

Can energy social innovation advance energy justice and energy equality? An evaluation of ten European cases

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SMARTTEES H2020 (2018-2021)

 <h2>1. Holistic mobility plans</h2> <p>A defining feature of this social innovation is the participatory development and adoption of a holistic and persistent mobility plan, in which all city planning follows a coordinated approach.</p>	<h3>REFERENCE CASES</h3> <ul style="list-style-type: none"> ► Zurich, Switzerland ► Groningen, Netherlands
 <h2>2. Islands & renewable energy</h2> <p>This social innovation centres around the mobilization of island residents to achieve energy independence through renewable energy production and energy efficiency measures.</p>	<h3>REFERENCE CASES</h3> <ul style="list-style-type: none"> ► Samsø, Denmark ► El Hierro, Spain
 <h2>3. District regeneration</h2> <p>Public-private-citizens alliances are at the core of this social innovation, which triggers district regeneration through measures as local energy generation, urban green spaces, transport system transition and citizen participation.</p>	<h3>REFERENCE CASES</h3> <ul style="list-style-type: none"> ► Malmö, Sweden ► Stockholm, Sweden
 <h2>4. Mobility in superblocks</h2> <p>Superblocks are an urban innovation that helps to reorganise urban space into car-free areas designed to maximize public space and foster social and economic interactions at the street level.</p>	<h3>REFERENCE CASES</h3> <ul style="list-style-type: none"> ► Vitoria-Gasteiz, Spain ► Barcelona, Spain
 <h2>5. Energy efficiency against fuel poverty</h2> <p>To address the growing problem of fuel poverty, this social innovation calls for the adoption of coordinated, tailored and inclusive energy efficiency schemes which combine financial incentives with high rates of coordination.</p>	<h3>REFERENCE CASES</h3> <ul style="list-style-type: none"> ► Aberdeen, UK ► Timișoara, Romania



“Social innovation is a process of change in social relationships, interactions, and/or the sharing of knowledge that broadens/deepens the engagement of individual stakeholders with energy topics and leads to, or is based on, new environmentally sustainable ways of producing, managing and consuming energy to meet societal challenges.” (Villagarcia et al., 2021)

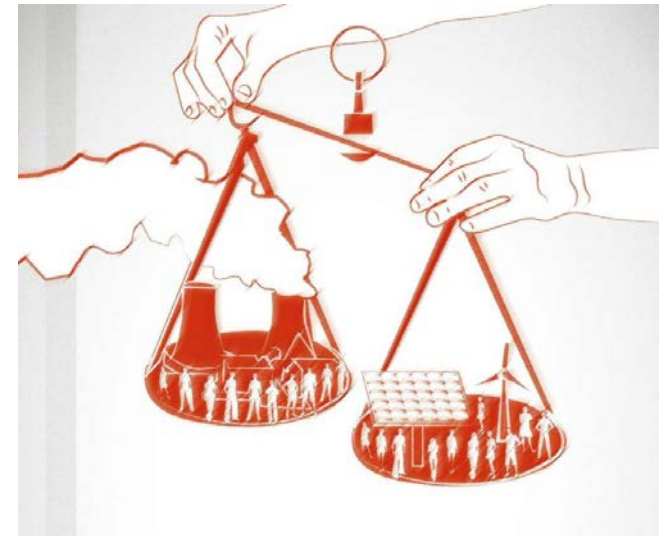
<https://local-social-innovation.eu>



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Energy Justice : what it is, why it matters

- Energy Justice, an ethical perspective on energy
- Defined as “a global energy system that fairly disseminates both the benefits and costs of energy services, and one that has representative and impartial energy decision-making” (Sovacool et al., 2017)
- Based on three tenets: 1 Distributional Justice, 2 Procedural Justice, 3 Recognition Justice (McCauley et al., 2013)



Cases and interviews



Malmö Augustenborg

- 32 ha in size and contains
- 1,800 apartments
- 1,600 of which are rented from the Malmö Municipal Housing Company (Malmö Kommunala Bostadsbolag – MKB)
- Multi-family houses are 3 stories high, some 7 stories
- 3,000 residents
- Built in the 1950s as social housing estate

