



Smart-BEEjS

Human-Centric Energy Districts: Smart
Value Generation by Building Efficiency and
Energy Justice for Sustainable Living

Yoo, Han Kyul¹, Nguyen, Minh-Thu², Lamonaca, Luca^{2*}

¹Wageningen University; ²ISCTE-IUL; *listed reverse-alphabetically

Socio-economic factors & Citizens' practices, enabling Positive Energy Districts

Round-table discussion on local energy transitions



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INTRODUCTION

This report presents the output of the Smart-BEEJS round-table discussion regarding the status quo of the local energy transition. The round-table, despite having to be conducted online due to the COVID-19 pandemic related travel and health restrictions, involved a diverse set of eight stakeholders, who represented different types of relevant actors for the local energy transition and also represented the eight European regions that are participating in the Smart-BEEJS project (Table 1): Amsterdam (Netherlands), Canary Islands (Spain), Italy, Ruhr Area (Germany), Switzerland, Nottingham (UK), Torres Vedras (Portugal) and Vienna (Austria). The main aim of the round-table discussion¹ was to explore and identify the perceptions of the stakeholders regarding the main drivers and challenges that these regions face currently in their efforts to deliver a sustainable energy transition. In this vein, the findings presented below are a systematization of the participants' own perspectives about the topics discussed during the round table, to which no theoretical or empirical analysis was added by the researchers. The four key topics explored during the round-table were: (a) the level of collaboration among municipalities and citizens in the different regions; (b) critical infrastructure changes and needs for achieving a decentralised energy system; (c) types of social values that might possibly be incorporated into different business models; and, (d) insights into the phenomenon of energy poverty during the energy transition in each region.

The round-table was organised as a 2-hour online session, on March 19th, 2021.

Table 1. Participants' characteristics

Participant No	Region	Stakeholder type	Gender
A	Amsterdam (Netherlands)	Technological expert	Male
B	Canary Islands (Spain)	Citizens' group	Female
C	Italy	Citizens' group	Female
D	Ruhr Area (Germany)	Technological expert	Male
E	Switzerland	Business sector	Male
F	Nottingham (UK)	Local authority	Female
G	Torres Vedras (Portugal)	Policy maker	Male
H	Vienna (Austria)	Policy maker	Male

¹ The background information for the round-table was prepared based on interviews held across the regions participating in the Smart-BEEJS project. In each region, 3-10 interviews were conducted with diverse types of stakeholders, exploring the insights from the Smart BEEJS deliverables (www.smart-beejs.eu/deliverables/): Challenging the 'silo thinking' for promoting PEDs; the status quo and framework conditions as a basis for developing techno-economic pathways in selected case studies; and the potential value generation by PEDs.

Municipalities' and Citizens' Collaboration

Public-private collaboration is key, but novel means to leverage resources are essential

Although public-private collaboration between municipalities and energy contractors is often initiated, stakeholders from business and citizens' groups have difficult experiences with municipalities and their energy contractors, who often **lack the time, knowledge, and human resources** to implement energy transition projects (Participants B and E). Two propositions were raised to address this. First, a **dedicated agency** run by the municipality (Participants F and G) that mediates the dialogue between public and private sector partners and incentivises the private sector to implement energy transition projects. Second, a **'crowd funding'** approach that engages citizens and other institutional funders in innovative ways (Participants A and B).

Perspective-shift to holistic benefits

Business and technology experts also considered the issue of **conflicts of interest** with municipalities as a key barrier for their collaboration. This discussion necessitates a shift in business and utilities' motivation, from economic growth to a **holistic urban planning perspective**. This shift means considering the impact of the energy transition across sectors and citizens' groups in the urban context.

BACKGROUND

The participants in the round-table discussed their perspectives regarding the drivers and barriers for collaboration between the different actors and how to balance local government, private sector and citizens' participation during the energy transition. The discussion is based on the findings about potential 'silo thinking' among the different actors in the collaboration process¹ and feedback from the interviews held prior to the round-table.

