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The Baltic Sea Region, an energy transition laboratory

Farid Karimi and Michael Rodi

Epilogue

The purpose of this book is to identify measures influencing stakeholder engagement, grassroots activities and the emergence of social acceptability in the context of the energy transition, based on case studies mainly drawn from the Baltic Sea Region (BSR). Demand-side, bottom-up, decentralised activities have largely been a 'blind spot' in national energy policy, even in progressive countries with ambitious goals for an energy transition, as discussed in Chapters 5, 6, 7, 9, 10 and 11. As shown in the chapters of this book, bottom-up activities are critical to the decarbonisation of the economy, as well as to the provision of energy security, energy democracy and social justice, and thus to the overall success of the energy transition. This edited volume also demonstrates that the BSR is a 'laboratory' for ideas, approaches and challenges associated with the bottom-up engagement of civil society in climate and energy issues. The BSR is uniquely positioned to serve as a laboratory due to the diverse socio-political, cultural and legal features, histories, energy profiles and strategies that characterise the region (see Chapter 1).

The interdisciplinary conceptual approaches applied in this book outline different perspectives on bottom-up and grassroots activities in an energy transition and on the emergence of social acceptability. The conclusions drawn from this research contribute, in particular, to the governance of an energy transition vis-à-vis social sciences, social movements and social justice. They can also inform broader debates about the social dimension of sustainability transformations taking place in response to global environmental crises, such as climate change. In general, the link between the various approaches and perspectives vis-à-vis citizen roles and activities, social acceptance and acceptability in the individual chapters is the governance of an energy transition, with an emphasis on energy democracy and social justice. This volume employs a comparative law and policy approach to identify potential legal barriers to the active participation of consumers and prosumers in an energy transition, as well as to provide a solid basis for future studies that can elaborate on legal design options through a comparative best-practice analysis.

In this concluding chapter of the book, we first summarise the arguments on social acceptability and the importance of citizen participation in an energy

transition. Next, we discuss the possible forms of participation and the factors that foster this participation. The requirements for institutional and legal design to activate people are then briefly discussed. Finally, we summarise the most important policy recommendations and offer concluding remarks.

Bottom-up activities: why do micro-level activities matter for the macro-level energy transition?

This book contributes to the literature on the importance of active public involvement in an energy transition, beyond the typical discussion of social acceptance. The following is a summary of the importance and impact of bottom-up activities and citizen engagement.

From social acceptance to social acceptability

In contrast to the conventional centralised energy systems (e.g., coal, gas and nuclear), most renewable energy (RE) facilities are largely decentralised and thus located in the vicinity of residential areas (excluding offshore facilities). Increasingly, this has led segments of the population to voice opposition to new RE developments due to concerns about noise and sight disturbance, nature degradation, adverse impacts on wildlife and possible losses in property value. Thus, social acceptance has become a significant threat to the success of energy transformation. Still, as Kojo et al. (Chapter 6) point out, social acceptance is not sufficient to deal with; the full realisation of an energy transition requires active support and participation. This will require a paradigm shift from the issue of social acceptance – as a general attitude towards renewable technologies – to that of (social) acceptability, which applies not only to technology as such, but also to the concrete design, planning, implementation and communication surrounding an energy transition. There is an urgent need to identify relevant factors that influence the dimensions of social acceptability (cf. social acceptance) of RE. Each of these factors has socio-political, community and market dimensions and pertains to production, network and consumption sectors. It is evident that, in the identification of appropriate measures to achieve social acceptability and activate demand-side responses, ‘the devil is in the details,’ as public attitudes vary significantly based on factors including age, gender, education and professional background (as demonstrated in Chapters 4, 6 and 12).

Obviously, the development of concrete incentive-based instruments to address local opposition and promote social acceptability is vital. Nevertheless, as Egelund Olsen argues in Chapter 3, most of the existing measures in the ‘strategy toolbox’ – even in countries with front-runner status, such as Denmark – focus on social acceptance; counterintuitively, opposition among local populations is rising. Egelund Olsen is critical of the ‘nuisance equals compensation’ methodology. She argues that a strategy designed to increase social acceptability (c.f. social acceptance) should take into account the overall legal frameworks for planning, site designation, strategic environmental assessments and environmental impact

assessments, rather than focusing solely on specific legal incentives related to community acceptance.