Cluster	Case study	Total
Holistic, shared and persistent mobility plan	Zürich	9
	Groningen	6
Island renaissance based on renewable energy production	Samsø	7+(12)
	El Hierro	8
Alliance for a district regeneration based on energy transition	Malmö	7
	Stockholm	7
Urban mobility with Superblocks	Vitoria-Gasteiz	12
	Barcelona	11
Coordinated, tailored and inclusive energy efficiency schemes for fighting fuel poverty	Aberdeen	14
	Timisoara	7
TOTAL		88+(12)



Stockholm Järva

- A peripheral neighborhood with a high concentration of socio-economic disadvantage: 30% unemployment
- Built between 1965 and 1980 as social housing estate
- 60,000 residents, of whom 80% are of immigrant background, many of which are of African or Asian origin
- 25,400 apartments, (700 private houses + 221 row houses)

Energy Justice and implementation of SIs in Järva, Stockholm

Addressing Distributional, Procedural and Recognition Justice

	Interventions
distributional justice	<ul style="list-style-type: none"> • Apartments and buildings retrofitted: new facades, solar PV, and lighting, together with interior and exterior upgrades. Goal to decrease energy demand from 180 kWh/m² to 88 kWh/m², 350 apartments (pilot ended in 2014), planned to refurbish 5,200 apartments until 2022 (over a total of 25400 apartments). • Photovoltaics: 10,000 m² photovoltaic (1.4 MW) to be installed on approximately 40 roofs in the area • Refurbishment of bike paths and green areas: a loan-a-bike facility in Akalla, signposting (for bikes) improvement (LED lighting) • Education: annual cycle week, free cycling courses, climate week, collaborations with the library/schools to ensure increased environmental education

procedural justice

The Järva dialogue

- Three dialogue steps: (i) Collecting residents' views and suggestions; (ii) Present the collected views; (iii) Present what has been built based on these suggestions and views and what's being planned for the future.
- Households met architects and building managers to ensure agreement
- Opportunity to comment on and participate in renovation decisions
- Open meetings
- 10,000 participated and 30,000 opinions gathered about positives and negatives in the area.



Photo: Erica Löfström

Recognition justice

- Bike courses targeting non-Swedish women 140 participants in total
- Employment of cultural mediators

Energy Justice and implementation of SIs in Augustenborg, Malmö

	Interventions
distributional justice	<p>Buildings retrofitted, local energy production, green areas and "new" centre</p> <ul style="list-style-type: none">• Rerouting heavy traffic through the area• Upgrading the houses in general to improve insulation (comfort and cost for heating)• Centre rejuvenated: local sustainable businesses (subsidised rents)• Open-water solutions with ponds and green areas, drainage of building• Improved facilities: laundry rooms and garden sheds for tools• Photovoltaics generating local energy• "the Greenhouse", verified passive housing, was built with car/laundry room sharing and growing of vegetables as mandatory



procedural justice

Co-creating Sustainable Augustenborg

- A dedicated communications officer assigned to the area
- Opportunity to comment on and participate in renovation decisions, including improved garden sheds, laundry rooms and green areas for local growing of vegetables
- Open meetings with the intent of involving residents and gathering ideas



The neighborhood car-pool. Photo: Jon Dolocek

Recognition justice

- Support for local initiatives, businesses and sustainable solutions
- Improved neighbourhood status (non-gentrification) visually and functionally
- "Showing off" local initiatives (including in press releases etc.)

Torry, Aberdeen

- Population of around 10,500
- One of the most deprived areas of the city. In 2016 the average annual income of Torry residents was £10,000 lower than the average for the city as a whole.
- Large (particularly Eastern European) migrant community; 18% of Torry residents do not speak English as a first language



