SI observatory for climate neutrality

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Summary

The purpose of this report is to learn from real experiences in social innovation and to uncover the contribution of social innovations in supporting the transition to climate neutrality goals promoted by the EU Cities Mission and Net Zero Cities platform. Social innovation can help cities accelerate their transition to climate-neutrality in many ways: (1) ensuring the consideration of economic development and overall wellbeing of people and the planet at every step of the transition to net zero; (2) highlighting the co-benefits of climate mitigation that generate social and economic value; (3) creating new business models and building capacity to address decarbonisation challenges; (4) creating engagement platforms for multiple actors to co-design and co-produce solutions contributing to decarbonisation; and (5) supporting positive behavioural changes by responding to specific local needs and acting within cultural contexts.

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Social Innovation for Climate Neutrality

Deliverable D9.1

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Table of contents

List of figures

Abbreviations and acronyms

Acronym	Description
WP	Work Package

Summary

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Keywords

Social innovation, cities, climate-neutrality, net-zero

1. Description of the role of Social Innovation for cities climate neutrality

1.1. Context for this report

The European Commission recently launched the Mission on 100 Climate Neutral and Smart Cities by 2030. To support cities in achieving this ambitious goal, the NetZeroCities Project is being developed. The four-year project NetZeroCities is meant to help cities to overcome the current challenges and barriers, enabling cities and citizens in taking the next steps towards an inclusive, thriving, climate resilient and sustainable future. NetZeroCities will support cities to achieve climate neutrality through a variety of forms, including the Climate City Contracting process, One Stop Shop Platform, pilots and social innovation capacities. NetZeroCities is committed to developing a range of support services for cities, which are responding to cities' needs.

Our aspiration is to work with cities to accelerate urban innovation and reshape the way that city leaders and urban planners think about creating and shaping thriving and sustainable places. We aim to improve the way that urban development connects with communities through social innovation initiatives, co-creating solutions for climate neutrality that respect both people and the planet. The purpose of this report is to learn from real experiences in social innovation and to uncover the contribution of social innovations in supporting the transition to climate neutrality goals promoted by the EU Cities Mission and Net Zero Cities platform.

In this report, we follow the definition of social innovation developed by the European Union: "new ideas (products, services and processes) which simultaneously satisfy social needs more efficiently than existing ones and create new and long-lasting social relationships and collaborations. Not only are these innovations good for society, they also improve its ability to act." (Hubert, *et al.*, 2011). Social innovation is, moreover, characterised by using prototyping and quick experimentation to produce new products, services or production models that generate both social and economic value, improving community wellbeing and prosperity.

Social innovation works most effectively with a systems innovation approach to generate holistic solutions to societal challenges and create responsive ecosystems for social change (see NetZeroCities Quick Read). Social innovation practices can support systems innovation by providing an inclusive and collaborative process for generating solutions that support a city's climate neutrality objectives. In doing so, social innovations generate "tangible" value, seen in concrete solutions and economic development, as well as, "intangible" value, which is reflected in the potential for cultural and behaviour changes, relationship building and inclusive growth, among others.

Social innovation can help cities accelerate their transition to climate-neutrality in many ways:

(1) ensuring the consideration of economic development and overall wellbeing of people and the planet at every step of the transition to net zero; (2) highlighting the co-benefits of climate mitigation that generate social and economic value; (3) creating new business models and building capacity to address decarbonisation challenges; (4) creating engagement platforms for multiple actors to co-design and co-produce solutions contributing to decarbonisation; and (5) supporting positive behavioural changes by responding to specific local needs and acting within cultural contexts.

The following is a summary of the collaborative state of the art collected by partners involved in the Task 9.1 focused on the links of social innovation to climate neutrality, grouped around the five above-mentioned elements.

1.2. State of the art

Social innovation for climate neutrality is a very broad and wide-ranging topic that spans across countries, sectors, and levels of impact. A large part of reaching climate neutrality lies not only in government policy, but also in the change that happens at a social scale. The following paragraphs present the argument for social innovation towards the goal of climate neutrality as well as a variety of examples.

The transition to net zero: People, Planet and Profit

Social innovation is an essential element in reaching climate neutrality because moving towards climate neutrality by 2030 requires a profound social, technological, economic, and institutional transformation in a very short timeframe. This will only be possible if there are widespread changes in the behaviour of individuals and societies, in their patterns of consumption, production and relationships.

Challenges of the magnitude of climate change cannot rely solely on top-down initiatives. New citizen spaces for creativity and social action will also be necessary, where alternatives compatible with the growing environmental and social constraints of our planet are produced and experimented (Muñoz, *et al.,* 2022). Examples of such spaces are proliferating in diverse sectors such as renewable energies, urban agriculture or health (Smith, 2016). They seek new solutions to specific problems, the production and dissemination of which is only possible through processes and practices based on collaboration and collective intelligence.

In "Bottom-up, social innovation for addressing climate change", Bergman and Noam (2010) argue that social innovation could yield benefits if integrated into wider considerations of research and policy development concerning climate change. Similarly, Haskell (2021) stresses the need to fundamentally change certain practices. He suggests "a move in social innovation research towards strong sustainability" and proposes such research avenues within each of the five dimensions of social innovation: conceptualization; environmental needs and challenges; key resources, capabilities, and constraints; types of governance, networks and actors; and process dynamics for strongly sustainable social innovation.

Researchers, local or regional advocacy centres, non-governmental organisations and companies committed to community development can make a significant contribution to the

flourishing of social innovations. But for social innovations to scale up and represent more than small enclaves of social experimentation, they also require a commitment from the public and private actors that govern and fund science and innovation trajectories (Mataix, 2017).

Climate change mitigation: Going beyond environmental benefits

Many initiatives that reduce greenhouse gas (GHG) emissions generate benefits that go beyond contributing to climate change mitigation exclusively. Reducing air pollution and the accompanying health and environmental impacts are the most obvious co-benefits, but there are many other areas, including resource efficiency, economic security, or sustainability of ecosystems where positive impacts can be expected (UNECE, 2016). City-level and regional-level governments are particularly well placed to incorporate co-benefits into their decision making processes as co-benefits most clearly manifest at that scale and interventions can have the most immediate effects (Jennings, *et al.*, 2020).

There are macro effects associated with increased climate-related investments on economic growth and employment. There are also distributional aspects (winners and losers) resulting from the shifts in the pattern of economic activity that need to be considered. (UNECE, 2016). It is therefore necessary to bear in mind what economist Thomas Piketty (2022) said: economic growth alone does not improve income distribution. It can even deepen inequalities.

For this reason, some governments are leveraging social innovation to improve the effectiveness and efficiency of certain public services and are becoming more aware of the reforms they need to make to their own policies in order to be true facilitators, without damaging the autonomy and spontaneity that are characteristic of social innovation (Mataix, *et al.,* 2017).

New business models and capacity building to address climate neutrality

Addressing decarbonisation challenges requires new capacities and business models. Many economists have shown that the effects of climate change have been explained in economic calculations as negative externalities (Mariana Mazzucato, 2016). Therefore, negative externalities such as those created by pollution require public policies to internalise external costs into the private sector using instruments such as a carbon tax. The empirical developments of Mazzucato open the debate on the possibility of creating new market conditions that allow for the expansion and flourishing of new business models, which could not emerge without a change in the conception of value generation. The emergence of the Internet, the nanotechnology sector, the biotechnology sector, and the clean-tech sector were mission-oriented investments that coordinated public and private initiatives, built new networks, and drove the entire techno-economic process, which resulted in the creation of new markets (Mazzucato, 2015).

One example of building capacity from a social innovation approach was presented by Clancy and Ruhf (2010) in an article where they analyzed the relationship between food production and consumption, and the relationships farmers have with distributors. The authors argue for the "regionalising" of food systems, that is, emphasising and focusing on the importance of

geographic regions in the production and distribution of food to expand the capacities of farmers and achieve more sustainable and resilient food systems. Indeed, regionally-focused food systems ensure that the economic returns remain within the region. This allows farms of all sizes, from both local and regional scales, to develop their trade and business models through a diversity of supply chain opportunities that they might not otherwise access. Developing sustainable regional food systems is a collaborative effort which requires addressing markets, new business models, branding, infrastructure, and financing, all of which require a wide range of capacities.

Acting within cultural contexts: A challenge for net zero pathway

There are inspiring examples that have helped the goal of carbon neutrality respect local identity and cultural heritage. Abaki Beck (2021) discusses the ways in which restoring indigenous cultural practices by giving land back to tribes has contributed to offsetting carbon emissions. Through California's cap-and-trade program, the Yurok tribe along with many others following, have purchased back a small portion of their lands from the state government, re-implementing indigenous practices long eradicated. They are now able to interact with the land as they choose, and through the use of sustainable practices such as culturally prescribed burning they can sustainably harvest timber, restore salmon habitats, and create farms to increase food sovereignty. As of September 2020, "78.9 million carbon offset credits were issued to tribes or Alaska Native Corporations for forest projects through California's program" (Abaki Beck, 2021).

Acting within cultural contexts is one of the biggest challenges for the future. If we disassociate social innovation from its cultural context, we are trapped in a permanent search of scientific evidence which ultimately cannot be replicated elsewhere. Generally speaking, we have built up considerable knowledge of how to implement social innovation projects, overlooking the cultural, human and community dimension of social innovation processes. In practice, we are still conducting linear actions, hoping to achieve systemic change (Espiau, 2018).

Another path of change from social innovation to reach climate neutrality is promoting gender equality within leadership in environmental politics. In the podcast episode, "How Gender Equality Can Save the Planet," Dr. Katharine Wilkinson and Dr. Ayana Elizabeth Johnson discuss how women, and specifically women of color, are more likely than men to be affected by climate change, and are therefore more likely to take the risks of climate change seriously. Yet, while it has been shown that countries with more women in positions of power to make environmental decisions have the most effective environmental policies, up until today women only make up a small fraction of the leadership in charge of environmental policies. (2021). Increasing women's representation in leadership, and particularly in climate leadership, is therefore a key challenge and lever in climate action.

Empowerment through collective social action

Climate challenges and sustainable development require collective action and partnerships to re-think and re-design our current paradigms (Moreno *et al*,. 2021). Studies of multi-stakeholder partnerships have looked at organisational factors that provide insights into the collaborative value created by partnerships (Austin and Seitanidi, 2012), non-traditional forms

of leadership in collaborative arrangements, or the individual factors in multi-stakeholder work (Stott and Murphy, 2020).

In order to build the partnerships that can effectively tackle systemic issues such as climate change, interpersonal relationships and relational drivers need to be cultivated. Interpersonal trust is described as the basis of shared purpose building (Seitanidi and Crane, 2009; Sloan and Oliver, 2013). A sense of familiarity and closeness may contribute to building common meanings and consequently to better self-management of individuals within an organization (Luke *et al.*, 2012). Stott and Murphy (2020) highlighted that it is mainly interpersonal and intrinsic motivations that can facilitate a partnership to reach a transformational status, and not the purely transactional, extrinsic motivations. They stress the importance of providing opportunities for experimentation, and fostering individual and organisational learnings (Stott and Murphy, 2020).

In addition to partnerships and interpersonal relationships, climate neutrality can be tackled through issues indirectly related to the environment. For instance, following the COVID-19 pandemic, high levels of infections were closely linked to high levels of air pollution. Tackling the highly tangible health issues forced societies to face the less obvious environmental issue of air pollution and the emission of greenhouse gases by the same token. Even more so, tackling environmental issues are closely interlinked with larger systemic issues. According to Powers, "the pandemic opens new opportunities for transformational change, giving new energy to movements targeting systemic injustices such as racism, inadequate public health systems, and environmental pollution that increases disease susceptibility" (Powers, 2021). In sum, highlighting social issues can also raise awareness about other, sometimes more intangible issues such as climate change, and fuel action in that direction.

To conclude, social innovation can be a multiplying lever for high-impact sustainable solutions in the sustainable transformation process to achieve environmental neutrality in 2030. Changes cannot be made at the governmental and political level without arriving at the narrative that change must be made and started at the social level. The referenced articles highlight the importance of social innovation, show ways it has been achieved in the past, and inspire future actions.

2. Methodology followed for the analysis

The methodological approach applied is qualitative, based on a case study method. Case studies are typically used to investigate a contemporary phenomenon in depth and within its real-world context. The methodology is particularly applicable when the research questions can be formulated in terms of "how" and "why" (Yin, 1981).

40 cases were chosen and analysed collaboratively among all the partners involved in the WP9, Task 9.1., following common databases and selection criteria, agreed by all partners. The information for each individual case has been produced through key documents analysis, interviews, and participant observation, depending on the access to information in each case and even on the professional involvement of some partners in the cases studied.

Selection criteria has sought diversity in terms of:
- Geography/Scale: City, Country, Europe, International
- Stakeholder composition involved in each case study
- Initiator: Policy/Decision Makers, Citizens/General Public, Industry & Innovation Communities, NGOs/Civil Society Organisations, Academia, Scientific & Research Communities

In addition to the criteria for ensuring diversity, other criteria were considered such as:
- Relevant links to the urban climate neutrality objectives, such as the public policy of reference, the impact of climate neutrality (and indicators)
- Innovative approach(es) addressed related to co-creation & prototyping or action portfolio implementation strategies
- Access to information, so that each partner could analyse those cases for which it had quality information

The follow-up of the analysis has been carried out in each regular meeting of WP9, followed by an intermediate coordination meeting to ensure alignment between all partners, and to provide an overview of the cases during the research process.

The overview of the cases offers a snapshot of the distribution of the case studies according to the selection criteria outlined above, and also the fit of the cases according to the **enablers** defined in another WP of the NetZeroCities platform (WP10).

The enablers are the following:
- Educational/Capacity Building
- Informative/Awareness raising
- Financial/Fiscal
- Planning
- Policy
- Regulatory
- Technical

In addition, another classification system was taken into account, according to **thematic areas**, also defined in WP10, to ensure sectoral distribution, strengthening internal coherence between WP within the NetZeroCities project.

The thematic areas are the following:
- Stationary Energy (building envelope solutions, energy storage at building level, domotics, etc.)
- Energy Generation
- Mobility and Transport
- Green Industry (business related with food, heat pumps to heat electrification, etc.)
- Circular Economy
- Nature-Based Solutions (green spaces, greens walls, urban forest, gardens, etc)
- Digital Solutions
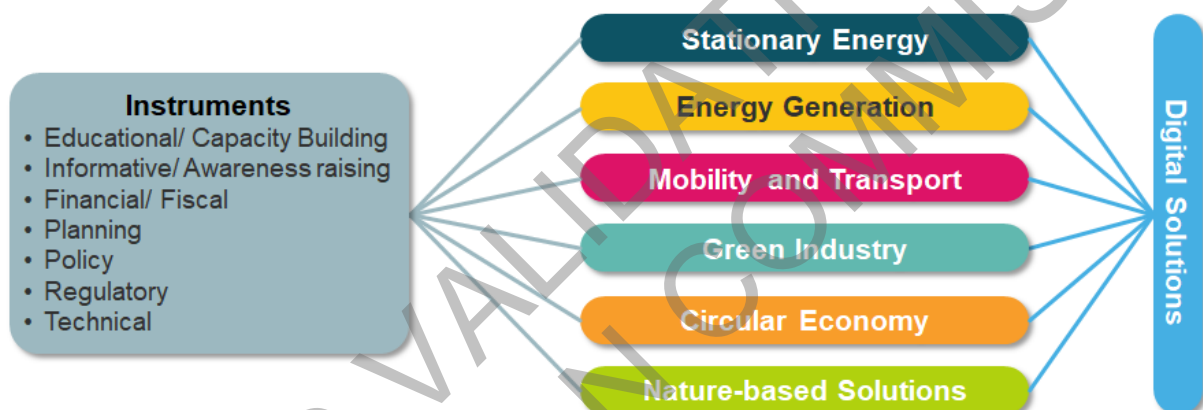
Figure 1. Enablers and thematic areas defined in WP10

The comparison among the cases has been structured following the enablers and the thematic areas defined in the WP10. In this way, the cases were compared according to two classification systems: the more conventional one, which is by topics, and the other, according to the enablers that most define the case studied. The results of the comparative analysis of the case studies are presented in the following section.

3. Evidence that emerges from the case studies

Public institutions are realising that long term and wicked challenges such as climate change cannot be positively addressed exclusively by applying the latest technological solutions or by the action of a specific sector. A deeper understanding of the social, economic, and environmental dynamics that are conditioning the evolution of these complex challenges is necessary during the entire policy process.

The role of social innovation in achieving the goals that cities around the world are setting to face climate change is crucial. As previously mentioned, social innovation contribution is based on the need to satisfy social demands in a more efficient way, improving people's capacity to act. This requires all agents in a society to bring their positions closer together. Indeed, the cases analysed show that public administration plays a prominent role as initiator in promoting social innovations and engaging people by offering incentives to make new ideas flourish and accelerate, going beyond traditional community participation and consultation mechanisms.

One-third of the cases were promoted by municipal entities committed to promoting social innovation in the processes of sustainable transformation of their cities.

Figure 2. Distribution of cases according to the initiator criteria

Almost half of the initiatives analysed belong to the city scale (not neighbourhoods or streets), i.e. they are either being planned to be scaled up or are already being implemented city-wide. This may give an insight into the ambition of some of the climate change mitigation and adaptation strategies that are currently being implemented.

Figure 3. Distribution of cases according to the scale criteria

The distribution of the cases studied according to the **enablers** for climate neutrality defined in WP10, and listed above, demonstrates that diverse initiatives pursuing sustainable and equitable transformation are being promoted from complementary entry points.

3.1. Educational and capacity building enabler

The first enabler, educational and capacity building, is crucial for developing and strengthening the skills, instincts, abilities, processes, and resources that organisations need. In this regard, interesting experiments are carried out around the world on capacity building, through training, co-creation and co-production practices, stakeholder diversity partnerships, incubators, or acceleration labs. Diverse institutions are paying increasing attention to social innovation, incorporating innovation units in their organisational structure, and offering lines of financing and technical support.

Case studies analysed such as the **"City Labs"** in the city of Mannheim and the city of Bristol, and the **"Local Energy Communities"** promoted by the Valencia City Council build new -or renewed- capacities for experimentation and entrepreneurship within municipal teams, and they are a way to build another narrative of public administration, often considered too bureaucratic and not innovative enough (Mazzucato, 2015).

In these cases, municipalities have implemented a substantial change in their usual behaviour. They moved from being recipients of external innovations to promoters of social innovations from the core of their municipal structure. In the case of the Energy Communities promoted by Valencia City Council, the municipality itself offers legal advice and training so that local residents can create a renewable Energy Community more easily. In addition, in the Energy Communities created in the most vulnerable neighbourhoods, the City Council becomes part of the community as an additional partner, to support those families who cannot guarantee the payment of the initial fee at certain times.

It is crucial to experiment on redesigning existing public services and initiatives with co-creation and prototyping approaches. Public, private, and social agents and communities are integrating some of these additional co-creation and prototyping dimensions into their work, developing a more comprehensive strategy, diminishing risk and attracting new funders interested in experimenting with a complex systems approach.

In this sense, a widespread initiative is the participatory digital platform model that emerges both from bottom-up and top-down pathways, improving society's capacity to act and interact with public administration. Such are the case studies of **"You Decide"** in the city of Braga and **"Better Reykjavik"**, focusing on crowdsourcing solutions to urban challenges. A common challenge identified by this participation model is the development of elements to make the extension to other cities easier.

3.2. Informative and awareness raising enabler

Focusing on the second enabler, informative and awareness raising, many advances have been made in this regard to amplify the audiences reached. As Kirsten Dunlop, CEO of EIT Climate-KIC[1], often mentions, the tradition and practices of marketing and mass communication can be applied to mobilise and catalyse the development and implementation of the innovation needed for deep systemic change. Communication campaigns to promote food menus such as the **"Climate Meal Label"** case, or civic movements to raise awareness around the topic of food waste and new sustainable food systems such as the **"Real Junk Food Berlin"** case, are good examples.

The case of **"City Studio"** shows an international program that builds awareness with the university population between 18 and 25 years of age through the development of Bachelor's and Master's degrees final projects on topics identified by civil servants, who act as co-tutors of these applied research projects. The model supports the work of municipal staff with innovative, experimental, and outcomes-oriented projects created alongside post-secondary researchers, students, and faculty. The first pilot of City Studio born in 2010 was promoted by the City of Vancouver and University of British Columbia. The program has been refined over the past 10 years, and it now includes 15 city members implementing the model in their cities with local universities, and more than 11,000 students involved so far.

These examples of awareness-raising provide a way for citizens to become deeply engaged in their city development through action. Each case is a place-based innovation example that is important for governments to consider when developing their climate engagement strategies.

3.3. Financial and fiscal enabler

COVID-19 pandemic and climate change are both manifestations of growing systemic risks, i.e., risks that have widespread, cascading effects across geographies and economies, like financial crises, infectious diseases and pandemics, and the economic impacts of disasters. Managing risk requires not only that financing is sustainable, risk-informed and resilient, but

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[1] https://www.youtube.com/watch?v=9mWP7Haabk0

also that sustainability, risk reduction and resilience are financed. To this end, both national and global action is needed (Sachs *et al.*, 2021).

From the financial and fiscal enabler approach, the Swedish strategic innovation platform case called **"Viable Cities"** aims to create transformative system change based on the EU Cities Mission with national finance support (100M€ for 2017-2030, 50% state funding, 50% partners) as a key element to ensure their sustainability over time. By leading the way in the transition, through co-creation and learning with cities and actors in other countries and at international level, this cities platform strives to fulfil the vision that Sweden inspires and has a leading role in the energy and climate transition through climate-neutral and sustainable cities. Swedish long-term funding strategy at national level should aim to lengthen decision-making and investment time-horizons, break down silos in policymaking, strengthen global cooperation and solidarity to address global risk drivers, and strengthen the voice of the most vulnerable in decision-making processes. Investments in prevention, risk reduction and resilience are a prerequisite for sustainable development (Sachs *et al.*, 2021).

Viable Cities, the Swedish cities platform, is inspiring other national platforms in the context of the EU Cities Mission with the aim of joining efforts and sharing learning and findings within each socio-cultural context.

3.4. Public policy enabler

Related to public policy as enabler, some of the cases analysed reflect the impulse that public policies are giving to the design of a different city model. The case of the **"15-minute city"** in Paris is paradigmatic, as it pursues the sustainable transformation implementing the 15-minute urban planning concept where access to services are at a 15-min walking and cycling distance from residents' homes. This model of decentralisation of public services is being prototyped in cities around the world.

This top-down approach is complemented by municipal strategies that listen to citizens at times of structural change in the territory. In this sense, other examples from the policy perspective, such as the **"Just Transition in a mining region"** case, enable the listening process among local public and private bodies through collective interpretation (sense making), narrative visualisation tools, and public-private collaborations platforms with workers and companies traditionally involved in the production of carbon-based energy. The objective is to collaboratively find green economy pathways in a historic mining region in the north of Spain (Lada and Velilla towns) where the economy and employment need to be reinvented. The lessons learned from this project reveal successful emerging ideas of new business models when resources are invested in a process of continuous listening between diverse actors with a strong intermediary role so that such dialogue is not truncated by ideological or business-as-usual interests.

Emerging approaches based on listening processes that produce qualitative information could be complemented with quantitative data in order to unravel a community's narratives and reveal in-depth needs, challenges and opportunities that may contribute to build a more adaptive and inclusive public policy design process. The policy co-production and participation are not the emblem of a retreat of public powers in favour of communities that solve their

own problems autonomously, but a mechanism for recovering energies and creating new engagement pathways. Participation revives democracy, it does not debilitate it. It is not about enabling communities to weaken public policy but about regenerating politics through social capacitation as a collective act (D'Alena, 2021).

3.5. Regulatory framework enabler

Governance and social innovation practices demand new management approaches that move away from command-and-control methods and that are built on convening power and soft leadership. Regarding the sixth enabler, the regulatory framework, Bologna's **"Citizen Collaboration Pacts"** represents an excellent example on how to connect, or reconnect, the relationship between public administration and citizens. Pacts for the transfer of public land to neighbours and participatory budgeting in the city of Bologna are the result of a political process that involved bottom-up and top-down societal agreements and norms contributing with the aim of creating a collaborative city.

Bologna' experimentation is part of the trend of cities playing a central role in a more inclusive version of regulatory innovation. As cities are where many of our shared challenges are deeply felt, they are also increasingly where solutions are found.

Regulatory innovation must be nuanced and carefully considered. It cannot mean relaxing rules to further concentrate power and wealth in big tech companies or extractive industries, or in a small number of hands. It needs to be about negotiating how we live and work together with greater care and responsibility, as stewards of a finite planet. The game is constantly changing, the rules need to keep changing as well (Dark Matter Labs, 2019).

3.6. Technical innovation enabler

From the technical enabler perspective, much has already been said. Technology is seen as an established innovation driver in the climate fight and in the race towards urban neutrality. Many social innovation initiatives stand out for contributing to climate neutrality through technological development in a specific sector. For example, social movements that have historically innovated in the ways of producing and co-producing food, housing or energy are today the basis for rethinking some logics in the provision of basic services.

The case of **"EWS"** (Schönau) is a clear example in the clean energy production and supply sector since 1986 from bottom-up movement in the aftermath of Chernobyl. In the same line, there are ecovillages initiatives such as the **"Cloughjordan Ecovillage"** which created 55 low-carbon homes, a carbon-neutral district heating system, a community farm, a green enterprise centre, a planned reed-bed treatment plant and a photovoltaic power plant.

Meanwhile, the growing green start-up and entrepreneurship sector is making alignments with urban climate change policies and agendas. Incubators and accelerators are emerging that aim to contribute to achieving climate neutrality, especially through the use and commercialisation of clean technologies. The **"Clean Cities ClimAccelerator"** promoted by EIT Climate-KIC is a clear example of this. Clean tech entrepreneurs develop their business ideas based on needs identified by the participating cities and work together for nine months to

develop business concepts that accelerate decarbonization and climate resilience, aligned from the start with the urban climate agenda.

Finally, and complementary to the enablers mentioned above, it is necessary to highlight that sustainable transformation requires integrating performance and evaluation practices, with a complexity-aware approach to monitoring, evaluation, and, particularly, to learning and adaptation. In the new management approaches studied in the cases selected, listening and dialogue processes, measurement mechanisms and public policies are re-tailored as targets evolve, and are designed to identify system dynamics, interdependencies and emerging connections, recognising the complexity of the system and the particularities of the context.

4. How to access case studies on the NZC portal

The Social Innovation Case Studies are an integral part of the knowledge resources from WP09 available on the NetZeroCities Knowledge Repository. The collection is starting out with **36 cases** but **will be expanding as new best practices arise** (by referral but also ideally coming from experiences that mission cities are having in their journey to Net Zero emissions). The remaining cases will be made available to the portal's Knowledge Repository by the release date and possibly integrated into the Deliverable upon a later revision. Cities will have diverse ways to access the case studies which will be explored below.

4.1. Tagging system

Thanks to a system of tags, social innovation case studies can be retrieved by a search filter according to tags. Cases can all be found with the "social innovation" tag but also through other tags, e.g. "stakeholder engagement", "finance", "governance and policy", "biodiversity", etc. In this manner, cities will be prompted with cases of social innovation also in relation to other areas.
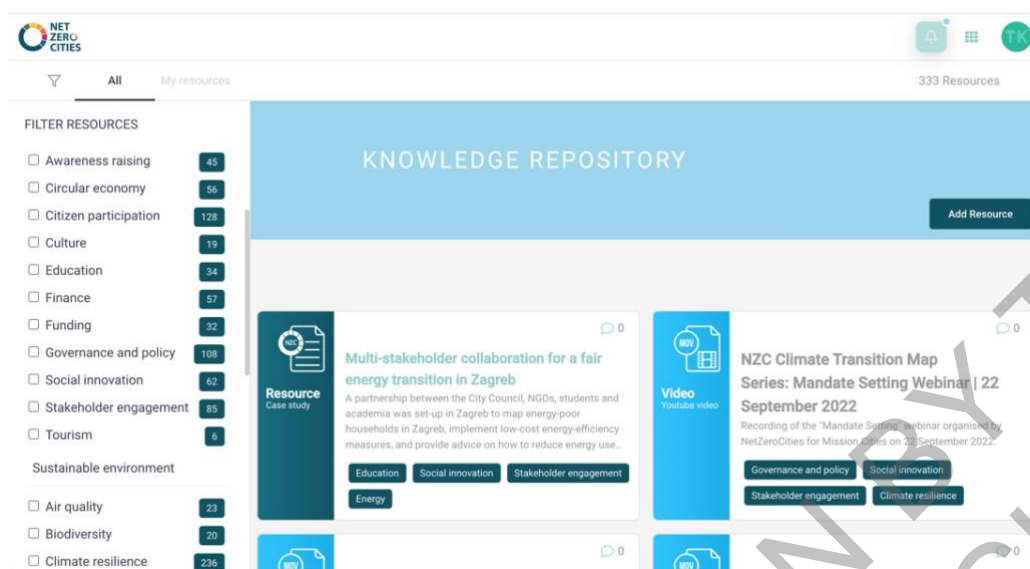
Figure 4. NetZeroCities Knowledge Repository's tagging system for resource filtering

4.2. Social innovation design process

One of the featured services helping cities integrate social innovation in their journey to Net Zero Emissions is the Social Innovation Pathway (See Deliverable 9.5, coming in September 2023). This service is still being developed and so it will not be explained in great detail here. The pathway, in short, will guide cities by way of a series of questions to different resources available and useful for their decarbonization goals, promoting the role of social innovation. The pathway starts by explaining to cities the value of social innovation for climate neutrality. Following this, cities are prompted to discover how other cities have done this and are led to a page in which they can find cases based on specific themes coming from the comprehensive framework of Social Innovation for Climate Change developed in Work Package 2 (Please see D2.7 Report on Indicators & assessment methods for social innovation action plans). The framework is composed of four broad categories and ten sub-groups, as follows together with the distribution of cases:

A) Skills and Capacity Building

1. **SI capacity building of public official and policy makers**
   - City Experiment Fund: Applying systems thinking to urban transformations
   - Pentahelix
2. **SI skills of citizens and urban stakeholders**
   - Climate meal
   - Agroecology
   - EVA – maakt het plantaardings
   - Smart House Training Program

- City Studio Program
- Valencia Local Energy Communities
- 1.5 degree lifestyles
- Ecohouse Antwerp
- Real Junk Food Berlin
- Applause
- Play!UC - Playing with Urban Complexity

B) Empowerment and Inclusion

3. **Co-design of policies with social innovators**
   - Pentahelix
   - Bologna's Citizen Collaboration Pacts
4. **Co-creation of SI initiatives with stakeholders**
   - Bologna's Citizen Collaboration Pacts
   - SONNET Mannheim City Lab
   - Synathina
   - El Dia Después
   - Smart House Training Program
   - Green Squares
   - Blok 19 Renewal Program in Zagreb
   - KLIK
   - Brainport Smart District
   - Entrepatios – Las Carolinas
   - Just Transition Listening Platform

C) Regulation and Support

5. **Funding/Supporting community-led initiatives and small-scale pilots/experimentation**
   - You decide
   - Clean Cities ClimAccelerator
6. **Enabling social innovation/entrepreneurship initiatives scale-up beyond pilots**
   - Clean Cities ClimAccelerator
7. **Testing and prototyping new funding mechanisms**
   - SONNET The Bristol City Lab
   - Brainport Smart District
   - Nappi Naapuri (Nifty Neighbor)
   - Viable Cities
8. **Public procurement of social innovation services for sustainability**

D) Systemic Innovations

9. **Urban planning for social innovations**
   ● Superblocks Vitoria-Gasteiz
   ● Brainport Smart District
   ● Partis 15-min city
   ● Climate Quarter Project
10. **Resources circularity**
   ● Applause
   ● Zklaster

All of the Social Innovation cases have been mapped according to these categories, which will help inspire cities to act by providing narratives on how other cities have done this, based on what assets and will be linked to a series of indicators to measure effectiveness.

4.3. NetZeroCities Climate Transition Map

In similar fashion to the above, cities will also be suggested to read specific cases based on where they are on the Climate Transition Map. All of the cases have been mapped according to the different phases in order to provide cities with case stories on how Social Innovation can support them in the specific stage. These cases will be part of the "Resources" tab of the specific stage of the interactive Climate Transition Map.

4.4. Deliverable 9.1: Social innovation for climate neutrality

The cases are also available in a single collection in the Annex to this deliverable. The readers should keep in mind that the templates were developed to be read online.