As Pons-Seres de Brauwer and Cohen suggest in Chapter 4, the development and mobilisation of community-as-investor schemes is another important strategy-cum-approach that enhances the potential for social acceptability and encourages local activities. The authors contend that enabling the local community to serve in the ‘new role’ of ‘investor’ would help mitigate community-related concerns about issues including fairness, distributional justice, transparency, trust in stakeholders and place attachment, given that citizens themselves would manage the relationship between the market, community and socio-political dimensions of RES development.

Facilitating an energy transition and energy security

Social acceptance is only one of the issues that can be addressed by engaging people in an energy transition. A decentralised energy system based on fluctuating RE sources is dependent on decentralised demand-side actions to balance energy. In other words, increasing the share of variable RE requires flexibility in the energy system in order to ensure security of supply and energy security. This can only be achieved by involving all actors that are connected to the system and by taking all possible measures on both the supply and the demand side. For this reason, it is important to take measures to encourage ‘prosumers’ – thus abolishing the traditional dichotomy between consumer and producer (as discussed in Chapters 2, 6, 7 and 9) – or to enable and activate residents of buildings in urban areas to push for clean energy and energy efficiency in the housing sector (as argued by Laakso and Lukkarinen in Chapter 10).

Although greater individual autonomy and decentralisation can facilitate an energy transition, these same elements can also destabilise the entire energy system (above all the electricity system), with significant economic and political repercussions. It is therefore necessary to carefully define suitable instruments with measurable impacts.

Reanimating civil society and enhancing democracy

Engaging people for an energy transition also has meaning and impact outside the context of climate change policies. Activation can promote social justice, empower civil society and enhance democracy. As Standal and Feenstra (Chapter 7) demonstrate, public engagement in an energy transition tends to vary based on gender, socio-economic and cultural factors, which raises questions of social justice. Such disparities can even lead to energy poverty in some countries or to marginalising certain segments of society.

Interestingly, Pietrzykowski, Rembarz and Cenian (Chapter 8) show that civil society can be an impactful agent of change if local entrepreneurs, urban activists, representatives of the local community and the scientific community voluntarily cooperate to transform and revitalise less-developed parts of countries emerging

from economic and political transitions, like Poland. The involvement of various civil society stakeholders enables feedback transfer of knowledge and experience, among other things. Furthermore, bottom-up activities strengthen the catalytic effect of the change process. Such activities become not only a channel for technological change but also a factor supporting the development of social capital.

Finally, activating people and enabling civil society is part of the broader concept of 'social innovation' (see Chapter 4). This means that the activation process reconfigures social practices, institutions and networks to empower citizens to support novel solutions that can address societal challenges. Empowering civil society increases legitimacy and trust in decision-making processes and thus contributes to equity and equality, as discussed above, in the sense of energy and mobility justice (Chapters 7, 11 and 12). This allows people to take control of new technologies, adapting them to their needs (Chapter 8). However, as Sareen et al. argue in Chapter 11, socio-political imaginaries about social innovations and transformation are dynamic and can thus be shaped and changed. This makes it extremely important to develop meticulous strategies for providing information and disseminating knowledge on social innovation and transformation, as argued by Komendantova, Neumueller and Nkoana (Chapter 12).

What are possible forms of public participation? How can this participation be encouraged?

Before examining how people can be activated to participate in energy and mobility transition, it is necessary to consider possible forms of participation. According to Antoni and Rodi (Chapter 2), the first level of active participation consists in demand-side flexibility, i.e., participation in demand response. Thus, people can passively – or in some cases, actively – help balance fluctuating RE in the energy system. The central technical instrument in this regard is smart meters, and they are already widely implemented in some countries, e.g., in Finland (Chapter 6).

The second level of active participation is prosumers (Chapters 2, 6, 7 and 9): consumers who also produce energy mainly in the form of electricity. In addition to producing energy, prosumers can play an active role in providing flexibility, e.g., through storage.