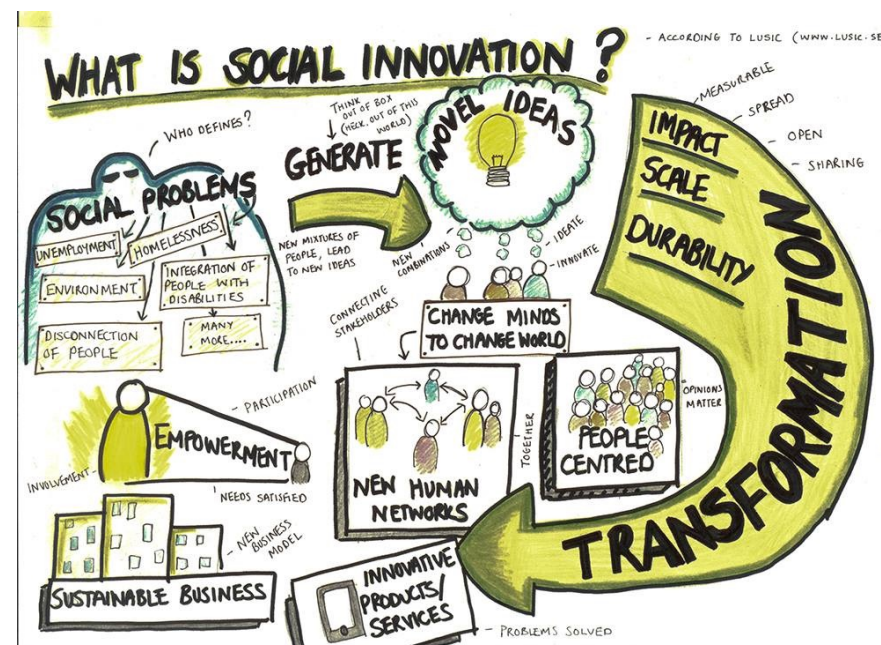
Energy Justice and implementation of SIs in Torry Aberdeen

	Interventions
Distributional justice	<p>Rollout of district heating through the Aberdeen Heat Network for the provision of affordable heating to city residents in fuel poverty. To date 50 of the 59 council-owned high-rise blocks have been connected to the network, amounting to around 3,000 customers; Cost savings for households, are estimated at “up to 40%”;</p> <p>A wider programme of improvements to the energy efficiency of the housing stock;</p> <p>The establishment of Aberdeen Heat and Power, a novel, not-for-profit energy services company;</p> <p>The introduction of personalised energy tariffs that consider individuals’ financial circumstances, “Heat with Rent” scheme;</p> <p>Scarf, an energy advice service that supports residents to make positive choices regarding the fuel efficiency of their homes.</p>
Procedural justice	<p>City Council engagement and consultation with affected individuals and wider communities, particularly in the process of development of the Sustainable Energy Action Plan.</p>



Energy equality and social innovations

- Energy Equality, radical stance within Energy Justice
- “Providing all individuals with **equal** opportunities of using energy services, energy technologies, and consuming energy and embodied energy for satisfying personal needs and nurturing capabilities” (Pellegrini-Masini, 2019).
- How do social innovations contribute to advancing energy equality?



Lusic- social innovation center

Energy Equality as a framework for qualitative analysis

- Existence/sustenance (physiological and safety) needs. Physiological and safety needs are essential for survival. (Maslow, 1954).
- Social needs refer to belongingness (Baumeister, Leary 1995), relatedness (Deci, Ryan 2000), i.e., to feel close and accepted by significant others and within perceived significant groups.
- Value-based needs refer to the need of striving for consistency with one's personal goals. Goal-framing theory (Lindenberg and Steg, 2007): 1) Normative goals, "to act appropriately" (e.g., following pro-environmental or prosocial values and attitudes), 2) Gain goals "to guard and improve one's resources", and 3) Hedonic goals: "to feel better right now" (e.g., pursuing comfort).



Essential findings: do SIs increase EE through improving opportunities for needs satisfaction?

1. Existence/sustenance

Different aims and interventions inevitably show that the impacts might be more or less profound.

Cases that **deliberately targeted the energy-poor or the economically disadvantaged** presumably delivered a broader impact on energy equality in relation to existence/sustenance needs, simply because this was one of their main aims.

Results were tied to interventions that benefited from a complete or substantial **public financing schemes**. Hence energy social innovations could be **local complementary redistributive policies** that target simultaneously several co-benefits.

2. Social needs

Several participation schemes regarding local energy interventions appeared to result in strengthening of community bonds: new spaces for socialisation, sense of inclusiveness, sense of collective agency. A **variety of instruments** delivered these results, but **timing appeared crucial**.