5. Annex: Case studies

List of cases

1. 1.5 degree lifestyles
2. Agroecology
3. Applause
4. Better Reykjavik
5. Blok 19 Renewal Program
6. Brainport Smart District
7. Citizen Collaboration Pacts
8. City Experiment Fund
9. City Studio Program
10. Clean Cities ClimAccelerator
11. Climate Quarter Project
12. Climate Meal
13. Cloughjordan Ecovillage
14. Ecohouse Antwerp
15. El Dia Después
16. Elektrizitätswerke Schönau (EWS)
17. Entrepatios Las Carolinas
18. EVA Maakt Het Plantaardings
19. Green Squares
20. Just Transition Listening Platform
21. KLIK
22. Local Energy Communities
23. Nappi Naapuri (Nifty Neighbor)
24. Partis 15-min City
25. PentaHelix
26. Play!UC
27. Ride Sharing Service
28. Real Junk Food Berlin
29. SONNET Mannheim City Lab
30. SONNET The Bristol City Lab
31. Smart House Training Program
32. Superblocks
33. SynAthina
34. Viable Cities
35. You Decide [Tu Decides]
36. Zklaster

NET ZERO CITIES

1. 1.5 Degree Lifestyles

Case identification	
Author(s) of the case study	Niklas Mischkowski (ICLEI Europe)
Brief description	Finnish cities have been experimenting with a vision of sustainable living. The tool "1.5 Degree Lifestyles Puzzle" was used to help households and other stakeholders understand what changes they need to make in their lifestyles to significantly drop their carbon footprint. Individual carbon footprints were calculated at the project start and the development was monitored over time.
Keywords	gamification; climate apps; behavioural change
Overview and description criteria	
City/Country	Lahti, Finland
World Region	Central Europe
Scale(s) of the case analysed	City
Target audience and dimension	10.000 - 100.000
Time period	Ongoing initiative
Solution applied	-
Challenge addressed/ Problem-led approach	Stakeholder/ Community engagement and capacity building
Engagement Journey	● Self assess ● Declare commitment
Methodologies	Based on an online consumption-driven carbon footprint calculator 'Lifestyle Test' set up by the Finnish foundation Sitra in 2017, individuals can assess their footprint. In an ongoing project (PSLifestyle) this app is supposed to be further developed to create personal sustainable Lifestyle plans that provide a personal lifestyle management tool.
Case contribution	
Impact to climate neutrality	The app holds the potential to reach a large part of the EU's population. The first versions of the app had already been used over one million times and continued to attract approximately 8.000 monthly visitors. Within 2 years the Finnish experiment reached 2.000 people that committed to over 40.000 actions, potentially affecting a reduction of 6.150 tonnes of CO2eq. The

	PSLifestyle project aims to upscale this potential in eight European countries leading to over 570.000 tonnes CO2eq savings annually.
Public policy of reference	No specific policy is referred to. Potential links could be made under the European Green Deal and concretely e.g. in the Energy Taxation Directive, as well as in food (CAP, Farm to Fork), housing (Renovation Wave, New European Bauhaus), or mobility (Smart and Sustainable Mobility Strategy) sector-oriented policies. (see https://zoe-institut.de/wp-content/uploads/2021/12/ZOE_1-5-Degree_Policy_Equitable_Lifestyles_WEB_211221_2.pdf)
Innovative approach(es) addressed	The gamification approach via smartphone apps is interesting as it holds potential to reach large numbers of individuals and can influence values and norms (i.e. normative institutions) that are adhered to in the public. Experiments in 3 cities invited participants to use an app to plan changes in their lifestyle that would bring their carbon footprint close to 2.5 tonnes CO2eq (average in Finland: 10 tonnes CO2eq).
Initiator	Sitra foundation
Stakeholder networks and organisational model	- Sitra - Initiator and funder - Prime Minister's Office of Finland - Public support 3 Finish cities (one of which was Lahti) - Communication and outreach to users
Resources	Programming and IT skills
Key enablers	- Funding and development through the foundation - Spokespersons / role models - Communicate target group specific
Key inhibiting factors	- Disinterest - Fear of negative impacts on quality of life - Incentive structures need to be aligned for medium to long term effectiveness
Drawbacks/pros/cons of the solutions	-
Scalability	Everyone using a smartphone can use the app. Criteria for upscaling thus are: - Technical transferability - Social acceptance and interest
Key lessons	Main positive lessons/opportunities identified - Adapt the message to different types of audience - Different channels for different contexts - Break down your message (https://talkofthecities.iclei.org/key-learnings-for-cities-to-enable-1-5-degree-lifestyles/) - Main failures/barriers identified - Incentives (e.g. cheap flight tickets) - Norms and values
Indicators	- Number of users - Carbon reduction potential of behavioural changes
Visuals	-
External link	-

2. Agroecology

Case identification	
Author(s) of the case study	Federico Rita (POLIMI)
Brief description	Terre & Humanisme promotes agroecology as an approach in transitioning towards more sustainable farming practices while training people in its application. The association aims to change production models to achieve higher combined economic, social and environmental production based on the founding principles of Agroecology. The association operates on three fundamental pillars: 1. Raising Awareness: To share agroecology (and its practices) as an approach and promote its adoption as a fundamental contribution towards safer, more equitable and climate-positive food systems. 2. Transmit: Training modules and internships on various themes according to a pedagogy that reconciles theoretical requirements and humanist practice. Technical support on agroecological practices to specific projects for a wide range of clients. 3. Network and Community Support : The association has forged long-term partnerships with local organisations to support thousands of farmers and citizens in their projects to disseminate agroecology (with technical, methodological and financial support). Support of a network of ambassadors throughout France trained in the Agroecological approach and its dissemination.
Keywords	agroecology; production models; support programmes; agricultural training; awareness-raising
Overview and description criteria	
City/Country	France
World Region	Central Europe
Scale(s) of the case analysed	● National ● International
Target audience and dimension	100.000 - 1.000.000
Time period	Ongoing initiative
Solution applied	-
Challenge addressed/	● Urban Governance, Policy Development ● Stakeholder/ Community engagement and capacity building ● Financing and Funding

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Problem-led approach	● Partnerships, multi-agents alliances ● Peer to peer learning, and replication, upscaling ● Energy systems ● Green Industry ● Nature Based Solutions ● Skills & Capabilities ● Policy & Regulation
Engagement Journey	-
Methodologies	Co-creation, learning-by-doing, agroecology
Case contribution	
Impact to climate neutrality	The current case intends to present an example of infrastructures within which agroecology can thrive. The term 'Agroecology' was first mentioned in October 2007 at the Grenelle Environment Forum, where the effects of climate change and biodiversity loss in agriculture were the main topics of debate. Previously, the agricultural discourse in France was driven by macro and micro institutions that had placed food availability and agricultural production at the centre of the problem and its remedies. As a result, authorities had overlooked environmental issues for quite a long time. Thanks to the Forum, farmers, unions, agrifood firm reps, NGOs, municipal authorities, and public service officials engaged for the first time in meaningful dialogue on the issue and were part of the policy consultation process. The Forum's main goal was to establish a concrete, measurable action plan with wide member consensus. The forum acknowledged Agroecology as a catalyst for prioritising environmental concerns. As a result of both the forum's development and the stated goals, a venue for civil society participants to communicate and converse has been established. The outcome was the formation of new bilateral links (such as between NGOs and unions or NGOs and local governments) and a 10-year action plan. Terre & Humanisme adopted and implemented these approaches and goals with the aim of managing how much feed/food/fuel and other materials the agricultural sector could and should produce to address climate change, health, biodiversity and natural resource protection, and the provision of a sustainable and healthy diet for citizens without compromising global food security.
Public policy of reference	In December 2012, the French Ministry of Agriculture developed the "Agroecological Project for France" approach (Ministère de l'Agriculture, de l'Agroalimentaire et de la Forêt, 2012). This tactic launched an agroecology policy. Thus, France was the first nation to pass an agroecology law in 2014, with ambitions to apply it on more than two hundred thousand farms by 2025. Approved in October 2014, the Loi d'Avenir (Law for the Future of Agriculture, Food, and the Forest) emphasises agroecology as a solution to agricultural difficulties. The law stipulates that public policies should promote and safeguard agro-ecological production methods, such as organic farming, that combine economic and social performance primarily through robust social, environmental, and health protection. This incorporation of agroecology into law is noteworthy because agroecology has the potential to revolutionise agricultural production by relying on ecosystem functionality rather than environmental inputs.

	In addition, many policies that attempt to assist the growth of agroecology in its various forms have emerged in recent years. The majority of them are not yet referred to as agroecology policies and instead use other labels (such as the present negotiations on the new Common Agricultural Policy (CAP) for the period 2021 to 2027 in Europe, the "Farm to Fork" plan, and the New Green Deal).
Innovative approach(es) addressed	The Agroecology initiative and its initiator Terre & Humanisme put a significant accent on the centrality that pedagogy, advocacy, and a solid network have in their innovation process. To that extent, agricultural training is one of the prominent approaches undertaken by the organisation and it is implemented in the gardens. These are pedagogic spaces in which groups of farmers together with organisational members of the institution and other relevant stakeholder (e.g., research centres, local authorities, and citizens) experiment with prototyping and co-creation to exchange knowledge, envision new paths and ideas and promote the initiative's approach. Through this approach the organisation strives to translate and mediate the policy of reference and to engage local actors, to meet local needs. Moreover, when discussing the organisational team, their innovative decision to follow the principles of shared governance without managerial positions ensures that the staff experiments with horizontal governance. These approaches, together with the creation of networks of farmers and ambassadors/trainers enables and supports the promotion and replication of interventions and prepares the ground for scaling in different contexts.

In terms of the overall Agroecology movement in France, some innovative policy tools and approaches can be found in the following:

Agricultural training: more effective inclusion of agroecology-related knowledge and teaching in educational programmes for students and the setting up of a train-the-trainers training programme.

Involvement of research and R&D organisations: continuation and stepping up of research and experimentation to disseminate agronomic and organisational innovations to support the changes in systems and practices on the ground (with particular emphasis on the use of the European Innovation Partnership (EIP), a new CAP measure for 2014-2020).

Creation of an agroecology diagnostic tool: to encourage farmers to think about their methods and possible changes to their systems. This tool allows individual farmers to assess their methods and performance and compare them with other farmers.

An overhaul of public support programmes: public support for agriculture is gradually being reviewed with attention to providing greater incentives for agroecological transition. Investment subsidies are being geared toward projects to implement agroecology on farms.

Setting up economic and environmental interest groupings (EEIGs): this new tool, created by the Future of Agriculture, Food, and Forestry Act (October 2014), enables the government to give recognition to the commitment of groups of farmers, and potentially other subjects in the local region, to changes in their farming methods with a view to economic, environmental and social considerations.

Regular project monitoring and evaluation: the results and impact of the action plan are presented in annual reports posted on the website of the French ministry responsible for agriculture. |

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Initiator	The Agroecology initiative was established by the Terre et Humanisme organisation in response to a policy decision made by the French Minister of Agriculture Stéphane Le Foll. The ultimate objective was to provide national agriculture with a vision and future orientation. In particular, the project's implementation is based on collaborative governance through a steering committee composed of the agricultural industry's key players who will share the vision and assist the transition through a series of practical measures. To facilitate commitment to agroecology and aid farmers in advocating and making the shift, the project's implementation entails adjustments to France's key agricultural policies (namely, a revamp of support programmes).
Stakeholder networks and organisational model	Terre et Humanisme consists of a Board of Directors elected by the General Assembly on an annual basis and an operational team. The General Assembly, which is composed of around one thousand members, elects the Board of Directors, approves the financial statements, and votes on the primary strategic orientations. On the other hand, the Board of Directors is composed of 12 administrators and 5 auditors. It is responsible for refining and ensuring the implementation of the association's strategic orientations. It holds discussion days and co-construction workshops with the operational team on a regular basis. Lastly, the operational team consists of twenty individuals who are responsible for implementing the association's missions and maintaining the organisation's efficient management. It functions as a team of ambassadors/trainers acting at the national level in France to promote the association's goal and establish train-the-trainer processes. Since 2015, the operational team has decided to follow the principles of shared governance. In the absence of a managerial position, staff experiment as much as possible with a horizontal governance model in connection to the Board of Directors and the office. In recent years, the association has also been developing new teams in the Mediterranean region.
Resources	● Human: Community assets, gardens, a network of ambassadors/trainers, train-the-trainer workshops, volunteers, community platforms, additional resources available nationally (e.g., Economic and Environmental Interest groups (GIEE) and farmers groups) or internationally (e.g., the FAO's knowledge hub on Agroecology). ● Financial: Donations, fundraising, public funding, development and management costs.
Key enablers	● Political: Engaged policymakers, the establishment of national and sectoral programmes and laws for agroecology, lobbying at the international level to support programmes' implementation. ● Economic: Public and private funding to establish new research programmes, support the project in expanding its community assets and hold the training and promotion operations. ● Social: Advocacy and availability of farmers, ambassadors/trainers, and citizens to experiment with implementing the solutions and promote Agroecology.
Key inhibiting factors	● Political: Lack of solid ties to EU-wide policy regulations and inconsistency of national/international programmes and laws for agroecology restrict the project impact and might isolate single initiatives. ● Economic: Little availability of implementation funding for the enactment of planned changes.

	● Social: Poor perception of the project's benefits, shortage of motivation, conflicts within the managing groups and between the association and other key actors.
Drawbacks/pros/cons of the solutions	-
Scalability	Scalability of the association's activities: The interventions, gardens, and train-the-trainers workshop are ideated in a way that can be potentially adapted to different contexts. The association's efforts in establishing new teams in the Mediterranean area and in expanding the ambassadors/trainers network offer solid opportunities. Scalability of the policy: To scale up agroecology and better incorporate it into the major farming and food systems, national and European institutions require stronger political support and a regulatory framework. France with its agroecology policy can be viewed as a predecessor, at least for the time being. France must carry its weight in the EU and ensure that Farm and Fork and the New Green Deal projects are completely aligned with its agroecology policy.
Key lessons	Main positive lessons/opportunities identified: ● Quick and robust implementation of education and training and increased research focusing on agroecology topics. ● Initiation of a 'movement' in the agricultural sector, with consequent stimulation of innovation in agroecology. ● Implementation of innovative agroecological practices, more substantial recognition of the importance of biodiversity for agriculture, and more conversion to organic agriculture. Main failures/barriers identified: ● Need for stronger ties with EU policies, national programmes, policies or action plans for agroecology (currently only France, Denmark and Italy mention agroecology in their policies). ● Lack of a clear and shared EU strategy for Agroecology and sustainable agriculture. ● Incompatibility with other crucial challenges: producing enough for Europe and the world while developing bioeconomy sectors in Europe.
Indicators	A set of 28 agri-environmental indicators (AEIs) have been set up in order to monitor the integration of environmental concerns into the Common agricultural policy (CAP). These indicators serve to: ● provide information on the farmed environment; ● track the impact of agriculture on the environment; ● assess the effects of agricultural and environmental policies on the environmental management of farms; ● inform agricultural and environmental policy decisions; ● illustrate agri-environmental relationships to the broader public. The complete list and description of the indicators are available at: https://ec.europa.eu/eurostat/web/agriculture/agri-environmental-indicators

Visuals	
External link	https://terre-humanisme.org/association/#gouvernance
	Wezel, A., & David, C. (2020). Policies for agroecology in France: implementation and impact in practice, research and education. *Landbauforsch J Sustainable Organic Agric Syst*, 70(2), 66-76.

NET ZERO CITIES

3. Applause

Case identification	
Author(s) of the case study	Ella Davidson (Demos)
Brief description	Applause is a project led by the city of Ljubljana, Slovenia aiming to find solutions to invasive alien plant species (IAPS) in cities. Ljubljana is applying a zero-waste and circular economy principle to deal with these harmful plant species. Ljubljana is moving from a linear model for managing IAPS to a circular one that is valuable for the entire ecosystem. This process involves six steps: plant identification, biomass harvest, processing & storage, value recovery, final production, and new products & services to market. Through a variety of educational and awareness-raising actions, citizens are encouraged to participate in different stages of the Applause circular model. To do so, Ljubljana implements a participatory model that adapts to the needs and interests of different target groups.
Keywords	circular economy; zero-waste; city-led; IAPS
Overview and description criteria	
City/Country	Ljubljana, Slovenia
World Region	Central Europe
Scale(s) of the case analysed	National
Target audience and dimension	100.000 - 1.000.000
Time period	Ongoing initiative
Solution applied	Solution based on education and cooperation with citizens of Ljubljana via three principles of operation: do it yourself, process with us, and bring it to the collection center. A zero-waste, circular economy solution was applied to IAPS to collect them and create new materials instead of just incinerating them. There is a six step process: plant identification, biomass harvest, processing & storage, value recovery, final production, and new products & services to market.
Challenge addressed/ Problem-led approach	- Stakeholder/ Community engagement and capacity building - Circular Economy

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Engagement Journey	● Define problem/s ● Action, learning and embedding
Methodologies	● Studied plant usability via researchers ● Participatory model for citizen engagement and decision making ● Developed new tools for IAPS identification via aerial and satellite image analysis, also created a public information platform for the identification and management of IAPS ● Have field inventories to store data, which they keep open
Case contribution	
Impact to climate neutrality	Applause draws awareness to the more unknown issue of IAPS. IAPS are detrimental to native biodiversity and can harm people's health depending on the species. Instead of getting rid of these species, the project reuses materials that would otherwise be incinerated, using innovative approaches to create new materials out of it. ● Democratised decision-making & distributed agency ● Collective learning ability ● Collaborative action ability The city recognises that in order to achieve climate neutrality people need to be involved and educated in the process to become invested. Through the participatory model, the project engages the public in the decision making process of how to deal with IAPS. They have also given the public three options on how to deal with them by either doing it by themselves and learning through educational materials, removing species together and learning in public workshops or leaving species at a collection point.
Public policy of reference	-
Innovative approach(es) addressed	Applause identified the IAPS as a problem for the town, creating a decline in native biodiversity, environmental damage and potentially human health. Instead of continuing to incinerate or compost these plants, they have instead identified new ways to use the species through means such as plant processing to make paper, pest control, food, dyes, and hybrid coatings. To do this they are testing unconventional processes and techniques to process plants to paper and other products. For example, testing the concept of using waste liquid from IAPS in production of paper into raw materials for industrial purposes. To identify IAPS, new approaches have been made to be more time efficient through the use of aerial and satellite imaging. The data that has been collected is on an open platform so many can contribute and also learn from the data. In processing IAPS, Applause has put people's engagement at the center of the approach, highlighting the importance of engagement to create change. They have collaborated with universities, students, and citizens to take part in this zero-waste approach where people are gathering and creating new materials together. To engage citizens they have held 143 workshops with 2980 participants, 29 educational events, 3 festivals, posted 20 educational videos etc. to ensure that there is effective communication and engagement with the public and to raise awareness at different engagement levels.
Initiator	This initiative was started by the City of Ljubljana and co-financed by the European Regional Development Fund via Urban Innovative Actions.

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Stakeholder networks and organisational model	As this was a people centred project, the citizens were the key stakeholders. The goal was to make them active participants in the project by raising awareness and increasing their participation in the project at three different engagement levels: DIY, join us, and collection points.
Resources	Communication skills have been crucial to engage the public with this project and create educational resources for consumption. This feeds into capacity-building skills to give citizens agency of the IASF harvesting process and enable them to learn about zero-waste concepts simultaneously. To identify IASFs, technology was needed via aerial and satellite imagery, in addition to a public information platform to contain data collected. Processing machines have been used to create paper, for example, out of the IASFs and liquids.
Key enablers	● Political: Promotion of circular economy and zero-waste principles. These principles helped towards the overall carbon-neutral goal by allowing for native plants to thrive without weeds. ● Social: Participation of citizens was the principal enabler of this project. Applause recognised the need for citizens as a core part of the project, as they are the ones who will benefit most. Through educational resources and workshops they were able to raise awareness of IAPS, bringing together the community to ensure that they could continue past this project to recognise IAPS and know what to do with them. ● Technical: There were two areas of technology that enabled this project: social media/internet and machines. Using social media such as youtube allowed for educational resources to be easily accessible for citizens. Machines were needed to process the IAPS and create the different products such as paper and dye.
Key inhibiting factors	Applause did not get as many people as they had hoped during the initial harvesting phase of IAPS, however, other than that it seems that there have been little inhibiting factors.
Drawbacks/pros/cons of the solutions	-
Scalability	The overall idea of the project can be used in other contexts, especially using citizen participation as a key part of the process. Raising awareness and using educational techniques should be fairly easy to transfer to other contexts. This would most likely need to be used in a smaller community context rather than larger city based projects to ensure increased participation and the ability to provide educational support. There would be a need to identify if an area needs/has significant issues with IAPS and if it does then they would need to adapt the plan to what IAPS there are. This would also mean that there would need to be research into whether the local IAPS can be similarly adapted/processed to create new products, perhaps with collaboration with local universities or research institutes.
Key lessons	Main positive lessons/opportunities identified

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Zero-waste + circular economy concepts were able to be applied to IAPS that would have otherwise been incinerated, creating a new purpose that is of use to the citizens who participated
Centering citizens as the core stakeholders/audience of the project meant that they were educated about the issue and were able to get involved too
Used a variety of educational tools to build awareness (such as, festivals, workshops, videos) on an often ignored issue

Main failures/barriers identified

Participation in the harvesting phase of the six step process was less than hoped for

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Indicators	-
Visuals	-
External link	https://www.ljubljana.si/en/applause/

4. Better Reykjavik

Case identification	
Author(s) of the case study	Zarrin Fatima (VTT), Maija Federly (VTT)
Brief description	Better Reykjavik is an online platform for the crowdsourcing of solutions to urban challenges launched in May 2010. Better Reykjavik is a co-creation project of the Citizens Foundation, Reykjavik City and its citizens that connects them and improves trust and policy. It's a platform for crowdsourcing solutions to urban challenges and has multiple democratic functions: Agenda setting, Participatory budgeting and Policymaking. Innovations include unique debating system, crowd-sourcing, submission of multimedia content and extensive use of AI to improve the user experience as well as content submitted. Better Reykjavik is an umbrella for several programs, including the city's participatory budgeting platform called "My Neighborhood" and the City Council's participatory lawmaking project is called "Your Voice." Over 20% of the population of the City regularly uses the platform, which has over 27,000 registered users, primarily for participatory budgeting.
Keywords	online platform; urban; co-creation; democratic
Overview and description criteria	
City/Country	Reykjavik, Iceland
World Region	Northern Europe

Scale(s) of the case analysed	- Neighborhood - City
Target audience and dimension	more than 10.000.000
Time period	Ongoing initiative (from June 2010 to now)
Solution applied	-
Challenge addressed/ Problem-led approach	Urban Governance, Policy Development Financing and Funding Built Environment Policy & Regulation
Engagement Journey	Define problem/s
Methodologies	Citizen identify a need for a service in the city. This is posted online on the forum after proper authorization. The idea is posted, discussed and voted online. These projects and the process through which they were conceived give people the power to improve their own lives in the city. Past projects include a programme to support homeless citizens during the winter (approved in 2011), and a proposal to transform the city's main commercial street, the Laugavegur, into a pedestrian-only corridor (approved in 2012)
Case contribution	
Impact to climate neutrality	By bringing citizens into the political realm and giving them a real voice in policy decisions, the platform has not only empowered citizens, but increased transparency and helped to align government action with citizen opinion and priorities. One of its core principles is crowd-sourcing, which is a process of "collaborative knowledge production" based on the collection of input from the public as opposed to from the experts. It has empowered ordinary citizens to engage in deliberations on important public policies and at the same time greatly reduced the influence of elite interests in politics. In the current system of BR, citizens have developed policies to improve the quality of their everyday lives involving school field trips, pedestrian park and homeless shelters; they are largely precluded from taking on greater political and economic matters since those are usually managed by the specialists and experts in contemporary society. Better Reykjavik could be the best direct source of ensuring climate solutions receive feedback and that that city is moving well towards the 2030 goal.
Public policy of reference	-
Innovative approach(es) addressed	This platform empowers citizens to bring their ideas and suggestions forward in making changes in the city, neighbourhood, schools etc. The platform offers every citizen to suggest an idea which will get discussed and then voted upon by other citizens. The final say is with the city authorities regarding the feasibility of the idea. This platform engages all groups from the comfort of their homes and ensures productive use of time instead of citizens spending time on leisure and other activities.

Initiator	The Better Reykjavik platform was built using the Your Priorities web application developed by the non-profit, Iceland-based Citizens Foundation. Using Your Priorities, individuals, groups, and governments can create their own participatory web portals with various sub-forums called 'communities'. Your Priorities was developed as a way to make online citizen participation simpler and more convenient. Unique to the platform is the ability to both propose ideas and deliberate on other proposals. According to developers, the application "allows large groups to speak with one voice and organize ideas." (Citizens Foundation). By separating points for and against into columns, people are able to see the most popular points of view on the topic.
Stakeholder networks and organisational model	All citizens and all age groups.
Resources	Better Reykjavik was created and initially funded by two private citizens, Robert Bjarnason and Gunnar Grimsson. Eventually, the program was turned into the Icelandic-equivalent of a non-profit organization. Funding ranges from €1,500-€1,600 per month. In 2011, the Better Reykjavik website was formally accepted as a collaborator by the Reykjavik City Council. This formal collaboration sparked the creation of the My Neighborhoods forum accessible through the Better Reykjavik platform. Better Neighborhoods received a €5.7 million initial investment from the city of Reykjavik (Bjarnason, 2014).

The cost of Better Reykjavik from 2011 to 2015 was approximately 1.3 billion ISK ($12 million USD, €10 million) - this includes the participatory budgeting outlay, costs such as the salaries of project managers, advertising and promotional costs, and the €2,500 service agreement with the Citizens Foundation, who operates the Better Reykjavik website. However, this figure does not account for the savings from the innovative proposals or the time of the citizens invested in making them. |
| Key enablers | ● Political: All relevant stakeholders have access and visibility to the ideas

● Economic: Ideas are posted and discussed free of charge

● Social: The platform engages all ages and groups from their homes

● Legal: All citizens given access to post, discuss and vote after authentication |
| Key inhibiting factors | ● Political: The BR policy-making process is essentially non-binding since the final decision rests in the hands of city councillors who decide which proposals get passed and implemented. |
| Drawbacks/pros/cons of the solutions | The use of the term "Better Reykjavik" to refer to multiple projects has caused confusion among participants. Some have submitted ideas on Your Voice that belong as participatory budgeting projects on My Neighborhood, as citizens often do not understand the rules for participation, much less how the City Council functions.

Some have raised concerns about the limitations of the platform with regard to its original goal. While Better Reykjavik was conceived as a platform to give citizens a voice in governmental and economic matters, participants' ideas have focused on projects that simply improve the quality of everyday life. This raises questions of whether it is necessary for the Better Reykjavik platform to be further improved to facilitate this larger conversation between citizens and the city's government. |

	Google Translate is incorporated to make the website accessible to non-Icelandic speakers, but it is questionable whether this is adequate to ensure participation by non-Icelandic speaking immigrants.
Scalability	The platform is very flexible and has no limiting condition on it at the moment. However, it needs to be properly managed for more engagement.
Key lessons	Main positive lessons/opportunities identified: ● Engagement of all citizens ● All suggestions are welcome - there is no clear budget limit for each individual idea or policy proposal submitted in the Open Consultations forum ● Even if ideas do not get implemented, they are still noted by the authorities Main failures/barriers identified: ● Final decision rests with the city in terms of funding and feasibility ● Fluctuating participations from residents (6,9% in 2012, 5,7% in 2014, 12,5% in 2018)
Indicators	-
Visuals	-
External link	https://betrireykjavik.is/domain/1/communities https://congress.crowd.law/case-better-reykjavik.html https://participedia.net/case/5320

5. Blok 19 Renewal Program

Case identification	
Author(s) of the case study	Tena Maruševac (REGEA), Tomislav Novosel (REGEA), Josipa Arapović (REGEA)
Brief description	Programme of comprehensive renewal of the historical centre of Zagreb is a pilot project that combines 12 studies on an area of Zagreb called "Blok 19" in order to present the pathway to comprehensive renewal for all Zagreb's 168 areas. The idea for the Programme came after the devastating earthquake that hit the City of Zagreb. It was clear that a fast renovation needed to be done, but the city wanted to go a step further and make the renovation inclusive, meaning that not only would the needed renovation be done, but measures for climate change mitigation and adaptation would also be included, which is in line for the energy transition plan for the historic centre of Zagreb until 2050. This is not an easy process, since the involved buildings are part of Zagreb's historical centre, and are protected as cultural assets. Besides the experts, the most important participants in the process were the inhabitants of the buildings in Blok 19 and the people who work in the area who were engaged in one of the studies.

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Keywords	inclusive renovation; earthquake; climate change mitigation and adaptation measures; sectoral studies

Overview and description criteria

City/Country	Zagreb, Croatia
World Region	East Europe
Scale(s) of the case analysed	City
Target audience and dimension	less than 1000
Time period	From 2020 to 2021
Solution applied	-
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Partnerships, multi-agent alliances ● Built Environment ● Nature Based Solutions
Engagement Journey	Action, learning and embedding
Methodologies	12 experts were engaged to create 12 sectoral studies which would perceive all aspects of the renovation. After the studies were completed, a process of public consultation was opened, after which the mayor invited all experts and citizens to participate in the development of the final document.

Case contribution

Impact to climate neutrality	The pilot project is a result of the City of Zagreb's aspiration to do an inclusive post-earthquake renovation which shows Political Commitment & Problem ownership. The 12 studies that were conducted for the pilot project show the Collaboration Action Ability while including green infrastructure in the renovation as well as involving and gathering the ideas and thoughts from the citizens which shows Climate narrative and communication. The results of the studies showed the importance of the multidisciplinary approach to solving challenges in space and opened the way for innovative and sustainable development. Furthermore, the main impacts on climate neutrality are elaborated methodology for the analysis of existing conditions in individual blocks, guidelines for increasing the share of applied green infrastructure, connecting block segments of green infrastructure into a network of urban, peri-urban, and rural green infrastructure, identified concrete measures and projects in the short and long term and a review of potential financing measures.
Public policy of reference	By empowering an inclusive after earthquake renovation that will not only do the necessary renovation of the building but also consider the climate change mitigation and adaptation measures, the City of Zagreb Is closer to achieving the desired energy and climate neutrality envisaged by the European Green Deal.
Innovative approach(es) addressed	One of the 12 studies done focused on gathering data from the inhabitants and users of the Blok 19 by creating and analysing a survey that took into account not only the current state, but also inhabitant's and user's

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	suggestions and expectations from the renovation process. After the document was completed, it was put up for a public consultation process, and citizens were invited to add their comments and suggestions.
Initiator	● City of Zagreb ● Institute for Physical Planning of the City of Zagreb
Stakeholder networks and organisational model	● SME - Bringing in valuable insights and identification of potential measures and system solutions. ● Academia / experts - Creating studies for the inclusive renovation ● Citizens - Bringing in valuable insights and identification of potential measures.

Resources	● Human: engagement capabilities, expert knowledge
	● Financial: studies paid by the City of Zagreb
	● Studies developed:
	    ○ Construction models
	    ○ Conservation models
	    ○ Sociological study
	    ○ Urban models
	    ○ Property law models
	    ○ Economic models
	    ○ Climate and green infrastructure
	    ○ Energy transition
	    ○ Improvement of mobility and transport system
	    ○ Circular economy
	    ○ Design models – scenario 1
	    ○ Design models – scenario 2

Key enablers	● Political: political commitment of the highest level of the city of Zagreb ● Social: SME's, Academia, experts and Citizens were involved in the planning of renovation
Key inhibiting factors	● Economic: Lack of funding support ● Social: Complicated ownership situation of the buildings that slows down the possibility of the renovation ● Legal: Lack of strong regulatory framework
Drawbacks/pros/cons of the solutions	The 12 studies that were done for the location helped to create Inclusive guidelines for the renovation of the City of Zagreb but the complicated ownership situation of the buildings which slows down the possibility of renovation.
Scalability	The whole Blok 19 project was developed with the goal to replicate it in other parts of Zagreb. Although the main goal of the project was to renovate the city of Zagreb after the earthquake, the methodology can easily be replicated in other cities and countries.
Key lessons	Main positive lessons/opportunities identified: ● The project was discussed with everyone living and working on the location, the measures developed were in line with their needs and wishes – one of the 12 studies done focused on gathering data from the inhabitants and users of the Blok 19 by creating and analysing a survey that took into account not only the current state, but also their suggestions and expectations from the renovation process. ● Bringing together 12 experts from different faculties and institutes helped to develop an inclusive renovation project.

