

# SOCIAL INNOVATION MEETS ENERGY

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About the social dimension of  
energy transitions

**In this “Energy Read” we introduce you to the concept of social innovation in energy transitions.**

The SONNET project aims to understand and show the diversity of social innovation in energy transitions, going ‘beyond only energy cooperatives’. This diversity is portrayed in a typology and illustrated with examples, putting an emphasis on the six cities that are partners in the SONNET project. Ultimately, we will see that energy transitions have inseparable social and technological dimensions to them.

We hope that, by understanding these dimensions, we can support the social dynamics that are necessary to the success of the much-needed renewal of our energy systems.

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## About social innovation in energy transitions

Global climate change and our resulting, daunting outlook have spurred global ambitions and actions to change energy production and consumption patterns from fossil fuel based sources to renewable energy sources. Still, the globally agreed targets under the Paris Agreement are far from being met. There is wide agreement that:

*"all actors – from corporate energy suppliers to private citizens – may have to undergo fundamental changes concerning not only their role but also their routine practices and attitudes towards how to produce, transport, store, trade and consume energy. In this regard, social innovation in the energy sector (SIE) has attracted increased interests both as a source of enabling sustainable energy transitions and as a relevant field of experience and learning."<sup>1</sup>*

Initiatives engaging in such SIE go beyond the development and use of new technologies and usually have a strong focus on relationships between organisations and/or individuals, as citizens, as consumers or even as energy producers. They can be found on the demand and supply sides across different energy-related sectors, such as electricity, heat, mobility and ICT.

Social Innovation has only recently been prominently included in research and innovation policy. However, the term dates back as far as the 15th century, when it first came up in religious texts in the Western world. Until recently, the term was not used to describe technological innovation (like the electric car or smartphones), but rather as a slogan or an ethical ambition for 'change' or even 'revolution'. Later, social innovation became synonymous with social reform and it began to mean more or less anything new that challenged a status quo – including alongside new technologies.<sup>2</sup> Some examples that were considered social innovations in their times of emergence include:

Participatory budgeting  
The Social and Solidarity Economy  
Women's rights Minimum wage law  
Mothers' pension Patents Fair trade  
Open source software

<sup>1</sup> Wittmayer, J.M.; Hielscher, S.; Rogge, K.S. and Avelino, F. (2020) Report on SONNET's initial conceptual framework. SONNET, Horizon 2020, Grant Agreement no. 837498, Deliverable 1.2, p.7. [https://sonnet-energy.eu/wp-content/uploads/2020/04/SONNET\\_DL\\_2\\_CONCEPT\\_SUBMITTED\\_v1\\_0\\_20200331-small.pdf](https://sonnet-energy.eu/wp-content/uploads/2020/04/SONNET_DL_2_CONCEPT_SUBMITTED_v1_0_20200331-small.pdf).

<sup>2</sup> Godin, B. (2012). 'Social Innovation: Utopias of Innovation from c.1830 to the Present', Project on the Intellectual History of Innovation (Working Paper No. 11). [http://www.csiic.ca/PDF/SocialInnovation\\_2012.pdf](http://www.csiic.ca/PDF/SocialInnovation_2012.pdf).

Looking at the broad range of possible fields of application, as shown above, it is not surprising that different understandings and lines of thinking on social innovation have developed over time. These streams tend to refer to social innovations as either new practices<sup>3</sup>, new social relations<sup>4</sup>, or new products, services, and models<sup>5</sup>.

In the SONNET project, we are looking at changes in social relations that manifest through activities related to energy generation, transmission, distribution and/or consumption. These changes have both a material and social side: they address changing patterns – by, for example, using new technology – as well as the simultaneous changes in behaviour of those people using this technology. In sum, a concise SONNET-definition of SIE starts with the following:

**Social innovation in energy (SIE) is a combination of ideas, objects and/or actions that change social relations and involve new ways of doing, thinking and/or organising energy.<sup>6</sup>**

To further unpack this definition's meaning, it is important to note that, when we refer to new ways of doing, thinking and/or organising energy, we mean<sup>7</sup>:

Doing



'Practices related to energy technologies and the physical composition of the energy system'. E.g. the act of building a new wind turbine.

