

SONNET

Social Innovation in Practice

Key findings from the SONNET City Labs
and recommendations for cities interested
in experimenting with the City Lab format





The **S**ocial **I**nnovation in **E**nergy Transitions (**SONNET**) project SONNET brings diverse groups together to make sense of how social innovation can bring about a more sustainable energy system in Europe. Through a diversity of methods, it explores how social innovation has contributed to making our energy sources, use, and production cleaner, as well as how social change help reduce our carbon footprint in the future. For more information, visit sonnet-energy.eu.

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About this Energy Read

Throughout the project, SONNET is producing a series of so-called 'Energy Reads' that summarise the key points from its diverse catalogue of research into concise, accessible, evidence-based publications. This Energy Read overviews key findings from the project's 6 City Labs in Antwerp, Bristol, Grenoble, Mannheim, Warsaw and Basel.

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About the City Lab method

City Labs are participatory platforms where local governments collaborate with diverse stakeholders to learn about new ways of dealing with urban challenges. They test and experiment with innovative methods and tools in a real-world setting to better understand and shape societal transformations. They usually engage citizens, not only as observers or participants, but as co-creators of innovation processes. They apply participatory methods, and transdisciplinary approaches – in other words, collaborative approaches that don't fit into just one sector or discipline.

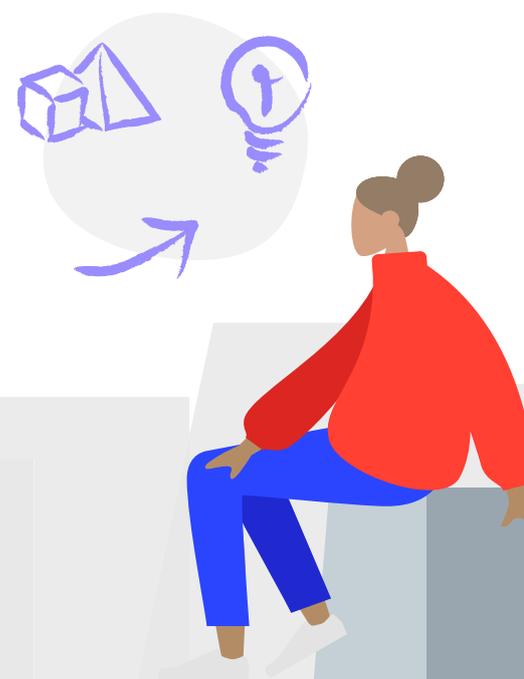
In 2020-2021 SONNET City Labs in six cities across Europe tested hands-on social innovations for energy transition (SIE) alongside their citizens and diverse local stakeholders. Each City Lab selected an energy-related topic relevant to its context and experimented with different solutions to best address this issue and accelerate local energy transition.

City Labs played a specific, dual role in the project. On the one hand, they created an experimental space for social innovations in energy to unfold. On the other hand, the City Labs themselves were a socially innovative method, novel in how they approach doing, thinking and organising local energy transitions.

The goals, outcomes, and resulting recommendations from each of these City Labs are presented in this Energy Read. Each of the Labs are unique and progressing at different paces. Unforeseen challenges, such as those related to the COVID-19 pandemic, have also generated valuable insights. Ultimately, despite facing obstacles, all of the City Labs led to important outcomes and recommendations that can be used by others looking to experiment with this approach.

This Energy Read is aimed at local policymakers, city administrations, energy activists and communities, local businesses, startups and all other energy actors. We hope it will spark your interest and help illuminate how you can use City Labs to make energy systems more sustainable and just.

And if you want to dive deeper into different phases of the City Lab process, make sure to check out our [SONNET City Lab Guide](#).



Overview of the SIE types that SONNET City Labs experimented with

	 Cooperation	 Exchange	 Competition	 Conflict		
Doing 	Local energy production and consumption Cooperative energy production and consumption Collaborative eco-efficient housing	Local peer-to-peer electricity exchange For-profit services and technologies	For-profit services and technologies	Action against specific energy pathways		
Thinking 	Advocacy for specific energy pathways	Energy education Non-profit consulting Peer-to-peer learning	For-profit consulting	Campaigns against specific energy pathways		
Organising 	Participatory energy dialogues Participatory experimentation and incubation	Platforms for direct energy transactions Investment and finance mechanisms	Energy gamification and nudges	Networks against specific energy pathways		
 All Cities	 Antwerp, Belgium	 Bristol, UK	 Grenoble, France	 Mannheim, Germany	 Warsaw, Poland	 Basel, Switzerland



Antwerp, Belgium

The City of Antwerp dedicated its SONNET City Lab to reducing energy poverty in vulnerable households across the city. To achieve this goal, the city explored four solutions to fight energy poverty: creating energy communities; renting energy-efficient appliances to vulnerable households; facilitating dialogue between the city departments to manage a fund for retrofitting houses; and retrofitting and installing solar panels on former social housing to rent to low-income families

SIE FIELDS

- Participatory experimentation and incubation
- Local energy production and consumption
- Local peer-to-peer electricity exchange

Actions

Energy community in Stalinsstraat

This City Lab action aimed at creating an energy community along the Stalinsstraat street, and installing solar panels on the roofs of the houses located there. In early 2021, a door-to-door campaign and an online information session were organised to encourage residents to join the project. Those homeowners whose roofs were technically not suited or who had no financial means to join were able to instead sign-up to buy local renewable energy from their neighbours in the future, when the appropriate legislation comes into effect. Ultimately, a solar installation and three renewable energy batteries were installed. The project will be continued beyond the SONNET City Lab thanks to funding from Antwerp's municipal Climate Fund.

Papillon: rental of energy-efficient household appliances

This project aims to offer a solution for households that can't afford new energy- or water-efficient appliances, like fridges, freezers or washing machines, while also creating a circular business model. The implementing partner has already been selected and the project will kick off at the beginning of 2022.

