusing code and data from the main case studies in SMARTEES. The exercise was chiefly about the degree to which results can be obtained with a limited amount of time and budget, rather than the results of the model *per se*.

The persons involved in the exercise consisted of five people from the James Hutton Institute, two from the University of Groningen, and one representative from the Western Isles.

Summary of work carried out and timings

The work comprised preliminary investigations and planning, followed by the development of the model. Starting in autumn 2020, an exchange between the Western Isles and the modelling team at James Hutton Institute began on what to choose for the transfer of the Aberdeen model to the Western Isles case. This work started in 2021 by assembling GIS, census and other data for potential use in the model, followed by adapting an existing model (ACHSIUM) to simulate the particularities of the case study. The model development stage included regular meetings with collaborators in Groningen, who were implementing a model of Samsø as part of the Islands Renaissance case study cluster.

Results

The model for the Aberdeen case was used as a basis for the development. The plan was to adapt this model to represent the islands of Barra and Uist in the Western Isles. Initially it was concentrated on the island of Barra. In order to complete the work for Barra the following tasks needed to be completed:

1. Create GIS data for Barra and Uist
2. Incorporate GIS data for Barra
3. Add additional heating options, these being peat, oil-tank and gas-tank
4. Include an additional decision to allow the installation of insulation

[8] See Graham, T.; Mischkowski, N. & Meskovic, E. (2021) D8.4 SMARTEES Exploitation Business Plan. Retrieved from https://local-social-innovation.eu/fileadmin/user_upload/Deliverables/SMARTEES_D8.4_Business_Plan_291021.pdf

5. For those using electric as a source of energy emulate the installation of heat pumps (by making their boilers more efficient and tying this effect to temperature is this was an air-to-air heat pump)
6. Using census data to populate the model
7. Completing some scenario runs and comparing the results

Initial preparatory work was undertaken, i.e. tasks 1 and 2 have been completed and the model has been completely initialised (see Figure 3). Tasks 3-4 have been completed in terms of development.

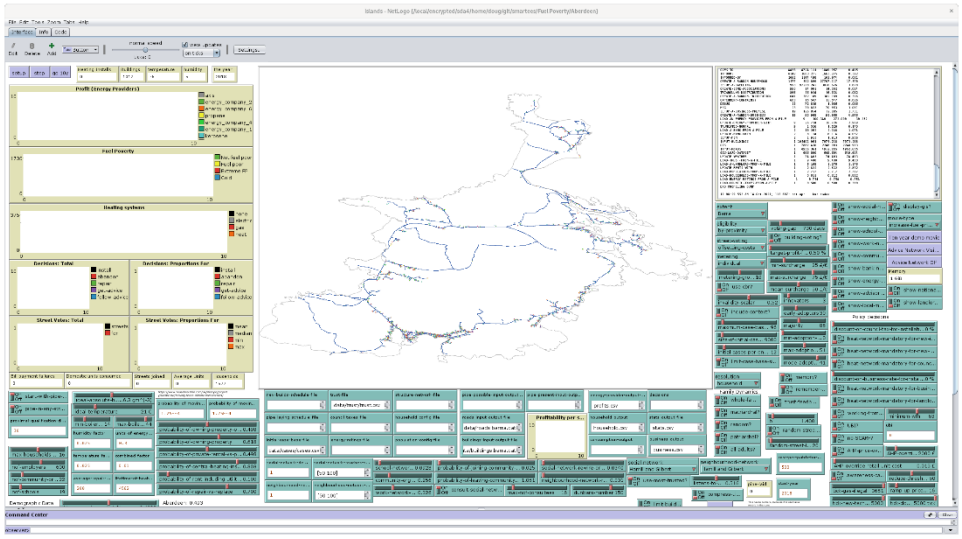


Figure 3: Model of Barra successfully initialised

The full economic cost of completing the transfer of the Aberdeen model to the Western Isles case can be estimated at €17,000. This includes staff time only and does not take account of travel time and hard costs (for example to meet local stakeholders) or computing costs. This estimate broadly supports the statement in the exploitation plan (see footnote 8) that the cost of creating a tailor-made ABM would be "unlikely to be below €25,000", but that it may be achievable for around that figure.

4. Cluster 3: District Regeneration

4.1 Stockholm

Overview and participants

The Follower City visit to Stockholm took place on the 11th of December 2018, with the purpose of acquainting the four Follower Cities of cluster 3 with Stockholm's learnings on forming an alliance for district regeneration based on energy transitions. The visit focused on two priority areas in Stockholm's regeneration and expansion strategy: Skärholmen and Järva. In Skärholmen, the City of Stockholm aimed to achieve district regeneration by focusing on social sustainability, the construction of 4000 new homes, and meeting high energy efficiency standards. In Järva, on the other hand, the focus was on following an integrated approach as well as the involvement of citizens and the public housing company. The Follower Cities that were included as part of the cluster on district regeneration were Banja Luka (BA), Cambridge (UK), Essen (DE), Jelgava (LV), and Lille (FR).

The city visit was coordinated by two project managers from the Environment and Health administration and a project director from the Executive Office at the City of Stockholm. Four representatives of the city of Stockholm, one of the city of Cambridge, one of the city of Essen, one of the city of Lille, and two representatives from ICLEI European Secretariat participated in the visit.

The first part of the visit during the morning took place in the south of Stockholm, in the district of Skärholmen. ICLEI facilitated the introduction to the project and the concept of social innovation to familiarise participants with its relevance for policy making and energy planning at the local level. This was followed by a presentation of the city's project manager in the environment and health administration. The presentation provided an overview of Stockholm's Vision 2040, including a strategy for the city to become fossil-free, and an explanation of the four focus areas in Stockholm. Prior to a site visit in Skärholmen, the project director in the Stockholm Executive Office, introduced the district and measures planned at that time to improve social sustainability.

The second part of the city visit took the Follower City participants to the district of Järva in the north of Stockholm. Since 2010, a district regeneration project had led to significant energy efficiency improvements, an increased living quality in the renovated apartments, and local renewable energy production. The visit in Järva aimed to exemplify the cooperation with citizens and the local housing company as well as to demonstrate the improvements made in the housing standard. After the site visit in Järva, ICLEI facilitated the knowledge co-creation workshop with the participating cities to link the experiences of Stockholm in both Skärholmen and Järva to their individual context.

Discussion of social innovation

The first session tackled the concept of social innovation and aimed at increasing the relevance of the term 'social innovation'. Participants from the three Follower Cities had a wide variety of possible experiences linked to social innovation in their own city contexts, such as gamification and competitions ("Keeping up with the Jones", a subsidised neighbourhood level challenge, organised by the city of Cambridge, to incentivise housing insulations), biking courses for adults, changes in public procurement, pop-up parks in vacant spaces, car-free zones for specified times per year.

The experiences of social innovation described by the participants included different approaches to working with local citizens and associations, various policy measures, programs and initiatives to achieve behaviour change or create new social interactions, as well as programs that describe social or psychological phenomena, such as peer pressure.

Presentation of the Supporting City case

As an introduction, prior to looking into Stockholm's district regeneration approaches in Skärholmen and Järva, the overall Vision 2040 for Stockholm was presented. This vision aimed at balancing challenges of a fast-growing population and goals for the construction of new houses with the aim of becoming a fossil fuel-free city by 2040. Skärholmen and Järva are two of Stockholm's four focus areas for district regeneration that benefit from concentrated investment to achieve the goals and vision for 2040.

The Skärholmen neighbourhood was subsequently further illustrated as a modernistic suburb that was constructed as part of the so-called "Million Homes" program in the 1960s, which aimed at solving a housing shortage at the time. Although today Skärholmen is connected to the city centre through an underground railway system, it was originally built for a car-based mobility model. The current project in Skärholmen involved the construction of 6,300 new houses. The new development was intended as a motor for social sustainability through strong citizen involvement, equal access to safe public spaces and parks, and a vibrant local life. In addition, the new buildings were intended to meet higher energy efficiency standards than those specified currently by national requirements. Breaking down infrastructure barriers between Skärholmen and neighbouring, more affluent districts were planned to help reduce the increasing social differences in the city.

The city was said to be working on three pillars to achieve social sustainability: 1) participation and knowledge, 2) vibrant and enriching, and 3) connected and varied. For the regeneration of Skärholmen the city undertook a wide-ranging consultation approach. This involved an early dialogue process through an online tool called "Basta Platsen!" (Best Place), an interview study with both adults and children, as well as a public consultation, all of which then led to the prioritisation of six areas. The developer who best addressed these priority areas subsequently received the license to develop, rather than the developer who suggested the lowest price. Both the wide-ranging consultation process and the developer selection process could be described as social innovations as both are novel approaches leading to new interactions between the city and citizens as well as developers and citizens. Interesting aspects for the Follower Cities concerned the financing (half private, half public), ownership of land, which is partially owned by the city and therefore makes development easier, and the system of rent support in Sweden. Instead of declaring social housing at lower than market rates, citizens with a need for lower rental costs received a rent subsidy.

Site visit

The presentation was followed by a site visit walk through the district of Skärholmen. During the walk, Follower Cities' participants had the opportunity to learn about renovated buildings designed to improve energy efficiency, two arts and culture projects, and urban planning approaches, such as traffic reduction or playgrounds. All measures were intended to increase social sustainability in Skärholmen. In the local shopping centre, it was explained that every Thursday a cultural activity was organised together with residents, as part of a greater mission to overcome the feeling of insecurity in that space and to instead turn it into a more "vibrant and enriching" place for people to gather.

