SONNET

# Social Innovation in Action

Key findings from Case Studies exploring how social innovations in energy shape – and are shaped by – larger systems

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



**November 2021**

**About this Energy Read**

Throughout the project, SONNET is producing a series of so-called 'Energy Reads' that summarise the key points from its diverse catalogue of research into concise, accessible, evidence-based publications. This Energy Read overviews key findings from the project's 18 Case Studies and three Country Reports.



The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837498.

# 1. From a typology to 'SIE-fields'



In its first months of work, the SONNET project distilled a **typology of social innovations in energy** (SIEs). We did this by identifying and analysing 500 examples of SIEs from eight European countries, and then categorising them into 18 types, grouped according to social relations (cooperation, exchange, competition, or conflict) and type of energy activity (doing, thinking, or organising). This was explored in our first Energy Read, and can be seen on our website.



Next, it was time to zoom out to examine the relationships between initiatives working on each SIE type. This led us to **SIE-fields**, which we define as a specific SIE, as well as the actors working on that innovation, and the actors in the field that enable and/or impede their work. All of these actors have a shared understanding of the SIE, and recognise shared rules and language.

**In this Energy Read, SONNET has selected six SIE-fields to delve into.** These six examples were selected strategically to ensure that we could look at each SONNET focal country (France, Germany, the Netherlands, Poland, Switzerland, and the United Kingdom) as well as each "social relation" type (cooperation, exchange, competition, conflict) and "energy activity" type (doing, thinking, organising) defined in our typology.

| SIE-field name | Short description of SIE-field | Country studied |
|---|---|---|
| **City-level competitions** | Local competitions that aim to change energy behaviour; they often involve ranking, gaining, and/or winning. | France, Germany, Switzerland |
| **Cooperative energy production and consumption** | Organisations in which citizens jointly produce – and/or own the means of production of – renewable energy. | France, Germany, Switzerland |
| **Financing and subsidies for renewable energy** | Subsidies and financial mechanisms that help convene diverse actor groups in support of renewable energy. | Netherlands/ Belgium, Poland, UK |
| **Framings against fossil fuel energy pathways** | The creation of framings against fossil fuel energy pathways that describe the problem with fossil fuels, and envision alternative futures. | Netherlands/ Belgium, Poland, UK |
| **Local electricity exchange** | Producing, consuming, distributing and trading energy locally (i.e. close to its point of generation). | France, Switzerland, UK |
| **Participatory incubation and experimentation** | Collaborations among diverse actors who together create (often physical) arenas that allow participants to experiment with new energy solutions. | Germany, Netherlands/ Belgium, Poland |



The SONNET team conducted fieldwork in each of these six SIE-fields – reviewing documents, and conducting in-depth interviews and participant observation. These insights were compiled into in-depth case studies and 'country reports' (sonnet-energy.eu/research/case-studies).

Explore the main findings and summaries in the sections that follow.

# 2 The cases

## 1. City-level energy competition

**Countries** France, Germany, Switzerland

**Definition** City-level energy competitions are formats – often framed as games – where participants strive gain or win something via activities that focus on local energy topics (e.g. energy savings) and contribute to specific energy pathways.

### Introduction to the field

City-level energy competitions are diverse, including games, voluntary comparisons, rankings, benchmarking activities, and more, in which participants take on energy activities to gain or win something. These competitions can be between cities – typically about changes in city administrations – or within cities, which targets changes in individual behaviour. In all cases, a competitive approach is used to promote and mainstream sustainable energy consumption and production. Participants can often win an award, label or even material prizes, like money or vouchers, as well as recognition, a feeling of empowerment, the ability to self-evaluate and evolve energy behaviours on one's own terms, and opportunities for marketing or for creating political capital. Furthermore, they can be a lot of fun!

"If you try to do something purely informational, you'll only have people participate that already know about the topic and are generally interested in it. No one else will come. But as soon as you have a game, something where people can win, all of a sudden more people will be interested."