Thinking



'Forms of knowledge and normative framings including values and perceptions'. E.g. the transfer of knowledge on financing a wind turbine towards interested target audiences – be it a local community of citizens, a company or a government.

Organising



'Governance and organisational structures within initiatives and within the energy system' (i.e. institutions in terms of rules and norms). E.g. lobbying for a change in subsidies for wind energy by civil society or business associations, or the setting of required technical standards by politicians.

<sup>3</sup> Howaldt, J. and Schwarz, M. (2010) Social Innovation: Concepts, research fields and international trends, Dortmund. [http://www.sfs.tu-dortmund.de/cms/en/social\\_innovation/publications/IMO-MAC\\_Howaldt\\_final\\_mit\\_cover.pdf](http://www.sfs.tu-dortmund.de/cms/en/social_innovation/publications/IMO-MAC_Howaldt_final_mit_cover.pdf)

<sup>4</sup> Moulart, F.; Mehmood, A.; MacCallum, D. and Leubolt, B. (2017), Social Innovation as a Trigger for Transformations - the Role of Research. Luxembourg. <https://ec.europa.eu/research/socialsciences/pdf>

<sup>5</sup> Bureau of European Policy Advisers, "Empowering people, driving change Social Innovation in the European Union," Luxembourg, 2011. <https://ec.europa.eu/migrant-integration/librarydoc/empowering-people-driving-change-social-innovation-in-the-european-union>

<sup>6</sup> Wittmayer, J.M.; Fraaije, M.; Hielscher, S. and Avelino, F. (2020) Report on preliminary typology of social innovation in the energy sector. SONNET, Horizon 2020, Grant Agreement no. 837498, Deliverable 1.1, p.6. [https://sonnet-energy.eu/wp-content/uploads/2020/03/SONNET\\_DL\\_TYPOLOGY\\_SUBMITTED\\_V1\\_0\\_20200131.pdf](https://sonnet-energy.eu/wp-content/uploads/2020/03/SONNET_DL_TYPOLOGY_SUBMITTED_V1_0_20200131.pdf)

<sup>7</sup> Ibid. p.13.

When saying ‘new ways’, it must be noted that the word ‘new’ does not necessarily refer only to things that are entirely new. It can also refer to ‘renewed’ phenomena in terms of:

*„re-discovering, re-inventing, re-using, re-vitalising and translating forgotten, lost or abandoned ways of doing, thinking and organising of the past. Innovation is just as much about new combinations of old things, as it is about integrating new things into existing contexts”<sup>8</sup>*

Furthermore, renewal brings with it a normative, socio-political dimension of societal change. Any decision-making is thus open to the multitude of directions and political views in society. Social innovations can be taken up by all members of society regardless of their energy-related beliefs and values. This means that social innovations are not inherently “good” or “bad” with respect to the movement towards sustainable energy transition.

It is important to note that SIE is always carried out by a complex network of actors from different societal corners. Whereas the picture of heroic and often bottom-up initiatives is prevalent in renewable energy research and sometimes in the media, it is important to be aware that, in order to be successful, a social innovation is likely to engage civil society actors, social entrepreneurs and policy entrepreneurs alike.

Social innovation cannot be seen as a functional tool. Rather, it is part of a long societal development process, of moving away from existing societal paradigms. There are a number of institutional questions and factors to be explored around social innovations, which relate to property rights, decision-making power, legitimacy and accountability.<sup>9</sup>

The next section turns our attention to concrete, practical examples of SIE.