The second part of the follower site visit took place in the afternoon in Järva, a district in the northern part of the City of Stockholm. Järva was a pilot project to achieve fossil fuel-free targets while promoting social and economic development in the district. Similar to Skärholmen, the construction of Järva started in the 1960s. Today, the district has a population of 60,000, 80% of whom have an immigration background. It was explained that the characteristics and challenges of Järva are comparable to Skärholmen. The City of Stockholm, based on a vision for 2030, aimed to regenerate Järva through energy efficiency renovations, local renewable energy production, and promotional activities for sustainable lifestyles, such as cycling. It was emphasised that sufficient funding from both the central government and the public housing company, "Svenska Bostäder", as well as the very comprehensive involvement of local residents were crucial to the transformation of the area. The consultation with citizens involved a so called "heat map", allowing them to mark points in the area as positive (green dot) or negative (red dot) as well as a specific consultation per building prior to its renovation.

The focus of the visit was to show, in particular, the process linked to the building renovations and the involvement of citizens. It was important that the renovations aimed to improve both the living and energy efficiency standard of each apartment. The group visited a range of renovated buildings and even had the opportunity to view one of the apartments from inside. It was explained that, per building, a group of tenants was chosen to work with the architects, agree and then vote on a proposal. Even though the buildings in Järva cannot be classified as social housing, Svenska Bostäder has the possibility to keep rents at lower levels by cross-subsidising from their more profitable housing stock in the centre.

The site visit guides went on to explain that the strong involvement at both the building and apartment level combined with the significantly improved outer appearance of the buildings contributed to a greater feeling of self-worth by the citizens. Well-designed resident participation, as part of a cooperation with the City of Stockholm and the Public Housing Company, represents an important social innovation in the case of Järva. This form of comprehensive and holistic renovation appeared as very exceptional to the Follower Cities. To improve the socio-economic conditions, it was explained that renovation suppliers were required to train unemployed citizens in Järva and provide employment opportunities.

After visiting one of the apartments, the visit was continued and participants were shown several of the photovoltaic panels that have been installed on building walls and roofs as well as the local swimming pool. It was further pointed to several of the areas, which citizens of Järva had marked with a red dot in the heat mapping exercise that the City of Stockholm was now starting to redevelop. The Follower City participants were particularly interested in questions concerning financing, rent levels and citizen participation tools that the City of Stockholm applied in Järva.

Knowledge co-creation workshop

The knowledge co-creation workshop aimed to allow site visit participants to share background information related to district regeneration in their city, reflect on the strategies and examples of district regeneration based on energy transitions in Stockholm, and then link the case of Stockholm to their own local contexts.

Follower Cities were first asked to share with the larger group what they thought were the most interesting aspects of the Stockholm example. The participating Follower Cities found several aspects particularly interesting, namely the:

- Holistic renovation approach in Järva, as it covered all environmental aspects as well as provided new flooring and kitchen appliance options;
- Possibility for a public housing company to renovate such a large stock of buildings while cooperating very closely with the residents;
- Combination of public leadership, private funding and residential consultation that underpins the proposed regeneration and redevelopment of Skärholmen;
- Ability for the city of Stockholm and the Public Housing Company to finance such a large-scale renovation. For the new housing development in Skärholmen, land ownership by the City of Stockholm facilitates such redevelopment.


Source: Elma Meskovic, ICLEI

In a second step, participants were asked to share with the bigger group the challenges they experience in their cities when carrying out similar district regeneration projects based on energy transitions. Both

Cambridge and Essen were intrigued by the detailed way in which the financing was structured in Stockholm. Both cities mentioned that financing represented a major barrier in their respective cities to undertake such holistic renovations. The participant from Cambridge further highlighted that the property tenure structure, with large shares in the private sector, has made it very difficult for the city of Cambridge to foster further renovations. The fact that the central government had taken over the ability to regulate local housing and aspects of energy efficiency make it difficult for a local council to implement impactful policies. For the case of Lille it was shared that fighting speculation in the private housing sector and involving inhabitants in the whole process have been particular challenges. Essen's participant pointed out that the current legal framework for PV in Germany and the lack of regulation for peer-to-peer trading were barriers in developing renewable energy for district regeneration in Essen.

The most inspiring aspects of the visit were as follows for the different cities:

- Cambridge: Car-free summers on one or several streets in a district
- Lille: Deep level of citizen involvement in the renovation process in Järva
- Essen: The strong political will to create focus areas and really put words into actions in both districts
- Stockholm: The 3% per annum renovation goal set in Essen

4.2 Malmö

Overview and participants

Following a successful city visit to Stockholm, SMARTEES Follower Cities in this third cluster were invited to join a field visit in the project's reference case: Malmö in Sweden. The event took place over a period of two half-days, the afternoon of June 4th and the morning of June 5th, 2019.

Similar to the previous Stockholm visit, the workshop aimed at sharing knowledge and creating new insights, deepening the understanding among the Follower Cities in regard to the steps that Malmö took to implement its district regeneration programme. Furthermore, the visitors had the opportunity of explaining concrete interventions in their cities related to this topic and receiving input from the other municipalities.

Two representatives of the city of Malmö, one of the city of Banka Luka, one of the city of Cambridge, one of city of Essen, one of the city of Jelgava, one of the city of Lille, one representative of Trianon Property Company, one representative of MKB Fastighets AB, one partner representative from urbanisland, and three representatives from ICLEI European Secretariat participated in the visit.

The city visit was coordinated by SMARTEES partner urbanisland, who was responsible for the Augustenborg district regeneration program at the time. During the first day, after a short introductory round with all the participants and a kind welcome, the participants were taken on a cycle tour to two of the formerly most disadvantaged districts in Malmö, Augustenborg and Lindängen, to see first-hand the workings on different elements of district regeneration. During the second day a knowledge co-creation workshop was held, which had the purpose of fostering knowledge by sharing cities' concrete interventions. Moreover, visitors could learn more in depth about the specific approach on social innovation in district regeneration in Malmö.

Presentation of the Reference City case

Once participants had arrived to the Augustenborg district, a speaker from the environment department of the city of Malmö gave an overview of Malmö's situation over the last few decades. Malmö used to be a successful industrial city, with a robust shipyard industry and a strong economy. However, the oil crisis led to a collapse of the industrial sector in the 1960s.

In this context, the Augustenborg neighbourhood was one of the most disadvantaged ones. Built in the 1950s as one of the first housing estates delivered under Sweden's housing policy, it was initially considered to be a highly successful mixture of housing, employment and social facilities. Nevertheless, the district was equally impacted by the more general decline of the city. People moved out, flats remained unoccupied and the residual population became marginalised with high levels of unemployment.

All these social problems were worsened by the environmental matters, as the neighbourhood suffered from seasonal floods, that were worsened by a bad storm water management system. This flooding damaged underground garages and basements, and restricted access to local roads and footpaths. Moreover, untreated garbage often entered watercourses as a result of the increasing pressure on the sewage treatment works. Malmö turned to the path of regeneration in the 1990s, when Sweden entered into European Union. Currently Malmö is an eco-friendly, multi-cultural and knowledge-based city, but the city continues its work on district regeneration, as inequality is increasing in the municipality.

A representative of the Trianon Property Company explained how private housing companies can benefit from working hand in hand with the city. Trianon was a large enterprise working all around Sweden, but in a change of strategy it focused exclusively on Malmö. Currently Trianon possesses more than 3000 houses with a clear focus on the renting market. Inside the city, Trianon works particularly in the Lindängen neighbourhood, which is considered to be facing social tensions. The company is able to maintain affordable prices for housing in the district with low investments in the renovation while still improving energy efficiency standards, taking advantage of all the objects and installations that are functioning beforehand. Trianon also committed to not selling their buildings and to contribute to social inclusion, hiring residents or helping them finding a job. It was claimed that this strategy is not a lucrative investment for a company in the short term, but very profitable in the long run.


Source: Iryna Novak, ICLEI

Site visit

Following the private housing developer's presentation, the public housing company MKB (owned by the city of Malmö) presented and showed participants around the so called "GreenHouse" in

Augustenborg: an example of more sustainable housing for the future. This building was characterised by a strong commitment to sustainability. All the energy used was explained to come from renewable sources and the structure to be designed to optimise energy efficiency through robust insulation, minimizing heating consumption. The building had more parking spaces for bicycles than cars, including shared cargo bicycles as part of the rent. Green roofs, large balconies for gardening and communal gardens were key elements of the Greenhouse and inhabitants were in part selected based on their interest in gardening. With regards to mobility, electric carpooling was made available to the inhabitants.

The "GreenHouse" concept puts a strong emphasis on community feeling, fostering relationships between neighbours. For example, events would be organised on the green roof and in other communal areas, like food workshops or gardening activities. Even the design of the building was thought to encourage social relationships. Communal spaces had been disappearing in modern buildings and MKB put a strong focus on changing this in the "GreenHouse". To ensure the smooth working of all these measures, MKB stated to be very selective with people moving to the 'Greenhouse', trying in addition to create a balanced community regarding family models, age and ethnicities.

On the way from Augustenborg to the Lindängen neighbourhood, a new storm water management system was shown to participants, which had prevented floods for the last decade. This new system included a total of 6 km of canals and water channels, combined with retention ponds. Rainfall is collected in natural ditches and reservoirs before directing it into a conventional sewer system. In the Lindängen district similar measures to Augustenborg's "Green House" were pointed out to, working on community-bonding with a focus on awareness raising and health-oriented and social activities.