	● Getting citizens involved may mitigate potential conflicts and ensure successful implementation of the project.

Main failures/barriers identified:
● It was not always easy to gather all the stakeholders important for the planning
● The legal rights of the location are complicated, and it will be hard to implement all the planned measures
● Lack of funding available for the implementation of the measures |
Indicators	Number of studies developed: 12
Visuals	
External link	https://www.zzpugz.hr/wp-content/uploads/2021/03/PROGRAM_CJELOVITE_OBNOVE_POVIJESNE_JEZGRE_ZAGREBA_%E2%80%93_prva_projekcija.pdf

6. Brainport Smart District

Case identification	
Author(s) of the case study	Zarrin Fatima (VTT), Maija Federly (VTT)
Brief description	Brainport Smart District (BSD) is a smart city district in the city of Helmond, the Netherlands
Keywords	participation; health; data; mobility; energy and circularity

Overview and description criteria	
City/Country	Helmond, Netherlands
World Region	Central Europe
Scale(s) of the case analysed	Neighborhood
Target audience and dimension	1000 - 10.000
Time period	Ongoing initiative
Solution applied	-
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Built Environment ● Mobility and Transport ● Green Industry ● Circular Economy
Engagement Journey	-
Methodologies	-
Case contribution	
Impact to climate neutrality	The realization and development of BSD takes place via eight different program lines, namely,; Circular district, Participation, Social and safe district, Healthy district, Digital district, Mobile district, District with Energy and District with water. The mixed-use district, set on 380 acres, will use technology to create an environmentally and socially sustainable community.
Public policy of reference	-
Innovative approach(es) addressed	A living lab where new ideas will be tested and adapted, the district will not be built according to a set design plan but developed in response to the needs and habits of its 4,500 future residents and what is learned along the way. "One of the key elements in realizing this district is that we have future inhabitants participating in the project from the very beginning," said Cathalijne Dortmans, a member of the City Council of Helmond and head of the foundation's board, "We also want them to feel co-responsible for the social cohesion and the community when the district has been finalized." The district will be designed with new forms of energy generation:; emissions-free mobility (an electric-car sharing program is being tested); and data sharing. Built into the infrastructure like the plumbing and electricity, neighborhood-wide smart technology (a network of sensors) will be grounded in a data platform hosting services related to living, mobility, food and health. Ultimately, the planners believe that such data sharing can improve residents' quality of life.

	For example, energy and food consumption habits can be tracked, leading to adjustments in supply and disposable income savings, which can then be used for more enjoyable activities.
Initiator	The project is led by the Brainport Smart District Foundation, a partnership among the municipality of Helmond, Eindhoven University of Technology, Brainport Development, the Province of North Brabant and Tilburg University.
Stakeholder networks and organisational model	-
Resources	The district, which encourages self-sufficiency and self-organization among its residents, is being financed through a public-private partnership, with individual projects funded privately by the project developers. Costs have not yet been determined.
Key enablers	-
Key inhibiting factors	-
Drawbacks/pros/cons of the solutions	-
Scalability	-
Key lessons	-
Indicators	-
Visuals	-
External link	https://www.nytimes.com/2020/07/24/realestate/brainport-smart-district-takes-shape-in-the-netherlands.html https://brainportsmartdistrict.nl/en/

7. Citizen Collaboration Pacts

Case identification	
Author(s) of the case study	Tamami Komatsu Cipriani (POLIMI)
Brief description	In 2014, the City of Bologna adopted a new regulation on the management of common goods that established Collaboration Pacts between citizens and the city. The law began a journey towards a new vision of community life in Bologna. The Regulation, along with a reconfiguration of the Public

Administration, was part of the political project "Collaborare è Bologna" ("Collaborating is Bologna") (CB), which sought to foster civic collaboration through material and immaterial tools. The Participatory Budget (PB) builds off the priorities that emerged in the CB project and engages citizens, the six Quarters, and the PA in a collaborative process that enables citizens to decide how to invest an allocated budget of 1 million euros –€150,000 for each Quarter. The process has four steps: the presentation of the proposals, co-design, voting, and implementation, and engages citizens, city officials from the Quarter offices, public sector technicians, and supporting professionals. The first edition took place in 2017 and continues to run annually, despite some setbacks and modifications due to the Covid-19 pandemic. As part of the urban innovation plan, the main focus of the projects has always been on renovating and maintaining urban spaces. However, in recent editions, a new strand of project proposals (community interest projects) responding to strategic priorities identified by the Quarter Councils (e.g., sport, culture, green spaces, education, social services, etc.) with an additional €1 million budget has been provided to give citizens quicker response times between winning and implementing a project.

Bologna's Participatory Budget and Collaboration Pacts offer a unique model of how structural changes can create the enabling conditions for citizen mobilization around strategic goals by providing pathways for citizen-led (public) value creation. By providing citizens with the right tools and channels to express, deliberate, and co-design goals from the neighborhood level, the city can engage citizens in civic life by allowing them to solve and prioritize their own needs. As such, the case offers fascinating insight for cities looking to harness collective action and generate innovative solutions to the mission's known and unknown challenges. It also demonstrates the value of creating enabling ecosystems for systemic change.

Keywords	community assets; urban social innovation; co-creation; territory-making; participatory budget

Overview and description criteria

City/Country	Bologna, Italy
World Region	Southern Europe
Scale(s) of the case analysed	● Neighborhood ● City
Target audience and dimension	100.000 - 1.000.000
Time period	Ongoing initiative
Solution applied	-
Challenge addressed/ Problem-led approach	● Urban Governance, Policy Development ● Innovation Management and Digitization ● Stakeholder/ Community engagement and capacity building ● Financing and Funding ● Partnerships, multi-agents alliances ● Skills & Capabilities ● Policy & Regulation
Engagement Journey	● Define problem/s ● Craft question ● Select portfolio

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	● Action, learning and embedding
Methodologies	Co-design; Co-creation; Open Space Technology; Participatory Budget

Case contribution

Impact to climate neutrality	The case demonstrates the power of policy as social innovation, in this case, engaging citizens in the maintenance of the city and in its social, cultural and economic development. This was accomplished through policy tools like the Participatory Budget, that serve to activate policy (e.g. the Regulation on Common Goods) and through the establishment of Quarter labs that engage and activate citizenship in the city's districts, while building capacity in the population and in the civil service. The process thus accelerates the network serendipity of the ecosystem and supports distributed agency in shared goals for the community. Through intense dialogue between city officials and citizens, policymakers are directed to take ownership of specific problems and commit to pushing along the agenda. The program naturally lends to diffusing social innovation and nudging behavioural changes through empowerment. While the case is not directly related to Climate-neutral Cities by 2030 EU Mission, it provides a powerful example of how the concerted effort of top-down (policy measures) and bottom-up measures (the collaboration pacts/participatory budgeting activities) can mobilise communities towards a common objective. Such tactics are directly useful for prompting system change in cities and ensuring a just transition toward climate neutrality.
Public policy of reference	The Participatory Budget and the Collaboration Pacts in general are regulated under the Bologna Regulation for Public Collaboration on Urban Commons. It is a regulatory framework that serves as a reference for local authorities, citizens, grassroots organizations, associations and informal groups who like to manage and care for urban commons through a collaborative process with clear guidelines and procedures. The Regulation in Bologna was the first to be passed but since it has been replicated in several other Italian cities as a pioneering and innovative approach to collaborative urban governance.
Innovative approach(es) addressed	There are several elements that mark this case of Social Innovation as exemplary for its innovative approach to urban regeneration that could be useful in similar approaches seeking to unite actors around a common vision and goal. The first is the participatory approach to policymaking that was at the core of the founding political program, centred around building a collaborative city. The unifying element can be seen in the use of participatory methods to engage and onboard stakeholders in the implementation of the vision. This approach was adopted at various moments, starting with six co-creation sessions to map funding priorities that guided the design of the Urban Innovation Plan. The Quarter Labs, established to support Quarters after their re-zoning and role change (from distributed city council centres to territorial agents responsible for activating citizen-city collaboration), use participatory design methods as part of their 'territory-making' activities and as part of the participatory budget process. Within the participatory budget process itself, other approaches to engage citizens in urban planning and revitalisation efforts can be seen in various moments: co-defining the quarter's strategic targets (shaping the call for the budget); shared decision-making at each step both in-person at general assembly meetings and online on the city's digital platform; and shared management and monitoring of the project's implementation.

Initiator	The technical initiator of the project is the City of Bologna and its Mayor at the time (Virginio Merola), however, the need for a new way to manage community assets came from the bottom-up, with an emblematic case of three citizens who wished to paint a bench. From this simple request, a political process began that saw the passing of a new Regulation on Community Assets (Regulations on the collaboration between citizens and the Public Administration for the guardianship and regeneration of common goods) in 2014. The implementation of this new regulation led to the development/re-organization of infrastructure (e.g. a new office to manage the pacts; a change in the role of city Quarters; establishment of the Office of Civic Imagination and Quarter Labs, etc.) and to the development of the Participatory Budget as a policy tool to implement the regulation.
Stakeholder networks and organisational model	● Quarter Offices - Coordinate with Quarter labs the progress of the participatory budget; ensure that access is given to public resources and encourage participation of technical staff for projects ● Quarter Labs - Responsible for leading the development of the participatory budget process and its activities from start to end; accountable for disseminating and sharing results for citizens ● Citizens - Consulted for neighbourhood need, challenges and resources; informed of progress reports; called upon to take part in improving their Quarter ● Office of Civic Imagination - Liaise with the city on participatory budget activities and facilitate citizen-PA discourse at the central level; provide knowledge and operative support to the Quarter Labs for the participatory budget activities; lobby for the program with top city officials ● Urban Innovation Foundation - Provide resources and direction for the Office of Civic Imagination together with University of Bologna and the Urban Center ● University of Bologna [Dept. of Sociology - Ces.Co.Com] - Provide knowledge, expertise and a methodology for the development of the activities; monitor, assess and evaluate progress; reflection and analysis of outcomes
Resources	● Knowledge of Co-creation/Co-design/Citizen Engagement methods and processes ● Facilitation skills: able to manage and inclusively engage groups with different professional and academic backgrounds, age, sex, professional seniority, etc. ● Ability to lobby and advocate for issues with politicians and other decision makers ● Ability to spot and engage gatekeepers to find ways to move projects and plans forward ● Digital platform for online engagement ● Annual Budget and regulation for its use in the participatory budget ● Committed and engaged civil servants, especially from top management ● Committed and engaged technicians from the public agency to consult with project leaders and help calibrate what's needed/desired with what's possible given various constraints ● Community 'managers' to engage local neighbourhoods in the initiatives, especially citizens/users who sit on the margins
Key enablers	● Political: The Regulation on Common Goods promoted the establishment of different relationships and means through which urban regeneration could develop between different actors. Not only did the regulation provide the legal grounds for such efforts but the co-created process of its development helped create an ecosystem

	around its implementation, leading to the design of the participatory budget. The co-creation of the Urban Innovation Plan was also instrumental to the process. ● Re-defining the roles of the City's Quarter Offices also contributed to this, framing and incentivizing the necessary support coming from the public to guarantee the success of the collaborative pacts. A new dedicated office further assisted the efforts. ● Economic: The allocation of an annual budget for the program is key to the success of the project. It provides concrete means for citizen engagement in the city's goals. Attention needs to be paid that implementation times aren't excessive to maintain citizen trust. ● Social: Engaging citizens is a requirement of the process but it must be handled with respect and inclusivity. Care needs to be made that all actors are engaged, even and especially those on the margins. Bologna's social context and capital is quite high, with a long history of civic participation and social innovation. The participatory process of the political campaign, "Collaborating is Bologna", helped build capacity in the territory regarding public participation and engagement in co-defining strategic goals and helped pave the way for the participatory budget process. ● Technical: The presence of an already developed civic platform from the city helped the project reach different audiences and engage with them in their preferred way. Furthermore, the availability of spaces for events and meetings is important. The presence of permanent spaces to keep project material is important also for sensemaking and knowledge sharing between events and phases. ● Legal: As already mentioned, the Regulation on Common Goods was the initiator of the activity and provides the legal grounds for its development.
Key inhibiting factors	● Political: Political turnover represents a risk of continued support. The team is working hard to document the program and set everything up to ensure easy turnover to the new administration. ● Economic: The program requires political commitment to ensure budget allocation. ● Technical: The urban projects require long implementation times. This creates frustration among citizens who want to see their projects come to life and risks losing their trust in the overall project. To mitigate this, cultural projects with an additional budget has been added to the last edition of the Participatory Budget to allow for quickly implementable solutions.
Drawbacks/pros/cons of the solutions	As described above, the long implementation times for urban projects led to the creation of uneasy relations with the citizens. Creating an additional track of quickly implementable cultural projects helped fix this problem.
Scalability	The approach is quite easily scalable and has been in many cities across Europe (in terms of participatory budget and while less, also in terms of a law governing the management of common goods). Adaptations would be necessary based on context in terms of gaining political commitment and ensuring the infrastructure necessary to support the activities; and ways and measures to engage citizens and any necessary capacity-building of actors.

Key lessons	Main positive lessons/opportunities identified
	• High engagement of citizens in strategic planning of city-wide goals
	• Practical measure to build territorial capacity amongst actors
	• Easily replicable in other contexts
	Main failures/barriers identified
	• Vulnerable to political turnover
	• Risk of losing citizen trust due to long implementation times of urban projects
	• Difficulties in finding a shared language and calibrated expectations between citizens and public technicians
Indicators	• Number of projects submitted
	• Number of projects won + funding allocated
	• Number of participants + online interactions
	• Number of citizen collaborations
Visuals	
	Figure 1: The bench in Piazza dei Colori that started it all
	Figure 2. Unused locker rooms at Giordani School's Gym and future home to Atelier dei Saperi

Figure 3. Launch of construction with project leaders, Quarter President Simone Borsari and the Office of Civic Imagination staff and representatives from social services

External link	http://partecipa.comune.bologna.it/bilancio-partecipativo

8. City Experiment Fund

Case identification	
Author(s) of the case study	Niklas Mischkowski (ICLEI Europe)
Brief description	Five cities from across South-Eastern European and Central Asian region embarked on an exploration of a new approach to problem solving, which is rooted in systems thinking. The city councils began designing what are called systems thinking portfolios for urban transformation with the support of UNDP Europe and Central Asia.
Keywords	systems thinking; organisational learning; sensemaking
Overview and description criteria	
City/Country	Stepanavan (Armenia), Almaty (Kazakhstan), Prizren (Kosovo), Pljevlja (Montenegro) and Skopje (North Macedonia)
World Region	● East Europe ● Asia
Scale(s) of the case analysed	National
Target audience and dimension	100.000 - 1.000.000
Time period	Ongoing initiative

Solution applied	-
Challenge addressed/ Problem-led approach	● Urban Governance, Policy Development ● Peer to peer learning, and replication, upscaling
Engagement Journey	● Select portfolio ● Action, learning and embedding
Methodologies	The following methods were employed: Deep listening, Agora Urban Transformation Stencil, strategic risk analysis and solution design. The key method referred to is the "Agorà urban transformation portfolio framework". The framework consists of two main phases: 1) the problem phase: unpacking the complex urban system, and 2) the solution phase: designing and implementing activities part of the urban transformation portfolio to learn how to address identified complex challenges. Ultimately, the aim is to develop Portfolios of Development Options. The process is described as follows: "Teams began their work by unpacking the complexity of the challenges they initially selected. This phase included deep listening, which is a process of identifying local narratives that surround both the challenge at hand, but also, more importantly, the city and its future in general. Once the teams developed a deep understanding of the issues they were attempting to tackle, they established their intent – what is it exactly that they want to change, who are they to change it, and what resources would they tap into? For some of the teams it meant reframing the entire challenge altogether, like shifting the focus from air pollution to alternative job opportunities for vulnerable groups, like in Pljevlja. For others it meant moving from a broader scope to a very specific challenge – like in the case of North Macedonia, where the team shifted from green growth to circularity in biowaste. With a clearly defined intent, each team then moved on to identifying the best places in selected systems to intervene. This sounds abstract, but in practice it is about noticing levers, bottlenecks, elements of the system that either attract the most or the least attention and that – when interacted with – can generate the biggest impact. This is what you design options for. And that's what the teams did."
Case contribution	
Impact to climate neutrality	The city of Skopje e.g. identified 6 Zones of Experimentation (Municipal back office functions, Well-being, Arts, science and power, Digital and platform economy, New Urban Infrastructure, Redefining and Restructuring the Commons) where actions shall be taken, funded under UNDP's City Experiment Fund. A concrete impact to climate neutrality cannot be shown, even though many measures hold the potential.
Public policy of reference	-
Innovative approach(es) addressed	UNDP's City Experiment Fund activities aim at innovating organisational models for public administrations towards a more open and citizen-centric governance mode that also uses data and IT.

NET ZERO CITIES

Initiator	UNDP Europe and Central Asia
Stakeholder networks and organisational model	UNDP - Funding
Resources	The City Experiment Fund is part of the Transformative Governance and Finance Facility II program, which is a joint undertaking of UNDP Istanbul Regional Hub and the Ministry of Finance of the Slovak Republic. "The fund will support interventions that cut across four domains where life in cities happens: public space, public administration, resident life and digital infrastructure. Among others, the experiments will touch on behavioral insights, new data and systems thinking, and horizon technologies such as artificial intelligence or blockchain."
Key enablers	-
Key inhibiting factors	-
Drawbacks/pros/cons of the solutions	-
Scalability	-
Key lessons	-
Indicators	-
Visuals	-
External link	https://innovation.eurasia.undp.org/city-experiment-fund-applying-systems-thinking-to-urban-transformation/ https://publicfinance.undp.sk/en/2019/02/20/city-experiment-fund/

9. City Studio Program

Case identification	
Author(s) of the case study	Sara Romero (UPM), Teresa Sánchez-Chaparro (UPM), Julio Lumbreras (UPM), Valentina Oquendo (UPM)
Brief description	City Studio is a scientific collaboration programme between cities and universities. Cities work together with university students to design solutions that contribute to sustainable urban transformation through Final Masters and Degree Theses. Students will develop their applied research work, including

	the design phase of a prototype, with dual mentoring:: a university lecturer and a civil servant. Each student receives a scholarship for the duration of their work, which can be financed by the university, the municipality or joint funds.
Keywords	binomios; final master/bachelor thesis; climate neutrality; co-creation; students

Overview and description criteria

City/Country	Madrid and other cities, Spain
World Region	Southern Europe
Scale(s) of the case analysed	City
Target audience and dimension	30 participants directly 10.000 - 100.000
Time period	Ongoing initiative
Solution applied	-
Challenge addressed/ Problem-led approach	● Urban Governance, Policy Development ● Stakeholder/Community engagement and capacity building ● Partnerships, multi-agents alliances ● Peer to peer learning, and replication, upscaling ● Energy systems ● Built Environment ● Mobility and Transport ● Green Industry ● Circular Economy ● Nature Based Solutions ● Skills & Capabilities ● Policy & Regulation
Engagement Journey	● Define problem/s ● Action, learning and embedding
Methodologies	● Co-creation approach ● Design Thinking ● Service Design

Case contribution

Impact to climate neutrality	The City Council of Madrid chooses the topics where scientific and technical research is necessary to make sure they contribute to reducing carbon emissions and answer to the priority measures set by the Roadmap towards climate neutrality for Madrid 2030-2050. The work developed by the students, and tutored by a university professor and a civil servant, can focus on the elaboration of impact analyses, feasibility analyses, indicators, prospective studies, ideation of new services or products (or their redesign) and even the design of prototypes that produce scientific evidence to support political decision-making. In the first edition in Madrid, work has been carried out on various critical issues for the climate neutrality of the city, such as: electric mobility and

	electric charging points, urban forest, energy efficiency in housing, and circular waste management in municipal markets. Several of the final works have been presented to the relevant department to assess their incorporation into the municipal work pathway.
Public policy of reference	In the case of Madrid, the challenges that the students have worked on are identified in the Roadmap towards climate neutrality for Madrid 2030-2050. All cities that have hosted the programme, such as Madrid (or are interested in doing so, such as Vitoria) have been selected in the 100 cities cohort of the European Union's Horizon Europe Missions (2021-2027).
Innovative approach(es) addressed	● Challenge identification & conceptualization new approaches: The co-creation of the projects between the student and their two tutors facilitates the match between the needs of the city and the capabilities of the university. This opens the opportunity for the generation of interdisciplinary and transdisciplinary knowledge. ● Co-creation & prototyping new approaches: During the first phase, the identification of themes takes place. The UPM students choose one of the seven thematic areas available to develop their work. In a second phase, teamwork begins and establishes the start of the co-creation process mentioned above. In the third phase, the final step is to present the results obtained. In these general sessions we evaluate the students' work in the first edition of the programme. ● Management new approaches: Throughout the development of the programme, a facilitation team manages the relationship within the teams, the joint progress of the work and the sessions for the use of open resources to exercise competences in the students. ● Action portfolio new approaches: Following the portfolio approach, all teams participating in the Madrid experience worked on interconnected and strategic issues for climate neutrality in the city of Madrid. The reference document for the City Council is the Roadmap to Climate Neutrality by 2050. ● Scalability and institutionalisation new approaches: Several Spanish cities are currently interested in replicating Madrid's experience. Knowledge transfer is taking place through the national platform of cities for climate neutrality: CitiES2030. Among the cities following Madrid are Vitoria and Valencia. ● Funding new approaches: We envisaged the possibility for new editions that the participating organisations would offer the scholarships to the Students, currently given by the University, through a common fund.
Initiator	Madrid City Council and Universidad Politécnica de Madrid, inspired by Vancouver City Studio experience.
Stakeholder networks and organisational model	UPM - Students and university lecturers / co-tutors (21) Madrid's City Council - Civil servants (co-tutors) (9) Joint coordination team (UPM+City Council) - Monitoring and facilitation tasks (4)
Resources	● Human: facilitation capabilities, expert knowledge, and legal issues. Four-person coordination team, nine civil servants, twelve university lecturers, nine selected students. Legal issues are related to intellectual property matters.

	● Financial: public funds at the moment, with private-public forecast of mixed funds in the near future (private-public business) Nine scholarships provided by the UPM. ● Material (Technology): video conferencing system (Microsoft Teams)
Key enablers	● Political: University commitment at the highest level with the support from Deputies and other units in the City Council. ● Economic: University scholarships ● Social: co-creation process and interdisciplinary capabilities. ● Legal: open knowledge guidelines and properties.
Key inhibiting factors	● Political: Changes of government both in the public administration and in the management of the University could imply changes at other levels in the development of the programme. ● Economic: Even if there is no financial remuneration to the students, the programme could still be developed because Final Degree Thesis and Final Master Thesis are compulsory in the Spanish university system. ● Social: This first edition of Madrid City Studio has been developed online due to the health conditions caused by the covid-19 pandemic.This has limited the working group meetings to online sessions, rather than allowing face-to-face contact.
Drawbacks/pros/cons of the solutions	Pros: ● Students are motivated to work on real-life problems related to the city. ● Civil servants find new ideas to implement to their current projects. ● University lectures find a place to test their investigations and findings. Cons: ● The long-term life of the project becomes harder to sustain in next editions. ● Continuity in joint research lines (e.g., lack of finance or changes on the city developments priorities from the municipal government)
Scalability	Several Spanish cities are currently interested in replicating Madrid's experience. Knowledge transfer is taking place through the national platform of cities for climate neutrality: CitiES2030. Among the cities following Madrid are Vitoria and Valencia. The chosen topics respond to each city's climate action strategy, which ensures the usefulness of the contribution of the applied research work. The programme is designed for easy replication, e.g. the division of the programme into phases (preparation, collaborative diagnosis, co-creation with portfolio approach, results) allows the order to be easily changed according to the needs of each case.
Key lessons	Main positive lessons/opportunities identified ● Students are motivated to work on real-life problems related to the city. ● Civil servants find new ideas to implement to their current projects.

	● University lectures find a place to test their investigations and findings. Main failures/barriers identified ● The long-term life of the project becomes harder to sustain in next editions. ● Continuity in joint research lines
Indicators	● 7 UPM Schools, 5 government areas within the Madrid City Council ● Overall programme score given by participants: 3,75/4 In the case of Madrid, we reached unforeseen achievements: ● Presentation of the results of the TFM to the entire Directorate General of Urban Planning of the City Council, to include the urban design proposal made by the student and his UPM tutor in their future planning. ● Participation of the student in the working day of the municipal project, on which she carried out her TFM (Metropolitan Forest). ● Pilot project in Chamberí Municipal Market ready to be executed and replicate the analysis in other municipal markets.
Visuals	Full video about the programme's first edition: https://youtu.be/f8sfl0QvppA
External link	https://www.itd.upm.es/madrid-city-studio-trabajos-fin-de-master-y-grado-para-la-transformacion-sostenible-de-madrid/

10. Clean Cities ClimAccelerator

Case identification	
Author(s) of the case study	Tamami Komatsu Cipriani (POLIMI)
Brief description	Clean Cities ClimAcclerator is a 9-month accelerator program that targets startups that help cities achieve climate neutrality, particularly through the use and commercialisation of clean technology. The program is focused on system-level innovations and is demand-led, matching startups in an early phase with challenge-owners. The accelerator is run by Impact Hub Vienna and Universidad Politécnica de Madrid. It has three stages: (1) explore, (2) validate and collaborate, and (3) scale. In the first stage, startups are given a funding grant of up to €5k (no equity taken) to focus on making sure the solution fits the challenge, to train and network with other ventures, city representatives and investors (also through specific network events). In the second stage, startups are matched with challenge owners to validate the fit of solutions to the specific challenges. Startups can access a funding grant of up to €20,000 in this stage to develop a proof-of-concept plan. This grant is made in the form of a CLIMA-SAFE Investment Agreement (which is in short, a founder-friendly simple agreement for future equity in exchange for a cash and services investment package). In the last stage, startups are given individual support to access investors and new markets.

NET ZERO CITIES

	As a demand-led accelerator, the objective is to create real solutions to real problems. The target is for high-growth projects that already have an existing market footprint and solid team (minimum 2 people) – established or in the process of incorporation, EU SMEs (or global but must establish one in case of becoming a beneficiary).
Keywords	accelerator; cleantech; urban resilience; sustainability; startup

Overview and description criteria

City/Country	Vienna, Austria and Madrid, Spain
World Region	- Southern Europe - Central Europe
Scale(s) of the case analysed	- City - International
Target audience and dimension	less than 1000
Time period	Ongoing initiative
Solution applied	-
Challenge addressed/ Problem-led approach	- Financing and Funding - Partnerships, multi-agents alliances - Peer to peer learning, and replication, upscaling - Energy systems - Built Environment - Mobility and Transport - Green Industry - Circular Economy - Nature Based Solutions - Skills & Capabilities
Engagement Journey	Action, learning and embedding
Methodologies	-

Case contribution

Impact to climate neutrality	The program is a good example of how the intermediary support system can provide essential support towards boosting solutions that help cities achieve climate neutrality. This is accomplished in several different ways: (1) in scope by focusing on the impact of climate change in urban areas and cleantech commercialisation; (2) in tandem, by being demand-led, allowing challenge owners to direct development and ensure fit to solution; and (3) providing tailored support at different stages in the form of a cash and service package ranging from no-equity grants to founder-friendly grants to training and competence development to networking and market access. While it is still too early to measure the final impact of its support, its potential impact could be quite vast with a wide portfolio of action. It provides an example of a form of services that could help cities leverage existing assets in strategic efforts, while also increasing the knowledge and competence of the ecosystem. Through this action, the innovation potential not only in terms

	of entrepreneurial success but also in terms of changes in social practices and behavior can be boosted; both of which are key elements of transitioning to net zero emissions in an inclusive way.
Public policy of reference	-
Innovative approach(es) addressed	The innovative aspect of this accelerator program is, as already mentioned above, the focus on a specific challenge. The lab focuses its efforts on the impact of climate change in urban areas and cleantech commercialisation. In the latter, it also promotes a form of solution. While targeting a specific challenge is not in itself innovative, the way the program is organized and delivered based on this target is of note. The program is demand-led, meaning that startups are contextualized in the first stage within identified challenges and then matched with challenge owners in the second in order to (co-)develop proof-of-concept proposals. The partnership is supported also with the view of it continuing after the support of the program. The objective is to ensure that solutions are fit to challenge from the start to increase potential impact. The grant funding scheme is also interesting, providing different levels of grant and commitment at the different stages. In the first stage, startups are given a non-equity grant to diagnose fit and in the second an innovative founder-friendly grant is given that gives support to the team in exchange for future equity (€50,000 value; 24-month long-stop date; no valuation cap; 20% discount rate; no most-favoured nation clause).
Initiator	The accelerator is run by Impact Hub Vienna and Universidad Politécnica de Madrid, in partnership with EIT Climate-KIC. The cities of Vienna and Madrid are closely linked with the program, hosting the events and whose portfolios provided the base of the challenges.
Stakeholder networks and organisational model	Impact Hub Vienna - Provide acceleration support in terms of services but also in managing the program; act as network connector between different actors: startups, cities, challenge owners, investors, etc. Universidad Politécnica de Madrid - Provide acceleration support in terms of services but also in managing the program; act as a network connector between different actors: startups, cities, challenge owners, investors, etc. EIT Climate-KIC - Host networking and training events; provide municipal insight on specific challenge portfolios to keep the solutions grounded in real challenges City of Madrid - Host networking and training events; provide municipal insight on specific challenge portfolios to keep the solutions grounded in real challenges Climate startups - Refine and develop their solution according to the needs of the challenge; commercialise and scale Challenge owners - Bring knowledge and perspective of the challenge's needs and opportunities; make connections with other actors in the challenge space Mentors - Provide technology support and market information and insights provide connections with their own networks; support, when appropriate, the start of pilots or proof-of-concepts within city councils Pool of Jury Members - Accelerator partners, entrepreneurs, investors and knowledge experts who evaluate applications to the program International Speakers - Provide insight and training in key areas of development from business acumen to sustainability topics
Resources	● Business intermediary support services: to provide technical support to startups ● Investor networks: to invest in high growth potential startups

	● City partners: to provide the base of the challenges ● Investor Partner: to provide staged investment in different formats ● Industry network: to match startups with firms and organizations facing the challenge identified ● Knowledge network: to provide training and insight on specific sustainability topics and more technical knowledge
Key enablers	● Political: The accelerator program will run best if the challenges are rooted in real problems that cities are facing. Partnering with the city (or the main actor in the specific context of action) helps ensure that actions are aligned with strategic goals and opportunities as well as addressing the real needs of the city and its citizens. For this, the accelerator is directly linked to the cities of Vienna and Madrid. ● Economic: The presence of an investor partner – like EIT Climate KIC – is a huge asset in a program like this as it provides the financial support to truly accelerate solutions to market. Likewise, the program depends on access to networks of investors and new markets. Innovative financing schemes, like Climate-SAFE, are also big incentives for onboarding truly innovative startups with high growth potential. ● Social: While not explicit, it is clear that climate solutions – especially in the urban context – will need to account for citizens and the general public. It is unclear if a co-design element is part of the training and development process of the program, but would definitely be an asset in other similar programs. ● Technical: The accelerator aims to promote cleantech and provides mentors and instructors who are able to provide guidance. Support is given remotely through IT tools and the accelerator has a website for mostly informative purposes. ● Legal: Support is provided to startups on EU Policy and Affairs in the Climate-SAFE package.
Key inhibiting factors	● Political: Insufficient buy-in from partners, especially the city, would hinder the effectiveness of the accelerator. ● Economic: The program requires financial investment of startups, making an investor a key partner for success.
Drawbacks/pros/cons of the solutions	The program has just closed its second call. It is still early to understand any potential impacts.
Scalability	The approach is quite easily scaled and is mostly dependent on finding strong partners and tapping into and connecting existing networks. It is mostly about harnessing (or creating) the ecosystem around specific solutions to accelerate their commercialisation and impact.
Key lessons	Main positive lessons/opportunities identified ● Acceleration of high impact and high growth solutions for climate neutrality in urban contexts through demand-led support and matching ● Targeted and effective support at each stage (service + grant mix) ● Easily replicable in other contexts Main failures/barriers identified ● Vulnerable to loss of key "founding" partners

	● Dependent on strong networks of partners (challenge owners, investment circles, mentors, etc.)
Indicators	● Number of startups in each stage of investment ● Breadth of portfolio by challenge area ● Amount of investments
Visuals	 *Figure 1: ClimAccelerator's Open Call* *Figure 2: Accelerated Ventures*
External link	https://www.cleancities.network

11. Climate Quarter Project

Case identification	
Author(s) of the case study	DemSoc
Brief description	The goal is to create a residential quarter that prevents the necessity to travel more than 15 minutes to get the most essential goods and services, and therefore reduces the amount of carbon emissions related to transport – the key to averting the so-called heat-island effect. An important aspect of the implementation will be the involvement of citizens and the active cooperation

	of all parties (city units) to discuss about the problems, vision for the Climate Quarter and future interventions.
Keywords	carbon neutrality; mobility; community engagement
Overview and description criteria	
City/Country	Krakow, Poland
World Region	East Europe
Scale(s) of the case analysed	Neighborhood
Target audience and dimension	Inhabitants of the area, people working there, entrepreneurs, people who previously lived in the area, representatives of units related to transport, greenery, culture, management of the city squares, social policy and health, tourism, communication, entrepreneurship and innovation, climate, energy, and water.
Time period	Ongoing initiative
Solution applied	-
Challenge addressed/ Problem-led approach	- Stakeholder/ Community engagement and capacity building - Peer to peer learning, and replication, upscaling - Mobility and Transport
Engagement Journey	- Define problem/s - Action, learning and embedding
Methodologies	- Focus studies (8 meetings): to discuss about the problems, vision for the CQ and future interventions - Workshop with representatives of the city units: to discuss about the results of the diagnosis, vision and future interventions - Café world (1st workshop with stakeholders): to diagnose problems and potentials (2nd workshop with stakeholders): to discuss about the future interventions 2 consultative points: to discuss about the problems, vision & future interventions - Online survey (geosurvey) - Phone and email contact with experts
Case contribution	
Impact to climate neutrality	Developing the CQ, the city centre could offer potential for decarbonising mobility which contributes to carbon-neutral infrastructure and lifestyle. The way of reaching this goal is through a climate narrative and communication. Next to that, there will also be a focus on behaviour change, as due to the pandemic the focus on cycling as part of the national recovery plan also offers the opportunity to accelerate this change. The CQ's cross-district bike routes will serve as a testing ground for this experiment.
Public policy of reference	This project is a part of Krakow's road to climate neutrality as a part of the challenge they took on joining the Deep Demonstrations programme, create by Climate-KIC and the European Institute of Innovation and Technology.