Most chapters in this volume focus mainly on the third level of active participation: different kinds of community engagement. According to Pons-Seres de Brauer and Cohen (Chapter 4), the concept of 'communities' is not exclusive to geographical locality; it also applies to other recognisable communities of interest, for instance those based on a shared interest. Magnusson (Chapter 5), however, shows that the historical (centralised) development of the energy system, for instance in Sweden, has led to path dependency and obduracy, and that community energy and collective initiatives have been met with a lack of active support and, in some cases, even neglect. Notwithstanding that countries like Sweden and Norway have implemented seemingly successful policies to increase RE production, these states have not directed support towards individuals and

communities; this has resulted in a centralised energy system (Chapters 5 and 7). Nonetheless, Magnusson argues that decentralised electricity production appears to be inevitable (e.g., in Sweden), given that there is a growing shortfall in power supply capacity. A similar observation is made in Chapter 6 with regard to Finland's electricity system. As Surwillo (Chapter 9) argues, community participation in the energy transition is even more crucial in the Eastern European states of the BSR, such as Poland; in these countries, other RE sectors, like wind energy, have stagnated, and there is a need to reconcile emission reduction obligations under EU policy with the heavy reliance on fossil-fuel-based energy resources for economic growth (see Chapter 1).

The concept of 'community' is not exclusive to the energy sector. Laakso and Lukkarinen explore potential in the housing sector, focusing on housing cooperatives. The authors argue that residents do not have adequate incentives or sufficient information on how and why they should participate in the development of sustainable energy for their housing cooperatives. The chapter thus concludes with a call for new incentive structures that prioritise sustainable energy improvements and link them more directly to management practices in buildings.

An energy transition requires both attitudinal and behavioural support from the general public (Chapter 6). A central prerequisite for engaging people is the dissemination of necessary information and knowledge for potential prosumers and communities and for municipalities and other stakeholders (Chapters 6, 7, 8, 9, 10 and 12). Targeted information and educational campaigns should be tailored to specific situations; this may require adaptations to technologies applied, socio-political factors, ages and backgrounds of target groups, and community location (e.g., Chapter 12). Pietrzykowski, Rembarz and Cenian (Chapter 8) show how 'living labs' in Poland serve as an interesting platform for a knowledge dissemination campaign of this kind.

When it comes to compensation and financial incentives to activate people for an energy transition and facilitate social acceptability, there are various perspectives on how to address these issues, and financial benefits are not necessarily constructive. Egelund Olsen (Chapter 3) reports that support schemes for facilitating social acceptability should be approached with caution given that financial incentives can be seen as buying consent or even as 'bribery,' which could stir up further opposition or reluctance within local communities. Similarly, Sareen et al. (Chapter 11) warn against policies that open up the possibility of a 'green buyout' (i.e., policies solely benefitting those with a better financial situation) within the mobility sector. It is essential for policies and strategies to be designed in accordance with principles of social justice, for example by promoting gender equality and equity for less privileged members of societies and minorities (see Chapters 7 and 11). Support schemes and funds provided by the EU seem to play a crucial role in enabling civil society to engage in grassroots activities that advance an energy transition (e.g., Chapter 8).

Finally, placing too much emphasis on prioritising top-down policies and strategies that favour centralised energy systems – as observed in Sweden (Chapter 5), Norway (Chapter 7) and Poland (Chapter 9) – can lead actors to underestimate

the importance of public engagement in an energy transition. This can slow the pace of transformation due to the unique characteristics of democratic polities, such as regular changes in government and power transitions between parties with varying or even contradictory policies (see Chapter 1). A sole focus on centralisation even threatens the security of supply (see Chapters 5 and 6).

Institutional and legal design for mobilising people

This volume also elaborates on the institutional and legal design for mobilising people. As shown in Chapter 2, the European legislature clearly obliged the Member States to develop concepts for this process and enact them. Still, the European legal framework is vague on this topic and leaves the Member States substantial leeway to translate such concepts into concrete terms.

In keeping with the subsidiarity principle, it is vital to find specific solutions that respect regional and local differences. Furthermore, the institutional and legal design needs direct input from the social sciences to identify needs for, gaps in and impacts of regulations. However, it is clear that the design of new legal concepts cannot be merely academic. Existing legal structures must be taken into account and adapted accordingly. The challenge of path dependency must be taken seriously when designing new instruments (Chapter 5). This will require a deconstruction of the traditional dichotomies that are deeply rooted in the historical evolution of the legal order, such as the dualism between producers and consumers, between the state-as-regulator and civil society (Chapter 2), and between housing owners/residents and decision-makers (e.g., Chapter 10).

