Social Innovation in the Energy Transition

Webinar
Social Innovation in the Energy Transition Platform TU Delft
Delft University of Technology,
Friday 19 June 2020
https://www.tudelft.nl/en/socialinnovation/
Schedule

• 15:00 – 15:05 Introduction.
• 15:05 – 15:10 What does social innovation entail, and what does it mean in the energy domain?
• 15:10 - 15:40 Presentation by Dr. Julia Wittmayer (Drift, Erasmus University Rotterdam, The Netherlands) about meaning and classification of social innovation in the energy transition.
• 15:40 – 15:50 Q&A.
• 15:50 – 16:10 Presentation by Dr. Anatol Itten (Faculty of Technology, Policy and Management, Delft University of Technology, The Netherlands) about social innovation and co-creation.
• 16:10 – 16:20 Q&A.
• 16:20 – 16:30 Key takes form the webinar and conclusion.
Introduction

• Welcome
• Platform on Social Innovation in the Energy Transition at Delft University of Technology.
• Explanation to the series of events and webinars for 2020 and 2021.
Platform Social Innovation in the Energy Transition

• Started in 2017 by Dr. Thomas Hoppe and Dr. Gerdien de Vries on behalf of the Delft Energy Initiative.

• Goals were:
  – To generate more attention to social and other human (i.e. “non-technical”) aspects that matter in energy transitions.
  – To mobilise researchers at Delft University of Technology who are working on the social dimension of energy transitions, and encourage them to collaborate.
  – To reach out to the wider academic community working on the social dimension of energy transitions.
Social innovation??

- At the time, however, little attention was actually paid to the very meaning of ‘social innovation’ within the domain of energy transitions.
- It was mostly used as a popular buzzword.
Symposium 2017

• 3-4 April 2017
• Widely attended by both academics and practitioners (and even members from the Dutch royal family!).
• With Special Issue of best papers:

Movie: https://www.youtube.com/watch?time_continue=22&v=dwpxft9jxqw&feature=emb_title
What does social innovation entail, and what does it mean in the energy domain?

• The 2017 symposium laid the foundation to attaching more meaning and defining social innovation in energy transitions.
• A literature study was conducted.
• Working definition:
  ‒ “Innovations that are social in their means and contribute to low carbon energy transition, civic empowerment and social goals pertaining to the general wellbeing of communities.” (Hoppe and De Vries, 2019:4).

Literature reference: *Sustainability* 2019, 11(1), 141; [https://doi.org/10.3390/su11010141](https://doi.org/10.3390/su11010141)
Social innovation in a wider academic setting

• At the same attention to the topic also rose elsewhere across academic communities.
• Currently more definitions exists, and the one we developed (previous slide) was criticized for being instrumentalist.
• We became involved in debates about the topic in larger academic settings, starting to cooperate with other universities and projects.
  – Including Drift’s H2020 projects PROSEU and SONNET.
Platform Social Innovation 2.0

• In January 2020 the Platform received new funding (from the Delft Urban Energy Platform) and could be extended for the 2020-2021 period.
  – Team: Anatol Itten, Gerdien de Vries, Thomas Hoppe, Twan Kramer.

• Revised approach:
  – Goal is to generate more exposure and to increase cohesion between researchers within Delft University of Technology, and with the wider academic community.
  – Furthering the research agenda.
Activities by SI Platform

• Activities for 2020-2021:
  – Organizing webinars and other knowledge events
  – Updating website and more.
  – Open to “bottom up” / grassroots suggestions.

• Close connection to the “Energy Transition Lab” at Faculty of TPM, Delft University of technology.
Closing of the webinar

• Many thanks for attending our webinar!
• We welcome you to our next webinar on Friday 18 September about the impact of Covid-19 on energy transition.
• Feel free to contact us at: sociale-innovatie@tudelft.nl.
• Or visit our website: https://www.tudelft.nl/en/socialinnovation/
More than cooperation?

Diversity of Social Innovations in Energy

Dr. Julia Wittmayer
DRIFT, Erasmus Universiteit Rotterdam

June 19th, 2020
SONNET’s overall aim is to generate novel understandings of the diversity, processes and contributions of social innovation in the energy sector, and critically evaluate and assess their success and future potential towards supporting sustainable transitions of energy systems.