NET ZERO CITIES

Innovative approach(es) addressed	● Challenge identification & conceptualization new approaches ● Co-creation & prototyping new approaches
Initiator	The City of Krakow (Zero-Emission Krakow) as part of the Deep Demonstrations Programme
Stakeholder networks and organisational model	Residents - Consulted, informed Entrepreneurs - Consulted City units - Consulted NGOs - Consulted People working in CQ - Consulted, informed
Resources	-
Key enablers	● Political: City of Krakow being part of the Climate-KIC programme to reach for carbon neutrality ● Economic: funding, prices for bikes and public transport ● Social: Behaviour change (more bikers due to pandemic) ● Technical: bike lanes, public transport connections
Key inhibiting factors	● Social: in general residents feel uninformed about activities undertaken by the city, they are tired of constant 'experiments' in the public space, feel fear of being disappointed – not all groups were sufficiently involved
Drawbacks/pros/cons of the solutions	-
Scalability	-
Key lessons	Main positive lessons/opportunities identified: ● Quite a wide range of participation forms made it possible to reach many different users of the CQ ● The whole process carried out by the external experts à easing tensions between the city and the inhabitants Main failures/barriers identified: ● Residents feel uninformed about activities undertaken by the city, they are tired of constant 'experiments' in the public space, feel fear of being disappointed ● Mobilisation of supporters, not many unconvinced appeared at the workshops – to be improved in a future ● Religious associations (Catholic and Jewish) and entrepreneurs not sufficiently involved – to be improved in a future
Indicators	-
Visuals	-
External link	https://www.themayor.eu/en/a/view/krakow-establishes-a-climate-quarter-7745 https://www.climate-kic.org/news/krakow-transforming-the-city-towards-climate-neutrality/

12.   Climate Meal

Case identification	
Author(s) of the case study	Iina Koskinen, Kaisa Schmidt-Thomé
Brief description	Food is a central part of our everyday lives. There is already a large amount of data available on foods' climate-effects and, with this data, a huge possibility to steer behaviour of both food service providers and consumers towards climate-neutrality. Restaurants recognize the need to become climate-neutral. They are aware of their environmental and climate effects and, more and more, aim to actively decrease them. In addition, they recognize the financial potential of serving climate-neutral options for consumers. The Climate Meal label helps restaurants and their customers identify meals from the menu that have a smaller-than-average carbon footprint. Restaurants were invited to join the initiative through a campaign by providing them with the Climate Meal label, including tools for calculating the carbon footprint of their dishes, and tools for communication about their commitment. Becoming climate-friendly is easier for bigger restaurants and restaurant chains who have, e.g. their own carbon footprint tracking systems and programs and possibilities to affect the whole supply chain. Small and medium sized enterprises often lack resources and know-how to become climate friendly. The Climate Meal label is targeted especially for SMEs. The campaign was run through a project under Forum Virium which is an innovation company owned by the city of Helsinki. Helsinki, with its canteen chain Palmia, took part in the campaign.
Keywords	food service business; climate neutrality; restaurants; SME's; consumers
Overview and description criteria	
City/Country	Region of Southern Finland
World Region	Northern Europe
Scale(s) of the case analysed	Metropolitan area
Target audience and dimension	less than 1000
Time period	Ongoing initiative Campaign from 25.10.2021 to 28.11.2021
Solution applied	The Climate Meal label can be given to a meal made from ingredients that have a combined carbon footprint of no more than 1.0 kg CO2e, which is roughly 30% less than the Finnish average.

	Restaurants taking part in the campaign were provided with Clonet Oy's OpenCO2.net-based Climate Calculator for meals, in addition to which they had free access to Unilever Food Solutions' CO2 calculator. Customers of Jamix, a cloud-based kitchen intelligence system, could take part by utilising the service's own carbon footprint calculator.
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Skills & Capabilities ● Other: Climate-neutral service & concept development
Engagement Journey	● Self assess ● Declare commitment ● Action, learning and embedding
Methodologies	-
Case contribution	
Impact to climate neutrality	Restaurants recognize the need to become climate-neutral. They are aware of their environmental and climate effects and, more and more, aim to actively decrease them. In addition, they recognize the financial potential of serving climate-neutral options for consumers. Becoming climate-friendly is easier for bigger restaurants and restaurant chains who have, e.g. their own carbon footprint tracking systems and programs and possibilities to affect the whole supply chain. Small and medium sized enterprises often lack resources and know-how to become climate friendly. The Climate Meal label is targeted especially for SMEs. SMEs are provided with expertise, support and tools to plan, advertise and offer climate friendly meals in their menu. In addition, customers are interested in consuming climate-friendly options. People are eating out more and consuming food-delivery services, thus restaurants are a practical tool to affect customers' choices, especially in cities. The recognisable Climate Meal label provides customers with information about climate-friendly choices and an easy way to lower their own carbon footprint. The participating restaurants stated that the demand for vegetarian food increased during the campaign. As such, Climate Meal Label helps to build and promote carbon-neutral infrastructure and lifestyle. It supports the business to become climate-friendly and new ways to support customers in their climate-friendly choices.
Public policy of reference	-
Innovative approach(es) addressed	Food is a central part of our everyday lives. There is already a large amount of data available on foods' climate-effects and, with this data, a huge possibility to steer behaviour of both food service providers and consumers towards climate-neutrality. Especially lunch restaurants, where the Climate Meal concept was mainly adopted, are key players because people find it easier to make good choices during lunch time. Climate Meal label is a way to support SMEs' own capacities to affect that part of their production chain where it is easiest to achieve impact without large resources. It is building on existing expertise and resources. The

| | participating restaurants were provided with carbon footprint calculators and support in using them. Support was provided for communicating their commitment to customers (communication toolkit and using the existing Climate Meal brand on the menu). The campaign gave restaurants an opportunity to experiment with carbon footprint calculators as part of their operations and challenged them to make changes to the menus.

Restaurants can continue using the Climate Meal label also after the campaign. The label can be taken into use by registering at ilmastoannos.fi and agreeing to calculate the carbon footprints of their climate meals.

Through a joint Climate Meal brand, it is supporting the joint action of restaurants in working towards climate neutrality targets. |
|---|---|
| **Initiator** | The Climate Meal campaign is part of the Mission Zero Foodprint project (under Forum Virum, an Innovation company owned by the city of Helsinki), which aims to help restaurants and other food service businesses to become carbon-neutral in the future. The project was funded by the European Regional Development Fund and the Helsinki-Uusimaa Regional Council. |
| **Stakeholder networks and organisational model** | Original idea was to get 20 restaurants involved. In the end, 60 restaurants showed commitment. The campaign did not map how many consumers were finally engaged.

The key persons engaged were restaurant managers and development managers who had a say on the menus. The project aimed to provide them support and increase their capabilities.

Restaurants were also engaged as businesses that were invited with the cites to make better business based on environmentally friendly offerings. Consumers were engaged as customers and the campaign aimed to affect their behaviour through offering them an easy way to choose climate-friendly options. |
| **Resources** | The initiative provided support for restaurants mainly through capacity-building: the restaurant designed the menus and made calculations on their own.

A communication toolkit was provided for restaurants to communicate their commitment.

Restaurants taking part in the campaign were provided with Clonet Oy's OpenCO2.net-based Climate Calculator for meals, in addition to which they had free access to Unilever Food Solutions' CO2 calculator. Customers of Jamix, a cloud-based kitchen intelligence system, could take part by utilising the service's own carbon footprint calculator. |
| **Key enablers** | The project gained momentum through general interest of restaurants and customers to make climate-friendly choices. Restaurants were keen to get tools and support for their actions.

- Political: climate neutrality targets are on the agenda and of interest for both private businesses and their customers. The urgency was recognized and restaurants were looking for support.

- Economic: Society is more and more service oriented and people are eating out. Therefore the development of climate friendly food services is interesting for both customers and restaurants. Providing the Climate Meal brand helps both providers and users of services to align their actions and find each other. Climate friendly options also |

	give commercial value and responsible businesses are considered as attractive for customers. In addition, the campaign helped Clonet Oy to get their OpenCO2.net-based Climate Calculator for meals into the markets and the need for similar services is growing. ● Social: The campaign helped restaurants and their kitchen staff to understand which elements affect the carbon footprint of food. Data available was used to orient people to make climate-friendly choices through the Climate Meal Label. ● Technical: Data of carbon footprint of food was available and calculators ready for use.
Key inhibiting factors	The campaign suffered from Covid-pandemics since many restaurants had to close or cut costs during the campaign. The campaign raised interest but some restaurants had to say no due to a lack of resources. In general, SME's have smaller resources to invest in climate friendly options. The campaign was relatively short and therefore some of the restaurants could not take part at such a short notice.
Drawbacks/pros/cons of the solutions	-
Scalability	The project created the campaign and a concept that is now openly available. The concept could be adapted in different cities and countries since the calculators are free to use. Cities and funders should be invited to further develop the concept and the Climate Meal could be used also in cities marketing and branding (project had been discussing with Visit Finland how to collaborate).
Key lessons	Main positive lessons/opportunities identified: ● The consumption of vegetarian food in the partnering restaurants grew higher during the campaign when the meals were introduced as Climate Meals. ● It was important that restaurants had a clear interest in developing their own processes. Climate Meal label provides a tool for their internal development. ● Campaign was a good format since it raised discussion. ● Choice of menu ingredients is a concrete way to empower restaurant staff to realize how easy it is to make climate friendly choices simply by altering the menu ingredients. Main failures/barriers identified: ● The covid situation set limitations for restaurants. ● Restaurants vary in their size and tools should be tailored for different sizes of restaurants. Tools should be free or at least reasonably priced so that SME's can afford them. They have to provide clear added market value for the restaurants.
Indicators	No customer feedback was monitored. Restaurants were consulted qualitatively.

Visuals	
External link	https://ilmastoannos.fi/en/climate-meal/

13.　Cloughjordan Ecovillage

Case identification	
Author(s) of the case study	Tena Maruševac (REGEA), Tomislav Novosel (REGEA)
Brief description	The Cloughjordan Ecovillage started as a plan to create a community of dedicated environmentalists; to buy a site on which they could build their lives. The very first residents of Ireland's first ecovillage moved into their homes in 2009. Today, with 55 low-carbon homes, a carbon-neutral district heating system, a community farm, a green enterprise center, a planned reed-bed treatment plant, a photovoltaic power plant, and Ireland's lowest ecological footprint, the ecovillage is demonstrating different ways to achieve ecological, economic, and social sustainability.
Keywords	local community; cooperation; ecovillage; sustainability; low ecological footprint
Overview and description criteria	
City/Country	Cloughjordan Ecovillage, Ireland
World Region	Northern Europe
Scale(s) of the case analysed	Neighborhood
Target audience and dimension	Less than 1000 (potential inhabitants of the village)
Time period	Ongoing initiative (from 1999 to now)
Solution applied	● Low-carbon homes ● Carbon-neutral district heating system

	● Community farm, a green enterprise center ● Planned reed-bed treatment plant ● Photovoltaic power plant
Challenge addressed/ Problem-led approach	● Financing and Funding ● Partnerships, multi-agent alliances ● Energy systems ● Built Environment ● Green Industry ● Circular Economy ● Nature Based Solutions
Engagement Journey	● Action, learning and embedding
Methodologies	First, the Central Hotel in the city centre of Dublin and Sustainable Projects Ireland Ltd pitched their ambitious idea of Ireland's first ecovillage to the public. Then people declared commitment and invested in the development of the village. The initiators and future inhabitants of the village worked together on discussing the problems and choosing the path forward which Included choosing the way how the houses in the village will be built, what kind of heating will they use, etc.
Case contribution	
Impact to climate neutrality	Everything regarding the Cloughjordan Ecovillage was agreed upon on regular meetings between its (back then) future residents. They used consensus decision-making to ensure each community member had their say in the development plan. Each step of the project was decided upon as a community, from choosing the location of Cloughjordan to agreeing upon the Ecological Charter for sustainable housing development. Cloughjordan is a showcase for natural building techniques, from traditional cob houses to straw bale walls, or timber frame kit houses. All of them tap into a district heating system that burns wood waste from a nearby sawmill and provides low-carbon heating and hot water. Many residents have built what they needed to run a business and work from home, including workshops and a bakery. Others work at a green business centre on the site, while a train link to Dublin and Limerick keeps the city accessible. The village also hosts Ireland's leading community-supported agriculture initiative, where paid farmers supply organic produce to a membership of local households. Villagers live as sustainable as they know and help each other in getting better. Moreover, they also host visits and online learnings where they teach others how to follow their steps.
Public policy of reference	● The European Climate Law – the village shows how the sustainable societies of the future should look like ● Ireland's Climate Action and Low Carbon Development (Amendment) Act 2021 – bringing Ireland closer to the goals of emission reduction and setting a good example of a low carbon community
Innovative approach(es) addressed	Members of Cloughjordan ecovillage adopted the idea of shared purposes and principles and shared out responsibilities.

	Every member of Sustainable Projects Limited has had their say in the development of Cloughjordan Ecovillage. Each step of the project was decided upon as a community, from choosing the location to agreeing upon the Ecological Charter for sustainable housing development. All members of Cloughjordan Ecovillage use the process of consensus decision-making to arrive at decisions. Instead of voting for an item, consensus decision-making ensures that everyone's opinions, ideas, and reservations are taken into account. The consensus is a process that can result in surprising and creative solutions and is committed to finding solutions that everyone can live with. Among other things, the farming methods, and biodiversity garden help keep the number for Cloughjordan's ecovillage low. As does a central district heating system that is fuelled by wood pellets, before piping heat under the ground into each house and building in the village. Unused timber from a nearby sawmill in Ballinasloe arrives twice per week. The village also hosts Ireland's leading community-supported agriculture initiative, where paid farmers supply organic produce to a membership of local households.
Initiator	The Central Hotel in the city centre of Dublin and Sustainable Projects Ireland Ltd
Stakeholder networks and organisational model	● Inhabitants (130) - In the beginning, gave deposits in order for the idea of ecovillage to become the reality. Now they live in the village. ● Schools - Visit the village and learn from the inhabitants ● Researchers - Do research using the data from the village ● Visitors - Visit the village and learn from the inhabitants
Resources	● Human: ideas, cooperation ● Financial: private investment ● Material (Technology): solar panels and district heating system
Key enablers	● Economic: enough private investment to buy the land and build the village ● Social: cooperation between inhabitants, they used consensus decision-making to ensure each community member had their say in the development plan ● Technical: enough knowledge about renewable energy sources to decide what technology to use in the village
Key inhibiting factors	● Economic: building an ecovillage is not something that is cheap, either a large amount of private investment is needed, or some funding needs to be found. ● Social: life in such a community is not for everyone, all members of the community need to adjust to sustainable living, all need to participate in the decision-making, etc.
Drawbacks/pros/cons of the solutions	● The major drawback was the economic crash of 2008 which forced 50% of those who have invested into the purchase to pull out of the project. ● Another drawback is that of the technical issue. Although the village has a PV power plant that should supply the village with electrical energy, it isn't working properly and thus the village is mostly supplied through the grid.

Scalability	The idea of the ecovillage could theoretically be applied to any location at any time if enough people and funds is collected. The only thing that would be needed is the initiator of the process who would find the location where the ecovillage can be built, as well as people interested to invest their money in order to build the ecovillage. Nevertheless, such an approach is not something that is for everyone. People who would live in such a community would need to be more focused on living in a sustainable way and would need to be willing to actively participate in regular meetings where all the decisions regarding the village would be made.
Key lessons	Main positive lessons/opportunities identified: ● People invested in the creation of the ecovillage ● Every person participated in building their home ● The village tries to have everything locally produced, for now, it has a bakery, paid farmers supplying organic produce to membership of local households, and a wood waste supplier for the district heating Main failures/barriers identified: ● Even though it is one of the greenest societies, it is still not net-zero ● The PV power plant that was installed for the village is not working properly ● Such a way of living is not for everyone
Indicators	● Number of households in the ecovillage: 55 ● Number of inhabitants: 130 ● Energy production through district heating ● Local food production
Visuals	-
External link	https://www.thevillage.ie/about-us/our-story/

14.   Ecohouse Antwerp

Case identification	
Author(s) of the case study	Natalia Altman (EuC)
Brief description	A one-stop-shop is a virtual and/or physical place where homeowners can find all information and services they need to implement an ambitious global energy renovation project. The buildings sector, and in particular, existing dwellings are pivotal in achieving climate neutrality. EcoHouse is a physical one-stop-shop for households offering all city services for building and living run by the city of Antwerp. Its focus is on energy reduction and renewables. It offers workshops and advice on energy retrofitting, as well as both short- and long-term solutions for saving energy and money. Antwerp's EcoHouse plays a key role in helping encourage people to start renovation projects and coordinate them. It is open to the general public, with a substantive part of its work focused on more vulnerable groups.

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Keywords	buildings, energy efficiency, social economy, one-stop-shop; vulnerable communities
Overview and description criteria	
City/Country	Antwerp, Belgium
World Region	Central Europe
Scale(s) of the case analysed	City
Target audience and dimension	100.000 - 1.000.000 Low income households
Time period	Ongoing initiative, from 2015
Solution applied	One-Stop-Shop
Challenge addressed/ Problem-led approach	● Innovation Management and Digitization ● Stakeholder/ Community engagement and capacity building ● Financing and Funding ● Energy systems ● Built Environment ● Skills & Capabilities
Engagement Journey	Action, learning and embedding
Methodologies	One-Stop-Shop
Case contribution	
Impact to climate neutrality	The building sector is responsible for more than one-third of the European Union's carbon emissions. The European Commission and other well-recognised EU institutions have issued a call for the creation of one-stop-shops to provide tailored energy efficiency renovation advice and financing solutions to homeowners. One-stop shops can bridge the gap between households and the construction supply side. They can help increase the actual renovation rate by supporting potential clients through the various steps of the decision-making process and can play a key role in EU's clean energy transition. Ecohouse conducts audits and offers solutions for saving energy and money. The short term solutions include advice on how to change behaviour to save energy, and free installation of simple energy saving products such as energy saving light bulbs. For more long-term and advanced solutions EcoHouse prepares a personalised plan for investing in energy saving infrastructure, which is based on the energy audit. For example, installing roof insulation or new energy efficient heating devices. It then provides support to residents in implementing these solutions. This case also stands out for offering substantive support and advice to vulnerable groups. It also has a special programme for schools, offering workshops, activities, subsidies, advice and materials to support them to fulfill their green goals. The EcoHouse is a place for the community where residents can find inspiration, information, advice and financial support. The place also offers

	meeting spaces, exhibitions related to green practices, a repair cafe, an ecoshop with books on sustainable buildings, greenery, among others.
Public policy of reference	The EcoHouse is included in Antwerp's Climate Plan 2030 and will contribute to the fulfillment of its objectives.
Innovative approach(es) addressed	-
Initiator	The city of Antwerp initiated and coordinated this project. However, many other actors have been involved and contributed to the project's success.
Stakeholder networks and organisational model	● Levanto (social economy association) - Helps to conduct energy audits using trained staff on work experience placement, and offers both short and long term solutions for saving energy and money. Trains unemployed people to carry out energy audits ● City of Antwerp - Coordinates the project. Administers the loans. Provides publicity and other services in the EcoHous ● Housing, education, migrant, community organisations - As partners of EcoHouse, they help to reach out to people and spread the word ● Flemish regional government's department of social economy - Provides financial support to the project ● Antwerp's grid operators - Provide financial support to the project ● Belgian Federal Government - Provides financial support to the project
Resources	● Human: Levanto, in partnership with Antwerp's grid operators, organised work placements to carry out the energy audits. These placements are reserved for people who have been unemployed for at least one year and either did not attend or did not finish high school. They receive an individual training programme for the first six months to strengthen their chances on the open labour market. The programme comprises two equal parts; on-the-job training with a personal trainer, and a customised education component based on the individual's aspirations, interests, qualifications and preferences. ● Financial: The project received financial support from the Flemish regional government's department of social economy, Antwerp's grid operators and the Belgian federal government. The zero-interest loans are a distinctive element of this project. Low-income households that would not qualify for a loan at a commercial bank can also receive a special zero-interest loan, financed by the Belgian federal government. EcoHouse can help them find and negotiate with contractors and coordinate the works. These services are offered to people with low incomes, and social assistance recipients; be they home owners or tenants.
Key enablers	● Political: This one-stop-shop has a locally embedded focus. In this case, the local government and many other local actors are involved, hence there is a knowledge of the local context and market that has helped facilitate access to financing and to provide solutions that are tailored to specific needs. ● Economic/social:There are several services offered to people on low income. For example, low-income households that do not qualify for a loan at a commercial bank can receive a special zero interest loan. EcoHouse can also help them find and negotiate with contractors.

NET ZERO CITIES

	● Technical: Levanto was fundamental in offering training and capacity-building opportunities for the unemployed, who were then able to carry out technical audits and strengthen their chances on the labour market.
Key inhibiting factors	● Social: Difficulty to reach the target group of low-income households. This entailed difficulties in understanding and integrating their needs (beyond energy related issues). ● Technical: Keeping it simple for the demand. Offering easy to implement solutions that bring immediate gains and help attract interest took some time. This is linked to the importance of putting needs at the centre.
Drawbacks/pros/cons of the solutions	Pros: ● Levanto helps/helped people to strengthen their employability ● Infrastructure is well adapted to host and carry out various activities (e.g. workshops, exhibitions,etc) ● These measures contribute to reducing energy poverty; improving quality of life and helping the city meet its climate change targets. Cons: ● It requires a large investment in terms of financial and human resources ● The EcoHouse is located in only one neighbourhood
Scalability	This model has been replicated in other places in the Flemish region. However, this solution is not so easily replicable, particularly for smaller municipalities, since the financial and human resources needed are quite high.
Key lessons	Main positive lessons/opportunities identified: ● Offering easy to implement solutions that bring immediate gains helped attract interest. The city created a simple and attractive voucher with information on free energy-saving products, together with tips on how to change behaviour and save money straight away. Creating a more user-friendly application system for the audit also encouraged more people to apply. ● Partnering and spreading the word through organisations significantly boosted the response rate to the programme. EcoHouse works in partnership with a range of welfare, housing, education, migrant, and community organisations, and across city departments. Main failures/barriers identified: ● Traditional means of communication such as newsletters, especially the ones using jargon or terms like 'energy audit' and 'infrastructural energy savings investments', had little impact and a discouraging effect.
Indicators	-

Visuals	
External link	https://www.antwerpen.be/nl/overzicht/ecohuis-antwerpen/nieuws

15. El Dia Después

Case identification	
Author(s) of the case study	Ella Davidson (Demos)
Brief description	El Día Después (EDD) is a multi-stakeholder platform for networks to address the sustainable development goals, specifically SDG 17. There are four communities within this project: environment & health, cooperation & global governance, city transformation, and inequality & new economic model. Within these groups are experts and professionals from the field who collaborate to create different services towards change. Through these collectives, lessons can be drawn from meetings that can catalyse and accelerate the transition towards models and systems that support cities, the environment, and global governance.
Keywords	collaboration; platform; multi-stakeholder
Overview and description criteria	
City/Country	Spain
World Region	Southern Europe
Scale(s) of the case analysed	National
Target audience and dimension	-
Time period	Ongoing initiative, planned from 25th March 2020 to 31st December 2030

Solution applied	-
Challenge addressed/ Problem-led approach	- Stakeholder/ Community engagement and capacity building - Partnerships, multi-agents alliances - Peer to peer learning, and replication, upscaling
Engagement Journey	- Declare commitment - Action, learning and embedding
Methodologies	Collaboration through participative workshops and co-lab to generate knowledge and solutions in the four communities of the platform, highlighted above.

Case contribution	
Impact to climate neutrality	It is often hard for a platform to emerge in which there are multiple collaborators in different sectors, creating a reliance on single decision-making bodies. Through the EDD platform, action toward climate neutrality can be created more easily. This platform explicitly explains that through a multi-stakeholder format, collaboration in this project will help create tangible solutions toward city transformations in the three lines of work: Sustainable urban recovery, sustainable mobility, and energy sustainability. This comes under SDG 17 'Partnership for the goals'. Outputs also can influence public policies at local and national levels for example, 'The agreements of the Ville' which was a response to the COVID pandemic in Madrid as a response strategy. Though the initial stages of the project were more COVID centered, more transformative partnerships have been able to be incubated in regards to green employment and transformation of what sustainability looks like in four of the biggest cities in Spain, in addition to increasing preparedness for emergency response which was triggered by the pandemic.
Public policy of reference	-
Innovative approach(es) addressed	This platform is creating an ecosystem for ideas to be created through various actors and stakeholders to approach problems in Madrid. By establishing themselves as a platform at the beginning of the COVID pandemic, EDD has demonstrated a quick and effective approach to the crisis that has ensued since. In creating a platform focussing on different areas they ensured that solutions through collaboration were able to be found. A new approach to how co-creation occurs within these multi-stakeholder networks is partnership incubation. When EDD communities identify a need for multi-stakeholder collaboration this incubation begins by developing a value proposition & support for the partnership to create short-term action, knowledge collaboration sustains this on a long-term scale. This is a unique platform for both public and private administrations/companies. On the private side, the inclusion of these companies has meant that opportunities for more effective innovation processes have increased. For public companies, acting within a diverse ecosystem in which all actors are considered as equals allows for faster and bolder actions.

NET ZER🔴 CITIES

Initiator	The COVID-19 pandemic was the primary reason for this platform to be established as a space to understand the crisis and what solutions could be formed. It carried on from a previous multi-stakeholder program ACELERA 2030. Four different organisations were instigators of this: Ilberdrola (global company in renewable energy), itdUPM (public university innovation center, ISGlobal (Global health research centre), SDSN Spain (the Spanish Sustainable Development Solutions Network).
Stakeholder networks and organisational model	There are approximately 20 professionals/experts in each of the four communities with EDD. These are the main stakeholders who are able to influence change. Companies and experts who have partnered with EDD are also a key stakeholder to this process, they are mainly brought in through the participation incubation projects explained above. This has meant over 500 experts have participated in various projects.
Resources	● Human resources: One of the key resources in this platform is the use of human connections and the ability to bring people from different backgrounds to one platform. This requires a lot of effort to meet and create an environment for effective collaboration. Human skills of collaboration ● Technological resources: As this platform was created during the COVID-19 pandemic, the resource of technologies (especially the internet, apps, computers) was key to the success of the platform to be able to bring together others and coordinate the project while everyone was unable to meet in person.
Key enablers	● Political: This platform allowed for political barriers of decision-making to be transcended in a way that actions that are usually slow to happen could be tackled by actors at different levels. Social: This platform was able to enable trust between organisations from the start in the way it was established. There was a sense of collective purpose that was created through the facilitation of distributed and open resources that all organisations involved contributed to in terms of knowledge, skills, and finance areas. ● Technical: Technology allowed for the networks to happen and enabled action in a time when action was severely inhibited by the pandemic.
Key inhibiting factors	● Social: While the COVID pandemic is what initially enabled the platform to be established in a time of crisis, it still created a significant organisational challenge because of the uncertainty and involuntary digitalisation of work.
Drawbacks/pros/cons of the solutions	-
Scalability	This project is seemingly easily scalable in a general sense where the overall idea and blueprint can be applied to other countries. It has proven useful for both public administrations and decision-makers and will continue on a long-term scale. For example, this collaboration platform is being taken to other Spanish cities and into South America too to adapt it to their contexts.

	There would be a need for key players/companies in a country to step up to the plate to start the process. Which would likely need help or a framework from the original platform to establish itself and create their own platform that fits the needs of the place it is being used. This would also be dependent on the government structures in the country and how receptive they are to it.
Key lessons	Main positive lessons/opportunities identified: ● Facilitation is crucial and can be undertaken by a diverse stakeholder community to create solutions Main failures/barriers identified: ● There are still some barriers to having to rely on digital platforms entirely, but this can slowly be remedied as the effects of the pandemic lessen
Indicators	-
Visuals	
External link	https://diadespues.org/city-transformation-community/?lang=en https://sdgs.un.org/partnerships/el-dia-despues-catalyzing-multi-stakeholder-collaborations-systemic-and-effective-sdg https://www.mdpi.com/2071-1050/12/17/7189

16. Elektrizitätswerke Schönau (EWS)

Case identification	
Author(s) of the case study	Tess Tjokrodikromo (TNO)
Brief description	In the aftermath of Chernobyl, a handful of committed citizens decided to become active together in their community in the Black Forest and create a nuclear- and coal-free energy supply belonging to citizens. Today the EWS supplies people throughout Germany with green power and eco-gas and works in various ways towards bringing about the energy revolution.
Keywords	renewable energy; sustainable; citizens' initiative; electricity
Overview and description criteria	
City/Country	Schönau, Germany

World Region	Central Europe
Scale(s) of the case analysed	National
Target audience and dimension	100.000 - 1.000.000
Time period	Ongoing initiative (since 1986)
Solution applied	Funds and incentives: in the support programme, every customer pays at least 0,5ct/kWh for the support of new renewable energy power plants, energy efficiency projects, energy democracy and others.
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Energy systems
Engagement Journey	-
Methodologies	-
Case contribution	
Impact to climate neutrality	EWS is not directly related to the Climate-neutral Cities by 2030 UE Mission. However, EWS provides an example on how a citizens initiative can grow to a nationwide supplier of green electricity. The way EWS is doing business has always been based on stringent environmental criteria that not only exclude the supply of electricity from nuclear and coal-fired power plants while subsidising renewable energy systems, but also reducing electricity consumption and supporting the operation of climate-friendly co-generation units.
Public policy of reference	EWS is constantly contributing to the current political debate on amendments to existing energy legislation while also proposing its own drafts and pursuing all available legal options up to the Federal Constitutional Court if and when required.
Innovative approach(es) addressed	EWS was the first of its kind in Germany to take over the grid as well as electricity supply to the local community. They made this possible by citizen involvement, a donation campaign and a local referendum. In 1998, when the German Energy market was deregulated EWS went nationwide and is the first clean energy supplier for Germany. Furthermore, EWS has a support programme among their members. Every customer pays at least 0,5ct/kWh for the support of new renewable energy power plants, energy efficiency projects, energy democracy and others.
Initiator	EWS started as a citizens initiative by a group in Schönau (Germany). Since the local grid operator had constantly obstructed related citizens' activities, which involved initiatives to save energy and to promote environmentally friendly power generation, local activists came up with the idea of acquiring the Schönau power grid to determine the conditions for its operation themselves.