Citizens' participation is essential, but the public is not a homogenous and passive group

All stakeholders agreed that citizens' opposition is a great barrier for project implementation. They also emphasised that public policy and technology developers should not take the public as a homogenous group of certain privileged people (e.g. capable men) when designing and implementing interventions. They need to **listen to the "needs, complaints and negative experiences" of vulnerable groups** from the early stages of the design, making the energy transition inclusive.

This realisation, though, generated discussion around **when and how to involve citizens**. One group of participants concluded that **the stage to involve citizens** should be when there are tangible options or plans, but when there is still room for change. Communication at that stage could be combined with **education or capacity building programmes**, which are common practice in several municipalities, **attempting to change citizens' behaviour**. This proposition derives from their experience and perception that citizens are not technically knowledgeable enough to design projects in the early stages. However, several participants pointed out that involvement only in the later stages may result in citizens rejecting mature project plans that took much time to develop. Other participants, who work directly with citizen groups, challenged this approach, citing **misrepresentation of citizens' reactions** or treatment of consumers as "children", i.e. passive and ignorant, who need to be informed and educated. These stakeholders, therefore, advocated for a balanced representation of lay public alongside experts in the decision-making process.

"We shouldn't forget we are citizens. We design our processes always thinking that both the banana growers and the astrophysicists on the islands have to have the possibility to understand the problem and participate in equal terms." Participant B.

¹ Yoo, Han Kyul, Minh-Thu Nguyen, Luca Lamonaca, Kostas Galanakis, and Robert Ackrill. 2020. "Smart-BEEJS Deliverable D3.2 - Socio-Economic Factors & Citizens' Practices, Enabling Positive Energy Districts Challenging 'Silo Thinking' for Promoting PEDs." https://smart-beejs.eu/wp-content/uploads/2021/01/WP3-Deliverable-D3.2_Silo-thinking.pdf.

Infrastructure and related policy shifts

National vs local levels of preparedness

The decentralisation and greening of energy systems are already on their way. Current **non-binding acts** and the political discussion at both the European and national levels, are pushing in these directions. However, there is a significant mismatch of workforce capabilities. Therefore, people from different backgrounds are having to be trained to keep up with the demand (Participants E).

That said, in areas that demonstrate a high level of readiness in terms of skills, technical ability and political willingness to create a municipality-owned, green and decentralised energy system, often the current national regulation does not allow for the establishment of local energy communities. Therefore, such initiatives are on hold (Participant G).

The notion of value – a conflict of interest

In regions where the municipalities own utilities and/or have district heating systems, a conflict of interest has been raised (Participants D and E). Energy efficiency measures reduce revenue streams for the utilities; and investment in renewable energy generation increases costs and often final consumer prices. This phenomenon is even stronger for private providers. Therefore, there is little incentive for such measures. This is a common issue in Germany and Switzerland. The current situation could be defined as a split-incentive dilemma. The users will benefit from decreased energy consumption or self-consumption while the owners of the energy systems would lose revenue. The split-incentive dilemma could be solved by developing a system of obligations and incentives, that include utility governance, technical solutions and appropriate business model design. Research has found several successful case studies in overcoming split-incentives that use ESCO (Energy service company) business models.

BACKGROUND

The push for decentralising the energy system raises challenges that vary widely across different regions, depending on the local or national conditions. The techno-economic aspects of decentralisation can be defined as “wicked problems” in planning¹, where there are no solutions that fit all.

Solutions are affected by different administrative levels of preparation, conflict about responsibilities among local and national administrations, conflicting financial incentives and physical aspects, such as meteorological conditions.

¹ Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4(2), 155–169. <https://doi.org/10.1007/BF01405730>.

² European Commission. Joint Research Centre. Institute for Energy and Transport. (2014). *Overcoming the split incentive barrier in the building sector :workshop*. Doi: 10.2790/31513

Incorporation of social and environmental aspects in business models



Figure 1 Social and environmental values and enablers by stakeholder group

BACKGROUND

This part of the round-table sought to explore stakeholder perspectives on which social and environmental values are associated with local energy transitions. The discussion was initiated by the findings presented in the case study book, which studied the financial, social, and environmental values generated by PED related initiatives across Europe¹.