Knowledge co-creation workshop

The knowledge co-creation workshop took place on the second day and began with an introduction from the planning department of Malmö that explained the next steps the city would be taking. These included plans for the harbour district and how nature-based solutions and social inclusion would become a cornerstone for the new development of 7,000 apartments until 2050. Secondly, the five Follower Cities were invited to present a concrete intervention in their own city related to district regeneration and get inspired and receive input from other cities based on specific questions. Afterwards, Urbanisland provided an in-depth explanation of the approach Malmö was taking on the topic of district regeneration, identifying drivers and barriers and how the different challenges are been faced. Finally, the event ended with a presentation about the SMARTEES Sandbox Tool and a discussion among Follower Cities how to make this tool valuable to cities.

The Follower city participants shared the following insights:

- For Cambridge, a programme to electrify transport was presented as part of changing a districts infrastructure. This electrification programme would be first implemented in taxis and then in buses. The current taxi project has been carried out with the maximum involvement of the sector, consulting drivers widely, supporting the new infrastructure and providing incentives for early adopters.
- For Lille, the regeneration of a housing block built in 1854 was an interesting real-life example to share about. After some complaints from residents regarding the deteriorated state of the buildings, the city started implementing measures considering the heritage value of the place. The process of engaging neighbours was coordinated by a local NGO, to best understand the needs of its inhabitants. More than 10 different actions were carried out among of them the reorganization of the gardens, a better garbage storage system, the removal of cars inside the block courtyard, the collective management of outdoor spaces.

- In Essen, some of the measures undertaken by the municipality to shift from a coal and steel town to a modern green city were shared. Currently, Essen is facing increasing inequality, particularly noticeable geographically between the north and the south of the city. One of the most disadvantaged districts is Eltingviertel, despite its excellent location close to the city centre. Providing the area with blue and green infrastructure, creating open spaces and the regeneration of the lake Niederfeld have provided quality of life and stimulated investments.
- With regard to Banja Luka, an introduction was given regarding the steps that the city is taking related to sustainable development. The measures taken included the implementation of LED lighting on the city streets, the bicycle sharing system "BL-Bike", the reconstruction of facades on older buildings to improve insulation, chargers for electric cars, and most importantly, the construction of a new district heating plant "Eko Toplane Banja Luka", using biomass as fuel.
- The representative from Jelgava introduced and described the regeneration of the banks of the Lielupe and Driska rivers and the revitalisation of the island. The actions taken included the construction of a recreational zone with cycling lanes, a small "beach" and walking paths, and a walking bridge, and the renovation of three streets and the riverside. Jelgava is further taking steps to become a smart city, using technology to become more energy efficient.

In the last part of the visit ICLEI provided participants with an overview of the SMARTEES Policy Sandbox Tool. The presentation aimed at sharing the latest concept of tool with the participants and at the same time, to collect feedback from the cities on how to maximise its usefulness. The base of the sandbox tool will be the Agent-based Modelling, which will help the SMARTEES project to understand complex social processes and the behaviour of various actors. The tool would deepen the understanding of which factors and interventions lead to the success of failure of the different measures taken in district regeneration, considering the behaviour of various involved actors. Follower Cities were particularly interested to understand which social engagement methods are most successful and how they could be replicated in a low-cost way.[9]

4.3 Activities carried out with the Prime Follower City: Lucca

In this cluster, unfortunately none of the Follower Cities involved in the site visits carried out further activities in SMARTEES. Given the situation, an attempt was made to involve another city: Lucca in Italy, where close contacts existed in the consortium. Lucca was an interesting case, as it had joined the covenant of mayors in 2012 and in 2013 presented its Sustainable Energy Action Plan, which outlined multiple actions aimed at the targets of reducing CO_2 emissions by 20% (compared to 2005 levels), achieving 20% or renewable energy consumption and decreasing energy consumption by 20% by 2020. The outlined actions spanned several sectors, including the building sector (public and private), mobility and renewable energy installations.

During the second half of the SMARTEES project, an interview was conducted with the deputy mayor and executive councillor of finances. The interview focused on two district regeneration projects for the neighbourhoods of San Anna and San Concordio, involving energy efficiency measures, sustainable mobility interventions and citizens' involvement.

[9] See Meskovic, E. & Mischkowski, N. (2021) D8.2 SMARTEES Policy Sandbox IT tool and workshop concept. Retrieved from https://local-social-innovation.eu/fileadmin/user_upload/Deliverables/SMARTEES_D8.2_PST_final.pdf

5. Cluster 4: Mobility in superblocks

5.1 Vitoria-Gasteiz

Overview and participants

The Follower City visit to Vitoria-Gasteiz (Spain) took place on the 17th of October 2018 to share learnings of the success and difficulties of Vitoria-Gasteiz on improving urban mobility and public space availability through superblocks. The creation of superblocks is included in the city's Sustainable Mobility and Public Space Plan as one of the key innovative solutions. An integrated approach and comprehensive participatory process, which accompanied their development, made the experience of Vitoria-Gasteiz a reference model for other cities aiming to implement superblocks in their own local contexts. The visit was coordinated by the Head of the Centre of Environmental Studies at the City of Vitoria-Gasteiz. The four Follower Cities of cluster #4 were A Coruña (Spain), Lisbon (Portugal), Porto (Portugal), and Zagreb (Croatia).

Two representatives of the city of Vitoria-Gasteiz, two of the city of A Coruña, two of the city of Lisbon, one of city of Porto, two of the city of Zagreb, and four representatives from ICLEI European Secretariat participated in the visit.

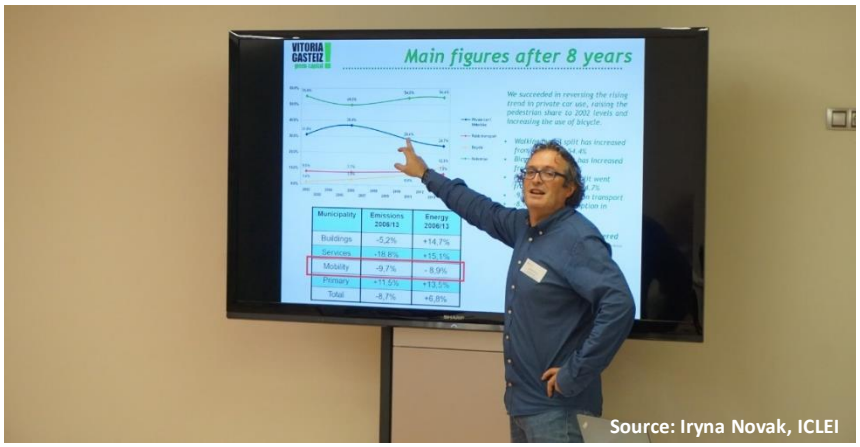
After the introductory session on social innovation and the SMARTEES project, the representatives from the city of Vitoria-Gasteiz explained the process of implementing superblocks, the redesign of the public transport system and its positive impacts on urban mobility, public space creation, urban quality and the local economy. Participants were led through the Sancho el Sabio superblock where important factors in its implementation were explained and the significantly increased public space and reduced individualised motorised traffic became visible. During the afternoon session ICLEI facilitated a knowledge co-creation workshop aimed at exchange and learning between the participating cities and Vitoria-Gasteiz.

Presentation of the Reference City case

The representative of the Urban Sustainability Unit of the Environmental Studies Centre of Vitoria-Gasteiz presented an overview of the city's experience in implementing their sustainable urban mobility plan and particularly the creation of superblocks. He introduced the particular urban characteristics of Vitoria-Gasteiz as a compact and flat city with most of the population living within a 3-km radius from the city centre and the absence of urban sprawl. Hence, the city holds perfect conditions for low private car usage. However, it was pointed out that the car fleet had quadrupled from the 1960s to 90s and by 2006 private car trips had increased to 37% in the model split. It then became an urgent matter to implement a mobility plan to correct the unsustainable urban mobility trend. Besides the visionary power and strong political will of the mayor, a political consensus existed and continues to exist for making the city a pedestrian one.

It was explained how the city has been reorganised in superblocks and how it had been decided with a political consensus across all political parties that Vitoria-Gasteiz will become a carbon neutral city by 2050. To help the authorities defining a vision together with the population, a participatory and consultation process had been set up. Wishes for the future of their city, for its mobility and public space have been expressed by the citizens. Through a range of participatory workshops called "Citizens Mobility Forum", a Citizen's Pact for Sustainable Mobility was written as a new approach to mobility and as a starting point to the Sustainable Mobility Plan. Even though the Citizens Mobility Forum has no institutional status, it had a common ambition and played an important part as a consultant body for the public transportation agents. The public transportation network got completely redesigned and

parking fees in the city centre were tripled. These measures led to a considerable reduction in car traffic in the city centre. Further, two superblocks were developed and implemented at the same time as the redesign of the public transport network was carried out.



Source: Iryna Novak, ICLEI

Site visit

Following the overview presentation, the group was guided through the Sancho el Sabio superblock. The walk through the superblock allowed participants to see the practical aspects of its implementation and allowed to experience the intended social benefits, such as priority for pedestrians, traffic calming measures and additional public spaces fostering social interactions between residents, and providing space for cafés, restaurants and other local businesses. It was explained that besides the political consensus and citizen involvement, the development of the Sancho el Sabio superblock was made possible through available infrastructure funds from the Spanish government during the financial crisis.