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837498.
These projects receive funding from the European Union’s Horizon 2020 research and innovation programme.
Sources: https://www.maasenwaalkanter.nl/nieuws/algemeen/616592/duurzaam-opgewekt-maas-waal-
Social Innovation and the Energy Transition

Thomas Hoppe* and Gerdien de Vries

Organisation and Governance (OG), Department of Multi-Agent Systems (MAS), Faculty of Technology, Policy and Management (ITM), Delft University of Technology, Jaffalaan 5, 2628 BX Delft, The Netherlands; GdV@Vries@tudelft.nl

* Correspondence: T.Hoppe@tudelft.nl

Received: 20 December 2018; Accepted: 21 December 2018; Published: 28 December 2018

Abstract: The transition to low carbon energy systems cannot solely rely on technological innovation. It also requires social innovation. In the context of energy transition social innovation can be defined as innovation that is social in its means and which contributes to low carbon energy transition, civic empowerment and social goals pertaining to the general welfare. The editorial comment of the special issue “Social Innovation in Community Energy: A Review of the Evidence” seeks to answer the question, “what does social innovation mean and what are its implications?” This special issue yields 2 different academic disciplines within the behavioral and social sciences relevant to social innovation emerge, pertaining to new market models, actor configurations, and institutional innovation; (ii) new governance arrangements; (iii) social incentives and policy to empower it; (iv) new part learn from living labs and best practices; (v) “green nudges” serious energy games. The editorial ends with suggestions for future research.

Keywords: social innovation; energy transition; green nudges; renewable energy; energy governance; climate change; citizen empowerment

Article


Jay Sterling Gregg 1, Sophie Nyborg 2, Meiken Hansen 3, Valeria Jana Schwanitz 3, August Wierling 4, Jan Pedro Zeiss 5, Sarah Delvaux 6, Victor Saenz 7, Lucia Polo-Alvarez 8, Chiara Candelise 9, Winston Gilriss 1, Osman Arrobio 7, Alessandro Sciullo 7 and Dario Padovan 7

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Citizen-driven Renewable Energy (RE) projects of various types, such as community energy (CE), have an important role to play. On the basis of evidence from the last 50 years, it is clear that achieving ambitious mitigation targets is more likely if RE projects are contextually appropriate and have a deep base of support and participation from the local community.

SocialRES
What is Social Innovation in Energy (SIE)?
What are different types of SIE?
...
What is social innovation?
Example: Community Energy

Social innovation in energy (SIE) is a combination of ideas, objects and/or actions that changes social relations and involves new ways of doing, thinking and/or organising energy.

(Wittmayer et al. 2020)

Sonnet

Doing
renewable energy production

New relations: consumers, producers, neighbours

new knowledge: ‘prosumers’

Thinking

Organising

energy cooperatives

http://www.westmillsolar.coop

Haxeltine et al. 2017, Avelino et al. 2019
Chilvers & Longhurst 2016
Understanding SIE also includes...

**SIE can originate in and involves multiple societal spheres.**

Innovation hero's from ‘outside’ the system (often community/third sector)...

But public sector innovation, business model innovation and distributed agency

**SIE is multi-directional and involves normative complexity**

Positive normative connotation ‘improvement’ ... but: not ‘inherently good’

Structural change, trade-offs, ambiguities, unintended consequences

*Wittmayer et al. under review*
Understanding SIE also includes…

**SIE is about socio-material intertwinement**

Secondary form of innovation or ‘bolt-on’...

But: changes in socio-material relations, as unintended side-effect, or technological change as bolt-on

**SIE is about renewed phenomena**

Re-discovering, re-inventing, re-using, re-vitalizing and translating forgotten, lost or abandoned ways of doing, thinking and organising of the past;

new combinations of old things

integration of new things into existing contexts

*Wittmayer et al. under review*
What is Social Innovation in Energy (SIE)?
What are different types of SIE?
A typology?

• There is no comprehensive (that not only covers specific phenomena (e.g. prosumerism, energy cooperatives)) typology of SIE

• Systematic classification allows for a differentiated analysis of patterns, relations and links between types, the different enabling and impeding conditions and distinct contributions.

• Provide guidance for systematic analysis, support and advocacy
SIE as changes in social relations ...
Different types of social interactions between actors occur in social relations (Brinkerhoff et al. 2008; Simmel 1971)

<table>
<thead>
<tr>
<th>Type of social interaction</th>
<th>Definition</th>
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<tr>
<td>Exchange</td>
<td>“Exchange is the voluntary interaction from which all parties expect some reward”</td>
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<tr>
<td>Cooperation</td>
<td>“Cooperation is interaction that occurs when people work together to achieve shared goals”</td>
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<tr>
<td>Competition</td>
<td>“Competition is a struggle over scarce resources that is regulated by shared rules”</td>
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<tr>
<td>Conflict</td>
<td>“Conflict is a struggle over scarce resources that is not regulated by shared rules, it may include attempts to destroy, injure, or neutralize one’s rivals”</td>
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</table>

Typology

Different types of social interactions between actors occur in social relations (Brinkerhoff et al. 2008; Simmel 1971)