Stakeholder networks and organisational model	● EWS Schönau eG Cooperative (7.000 members, 120 employees) - Shareholders ● EWS Sales Company (200.000 clients) - Consumers
Resources	Netzkauf EWS eG, the Schönau co-operative is growing steadily: at the end of 2015, it had about 4,795 shareholders and paid-up capital shares in the total amount of €37 million. The EWS website includes links to forms and documents that can be downloaded to become a shareholder in the co-operative. In 2019 the cooperative had 7000 members and 120 employees.
Key enablers	EWS is more than just an electricity provider because its goals are much broader. EWS wants to encourage people to take matters into their own hands, to instigate change and to take action. Thus, success is not only defined by the number of customers or subsidised renewable generation units. According to EWS it is also about the effect brought about by the dedication and motivational power that emanates from Schönau and instigates a large number of activities. The Schönau electricity seminars, for example, often attract people who share common goals and interests and join forces to plan and implement projects. This setting creates a constantly growing network of very active, environmentally driven initiatives.
Key inhibiting factors	Social innovation initiatives are often restricted by space, power struggles and policies. Traditional policy frameworks in Germany for instance favoured the big energy companies and grid operators. This led to EWS Schönau paying an exaggerated price for using the electricity grid as the price is determined by the grid operator. Thus, the obstacles were mainly legal, financial and policy related.
Drawbacks/pros/cons of the solutions	When the town council of Schönau gave the licence to operate on the local grid to EWS, the former grid operator called for a second referendum and started a campaign against EWS. However, the initiative upheld its demand and citizens were prepared to donate to EWS to allow them to pay the price for the grid. The press then referred to them as the "Schönau electricity rebels" who "had won a David versus Goliath battle", and the victory of the Schönau people over nuclear lobbyists was met with much enthusiasm throughout the country.
Scalability	The EWS initiative has successfully scaled in the sense that it has expanded its reach on the electricity grid throughout Germany. Furthermore, it provides an example of how community action can really instigate change. For example, a construction such as the support programme could be replicated by other initiatives but the local/national context and regulatory framework are very influential as to whether similar successes can be achieved.
Key lessons	Main positive lessons/opportunities identified: ● Collective action ● Expansion/scaling Main failures/barriers identified: ● Power struggles with big energy companies ● Regulatory frameworks ● Financial obstacles for social innovations
Indicators	-
Visuals	-
External link	vorstellung-ews-englisch.indd (ews-schoenau.de)

17. Entrepatios Las Carolinas

Case identification	
Author(s) of the case study	Sara Romero (UPM), Teresa Sánchez-Chaparro (UPM), Iñaki Alonso (sAtt Arquitectura Abierta Studio)
Brief description	"Entrepatios – Las Carolinas" is the first ecological cohousing built in the city of Madrid, nearly zero energy building which operates with the Right of Use of the dwelling, but not ownership of it. It is a nearly zero energy residential building consists of 17 houses, CO2 zero and made of wood, under the Right of Use regime in the Community of Madrid.
Keywords	green cohousing; right of use regime; high energy efficiency; nearly zero energy building; CO2 zero
Overview and description criteria	
City/Country	Madrid, Spain
World Region	Southern Europe
Scale(s) of the case analysed	Neighborhood
Target audience and dimension	Less than 1000: 58 people (17 families) co-living in Entrepatios-Las Carolinas
Time period	Ongoing initiative: from 2018 (date of the first building finished) to now
Solution applied	-
Challenge addressed/ Problem-led approach	- Urban Governance, Policy Development - Stakeholder/Community engagement and capacity building - Partnerships, multi-agent alliances - Energy systems - Built Environment - Circular Economy - Policy & Regulation
Engagement Journey	-
Methodologies	The joint activity of deliberation and decision making is driven by different working committees which provide the rest of the cooperative members with the information they need to decide on one option or another. They organised the Assembly among future inhabitants of the cohousing and members of a cooperative to co-design and manage the building management.

Case contribution	
Impact to climate neutrality	"Entrepatios – Las Carolinas" is a nearly zero energy residential cohousing consists of 17 houses that are combined with different common spaces (3.313 m2), CO2 zero and made of wood, under the Right of Use regime in the Community of Madrid. The project is developed with the latest advances in ecological architecture under criteria of high energy efficiency, life cycle analysis, bio-construction, water management, geo-environmental analysis and bioclimatic design. Entrepatios-Las Carolinas is a near-zero energy cohousing that is economically, socially and environmentally sustainable. In particular, the cohousing Carbon Footprint is offset by reforestation programmes, so it is a CO2 zero building. The structural spruce wood used (400 m3) is sustainable and FSC (Forest Stewardship Council) certified. Recycled wood has also been used for the false ceilings. The use of wood is a paradigm shift, because it is a renewable and circular material. Related to the water management system, there are low water consumption taps and toilets with dual flush cisterns, aerators, etc., and focusing on the recycling of rainwater and grey water for subsequent use in the irrigation system in the courtyard garden, paddocks and roof, as well as in the toilets. This system is expected to save 750,000 litres of water per year. Las Carolinas cohousing is electrified with 100% energy from renewable sources, by contracting and by photovoltaic energy production in the building itself.
Public policy of reference	● "Las Carolinas" achieves the maximum possible degree of Nearly Zero Energy Consumption Building concept according to the European Directive 2010/31/EU, in addition to other advanced strategies in terms of green architecture: bioclimatic design, high energy efficiency, life cycle analysis, bio-construction, water management, and geo-environmental health. The ECOMETRO tool has been applied, based on the UNE-EN 15804 (product) and UNE-EN 15978 (building) standards for the evaluation of the environmental impact of the construction process and use of the building (extraction and manufacture of materials, transport to the construction site, installation, maintenance and use: heating, cooling, lighting and consumption of household appliances). ● New regulation for cohousing at municipal level in some cities in Spain (Barcelona, Alicante, Asturias, etc.). ● There is also a future link with the European energy regulation (EU Directives 2018/2001 and 2019/944) related to co-production practices and the new legal figure in the energy supply chain: the "citizen energy community", translated into the Spanish regulation (PNIEC, 2021-2030) as Local Energy Communities (Comunidades Ciudadanas de Energía) and Renewable Energy Communities (Comunidades de Energías Renovables).
Innovative approach(es) addressed	The "Entrepatios – Las Carolinas" ecological cohousing is the first ecological cohousing built in Madrid, nearly zero energy building, CO2 zero and made of wood. This is also the first cohousing management under the Right of Use regime in the Community of Madrid. This means that the ownership of the co-housing building is cooperative and not private. It is a non-profit project with funds from ethical banking, as well as loans and donations from those seeking to promote a new housing model. The Right of Use regimen is an intermediate

	ownership model between renting and buying that advocates the management of the commons. The inhabitants of the cohousing do not own their home, but have a right of use over it and over the common areas of the building throughout their lives. It is a non-speculative and non-profit model where cooperative members enjoy indefinite use of the housing through a fee or 'soft rent'. To this is added another entrance fee, returnable in the event of leaving the cooperative. This right of use can be indefinite in time, transmitted and inherited. As a collective project, a reserve fund is envisaged that could cover the non-payment of the entire cooperative for three months. The transfer of land by the public authorities means that the purchase of land does not make the project more expensive. Finally, sAtt is the first B Corp architecture and construction company in Spain.
Initiator	"Entrepatios" Cooperative, promoted by sAtt Arquitectura Abierta Studio (SME).
Stakeholder networks and organisational model	● "Entrepatios – Las Carolinas" Cooperative - Inhabitants of the cohousing with multiple role: user, developer and participant in the co-design process (less than 1000) ● "Entrepatios" Cooperative, promoted by sAtt Arquitectura Abierta Studio (SME) - Initiator (66 cooperative members with the support of Lógica'Eco, a manager of collective initiatives, and sAtt, an architectural process studio). ● Companies involved in the construction of the cohousing "Las Carolinas" - Experts on construction and structures design, water management, geo-environmental health timber installation and manufacturer (7-10 people: Técnica ECO, Daniel Pascual, Miguel Nevado, Madergia, Ismael Caballero, Fernando Pérez y Pascual Pérez) ● Local public sector - Cession of land for the construction of cohousing
Resources	● Legal: the inhabitants of the cohousing set up as a cooperative that will be maintained throughout the life of the building. ● Human: facilitation capabilities, technical expert knowledge and participation abilities ● Financial: private funds (purchase of the land financed with the cooperative's own funds), and a subsidy of the photovoltaic system at 50% for the first 3 years. ● Material (Technology): wood as the main construction material (plus reinforced concrete and others); building electrified with 100% energy from renewable sources, by contracting and by photovoltaic energy production in the building itself.
Key enablers	● Economic: 30% cheaper than new developments in the district (total construction cost: 708 euros/m2; final sale price: 2,295 euros/m2). It generates a model of use whose cost does not exceed 10euros /m2 for each housing unit. ● Social: social acceptance and growing demand; 13 participatory workshops with future tenants to make certain collective decisions, specifically design with technicians and managers; innovation in the Right of Use regime (i.e., an intermediate ownership model between renting and buying that advocates the management of the commons.

	The inhabitants of the cohousing do not own their home, but have a Right of Use over it and over the common areas of the building throughout their lives). ● Technical: enough technical capacities in bioclimatic design and green building among the SME partners networks. ● Legal: there are no external promoters, the group itself is set up as a cooperative that will be maintained throughout the life of the cohousing; Open source prototyping and innovation project.
Key inhibiting factors	● Political: Among the measures that would guarantee greater accessibility to the model, the main one is the transfer of land by public administrations (as in the case of Barcelona City Council with the La Borda cooperative), which means that the purchase of the land does not make the project more expensive and the initial payment is reduced; No institutional financial support (subsidies, bonuses) has been obtained, except for the photovoltaic system, which has been subsidised at 50% for the first 3 years. ● Legal: there is a need to modify a local water regulation (Ordinance on the Management and Efficient Use of Water) in the City of Madrid, which only allows the use of grey water for irrigation, but not for toilets (a change to this ordinance is planned); A reduction in property tax (IBI) for green buildings could make the model cheaper. This is a municipal tax. ● Economic: niche market growing, but still has a niche scale; the transport of the FSC wood used, which came from Switzerland (400 m3), emits pollutants on its long journey. ● Technical: no wood local market
Drawbacks/pros/cons of the solutions	● Growing social demand generates a space for community coexistence with a social action perspective, both internally (among the members of the community itself) and externally (from the community towards the neighbourhood and the nearby urban and social context). ● Pollution caused by the transport of imported timber by road from outside the country could be minimised by promoting the local timber industry in Spain in the face of a future increase in demand.
Scalability	The "Entrepatios – Las Carolinas" ecological cohousing is a social innovation reference case for climate neutrality. The ecologic cohousing model of Las Carolinas is being applied in a new cohousing nearby, in PIRITA. Negotiations are underway to build a third and fourth building nearby. And the promoters (Entrepatios) are working on the design of a future energy community in a rural area near Madrid, in the valley of the Tiétar river. This demonstration shows how climate innovation at a niche scale could generate a bigger impact in the growth of the green building market.
Key lessons	Main positive lessons/opportunities identified: ● It is the first ecological cohousing built in Madrid, nearly zero energy building, CO2 zero and made of wood. ● This is also the first cohousing management under the Right of Use regime in the Community of Madrid (i.e., an intermediate ownership

	model between renting and buying that advocates the management of the commons. The inhabitants of the cohousing do not own their home, but have a right of use over it and over the common areas of the building throughout their lives). ● Growing Social demand Main failures/barriers identified: ● There is a need to modify a local water regulation (Ordinance on the Management and Efficient Use of Water) in the City of Madrid, which only allows the use of grey water for irrigation, but not for toilets. ● Small local timber industry in Spain, there is a need for imported timber and transport to Madrid by road.
Indicators	● Number of people/families involved in the first cohousing "Las Carolinas": 58 people (17 families) co-living in Entrepatios-Las Carolinas ● Objective in the long-term: 2/3 cohousing buildings per year
Visuals	 *Source: https://www.entrepatios.org/proceso-participativo/* *Source: https://satt.es/portfolio_page/cohousing-entrepatios/*
External link	https://www.entrepatios.org/

18.   EVA Maakt Het Plantaardig

Case identification	
Author(s) of the case study	Tess Tjokrodikromo (TNO)

Brief description	EVA is a bottom-up initiative that promotes plant-based diets through cooking workshops & awareness. EVA believes that, on average, plant-based products have the greatest overall positive impact on the well-being of people, animals and the planet. Working on a larger scale with restaurants, hospitals and schools through guidance at institutional kitchens will have a large-scale impact.
Keywords	plant-based; food; cooking; climate; social work

Overview and description criteria

City/Country	Belgium
World Region	Central Europe
Scale(s) of the case analysed	Regional
Target audience and dimension	1.000.000 - 10.000.000
Time period	Ongoing initiative, from 1 september 2000
Solution applied	-
Challenge addressed/ Problem-led approach	Stakeholder/ Community engagement and capacity building
Engagement Journey	-
Methodologies	-

Case contribution

Impact to climate neutrality	There is no direct relation to the climate neutral cities mission. However, a plant-based diet is beneficial to reaching climate neutrality and EVA is promoting behavioural changes towards this diet through their activities. According to the FAO, livestock farming is one of the main causes of every major environmental problem: climate change, deforestation, loss of biodiversity, and water pollution. The conversion of plant proteins into animal proteins is generally inefficient and requires a lot of land, water and energy.
Public policy of reference	In their policy plan 2021 – 2025 it says: The role that policy can play in the greening of our food system is huge. At local, Flemish, federal and European levels, we want to stimulate and inspire governments to develop a sustainable, healthy and animal-friendly food strategy. Together with BBL and GAIA, we want to make sure, among other things, that livestock numbers are reduced, that money is invested in the transition to plant protein sources, that the government sensitises the consumers about the importance of more plant-based food, and that the government itself sets a good example. At European and international levels, we want to cooperate more closely with ProVeg on climate policy and the transition of European agricultural policy.
Innovative approach(es) addressed	Although one in two Flemings say they would like to eat less meat in the future there are a lot of thresholds and obstacles between wanting and doing. EVA sees it as their role to lower these thresholds in innovative ways. They

	do this through nudging, through new and unprecedented collaborations with companies and other intermediaries such as civil society, the media, governments and the hospitality industry, and through the innovative self-managing way in which they shape their community and approach their volunteers. Thursday Veggieday is a national and international example of how eating habits can be changed through small positive nudges. Nudging is embedded in their strategy; they consider themselves trendsetters in this field.
Initiator	EVA was founded in 2000 as a citizen initiative. Until the end of 2004, the organisation worked entirely with volunteers.
Stakeholder networks and organisational model	EVA currently has 13 employees working in their office on a daily basis. These employees are supported by more than 300 volunteers, several partners and a board. Employees (13) Volunteers (300) Board (5)
Resources	The main skills that are necessary for this initiative are related to communication and funding. The employees are mainly active in campaigning and lobbying their ideas to local stakeholders, politicians, restaurants and schools. To achieve a bigger outreach more funding would be beneficial.
Key enablers	- The agricultural, food and climate crisis is forcing us to look for new solutions. - There is a strong and swiftly growing interest among consumers. - The supply of plant-based products is rising rapidly and a lot is being invested in plant-based nutrition at the moment. - There is a growing awareness and commitment among local governments to support organisations like EVA in their mission.
Key inhibiting factors	- The fact that more and more organisations are taking up the theme means that there is more competition and more fragmentation of resources. - There are not enough resources and people to follow up on all the opportunities and collaborations in a professional manner, inhibiting the growth of the organisation.
Drawbacks/pros/cons of the solutions	With a vegetarian diet becoming more mainstream in the last few years, the opposition is also growing. While it is a good thing that the number of flexitarians, vegetarians and vegans is growing and EVA possibly receiving more attention they also encounter strong resistance from sectors that depend on animal products for their income.
Scalability	The initiative is scalable in the sense that it can become a bigger organisation with more employees, more volunteers, more partners and have a bigger outreach. Furthermore, it is also possible to ''replicate'' and start the same initiative in other cities and countries. However, the issue now is that EVA is not that well-known and they have difficulty in obtaining members and funding (donations) to grow.
Key lessons	Main positive lessons/opportunities identified - Support by the city of Gent that endorsed the launch of an official veggie day (Thursday Veggieday) - The EVA team is stable and therefore has a lot of experience and expertise. - Due to EVA's positive reputation, they are seen as a reliable, accessible organisation, which makes collaborations run smoothly.

	Main failures/barriers identified ● EVA is not seen as a traditional charity organisation and is therefore struggling with recruiting members and receiving sufficient donations. ● EVA is still too much regarded as something just for the city of Gent ● EVA as an organisation is still not well-known to the average Fleming; EVA's actions or campaigns are not always associated with EVA
Indicators	-
Visuals	-
External link	https://www.evavzw.be/sites/default/files/page/attachments/Beleidsplan%20EVA%20vzw%202021%20tot%202025.pdf

19.   Green Squares

Case identification	
Author(s) of the case study	DemSoc
Brief description	The Green Squares project aims to support the local communities in climate action by piloting a model for joint engagement of residents, students, local artists and civil society in a collaborative process of co-designing solutions for neglected urban pockets in line with particular needs of local communities. The goal of the project is for communities to collaboratively design micro public spaces to improve air quality in Niš.
Keywords	● Collaborative co-design ● Air quality ● Community-building ● Oasis Game
Overview and description criteria	
City/Country	Niš, Serbia
World Region	East Europe
Scale(s) of the case analysed	City

Target audience and dimension	Urban planners (oversee the implementation), building maintenance workers (ensure proper maintenance of the solutions), Faculty of Arts, Civil Engineering and Architecture (engage local students), Civil Society and community leaders (focus on inclusivity and diversity), local artists (develop together with other a sustainable, aesthetically pleasing solution), residents (collaborate on the design and maintenance) 100.000 - 1.000.000
Time period	Ongoing initiative
Solution applied	-
Challenge addressed/ Problem-led approach	● Urban Governance, Policy Development ● Stakeholder/ Community engagement and capacity building ● Financing and Funding ● Peer to peer learning, and replication, upscaling ● Built Environment
Engagement Journey	Action, learning and embedding
Methodologies	Pilot and test a model for engagement of residents, students, artists and civil society through a collaborative process of co-designing solutions and reclaiming these urban pockets in line with particular needs of local communities. The Oasis Game method for community engagement was suggested, a participative method for community development used by community members and change-makers working in local communities taking on the challenge of social cohesion, urban planning and welfare. The aim of this method is not focusing only on material end result, but also on fostering connections that emerge in local neighborhoods, thereby contributing to community building and citizens' empowerment, and to re-establishing a sense of connection with society.
Case contribution	
Impact to climate neutrality	The goal of the project is for communities to collaboratively design micro public spaces to improve air quality in Niš. To achieve this goal, the project has some main objectives, one being: to use innovative methods to support climate action.
Public policy of reference	A scalable model for engagement of residents and local stakeholders is developed, tested and adapted for further use in the city of Nis, supported with the establishment of the Urban Lab. Building upon the insights and previous experience, including the ongoing Thriving Communities Initiative, funded by EIT Climate-KIC Future Cities of South East Europe project, the consortium developed the Green Squares project proposal in order to contribute its efforts to boost the engagement of local communities in climate action in Nis through highly localized actions, by focusing on piloting collaborative community design process of micro public spaces.
Innovative approach(es) addressed	-
Initiator	City of Nis

Stakeholder networks and organisational model	- Urban planners (city staffers) - Accountable - Building maintenance workers (city staffers) - Consulted - Faculty of Arts + Civil Engineering + Architecture - Consulted - Civil society and community leaders - Consulted - Local artists - Consulted - Residents - Consulted
Resources	-
Key enablers	-
Key inhibiting factors	- Political: mistrust between residents and local stakeholders - Technical: limited level of interest shown by residents in participating in the design of public spaces
Drawbacks/pros/cons of the solutions	-
Scalability	-
Key lessons	-
Indicators	Environmental and social indicators: installing climate adaptation measures, reducing urban heat-island effect, and promoting the values of open, transparent and participatory public administration.
Visuals	-
External link	-

20. Just Transition Listening Platform

Case identification	
Author(s) of the case study	Sara Romero (UPM), Teresa Sánchez-Chaparro (UPM), Cecilia López-Pablos (UPM), Gorka Espiau (ALC), Mónica Oviedo (Iberdrola)
Brief description	The Lada and Velilla Social Innovation Platform aims to promote the collaboration between companies, public entities and the population living and working in the region in order to unlock the just transition of the region after the closing down of a thermal coal plant.
Keywords	just transition; listening; co-creation; coal-fired power plants; economic recovery
Overview and description criteria	
City/Country	Madrid, Spain
World Region	Southern Europe

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Scale(s) of the case analysed	Regional
Target audience and dimension	10.000 - 100.000 (30.000 inhabitants)
Time period	Ongoing initiative, from September 2020 to now
Solution applied	-
Challenge addressed/ Problem-led approach	● Urban Governance, Policy Development ● Stakeholder/Community engagement and capacity building ● Partnerships, multi-agents alliances ● Green Industry ● Circular Economy ● Skills & Capabilities ● Policy & Regulation
Engagement Journey	● Declare commitment ● Define problem/s ● Select portfolio ● Action, learning and embedding
Methodologies	● Listening method based on ethnographic approach (deep interviews, ethnographic profiles) ● Sense-making (collective interpretation) ● Multi-agent co-design sessions
Case contribution	
Impact to climate neutrality	The Lada and Velilla innovation platform was set up in response to the closing of coal thermal plants to facilitate the just transition of the region. Its goal is to bring together key stakeholders (most importantly the affected communities, the energy company and local and regional government agencies) to co-design a portfolio of initiatives that enable the region to move away from a coal-centric socio-economic model towards decarbonization and long-term resilience, in line with the aspirations and perceptions of the people who live and work there.
Public policy of reference	European framework "Just Transition Mechanism" is a key tool to ensure that the transition towards a climate-neutral economy happens in a fair way, leaving no one behind. The initiative contributes directly to Spanish regulation on climate change as: The Climate Change Law at Spain, National Integrated Energy and Climate Plan 2021-2030 (PNIEC), and the Just Transition Strategy at Spain. Particularly, the Just Transition Strategy encourages the transition to a greener economic model to be socially beneficial and to be the engine for new quality jobs, in a country (Spain) with high unemployment rates. This Open Innovation Platform emerged under the framework of the agreements signed between the Ministry for Ecological Transition, Ministry of Labour and Social Economy, the companies owning coal-fired power plants in Spain (including Iberdrola, Endesa, Naturgy and EDP) and the trade union organisations (UGT, FICA and CCOO Industria).
Innovative approach(es) addressed	● Mapping actors and initiatives (in 5 different levels) in the territory. ● Performing a Deep Listening Processes, including interviews and collective sensemaking sessions

	● Co-creating process including co-design and user-focused open innovation to unleash, connect and identified initiatives ● Co-creating a portfolio of interconnected initiatives that respond to the diversity of visions, actors and commitments, including small scale innovative business model initiatives and large-scale public-private initiatives, new public services or new regulation
Initiator	The multi-agent platform is promoted by Iberdrola, (a global energy company, the number-one producer of wind power, and one of the world's biggest electricity utilities by market capitalisation), the Innovation and Technology for Human Development Centre of the Technical University of Madrid, and the Agirre Lehendakaria Center for Social and Political Studies of the Basque Country University.
Stakeholder networks and organisational model	● Employees of the coal-fired power plants (between 96 - 140) - Different positions ● Inhabitants of the regions - Inhabitants Lada y Velilla towns (30.000) ● Multi-agent platform form by public-private entities - Promoter ● Iberdrola, a global energy company, the number-one producer of wind power, and one of the world's biggest electricity utilities by market capitalisation - Initiator ● Center for Innovation and Technology for Human Development of the Technical University of Madrid - Experts on facilitation of multi-agent platforms. Public University ● Agirre Lehendakaria Center for Social and Political Studies of the Basque Country University - Experts on listening processes and mediation ● Public sector in the region ● SME, cooperatives, and entrepreneurs - Participants
Resources	● Financial: Investment from Iberdrola to cover the costs of the process ● Human Labour: A dedicated team of 12 people ● Material: Interview and workshop materials ● Software and other tech: Spreadsheet and database software, graphic design
Key enablers	● Economic: need to revitalise the economy. ● Social: The listening methodology applied allows for a deep and diverse knowledge of the agents, including those who do not usually participate in the participatory, and allows the mapping of the community in a highly segmented way — for instance by gathering opposing ideas and collectively making sense of their associated values and beliefs. ● Technical: Enough expert facilitation capabilities to facilitate a dialogue among a wide range of agents: current employees, public institutions, private agents with interest in new business models, etc. ● Organizational: Agree on a concrete objective (economic reconversion in the areas of action and, yes, with a clear time horizon, few actors at the beginning but highly committed, and offer a free accompaniment service by the multi-agent platform.
Key inhibiting factors	● Political: Few policy and public stakeholders involved. ● Legal: Lack of regional regulation to promote a just transition and green economy pathway from the local perspective.

	● Economic: The Open Platform supports an ecosystem of innovation and prototyping that needs strategic connecting and facilitation work, and from funders perspective, remains to be resolved how to secure funding for the facilitation agents, that have been tasked with generating conversations and strengthening relationships between agents in the territory within the multi-agent Platform. ● Organizational: It is important to clarify from the outset that this type of multi-actor platform does not replace the role and functions of each of these actors separately. The combination of different capabilities offers additional problem understanding and services that do not complement the activity of public and private institutions.
Drawbacks/pros/cons of the solutions	● The community listening processes enable a profound understanding of the diverse stakeholders, including those that do not usually participate in participatory processes. This enriches the collective sense making and co-design processes, which were able to include informal workers, migrants, children, women, and seniors, among others. ● The process was able to integrate people of diverse political and ideological positions, enabling broad participation in the shared narrative creation ● Historical conflicts, in addition to perceptions and aspirations, were surfaced as part of the process making it possible for some of these issues to begin to be resolved in a transition towards greater social cohesion
Scalability	Preliminary analyses are being carried out on the potential for scaling up or transfer, through the identification of lessons learned and proven procedures that have worked under the framework of the initiative of the Open Innovation Platform. The following critical elements can be anticipated for replication of the Open Innovation Platform practices elsewhere: ● Train the listening team, making a combination of expert capacities in social and ethnographic research, and local capacities that know the territory in depth. ● Involve key actors in the co-creation process, both those audiences that are not usually listened to, and those linked to the decision making that will be required to advance the process of change pursued. ● Share learning from the process with peers who are implementing similar strategies in other contexts, so that the exchange of learning and failures is as immediate as possible.
Key lessons	Main positive lessons/opportunities identified: ● The open approach reinforces the multi-agent collaboration among different agents involved in the transition of the regions. ● The listening methodology applied allows for a deep and diverse knowledge of the agents, including those who do not usually participate in the participatory processes promoted by the administration. Main failures/barriers identified: ● Slow involvement of some strategic local agents

Indicators	Specific indicators are co-defined as part of the process following a developmental evaluation approach. The complete list of indicators has not yet been defined.
Visuals	
External link	https://plataformainnovacion.com/

21.   KLIK

Case identification	
Author(s) of the case study	Tena Maruševac (REGEA), Tomislav Novosel (REGEA), Josipa Arapović (REGEA)
Brief description	Energy cooperative KLIK (Križevci Climate Innovation Laboratory), was founded in 2020 to help make Križevci a self-sufficient city, but above all to engage citizens in the energy transition. KLIK works on identifying the needs of the local community, implementing technology in the social environment, and empowering the local community through cooperation, joint creation and capacity building. KLIK encourages local people to invest in renewable energy sources, both in public projects and in their households, they help citizens in the development and application of renewable energy projects, and are a place for all issues related to energy, climate, quality of life striving to be a driver of change in their local community. Its goal is to democratize the energy system by empowering citizens to produce and consume their own energy and to put citizens at the very center of the energy transition: they should have control over the production, distribution, and supply of energy. Also, they are discovering opportunities for the citizens to invest their savings in local energy facilities that both generate income and produce clean energy, instead of keeping money in the bank. In this manner, KLIK delivered a first project that allows the citizens to invest in the solar roofs called "Križevački sunčani krovovi" (eng. Solar roofs of Križevci). Citizens

	were given the opportunity to finance the installation of a 30,667 € power plant on the roof of the Križevci Development Center and Technology Park through a loan for a period of 10 years, during which the investment is returned with an interest rate of 4.5 percent. The lowest bet was 133 € and the highest was 1,333 €. After the announcement of the campaign, the necessary amount was collected in just 10 days, and the response of the citizens was truly extraordinary. The power of the installed power plant is 30 kW, and the estimated saving in electricity bill payment is 4,800 € per year.
Keywords	self-sufficient city; citizen engagement; technology implementation; joint creation; capacity building

Overview and description criteria

City/Country	Križevci, Croatia
World Region	East Europe
Scale(s) of the case analysed	City
Target audience and dimension	Less than 1000
Time period	Ongoing initiative (from 2020 to now)
Solution applied	-
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Partnerships, multi-agents alliances ● Peer to peer learning, and replication, upscaling ● Energy systems ● Built Environment ● Nature Based Solutions
Engagement Journey	● Action, learning and embedding
Methodologies	Citizens of the City of Križevci expressed their need for support in the energy and climate projects. Based on their need KLIK cooperative was established and is strongly supported by the City of Križevci and Green Energy Cooperative. KLIK is a place where all energy related questions that the citizens may have will be answered,. It offers support to the citizens in applying for funds. It also supports the City of Križevci in writing and submitting projects, mapping and designing solar power plants, and resolving all issues regarding energy, quality of life, transparency, and citizen involvement.