Noodkoopfonds: renovation coaching & energy loan

The purpose of this action was to facilitate a dialogue and foster a closer relationship between city departments to help collectively find a solution regarding who and how to manage a so-called "Noodkoopfonds" fund, provided by the Flemish Government to the municipality. The "Noodkoopfonds" fund is dedicated to vulnerable homeowners who don't qualify for social housing and have trouble renting homes on the private rental market. These homeowners typically

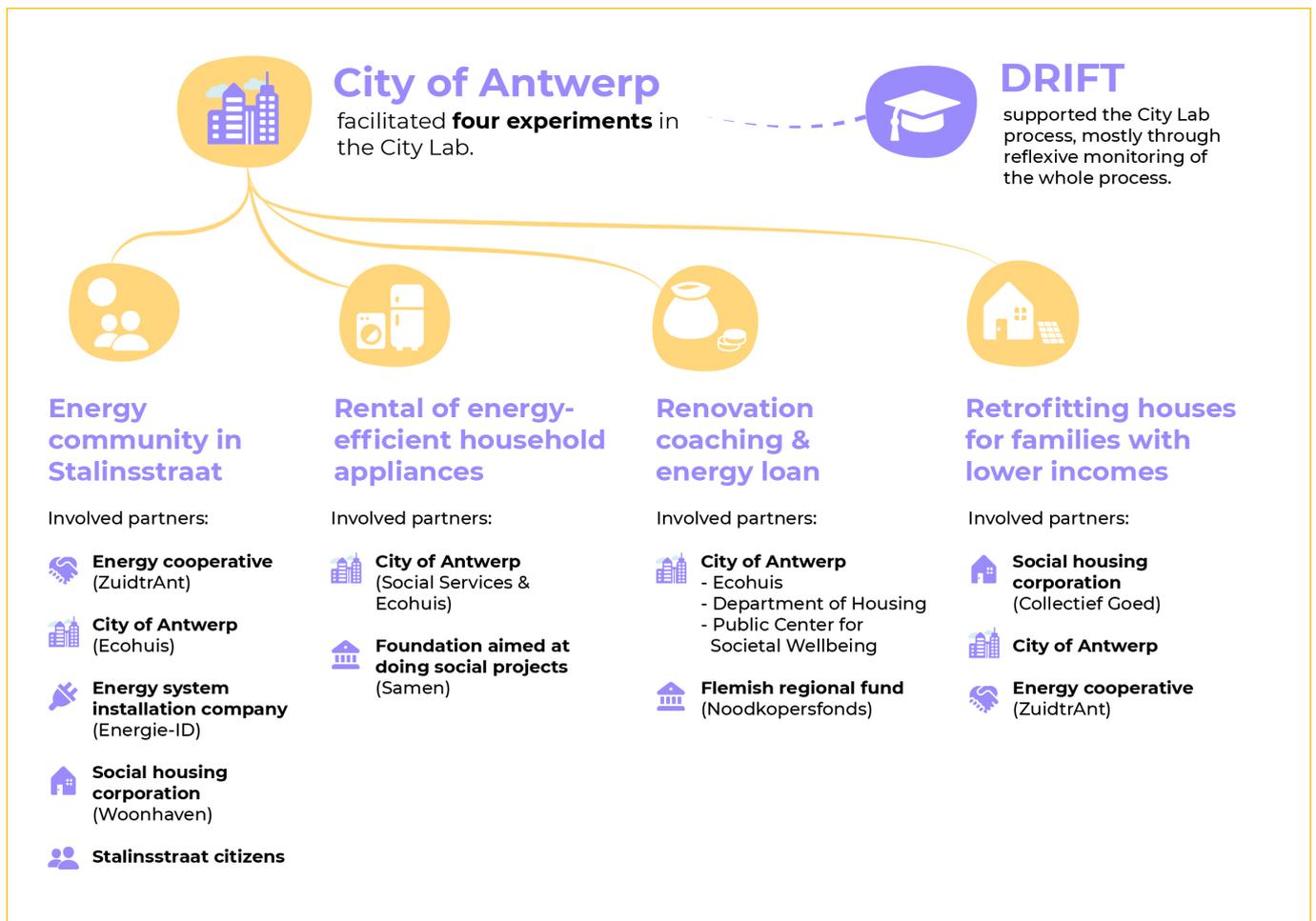
end up buying homes that are in bad condition and not energy efficient, without the means to renovate and retrofit. The fund enables them to apply for an energy loan up to €25,000 to renovate their house.

Collectief Goed: retrofitting houses for families with lower incomes

The aim of this City Lab action was to retrofit and install solar panels on 77 former social houses, and rent them to families with lower incomes. This project was a collaboration between two cooperatives: Collectief Goed, the owner of the buildings, and ZuidtrAnt, an energy cooperative with expertise in installing solar panels. While considerable progress has been made, solar panel installation has since been paused due to an unclear legislative framework and pricing mechanism.

Key learnings

- ★ Government funding or subsidies are essential for projects aimed at reducing energy poverty. These issues cannot be solved by the private market alone.
- ★ SIE-friendly policies and legal frameworks at the national and regional levels are important to facilitate smooth implementation of projects that reduce energy poverty at the local level.





Bristol, UK

In its SONNET City Lab, Bristol City Council focused on the question: how to make use of crowdfunding as an investment activity to collectively raise capital to install energy efficiency measures in local community buildings? The municipality, working in close collaboration with the Bristol Energy Network, engaged building managers to assess the costs and energy-related savings associated with undertaking energy efficiency works in community buildings. It then investigated the possibility of using a Community Municipal Bond (CMB) mechanism to fund this work – such a mechanism is explained in [this video](#), created by the SONNET team in Bristol. Finally, the City Lab conducted a survey among citizens to see the level of interest in this type of investment.