Source: Iryna Novak, ICLEI

With the redesign of the public transport network, a tram line was introduced in the Sancho el Sabio Street to reduce traffic in the former four-lane street. To make the public space more attractive for citizens it had been decided after several discussions with traffic engineers to temper the motorised traffic in this street, by keeping only one car-lane at 20 km/h (see picture below). The fear of local businesses for reduced economic activity in a street without regular car traffic was pointed out as key concern. However, the increased public space and attractivity for pedestrians actually improved the economic situation for local businesses. 80% of the streets in the superblock are without cars or allow them only at low speed, increasing the safety for pedestrians and cyclists and improving the quality and multi-functionality of public space (cultural, sport, shopping, walking etc.). Participants then visited some streets outside of the superblock where safety and quality improvements of the public space were aimed at through cost-efficient measures (slow bumps, speed limits, one-way streets), due

to the unavailability of funds from the central government for the costlier infrastructure measures taken in the superblocks.

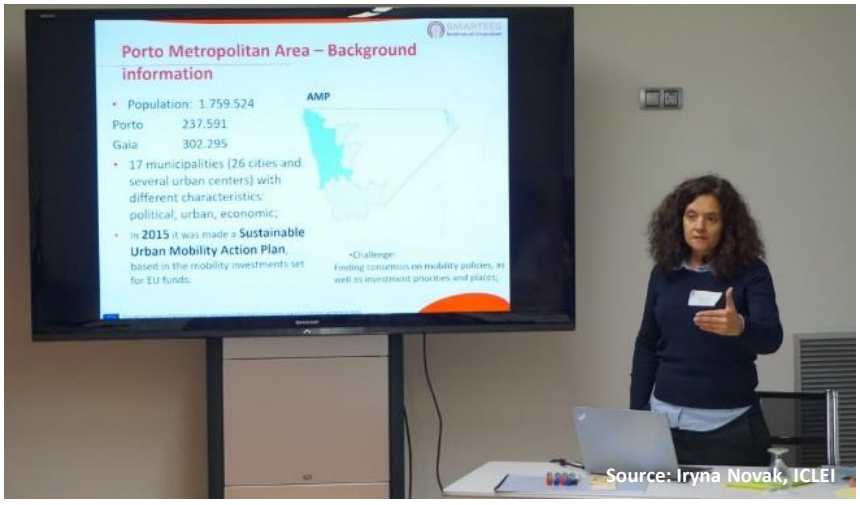
The visit of the superblock provided enough space and time for an active exchange between the Follower City participants and the representatives of the City of Vitoria-Gasteiz. Questions ranged from "What was the process like? How were decisions taken?", to questions on how inhabitant complaints about parking restrictions were dealt with, or how difficulties with logistics in car free zones were handled. It was highlighted that it was a 20-year process of small steps, which included an open involvement of the public to find a common vision. The vision was important for creating public awareness and keeping public acceptance for the project. Regarding potential difficulties such as parking restrictions or logistics, required parking spaces for residents were calculated, permits were given and deliveries are allowed in the morning. 30km/h limits were named as a first, low-cost step, when large funding would not be available.

Knowledge co-creation workshop

The knowledge co-creation workshop aimed to allow the participants to share background information on their city related to holistic mobility planning, reflect on the case of urban mobility with superblocks in Vitoria-Gasteiz and then reflect on their own local contexts. All four cities presented their current status and aims related to urban mobility and superblock like areas to allow for a better understanding of each city context and a better base for discussion:

- Zagreb is the biggest city in Croatia and mentioned that initial plans have been developed on how multiple blocks of streets could be developed into superblocks. The main square is pedestrianised and considered as a pilot project for further implementation. Strategies using art and the culture have been implemented by cooperating with the most popular street artists, organizing concerts on street without cars or putting a piano on public squares. The City of Zagreb involved citizens through questionnaires and increased the awareness of the benefits of streets for citizens instead of for cars. Superblocks are considered to form part of the development of the "new expanding Zagreb", a big area of urban sprawl beyond the main river.

- Porto Metropolitan Area has a population of 1.8 million, aggregating 17 municipalities with various characteristics at the political, urban and economic levels. In 2015, a Sustainable Urban Mobility Action Plan was developed supported by mobility investments of the EU. The biggest challenge was to find consensus on mobility policies, as well as investment priorities and locations for those investments. However, already four municipalities (Matosinhos, Porto, Maia and Gondomar) were strongly supporting the process of switching from individual motorised transportation to soft modes. It was explained that the redevelopment of a main street (Estrada da Circunvalacao) would be planned, i.e. parking lots will be removed to give space to wider sidewalks, bike lanes and a tram, while trees and green spaces will be planted as much as possible.



- Lisbon has 500,000 inhabitants and about the equivalent in commuting daily workers. It was explained that Lisbon had very diverse types of urban structures that could not be redesigned with a one-size-fits-all approach. Special attention would need to be given to historical neighbourhoods. Lisbon had applied diverse measures to create more liveable, safer and healthy neighbourhoods such as 30 km/h zones, including various traffic calming measures and by providing more space and safety to pedestrians. The Bairro do Arco do Cego and the Bairro Alto are two neighbourhoods with successful implementation of low-carbon mobility practices and public space maximisation. Lisbon plans to implement additional 30 km/h zones

and aims to further develop and implement their Sustainable Mobility Plan and establish neighbourhoods without cars.

- A Coruña is a very dense city in the north-west of Spain with 250'000 inhabitants and 400'000 inhabitants in the whole metropolitan area. An urban mobility plan and a green infrastructure plan were under development at the time, with projects to decrease carbon emissions and air pollution as well as to eliminate motorised traffic and to increase the number of bike lanes in parts of the historic city centre. In contrast to Vitoria-Gasteiz, no political consensus would exist in A Coruña, which was named as a strong barrier towards the implementation of these plans.

Follower Cities' participants subsequently shared in the group what they thought were the most interesting aspects of the Vitoria-Gasteiz example. For participants from Zagreb, the political consensus and the available technical knowledge, skills and structure to plan and implement such a superblock project stood out. A Coruña's participant found the combined measures of strong investment into public transport, improved space and safety for pedestrians as well as adapting the streets to invite bicycles into the city very remarkable in order to shift the modal split. For Lisbon, learning about the results of combining of more expensive investments (e.g. Sancho el Sabio street) and the implementation of less expensive, simple measures was useful. The Green Capital identity of Vitoria-Gasteiz was considered as an important, motivational factor by the participants, as it gave more visibility at the international level and at the same time generated more support from citizens.

It became clear during the workshop that the geographical, urban and political conditions were favourable for Vitoria-Gasteiz to redesign the public transport network, to implement superblocks and to extend pedestrian and cycling infrastructure. While participating cities got inspired by various elements seen in Vitoria-Gasteiz, and were motivated to implement aspects of it in their own cities step by step, it would remain difficult to replicate the exact measures and approach given the specific favourable local conditions.

5.2 Barcelona

Overview and participants

Following a successful city visit to the main reference case for the cluster on mobility in superblocks, the relevant Follower Cities were invited to again join SMARTEES partners for a study visit to the project's supporting case, namely Barcelona, Spain. The city visit took course over a period of two half-days (from 09 April to 10 April 2019). During this time, representatives of Porto and Lisbon were given the opportunity to further learn about the successes and difficulties of improving urban mobility and public space availability through superblocks, this time based on the experiences of Barcelona. The visit was especially important for Lisbon, which has officially taken on the role of a SMARTEES Prime Follower City in the superblocks cluster and committed to the implementation of a 30 km/h-zone programme and possibly also a superblock in the São Sebastião da Pedreira neighbourhood.

Four representatives of the city of Barcelona, three of the city of Lisbon, one of the city of Porto, and two representatives from ICLEI European Secretariat participated in the visit.

The city visit was coordinated by staff of the City of Barcelona's Urban Ecology Department. Participants convened in the Barcelona City Hall to kick-off the city visit. Following a short introductory round with all participants and a kind welcome from the City of Barcelona, the focus of the meeting

was the concept of superblocks. In a presentation, a detailed explanation of Barcelona's "fill the streets with life" superblocks programme, as well as an informative introduction to both the Poblenou and Sant Antoni superblocks was given. Later in the afternoon, participants made their way to see first-hand both superblocks. On the second day both participants from Porto and Lisbon explained their plans related to superblocks and discussed with regards to the intensive public participation process in the development of superblocks in Barcelona.

Presentation of the Supporting City case

Barcelona, a city of 1.6 million inhabitants, is currently facing a number of challenges. Included among these are high levels of air pollution, noise pollution, road accidents, and sedentary lifestyles, the latter of which is further encouraged by a limited number of public spaces and parks. Linked with the limited number of public spaces and parks is the fact that 50-75% of public space in the city of Barcelona is currently dedicated to the car, despite the fact that only 25% of all journeys are made by car. In an effort to address these challenges and to thereby better the quality of life of its residents, Barcelona has taken on superblocks as a strategy to give streets back to the people.

The first superblock in Barcelona was implemented in 2003 and another five were implemented in 2014 as part of a pilot programme. Under the current superblock programme, referred to as the "fill the streets with life" initiative, the decision was made to implement one superblock per district. There were cases in which residents were vocal in expressing a desire to have a superblock in their respective neighbourhood, thus simplifying the selection process. In other cases, however, sites were chosen because it was believed that it would be easier to implement a superblock there or that a superblock would have a more significant impact in fostering low carbon mobility behaviour.