Case contribution

Impact to climate neutrality	KLIK's goal is to help make Križevci a self-sufficient city, but above all to engage citizens in the energy transition. With that, it has a direct relation to Collaboration Action Ability and Climate narrative and communication. Besides the "Križevački sunčani krovovi" project which helped citizens to invest in solar power plants in 30 kW solar power plants in 2018. and 2019., during the first half of 2022, KLIK helped in the preparation of 37 solar panel projects for households and 6 for companies. Moreover, Klik opened a Center for combating energy poverty and invited citizens to contact them, not

	only to prepare investment projects but also if they need a recommendation on small energy efficiency measures that could help them to achieve savings.
Public policy of reference	With its goal to help Križevci to become an energy self-sufficient city, KLIK brings Križevci closer to achieving the desired energy and climate neutrality envisaged by the European Green Deal.
Innovative approach(es) addressed	KLIK is a prime example of citizens coming together for the same cause, strongly oriented towards energy efficient and climate resilient development of the city. By establishing KLIK cooperative, citizens of Križevci created a place where they can go when they need help with their energy projects, but also an entity that will work on the projects oriented towards creating a self-sufficient city.
Initiator	Citizens of Križevci
Stakeholder networks and organisational model	● City of Križevci - Support to the KLIK cooperative in its work ● Energy and Development Agencies - Cooperation with Energy and Development Agencies in the project development ● Academia - Cooperation with Academia in the project development ● SMEs - Cooperation with SMEs in the project development ● NGOs - Cooperation with other NGOs in the project development ● Citizens - All the work of KLIK is oriented around the needs of the citizens
Resources	● Human: engagement capabilities, expert knowledge, ideas cooperation ● Financial: crowdfunding ● Material (Technology): solar panels
Key enablers	● Political: political commitment of the highest level of the city of Križevci ● Social: Initiative started from the citizens
Key inhibiting factors	● Political: Uncertainty of project development because of lack of support from governmental and international level ● Economic: Difficulties regarding financial security and needed employment to keep the cooperative growing ● Legal: National laws are not in favour of cooperative model
Drawbacks/pros/cons of the solutions	KLIK encourages local people to invest in renewable energy sources, both in public projects and in their households, they help citizens in the development and application of renewable energy projects, are a place for all issues related to energy, climate, quality of life and strive to be a driver of change in their local community. To do so, KLIK leads several projects which have the goal to involve citizens. One of the projects is the festival "Klikni na održivo" (eng. Click on sustainable), which is an annual sustainability festival in Križevci where citizens have the opportunity to participate in various workshops and lectures, learn about sustainable lifestyles, meet sustainable products, associations and projects.
Scalability	A cooperative such as KLIK can be established in every city with the active involvement of the citizens to encourage the empowerment of the local community through cooperation, joint creation, capacity building, and the implementation of technology in the social environment. These types of cooperatives develop proactive, synergetic climate responses in an integrated manner that at the same time offer immediate involvement and are politically acceptable.
Key lessons	Main positive lessons/opportunities identified:

	● Easier engagement of other citizens (citizens working with citizens, more trust) ● A better understanding of problems in the local community ● Involvement in the city's energy transition by combining needed expertise and 'on- ground' experience Main failures/barriers identified: ● Difficulties regarding financial security and needed employment to keep the cooperative growing ● National laws are not in favour of cooperative model ● Uncertainty of project development because of lack of support from governmental and international level
Indicators	● Completed projects: 1 ● Ongoing projects: 6
Visuals	
External link	https://klikninaodrzivo.com/

22.   Local Energy Communities

Case identification	
Author(s) of the case study	Sara Romero (UPM), Teresa Sánchez-Chaparro (UPM), Carlos Sanchez (Climate and Energy municipal Foundation)
Brief description	The Valencia City Council is promoting Local Energy Communities providing legal advisory and mediation skills to promote agreements among neighbours around Local Energy Communities, under the legal form of Association. The public involvement is guaranteeing inclusive access and sustainability in the initial phase.
Keywords	local energy communities; energy policy; energy co-production; prosumer; EU Missions

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Overview and description criteria	
City/Country	Valencia, Spain
World Region	Southern Europe
Scale(s) of the case analysed	Neighborhood
Target audience and dimension	Less than 1000
Time period	Ongoing initiative (from 2019 to now)
Solution applied	-
Challenge addressed/ Problem-led approach	- Urban Governance, Policy Development - Stakeholder/Community engagement and capacity building - Partnerships, multi-agents alliances - Energy systems - Policy & Regulation
Engagement Journey	-
Methodologies	-
Case contribution	
Impact to climate neutrality	The City of Valencia is directly related to UE climate neutral objectives. The City signed in September 2019 a climate pre-contract with 8 other Spanish cities and the Spanish Ministry of Ecological Transition. Besides the City has been selected in the UE Mission Climate Neutral Cities cohort by 2030. Valencia is an active member of CitiES2030, Spanish Nacional Platform of cities through climate neutrality. In 2019, the City launched Missions València 2030, as a replication of UE Missions at city scale. Local energy communities in Valencia are been promoted since 2019 by public sector as an example of commitment with the whole city climate neutrality objective in 2030. Valencia City Council, through the Climate and Energy municipal Foundation and the network of Energy Offices in city districts, provides legal advisory and mediation skills to promote agreements among neighbour communities around Local Energy Communities (under the legal form of Association). This is provoking a chain effect among more and more neighbour communities asking for city services and accompaniment in the whole city.
Public policy of reference	- Missions València 2030 commitment made by the city in 2019, follows the Missions of European Union's Horizon Europe (2021-2027) program, to contribute to the Sustainable Development Goals and to improve the quality of life for its citizens. - Urban Strategy València 2030, to benefit from cross-disciplinary and cross-sectoral municipal coordination.

	● Climate and Energy municipal Foundation is directly commitment with the Global Covenant of Mayors emissions reduction objectives signing the Sustainable Energy and Climate Action Plan (SECAP)
Innovative approach(es) addressed	In 2020, the European Commission acknowledged València as one of the most innovative cities in Europe. Contributing to the mission selection process, and in parallel, Missions València 2030 also includes a process of organisational innovation with the aim of refocusing efforts, building capacities, and making the city of València and its City Council a true testing ground for mission-oriented innovation. Local Energy Communities promoted by the City Council guarantee the energy access to the most vulnerable people acting as a participant in the Energy Community (legal figure of Association) in its initial phase, and paying a fee like all the other neighbours, with the condition of supporting the cost of those who cannot assume the initial cost. It is done in coordination with Social Services of the City and assuming a fee payment in Energy Communities located in vulnerable areas. City Council is providing legal advisory and mediation skills to promote agreements among neighbours around Local Energy Communities. They have developed a template to create the legal organisation (Association legal figure) and facilitates workshops in the districts, face to face, to create the Energy Community. City Council is promoting pilots on public and, also on private building to test different models of production of energy in the city.
Initiator	Valencia City Council through the Climate and Energy Municipal Foundation.
Stakeholder networks and organisational model	● Neighbors communities and association (less than 1000 until now) - Prosumers, members of the Local Energy Community Association ● Consultancy services - Facilitation of workshops with neighbors ● Climate and Energy municipal Foundation (Team of the Foundation) - Management and finance of services (legal advisory and facilitation or workshops) ● Energy Municipal Offices network (Team in the Offices) - Legal advisory ● Valencia City Council - Initiator ● Distribuitoras and Market agents - Negotiation of the value chain (at medium term)
Resources	● Human: facilitation capabilities, expert knowledge in energy systems and legal advise ● Financial: public funds at the moment, with private-public forecast of mixed funds in the near future (private-public business) ● Material (Technology): solar panels and energy system
Key enablers	● Political: Political commitment at the highest level in the city (Mayor involved) to the UE Missions. / Support from Deputies and other units in the City Council. ● Economic: enough public money to promote pilots, at the moment ● Social: first neighbor pilot communities working and City Council is acting as a participant in the Energy Community in its initial phase paying a fee like all the other neighbours in the most vulnerable districts, with the condition of supporting the cost of those who

	cannot assume the initial cost. City Council. It is done in coordination with Social Services of the City ● Technical: enough technical capacities inside city council ● Legal: main service offers from the City to neighbor to create the Energy Community
Key inhibiting factors	● Legal: transposition of European directives to the Spanish regulation not completed yet. ● Economic: Market readiness and conditions from energy distribution companies to be checked (e.g. to reconfigure the load capacity of the energy system to take on local discharges from local energy communities). ● Social: rejection by some neighbourhood communities to use the roofs of their residential buildings for the photovoltaic installation. / The old Spanish restrictive legislation for self-consumption of energy (commonly called "impuesto al sol") remains in the collective imagination and many people do not know that it is now allowed (and even encouraged) by the new EU regulation ● Technical: Future rejection from energy distribution companies in the energy value chain to attend local energy communities demands and to reconfigure the load capacity of the energy system to take on local discharges and its conditions.
Drawbacks/pros/cons of the solutions	● Pilots in public buildings are going better than the private ones because of the pandemic and difficulties to talk with neighbors face-to-face. ● Energy Offices from City Council offering accompaniment, training workshops and legal advisory services at district level.
Scalability	The Valencia City Council is preparing itself from an organizational change for the next scalability phase designing a new legal and finance entity to manage Local Energy Communities: a private-public company. Energy Municipal Offices network at district scale continues to be the reticular adequate municipal structure to attend social demands in the field.
Key lessons	Main positive lessons/opportunities identified: ● Energy Municipal Offices network at district scale ● Private and public pilots running in parallel under the legal form of Association ● Mayor's commitment ● Current legislation allows to make photovoltaics (PV) installations (which can later on help to form an energy community) in a multiapartment building with only 1/3 quorum from the neighbours Main failures/barriers identified: ● New EU regulation has not been adapted to the Spanish regulation completely yet. It provides freedom to energy communities to be constituted in the legal form that they want, but also it lacks on assistance (what they need, which steps they need to perform, etc.) and provokes people to be more reluctant to do so by themselves ● The old Spanish restrictive legislation for self-consumption of energy (commonly called "tax sun") remains in the collective imagination and

	many people do not know that it is now allowed by the Royal Decree 244. ● Rejection by some neighborhood communities to use the roofs of their residential buildings for the photovoltaic installation. ● Certain public buildings are not under the jurisdiction of Valencia with limits energy communities' expansion. ● Municipalities in Spain, as Valencia, cannot offer their public roofs so easily to neighbours because when 40k€ are exceeded you need a tendering procedure.
Indicators	● Number of participating families (until now): 70 (+ 40-50 families waiting) ● "El Castellar" Community producing 40 Kw. Objective: 10MWp in 2026 ● Objective at City Scale in 2026: 100 Local Energy Communities running (with EU Next Generation Finance support)
Visuals	
External link	http://climaienergia.com/es/ https://www.valencia.es/es/-/evaluaci%C3%B3n-oficina-de-la-energ%C3%ADa

	https://valenciaplaza.com/la-comunidad-energetica-castellar-oliveral-ultima-su-puesta-en-marcha-instalando-la-planta-fotovoltaica

23.   Nappi Naapuri (Nifty Neighbor)

Case identification	
Author(s) of the case study	Maija Federley (VTT)
Brief description	The purpose of Nappi Naapur is to increase real encounters between people who live close to each other. It is intended for neighborly help, getting to know each other, gig work and promoting the sharing economy. Everyone is welcome to become a user! However, children under the age of 13 need to be accompanied by a guardian who monitors that the use is safe. In Nifty Neighbor you can meet people near you - people you would not otherwise know. You can ask help for taking your dog out, find friends for your children, borrow tools, offer fishing company, help your neighbor, and find someone to appreciate receiving the leftover of their family dinner. Nifty Neighbor is a map and location based social web service. Social media, but on the map, based on location. In Nifty everyone has their own location, home, on the map. It is close to other homes, and everyone can send messages on the map, and answer to other people's messages. People can meet each other, with their needs and resources. Communication is positive. People ask and get help, they employ each other, get to meet each other, and create projects together. Neighborhoods become generally nicer places.
Keywords	neighbor; social; map; wellbeing; sharing economy
Overview and description criteria	
City/Country	Finland (most actively in the capital area)
World Region	Northern Europe
Scale(s) of the case analysed	● Neighborhood ● National
Target audience and dimension	Anyone interested to contribute to communal feeling and in getting to know people close to home, or e.g. offering or searching for utensils to borrow. In addition to individuals, organisations can also join, but they are charged for use of the service. (2500 users in 2019; 6000 registered users in 2017)
Time period	Ongoing initiative (continuous service from 2015)
Solution applied	Social media application built on Google Maps.
Challenge addressed/	● Stakeholder/ Community engagement and capacity building ● Circular Economy

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Problem-led approach	
Engagement Journey	Action, learning and embedding
Methodologies	This works on one's own initiative. It is up to the person if he/she wants to connect with the people in their neighbourhood.

Case contribution

Impact to climate neutrality	Nifty Neighbor does not have a direct organized relation to climate neutrality. The users are free to use the service as they see most useful and interesting. However, sharing economy (e.g. lending utensils to neighbours), avoiding food waste and ride sharing are among the topics seen in the service. Nifty Neighbor could contribute to behaviour change, climate communication and new forms of collaboration and ways to organize activities. This is because it is a way of meet new people and also find out what types of activities they have going on. This could lead to a conversation about energy saving equipment at home or car-pooling.
Public policy of reference	No relation to public policies.
Innovative approach(es) addressed	Studies and initiatives have been conducted to pilot and assess the potential of the service in various contexts, such as support for those caring for close relatives and organizing voluntary work. Feedback and ideas are continuously gathered to further develop the service. During the Covid-19 crisis, a new category was created to promote neighbourly help, especially for those in vulnerable position.
Initiator	A non-profit association Yhteismaa, specialized in urban culture and communality, has ideated the service, initiated the crowdfunding campaign, implemented the service and applied financial support for continuity. The same association has initiated other urban events (Cleaning Day and Dinner Under the Sky).
Stakeholder networks and organisational model	● Yhteismaa ry - Initiator; Developer of the service (technical & moderator) (3) ● Citizens, neighbours - All content in the service and ways to use the service comes from the users, i.e. citizens (2500 in 2019) ● Companies - Companies may promote local events and services on the platform for a fee ● Financing organisations - Financing further development of the service and potentially some operational costs (About 700 people and organizations participated in financing the completion of the first version of Napi.)
Resources	● Map-based social media platform ● Crowdfunding 20.000 € to implement the service; additional awards, project funding and sponsoring from some organisations ● Non-profit organisation committed to promote participatory society and use of digital tools to create better lives for all ● Citizens using the service and creating both content and purpose for the service

NET ZERΦ CITIES

Key enablers	● Economic: Initial financing from crowdfunding, awards and project funding, non-profit running the service ● Social: Mission of the non-profit to promote participatory society; Interest of citizens for communal activities and sharing economy ● Technical: Digital capabilities of the initiator; Location-based service; Easy UI
Key inhibiting factors	● Economic: Continuous funding may be required for maintenance and further development of the service, but also for boosting communality and thus use of the service ● Social: Lack of interest from citizens, competing solutions (other social media groups) ● Technical: A separate solution from other daily social media use
Drawbacks/pros/cons of the solutions	● Cons: During the first months after the launch of the service, there were technical problems for users in signing in. ● Pros: During the COVID-19 crisis a special Corona Help category was established, and thousands of people joined the platform and offered their help to those neighbours in vulnerable positions.
Scalability	Basically the service can already be used anywhere by anyone. However, a critical mass of users living in the same area/neighbourhood is necessary to create active communication and sufficient scale so that offers and requests on the platform would reach interested users.
Key lessons	Main positive lessons/opportunities identified: ● Successful crowdfunding for implementation ● Easy to use and low threshold to join, open to all ● Builds completely on voluntariness and spontaneity, flexible, non-binding ● Thousands of people joined the platform and offered their help to those neighbors in vulnerable positions in a special Corona Help category that was established in 2020 Main failures/barriers identified: ● Having too few users in a neighborhood hampers the potential benefits of the service. Difficult to reach sufficient number of active users. May be necessary to engage an existing community or to launch a pilot to gain active use, also to 'recruit' someone to organise occasional events and campaigns. ● Reliability and privacy may be of concern (e.g. how to ensure it's safe for an elderly to meet a person offering to help)
Indicators	-

Visuals	
External link	https://mesenaatti.me/en/nappi-naapuri-valittamisen-paikka/ https://www.nappinaapuri.fi/users/sign_in?locale=en https://www.theseus.fi/bitstream/handle/10024/126676/Montonen_Laura.pdf (2017) https://docplayer.fi/14126368-Nappi-juttu-anneli-rissanen-nappi-naapuri-palvelun-mahdollisuudet-vapaaehtoistoiminnassa-metropolia-ammattikorkeakoulu-geronomi.html (2015)

24.   Paris 15-min City

Case identification	
Author(s) of the case study	Tess Tjokrodikromo (TNO)
Brief description	15-Minute City is an urban plan established by the city of Paris whose goal is to make most daily necessities accomplishable by either walking or cycling from residents' homes in a maximum of 15 minutes.
Keywords	urban development; urban mobility; walking; cycling
Overview and description criteria	
City/Country	Paris, France
World Region	West Europe
Scale(s) of the case analysed	City
Target audience and dimension	1.000.000 - 10.000.000
Time period	Ongoing initiative (from 2020 to 2026)

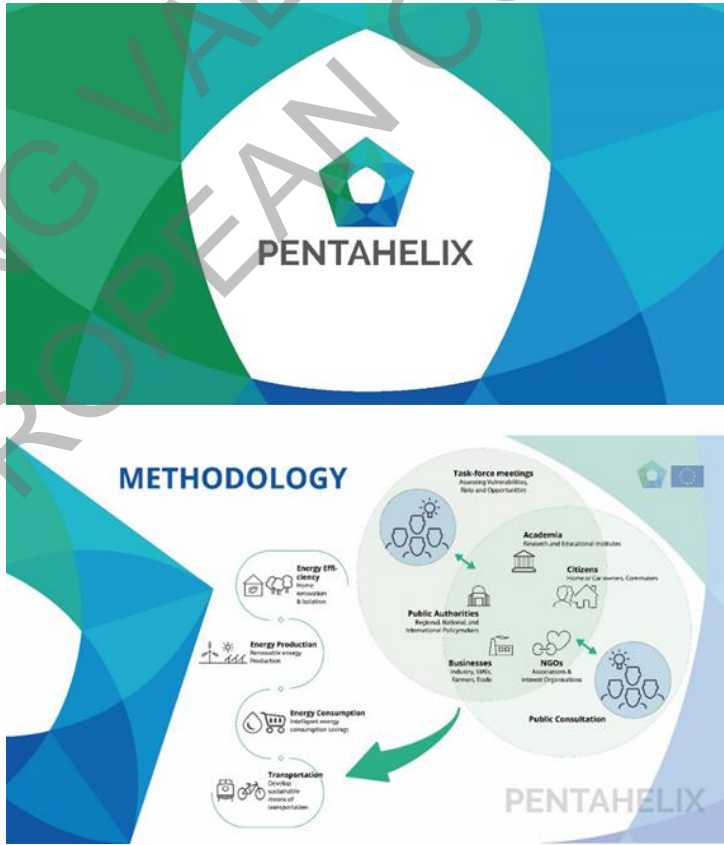| Solution applied	-
Challenge addressed/ Problem-led approach	● Urban Governance, Policy Development ● Mobility and Transport
Engagement Journey	-
Methodologies	-
Case contribution	
Impact to climate neutrality	The goal of 15-Minute City is a more environmentally friendly and socially inclusive urban (sub)development, which should make urban life more qualitative, agile, healthy and flexible. The 15-Minute City also provides a framework to accelerate the path to carbon-free cities. It focuses on integrating land use and transport planning and is most successful when implemented as part of a citywide, city-led strategy that strongly involves local people.
Public policy of reference	Paris is committed to creating a city, or rather a multitude of neighbourhoods within the city, that will put people at the centre. The 15-minute city started as one of the drivers in Anne Hidalgo's (Mayor of Paris) re-election campaign. The project started in 2020 and is expected to take six years.
Innovative approach(es) addressed	"The concept of a 15-minute city, in a nutshell," explains Carlos Moreno, professor at the Sorbonne and scientific advisor to the Mayor of Paris "is to design the city within a distance of 15 minutes by foot or by bike to enable the six main urban activities for living in cities: to live, to work, to supply, to education, to health, and to enjoy." After Anne Hidalgo's election the wheels have started turning to bring the idea to life. "The 15-minute city is a new way of thinking about the city and city politics," says Diana Filippova, advisor to the Mayor. "You have to start from the people, by understanding how people move and live in the city, what people want."
Initiator	Mayor of Paris Anne Hidalgo took her bicycle out on the streets to promote her vision on the 15-minute city during the 2020 mayoral elections. Under Mayor Anne Hidalgo's aim for 'La Ville Du Quart d'Heure' (the quarter-hour city), Paris is now focusing on developing new services for each district. A new economic model for local businesses, reducing traffic and reclaiming streets as bike lanes and areas for leisure, and transforming existing infrastructure are on top of the list.
Stakeholder networks and organisational model	The project is planned and developed by the city of Paris.
Resources	The city of Paris appointed a commissioner for the 15-minute city, Carine Rolland, who is entrusted with creating a 'city of proximities'. Prominent actions such as banning cars on certain routes, making pedestrian gathering spots along the river Seine, turning school playgrounds into parks are part of the new normal. Further, Hidalgo pledged 1bn euros per year to maintain and beautify streets, squares, and gardens.

NET ZERO CITIES

Key enablers	The main enabler of the 15-minute city concept in Paris is the political commitment by the mayor. Because the concept is part of her agenda it receives funding and support. Furthermore, the worldwide COVID-19 pandemic revealed weaknesses in urban planning that had previously been overlooked. This finding accelerated the consideration and implementation of the 15-Minute City concept in response to the climate crisis and urban impacts of the COVID-19 pandemic. The restricted radius of movement led to an increased relevance of quality in one's own neighborhood. In this respect, the 15-Minute approach is an attempt to bring the built environment more in line with the people living there.
Key inhibiting factors	Proponents of the concept urge those investments under the 15-Minute City paradigm should be targeted to lower-income neighborhoods. This includes measures such as implementing inclusive spatial planning/zoning, affordable housing, and supporting collaborative and community based approaches to housing development (e.g., cooperative housing). Urban planning interventions must be understood and implemented hand-in-hand with socially inclusive development processes.
Drawbacks/pros/cons of the solutions	Spatial distances between living, working, (local) supplies, services, leisure, and educational facilities should be kept short so that the need for transport is reduced and traffic is avoided. The strong focus on spatial proximity is mainly criticized because it promotes gentrification which leads to increasing segregation and isolation of neighborhoods.
Scalability	The concept is occasionally criticized as an urban paradigm best suited for European cities (esp. Oslo, London, Barcelona) and not for the Global South or North American contexts.
Key lessons	Main positive lessons/opportunities identified: ● Stimulation of initiatives on local level ● Shift towards cleaner modes of transport ● Healthy living environments Main failures/barriers identified: ● Ensuring equality at city level ● Creating diverse yet self-sufficient communities ● Urban sprawl
Indicators	-
Visuals	-
External link	https://www.citiesforum.org/news/15-minute-city/ https://www.transformative-mobility.org/assets/publications/TUMI_The-15-Minute-City_2021-07.pdf https://eurocities.eu/latest/parisians-will-live-within-a-15-minute-radius/

25.   PentaHelix

Case identification	
Author(s) of the case study	Tena Maruševac (REGEA), Tomislav Novosel (REGEA), Josipa Arapović (REGEA)
Brief description	PentaHelix aimed to empower local and regional authorities to find innovative and cost-effective approaches to develop, finance, implement and improve sustainable energy and climate action plans (SECAP) that contribute to reaching national and European climate and energy goals and policies. To achieve this, the PentaHelix project developed and tested a new approach for integrating multi-governance planning for sustainable energy, both horizontal and vertical, together with close interaction with key stakeholders in energy efficiency and sustainable energy solutions. Here, integrated development focuses on five different stakeholder groups, who constitute the PentaHelix pillars: ● Public authorities (local, regional, national and international); ● Industry (and businesses such as SMEs, farmers, trade etc); ● Academia (research and educational institutes); ● NGOs (associations, interest organisations, etc); ● Citizens (house owners, car owners, commuters etc). Representatives of the PentaHelix pillars constitute the task force groups, that serve as a driver for a wider scope of the Sustainable Energy and Climate Action Plans (SECAPs), as well as bringing in valuable insights and identification of potential measures, system solutions and a better understanding of drivers and barriers for a more sustainable society as a whole, in each specific region. The approach is developed and tested in Belgium, Croatia, Latvia, Norway and Spain, which enabled its validation across a wide set of different economic, climate, social and political conditions. Furthermore, the project developed a peer-to-peer online platform for SECAP development that can be used by multiple public authorities in joint planning and implementation. This enables the integration of different administrative levels and geographical planning areas as well as enhances the cost efficiency in the entire planning and implementation process based on economy of scale and closer cooperation and exchange.
Keywords	SECAP; stakeholders; EU climate and energy goals and policies
Overview and description criteria	
City/Country	Zagreb, Croatia
World Region	East Europe
Scale(s) of the case analysed	City
Target audience and dimension	Less than 1000 (public authorities, representatives of NGOs, citizens, academia, industry)
Time period	From March 2019 to September 2021

Solution applied	-
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Other: Sustainable energy and climate action plans
Engagement Journey	Action, learning and embedding
Methodologies	Regional PentaHelix Task forces were established, involving key stakeholder and target groups. These task forces broadened the scope and impact of the SECAPs by bringing in valuable insights and identifying potential measures, system solutions, and a better understanding of drivers and barriers for a more sustainable society and economy in each specific region.
Case contribution	
Impact to climate neutrality	With PentaHelix's goal to empower local and regional authorities to find innovative and cost effective approaches to develop, finance, implement and improve sustainable energy and climate action plans (SECAP) it has a direct relation to Collaboration Action Ability, Political Commitment & Problem Ownership, Climate narrative and communication. The implementation of co-creation approach and improved climate communication results with a better anchored SECAP that has a higher probability of being implemented, since both targets and measures are influenced by and supported by a wide range of stakeholders in the municipality. Fostering dialogue between different stakeholders may mitigate potential conflicts and improve cooperation, thereby increasing the implementation rate of the SECAP.
Public policy of reference	By empowering local and regional authorities to develop and implement sustainable energy and climate adaptation plans, PentaHelix directly influenced the key targets that municipalities must set set and achieve, in terms of greenhouse emission savings and climate resilience, envisaged by the European Green Deal.
Innovative approach(es) addressed	The PentaHelix project established an innovative method of co-creative approaches in climate and energy planning. The task force method provides a new multilevel and multi-stakeholder approach for strategic energy and climate action plan (SECAP) development. The method goes beyond the current practice of public hearing and the passive role of stakeholder involvement in climate and energy planning. It combats the lack of multi-stakeholder connection. Good dialogue among different types of actors helps ensure the continued reliability of the emission and society data that SECAPs are based on. The objective of a task force is to structure the involvement process and ensure that all elements of society are involved. This taskforce should include actors from all five pillars (public authorities, industry, academia, NGOs, and citizens), of the PentaHelix, preferably as representative of the local and regional society as possible. In the work of the task-force group, a strong focus is set on the implementation of the best practices in climate communication. The taskforce method has been tested in several European countries and has been shown to be a powerful tool for increased implementation, due to better-anchored processes.

D9.1 Social Innovation

NET ZERO CITIES

Initiator	University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture
Stakeholder networks and organisational model	Public authorities - Bringing in valuable insights and identification of potential measures, system solutions and a better understanding of drivers and barriers for a more sustainable society as a whole. Industry - Bringing in valuable insights and identification of potential measures and system solutions. Academia - Bringing in valuable insights and identification of potential measures, system solutions and a better understanding of drivers and barriers for a more sustainable society as a whole. NGOs - Bringing in valuable insights and identification of potential measures, system solutions and a better understanding of drivers and barriers for a more sustainable society as a whole. Citizens - Bringing in valuable insights and identification of potential measures for a more sustainable society as a whole.
Resources	● Human: engagement capabilities, expert knowledge ● Materials developed in the scope of the PentaHelix project: Barriers and drivers for the SECAP development; PentaHelix guidelines, Impact assessment database, Climate communication guidelines, Feedback report, presentations on Climate communication training (training for trainers) ● Technology: PentaHelix peer to peer platform - "Climate Forum"
Key enablers	● Political: political commitment of the highest level of municipalities that were pilots for PentaHelix's methodology ● Economic: SECAP's developed in the scope of the project, without the need for additional budget ● Social: Public authorities, industry, Academia, NGOs and Citizens were involved SECAP development. ● Technical: Online technical capacities to create an online platform and manage it
Key inhibiting factors	● Political: Scalability depends on political will, and not all local authorities have the will to engage stakeholders for SECAP creation ● Economic: Lack of funding support for the SECAP development ● Social: Allocation of sufficient human resources and lack of support of the stakeholders ● Legal: Lack of strong regulatory framework
Drawbacks/pros/cons of the solutions	The municipality and stakeholders are more aware of the current situation regarding climate emissions, as well as risks and vulnerabilities. More importantly, they become more knowledgeable about mitigation and adaptation action strategies and the available funding opportunities (funds, grants, credits).
Scalability	The development and implementation of a SECAP with the PentaHelix method can be a beneficial process to promote cooperation within a municipality or region. Providing the necessary support and motivation to get all types of actors engaged in climate actions is not easy, but after testing the PentaHelix method it has become clear that this can be one way to provide

107

	the necessary structure to develop an engaging and well-organized SECAP development and implementation process. By testing it in different socio-economic, political, cultural and geographical contexts the method has been proven adaptable to different geographic and cultural settings all throughout Europe.
Key lessons	Main positive lessons/opportunities identified: ● When the targets and measures are Influenced by and supported by a wide range of stakeholders in the municipality, the SECAPS are better anchored and have a higher probability of being Implemented. ● When the SECAPs are based on quality-controlled data and expert knowledge from the local and regional stakeholders that will take part in implementing the measures, they are ambitious and realistic. ● Getting different stakeholders together with each other and with the regional and local authorities may mitigate potential conflicts and improve cooperation, thereby increasing the implementation rate of the SECAP. Main failures/barriers identified: ● It was not always easy to gather all the important stakeholders for the planning of targets and measures. ● Lack of political will. ● Lack of sufficient human resources (from the local administration).
Indicators	Number of SECAP's developed: 5 Number of stakeholders engaged: 63 Energy Savings [MWh/year]: 4.197.254 t/CO2 savings: 950.211 Renewable energy produced [MWh/year]: 80.054
Visuals	
External link	https://pentahelix.eu/

NET ZERO CITIES

26.   Play!UC

Case identification	
Author(s) of the case study	Felicitas Schmittinger (POLIMI)
Brief description	Play!UC is an initiative that developed a series of serious games and following participatory processes to raise awareness and deal with the individual carbon footprint of young adults. The term 'serious games' can describe all kinds of physical or digital games that are developed and played not only for entertainment, but have a functional scope as well like education, training or exploration. Different games like a strategy board game that requires players to build an energy network for their region or a smartphone application to navigate vehicles across the urban spaces trying to keep CO_2 emissions minimal are meant to raise awareness thorugh gamification and storytelling. Each game addresses a specific social issue within the thematic area of urban carbon footprints. The games are meant to be available for users in their home town or city to create a direct relation to daily behaviour and raise awareness on possibilities to take action as an individual By understanding complex urban problems and how individuals can contribute to their resolution, the games are planned to be combined or followed by participatory processes.
Keywords	urban complexity; serious games; participatory processes; co-creation; gamification
Overview and description criteria	
City/Country	Netherlands, Belgium, Austria
World Region	Central Europe
Scale(s) of the case analysed	City
Target audience and dimension	Less than 1000
Time period	Recurring initiative (from 2014 to 2017)
Solution applied	-
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Partnerships, multi-agents alliances ● Built Environment ● Skills & Capabilities

Engagement Journey	- Declare commitment - Define problem/s - Action, learning and embedding
Methodologies	- Serious games - Gamification - Co-Development
Case contribution	
Impact to climate neutrality	The project aims to actively engage adults in serious games to trigger collaboration and behavioural change towards better decision-making in relation to their urban carbon footprint. Even though it mainly targets individuals, the collective games may also lead to group reflections and enable collaborative ability to action.
Public policy of reference	-
Innovative approach(es) addressed	By prototyping and experimenting with serious games as an approach to support the understanding of complex urban problems, these games were improved throughout the project. The games are fundamentally different from one another depending on their scope and target group. They range from a mobile application to simulate traffic patterns to a board game that turns the players into leaders of urban development campaigns. The individual games were developed by different institutions and initiatives, but all of them made the templates and instructions available to support replication
Initiator	Play!UC was initiated as a part of the JPI Urban Europe Pilot Call II involving three universities (Uiversity of Groningen, Hasselt University & University of Applied Sciences Upper Austria) together with the Green City Lab in Vienna and the Ars Electronica Center, a "museum of the future", as main partners.
Stakeholder networks and organisational model	The project partners have mainly developed the games that were then tested directly with citizens taking their opinion and reaction into account to further refine and develop the games. - Citizens, Young Adults - Consulted, informed. As active participants of the testing and execution of the games, citizens were directly involved and later on asked for feedback on how to further improve the games or engage them long-term in the topic on carbon footprints. - Project Partners - Accountable. Project partners had few involvement apart from general updates on the progress of the development and the use of the funding/resources provided
Resources	- Human: Game development skills, knowledge on gamification and drivers - Financial: Development costs, material costs for board games, costs to hold workshops, tech development
Key enablers	- Political: Engaged policymakers, open for new suggestions from citizens - Economic: Funding to buy games and hold the gaming sessions

	● Social: Availability and motivation of citizens to play and move things forward
Key inhibiting factors	● Political: Regulatory frameworks and siloes that hinder change and make it difficult for citizens to make actual impact ● Economic: Missing funding for the implementation of planned changes and therefore loss of motivation ● Social: Lack of motivation or perceived benefits from the activity, conflicts of interest and different opinions on climate neutrality and potential solutions within the group
Drawbacks/pros/cons of the solutions	Self-organisation of citizens can be a powerful tool, but self-organised groups that do not have any connection to policy-making or political agendas can also focus too much on specific issues without considering the long-term or broader influence and consequences. A certain level of guidance by impartial experts can help reduce this risk and develop more holistic and effective solutions.
Scalability	The games are all designed in a way that they can be played in various contexts and situations lining out their potential to make long-term change when the playfully obtained challenges and ideas are then further developed and discussed.
Key lessons	Main positive lessons/opportunities identified: ● Games can facilitate civic participation ● Complex problems can be broken down ● Enable citizens for self-organization ● Fostering communication in a diverse group Main failures/barriers identified: ● Possible lack of representation of entire groups ● Need for guidance and establishment of a dialogue with decision makers
Indicators	-
Visuals	
External link	http://play-uc.net/ https://trepo.tuni.fi/bitstream/handle/10024/116609/AESOP_PC2015_PROCEEDINGS.pdf?sequence=1#page=146