SIE FIELDS

- Participatory experimentation and incubation
- Investment and finance mechanisms

Actions

Building manager survey

The first phase of the City Lab was to engage community building managers in the process, and to invite them to take part in an energy-based survey. The survey was to determine the current energy needs and costs in the buildings, the feasibility of on-site renewable energy installation, and to identify energy efficiency improvements needed. The survey indicated a desire to reduce energy consumption in the buildings, in part because energy is often one of the highest building costs. Collaboration with the building managers also helped understand the important role these buildings play for Bristol's citizens.

Energy audits of community buildings

Based on the survey results, Bristol City Council carried out full energy audits of 12 community buildings participating in the City Lab. The audits showed that investment of about £200,000 (about €230,000) would be necessary to implement suggested energy efficiency improvements and thus to achieve long term energy savings.

Citizen survey

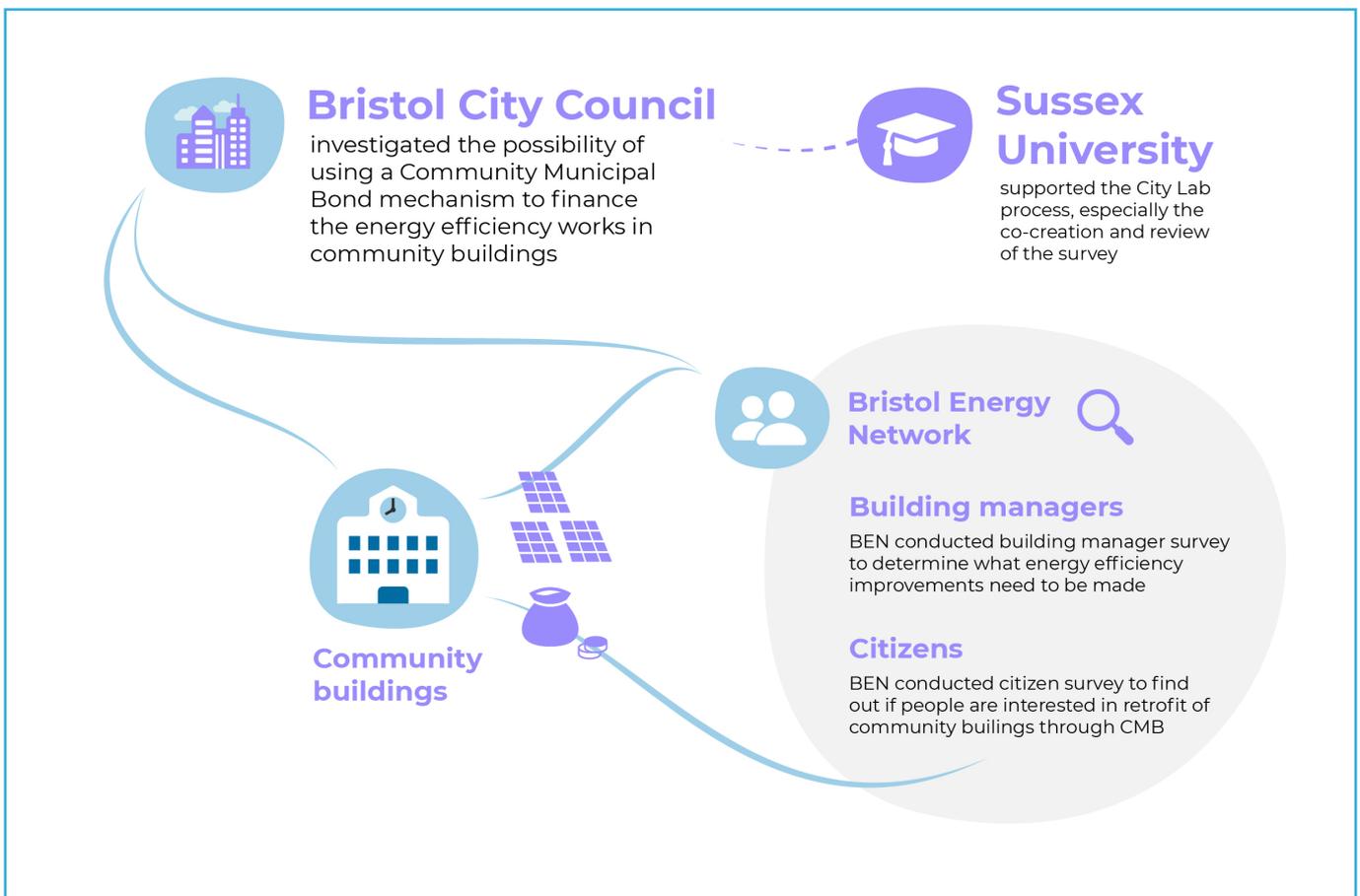
The second phase of the City Lab process was to find out what the Bristol citizens think about crowdfunding as a solution to finance energy retrofits of community buildings. The survey demonstrated clear interest in innovative funding methods, including CMB. Over 70% of respondents stated that community buildings were of high or very high importance to them personally and approximately 60% said that they would be interested in a CMB.