Barcelona had approached superblocks by adopting a three-step participatory process. As part of the first step of this process, city officials carried out an actor-mapping to better understand which actors are relevant in the particular territory and to identify a representative group of stakeholders. During this phase, the city began to work with a promotional group to draw up a list of priorities and first actions to be implemented in the neighbourhood. Once these lists had been drawn up, the city, in a second step, shared the information with a broader audience and engaged with specific groups and local residents, to both communicate as well as gather feedback on what had been proposed. In a third step, the actors again reconvened into smaller groups to make last adjustments to the action plan, based on the received feedback, before proceeding finally to implementation.

Site visit

The Poublenou superblock was the first superblock that was implemented in 2016 as part of the "fill the streets with life" programme. Due to the speed at which the superblock was implemented and the lack of public consultation that took place during the process, significant backlash was received from

residents. Residents went out into the streets and reiterated that they had not been consulted as to whether they had an interest in having a superblock. Following this backlash, implementers of the superblock contacted residents and worked with them to introduce some changes in the superblock, asking them also for input regarding what kind of uses they would like different areas to offer. Even after this effort by the implementers, the stage had already been set for the formation of anti-superblock and pro-superblock groups. The above experience continued to serve as a lesson for the implementation of all superblocks in the city. In the meantime, opposition to the Poublenou superblock had decreased and the activity level on new public spaces had increased considerably.

The Sant Antoni superblock, on the other hand, began with the involvement of residents and their drawing public facilities and spaces throughout the neighbourhood. The opportunity to implement a superblock in Sant Antoni arose largely following the conclusion of a 10-year development of the neighbourhood market. The conclusion of the development presented an opportunity for actors to re-think the neighbourhood streets. There was much less opposition during the development and implementation of the Sant Antoni superblock since residents were involved and gave their consensus during the various steps of the development and implementation process. As a result of the implementation of the Sant Antoni superblock, pedestrians now had the ability to continuously walk straight on, rather than having to constantly move back-and-forth from one street to another to reach their desired destination. Vehicles, on the contrary, were not given this advantage and remained forced to keep switching streets. Such a policy incentivises people to walk rather than drive within the neighbourhood as it is faster to walk than it is to drive from one end of the neighbourhood to the other.

Knowledge co-creation workshop

City visit participants were again convened on the following day for an interactive workshop. The aim of the workshop was three-part, namely for participants to:

- work together towards a clearer understanding of what a valuable policy sandbox tool could look like;
- get inspired and receive input about different interventions from all participating cities;
- learn about public engagement processes in detail.

ICLEI began the day by providing participants with an overview of the SMARTEES Sandbox Tool.[10] The presentation intended to share the latest concept of the tool with the participants and to, at the same time, collect feedback from participating cities on how to maximise the tool's usefulness. For the case of SMARTEES Cluster 4, this would ideally lead to a deeper understanding of which factors and interventions lead to the behavioural change within agents, and thereby also impact their mobility choices as well as social cohesion within a superblock. A deeper understanding of the potential link between certain policy interventions and the outcomes presents several benefits to city planners interested in developing and implementing a superblock.

Among the benefits of having such a tool, representatives of Barcelona pointed out its usefulness especially if it could help determine whether the mobility habits of people living in a superblock have changed and whether people are happier following the implementation of the superblock. Participants additionally pointed out the importance of developing the tool in the local language of a respective city. While it was agreed that the Policy Sandbox tool could indeed be advantageous, Barcelona representatives raised the concern that it was feared that the public may perceive the city's attempt at using such a tool as a manipulative attempt to steer people.

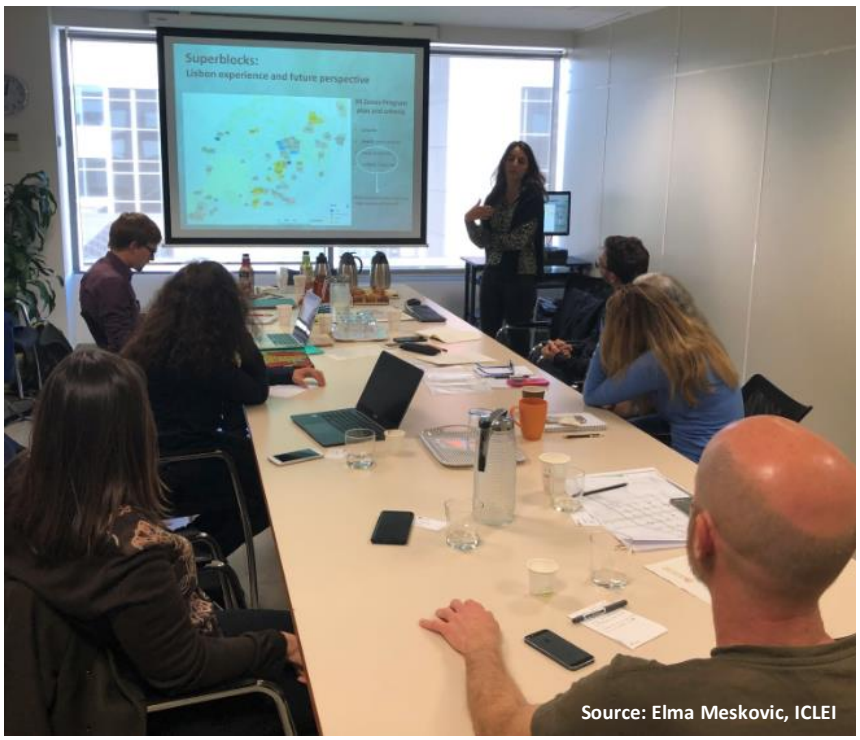
Following the discussion on the Policy Sandbox Tool, the Follower City presentations ensued:

- The participant from the Porto Metropolitan area shared the experiences linked to the implementation of a public space regeneration project in the Trofa municipality. While different municipalities were convened to discuss superblocks, one of the outcomes of these group discussions was the decision to implement the regeneration project in Trofa rather than a superblock. The urban area of Trofa, with a population of over 38,000 inhabitants, was divided into two parts by an obsolete railway line. The project thus sought to remove this barrier and instead regenerate the area by making it an attractive and green public space that people would be able to enjoy. A top-down approach was taken in the implementation of the project, albeit with a guiding principle that the space should be a space for all. While there were some initial public complaints due to the re-routing of the cars, the overall benefits of the regeneration and urban revitalisation project are already observable. As a result of the project, additional green spaces, pedestrian routes, bicycle lanes, sports and fitness areas, have decorated the previously abandoned area.
- Lisbon's Technical Supervisor of Cycling Projects presented the city's eagerness to implement a 30 km/h-zone programme in a proposed area as part of its role as a SMARTEES Prime Follower City. The city has already implemented such a programme in two separate areas, while the rest of Lisbon has a 50 km/h speed limit in place. The city is now interested in replicating the programme in the São Sebastião da Pedreira neighbourhood, which is additionally being considered for the implementation of a superblock. It was further shared that among the key challenges the city faced in the implementation of such measures, it is

[10] See Meskovic, E. & Mischkowski, N. (2021) D8.2 SMARTEES Policy Sandbox IT tool and workshop concept. Retrieved from https://local-social-innovation.eu/fileadmin/user_upload/Deliverables/SMARTEES_D8.2_PST_final.pdf

about how to deal with parking spaces. Barcelona representatives highlighted that communicating a reduction in parking spaces was heavily dependent on the focus of the debate, either the problem to find a parking space or the benefits afforded by a healthy and sustainable city.

Next steps



Source: Elma Meskovic, ICLEI

As Prime Follower City within the superblocks cluster, Lisbon expressed their interest to implement a 30 km/h-zone programme in a proposed area of the city. Inspired by the lessons drawn from superblocks, it was mentioned that the city had begun to consider the 30 km/h-zone programme and the superblock model just a few days before the SMARTEES city visit to Barcelona. The city of Lisbon expressed interest to participate in the SMARTEES research process by assisting project partners with the qualitative interview phase and implementation of the quantitative survey.

5.3 Activities carried out with the Prime Follower City: Lisbon

The empirical research conducted by the UDC research team in the City of Lisbon consisted of a combination of document analysis, qualitative interviews and online meetings with representatives of the municipality of Lisbon. The case study started during 2020 with brief desktop research on available primary sources (e.g. low-carbon mobility plans, evaluation reports and impact analysis done by the municipality) and secondary publications, such as media news and grey literature that contributed to the elaboration of the state-of-the-art on sustainable mobility policies in the Lisbon City that paved the way for the future implementation of one pilot superblock in a specific neighbourhood in the city. Qualitative (semi-structured) interviews were conducted in October 2020 with two key actors of the Municipality of Lisbon, representing the Department of Mobility and the Department of Public Space. Further, several informal conversations and online meetings organised in 2020 and 2021 with policy advisors and local technicians provided also relevant inputs for the case study research. However, no models could be developed for the case until the end of the project.

The goals of the SMARTEES research activities in the City of Lisbon included: (I) the identification of aims and key actors for the implementation of the SI; (ii) the identification of the main features of the

social context (iii) the exploration of the social dynamics shaping social acceptability of superblocks and the adoption of low-carbon mobility patterns; and, finally (iv) the factors and dynamics underlying expected public contestation and resistance, based on previous sustainable mobility policies already implemented. Superblocks are observed by the Lisbon city planners as innovative approaches to create a more liveable, safer and healthy place, facing both local and global challenges such as high levels of accidents in the city and climate emissions derived from transportation within the metropolitan area. Lisbon has paid particular attention to reducing vehicle dependence, strengthening the use of the bicycle, and creating a series of car-free zones, giving more space and safety to people. Since 2014 the City Council launched the project Uma Praça em cada Bairro (One Square in each Neighborhood), which appear to be the antecedent of superblocks in the city. This project pursues the creation of high-quality public spaces that became also an opportunity for the local population to be engaged in participatory processes for the co-designing of new public areas.