NET ZERO CITIES

27. Ride Sharing Service

Case identification	
Author(s) of the case study	Tess Tjokrodikromo (TNO)
Brief description	Ride sharing service initiated by local football club PPJ started from an agile pilot and became a permanent activity in the club. After school, school children get transported from school to football training on a minibus. This saves time and reduces the number of total trips otherwise taken by each individual child driven by their [parent]. Lower price of early practice hours compensates the transportation costs.
Keywords	transportation; leisure; children; schools; sports
Overview and description criteria	
City/Country	Helsinki, Finland
World Region	Northern Europe
Scale(s) of the case analysed	City
Target audience and dimension	Less than 1000 (PPJ football club)
Time period	Ongoing initiative (from 2019 to now)
Solution applied	-
Challenge addressed/ Problem-led approach	Stakeholder/ Community engagement and capacity building
Engagement Journey	-
Methodologies	-
Case contribution	
Impact to climate neutrality	This initiative impacts climate neutrality in the sense that it reduces the amount of trips that are made by car. After the first trial almost 70% of the parents reported that the project made them feel less like they needed to own a car.
Public policy of reference	In Finland, many cities are now looking into offering children more leisure activities after school. Helsinki and Tampere have already launched projects

	to determine whether the level of children's physical activity could be increased by enabling them to attend sports practice in the afternoon. The Finnish government is also looking into the possibility of offering all children the chance to pursue a free hobby as part of their school day.
Innovative approach(es) addressed	The Kyyti Group is currently working to develop a solution that meets the needs for a shuttle service between schools and sports venues. The goal is that parents will eventually gain access to an app that allows them to manage their children's rides and track them in real time.
Initiator	Pallo-Pojat Juniorit (PPJ) is the third-largest football club in Finland and growing rapidly. The club wanted to make more efficient use of its football hall and create new service models to better meet the needs of its junior players and their families. Two PPJ teams tested a ride service in the 2018–2019 season, and the model was scaled up in the 2019–2020 season. In the ride service model, football practice was moved from the evenings to the afternoons and the children were transported from their school to the sports hall and back. The project's early testing stage was carried out in collaboration with Forum Virium Helsinki's 'Last Mile' project.
Stakeholder networks and organisational model	- PPJ - Football club - Forum Virium Helsinki - Funded the initiative as part of the Six City Strategy, Last Mile - Annika Järvelin - Service Designer - Children and parents - Users of the service - Cabing - Transport operator
Resources	Enough time and funding is needed to organise the ride sharing service. It requires quite some planning and scheduling and careful communication with all stakeholders.
Key enablers	PPJ was accepted into 'Last Mile', a project of City of Helsinki innovation company Forum Virium Helsinki. Funded as part of the Six City Strategy, Last Mile sought smart mobility solutions for tourists, residents and commuters in the Jätkäsaari area of Helsinki. As an incentive to make teams use the earlier slots in the football hall, the club offered all teams that took up afternoon practice a generous discount on hall fees for all practice times before 5 pm. This discount compensated for the transportation costs of the buses.
Key inhibiting factors	PPJ has limited resources and setting up this pilot had cost a lot of time, fortunately they could use the sum that they received from the city of Helsinki to hire service designer Annika Järvelin to run the project.
Drawbacks/pros/cons of the solutions	All parents who responded to PPJ's survey thought that moving practice to the afternoons was either a good thing or a very good thing. Nine out of ten children also reported this. All parents also thought that the ride service made family life easier, and two-thirds of parents were satisfied with the cost of the service.
Scalability	The concept created in this project could very well be replicated by other sports clubs. When considering adopting a similar model, the main thing is to ensure that the service will have a high enough utilisation rate and that the distances will be fairly short so that buses can pick up as many children as possible for hourly training sessions. Then again, if the training times could be optimised according to the rides and not vice versa, the service might be more flexible.
Key lessons	Main positive lessons/opportunities identified:

	● The service made family life easier for the users ● The children really like riding to practice with their friends ● The service increases the children's independency Main failures/barriers identified: ● Preparations took a long time, definitely need a couple of months before launching the service ● If starting such a project, your project is not necessarily the priority of the transport operator ● The smaller children may need some 'behavioural' rules
Indicators	● Parent satisfaction ● Children satisfaction ● Saved time ● Reduced amount of trips ● Using the space at PPJ more efficiently
Visuals	
External link	https://drive.google.com/file/d/1uPgEesYfCK6xni2Nqr6IoH2k6iDv0jNH/view

28. Real Junk Food Berlin

Case identification	
Author(s) of the case study	Felicitas Schmittinger (POLIMI)
Brief description	Real Junk Food Berlin is part of the international organization The Junk Food Project that aims to raise awareness around the topic of food waste and new sustainable food systems. Their activities include the use of food that would otherwise go to waste and the conduction of workshops and courses sharing ways to avoid food waste.
Keywords	fighting food waste; sustainable food systems; pay-as-you-feel; movement; awareness

Overview and description criteria	
City/Country	Berlin, Germany
World Region	Central Europe
Scale(s) of the case analysed	Metropolitan area International
Target audience and dimension	1.000.000 - 10.000.000
Time period	Ongoing initiative from 2015
Solution applied	-
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Peer to peer learning, and replication, upscaling ● Circular Economy
Engagement Journey	● Declare commitment ● Action, learning and embedding
Methodologies	● Workshops & Educational activities ● International/replicable movement ● Co-design ● Co-production
Case contribution	
Impact to climate neutrality	Fighting food waste and promoting sustainable lifestyles, the Real Junk Food aims to communicate the consequences of climate change and how individuals can contribute to their goal with their lifestyle. The ultimate goal is a change in behaviour and new policies to avoid food waste.
Public policy of reference	The main public policy of reference are the regulations that require the disposal of food in restaurants or supermarkets that are close to or beyond their best-before date. It also addresses the lack of policies to punish excessive food waste and the regulation of how leftover goods can be used.
Innovative approach(es) addressed	Co-creating new value from goods that would otherwise go to waste while creating benefits for those who need it. It is also worth mentioning the inclusive approach adopted with the pay-as-you-feel model giving (almost) all people the opportunity to join without high monetary boundaries or the need of certain skills or financial availabilities.
Initiator	A single activist started the general movement in the UK in 2013. Since then, a network of volunteers and activists has established replicating the movement in a series of cities and countries. It is based on individual contribution, but the networks in each city aim to collaborate with associations, local businesses and citizen communities to strengthen the local bondings.
Stakeholder networks and	Activists - Accountable, active Volunteers - Accountable, active Restaurants - Active/Consulted

organisational model	Initiatives in other cities - Consulted/Informed
Resources	The main capabilities in this initiative are the ones of the volunteers establishing the network, disseminating the events and contributing by collecting and cooking the food for the gatherings. There are few financial resources involved, the money collected with the pay-as-you-feel is invested for future events and the purchase of ingredients.
Key enablers	● A general legal base or context that allows the collection and further processing of food is fundamental to allow the initiative to operate. ● A culture of sharing and existing similar social initiatives foster the set up and embedding of such projects based on volunteer work. ● Political: Fighting food waste as part of political agendas ● Economic: All work is on volunteer base, low starting cost, few equipment needed ● Legal: Laws for the distribution of food enhancing the effective use and processing of foods
Key inhibiting factors	● Political: Issues justifying why restaurants/supermarkets cannot sell goods anymore and should donate them to an initiative that eventually cooks with them and sells the meals ● Economic: 'Loss' of revenue for the original owners of the raw products/material ● Social: Hesitation of people to buy and/or consume food that has been labelled as expired ● Legal: Laws against the sales/distribution of food beyond the best-before-date
Drawbacks/pros/cons of the solutions	The initiative was accepted and supported by a lot of locals volunteering regularly at the numerous events to back the project by helping to collect, prepare or distribute food. No business model was identified in order to make the initiative financially sustainable over time and develop a real revenue model.
Scalability	The initiative is replicable in other contexts, originating from the UK, the project was replicated in a number of cities across Europe. Scaling appears slightly more difficult being based on individual contribution of volunteers and small communities shaping around the idea of transforming food waste into meals.
Key lessons	Main positive lessons/opportunities identified: ● Strong commitment from volunteers ● Replicability of the initiative in other cities & countries ● No need for particular technical knowledge or abilities to participate Main failures/barriers identified: ● Difficulty in producing revenue ● Achieve long-term commitment from sellers/producers ● Overcome policy barriers for the sales of intercepted food
Indicators	● Number of meals sold at event

	● Number of guests showing up to events ● Number of regular partners donating goods ● Number of recurring volunteers active in the community
Visuals	
External link	https://realjunkfoodberlin.wordpress.com/about/

29.   SONNET Mannheim City Lab

Case identification	
Author(s) of the case study	Niklas Mischkowski (ICLEI - Local Governments for Sustainability, European Secretariat)
Brief description	In line with the city's overall climate policy, the city of Mannheim developed and implemented a city lab ("living lab" approach) as part of the EU Horizon project "Social Innovation in Energy Transitions" (SONNET). The city lab aimed at mobilising citizens for the development of the neighbourhood Neckarstadt-West, a neighbourhood with many residents with migration background, where language barriers posed a challenge to the city to engage with citizens for energy transition efforts. Whereas the Covid-19 crisis posed significant barriers to the original idea and scope of actions, the city still managed to implement diverse actions. The city lab entailed mobile participation/planning containers, gamification with apps, and explored measures for the neighbourhood such as energy role model flats, a neighbourhood fund (crowdfunding) for energy efficiency measures, and more. Towards the end of the project, additional funding from the German development bank KfW was acquired for a neighbourhood renovation management, which enabled a certain level of continuation of the activities. The overall impact lies in the social dialogue and processes that were strengthened and shaped, rather than measureable emmission recutions.
Keywords	social innovation; energy efficiency; behaviour change; citizen engagement; vulnerable groups
Overview and description criteria	
City/Country	Mannheim, Germany
World Region	Central Europe
Scale(s) of the case analysed	Neighbourhood
Target audience and dimension	Less than 1000
Time period	From 12/2019 to 10/2021
Solution applied	-
Challenge addressed/ Problem-led approach	Stakeholder/ Community engagement and capacity building
Engagement Journey	Self assess
Methodologies	● Design thinking workshops with key stakeholders ● Mobile green room (a "planning container" in public space to attract bywalkers and used for targeted interventions to get input from citizens)

	● Gamification (KLIMAthon App)
Case contribution	
Impact to climate neutrality	Whereas concrete GHG-emission saving are not recorded, the activities under the SONNET city lab sought the following impacts: ● Climate narrative and communication ● Carbon-Neutral Infrastructure & Lifestyle ● Democratised Decision-making & Distributed Agency ● Behaviour Change ● New forms of financing climate action The city lab needs to be seen in context with the broader climate protection measures of the city: prior to the city lab a neighbourhood development concept was finalised and received state-funding for implementation. The city lab was intended to support integrating and further developing social innovations in energy transition in the neighbourhood.
Public policy of reference	The project was aligned with the city's political goal of local CO2-emission reductions by 40% by 2020 ("MANNHEIM AUF KLIMAKURS") and the climate policy continuation of reaching the national climate reduction goals by 2030 and climate neutrality by 2050 (against 1990 baseline i.e. 65% by 2030; 88% by 2045; 100% by 2050) ("Klimaschutz-Aktionsplan"). Mannheim also successfully applied to become one of the 100 cities in the Climate-neutral Cities Mission.
Innovative approach(es) addressed	Three smaller design thinking workshops have taken place with selected local stakeholders and policy makers, gathering initial ideas for a larger event. Due to the coronavirus pandemic, the Mannheim City Lab had to come up with alternative ways for citizens to participate – and not only virtually. This included, for example, a pop-up event in public spaces in fall 2020. Here, ideas that had already been developed could be discussed and new aspects were sought after to bring them into the SONNET city lab. To ensure citizen participation despite the pandemic, Mannheim used a so-called "Mobile Green Room®": a half-opened container designed with vertical and roof greening that provides a room for information material and is aimed at attracting people's curiosity as well as inviting them to spend time around it, thus creating a public space. Over a period of three months the Mobile Green Room was placed in different locations in the Neckarstadt-West neighbourhood to provide information and the opportunity to exchange ideas for the neighbourhood's energy transition in public space.
Initiator	Climate protection agency, City of Mannheim
Stakeholder networks and organisational model	The city lab was managed and implemented by the Climate protection agency, with 2-3 staff primarily involved. In the design thinking workshops, there was a mix of professional and public organisations. About a third of participants came from different departments of the city such as the neighbourhood management, the climate protection agency, the social work and educational departments. Between 20 and 30 participants took place. Actors close to the city administration were the public energy utility, the public housing company, the consumer protection agency, and a handful of city councillors. Then there were a few citizen associations and NGOs such as a nature protection association (BUND), a bicycle association (ADFC), a local sports and a cultural association. Finally, a few local private consultants / small enterprises participated, such as a communication expert, a local trade association, a car sharing platform, and social care providers.

NET ZERO CITIES

Resources	● 2-3 staff working part time on the city lab on behalf of the climate protection agency ● Overall budget of appr. €60.000 ● KfW development bank funding was acquired for an energetic urban renovation management ("Energetisches Sanierungsmanagement" – KfW 432, Part B) in the neighbourhood Neckarstadt-West to implement the measures of the Neighbourhood Concept over 3 years (optionally +2 year extension)
Key enablers	Key enabling factors were the politically supportive framework, strong political will of the mayor, and the governance structures of the climate protection agency being in place to coordinate actions on the ground.
Key inhibiting factors	The strongest inhibiting factor has been the Covid-19 crisis, which disrupted the originally planned actions and inhibited the direct interaction and contact establishment with the neighbourhood inhabitants. In response, the type of activities and the scope of measures had to be adapted to online formats (the climathon app, online meetings with professionals) and measures in situ but with respect to distancing-rules and dispersed interaction (the mobile green room).
Drawbacks/pros/cons of the solutions	-
Scalability	The multi-stakeholder approach to a design thinking workshop, the mobile room and the use of apps for behaviour change can be transferred in principle to any other context. The city lab and the preceding development of the neighbourhood development concept both showed that the networks and citizen engagements have to be implemented long-term in order to help the district to become climate neutral. The KfW development bank funding allowed the recruiting of an employee to manage the process and offer consultation in the neighbourhood. Thus, local social innovation processes can be supported through the creation of intermediating/moderating paid staff positions. This creation of neighbourhood level agency is well replicable where funds are mobilised.
Key lessons	● Plan more time resources for establishing new relations ● Reduce the number of activities but calculate time to plan and prepare them well ● Embed and frame activities target group specific ● Reflect on strategic further actors to involve in the process ● Integrate experiments in a long-term process, if possible"
Indicators	-

Visuals	
External link	https://sonnet-energy.eu/portfolio-item/mannheim/

30.   SONNET The Bristol City Lab

Case identification	
Author(s) of the case study	Tena Maruševac (REGEA), Tomislav Novosel (REGEA), Josipa Arapović (REGEA)
Brief description	In its SONNET City Lab, Bristol City Council searched for ways to make use of crowdfunding - specifically a Community Municipal Bond (CMB) mechanism - as an investment activity to collectively raise capital to install energy efficiency measures in local community buildings. The Bristol municipality, working with the Bristol Energy Network, engaged building managers and technically surveyed the buildings to assess the value of the energy efficiency works that needed to be undertaken, resulting in 12 energy audits. They then surveyed across Bristol and building managers of the community buildings about their opinion of such an initiative. The survey was completed by 170 participants (124 online and 46 in person).
Keywords	crowdfunding; community municipal bond; surveys; community buildings; energy efficiency measures
Overview and description criteria	
City/Country	Bristol, UK
World Region	Northern Europe
Scale(s) of the case analysed	City
Target audience and dimension	100.000 - 1.000.000

NET ZER◉ CITIES

Time period	From January 2020 to October 2021
Solution applied	-
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Financing and Funding
Engagement Journey	● Declare commitment
Methodologies	The Methodology contained several steps: ● Launch event where the SONNET project was introduced and the rest of the meeting was spent in the breakout groups with building managers and Bristol Energy Network (BEN) members exploring the needs of the buildings and the scope of the project ● Building manager survey was developed to ascertain practical and technical information that would enable Bristol City Council (BCC) to determine which buildings may be best placed to receive a full energy audit which would then be used in their modelling of a Community Municipal Bond. It was also designed to find out what barriers to energy efficiency improvements exist for managers ● Citizen Survey was developed as the second stage of engagement around the Bristol City Lab. It aimed to establish how citizens use and view their community buildings and whether there would be an incentive for establishing a new model of council-backed community crowdfunding (i.e. a Community Municipal Bond (CMB)) in order to finance the energy efficiency improvements and renewable generation projects that would help sustain community buildings and reduce their carbon emissions.
Case contribution	
Impact to climate neutrality	The City Lab investigated the possibility of using crowdfunding - specifically a Community Municipal Bond (CMB) mechanism - to fund energy efficiency measures in community buildings. They surveyed citizens across Bristol and building managers of the community buildings about their opinion of such an initiative. They also technically surveyed the buildings to assess the value of the energy efficiency works that needed to be undertaken. The result was a business case. The goal of the project was to work with communities to explore how community buildings could receive energy efficiency improvements within the existing funding environment.
Public policy of reference	The SONNET project was started to help Bristol to meet the EU 2030 target (EU climate law, European Green Deal). Bristol was assessing the feasibility of crowdfunding as a method to raise capital for energy efficiency measures within community buildings.
Innovative approach(es) addressed	SONNET provided a very valuable tool to speak to people and find ways of making the CMB proposal acceptable to more people, since the investments could have been as little as £5. This makes it incredibly valuable and inclusive, potentially attracting a wide variety of people across the city rather than a small number of people who invest more money. What made the

	Bristol case different from other local authorities' projects was their intention to make sure that they are doing what citizens want and are interested in. The highlight of the project was put on the communities and their buildings.
Initiator	The Bristol City Council, the Science Policy Research Unit at the University of Sussex, and BEN.
Stakeholder networks and organisational model	- Citizens of Bristol - Engaged on the idea of using investment-based crowdfunding to fund energy efficiency works in community buildings - Building managers - Participated in the survey to indicate the desire for managers to reduce their building's energy consumption - Community groups - Relationships and capacity for (community) retrofit were built - Other groups who rent/hire/borrow space - Participated in the citizen survey
Resources	- Human: engagement capabilities, expert knowledge in energy efficiency and investment initiatives - Technology: SurveyMonkey platform for the surveys, online crowdfunding platform, a program for online meetings
Key enablers	- Political: Political commitment at the highest level in the city (Bristol City Council) to the UE Missions. - Social: citizens, building managers, community groups. Everyone was included in the process of investigating the possibility of using crowdfunding - Technical: enough technical capacities to create online surveys, online meetings, and an online platform
Key inhibiting factors	- Economic: more funds to organise more events with citizens would be useful - Social: the pandemic was a big problem, having live events would be much better for the project
Drawbacks/pros/cons of the solutions	The objectives of citizens' perceptions have not been achieved in full: building a greater understanding of how citizens perceive energy efficiency and the use of the community buildings was problematic due to the lack of in-depth interviews or focus groups that were originally planned for two case study buildings.
Scalability	The process undergone in the project can be replicated in any city. Although the Bristol city lab did not have immediate plans for scaling up or replicating the experiment, it did see a massive opportunity in going straight into the delivery of known solutions to make a bigger impact. The learnings gained from the city lab will be useful for energy-related activities, especially in the context of the City Leap agenda for Bristol. The project can be viewed as a pilot - there is a lot of rich data collected (e.g. on the energy efficiency of community buildings, including recorded discussions with architects and energy specialists about how best to undertake building audits before conducting them) that can inform other activities/projects.
Key lessons	Main positive lessons/opportunities identified:

	• A valuable tool to speak to people and find ways of making the CMB proposal accessible to everyone, as the investment of as little as £5, was provided. • The tool has the potential to attract a wide variety of people across cities. • The project helped communities to reflect on their community buildings as cohesive places where they can have a conversation about climate change. Main failures/barriers identified: • More technical information is needed to make the CMB scheme investable. • It was hard to work on community engagement during the pandemic. • It would have been useful if building managers were part of the whole Bristol city lab experiment.
Indicators	• Number of energy efficiency audits: 12 • Number of buildings that responded to the survey: 12
Visuals	
External link	https://sonnet-energy.eu/about/

31. Smart House Training Program

Case identification	
Author(s) of the case study	Maija Federley (VTT)
Brief description	The core idea of the experiment is the fact that a city is not made smart only through applying smart solutions but by also cultivating smart citizens. The training program was developed to encourage pilot area residents to learn from each other by training so-called Ambassadors in every pilot area building who would be able to help and support their neighbors in various aspects of smart house and smart city living.
Keywords	learning; smart solutions; behavioural change; ambassadors; training program

Overview and description criteria	
City/Country	Tartu, Estonia
World Region	Northern Europe
Scale(s) of the case analysed	Neighborhood
Target audience and dimension	Smart House pilot area residents (potentially to be scaled up to other areas later). 4000 citizens live in the pilot area. Altogether 40 participants to training, 8 persons were nominated Ambassadors.
Time period	Training from April to May 2019 (ambassadors work from that on)
Solution applied	The training program and other citizen engagement activities were carried out in parallel with building retrofitting aiming to increase significantly the energy efficiency of the area comprising of buildings constructed during the years 1950-1970. Smart home solutions were installed during the renovations. Residents' everyday life practices need to change after the introduction of the new technology, in order to reach the targeted energy savings. The ambassador program aims to support awareness raising, social learning and technology acceptance in the renovated buildings.
Challenge addressed/ Problem-led approach	● Stakeholder/ Community engagement and capacity building ● Built Environment
Engagement Journey	Action, learning and embedding
Methodologies	Communication, dialogue, social learning
Case contribution	
Impact to climate neutrality	The case was carried out as a part of a retrofitting plan in SmartEnCity project. The objective is to drastically reduce the energy usage of the pilot area buildings, in minimum by 60%. As a result of the renovation of the buildings, annual energy savings of over 6 000 000 kWh and CO2 savings of 922 tonnes per year will be achieved. In addition to energy savings, renewable energy is produced by PV-panels installed on retrofitted buildings about 471 000 kWh annually. The smart home solutions introduced during the renovations, together with engagement and social innovation activities, have increased residents' awareness of energy use and raised the sense of community cohesion. Social innovation models were experimented with to facilitate behavioural change and mutual learning among pilot area and Tartu residents. The training program was developed to encourage pilot area residents to learn from each other by training so-called Ambassadors in every pilot area building. They will be able to help and support their neighbours in various aspects of smart house and smart city living. The program consisted of five trainings, each focusing on an important smart living area: ● Home expenses and how to live in a smart apartment;

	● Inside climate, ventilation and environmentally friendly interior design solutions; ● Waste, recycling and sustainability; ● Smart home system and the rights of an apartment owner; ● Green mobility solutions.
Public policy of reference	Co-funding and results of the SmartEnCity project were used in preparing Tartu City energy and climate action plan "Tartu Energy 2030" that was published in 2021. Tartu City Sustainable Energy Management Action Plan for 2015–2020 laid down the goals of reducing energy consumption and carbon emission by 20% and consuming at least 20% of energy from renewable sources. The 2017 interim evaluation of the plan revealed that although the municipal sector managed to reach the goals set in the plan, the emission of greenhouse gases in the city as a whole increased. The main causes are increase in emissions in private transport and electricity consumption in the private sector (mainly undertakings). On the one hand, it refers to growth in economic activity, which is of course positive, on the other, it clearly highlights those groups of the community that require more cooperation to achieve the common goals. The activities designed in the sustainable energy management action plan were addressed to the municipal sector and there were no activities aimed at the private sector. The SmartEnCity has contributed to the shift of focus in Tartu Energy 2030, and it provided examples of wider engagement activities.
Innovative approach(es) addressed	Investing in enhancing awareness and capabilities among citizens/residents in parallel with introduction of new technological solutions, to achieve necessary behaviour change. Peer to peer learning encouraged. Experimenting with social innovations, to contribute to development of the city's new energy and climate action plan.
Initiator	Research project SmartEnCity, Tartu University as a coordinator.
Stakeholder networks and organisational model	● Local project consortium, University of Tartu - The project consortium planned, organised and evaluated the initiative ● Participants of the training / Ambassadors (40 / 8) - The ambassadors are the key stakeholders to create impact through supporting learning and promoting behaviour change within their neighbourhood. ● Pilot area residents (4000) - Target group of the initiative, help and support for living in a smart building and city, in order to reach the energy efficiency goals. ● Other communities - Stakeholders in other areas will be informed, if after evaluation of the experiments they seem promising to be disseminated and replicated more widely.
Resources	● Organisation of the five face-to-face trainings (lecturers, materials, invitations, venue) ● Communication skills; Knowledge on the Smart Building and Smart City systems and living. ● Attendees (all in all nearly 40 persons): Interest in learning and helping others, time spent in trainings and after that, in volunteer work (?) with neighbours ● Project funding
Key enablers	● Political: Recognition of the relevance to increase cooperation with the private sector and other communities to reach the climate goals. Commitment to the energy and climate action plan, and related projects.

	● Economic: Financing for the activities ● Social: Residents that are interested in learning about energy efficiency, capable of investing time and willing to support other residents.("The main motivations for people to participate in the program came from personal interest and willingness to learn more.") ● Technical: New technology has been or will be introduced, and social aspects are essential for achieving benefits.
Key inhibiting factors	-
Drawbacks/pros/cons of the solutions	Nearly half of the retrofitted buildings did not end up with an Ambassador. Three main themes emerged that need to be emphasized in future renovations: ● more appropriate variety of dates for the trainings should be chosen; ● input about possible topics should be also gathered from the residents; ● the enrolment in the program needs to be more attractive
Scalability	After the analysis of the results, the replication potential of the social innovation experiment will be assessed and Tartu city will plan and conduct dissemination and replication activities. "The project convincingly proved that the renovation of similar apartment buildings into a high "A" energy class is completely feasible and the renovation practice in Tartu can be transferred to other European regions as well." [D4.3 Building retrofitting completed]
Key lessons	Main positive lessons/opportunities identified: ● Motivation to participate among the residents; personal interest and willingness to learn more ● A city is not made smart only through applying smart solutions but by also cultivating smart citizens. Main failures/barriers identified: ● Early stage engagement is highly important and paves the way to success. ● Involve decision makers from the beginning to keep the project smoothly running. ● Nearly half of the retrofitted buildings did not end up with an Ambassador. In future renovations three main themes need to be emphasized: 　○ more appropriate variety of dates for the trainings should be chosen; 　○ input about possible topics should be also gathered from the residents; 　○ the enrolment in the program needs to be more attractive as it is very common for Estonians to be rather passive. No information is available about the potential impacts or experiences of the Ambassador activities in the pilot area.
Indicators	

Visuals	
External link	https://smartencity.eu/about/solutions/social-innovation-experiments-tartu/ SmartEnCity D_4.3__Building retrofitting completed Social innovation experiment / SmartEnCity.eu https://smartencity.eu/media/tartu_lh_solution_social_innovation_experiment.pdf TartuEnergy2030.pdf

32.   Superblocks

Case identification	
Author(s) of the case study	Niklas Mischkowski, ICLEI - Local Governments for Sustainability (European Secretariat)
Brief description	The concept of "Superblocks" is an urban innovation that aims at low-carbon mobility following a participatory approach at the city and neighbourhood level. The idea is that the city, at the neighbourhood level, is reorganised into car-free areas that maximise public space for new social uses and keep road traffic outside the neighbourhoods – so called superblocks. Inner streets are redesigned for the primary use by pedestrians. The planning process as well as the adapted mobility behaviour after completion of the infrastructure changes both need strong communication and engagement work to faciliate a succesfull working of a Superblokck. In Vitoria-Gasteiz the positive environmental impacts of the measures were significant, reducing conmbustion engine-borne emmissions.
Keywords	urban mobility; social innovation; SUMP; urban planning

Overview and description criteria	
City/Country	Vitoria-Gasteiz, Spain
World Region	Southern Europe
Scale(s) of the case analysed	City
Target audience and dimension	100.000 - 1.000.000
Time period	Ongoing initiative (from 2007 to now)
Solution applied	-
Challenge addressed/ Problem-led approach	Urban Governance, Policy Development
Engagement Journey	Action, learning and embedding
Methodologies	● The Superblocks concept: "The superblock is an urban cell defined by some peripheral main roads, where the surface transport networks (bicycle, bus and car) circulate, and some internal streets or pacified roads, where preference is given to pedestrian and cycling modes, and motorised traffic is restricted to residents' cars, service vehicles and emergency vehicles. On both main and internal roads, speed is limited." ● Deliberative workshops with both a) technical staff for inter-departmental consensus making and b) technical-political workshops to convince all political parties, and c) the greater public, through a special Citizens' Forum for Sustainable Mobility ● Agreement in Citizens' Pact for Sustainable Mobility. ● All of these efforts fed into the development of the city's Sustainable Urban Mobility Plan (SUMP)
Case contribution	
Impact to climate neutrality	Impacts of the first Pilot Superblock in 2009/2010 in the "Sancho el Sabio" neighbourhood area were: ● The pedestrian surface increased from 45% to 74% of the total surface. ● Noise measured sank from 66,50 dBA to 61,00 dBA (due to reduction of motorised vehicles in the zone). ● A 42% reduction in CO2 emissions, 42% reduction in NOx, and 38% reduction in particles. ● A modal split shift from cars to walking and cycling: walking (66%), cars (23%) and cycling (11%). By 2021, the development of 20 (out of 77 planned) Superblocks had started. According to the 2006-2016 evaluation report of the SUMP and the Cyclist Mobility Master Plan of Vitoria-Gasteiz:

	● Vitoria Gasteiz has seen the development of a new mobility paradigm in the city, manifested in a shift in transport mode used for commuting. ● The environmental quality of the city has improved, including improved air quality, a reduction in total CO2 emissions, lowered noise pollution, as well as decreased congestion and fuel consumption. In recognition of the city's effort, Vitoria-Gasteiz has received several awards, including the title of "European Green Capital" (2012) as well as the "UN Global Green City Award" (2019). The SUMP was further rated as a best practice example by UN-Habitat.
Public policy of reference	● Local level: SUMP as part of SDG-oriented sustainability strategy (esp. SDG11) ● EU level: SUMP/2013 urban mobility package
Innovative approach(es) addressed	The concept of the Superblocks was invented in the the city of Barcelona, where it was piloted in 1993, with two more superblocks following in 20031. The approach was also taken up in Vitoria-Gasteiz where civil society actors and the city council pushed for the development of a more sustainable mobility concept in 2006. An intense participatory, deliberative process of technical-administrative and technical-political workshops led to the Citizens' Pact for Sustainable Mobility, which was signed in 2007 by over 50 local and diverse stakeholder groups, establishing a consensus between the public administration and civil society to define new priorities for sustainable mobility. Ultimately, all of these efforts fed into the development of the SUMP, which was unanimously accepted by the City Council by the end of 2007. A new public transport system was implemented, which was embedded into the social fabric e.g. with the help of volunteers who worked as ambassadors for the new mobility services. This was followed in 2009/2010 by the development of the first Superblock in the "Sancho el Sabio" neighbourhood.
Initiator	Based on the Citizens' Pact and the SUMP, the city council of Vitoria-Gasteiz invited the Barcelona Urban Ecology Agency (BCN ECO) to support the city in the planning of the Superblock approach based on their technical expertise.
Stakeholder networks and organisational model	● Who: The SUMP was developed following a multidisciplinary and participatory approach involving a variety of municipal departments and stakeholder groups. These included transport professionals, an association of people with reduced mobility, local economic agents, retailers, and professional and neighbourhood associations. In addition, established organs of participation such as the Environmental Council and the Local Agenda 21 Council participated. The University of the Basque Country was also involved. ● How: An intense communication and dissemination campaign was launched in order to convey to the public the aims of the plan. This campaign was followed by a citizens consultation process, mainly comprising public briefings and participative workshops. A number of channels and forums provided information to citizens: ● sector councils, territorial councils, the Municipal Social Council; ● mobility web portal, urban ecology classroom, digital bulletin, established city newsletters; ● technical workshops, press conferences,