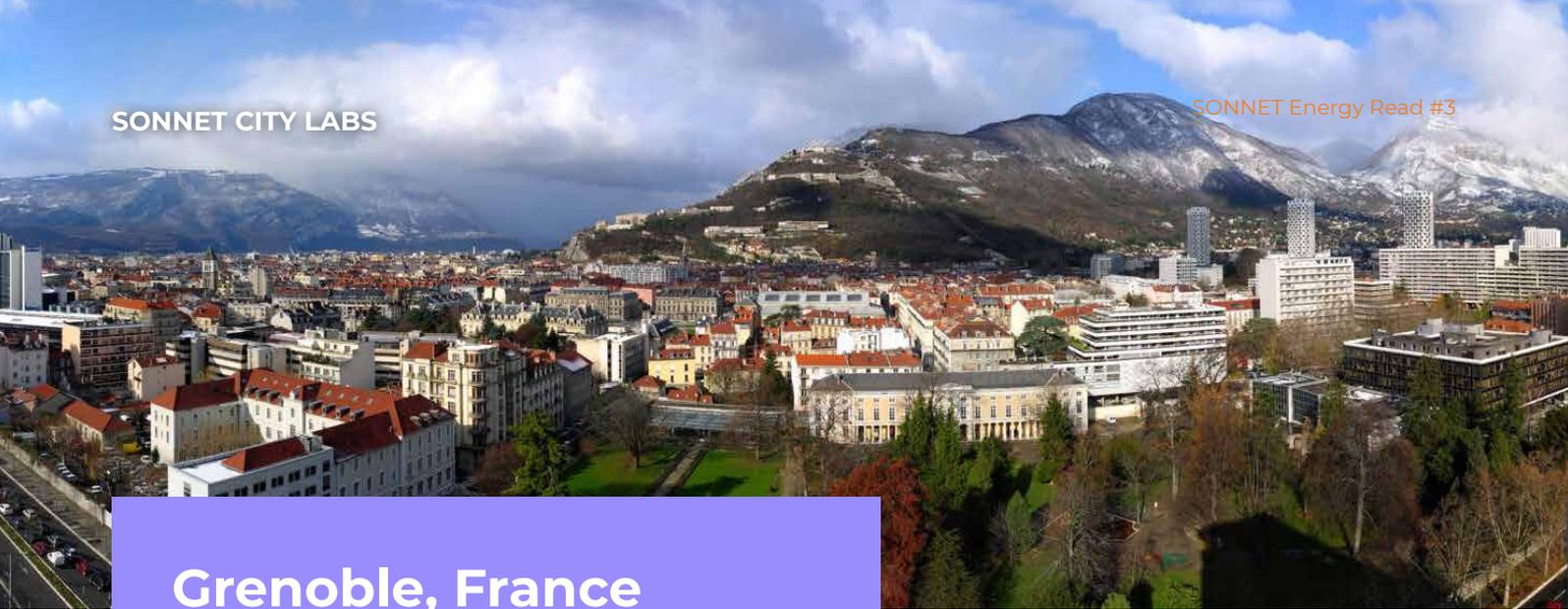
Further actions

In November 2021, the City Lab hosted a [SONNET on Tour](#) in Bristol event on innovative financing mechanisms to fund renewable energy projects. During the workshop, the City Lab shared its experience and lessons learnt on CMBs. And, at the end of 2021, Bristol City Council started to seek a senior officer and political leadership permission to launch a CMB in the future.

Key learnings

- ★ Community buildings are highly valued by the local communities for the services they provide and the environment they create. People want these places to be safer and more energy efficient.
- ★ There is an interest among local communities to invest in a CMB as a means to fund the energy upgrades in their community buildings.
- ★ To launch the CMB in Bristol, the municipality would first need to run energy audits in more buildings to increase the value of the investment portfolio, and organise another round of face-to-face engagement on the CMBs.
- ★ There is an appetite to explore alternative ways of financing energy transition.





Grenoble, France

The main goal of the SONNET City Lab in Grenoble was to experiment with diverse innovative methods to foster change in energy behaviours and promote 'energy sufficiency' (i.e. reducing or avoiding energy consumption). The Lab was launched in February 2020 and worked together with three groups that use municipal buildings: associations, the local administration, and schools.

SIE FIELDS

- Participatory experimentation and incubation
- action against specific energy pathway
- advocacy for specific energy pathway
- energy education
- non-profit consulting
- peer-to-peer learning
- energy gamification and nudges

Actions

Charter for eco-responsibility

The Charter for Eco-responsibility is a commitment between the Grenoble Municipality and an association that makes use of a municipal building. It aims to raise awareness on how to become more eco-responsible and use buildings in a more energy sufficient way.

The SONNET City Lab hosted several meetings that brought the municipality and associations together to discuss and validate the charter text. The charter was then piloted by six associations, who used it to commit to actions like reducing their use of electricity and water, purchasing goods with moderate environmental impacts, and hosting events that are easily accessible by public transportation. The municipality supports associations that sign the charter with resources (e.g. guidelines, tools, contacts), workshops and meetings, and by monitoring their eco-responsible actions. Long-term, Grenoble hopes to extend this charter to all of the approximately 350 associations using municipal buildings.

Community Centre "Bois d'Artas"

This action is still in its early stages. It aims at supporting users of the Bois d'Artas community centre to co-create an action plan on how to adopt energy-saving practices in the building. The action plan will be based on a diagnosis exercise, including observation of routine practices in the building.

Administration building "Caudel"