– Swiss interviewee

## Key insights

City-level energy competition can activate and help coordinate changes at the local administration level. Some competitions, like the EnergieStadt label in Switzerland, go way beyond one-time participation to win an award, and rather develop a process-oriented management system – based on audit and re-audit processes – as well as ambitious and continually updated criteria.

It is important that city-level energy competitions are embedded in existing institutional structures, and that they are adaptable to changing political and cultural conditions. Only then can they be relevant and useful tools for municipalities to use while pursuing their local sustainable energy pathways. Especially local cooperation and close network relationships amongst cities – and amongst actors within a city – are essential and have a positive impact on development of new energy behaviours.

"We put great emphasis on the institutionalisation of the process... There has to be institutionalisation in order to get the EnergieStadt label. [It is] not only about working on the content, but showing that this is anchored in the organisation [of the municipality]. This is a mandatory point to get the EnergieStadt label."

– Swiss interviewee

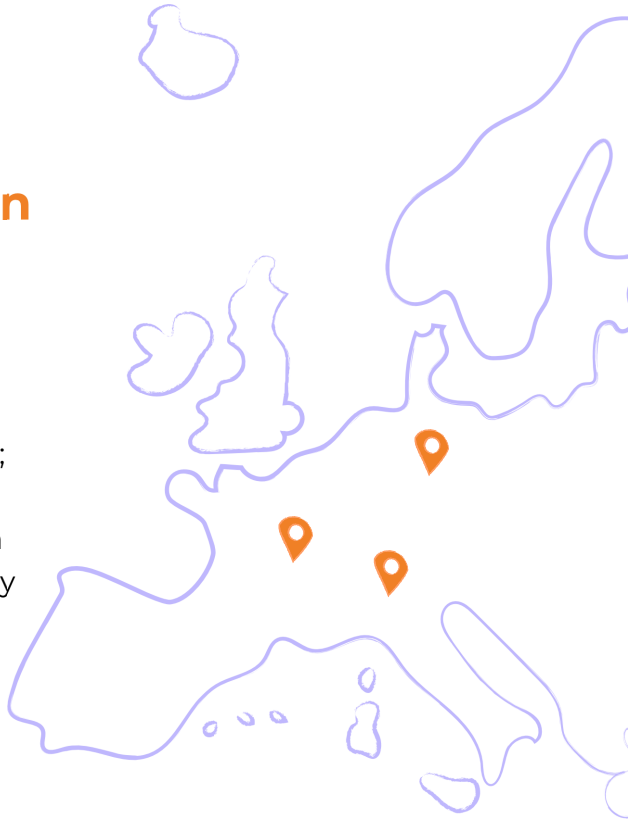
## Recommendations

**SIE-field actors** organising city-level energy competitions must continuously adapt their contents to meet changing circumstances and stakes. They must also have resources to put into practice the energy-related ideas collected during the competition.

**Municipalities** should measure energy behaviour to determine topics where competition formats could be most impactful. They must keep in mind that competitions alone may not suffice, and must be accompanied by other knowledge and/or resource-sharing activities.

**National and EU policy makers** should look at the outcomes of the city-level energy competitions in a holistic way, beyond easily quantifiable results like emissions reductions, taking into account effects that are more difficult to measure, such as institutionalisation of energy policy. Policymakers should allocate resources to develop competitive tools that support sustainability decision-making.

# Cooperative energy production and consumption



**Countries** France, Germany, Switzerland

**Definition** Models where residents jointly own and participate in renewable energy production; renewable energy cooperatives (RECs) follow certain principles, including: voluntary and open membership; democratic governance; autonomy and independence.

## Introduction to the field

RECs democratise energy production, thereby shifting social relations: citizens go from being passive consumers of energy to being energy producers and advocates who actively shape developments of the energy system.