In light of these factors, it is impossible for the chapters in this volume to identify a one-size-fits-all solution. Instead, they propose various institutional and legal designs that can be further developed and – after any necessary adaptations – transferred to other legal systems. Although most of the chapters show that mobilising people for the energy transition requires financial incentives, Chapter 3 demonstrates that the design of the incentives also plays a vital role; poorly constructed incentives do not provide constructive solutions. As mentioned above, these incentives must be reliable to encourage long-term investment schemes (Chapter 4). Feed-in schemes have some advantages in this respect (Chapter 4), as do green certificates, which can be used as a suitable long-term regulation (Chapter 5). Financial support schemes are often overly complex and entail extremely high transactions costs or thresholds (e.g., Chapters 5 and 7). Modernised instruments directed at engaging people for the energy transition should take this into account and contribute to harmonising and simplifying existing schemes instead of further complicating them.

The recent EU regulation demands more support for energy communities (Chapter 2). Magnusson (Chapter 5) suggests that there should be a greater focus on cooperatives, perhaps in the form of umbrella organisations. In this respect, Pietrzykowski, Rembarz and Cenian (Chapter 8) refer to the Polish experience of ‘living labs’ as an innovative organisational form that can also foster an integrated planning process. In order to activate people, it is vital to overcome existing

obstacles that hinder a common bottom-up production of energy. Energy communities like those created in Finland (e.g., housing cooperatives) can enable the sharing of produced energy (Chapter 10). In Norway, a ‘plus-customer scheme’ implemented in 2017 appears to be a suitable approach to reduce transaction costs (Chapter 7). This model encourages end-users to feed power into the grid (not exceeding 100 kW). These users are exempted from charges and feed-in tariffs and are allowed to sell their excess production without a licence. Households within the same building are allowed to join energy production projects (through virtual metering).

Policy recommendations and implications

Each chapter of this book provides recommendations for practical policies that cultivate citizen-driven initiatives, establish decentralised systems and facilitate social acceptability to expedite an energy transition. In this section, we summarise the most important of these holistic policy recommendations, which can be applied even beyond the borders of the BSR:

- The legal design of incentives for social acceptability should be carried out meticulously to ensure that the end result accommodates different regional circumstances. Context matters, and the same method or measure may not work everywhere (even in the same region with shared borders, i.e., the BSR) or for all projects.
- Lawmakers should consider instruments that are less complex, more predictable and more likely to project a positive outlook on the local implications of the green transition. Legal measures with complex procedures are perceived as less transparent; one example is the notably *subjective* assessment of the visual impact of a wind farm (see Chapter 3).
- Policies should promote the principles of social justice and mitigate gender, social, cultural and other disparities. Thresholds should be low to create a level playing field.
- Policies, strategies, measures and incentives should not benefit only elites and privileged groups (e.g., in the case of the electric vehicle (EV) rollout in Norway; see Chapter 11).
- When it comes to the legal framework vis-à-vis bottom-up, decentralised activities in the EU, it is clear that the rights of prosumers or energy communities granted under EU law remain relatively open to interpretation; the crucial step is their transposition into national laws. Therefore, Member States should carefully examine how the various design options presented in this volume can be adapted to their legal and cultural contexts to enable people to participate actively in the energy transition.
- Financial measures to incentivise local communities will play a crucial role, with some caveats: they must be designed in such a way that they will be reliable in the long term and create legal certainty. Moreover, they should be transparent and not overly complex in order to grant access to more people.

Finally, the design should prevent incentives from being perceived as an attempt to buy consent.