	● institutional media campaigns, street communication campaigns
Resources	● High personnel investment of city staff to moderate process ● Consulting services from external partners (BCN ECO) ● High commitment from CSOs and citizen groups, ● High financial costs for infrastructure works (reconstruction of streets and squares): ~€5mill/superblock The total cost of superblock projects in Vitoria-Gasteiz for the years 2008-2016 was €56.6mill (Bloomberg Businessweek 2019). Funds came from the regional and national government as well as the EU.
Key enablers	Preconditions: ● Pedestrian culture / identity ● Strong, well established urban sustainability policy ● Well organised population Process: ● The high level of public participation helped create credibility of the initiative, enabling the city to overcome conflicts of interest and adjust the mobility plan to the requirements of the public. Political-Economic/Power: ● Conflicts of interest were also not given regarding the main employers in the city: the automobile industry (providing 30% of jobs) didn't object to the plans but expressed willingness for new mobility patterns as they still saw a market in it.
Key inhibiting factors	● Resistance to change from affected residents/car-owners ● Fear of losing jobs amongst retailers ● Gentrification in superblocks is a general concern
Drawbacks/pros/cons of the solutions	-
Scalability	The costs of Superblocks as developed in Vitoria-Gasteiz mean strong infrastructural modifications and strong communication campaigns to in the end create acceptance and behaviour change. Both together mean relatively high costs. Therefore, results are transferable as long as plans with similar objectives in other cities are based on the same foundations of heavy infrastructural changes and powerful participation, communication and promotion campaigns.
Key lessons	Main positive lessons/opportunities identified: ● Large infrastructure changes are possible ● Car-free city centres are socially attractive and environmentally effective Main failures/barriers identified: ● Need for good public transport system ● Need of good participation and sustainability culture ● Availability of funding
Indicators	● Pedestrian surface / area ● Noise / area ● CO_2, NOx, and fine particulate matter emissions / area ● Shift in modal split from cars to walking

Visuals	
External link	https://www.vitoria-gasteiz.org/humanscalecity
	https://local-social-innovation.eu/sandbox-tool/vitoria-gasteiz/
	https://www.vitoria-gasteiz.org/docs/wb021/contenidosEstaticos/adjuntos/es/00/05/5.pdf
	https://local-social-innovation.eu/sandbox-tool/vitoria-gasteiz/#time-3:
	https://local-social-innovation.eu/sandbox-tool/vitoria-gasteiz/#time-8:
	https://civitas.eu/sites/default/files/Results%20and%20Publications/Brochure_STAKEHOLDER_CONSULTATION_web.pdf

33.   SynAthina

Case identification	
Author(s) of the case study	Natalia Altman (EuC)
Brief description	The SynAthina platform is the social innovation platform of the City of Athens for engaging citizens in problem-solving and reform. Citizens and community groups can submit innovative ideas on how to improve life in the city and are then connected to the relevant government representatives, non-governmental organisations, and private businesses that can support their efforts.
Keywords	citizen engagement; partnerships; participation; digital
Overview and description criteria	
City/Country	Athens, Greece

NET ZERO CITIES

World Region	Southern Europe
Scale(s) of the case analysed	City
Target audience and dimension	The citizens of Athens are the potential beneficiaries. The population of Athens is above 3 million inhabitants.
Time period	Ongoing initiative (from 2013 until now)
Solution applied	-
Challenge addressed/ Problem-led approach	● Urban Governance, Policy Development ● Innovation Management and Digitization ● Stakeholder/ Community engagement and capacity building ● Financing and Funding ● Partnerships, multi-agent alliances
Engagement Journey	● Define problem/s ● Select portfolio ● Action, learning and embedding
Methodologies	-
Case contribution	
Impact to climate neutrality	SynAthina has changed the relationships between the community, the people, and the municipal government. One of the successes of the platform is that it connects citizens and community groups with donors, experts and municipality services to help execute ideas and projects. This has revolutionised the way in which the government interacts with citizens and other stakeholders. This platform also facilitates connections with sponsors, who may support the groups by providing volunteers, experts, equipment or funding. The case of SynAthina also stands out for allowing citizens and the municipality to co-design neighbourhoods. Athens has put a lot of export in including everyone, including the non usual suspects and disenchanted, in decision-making processes. Synathina has enabled citizens' participation and engagement in several municipal and other climate change related projects and initiatives. Adaptation to climate change and urban resilience in Athens are now addressed through horizontal, multi-stakeholder and resilience-building projects. Another crucial element of SynAthina concerns its power to shape regulation. In fact, if outdated regulations are hindering the advancement of good ideas or solutions, the synAthina project team can harness innovation within the City Hall to update or change regulations, policies and procedures and incentivise the public and private sector to experiment in new ways of working and cooperating.
Public policy of reference	-
Innovative approach(es) addressed	● Challenge identification & conceptualization new approaches ● Co-creation & prototyping new approaches ● Management new approaches ● Funding new approaches

Initiator	SynAthina was initiated by the City of Athens. It was created in July 2013 and today comes under the Vice Mayoral Office for Civil Society and Innovation.
Stakeholder networks and organisational model	The platform was initiated and implemented by the City of Athens. Moreover, citizens and other stakeholders such as NGO's, private institutions and city departments are involved in all aspects of the platform, from uploading volunteer activities on the website to registering as potential supporters, as well as using the physical space to organise participatory events and public workshops and visiting the City Hall offices to communicate their ideas and projects receiving consultation and capacity building.
Resources	The main resources include: ● Online platform: This is a platform that allows citizens to submit and map initiatives. The platform includes a networking tool, a directory of activities, best practices and open calls. ● Open Mondays: Synathina also offers sessions or meetings in the municipality to facilitate connections and partnerships. ● Open calls: This is a space to connect different stakeholders. They need to submit a proposal to respond to a need or challenge.
Key enablers	● Political: SynAthina had a strong political backing. This initiative sits under the Vice Mayoral Office for Civil Society and Innovation. In fact, the vice mayor Amalia Zepou helped spearhead Athens' winning entry in the 2014 Bloomberg Philanthropies Mayors Challenge, which provided the city with funding for synAthina. Moreover, the political vision of Mayor Kaminis, and his alignment of international efforts to strengthen democracy in the city were fundamental. He also promoted SynAthina inside the municipality. ● Economic: The austerity measures and the economic crisis in Greece had an impact on the operational capacity of the government of Athens. The budget cuts and shrinking staff pushed Athens to find innovative solutions to do more with less resources available. ● Social: A vibrant and creative civil society working to improve neighbourhoods and communities was key. They became protagonists when it came to providing solutions and bridging the services gaps.
Key inhibiting factors	● Social: Bureacratic culture was a main barrier that Synathina has tied to address. Changing the culture takes time and effort. ● Technical: Outdated regulations and practices constrain citizen activities.
Drawbacks/pros/cons of the solutions	Pros: ● Number of city officials involved in collaborative mechanisms with civil society partners has increased ● Several regulations concerning the use of public spaces have been updated by the city council based on synAthina's findings ● Digitalising the administration helped to crowdsource input from different stakeholders ● SynAthina inspired the creation of the new Innovation Department

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The culture, communication and vocabulary of city officials changed. For example, 'co-creation' and 'community groups' have become key terms for them.
SynAthina's collaborative and co-creative approach has helped build trust and ensure the sustainability of the municipality's new programmes
In 2013 (SynAthina's inaugural year), 42 groups shared 208 activities on the City's digital map. As of today, a total of 453 groups have posted 4,253 activities on synAthina in cooperation with 153 sponsors.
The platform allowed the municipality to have direct access to what was going on at grassroots level, enabling officials to be better informed, understand the needs and be more flexible in responding to the citizens' demands

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<td>**Scalability**</td>
<td>Many Greek and European cities have contacted Athens to learn from and replicate their model.

SynAthina actively participates in international networks which exchange experience and knowledge, thus playing a leading part in a worldwide dialogue about innovation and the participation of citizens in local governance.</td>
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<td>**Key lessons**</td>
<td>Main positive lessons/opportunities identified:

Mayoral support and commitment was key for the long-term success of this initiative
Changing the organisational culture and valuing innovation has improved social cohesion
Fostering partnerships is key but the right conditions need to be created. Connections cannot be prescribed but they need to emerge and develop independently.

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34.   Viable Cities

Case identification	
Author(s) of the case study	Maija Federley (VTT)
Brief description	Viable Cities is a Swedish strategic innovation programme focusing on the transition to climate-neutral and sustainable cities. Viable Cities aims to create transformative system change based on the mission Climate Neutral Cities 2030 with a good life for everyone within the planetary boundaries. The mission means that cities' climate transition should take place from a broad perspective, where social, ecological and economic sustainability is taken into account. By leading the way in the transition, through co-creation and learning with cities and actors in other countries and at international level, the programme strives to fulfil the vision that Sweden inspires and has a leading role in the energy and climate transition through climate-neutral and sustainable cities. Together with cities - municipalities, business, academia and civil society - and public authorities, we work to create ecologically, economically and socially sustainable cities. Cities that work well for the people who live in them, that are good for the economy of citizens, businesses and society - and - that are good for the climate and our planet. In our major initiative Climate Neutral Cities 2030 , 23 Swedish municipalities - together accounting for 40% of Sweden's population - are working with us and five government agencies to achieve the mission. Our central tool for this is Climate City Contract 2030. Viable Cities is one of 17 strategic innovation programmes supported in a joint initiative by Vinnova, the Swedish Energy Agency and Formas.
Keywords	climate transition; city; systemic; mission-driven; quadruple helix
Overview and description criteria	
City/Country	Sweden
World Region	Northern Europe
Scale(s) of the case analysed	- National - International collaboration
Target audience and dimension	1.000.000 - 10.000.000 (currently 23 municipalities are part of the initiative, that accounts for 40 % of Sweden's population) - Cities, municipalities, business, academia and civil society and public authorities
Time period	Ongoing initiative (from 2017 to 2030; in 3 year phases with evaluation and new application for funding for each phase)
Solution applied	Viable Cities sees climate change as a symptom of structural problems in the economy and social systems. The scale of the challenges we face as a civilization will bring many governments to make significant investments in transition (so-called Transitional Capital, e.g. Green Deal for Europe). Within Viable Cities, we intend to use our budget as a catalyst to build societal, political and operational ability to invest capital in the best possible way to

	create climate neutral cities by 2030 with a good life for everyone within the planet's boundaries.
Challenge addressed/ Problem-led approach	- Urban Governance, Policy Development - Innovation Management and Digitization - Stakeholder/ Community engagement and capacity building - Financing and Funding - Partnerships, multi-agents alliances - Peer to peer learning, and replication, upscaling - Policy & Regulation
Engagement Journey	All elements are addressed in the programme (through various activities and projects). For example, a proposal for a strategy for citizen engagement for transition to climate-neutral cities has been published in 2021 (in Swedish).
Methodologies	Cities commit themselves, among other things, to working to reduce climate emissions, to increase innovation capacity and to involve citizens in climate change transition work. The contract is a long-term document that ensures cooperation between cities and the state level and will develop over time. There is no information about 'how' cities are working with citizens.
Case contribution	
Impact to climate neutrality	The mission of the programme is in line with the global sustainability goals of the UN's Agenda 2030, which is a starting point for many Swedish cities' climate and sustainability work. The mission is also in line with the Swedish environmental goals and the climate policy framework with no net greenhouse gas emissions in Sweden by 2045 and the EU's climate neutrality target by 2050. The programme has been initiated before the launch of EU Mission Climate-neutral Cities by 2030, and it provides relevant models, cases and learnings for the implementation of the Mission. "Viable Cities now functions as a European "living lab" for the EU Green Deal initiative on climate-neutral cities. Other countries want to follow suit, and we have a good dialogue with several of them." (Allan Larsson, Apr 23 2021) Making the transition to climate-neutral and sustainable cities requires cooperation between citizens, politicians, businesses and civil servants on a scale never seen before. National, regional and local levels must work in new ways, in the same direction and together to achieve climate-neutral cities. The Climate City Contract 2030, that was developed in the programme in 2020, is a tool to achieve this. It is a long-term commitment that ensures cooperation between cities and the government level. The contract will be revised every year, both at the local and national level.
Public policy of reference	The programme has been built to contribute to global, European and national climate-neutrality objectives (see above). Governance is one of the crosscutting themes in the programme. There are also several projects in the programme focusing on creating an action plan and/or a roadmap for a city and on improving cities' ability to deal with the complex decision-making situations.
Innovative approach(es) addressed	The programme builds on the mission-oriented research and innovation and engages stakeholders across disciplines and sectors to mobilise forces and create a movement to achieve climate-neutral cities by 2030 with a good life for all within planetary boundaries.

	To enable transformative systems change, Viable Cities is building a mission infrastructure to support: ● New forms of governance and management in quadruple helix ● New forms of citizen engagement ● New forms of cooperation between the state and municipalities (Klimatkontrakt 2030) ● New forms of coordination in financing climate investments in cities ● New ways to support policy development and decision-making processes through knowledge support and digital tools ● New ways to develop, implement, spread and scale up new solutions with a focus on impact ● New forms of reflexive learning and skills development Examples of how challenges are addressed in Viable Cities: ● The climate city contracts are designed to serve as a new way to coordinate and deliver national support for innovation, investment, policy development to accelerate climate transition in Swedish cities. Climate contracts 2030 are revised every year to accelerate the transition. ● Viable Cities Transition Lab is a central platform for creating a mission infrastructure in Sweden and supporting continuous and coherent processes for innovation, co-creation and learning for climate transition in broad collaboration.
Initiator	The programme is implemented with support in a concerted effort by Vinnova, the Swedish Energy Agency and Formas, where the Swedish Energy Agency is the responsible authority. KTH is the host organisation for the program.
Stakeholder networks and organisational model	● Programme office (aprox 20) - Work full or part-time for the programme (KTH is the host organisation) ● Programme board (13) - Representing cities and companies and research organisations ● Public sector (cities, regions and authorities) (27), Idea-borne sector (8), Universities and research institutes (17), Companies (58) - Share the vision of smart sustainable cities and work together for the programme's mission; ● Development of the programme through participation in the programme's activities, in strategic projects and in the annual meeting of members
Resources	● Programme office of approx. 12 persons with wide range of expertise and affiliated experts. ● Quadruple helix collaboration of public authorities, academia, companies and civil society (>100 members in 2022). ● Budget of 100M€ for 2017-2030 (50% state funding, 50% partners)
Key enablers	● Political: Government-backed strategic innovation programme, commitments from cities to long-term work and mission-driven innovation. ● Economic: Long-term funding at national level ● Social: Mission-driven innovation, broad collaboration across sectors and citizen engagement key elements in the programme. Sweden's goal to have a leading role in the energy and climate transition. Active international networking.

	● Technical: Technical capabilities and pilots through the project portfolio and collaboration network. ● Legal: Formal structures for decision-making
Key inhibiting factors	● Political: Organisational boundaries have been identified as a barrier to holistic approach, e.g. with regard to authorisation and sharing resources. ● Economic: Commitment of companies for implementation and scale-up need to increase. ● Social: Better support to other cities and municipalities (than CCCs) to scale-up ● Technical: More broad range of implementing actors to be engaged, also such that challenge the current regime. ● Legal: Potentially also legal issues inhibit flexible decision-making and resource allocation that would be required in transition management.
Drawbacks/pros/cons of the solutions	The programme is still ongoing, it is continuously developed and it proceeds in phases. Con: ● Requires substantial investment and long-term commitment broadly. Pro ● Focus on co-creation and learning, agile ● Active and open communication, strong links at European level The first 3-year phase has been successful (e.g. Climate contract, networking, nbr of members). The evaluation report (2020) suggests as areas to focus on in the second phase: ● Engagement of implementation partners and clarification of mechanisms from project work to disruptive innovations and scale up ● Identification of barriers for transition at the "middle layer" (from projects to address transformational challenges) but also risks on the larger scale in the operational environment
Scalability	Lessons learnt of the programme are already feeding into NZC and EU Mission "100 Climate-neutral cities by 2030". The Swedish Climate City Contract has inspired the design of the EU's Climate City Contract. Other national strategic innovation programmes can benefit from experiences gained in Viable Cities, that are actively shared, but each programme needs to be tailored for context. E.g. new forms of governance of quadruple helix, coordination of financing climate investments in city and ways to support policy development could provide valuable insights to be replicated.
Key lessons	The programme is still ongoing. Some points based on the evaluation of the phase 1 are presented below: Main positive lessons/opportunities identified: ● Key enablers: Strong commitment on national level to the vision and substantial financing. ● The programme has been well led and it is ambitious.

	● It has been successful in making Sweden visible in the context of sustainable cities and has actively connected with EU and policy development. After the successful launch of the programme and Climate City Contract 2030 tool in the first phase, in the second phase the programme is recommended to: ● Develop ways to address the links between programme's individual projects and transformational challenges ● Further clarify positioning of the programme to other initiatives and enhance exchange of good examples and learnings with other relevant initiatives ● Reach out to potential implementing actors (industry, companies) more broadly
Indicators	Objectives for phase 2 (2021-2023), building on the learnings of the phase 1 and recommendations of the evaluation. An evaluation is conducted and an adjusted plan developed for each 3-year phase: ● 20 cities work actively with "Klimatkontrakt 2030" ● 10 cities have established system demonstrators in larger and smaller scale to enable transformative systems change. ● 20 municipalities have increased engagement of citizens and civic society's organisations in climate transition. ● 20 municipalities have increased the use of digital tools in decision-making that is increasing the understanding of decision-makers as well as citizens and business. ● 20 cities have successfully developed their way of organizing their systematic innovation work and work with procurement, design and communication for climate transition. ● 20 cities have active support in their climate transition from research and education at geographically nearby universities and research institutes. ● 30 companies are involved in system demonstrators and climate-neutral cities. ● 5 formalized collaborations with joint activities for mission-driven innovation with SIPs and with other relevant programs in Sweden, the Nordic countries and internationally ● Methods for multi-level governance, follow-up, reflexive learning and storytelling for transformative system change for climate transition have been developed and tested. ● A framework for integrating sustainability indicators into financial analysis has been developed/implemented. ● 10 scientific articles, 6 scientific conferences / presentations, 5 courses and 10 dissertations based on new knowledge have been developed with an interdisciplinary, critical approaches to driving climate transition in cities. ● A network for follow-up research on climate transition in cities has been established. ● 8 Swedish cities are successful in the EU's various relevant calls for climate-neutral cities, including Climate City Mission and Energy-efficient districts. ● An open and dynamic arena for accelerating climate transition actively involves 30 municipalities and 200 other actors ● Viable Cities has organized 12 major events and participated in 10 events of strategic importance for climate transition in cities. ● Viable Cities communication has contributed to lessons and experiences from the program being used by all municipalities in Sweden and internationally.

	● Insights and experiences from climate transition in Sweden have reached 50,000 people internationally through MOOCs and other channels.
Visuals	
External link	Website: https://en.viablecities.se/ Research and innovation projects: https://en.viablecities.se/foi-projekt Report "Citizen engagement for transition to climate-neutral cities" (in Swedish): https://static1.squarespace.com/static/5dd54ca29c9179411df12b85/t/616ed6f9fab1c868e8359b5d/1634653947404/20211019_Medborgarengagemang.pdf https://en.viablecities.se/om-viable-cities https://en.viablecities.se/grafisk-profil-och-mallar https://static1.squarespace.com/static/5dd54ca29c9179411df12b85/t/61f9249750e8f103201cfb4e/1643717784139/Bilaga+B+Effektlogik+med+effektsamband+Viable+Cities+etapp+2.pdf https://static1.squarespace.com/static/5dd54ca29c9179411df12b85/t/5f7b2ce1e90164491f531a4f/1601907943248/Viable%2BCities.pdf

35.   You Decide [Tu Decides]

Case identification	
Author(s) of the case study	Natalia Altman (EuC)
Brief description	Public participation, particularly of the younger generations, can play a key role in the efforts to achieve climate neutrality. You Decide [Tu Decides] is a

	participatory budget for youth of the Braga City Council. Participatory budgeting wherein members of a community deliberate on the allocation and distribution of public resources has long been recognised as a means of involving citizens in local governance and decision making. You Decide is aimed at promoting greater participation of young people and at increasing their contribution to the development of the city. In practice, this initiative allows young people to develop and vote upon which projects they would like to see completed in their city. The winning young citizens get to also implement the project under the supervision and support of the municipality.
Keywords	participatory budgeting; youth; democratic innovation; participation; empowerment
Overview and description criteria	
City/Country	Braga, Portugal
World Region	Southern Europe
Scale(s) of the case analysed	City
Target audience and dimension	10.000 - 100.000 The potential beneficiaries of the project are the young people in Braga, which roughly represent around 40% of the total population that is 193 333 habitants.
Time period	Recurring initiative (from 2015 to 2019)
Solution applied	-
Challenge addressed/ Problem-led approach	● Urban Governance, Policy Development ● Innovation Management and Digitization ● Stakeholder/ Community engagement and capacity building ● Financing and Funding
Engagement Journey	● Define problem/s ● Select portfolio ● Action, learning and embedding
Methodologies	participatory budgeting; co-design; co-production
Case contribution	
Impact to climate neutrality	You Decide [Tu Decides] is closely linked to the Mission of achieving climate-neutral cities by 2030 in two ways. Firstly, Tu Decides brings young citizens aged 14 to 35 into the political realm. Participatory budgeting allows young people to create, submit and vote for project proposals aiming to provide solutions associated with sustainable development, culture, sports and inclusiveness. The projects with more votes ultimately receive public funding for implementation. Tu Decides is a good example of how to involve citizens, young in this case, in the co-production of services, which can lead to greater community empowerment and satisfaction and facilitate implementation, as well as help develop new products and innovative services. Secondly, many of the projects/actions proposed and even selected and implemented are related to sectors and policies that are key for the transition to climate neutrality. For instance, some initiatives are linked to the creation

NET ZERO CITIES

	of bike lanes or raising awareness about the importance of recycling and upcycling, native trees, among others.
Public policy of reference	-
Innovative approach(es) addressed	The project You Decide [Tu Decides] allows and empowers young citizens to propose ideas and projects that can bring solutions to their daily problems. Young people also have to vote (in-person or online) and the most popular proposals receive funding for implementation. Ultimately, the winning proposals have to be implemented by the proponents. Therefore, this initiative allows youngsters to directly influence how to spend part of the public budget and take part in the design and implementation of solutions and public services to address current issues of concern for their lives in the city. This can ultimately help build trust from young people towards the municipality and co-shape the long-term vision for Braga. You Decide is also an example of an innovative financial practice that has the potential to enhance youngsters' voice in budget decision-making.
Initiator	The project Tu Decides was initiated by the Municipality of Braga, in collaboration with the Local Youth Council. The project Tu Decides sits on a portal called Braga Participa. This online portal focusing on participatory budgeting was launched in 2015. It offers three participatory budgets for citizen engagement: Participatory Budgeting Braga, Schools Participatory Budget and You Decide [Tu Decides].
Stakeholder networks and organisational model	● Young citizens (between 14-35) 　○ Propose ideas or projects that fall within the areas of competence of the municipality of Braga and are linked to the areas of: Education and training; Jobs and entrepreneurship; Sport, health and well-being, Civic participation, Volunteering and social inclusion, intergenerational dialogue, culture and creativity, sustainable development. 　○ Young citizens can vote online or onsite. Voting stations are set up in the Town Hall on selected dates to ensure that people without internet or under age can vote. 　○ The selected proposals/projects are implemented by the proponents. 　○ After completion of the implementation, the implementing entity must send a final report of implementation, according to the data requested by the Municipality of Braga. ● Municipality of Braga 　○ Manages the project and provides the budget. 　○ Analyses the project proposals from a technical standpoint. Officials working on this are in charge of validating, rejecting non-eligible projects or proposing similar projects to merge. 　○ The municipality also assists and supervises the implementation of the winning proposals. ● Local Youth Council 　○ Co-manages the project with the municipality of Braga. 　○ A commission is appointed by the Braga Youth Council to monitor the work carried out within the scope of the implementation of the You Decide budget. 　○ The members of the Council are responsible for publicising the actions that are implemented with the participatory budget. 　○ The Council defines the participation rules. ● Loja Europa Jovem 　○ Supports young people with submitting proposals or voting.

Resources	● Financial: The global amount of municipal budget that is available to fund projects under You Decide is 75 000 EUR. The proposals selected will be those that obtain the highest number of votes, being accumulated in voting order, up to the global limit of the "Tu decides!" Budget. of 75,000 Euros. ● Human: The Loja Europa Jovem provides help with the proposal submission process. Moreover, the winning proposals can obtain support with the implementation of the project.
Key enablers	● Political: A very strong political commitment from the Mayor. In fact, Ricardo Rio, the current mayor, was strongly involved in the implementation of the "Braga Participa" online portal. The involvement of this political figure has given strength, visibility and legitimacy to the idea of youth involvement in decision-making. Moreover, participatory budgeting is very important in Portugal, to the extent that in 2017 a National Participatory Budget was completed for the first time. ● Social: Youth is seen as a key group to engage with to move towards a more inclusive and sustainable Braga. This is linked to the fact that Braga received the title of Youth Capital of Europe in 2012. Moreover, around 40% of Braga's population is under 25 years old. Young people are also more familiar with digital forms, which helps facilitate participation.
Key inhibiting factors	● Political: Some projects have yet to begin or be completed, which has resulted in frustration from citizens. This is probably linked to some gaps in the necessary support and supervision of these projects.
Drawbacks/pros/cons of the solutions	Pros: ● Good participation levels. Young people are motivated to contribute and provide solutions to the city challenges, which can help build mutual trust between young citizens, other citizens and the municipality. This is also useful to build the knowledge and capacity of young people, that by getting involved can learn to solve problems, work as a team ● City officials listen to young citizens' needs ● New and innovative ideas have space to flourish Cons: ● Delayed implementation of projects ● After a SMS activation code was introduced to validate registration to the portal for voting, the number of voters dropped. This highlights the importance of making tools for participation simple.
Scalability	This project could be easily adopted and adapted in different cities or countries. In fact, participatory budgets are being implemented in many cities and countries around the world already.
Key lessons	Main positive lessons/opportunities identified: ● Political commitment from the Mayor from the start ● Focusing on young citizens was a good choice. Young citizens represent an important percentage of Braga's population and gained momentum after the Youth Capital prize that the city won in 2012. ● Focus on involving youth in the whole project cycle of participatory budgeting, from designing and voting, to implementing and monitoring projects to improve the well-being and inclusion of youth in the city

	Main failures/barriers identified: ● Implementation of some projects took longer or failed
Indicators	-
Visuals	
External link	https://participe.cm-braga.pt/otd/

36. Zklaster

Case identification	
Author(s) of the case study	Niklas Mischkowski (ICLEI Europe)
Brief description	Zklaster – the Zgorzelec Cluster for the Development of Renewable Energy Sources and Energy Efficiency – is widely regarded as one of the most successful cases of social innovation in energy in Poland. It aims at setting up a regional Renewable Energy System (RES), to replace the brown coal mining in the region. Representatives of local authorities in the area signed an agreement on the basis of which a "Committee for the Transformation of the Turoszów Region" was established. The role of the Committee is to work for the transformation of the coal region, in accordance with the requirements of national and international law, in cooperation with the European Commission under the "Platform for Coal Regions in Transition". The agreement was initiated by the Poviat Starosty Board (regional adminitration board) of the Zgorzelec county. It aimed at building a multi-stakeholder process, engaging both buisnesses and citizens. One of the key success factors of the cluster can be seen in successfully attracting private business investments into RES infrastructure to build an alternative local energy system, ready to replace the regional coal mine.
Keywords	participatory incubation and experimentation; renewable energy cooperatives; coal exit

NET ZERO CITIES

Overview and description criteria	
City/Country	Zgorzelec, Poland
World Region	East Europe
Scale(s) of the case analysed	Regional
Target audience and dimension	100.000 - 1.000.000
Time period	Ongoing initiative (from 2017)
Solution applied	-
Challenge addressed/ Problem-led approach	- Stakeholder/ Community engagement and capacity building - Partnerships, multi-agents alliances - Energy systems - Policy & Regulation
Engagement Journey	Action, learning and embedding
Methodologies	Inspired by living lab approaches and the concept of "Prosumers", in Poland so called Energy Clusters were established as pilot areas for (decentral) renewable energy systems. ZKlaster was one of the very first ones. An Energy Cluster is an agreement between local consumers and energy producers, including local government units, entrepreneurs, universities, business environment institutions, housing cooperatives / communities. The goal is to build an independent, local energy market - using renewable energy sources and high-efficiency cogeneration (simultaneous generation of heat and electricity).
Case contribution	
Impact to climate neutrality	ZKlaster aims to accelerate and manage the energy transition in the region, especially the coal exit transition. The Turow mine in the region is one of the largest open cast mines in Poland and closely linked to the mining history of the whole cross-border region (including mining bordering regions in Czech Republic and Germany). Managing and accelerating the coal exit and the transition to a RES has large direct impacts for achieving climate neutrality. The ZKlaster furthermore holds large potential in showcasing a socio-technical transition model, where a central large coal power plant is substituted with decentral RES, engaging stakeholders in the region and creating a Prosumer-model that creates ownership and social as well as economic benefits.
Public policy of reference	ZKlaster refers mostly to EU regulation, as the national level regulations are portrayed mainly as barriers. The following regulations play a role in the institutional work carried out by the cluster: - RED II directive - Environmental Impact Assessment (EIA) Directive, - Strategic Environmental Assessment Directive - the Freedom of Access for information Directive - Water Framework Directive

	● EU ETS ● Fit for 55 policy At the national level, Poland's National Energy and Climate Plan for the years 2021–2030 is referenced, as well as the Strategy for Responsible Development (2017) followed by 'Poland's Energy Policy until 2040' (2021).
Innovative approach(es) addressed	ZKlaster aims at demonstrating a portfolio of local and regional RES instalments to phase out coal extraction and coal-based energy production in the region.
Initiator	Zgorzelec Regional Council
Stakeholder networks and organisational model	The unique structure of the Cluster allows for the implementation of ambitious projects on many levels. It allowed the potential of cooperation between many different institutions. The subject of RES energy, in addition to building sources and other aspects of the energy department (service, distribution and transmission), also includes Research and Development, innovative, as well as social and educational aspects. Besides ZKlaster as a regional energy cluster itself, there is a national chamber of energy clusters, which is a non-governmental association established in April 2020. Its purpose is the representation of all energy clusters' members and their economic interests (including entrepreneurs and their unions). ● Companies - 83 RES energy producers, 2 companies from the modern technology sector, 1 heat energy company with its own energy network ● Local grid operator - 1 distribution company with its own energy network ● Academica - 2 universities, 2 research institutes ● Local government - 9 local government units ● Civil society - 1 non-governmental organisation ● National Chamber of Energy Clusters - Coordinating energy clusters in Poland
Resources	Thanks to the establishment of the Cluster, by 2021 it was possible to attract investors who had invested 250 million in the region. The development of renewable energy sources is not only a profit for producers, but also a contribution to the energy transformation of the country and an impulse for investors from other sectors of the economy to locate their activities in the region thanks to the provision of "green" electricity. Representatives of the Cluster signed a Declaration of Cooperation with local governments in order to obtain funds from the Just Transition Fund for the process of moving away from coal in the region. (Dańkowska 2021) Social capital as described below, under "key enablers", can be considered as ciritical resource in initiating the Cluster.
Key enablers	According to research a success factor of the ZKlaster results from the fact that from the beginning it has been conceived as a business venture based on private capital.

	The second important factor is the engagement of people with previous business or technical experience. The third success factor is the ability to network efficiently. ZKlaster's coordinator is also the president of the National Chamber of Energy Clusters, thus a high level of social capital can be assumed as a key enabler. The national energy ministry had set up energy clusters via a competition for pilots. This has opened the door to the world of energy for local actors. The very fact of having the logo of the Ministry of Energy and an inscription as "Certified Cluster" for communication materials made local governments take a different approach to discussions on development opportunities.
Key inhibiting factors	The main barrier to the development of clusters is the current law. The definition of a cluster is too general, the benefits of joining a cluster for individual entities are unclear, relations between clusters and distribution network operators are unregulated, and there is a lack of financial incentives. At a social level, the most difficult thing was to influence the social awareness, where three generations were brought up on a "coal culture".
Drawbacks/pros/cons of the solutions	-
Scalability	The model of regional RES is in principle replicable to any region that has the natural endowments (being wind or sun as inputs, for RES) and supportive political and economic conditions – ideally at the national level, but as the case illustrates possibly also sufficiently at the regional level.
Key lessons	Main positive lessons/opportunities identified: ● Pilots can be set up even in a non-supportive environment. Main failures/barriers identified: ● Pilots are limited from the top
Indicators	Advocacy work for the clusters' RES was strongly based on technical analysis and argumentation about annual energy production capacities, CO2-emissions, and the costs of CO2-emissions under the EUTS; respectively in comparison between the operation of the coal mine and power plant VS a mixed RES.
Visuals	
External link	https://zklaster.pl/ Dańkowska, Alicja (2021): Participatory experimentation and incubation in Poland. Research Report, SONNET: EU Horizon 2020 Grant agreements no: 837498

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