<sup>8</sup> Ibid. p.15 and Manifesto for Transformative Social Innovation. Version 0.1. / October 2017. <https://tsimanifesto.org/app/uploads/2017/12/Manifesto-for-Transformative-Social-Innovation-v0.1-Oct-2017-1.pdf>

<sup>9</sup> For this first Energy Read these institutional factors are only mentioned; however, they will be explored in more detail in future Energy Reads. For more information, view the upcoming paper: Wittmayer et al. (in review) Beyond instrumentalism: Broadening the understanding of social innovation in socio-technical energy systems.

## SIE in practice

So far, we have talked about how social innovations include changes in social relations. Sociologists have looked at how individuals and organisations interact, and have found that we either work together towards shared goals (cooperation) or exchange material and/or immaterial goods or services (exchange). When we must contend for access to a scarce resource, we do this either by following shared rules (competition) or through unregulated access that may be contentious (conflict).

When we examine examples of social innovation initiatives, we must ask whether the relationships amongst individuals and organisations are different than they would be without the innovation. Such changes in relations manifest in different ways; we differentiate between changes that involve “doing,” “organising,” or “thinking.”

Doing



Think about installing new energy technology, generating electricity/heat, or taking on direct actions such as blockades in power plants to influence political agendas

Thinking



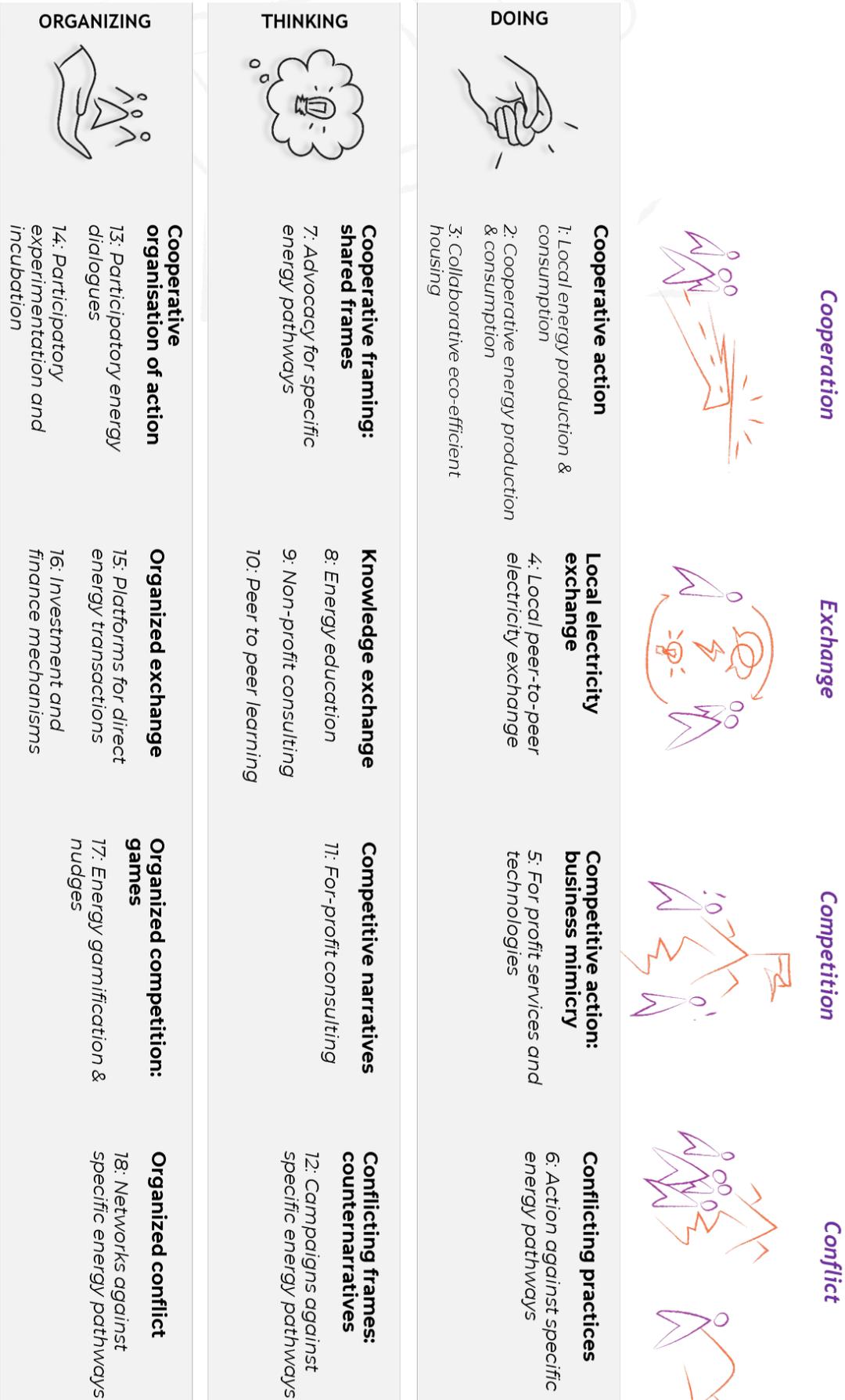
This may include awareness raising efforts, campaigning for political agendas, or transferring knowledge and skills