- More specifically, when it comes to the electricity sector, an effective market design is crucial to ensure that the system is cost-effective overall, not just for those who ‘actively’ participate, because local consumption also needs to respond to effective market price signals. The Member States must ensure that self-consumed electricity that is used behind the metre is not subject to any charges or fees, although the Member States may apply charges in certain limited cases, in particular for installations with a capacity above 30 kW (see Chapter 2).
- An important recommendation for policymakers at the national level is to keep the door open for alternative pathways and technological breakthroughs. Specific circumstances – for example with regard to country geography, resources, socio-political events and the economy – obviously shape possible pathways, but keeping the door open to new opportunities and supporting alternative groups to invest in renewable energy may lead to surprising developments and major breakthroughs (see Chapters 4, 5, 6 and 9).
- A comprehensive plan is crucial for social outreach and knowledge dissemination. There should be effective and transparent communication with the public concerning renewable energy technologies, possible pathways to participation in an energy transition, costs and benefits, existing legal and support schemes, and various measures for citizen-driven energy projects and demand-side flexibility. For such communication to be successful, cross-cultural differences, socio-political factors, demographic backgrounds and legal landscapes in each country must be taken into account (see Chapter 12).
- Local-level innovation vis-à-vis a local-level energy transition cannot be limited to the adaptation of solutions from other areas to local conditions, such as in the context of urban revitalisation and the decarbonisation of the housing sector (see Chapter 8). Moreover, not all the changes should be made at the legislative level or at the level of the state; there must be cooperation with municipalities, energy companies, residential areas, housing cooperatives and other actors (see Chapter 10). In some cases, bottom-up grassroots activities require innovative grassroots solutions. Policies and legal frameworks must have sufficient flexibility to accommodate these in conjunction with top-down policies and strategies (e.g., EU policies).

Concluding remarks and outlook

Overall, the chapters in this volume show that the BSR represents a kind of ‘energy transition laboratory’ that can provide valuable insight into the activation of people for the energy transition and the emergence of social acceptability. The region is uniquely suitable for this role because histories, political conditions, geographies, cultures and economic performance vary considerably between BSR countries. Therefore, other regions and countries, particularly those in the EU, would benefit from the experiences of this region to avoid ‘reinventing the wheel’

and expedite the transformation necessary to meet the goals of the European Green Deal.

In order to motivate consumers to become active in the energy transition (e.g., as prosumers), it is crucial to make the process as interesting (e.g., financially attractive), as transparent and as simple as possible. Citizens need adequate and precise information regarding the opportunities available to them to participate in an energy transition. A lack of crucial information often constitutes a significant obstacle to participation. Sufficient and transparent information, a simple process and clear rights of consumers to participate will lead to a more flexible energy system, optimise the grid and ensure energy security. This will not only address the challenges of acceptance, but also facilitate acceptability, which is essential to the success of an energy transition.

The prevalent reported grand challenge of social acceptance for development of clean energy systems and an energy transition would not be fully addressed unless a balance is struck between top-down, centralised energy policies and strategies on the one hand and bottom-up, grassroots approaches on the other. Therefore, we suggest that future studies shift the focus from social acceptance to social acceptability. Social acceptance is a top-down concept that merely refers to the absence of active stakeholder opposition to a technology. Social acceptability is a more democratic and socially inclusive concept that combines social acceptance and social support. Social acceptance should not be considered the equivalent of social support; when studying the social dimensions of an energy transition, care should be taken to distinguish between these two concepts. Evidence suggests that social acceptability emerges when citizens are activated to make practical contributions to an energy transition through demand-side flexibility, prosumption, community energy projects, decarbonisation of the mobility sector, sustainable land use, and energy efficiency and green energy systems for households. Hence, citizen participation will not only expedite an energy transition and mitigate climate change, but also facilitate more jobs and bolster the economy in the face of significant challenges, such as those associated with technological breakthroughs (e.g., artificial intelligence) or abrupt global crises, like climate change or the Covid-19 pandemic.

One of the limitations of this edited volume is that none of its chapters focuses exclusively on the Baltic States (i.e., Latvia, Lithuania and Estonia), although these three nations are considered alongside other BSR countries in Chapter 4. This issue warrants further investigation: the significance of grassroots activities for energy independence and for the security of small states in geopolitical regions facing particular challenges (in this case concerning the dispute between Russia and the Baltic States and the security threats posed by Russia) is an important topic for future research. In addition, further comparative studies between regions would also allow for an exchange of lessons learned between regions and countries and prevent the repetition of experiences that hinder a timely energy transition. Generally speaking, constructive cross-border knowledge exchange is valuable because, in the context of climate change and energy security, local actions have global impacts.

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