Today, RECs are rather widespread and often institutionalised (e.g. represented by European advocacy networks). This has had pros and cons: RECs have a unified voice and networks to support them; however, this also necessitates 'gatekeeping' which can exclude newer projects.

## Key insights

Legal frameworks including favourable feed-in tariffs are crucial to making cooperative organisation of energy possible.

France and Germany in particular are characterised by historically highly centralised energy sectors. In both cases in the early-2000s – and in Switzerland in 2008 – national policy shifts led to the development of enabling legal frameworks and feed-in tariffs, and the rapid expansion of RECs. However, large energy utilities remain extremely influential; they hold vast lobbying power, which contributed to national policy "back-tracking" that has hindered REC viability since their early-2000s boom.

“We asserted that a single cooperative does not really have a voice concerning politics. That was the starting point where we said, we want an umbrella organisation which represents the voices of energy cooperatives in our federal-state.”

– German interviewee

One tool to counter this is the establishment of REC networks, which advocate with a common voice. This has been seen across several countries, and at the European level.

Many REC members are volunteers, driven to join by their values. RECs often arise in response to political events like Germany and Switzerland’s anti-nuclear movements, or in opposition to for-profit prospecting. Constantly recruiting new volunteers has proven to be a real challenge.

“Our projects are financed by local people with the objective – first and foremost – of making the regions work, and of ensuring economic benefits stay in the regions.”

– French interviewee

## Recommendations

**SIE-field actors** can find new ways to communicate their work to attract new members, and can consider diversifying their activities to include behaviour change (energy sufficiency) and partnerships with established actors. Cooperation amongst RECs should continue, and should consider expanding to include new potential partners or allies.

**Municipalities** can help co-finance and co-develop REC projects, provide locations (e.g. public roofs) to use for projects, purchase energy from RECs, or create incentives to encourage residents to do so.

**National and EU policy makers** should ensure that feed-in tariffs are open to smaller suppliers, and ensure that RECs can participate in energy production and trading without prohibitively complex administrative procedures. Fundamentally, policymakers must not only consider economics in energy policy, but also the role of RECs in achieving wider objectives, such as acceptance of renewable energy and sustainability education.

# 3. Financing and subsidy mechanisms for renewable energy

**Countries** the Netherlands, Poland, the United Kingdom

**Definition** Financing and subsidy mechanisms through which funding or investment is made available to facilitate innovative activities related to renewable energy (RE).

## Introduction to the field

Innovative financing is an important lever in energy transitions, which can enable new actors (e.g. citizens as investors), new roles (e.g. communities becoming energy suppliers) and new combinations of actors (e.g. cooperation between a traditional utility and a local community) to get involved in renewable energy. Some examples include municipalities lending money to energy communities, and crowdfunding to collectively invest in energy initiatives.

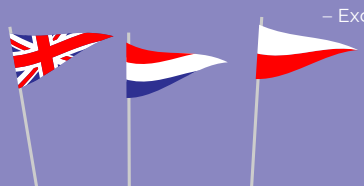
## Key insights

In the Netherlands, Poland and the UK, national governments design energy markets. State-led RE funding (subsidies) is often a first step, which can be followed by decentralised, local government-led RE funding, and finally by private, citizen-led financing mechanisms.

The Netherlands, and to some extent the UK, saw a recent (after 2010) shift of power from the national to regional and local authorities. In the Netherlands, energy utilities were sold, and this income was used for "regional RE funds", while in the UK, policy changes resulted in growing the role of local authorities in financing renewable energy projects.

"The most important policies and policy-making relevant to the SIE-field has been happening at the national level. This manifested, first of all, in subsidy schemes for renewable energy."

– Excerpt from case study



“Poles became investors in energy production on a mass scale. The goal of reaching 1 million prosumers in 2030 set in the state energy strategy not only seems to be realistic, but likely will be reached earlier if the current trend continues.”

– Polish interviewee

Eventually more bottom-up financing developed (e.g. crowdfunding), often supported by local governments.