Organising



Includes, for example, facilitation and networking between actors, provision of (or facilitating procuring) financing, constructing dialogues, or facilitating supply/demand exchanges

**The SONNET project has developed a typology of different types of social innovations in energy that take these categories into account.** The table below provides an overview of the different types, grouped based on the three social innovation “forms” previously introduced (vertical axis), as well as based on the four types of social interactions (horizontal axis). This includes sub-differentiations within the types. A selection of these types are illustrated and elaborated upon in more detail on the following pages.



<sup>10</sup> Brinkerhoff, D.B.; White, L.K.; Ortega, S.T. and Weitz, R. (2008) Essentials of Sociology. 7th ed. Belmont: Thomson Learning. Pages 98-100.

## 1 Cooperative energy production and consumption (#2)

### Cooperation/ Doing



*"Cooperation is interaction that occurs when people work together to achieve shared goals"<sup>10</sup>*



This type of SIE is generally driven by member-based, local, citizen-led or grassroots initiatives; they can also be inter-organisational collaborations with a non-profit mentality. They can involve electricity generation, supply, storage and consumption, and realise physical changes in the energy system through practical activities. These SIEs are often, but not exclusively, organised as cooperatives and follow principles such as those followed by the European federation of renewable energy cooperatives (REScoop) and by the International Co-operative Alliance (ICA). These principles include i) concern for community, ii) voluntary and open membership, iii) democratic governance of the undertaking, and iv) autonomy and independence.



#### Bristol Energy Cooperative

**Activity:** Development of renewable energy and energy efficiency projects, and advisory activities.

**Country:** United Kingdom **Website** [www.bristolenergy.coop](http://www.bristolenergy.coop)

## 2 Local peer-to-peer electricity exchange (#4)

### Exchange/ Doing



*"Exchange is the voluntary interaction from which all parties expect some reward"<sup>11</sup>*



This type of SIE is driven by communities, companies and citizens engaging in (peer-to-peer) local or regional electricity 'exchange' – i.e. production, consumption and distribution of renewable energy – whilst being connected to the national grid. Because the current energy system is oriented around centralised electricity distribution, these initiatives, to date, mainly involve experimenting and engaging in temporary projects. Initiatives might have varying motivations, such as reducing peaks in electricity supply, or aiming for self-sufficiency and economic independence.