Wittmayer et al. 2020
... involving ‘new’ ways of doing, thinking and organizing energy
<table>
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<tr>
<th>Typology</th>
<th>Definition</th>
<th>Operationalisation for the energy sector</th>
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<tbody>
<tr>
<td>Doing</td>
<td>Practices related to energy technologies and the physical composition of the energy system</td>
<td>Generating electricity/heat (efficiently)</td>
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<td>Supplying electricity/heat</td>
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<td>Using electricity/heat (efficiently)</td>
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<td>Exchange electricity peer-to-peer</td>
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<td>Storing electricity/heat</td>
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<td>Implementing technology-based energy services</td>
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<td>Installing energy technology</td>
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<td>Action against political agendas</td>
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<td>Organising</td>
<td>Governance and organisational structures within initiatives and within the energy system (i.e. institutions in terms of forms of social organisation or standard operating procedures that shape behaviour and find expression through rules, practices and narratives)</td>
<td>(Facilitating) Networking</td>
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<td>Providing services</td>
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<td>Offer/facilitate financing</td>
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<td>Constructing a dialogue</td>
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<td>Incubating ideas and solutions</td>
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<td>Facilitating supply/demand exchanges</td>
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<td>Nudging and facilitating behaviour change</td>
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<td>Thinking</td>
<td>Forms of knowledge and normative framings including values and perceptions</td>
<td>&quot;Raising awareness&quot; about energy</td>
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<td>Campaigning against political agendas</td>
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<td>Transferring knowledge &amp; skills</td>
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Wittmayer et al. 2020
Social innovation in energy (SIE) is a combination of ideas, objects and/or actions that changes social relations and involve new ways of doing, thinking and/or organising energy. (Wittmayer et al. 2020, Avelino et al. 2019)
SONNET

Cooperation

Exchange

Competition

Conflict

DOING

THINKING

ORGANIZING
### Cooperation
1: Local energy production & consumption
2: Cooperative energy production & consumption
3: Collaborative eco-efficient housing

### Exchange
4: Local peer-to-peer electricity exchange

### Competition
5: For profit services and technologies

### Conflict
6: Action against specific energy pathway

### Doing
**Cooperative action**
- 1: Local energy production & consumption
- 2: Cooperative energy production & consumption
- 3: Collaborative eco-efficient housing

**Energy exchange**
- 4: Local peer-to-peer electricity exchange

**Competitive action**
- 5: For profit services and technologies

**Action as conflict**
- 6: Action against specific energy pathway

### Thinking
**Cooperative frames**
- 7: Advocacy for specific energy pathways

**Knowledge exchange**
- 8: Energy education
- 9: Non-profit consulting
- 10: Peer to peer learning

**Competitive narratives**
- 11: For-profit consulting

**Conflicting frames**
- 12: Campaigns against specific energy pathways

### Organizing
**Organized cooperative action**
- 13: Participatory energy dialogues
- 14: Participatory experimentation and incubation

**Organized exchange**
- 15: Platforms for direct energy transactions
- 16: Investment and finance mechanisms

**Organized competitive action**
- 17: Energy gamification & nudges

**Organized conflict**
- 18: Networks against specific energy pathways

www.sonnet-energy.eu/typology

Wittmayer et al. 2020
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www.sonnet-energy.eu/typology

Wittmayer et al. 2020
Participatory experimentation and incubation

- Multi-actor, collaborative formats that aim to experiment with and/or try out novel energy solutions in specific local settings.
- Solutions include (the development of) ideas, projects, solutions, technologies, services – are driven by technological (e.g. smart grid installations) and/or social (e.g. novel business models) developments
- Dedicated to specific energy pathways
- Bound in time and place
- Examples: Living labs, urban labs, transdisciplinary collaborations, triple helix, ...
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Wittmayer et al. 2020
Campaigns/Frames against specific energy pathways

- Frames against specific energy pathways, e.g. centered on fossil fuels
- Creation and development of these framings (specifically through problem descriptions and possibly through envisioned alternative futures)
- Protest, peaceful opposition and campaigns against specific energy pathways
- Driven by NGOs, grassroots, multi-stakeholder collaboration
- Examples: platform against smart meters, nuclear, coal; but also against inactivity of political elite
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Investment and Finance mechanisms

• Financial mechanisms through which funding or investment is made available to facilitate the activities of novel actor constellations related to the advancement of certain energy pathways.

• Schemes for accessing money

• Public, community, private investment in support of certain energy solutions

• need to require or enable novel combinations of actors (e.g. cooperation between traditional utility and local community) or allow actors to assume novel roles in the energy system (e.g. energy community turns DSO)

• Examples: national subsidies, community funds, crowdfunding, ...
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For more information: www.sonnet-energy.eu/typology

This was only a glimpse... (and only the start)
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**Case Study work**

[www.sonnet-energy.eu/typology](http://www.sonnet-energy.eu/typology)

Wittmayer et al. 2020
Thank you and stay in touch

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sonnet-energy.eu
SOCIAL INNOVATION THROUGH CO-CREATION

Examples from the sustainable heat transition

Dr. Anatol Itten
Co-creation: main concepts

• Co-creation starts from a different place than ‘decide-announce-defend’.