After Poland joined the EU in 2004, the national government – with EU support – began to fund pilot sites for RE, and ultimately supported energy metering in private homes. This empowered residents to steer energy transition, and supported a rise in “prosumerism”.

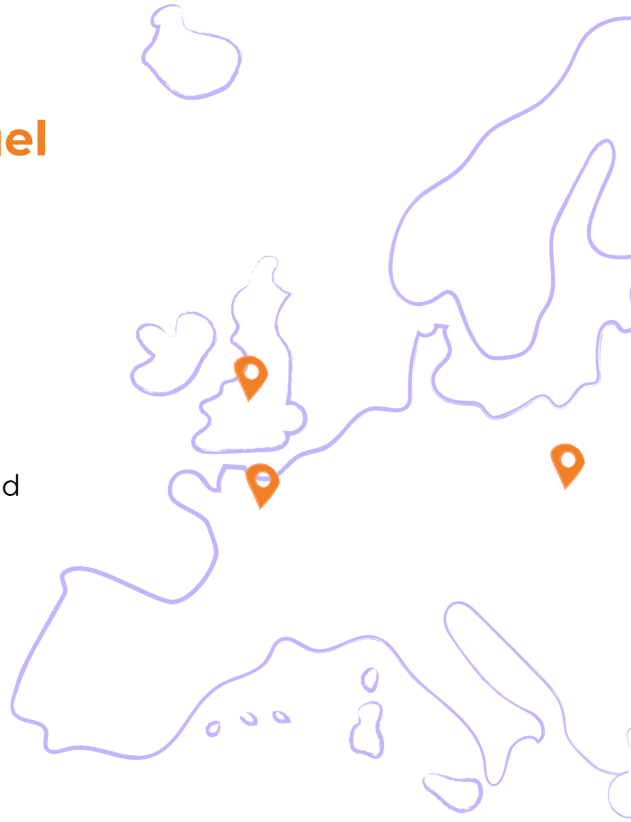
## Recommendations

National governments are key to re-shaping energy markets, so must be considered, while local governments need clear mandates to steer energy transition. Furthermore, it takes time to shift social relations, so perseverance is critical.

**SIE-field actors** should monitor the policy changes and influence them by lobbying, campaigning, and educating.

**Municipalities** should support innovative financial mechanisms, including via: shared ownership of RE projects; administrative support; facilitating exchange between relevant actors (e.g. residents and companies); procuring energy from local RE generators; and allocating staff to work on energy transition and innovation.

**National and EU policy makers** must ensure that newcomers in the energy system are given fair consideration; consider tax relief for community RE projects; and shape markets to enable local energy exchange.



# 4. Framings against fossil fuel energy pathways

**Countries** the Netherlands, Poland, the United Kingdom

**Definition** New ideas, concepts, approaches, and concrete actions – like lobbying, protests and campaigns – aimed at changing mainstream energy practices centred around fossil fuels.

## Introduction to the field

Framings against fossil fuel energy pathways can originate from multiple different actors, including NGOs, networks, protest groups and citizen groups. Their main aim is to change mainstream energy practices, by influencing policymaking, stopping local fossil fuel extraction, and/or offering alternative energy future scenarios. This is done via, for example, campaigns, protests, petitions, and the sharing of information, expertise and experiences. They shift energy storytelling and challenge how society relates to the fossil fuel industry.

## Key insights

The success of initiatives against fossil fuels often depends on: engaging directly affected communities; attracting wide social support; connecting with and learning from other initiatives; and the availability of experts to support legal, financial or political efforts.

Examples from across focal countries also show: trends towards litigation, the power of reducing barriers to entry to enable non-scientists to join, and how movements have shifted from demanding less fossil fuel use, to a fossil fuel-free future.