#### Living Lab Walldorf

**Activity:** Electricity exchange through a locally-organised electricity grid, done via a city lab

**Country:** Germany **Website** [www.living-lab-walldorf.de](http://www.living-lab-walldorf.de)

<sup>11</sup> Ibid. footnote 6

<sup>12</sup> Ibid. footnote 6

### 3 Energy gamification and nudges (#17)

#### Competition/ Organising



*"Competition is a struggle over scarce resources that is regulated by shared rules"<sup>12</sup>*

Games create competition around a scarce resource (the prize) regulated by shared rules. Energy transition games use this framework to encourage participants to compete with one another to change their energy practices. Challenges in the form of games, apps and competitions, or that present awards and certificates, are usually organised by municipalities or non-profit organisations to "nudge" people to adopt more sustainable behaviour. Sometimes winners are rewarded simply with a sense of pride for becoming a role model for others, while other games provide in-kind or financial rewards.



#### Déclics

**Activity:** Programme that provides playful nudges towards energy saving behaviour.

**Country:** France **Website** [defis-declics.org/fr](http://defis-declics.org/fr)

### 4 Campaigns against specific energy pathways (#12)

#### Conflict/ Thinking



*"Conflict is a struggle over scarce resources that is not regulated by shared rules, it may include attempts to destroy, injure, or neutralise one's rivals"<sup>13</sup>*



This type of SIE does not play by the typical rules; it is about challenging dominant frames and promoting counter-narratives that are explicitly set in opposition with the mainstream. These often oppose governments or other powerful institutions. Physical action (SIE type 6, cf. figure 1) is one such way to protest against mainstream energy practices. Other forms can be peaceful opposition through campaigns against current energy pathways, as well as lobbying for specific political agendas. This type of action is usually driven by multi-stakeholder collaborations, led by NGOs



#### Frack Off, Extreme Energy Action Network

**Activity:** A grassroots direct action campaign aimed at stopping the extraction of unconventional resources in the UK, with a focus on gas extraction through hydraulic fracturing ('fracking').

**Country:** United Kingdom **Website** [frack-off.org.uk](http://frack-off.org.uk)

<sup>11</sup> Ibid. footnote 6

<sup>12</sup> Ibid. footnote 6

## 5 Investment and finance mechanisms (#16)

### Exchange/ Organising



Various non-traditional financial mechanisms exist through which funds are made available to support activities related to energy saving and energy efficiency, or the production, distribution and storage of renewable energy. To be considered SIEs, financial mechanisms need to enable novel combinations of actors to come together (e.g. cooperation between a traditional utility and local community), or allow actors to assume novel roles in the energy system (e.g. an energy community becomes a distribution system operator). These financial mechanisms include national subsidies, municipal funds, crowdfunding, community bonds, ventures, social investment, 'pay as you save', membership fees, and others.