Enablers for alternative value generation

In the round-table, the citizen-group stakeholders focused on the environmental values, inclusiveness, ownership, and healthy lifestyles that can be generated by local energy transitions. On the other hand, business and government stakeholders concentrated on the enablers to achieve the environmental and social goals of the energy transition (Figure 1).

The participant working closely with citizen groups mentioned the environmental values and social values, such as inclusiveness and ownership, that can be achieved through well-designed and trustworthy citizen groups, such as energy cooperatives. Through energy cooperatives, different segments of society are able to have ownership of renewable energy at an affordable price. Government stakeholders gave the example of housing retrofits, where humidity levels are measured after renovating the house, which serve as an indicator of the improved well-being of residents. Business stakeholders discussed transitioning to renewable home energy systems, proposing that the narrative can be made favourable for homeowners to invest, if it is emphasised that the investment costs can be recovered by decreased running costs. Well-designed citizen-led initiatives, quantification of social benefits, and clear and persuasive communication of opportunities can be used to incorporate social and environmental value into how energy systems are shaped through the transition.

“the key element is the Comfort Plan and how they feel about the actual house. So, this is a way of quantifying the benefits of a retrofit in terms of well-being. There are measures like humidity, damp levels, and the temperature of the property, through which you can look at citizen well-being” – Participant F

¹ Derkenbaeva, Erkinai, Helen Heinz, Maria Lujan Lopez Dallara, Darja Mihailova, Kostas Galanakis, Eleni Stathopoulou. 2020. “Smart-BEEJS Deliverable D6.2 - Business models and consumers' value proposition for PEDs value generation by PEDs: Best Practices Case Study Book.” <https://smart-beejs.eu/wp-content/uploads/2020/12/WP6-Deliverable-D6.2-Value-Generation-by-PEDs.pdf>.

Energy Poverty

Awareness of energy poverty

Energy poverty is a relatively new concept; thus, awareness of it was the focus of discussion. Awareness varied wildly across participants depending on their region. There is a noticeable divide (Figure 1) between areas defined by their levels of energy poverty and whether it is addressed explicitly by regulators. The main focus was domestic energy poverty.

The energy poverty divide²

In Germany and the Netherlands, there is little discussion on energy poverty, with participants more concerned about the affordability of energy than social deprivation. Consequently, they raised issues surrounding energy imports and geopolitics that can affect energy prices.

The participant from Switzerland seemed to be unaware of energy poverty as an issue for the region, expressing the view that energy poverty is a phenomenon concerning low-income countries.

On the other hand, energy poverty is a well-embedded concept in related policy measures in the United Kingdom. In Nottingham, the city council and the social housing providers have policymakers and personnel dedicated to tackling fuel poverty ('fuel poverty' is the more common term in UK policy discussions). Southern European countries are aware of the social situation for many sections of their population. Specifically, in the Canary Islands, the problem is not linked to thermal comfort because of the temperate weather, but instead to other domestic energy services such as cooking and electricity use for other services (e.g. internet use). However, the participants from Southern European countries (i.e., Portugal, Italy, the Canary Islands and mainland Spain) believed that the phenomenon is not being addressed effectively in terms of allocated resources and the type of measures that are implemented. Here the predominant measures are aids to pay current energy bills. These are considered a short-term approach and an ineffective strategy in tackling the causes of energy poverty.

Energy justice across Europe

Along with energy poverty, participants mentioned energy justice issues that apply to all regions. There is the necessity of understanding the energy needs of different segments of the population. Policymaking should not be tailored to the so-called norm of adult healthy middle-class individuals, usually males. One participant takes the example of the public transportation policies. She noted that:

"Mostly women and often elderly people use public transport, and they may have different needs, even depending on the time of day. For example, if you have a stroller or you are carrying your grocery and need to get on the bus, it's a different need from somebody who just needs to get to work on time." – Participant C

BACKGROUND

Energy poverty¹ is defined as "a situation where a household or an individual is unable to afford basic energy services (heating, cooling, lighting, mobility and power) to guarantee a decent standard of living due to a combination of low income, high energy expenditure and low energy efficiency of their homes"

Energy poverty is an increasingly recognised phenomenon of deprivation in several European countries but still their recognition differs at the local level.