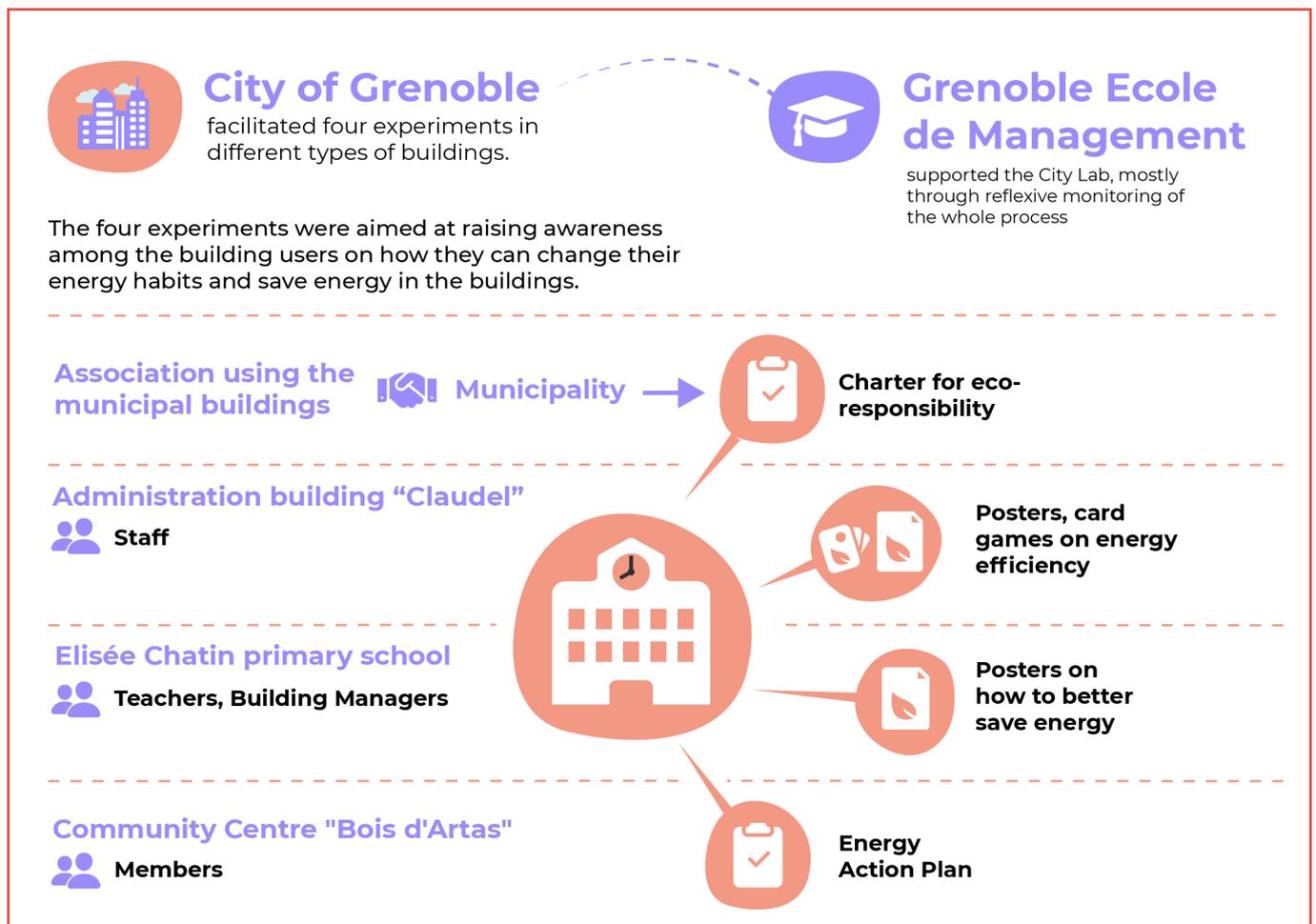
The city administration's so-called Caudel building hosts the most employees, and became the focus of an action to motivate employees to save energy in their workplace. This aimed to raise awareness among employees on how they can change their energy habits at work, via new posters, a card game with information about eco-responsible behaviour, as well as nudges, such as signs encouraging employees to use the stairs rather than the elevator.

Elisée Chatin primary school

The City Lab action in Elisée Chatin School focused on working with staff to create posters on how to save energy. The materials were co-designed with professionals specialised in the areas of maintenance, cleaning and catering, and based on the observation and analysis of daily routines. The action resulted in a guide for eco-friendly behaviours explaining how to best make use of the lights, heating, electric appliances, internet, etc. to save energy. Separate posters were also created dedicated to lighting practices and energy saving in the school kitchen, as well as a guide of best energy saving practices in school buildings.

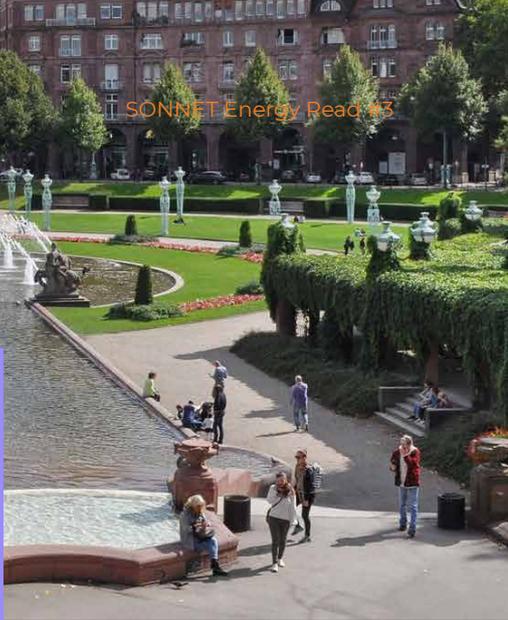
Key learnings

- ★ City Lab participants were interested in receiving practical tips and energy saving solutions.
- ★ In order to run a successful City Lab on energy sufficiency, it was necessary to ensure energy quality and proper maintenance of buildings. If buildings are in poor condition, users may be less willing to participate in energy saving actions.
- ★ It is essential to have a dedicated, well-trained and enthusiastic team that can bring everyone on board, both employees and managers.
- ★ Always think of your target group and find appropriate ways to communicate with them.



Mannheim, Germany

The City Lab in Mannheim focused on novel governance arrangements to enhance social innovation in energy in the district of Neckarstadt-West. The aim was to foster collaboration between diverse stakeholders, strengthen dialogue within the city administration, and encourage citizen participation. To mitigate the impact of the pandemic, the City Lab implemented two concrete experiments that could be carried out under the restrictions. First, the City Lab used a Mobile Green Room® to show the benefits of urban green structures in the densely built district. Second, awareness among local residents on energy consumption challenges was raised through the city’s KlimAthon App. Collaboration with Neckarstadt-West will continue: in May 2021, the City of Mannheim received financing for urban energy renovation management to be implemented in the district over the next three years, with a possible extension for two more years.