The development of these previous policies provided rich information and expertise for the city planners, becoming meaningful policy learning experiences that might inspire the designing of the superblocks project. For example, pedestrianization measures, traffic restrictions on streets or the enlargement of the bike lane network facing Covid-19 were all policies that led to high levels of social protest because, according to the interviewees, “all the measures that involve withdrawing space for the car are controversial in Lisbon. People still have the perception that using a private car is the best option for mobility. Specific sectors such as merchants have always protested against pedestrianization measures, although these policies benefit them eventually”.

One lesson learned from the project “Uma Praça em cada Bairro” relates to the need of involving citizens and the neighborhood’s stakeholders and district political representatives since the beginning of the projects. Thus, pilot superblocks should count on the support of the key actors in the neighbourhood. Second, citizens should be involved in decision-making through different formulas. For example, online surveys have been successful measures in Lisbon for doing a diagnosis of the existing issues and social needs, and for citizens to make proposals and suggestions for the improvement of the public space. Furthermore, the interviewees stress that online tools should be also combined with face-to-face participatory sessions with residents and stakeholders to discuss more concrete proposals and reach social consensus.

6. Cluster 5: Energy efficiency against fuel poverty

6.1 Aberdeen

Overview and participants

The Follower City visit in Aberdeen (Scotland) took place on the 29th of January 2019. The purpose of the visit was to provide Follower Cities of the respective cluster the opportunity to learn about the different energy efficiency schemes the city was implementing to fight fuel poverty. The visit highlighted, in particular, the Torry neighbourhood as well as the Tillydrone and Seaton Energy Centres.

The city visit was coordinated by Aberdeen City Council staff and comprised a total of fourteen participants, namely six representatives of the City of Aberdeen, three of the James Hutton Institute, one of the City of Lahti, one of the City of Timisoara, and three of ICLEI. In addition, a representative of the City of Jelgava joined remotely for parts of the meeting.

The city visit was divided into three sessions. The morning session convened participants in the Aberdeen City Council building and saw four presentations, from a representative of Aberdeen City Council, Aberdeen Heat and Power, the social enterprise SCARF (a not-for-profit organisation founded in 1985 to fight fuel poverty), and ICLEI. For the second session, participants went to visit the three above-mentioned sites to see first-hand the workings of the district heating network, the Combined Heat and Power plant and understand the challenges and approaches to encourage energy efficiency renovations among households. The final session brought participants back to Aberdeen City Council for an interactive, knowledge co-creation workshop facilitated by ICLEI.

Discussion of social innovation

The first presentation familiarised participants with the SMARTEES project and upcoming activities. It was followed by a short discussion about the concept of social innovation (as in previous site visits). Participants from the two participating cities and the different institutions in Aberdeen had a wide variety of possible experiences linked to social innovation in their own cities' contexts. Examples were community/localised energy tariffs, carsharing schemes, food banks, remote working, provision of advice on fuel poverty and insulation, and more.

The understanding of social innovation described by the participants was very wide, including different forms of citizens and community involvement, new forms of organizing mobility, work and energy, as well as education and communication measures and new set-ups for organisations such as SCARF. It was explained that social innovation can entail a wide variety of aspects since it can be described as a novel approach to meet social needs that simultaneously creates new social interactions. The variety of ideas and understandings of social innovation by the different participants made clear that a broad definition of social innovation would be useful to encompass the variety of elements.

Presentation of the Reference City case

The Energy Manager at Aberdeen City Council kicked-off the round of introductory presentations on Aberdeen in the context of energy efficiency measures. Before delving deeper into the case of Aberdeen, a general overview of Scotland was provided in this regard. The Energy Efficient Scotland policy was highlighted as one that aims to develop a roadmap and a program that will aid people in increasing energy efficiency for houses and reducing greenhouse gases.

It was highlighted that the aims set by the Energy Efficient Scotland policy will further be pushed forward if the Fuel Poverty Scotland Bill is made into a statutory policy in the same year. The Bill would do two main things, namely, it would set a new objective to reduce the number of Scottish households in fuel poverty to no more than 5% by 2040 and it would look at net income to determine fuel poverty. A household was at the time considered to be fuel poor when 10% or more of the overall gross income was used to pay for fuel.[11]

The City of Aberdeen, with a current population of 228,000 people and 105,000 households in the city, has an average fuel poverty level of 23%.[12] The city had attempted to address the issue of fuel poverty in the Local Outcome Improvement Plan, which is divided into four key themes that Aberdeen is trying to target. It was explained that the situation would be particularly dire in Aberdeen's neighbourhood Torry, where up to 30% of households were considered to be living in fuel poverty.

The presentation was followed by one from the Chief Executive Officer at Aberdeen Heat and Power together with one by the Home Energy Team Leader at SCARF. More specifically, participants were introduced to the work that had been carried out by Aberdeen Heat and Power, a not-for-profit organisation that was set up in 2002 with the aim of reducing fuel poverty, the city's carbon footprint, and running costs in city council buildings through a local district heating network. Since its establishment, Aberdeen Heat and Power had managed to reduce the carbon footprint of the buildings it supplies by 40%. It had done so through seven Combined Heat and Power (CHP) plants that provide 7MW of heat through a district heating network to which approximately 3,000 flats and buildings and 36 multi-storey buildings are connected. The future potential was seen in eleven additional multi-story buildings that could be connected to the district heating network. Possibly contributing to the company's success is that it had been able to maintain the same heating tariff, both domestically and commercially, throughout Aberdeen. While significant progress had been made, the challenge for Aberdeen Heat and Power was now to connect the different district heating clusters to one another and to link others as they are developed.

Participants then got to learn about SCARF, a not-for-profit organisation that was founded in 1985 to fight fuel poverty. At the time of visiting, there were over 60 SCARF employees who are helping members of the public and organizations address their energy needs, while approximately another 500 individuals had been trained to support households and organizations. Among the initiatives in SCARF is Home Energy Scotland, which has acted as an energy call centre that provides callers with advice, and the Home Energy Advice Team (HEAT), in which employees go to households directly to provide personalised and in-home energy advice. Through its efforts, SCARF projected that there will be a saving of 223,000 British Pounds in household energy expenditure and a 710t reduction of CO_2-emissions from these households for the 2018-2019 fiscal year.

Site visit

Following the morning presentations on Aberdeen, participants made their way to the first of three site visits. The first site visit brought participants to Torry, a coastal area located south of the City of Aberdeen. What made Torry an especially interesting case for the deeper study was that up to 30% of the neighbourhood's households are living in fuel poverty, with further implications on well-being and health. In consequence, 23% of children living in Torry are living in poverty, in comparison to 18% in Aberdeen overall.

[11] Fuel, as used throughout this chapter, will refer to electricity used for light and other household appliances as well as heat.
[12] See https://www.aberdeencity.gov.uk/sites/default/files/2018-10/Aberdeen%20Key%20Facts.pdf

To address the issue of fuel poverty, it was explained that Aberdeen Heat and Power worked closely together with one of the three local community centres to spread information about and increase the uptake of free basic cavity wall insulation offered to private sector houses in Torry. More specifically, the community centre helped advertise the free insulation by conducting house visits. In exchange, Aberdeen Heat and Power paid the respective community centre five British Pounds for each subsequent connection that was made to a private home owner. Aberdeen Heat and Power additionally found someone to translate the documents in different languages to cater also to the immigrant groups living in Torry. Money for these translations was given to the English learning centre. This strategy proved to be especially effective as it directly engaged with local house owners and increased the level of their trust.

In addition to the above efforts, a gas-fired Combined Heat and Power (CHP) plant was explained to provide district heating to three multi-story city council buildings. Plans to further extend the district heating network by a waste-to-energy plant were mentioned. Once established, a larger area of Torry would be expected to be connected to the extended network. Costs for tenants had been cut by half as a result of the switch to district heating by the multi-storey houses. Unfortunately, however, due to the high investment costs for network pipes, the installation of a district heat network is not profitable in Aberdeen. Therefore, the city council has resorted to using the 'saved' budget for individual gas boiler upgrades to compensate for the additional investment.

The second site that participants were brought to visit was the Tillydrone Energy Centre. Participants had the opportunity to learn more about and see another CHP plant (1.2MW_{th} and 1MW_{el}) with a peak gas boiler. The plant at the time connected 80 percent of all flats found within seven high-rise buildings and further provided district heating to a church, school, and community centre. Residents were involved in deciding upon the heating cost, choosing to go with a set price rather than one based on consumption. With the district heating, costs dropped approximately 50 percent, from 20-25 British Pounds per week to 10-12. In addition to the decreased heating cost, the area had seen a 45 percent in carbon saving. SCARF was explained to have continued working with residents to understand heating costs and give them advice when needed.

For the third and final site visit of the day, participants made their way to the Seaton Energy Centre. The Centre also housed a CHP Plant that, at seven megawatts heat capacity, supplies heat to 14 multi-storey blocks (370 flats), the Riverbank school, an aquatic centre, as well as non-domestic customers. The Aquatic Centre was at the time the largest heat consumer in comparison to the others listed. Participants, in addition to learning about the plant, also had the opportunity to see two storage units, each with a total heat energy capacity of 3MW, that were put in place to overcome the peak load challenge.