#### Klima Stiftung

**Activity:** Foundation for the funding of climate protection measures by SMEs.

**Country:** Switzerland **Website** [www.klimastiftung.ch](http://www.klimastiftung.ch)

## 6 Participatory experimentation and incubation (#14)

### Exchange/ Organising

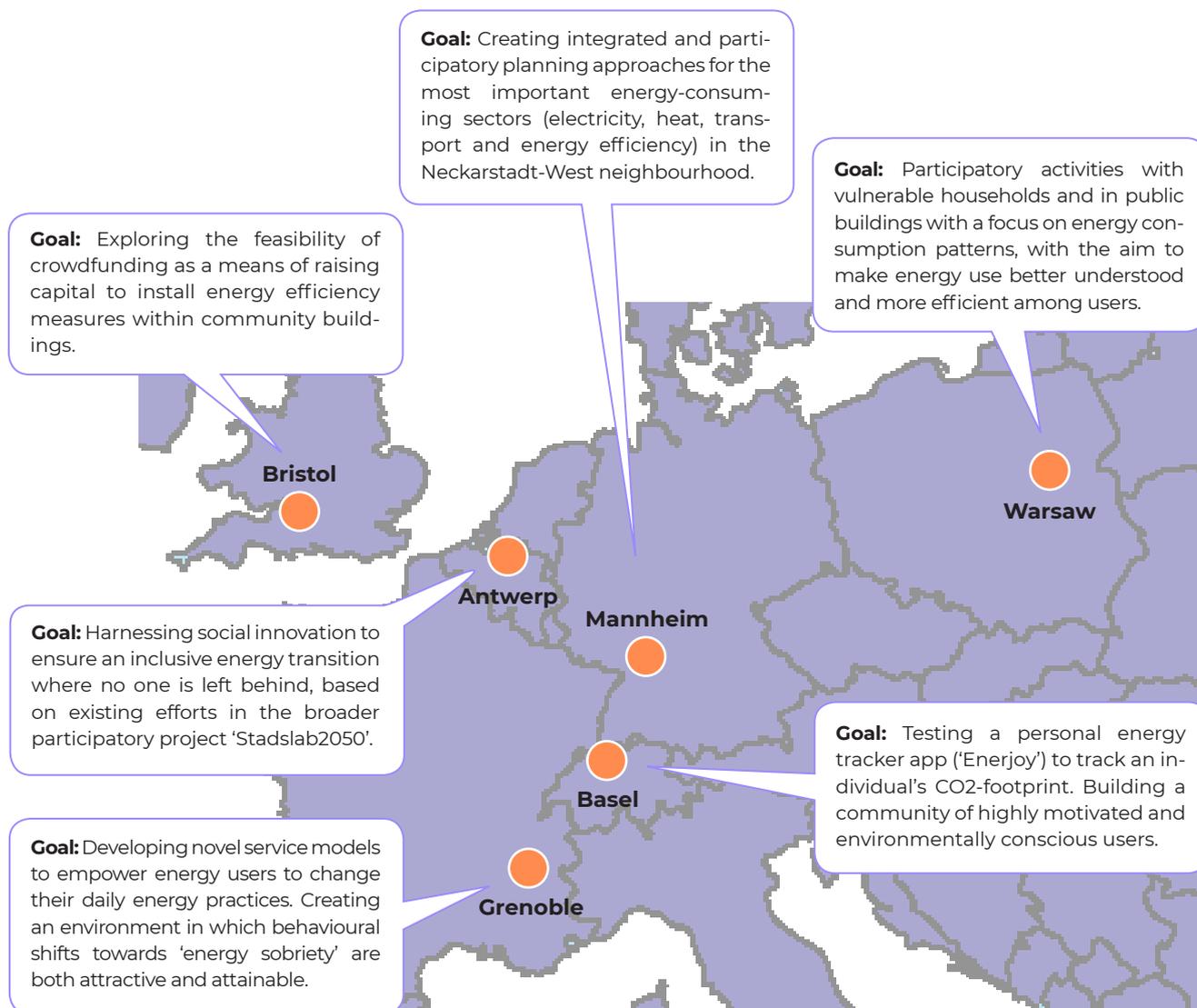


The SIE type 'participatory incubation and experimentation' refers to multi-actor collaborative formats that aim to test new solutions for specific energy pathways (e.g. collective energy prosuming). These solutions can be driven by technological (e.g. smart grid installations) and/or social (e.g. novel business models for prosuming energy) developments. A key component of these formats is that they provide a physical space for people to experiment for a limited, pre-defined time span. Examples are 'living laboratories' or 'real-life laboratories'.

In the SONNET project, we use the term 'City Labs' for this type, as we are working with six partner cities, all of whom are carrying out such experiments as part of SONNET. Get a rough overview of our City Labs<sup>14</sup> on the next page.

<sup>13</sup> Ibid. footnote 6

<sup>14</sup> Agata Dembek, Alicja Dańkowska and Marta Strumińska-Kutra (2020) Report on transdisciplinary research protocol for six co-creating SIE city labs. SONNET, Horizon 2020, Grant Agreement no. 837498, Deliverable 4.1, p.15-16. [https://sonnet-energy.eu/wp-content/uploads/2020/04/SONNET\\_D4\\_1\\_CityLabProtocol\\_SUBMITTED\\_v1\\_0\\_20200331.pdf](https://sonnet-energy.eu/wp-content/uploads/2020/04/SONNET_D4_1_CityLabProtocol_SUBMITTED_v1_0_20200331.pdf)