3. Value based needs

Complex picture, due to a variety of goal orientations at stake, highly dependent on context and social groups involved,
Several individuals and groups positively affected

- Pro-environmental attitudes
- Place attachment
- Safety
- Self-improvement/personal gain
- Recognition



Policy recommendations

SMARTeES policy recommendations to improve distributional justice in relation to Energy Equality:

- Financial solutions need to take into account a differentiated pattern of managing and consuming energy according to income households (from low-income to high-income)
- Provide sufficient public funding for financing and long-term maintaining the SI's interventions in cases where the community is not able to finance these themselves (at least partially)
- Build a financial system resilient to financial crises as a part of energy justice as crises affect marginalized households disproportionately

SMARTeES policy recommendations to improve procedural justice in relation to Energy Equality:

- Strengthen regulations that foster early-stage consultation and co-creation of SIs through prescribing a participatory process whenever the SI is led by local authorities and public bodies.
- Involve citizen organizations early on in the process to unburden individual citizens.
- Create dedicated seed funding schemes in local authorities to support citizens organisations led SI projects.

SMARTeES policy recommendations to improve recognition justice in relation to Energy Equality:

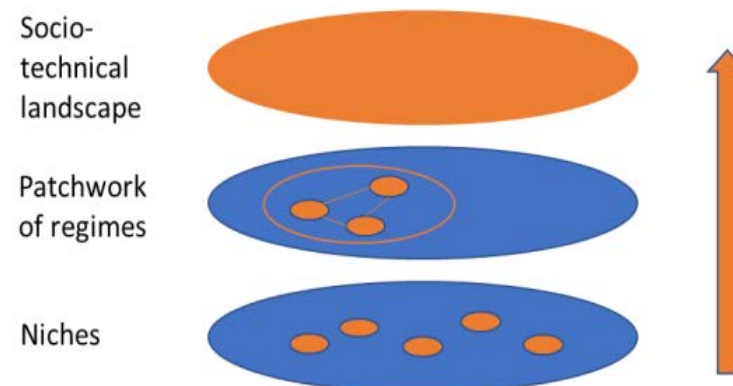
- Acknowledge various needs, rights and experiences of individuals, households, groups or neighbourhoods
- Vulnerable groups must have a voice, their needs must be visible and accounted for.
- Build trust to vulnerable groups which are less likely to engage in participatory processes and acknowledge cultural differences in who is trusted
- Develop targeted approaches to engage silent or underrepresented vulnerable groups with contact persons close to the target group (both physically and culturally)



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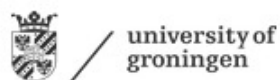
Conclusions

- SIs are **best placed to contribute to a Just Transition** because are multidimensional processes: social and environmental goals coexist
- Effective policies and **sufficient financial resources** are a key aspect (distributional justice)
- SIs must be socially sensitive, **top down approaches do not work** particularly in marginalised communities (procedural and recognition justice)
- Engineering SIs requires **harvesting the attitudinal drivers** of all stakeholders (procedural and recognition justice)



Thank you!

Stay in touch!
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SI's Interventions

Timisoara	Aberdeen	Stockholm	Malmö
Energy efficiency interventions on residential buildings, behavioural change interventions, research on fuel poverty finalised at specific future interventions	Development of the Aberdeen Heat Network and associated energy efficiency improvement schemes, behavioural change interventions	Retrofitting of energy efficiency technologies on buildings, 10,000 sqm of photovoltaics, transport and cycling measures, a bike loan facility, behavioural change interventions	Insulation of apartment buildings, optimisation of heating and hot water systems, installation of solar thermal, photovoltaics and micro wind turbines, behavioural change interventions



The SMARTeES Project

SMARTeES - www.localsocialinnovation.eu

is a H2020 project researching social innovations in 5 case clusters

1. Implementation of a holistic shared and persistent mobility plan
2. Island renaissance based on renewable energy production
3. Alliance for a district regeneration based on energy transition
4. Urban mobility with super-blocks
5. Inclusive energy efficiency schemes for fighting fuel poverty

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