Knowledge co-creation workshop

The co-creation workshop started with short presentations by the city participants on their current activities relating to the theme of energy poverty:

- The beginning was done by the participant from Lahti (Finland): Lahti was part of the national Energy Efficiency Agreement that was developed by the Ministry of Employment and which had set a target to reduce energy use by 15%, which Lahti surpassed slightly. Further reductions were seen as hard to realise and energy efficiency was the area of next actions: for example, the city has set a target which aims to reduce energy use in all new buildings by 10% more than is currently required by national law. In Lahti, 90% of households would receive their energy from the district heating network. All owners are required to join the network, with a connection cost of €5000, unless they can prove that they are a low-income household. The city-owned energy company that is responsible for the network has committed itself to cut carbon dioxide emissions.
- In Timisoara (Romania), the situation was portrayed differently: with a population of over 330,000 inhabitants, Timisoara is the second-largest city in Romania. Contrary to the case of

Aberdeen, there is no strong focus or discussion on fuel poverty, although politicians at the national level do increasingly realise that it is a problem. People would warm their houses with either wood chips, with gas or for a small number of households through a district heating network. The district heating network at the time provided heat to approximately 2,000 buildings and while there were still several extensions that could be made, its development would be considered as completed. Advising services for citizens had been set up and the city had established a Municipal Building Benchmarking Programme, with which Timisoara hoped to assess overall annual energy consumption in public buildings.

After the presentations by Lahti and Timisoara, the workshop continued by exploring links between the two cases to the one of Aberdeen. The workshop was structured around three questions, the first of which asked participants to reflect on the most interesting aspects and what they found to be the most innovative aspect in Aberdeen's approach both personally as well as for their respective cities.

The responses for the first question included, among others:

- The diversity of energy usage in Aberdeen;
- Recognition of fuel poverty and its emergence as a policy issue to address;
- The establishment of SCARF as an intermediary organisation to provide residents with energy efficiency advice. People can simply go there and speak to someone. SCARF also helps to overcome the trust issue;
- The city having been ahead of its time in delivering the organisation Aberdeen Heat and Power;
- Direct communication and connection with residents. The strategy for convincing tenants to join the district hearing network and to implement energy-efficiency measures included engaging with existing networks in Torry and peer-to-peer outreach;
- Redirecting (possibly) the definition of fuel poverty to focus on gross income to net income.


Source: Elma Meskovic, ICLEI

For the second question, participants were asked to share some of the challenges that stand in the way of their respective cities in implementing successful energy efficiency measures and in fighting fuel poverty. The answers to challenges could be linked around five clusters: knowledge, social norms and understanding, policy support and funding, energy companies, and real local engagement with impact (see image below).

For the last round of questions, participants were asked to divide themselves into two groups. Each group was instructed to brainstorm and discuss solutions for some of the challenges identified in the previous question relating to the five clusters (see blue cards in the picture above). Most suggested, or discussed solutions related to the local engagement challenge. Participants suggested to train energy champions which would inspire other members of the community, to use existing engagement structures and local groups which already have the trust of the population, to work with other topical charities and to help citizens not only on the topic of fuel poverty, but on a variety of topics such as personal finances for example.

6.2 Timisoara

Overview and participants

On 24 October 2019, the tenth and final SMARTEES Follower City study visit took participants to Timisoara (Romania). Timisoara, as the supporting case of cluster #5 on energy efficiency, offered participants the opportunity to draw inspiration and learn from the city's experience in tackling fuel poverty and undertaking energy efficiency schemes in the housing sector. The study visit provided a space to continue the discussions held during the Aberdeen visit and to deepen the understanding of the technical and social aspects of the transition to more affordable (and green) energy. The visit focused on the specific challenges and interventions of Timisoara related to tackling fuel poverty.

A total of 18 participants took part in the event, comprised of five representatives from the City of Timisoara, two from the district heating company COLTERM (Romania), one from the Romanian Sustainable Energy Cluster (ROSENC), one from Aberdeen municipality, two from Tuzla, and one from Lahti, and two partner representatives from West University of Timisoara, two from the James Hutton Institute, and two from ICLEI.

The study visit was divided into four parts:

(1) An introductory session at the Timisoara City Hall, which included presentations by representatives of Timisoara and ROSENC on Timisoara's experiences with energy efficiency and fighting fuel poverty;

(2) A site visit to the neo-traditional ECO BORDEI EcoLiving Concept project site and the "CET Freidorf," the cogeneration plant with thermal motors that uses renewable energy sources. Participants were also surprised with a boat ride on the river that crosses the city.;
(3) A 'knowledge co-creation workshop' at the local district heating company's (i.e. COLTERM) office building, which included presentations by the Follower City representatives on concrete interventions concerning energy efficiency and fighting fuel poverty in their cities as well as a group discussion on key challenges linked to such or similar measures and solutions to help address these;
(4) The last part of the visit involved a presentation by ICLEI on the SMARTEES Policy Sandbox Tool and its aims, an illustration by a representative of the James Hutton Institute of the potential of the Aberdeen model, and a discussion on how to increase the value and usability of the tool for local governments.

Presentation of the Supporting City case


Source: Elma Meskovic, ICLEI

Representatives of the city of Timisoara welcomed participants and provided an overview of the city, which was named the European Capital of Culture for 2021. With regard to the local energy system, it was explained that the communist era introduced district heating plants to provide heating to residential buildings. During the post-communism period, the infrastructure was not properly maintained and the public energy supply became less reliable and more expensive. Energy prices have been rising continuously and the price doubled since the year 2000. With this in mind and considering that 50% of the city's buildings were built before 1970 and are regarded as energy inefficient, Romanian politicians have increasingly paid attention to the issue of energy poverty. In Timisoara, a household is considered to be fuel poor if more than 10% of the income is spent on heating to maintain an adequate level of warmth. The legal framework in Romania on energy poverty and vulnerable consumers was said to be evolving.

The residents of Timișoara have been dealing with an inefficient and costly energy system, and households have increasingly turned to the installation of individual gas boilers as a result. To reverse this trend and halve the negative environmental and social impacts, the city's ambitions to support its existing district heat network, increase energy efficiency, and encourage behaviour change among its inhabitants were emphasised during the study visit. The participating representatives of Timisoara mentioned that the city is determined to improve the current situation with regard to energy with an action plan that highlights three major goals: (1) Renovation work to transform existing buildings into energy-efficient buildings; (2) The development of more energy-efficient district heating systems and energy-sufficient behaviour of private households; and (3) development of energy-neutral or energy-positive new buildings.

Representatives of Timisoara shared that the city aims to increase the energy performance of buildings, as well as reduce annual heating costs by approximately 60% and energy consumption by 20%. The city had started with awareness-raising campaigns and the training of six public servants to provide residents with guidance and practical advice on smart metering, energy efficiency, consumption reduction and savings. Furthermore, it was explained that Timisoara also supported complementary citizen and private sector initiatives that were designed to increase accessibility with regard to mobility,

housing and energy. Three Eco 'Bordei' houses, based on traditional rural techniques, were built in the city periphery, for example, with the political support of the local authorities.

Site visit

ECO BORDEI - EcoLiving Concept

The first site that participants visited was in the Sacalaz Commune, where several green and (relatively) affordable individual homes have been built as part of the ECO BORDEI - EcoLiving Concept project. The homes are not only aesthetically pleasing and affordable, but they are also ecological homes that have been built using local materials. As the study visit participants were taken on a tour of these homes by a representative of ROSENC, it was explained that traditional Romanian construction methods help to significantly reduce energy consumption and, thereby, also the carbon footprint. Instead of buying and transporting expensive concrete, a decision was made to, instead, experiment with the use of cheaper and more local materials to make bricks or wall isolation.

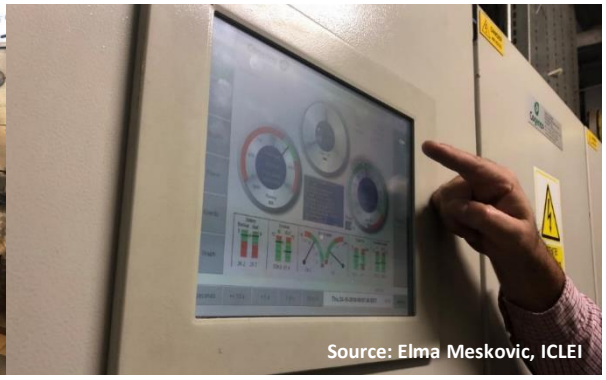
The experimental houses are still being monitored and once the design and smart-metering technology provide longer-term results, the technology may be sold further. The collection and generation of data is not only relevant for the homeowner, but also from a scientific perspective. The houses have shown to be successful thus far and if they would continue on this track, a high demand was explained to be expected, particularly as the homes are affordable, environment-friendly, comfortable, and can be ready within four months.

COLTERM SA – 'CET Freidorf'

The second site that participants visited was the CET Freidorf, a cogeneration plant with thermal motors that is managed by COLTERM SA Timisoara (i.e. the local heating company and subsidiary of the Timișoara City Council). COLTERM SA was established in 2004, through the reorganisation of two companies, as a result of a decision that was reached by the City Council. COLTERM had several responsibilities: the production, transport, distribution, and supply of thermal energy and electricity; the operation, maintenance, repair and development of infrastructure, cold water hydropower, , the installation and operation of cost-sharing systems; and transport activities, such as rail shunting.