SIE FIELDS

- Participatory experimentation and incubation
- Participatory energy dialogues
- Energy gamification and nudges
- Non-profit consulting

Actions



Mobile Green Room®

To ensure citizen participation despite the pandemic, and to demonstrate the benefits of urban greenery, in summer 2021 the municipality installed a Mobile Green Room® in Neckarstadt-West, which provided information and the opportunity to exchange ideas in public spaces. It was an excellent opportunity for stakeholders engaged in local energy transition to connect,

network and promote their green ideas. The Mobile Green Room® was very well received by the community, who were also able to use it as a recreational area and a space for spontaneous summer gatherings.

Networking and citizen engagement

The municipality initiated collaboration between local professional stakeholders, like the Neighborhood Management and the Consumer Center, alongside businesses, local associations and citizens, and created a platform for them to connect and exchange on energy-related topics relevant for the district. A number of citizen engagement activities were held throughout 2020, such as design thinking workshops, a public pop-up event, a virtual lab opening event and more, to create stronger links between local stakeholders to speed up energy transition in the neighbourhood.

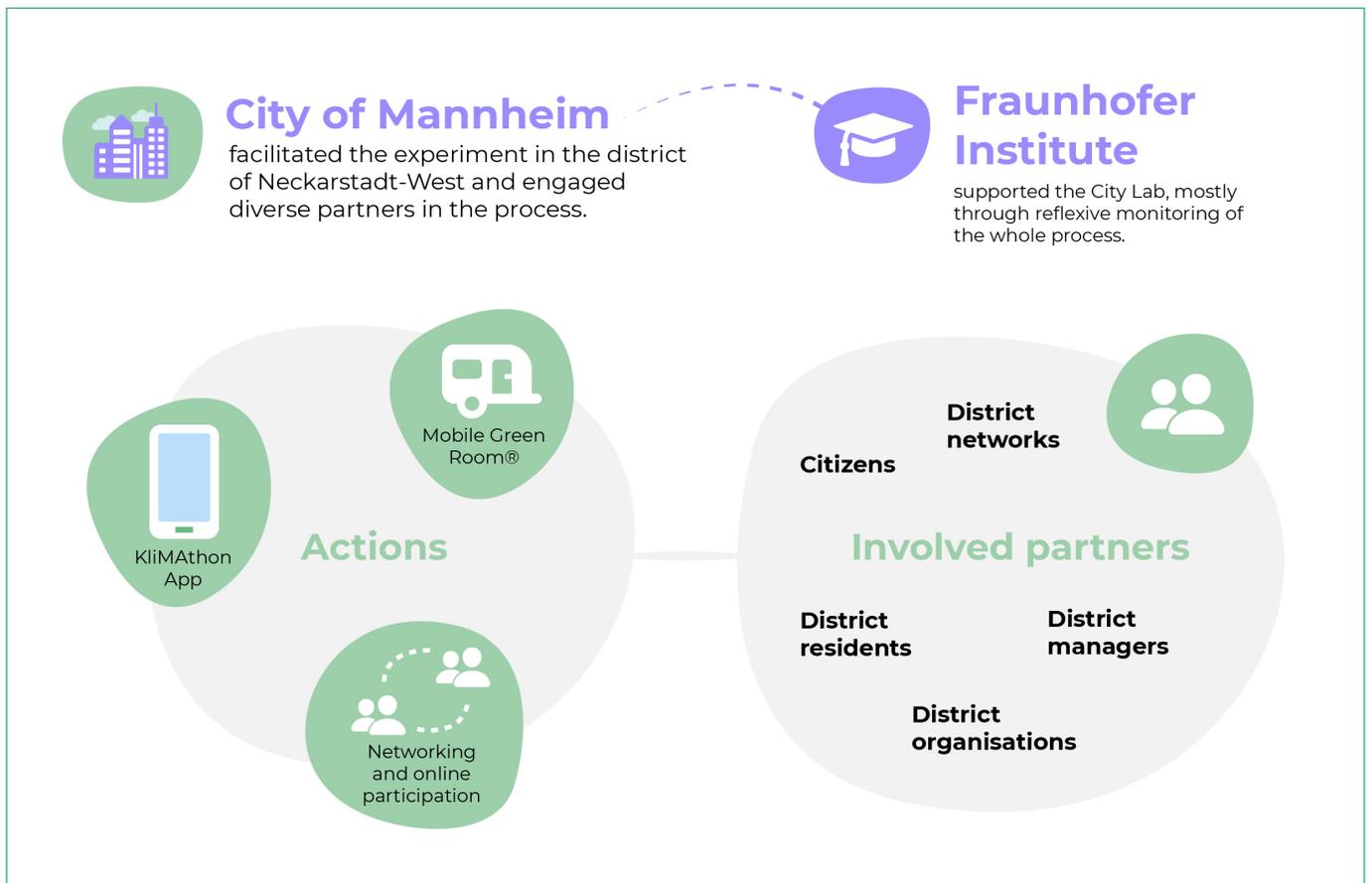
KliMATHon App

Mannheim's KliMATHon App makes use of gamification to motivate citizens to change their energy behaviours and adopt more eco-friendly lifestyles. App users can take on challenges in the categories living, food, mobility, shopping, leisure, holidays and digital life. Participants

can play individually or in groups, enabling those with low technical skills to team up with others to participate. Over the six weeks of the city's KliMATHon event, 506 participants took on challenges, and together saved 28 tonnes of CO₂ or about 55 kg of CO₂ per person!