• Citizens and professionals sharing power and responsibility to work together in equal, reciprocal, and caring relationships.

• Voorberg et al. (2014) see it as necessary that citizens are present at co-creation.

• Citizens as co-initiators, co-designers or co-producers of public services.

• We are interested in what happens when ‘ordinary’ citizens take over public tasks, and when public officials take over new civic roles.
State-of-the-art report for co-creation approaches and practices with a special focus on the sustainable heating transition Sustainable Heating

Technical Report (PDF Available) - April 2020  with 96 Reads
DOI: 10.13140/RG.2.2.22835.17440
Affiliation: Delft University of Technology

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University of Exeter

Aarthi Sundaram
Delft University of Technology

T. Hoppe
Delft University of Technology

Patrick Devine-Wright
University of Exeter
Sustainable heating is challenging

Fig. 2. Needs identified by the qualitative and quantitative studies.

Source: Mallaband and Lipson (2020)
Six co-creation pilots SHIFFT project (2019-2022)
## Social innovations in practice – what have we learned so far

<table>
<thead>
<tr>
<th>Mechelen</th>
<th>Norwich</th>
<th>Hauts-de-France</th>
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</table>
| - Facilitating group purchases  
- Building the work of a local citizen community and energy cooperative.  
- Using online platforms to consult and discuss perspectives | - Housing association seeks to be a role model for the City council  
- Seeking better knowledge about stakeholders and tenants needs  
- Co-creation can to fit into a business case, as innovations become more user centered. | - Using heat transition as a means to reduce energy poverty (providing jobs, lowering bills, providing training sessions)  
- Putting Social Housing Association at the center of the transition  
- Innovate learning and uptake systems |

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<tr>
<th>Bruges</th>
<th>Fourmies</th>
<th>Middelburg</th>
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</table>
| - User centered approach, co-creating inspiration and then action  
- Building neighbourhood coalitions  
- Using online platforms to consult and discuss perspectives  
- Focusing on mutual gains and self-responsibility | - Co-creation is part of the culture, but it is done with a humble attitude  
- Invitation of citizens via a network of third parties  
- Take over different roles (private/professional) in the co-creation | - Ambition to involve non-Dutch speaking residents into the co-creation process  
- Building social coalitions with highly motivated neighbourhoods  
- Using online platforms to consult and discuss perspectives |
“There is a gap of 3 months where it wasn’t possible organise other brainstorm evenings, lessons in schools, information evenings.

But it gave me the chance to really think about how we can trigger citizens to take some actions regarding to reducing their CO₂ emission and implementing sustainable heating solutions. It changed our plans of co-creation.

Our process of co-creation will be more intense than before, the process won’t only be communication and participation, the citizens will have to take up the challenge and be more responsible for their neighbourhood.”

Lies Debbaut, Project Coordinator, City of Bruges
How a pandemic and the digital transformation accelerate change

The heating challenge cities must solve to fight global warming

Helsinki is looking at all possible impediments to it becoming carbon neutral by 2035 and taking appropriate action. Image: Pixabay

Cities globally need to look at innovative solutions to decarbonise their heating systems.
Timing: Synchronous or asynchronous co-creation?

1. A trade-off between a more ‘real-life’ experience and a more reflective, inclusive, egalitarian or accessible process.

2. Real-time is more spontaneous and dynamic and helps build rapport between participants.

3. Asynchronous co-creation, allows more time for self-reflection, removes location or time restrictions.

4. It is a way to “level the playing field” between the more and less informed public.
Privacy: Identification or anonymity?

1. With anonymity, people feel more **freedom to express** their honest, even if unpopular, point of view.

2. Anonymity can also allow people with **neutrality obligations** to participate.

3. However, anonymity can imply a **loss of accountability** and the risk of uncivil behaviour.

4. Reducing anonymity has a **positive effect on respectfulness**, thoughtfulness and transparency.

5. But has a **negative effect on engagement** — people tend to contribute less when they are identifiable.
Co-creation formats: conversation or visualisation?

- There is a trade-off between user accessibility and the usability of the outcomes in the policy cycle.
- Most online discussions happen on easy-to-use conversation-based platforms like forums, but their ability to promote equal co-creation is debatable.
- New platforms visualize scenarios, trade-offs and map out arguments, helping participants to clarify their thinking and better connect information.
- Nevertheless, for complex problems with a broad range of perspectives, rigid pro/con structures may not be appropriate. A better options is to include systems maps.
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