In the UK, for example, the government announced in 2017 that they would stop using coal for electricity generation by 2025; this phase-out does not include coal for steel-making, which subsequently became a focus of anti-fossil fuel framings. In 2018, climate movements gained steam across Poland, characterised by democratic organisational structures which made it possible for average citizens to participate.

A turning point in the Netherlands came earlier, in 2012, when gas extraction caused a severe earthquake, which prompted the establishment of an association of those impacted, who fight for a "gas-free future" and have pressed charges against a gas extraction company for endangering local lives.

> "The campaign in Groningen is actually mainly based on people from Groningen, who were not concerned with the climate at all. Yes, they were very much people who resisted something that was done to them. Yes, we have always tried to make that link with climate, also with the shale gas campaign. [But] the core of the resistance there were just people who got a derrick in their backyard and didn't want that."
>
> – Dutch interviewee

## Recommendations

**SIE-field actors** have knowledge and experience which should be capitalised and built upon. They must connect with each other and engage in diverse activities, using various means to achieve their goal. Furthermore, real, personal stories are crucial communication tools

**Municipalities** should engage actors working on framings against fossil-fuel energy pathways in the policymaking, and treat them as allies in their energy transition work and goals.

**National and EU policy makers** should ensure that the energy transition is democratic and transparent, including by engaging all voices in decision-making processes. They must refrain from framing those engaged in anti-fossil fuel activities as extremists, as this can prevent citizens from engaging in the energy transition; in fact, policymakers should support those actors, as they often bridge gaps, translating local issues to national or EU agendas.

# 5. Local electricity exchanges

**Countries** France, Switzerland, the United Kingdom

**Definition** New ideas, concepts, approaches, and concrete actions – like lobbying, protests and campaigns – aimed at changing mainstream energy practices centred around fossil fuels.

## Introduction to the field

LEE aims to increase the share of RE, and provide opportunities for energy production and consumption to be increasingly local. LEEs shift social relations by creating closer connections between where energy comes from and those who consume it.

The most common forms of LEE are: collective self-consumption, in which a community collectively generates, buys or manages their electricity; some forms of power purchase agreements (PPAs), in which an electricity supplier facilitates exchange between a RE producer and consumers living within the vicinity of this producer; and local peer-to-peer (P2P) trading, in which a group of consumers use new technologies (e.g. blockchain) to share energy in a connected community.

## Key insights

LEE is a somewhat ambiguous term, and there remains debate about what can be qualified as "local". Furthermore, LEE can rely on complex technology and legalities, which can prove challenging. Existing policies can also be a barrier for small electricity generators – e.g. this is the case with electricity supply licence rules in the UK, and frameworks in France that favour the centralised system and make LEEs technically and legally complex.

"[LEE complexity] is a blessing for lawyers and technology providers"

– French interviewee

Collaboration between vastly different actors can help push policymakers to reduce these hurdles. Examples include the UK's proposed Local Electricity Bill, which has mobilised a diverse group of advocates. In France and the UK, partnerships between project developers and electricity suppliers have been used to bolster and spread LEE.

While in Switzerland, a business model called an "Association for Self-use" (ZEV) brings together energy and housing sectors, allowing households to form district-level communities, with a ZEV organisation becoming responsible for the district's energy production, opening the possibility to invest in and sell locally-produced electricity to groups of tenants.

> "You know, it is still unclear really what works and what doesn't work that's out there."
>
> – British interviewee

## Recommendations

**SIE-field actors** can share their experiences and know-how to support emerging LEE projects, and build partnerships to advocate for more supportive environments for LEEs.

**Municipalities** can support local LEE pilots to build up expertise and know-how on LEE's potential to facilitate just energy transition; they can push municipal utilities to support or develop new LEE projects, and should consider cooperating with electricity suppliers to create PPA schemes, or provide spaces (e.g. city-owned buildings) for LEE experimentation.

**National and EU policy makers** should support experimentation to determine the actual potential and pitfalls of LEE, including by decreasing administrative burdens on these projects. Delegating power and resources to local authorities would help exploit the full potential of LEE.
The EU could also introduce new criteria to its "Guarantee of Origin" RE labels to support LEE.