Participants were informed that COLTERM managed and operated a full distribution system of thermal energy. Thermal plants were able to meet 90% of the heating needs of consumers connected to the urban heating system. When it came to the installation and operation of cost-sharing systems for heating and hot water consumption in apartment blocks, it was explained that COLTERM tries to follow several principles, including fair cost sharing, resource savings, energy efficiency, environmental conservation, and sustainable development.

During the site visit, participants were further informed that there is a funding issue when it came to developing and maintaining the infrastructure of the district heating company/network. There was a dilemma involving the question as to whether to either maintain the old infrastructure or extend the network, but both were not financially feasible at that time. For COLTERM, under those circumstances, extending the network could only be achieved by splitting the cost with the customers that would be connected to the network.



Source: Elma Meskovic, ICLEI

Knowledge co-creation workshop

The workshop provided an opportunity for the Reference and Follower City representatives to share more about their own local contexts and concrete interventions, and to discuss challenges and solutions to help overcome them. Presentations and open discussions alternated on key challenges, measures and approaches related to fighting energy poverty and increasing energy efficiency.

- Aberdeen presented its case (see section 6.1) and highlighted that with regard to Timisoara's context, it is important to understand that the more people are connected to the heat network, the cheaper it would get and, thus, easier it would be to expand it. The ABM modelling that was done for the Aberdeen case as part of the SMARTEES project was also presented to the participants, in order to show the potential of the tool and address some barriers to heat network expansion. When it came to the question concerning citizen acceptance of being connected to the heat network, the Aberdeen example pointed to the 'open house' approach, during which people are taken through the process by the Aberdeen City Council and Aberdeen Heat and Power to respond to any concerns. In addition, it was pointed out that making home owners share the related costs was a more acceptable solution than making renters do so.

- The presentation on Lahti highlighted the city's past dependence on coal and its transition to becoming a leading green city in Finland, which ultimately led to it being awarded the title of European Green Capital for 2021. The presentation shed light on the city's waste and energy management, pointing out that the use of waste in energy production increased the waste recovery rate and decreased the amount of waste going to landfills. In 1998, the recovery rate of waste was 25%, while today as much as 97% of household waste is recovered. One third of the waste that is generated in the area is recycled as raw material for new products, and the other two thirds are used to produce energy. Over 90% of population is connected to the district heating network. The city abandoned the use of coal and set a goal to become the first major Finnish city to become carbon-neutral by 2025 and a waste-free city with a fully circular economy by 2050.

Source: Elma Meskovic, ICLEI

- During the presentation on the city of Tuzla, which is the third largest city in Bosnia and Herzegovina, it was explained that the city introduced a district heating system 30 years ago. The district heating network is 150km long and supplies energy to 22,000 users (individual households, condominiums, etc.). It was expressed that expanding the network is complicated for reasons similar to that in the Aberdeen case, namely the reluctance of inhabitants or home owners to connect. As an incentive to connect to the network, the municipality started to offer bonus payments to households for connecting. Approximately 50 homes had responded to the incentive and connected. It was mentioned that major challenges include the continued use of coal in a local power plant that is owned and run by the central state, as well as that the sinking of the ground's surface in some regions, due to the existence of abandoned salt mines.

Source: Elma Meskovic, ICLEI

Policy Sandbox Tool

The last session of the day was dedicated to the SMARTEES Policy Sandbox Tool. After ICLEI presented the concept and potential the tool, representatives from the James Hutton Institute presented the concept of the model that was being developed for the case of Aberdeen. It was emphasised that any model depends on data that feed into it, before any insights for potential of social innovations could be made.

The presentation led to an interactive discussion among the cities regarding the model and tool and their expectations, and feedback was collected to support the further development of the tool. When discussing the Policy Sandbox Tool, the Aberdeen representative indicated that it would be useful to know how to incentivise Aberdeen's population to adopt the green funding offer, overcome resistance and adopt efficient policies and processes. Timisoara representatives expressed interest in knowing how to combine next steps and energy measures (e.g. reduce costs, increase energy efficiency, air quality, infrastructure, etc.) to overcome the inertia of the current system. Tuzla representatives expressed that the city would like to solve two issues with one action: improve air pollution and energy efficiency and sufficiency. The representative from Lahti highlighted that they would like to focus on the most vulnerable population and learn how to help them reduce their bills and CO_2 emissions.

Based on the Policy Sandbox Tool presentation, and the day's site visits and discussions, participants were asked to share their key take-ways. Several points were mentioned:

1) Accurate data is essential to feed into the modelling programmes and provide relevant solutions. The municipality needs to provide precise data on energy consumption, for example;
2) A new vision is needed at the local level to overcome financial barriers. By collecting experiences and ideas from different departments, a solid strategy can be developed into sustainable/green/climate action plans and could help to unlock funding more easily;
3) Improved legislation related to thermal energy supply at the national and local level could help to diversify energy sources.

6.3 Activities carried out with the Prime Follower City: Lahti

Lahti is a Finnish city with approximately 119,000 inhabitants. The city's commitment to the reduction of carbon emissions is demonstrated by its adhesion to the Covenant of Mayors and the adoption of a Sustainable Energy and Climate Action Plan (SECAP). Lahti is also part of the national Energy Efficiency Agreement with the Ministry of Employment, which aims to lower energy use by 7,5% in all public buildings during the 2017-25 period. Within the frame of SECAP, Lahti aims to reduce its emissions by 80%, using the 1990 level as a base, and achieve carbon neutrality by 2025. The main action that was implemented to reduce carbon emissions consisted of the phase-out and dismission of the coal-fired district heating plant Kymijärvi and its replacement with the biofuel Kymijärvi 3 plant in 2019.

The work that was conducted with Lahti in SMARTEES consisted of a preliminary collection and review of available policy documents regarding the city's energy transition. This work served the purpose of setting the ground for a round of interviews and potentially the adaptation of one of the SMARTEES models (i.e. the district regeneration model that was developed originally for the case of Stockholm) to the case of Lahti. One interview was conducted with the head of the environmental services of the municipality of Lahti.

7. Video reporting

The study visits that place in the main reference cases of each of the thematic clusters were partially filmed to produce video footage and finally cluster videos that summarise the cases and promote the project work. A total of five study visit videos were produced, one per each thematic cluster.

Cluster 1: Holistic mobility plans

- Title: Urban mobility: The Voice of Citizens in Zürich
- Link: https://local-social-innovation.eu/video/urban-mobility-the-voice-of-citizens-in-zurich/
- Publication date: 9th October 2019

Cluster 2: Islands & renewable energy

- Title: Renewable energy renaissance in Samso
- Link: https://local-social-innovation.eu/video/renewable-energy-renaissance-in-samsoe/
- Publication date: 5th of June 2020

Cluster 3: District regeneration

- Title: Regenerating city districts with inhabitants in Malmo
- Link: https://local-social-innovation.eu/video/regenerating-city-districts-with-inhabitants-in-malmoe/
- Publication date: 14th of April 2020

Cluster 4: Mobility in superblocks

- Title: Think beyond the grid: superblocks in Vitoria-Gasteiz
- Link: https://local-social-innovation.eu/video/sustainable-mobility-in-superblocks/
- Publication date: 11th of April 2019

Cluster 5: Energy efficiency against fuel poverty

- Title: Fighting fuel poverty in Aberdeen
- Link: https://local-social-innovation.eu/video/fighting-fuel-poverty-in-aberdeen/
- Publication date: 20th of April 2020

8. Conclusion

This report captures the insights explored during the study visits that were carried out in the SMARTEES project as well as the activities that carried out later in the Prime Follower cases. The study visits aimed at exploring the social innovation activities from the references and supporting cases and facilitating knowledge exchange among city and island representatives to support their energy transition efforts. The reported events bridged experiences and showed the importance of both trans-local knowledge as well as local policy-making. The study visits constituted an important activity in the SMARTEES project, especially as the most interactive form of communication and dissemination.

The study visits have shown that social innovation remains a relatively new concept for policy makers and practitioners, and it cannot be directly transferred from one place to another, although its logic and principles can be. The uniqueness of urban contexts limits the replication of best practices. It is indeed difficult to generalise lessons learnt from one locality to another, since the success factors are manifold. There is no easy 'transfer code' between cities or islands as the geography, culture and legislative/political settings can differ significantly between places. One localised experience needs to be adapted, tailored to each place – and as the study visits have shown: this ideally happens together with the local population, to contribute and embrace the transition.

That being said, it seems that rapid behaviour change is accelerated with increased knowledge among the local governments and their population. The attitude of local governments in the transition is of upmost importance: driving constant co-creation at the local level with citizens/inhabitants (and other stakeholders), defining clear goals, promoting and supporting socially innovative actions all seem to increase citizen acceptance and the general success of the energy and mobility transition. Other cultural elements and the identity-building throughout participatory processes seemed to be key to a successful transition.

The ten SMARTEES site visits and co-creation knowledge workshops emphasised positive institutional processes and stakeholder interactions that could be inspirational and potentially 'translated' across the SMARTEES Follower City network. Municipalities and other actors can find the cases as a reference point for their own local challenge and try to learn from and adapt it. Addressing differences and similarities between local contexts and two-way learning were mentioned as important part of local energy transition processes, which consequently confirms the relevance and positive contribution of the site visits for the SMARTEES city and island network. The SMARTEES researchers and modelers also attended several of the events and benefited from the "reality checks" that the discussions on the Policy Sandbox Tool constituted. They also informed the qualitative research carried out and thus contributed to the broader knowledge base of the project.