Failing to address this phenomenon might hinder the energy transition because green measures would lack

¹ European Commission, Citizens' Energy Forum 2016, available at https://ec.europa.eu/energy/content/previous-editions-citizens-energy-forum-2011-%E2%80%93-2016_sk

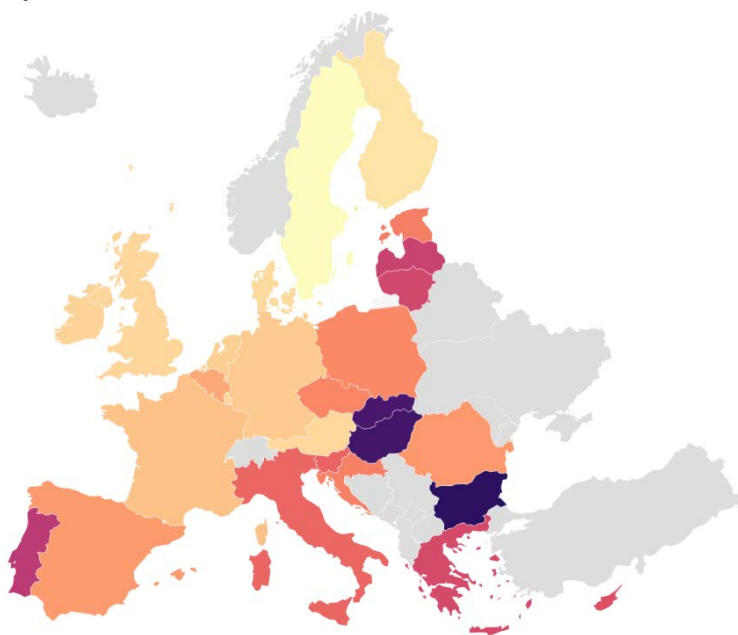
² The divide is a phenomenon where the core countries - Western and Northern European countries- have lower domestic energy poverty levels while the periphery - Southern European and Central and Eastern European Countries (CEE) countries- have higher energy poverty levels, affecting not just the most vulnerable strata of the population. (Thomson, H., Bouzarovski, S., & Snell, C. (2017). Rethinking the measurement of energy poverty in Europe: A critical analysis of indicators and data. *Indoor and Built Environment*, 26(7), 879–901. <https://doi.org/10.1177/1420326X17699260>)

CONCLUSION

In this report, the main aim was to identify and systematise the views of key stakeholders in local energy transitions across the regions and countries involved in the Smart-BEEJS project, through a round-table conducted with 8 participants' representative of those stakeholders and regions. In this vein, this report gives voice to what the participants identified as main barriers and opportunities for local energy transitions. During the round-table, the experiences and perceptions of each participant converged regarding some of the topics discussed, but remained apart on other, typically defined by stakeholder group and by region. A common goal across regions and stakeholders is to have an accurate representation of citizens and to give priority to their engagement, especially with regards to the different needs of diverse segments of the population. Each stakeholder group has their own approach and plays a different role in bringing environmental and social values into local energy transitions, but each approach could and perhaps should co-exist and complement the others. Regional circumstances dictate participants' thoughts on how to achieve decentralisation and deal with energy poverty, thus these issues may be best addressed by region, while learning from the example of other regions.

Domestic energy poverty

High Low



Source: EEPI index, Saheb et al. 2019
Created with Datawrapper

Figure 2. Domestic Energy poverty indication across Europe

As a way forward, better understanding of citizens' diverse needs and views, and building a trustworthy community, can enable improved citizen engagement. Channels such as energy cooperatives and citizen involvement in co-designing interventions are proposed as ways of achieving these goals. Further, developing policy that supports the alignment of different stakeholders' interests could help with the current conflict between the financial interests of utilities and public interest, to incorporate the energy transition into sustainable urban planning. Finally, raising awareness of stakeholders about energy poverty in all regions and promoting more long-term

support for energy poor households will help address energy poverty and ensure a more just energy transition.