Key learnings

- ★ Close cooperation with local stakeholders and multipliers from the beginning of the City Lab helped establish a “coalition of the willing” and contributed to a better understanding of local needs.
- ★ Digital tools and innovative methods help engage citizens on a larger scale. However, they should be tailored to the local context and to specific challenges and needs.
- ★ It is difficult to start a conversation on energy transition in districts facing social challenges, in which climate change is not on the top of the agenda. It was helpful to focus on energy-related issues relevant for the neighbourhood, like mobility, urban green space, and the improvement of living conditions, and engage already existing social networks when developing activities.
- ★ It is important to seek ways to include the City Lab experiments in long-term action plans or strategies.



Warsaw, Poland

The SONNET City Lab in Warsaw focused on achieving energy savings by monitoring energy use in private apartments and providing those residents with personalised recommendations on everyday ways to reduce energy consumption. The experiment engaged a group of 11 apartments inhabited by 37 people, located in different districts of Warsaw.

SIE FIELDS

- Participatory experimentation and incubation
- Non-profit consulting

Actions

Installing equipment to measure energy consumption in households

The City Lab experiment started by installing smart meters in 11 households across the city to measure energy consumption and to monitor indoor conditions, like CO2 concentration, humidity and temperature.

Recommendations on how to save energy

The devices monitored changes in residents' energy habits and behaviours. For six weeks, participants received advice on how to better save energy in their houses. Such messages would, for example, read: "Higher power consumption of the refrigerator was registered. We suggest checking for frost and damage to the refrigerator door seal." Recommendations were communicated to residents through phone calls, weekly energy efficiency reports sent by email, and via feedback surveys. Additionally, at the end of this six week period, the old light bulbs in each apartment were replaced with LED bulbs that use about 90% less energy.

Analysis of collected data

Lastly, the City Lab team compiled the collected data and developed conclusions. The Warsaw City Lab ended in October 2021 with an online meeting that brought together participants of the experiment with representatives from the municipality, partners from Kozminski University, and the smart meter provider. During the meeting, the citizens and the municipality confirmed their interest in continuing such projects in the future.

Key learnings

- ★ The experiment showed that changing energy habits and investing in energy efficient appliances, like replacing regular light bulbs with LED ones, can have a significant impact on reducing energy consumption.
- ★ Changing energy habits may help to protect residents, especially vulnerable groups, from the consequences of increased energy prices.
- ★ The participants of the experiment appreciated the regularly received energy reports, including the information about their use of energy and personalised tips on how to reduce it.
- ★ Participants suggested that an integrated programme or app in which all information on their energy consumption is compiled would be a more attractive tool than weekly energy reports.
- ★ Participants were also open to the possibility of receiving alerts via SMS or email in case irregularities in their energy consumption were detected.
- ★ Participants show some concerns about privacy issues involved in real-time data collection, analysis, and transfer.





Basel, Switzerland

The goal of the SONNET City Lab in Basel was to support more sustainable individual behaviour through the use of the Enerjoy app, which encourages users to reduce their CO2 footprint by changing climate-relevant behaviors. The app was developed by the local state-owned energy and water utility Industrielle Werke Basel, which was the main partner for the SONNET Basel City Lab. The Lab engaged about 500 app users, working with them to measure the app's impact on eating and mobility behaviour. In 2021, Enerjoy was widely released and is now available to download from the Swiss Apple and Google Play app stores. The app development team will continue the project beyond the SONNET City Lab and is testing the viability of business models for continued growth.

SIE FIELDS

- Participatory experimentation and incubation
- Energy gamification and nudges

Actions

Process design

During a series of meetings in 2019 and 2020 between the SONNET team at the Zurich University of Applied Sciences (ZHAW) and the app development team, the goal and scope of the Basel City Lab experiment was clarified. The Lab aimed to understand how using the app could influence everyday food and mobility choices, and to test this with volunteer users.

The test itself took place over six weeks in late-2020. Participants' use of the app was recorded, and online surveys before, during and after the field experiment tracked changes in behaviour in both app users and in a control group. Results of the experiments were analysed in order to improve app design.

