

# Drivers and barriers to energy social innovations in neighbourhoods: what policies we need for a just transition?

Giuseppe Pellegrini-Masini, Irina Macsinga, Patricia Albuлесcu, Erica Löffström, Coralia Sulea, Adina Dumitru, Alim Nayum

BEHAVE Conference 23 April 2021



# The Just Transition and its challenges

- “a fair and equitable process of moving towards a post-carbon society” (McCauley & Heffron, 2018)
- Four challenges (Pellegrini-Masini et al. 2020)
  - (a) intergenerational justice and energy justice,
  - (b) justice and energy vulnerability,
  - (c) transformation of the social imaginary and energy infrastructure, and
  - (d) damage, compensation, and energy infrastructure.

Delivering a timely and Just Energy Transition: Which policy research priorities?

Environmental Policy  
and Governance



Giuseppe Pellegrini-Masini<sup>1,\*</sup>  | Alberto Pirni<sup>2</sup> | Stefano Maran<sup>3</sup> | Christian A. Klöckner<sup>1</sup>

# Energy vulnerability and social innovations

---

- ‘energy vulnerability’ – “the propensity of an individual to become incapable of securing a materially and socially needed level of energy service in the home.” (Bouzarovski et al. 2016)
- “Social innovation in energy transition is a process of change in social relationships, interactions, configurations, and/or the sharing of knowledge leading to, or based on, new environmentally sustainable ways of producing, managing, and consuming energy that meet social challenges/problems” (Caiati et al. 2019)



# 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
<b>TOTAL</b>		<b>88+(12)</b>



## 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)

# Cases

## Aberdeen, Torry

- 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 (Caiati et al., 2019)



## Timisoara

- Timișoara has a significant number of buildings, built mainly from 1960 to 1990, with low thermal insulation.
- Timisoara is divided into 13 districts (residential areas), which have a total of 23,223 buildings, approx. 14500 of this, i.e. 60%, were built before 1940. (Denkstatt, 2010)



# 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



# What barriers and drivers affected the SIs?

---

## Attitudinal factors

- Pro-environmental attitudes

A driver relevant in varying degrees for different stakeholders, but often not prominent. Examples: policymakers and citizens

- Pro-social attitudes

A major driver for policymakers, the SIs are placed in disadvantaged neighbourhoods

- Personal gain

A driver for citizens who wished to improve their living condition and decreasing their energy costs





# What barriers and drivers affected the SIs?

---

## Capabilities and resources

- Financial resources

Were a key driver for starting the SIs: government grant schemes, municipality's funds, municipal housing company's finances

- Knowledge and skills

An important driver at various levels: municipalities, housing companies, NGOs, citizens

- Social status

Marginalised and ethnically diverse communities present some challenges

- Policies, laws and regulations

A key driver for some type of SIs

- Media reports

A magnifier of attitudinal drivers



# Energy Justice and implementation of SIs in Järva Stockholm

	Järva -Stockholm
<b>distributional justice</b>	<p>-350 apartments (pilot ended in 2014), planned to refurbish 5,200 apartments until 2022 (over a total of 25400 apartments). Retrofitted with energy efficient technology including new facades, solar PV, and lighting, together with interior and exterior upgrades. Goal was that energy demand decreases from 180 kWh/m<sup>2</sup> to 88 kWh/m<sup>2</sup></p> <p>-10,000 m<sup>2</sup> photovoltaic (1.4 MW) to be installed on approximately 40 roofs in the area.</p> <ul style="list-style-type: none"> <li>-refurbished old and new bike paths</li> <li>-refurbishment of green areas</li> <li>-a loan-a-bike facility in Akalla</li> <li>-signposting (for bikes) improvement (e.g., LED lighting)</li> <li>-an annual cycle week</li> <li>-free cycling courses for adult residents</li> <li>-establishment of a climate week</li> <li>-collaborations with the library/schools to ensure increased environmental education</li> </ul>



**procedural  
justice**

Järvadialogen

- 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 is being planned for the future.
- Before each renovation, every household was invited to meet the architects and building managers to ensure that there is a collaborative agreement on the changes to come.
- Opportunity to comment on and participate in decisions about the renovation
- Open meetings. 10,000 participated and gathered 30,000 opinions about what was considered positive and negative in the area.

**Recognition  
justice**

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

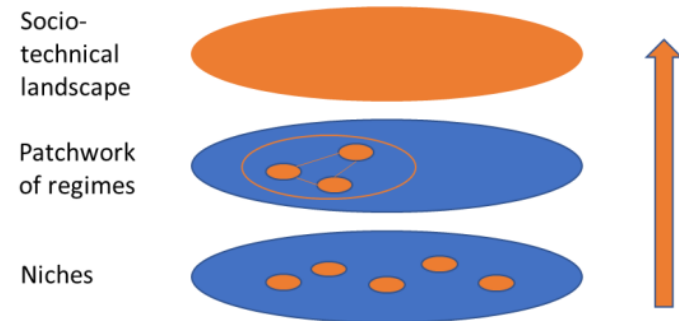
**needs  
satisfaction and  
capabilities  
enhancement**

- Bike courses became important for non-Swedish women increasing their integration and mobility
- Improvements in safety
- Increased fruition of green areas
- Increased social cohesion and interaction



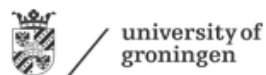
# Conclusions

- SIs are best placed to contribute to a just transition because they are multidimensional processes: social and environmental goals coexist
- Effective policies and financial resources are a key aspect
- SIs must be socially sensitive, top down approaches do not work particularly in marginalised communities
- Engineering SIs requires harvesting the attitudinal drivers of all stakeholders



# Thank you!

Stay in touch!  
[giuseppe.p.masini@ntnu.no](mailto:giuseppe.p.masini@ntnu.no)



# References

---

- Denkstatt (2010) Strategia locală privind schimbările climatice în municipiul Timișoara. Denkstatt Romania.
- Bouzarovski, S., Petrova, S. and Tirado-Herrero, S. (2016), “From Fuel Poverty to Energy Vulnerability: The Importance of Services, Needs and Practices.”, SSRN Electronic Journal.
- Caiati, G., Marta, F., Quinti, G., (2019) Deliverable D3.4 Report on “Five models of social innovation”. SMARTEES H2020 PROJECT.
- McCauley, D., & Heffron, R. (2018). Just transition: Integrating climate, energy and environmental justice. *Energy Policy*, 119, 1–7.
- Pellegrini-Masini, G., Macsinga, I., Albulescu, P., Löfström, E., Sulea, C., Dumitru, A. and Nayum, A. (2019), D6.1 Report on Social Innovation Drivers , Barriers , Actors and Network Structures.