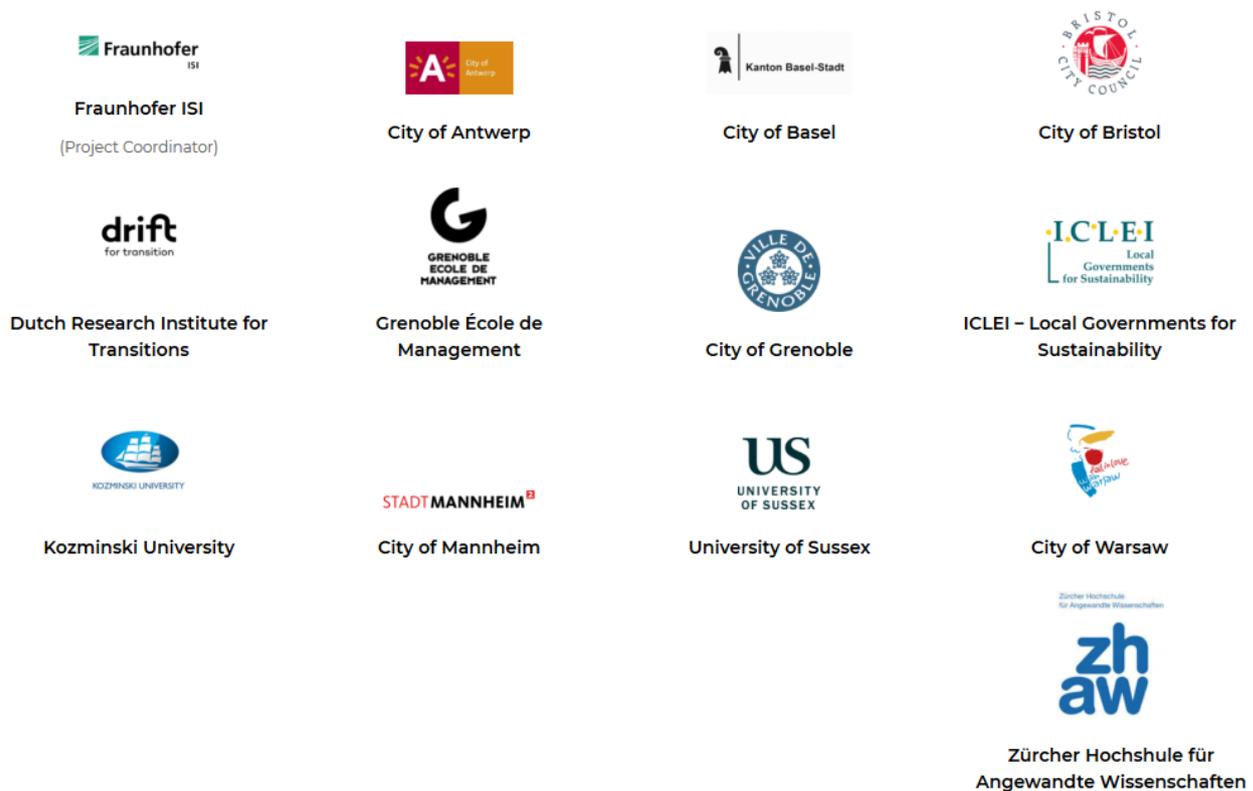
All of the above examples make it clear that SIEs are highly diverse, can take different forms, and utilise different means to shift how energy is produced and consumed. *To examine the entire typology in more detail, and to read our other project outputs, please visit our website at [sonnet-energy.eu](https://sonnet-energy.eu).*

**We hope that this first SONNET Energy Read has inspired you to join us in exploring the meaning and magnitude of social innovations in the energy sector.**

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:

 [www.sonnet-energy.eu](http://www.sonnet-energy.eu)  [twitter.com/SONNET\\_energy](https://twitter.com/SONNET_energy)

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



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