In the app

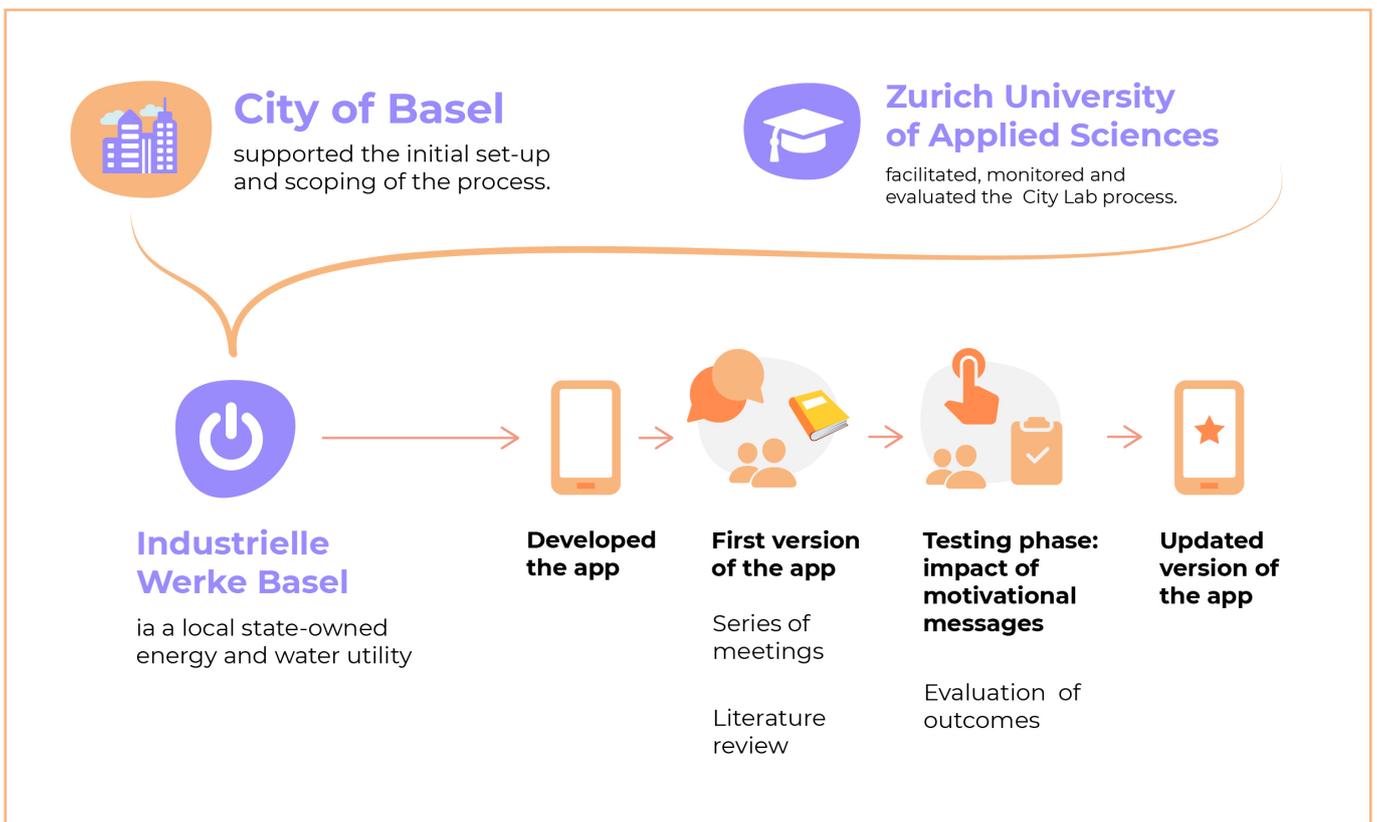
App users could input their daily food and mobility choices (e.g. how much cheese was in the sandwich at lunch, or the distance of their daily bus commute) and immediately see their CO2 footprint for that day. The app also included motivational messages based on environmental and social values, such as: "Where is Nemo? Climate change threatens coral reefs which are home to 25% of all marine fish. Reduce CO2 emissions to save them!" or "Summer serial killer? An increasing number of heat days causes the mortality rate to rise markedly. Let's do something for grandma and grandpa."

Further actions

ZHAW evaluated the data and organised an online workshop in February 2021 with about 90 of the experiment’s participants to share the preliminary results on the behavioural impact of the app. A final event was held in October 2021 to discuss Lab results as a whole with Enerjoy stakeholders, as well as city and academic representatives.

Key learnings

- ★ The app increased awareness about the impact of everyday transportation and food choices on CO2 emissions, and shed light on personal responsibility for climate change.
- ★ While motivational messages did not significantly impact behaviour change, the app did produce significant reduction in CO2-relevant consumption.



Recommendations for cities

- ✓ **Make the City Lab meaningful!** City Labs deliver the best results when they are embedded in a larger municipal vision or strategy. Political support and openness to experimenting with SIE, as well as dedication of local policy-makers and municipality employees, is essential.
- ✓ **Dedicate time and effort at the beginning of the process** to define the goals, key stakeholders and formulate a robust action plan. This will help you eliminate distractions and smoothly realise your plan.
- ✓ **Clarify the roles and responsibilities** among the team members early on in the process. Honest and transparent communication, as well as clear division of roles and tasks, are key to a successful City Lab.
- ✓ **Seek direct contact with participants of the City Lab.** The main goal of the City Lab is to build strong relationships with local actors. Don't waste this opportunity by delegating this task to someone else.
- ✓ **Include the local community!** If you want to transform the energy system, you need to make people a part of this change.
- ✓ **Rely on local partners.** Look around: there are certainly plenty of interesting organisations, businesses and start-ups who want to be included in the transformation of the local energy system.
- ✓ **There is power in a clear, shared story.** Energy transition is a complex process. Creating a shared and easy to understand story will help you explain certain processes and inspire change.
- ✓ **Start small and scale up.** It can be complicated to organise and finance big projects right away. Try to start from smaller initiatives and harvest best practices and lessons learnt. Give yourself time to build an experienced team, map diverse sources of funding, and create strong partnerships with local actors.
- ✓ **Share your knowledge and skills with others.** Have you facilitated a participatory method and have plenty of stories to share? Arrange a meeting with colleagues working in different departments and tell them about your experiences.
- ✓ **Don't stick to the usual suspects.** It is important to engage different and varied partners, such as relevant NGOs working in different sectors, early on in the process.
- ✓ **Don't give up in the face of challenges.** After all, a City Lab is an experimental format to test innovative solutions. Obstacles, mistakes and failures are a crucial part of the learning process and can teach us valuable lessons. SONNET City Labs were turned on their heads when the COVID-19 pandemic hit – adapting to this unexpected new reality was a challenging and enriching learning opportunity.
- ✓ **Dream big!** Try to find ways to integrate your City Lab into long-term processes or action plans to ensure their continuation.



SONNET Energy Read #3

The “Social Innovation Meets Energy” series – in short, the SONNET Energy Reads – aims at communicating the project’s research results and distilling key insights as practical recommendations. Through these reads, we aim to reach out to researchers and social innovation practitioners alike to support critical reflection and capacity building. To follow our work, please sign up for email updates on our website and check out our twitter account:

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Partners

The SONNET project brings diverse groups together to make sense of how social innovation can bring about a more sustainable energy system in Europe. How has social innovation contributed to making our energy sources cleaner? How can social change help reduce our carbon footprint in the future? SONNET cities and academic partners are working together to get to the bottom of these questions and more.



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