# 6. Participatory incubation and experimentation

**Countries** Germany, the Netherlands, Poland

**Definition** Multi-actor, collaborative formats – often in physical places – that support groups to experiment with new energy solutions in specific (local and time-bound) settings.

## Introduction to the field

Multi-actor collaborative formats such as living labs, urban labs, regulatory sandboxes, showcases or 'Reallabore' (real-life laboratories) allow for incubation of, and experimentation with, novel solutions. These formats support experiments that take place in settings that are close to real-world contexts, involving everyday problems and actors. The aim is to find new ways of organising energy production and consumption, for instance by using new technologies, funding mechanisms or governance structures. The primary goal of these experiments is to spark innovation and to co-create new ways of doing, thinking and/or organising.

## Key insights

Experimentation and incubation are often focused on technological innovation, and part of national policies. Although these plans typically aim to integrate local actors, these actors have historically not been empowered with adequate resources and mandates. And, without meaningfully involvement and leadership from the local level, even successful experiments can struggle to transform energy systems.

In Germany, experiments focused on citizen participation and on technological development are common.

"If you look back 30 years, this word [innovation] was hardly used: the focus was on research and development. Gradually, more attention was given to ensuring that you would work more in practice instead of in a factory or in a laboratory."

– Dutch interviewee

However, their short-term nature has often inhibited long-term learning and integration into far-reaching strategies.

In the Netherlands, experiments originally focused on technological innovation built collaboratively by technical universities, energy corporations and governments. After the 2008 financial crisis, civil society began joining this work, and experiments focused more on learning.

The main driver of participatory experimentation in Poland was the need to align legislation after joining the EU in 2004, including decentralising energy systems. At first, these efforts were largely supported by EU funds; however, more recently the national government's local "energy clusters" concept has provided new paths for participatory experimentation.

"Energy clusters are the answer...to take action to eliminate the many years of lagging behind in the use of RES... They are laboratories for energy market change."

– Polish interviewee

## Recommendations

**SIE-field actors** working on pilot projects or experiments are encouraged to be transparent about their aims; link up to broader social visions (e.g. the Paris Agreement); seek support from the EU; make use of new technologies; network with other, similar projects to share lessons and advocate with one voice; and to be aware of risks such as administrative barriers.

**Municipalities** are encouraged to consider experimenting themselves with local administrative structures; clarify how experimentation supports local energy transition; collaborate with key stakeholders; and to network with other cities to share experiences.

**National and EU policy makers** should provide resources and opportunities that enable diverse actors to experiment (e.g. this should engage different ministries); and can transparently link energy transition goals to funding of experimentation.

# The path to diving deep into SIE-fields

## Case Studies

**18** case studies

**6** country reports

France, Germany, the Netherlands, Poland, Switzerland, the United Kingdom

**Next step:** carry out comparative analysis across countries and case studies

> The documents we reviewed, timelines we created, and people we spoke to helped us get a sense of what has happened. Now it is time to look ahead, and to apply these insights to shape the future of energy transitions.
>
> researcher insights

Timeline of key events created

Collectively agreed on themes for analysis to enable comparisons across case studies

Carried out thematic and historic analysis of rich empirical data.

> The process of creating innovation biographies that bring together people's experiences, historical accounts and their interactions with others helped us dive deeper to understand social innovations processes within energy transitions.
>
> researcher insights

> 171 in-depth interviews was quite a feat! We are proud to see that so many people working in social innovations across Europe entrusted us with their stories.
>
> researcher insights

Participant observation in **37** online events

## Methodology

Common guidelines created, including Topic Guide for interviews

**298** documents reviewed

**171** in-depth interviews conducted

## SONNET Energy Read #2

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

sonnet-energy.eu @SONNET_energy

## Partners

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837498.