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Public Acceptance in Sustainable Grid Development – A New Approach

Wenche Tobiasson and Tooraj Jamasb
Durham University Business School (UK) and Copenhagen School of Energy Infrastructure (DK)

In the course of the transition from carbon extensive power generation to low carbon technologies, the electricity grid will face technical as well as non-technical challenges. Transmission systems are required to tackle the change from highly flexible, centralized generation technologies to fluctuating, unpredictable and decentralized power generation. The grid often needs to be extended to ensure security of supply. While the benefits of the projects affect the whole system, their social costs are local. This mismatch of costs and benefits is a source of conflict and requires new approaches to grid development.

In recent years, the public increasingly engages with major grid expansion projects. Their opposition raises concerns about sustainability, environment and health to an extent that stakeholders need to address these. Experience from projects in Norway, the United Kingdom and other countries have shown that gaining public acceptance requires new approaches.

Tooraj Jamasb and Wenche Tobiasson have investigated sustainable electricity grid development and propose a new framework for the planning process. The approach is based on the principles of **weak and strong sustainability** which rather places the natural environment at the center of a deliberation mechanism than the local communities.

They argue that in this framework the stakeholders can identify how to use some of the system benefits to **favor environmental, social and long-term sustainability**. This approach opens for various forms of compensation along the spectrum of weak and strong sustainability and implies attention to long-term planning rather than just to short-term considerations of communities.

The rise in public engagement with grid development requires sustainable solutions that are yet to be found. The authors learn from projects in Norway and the United Kingdom that **stakeholders are not viewed as trustful or equal agents** by communities and the public. The imbalance in financial power and conflicts of interest lead to opposition from the local communities, and **decision-makers are constrained to planning mechanisms** which are **not adequate for inclusion of communities in negotiations**.

Weak sustainability: Financial, natural or social community capital, or a combination, of the same value can be created from the benefits of the project.

Strong sustainability: The total value of a resource or natural asset is to be maintained for current and future generations if an equivalent value of environmental asset can be created from the rents.

Figure 1: The concept of weak and strong sustainability

In light of the experience from grid development projects, the proposed approach **combines the concept of weak-strong sustainability with transparency and engagement**. While the latter aspects call for a shift in involvement of local communities and directly affected individuals in the process, the concept of weak-strong sustainability has a spectrum on which the parties can build collective negotiations.

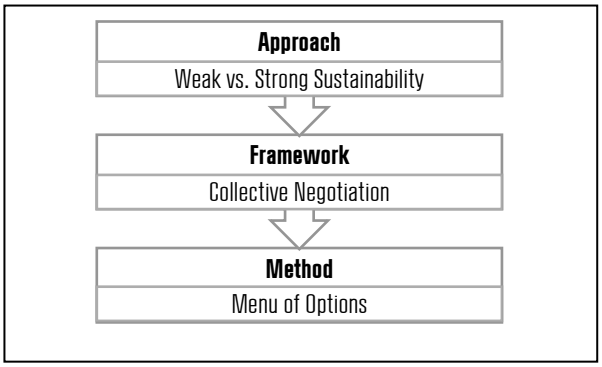

Figure 2: The economic sustainability approach for grid development

This conceptual framework on engagement of affected communities through negotiation is **based on a spectrum of compensation options** derived from the weak-strong sustainability **summarized in a menu of options** and presents a new approach to achieving public acceptance in grid expansion.

This approach **focuses on environmental investments** rather than on compensating individuals and benefits the society and economic welfare. The approach is also **applicable in other parts of energy systems and production**, for instance in locating waste, wind farms, nuclear plants or gas wells.

Case 1: Norway
Hardanger Power Line

In the scenic region along the Hardanger Fjord, a 90km long transmission line was constructed and went live in 2014. It was built by the system operator Statnett and connects hydro power plants to the city of Bergen.

The purpose of the project was argued to provide security of supply of reasonably priced electricity at times of increasing demand. A national debate evolved raising concerns about biodiversity, ecosystems, scenery, tourism and quality of life. Local municipalities were compensated at about 100 Million Norwegian kroner.

Although authorities completed the construction, the project started a debate to revise the planning procedures in order to increase public acceptance.

Case 2: United Kingdom, Scotland
The Beauly-Denny High Voltage Line

Scottish Power Transmission (SPT) and Scottish Hydro Electricity Transmission Lines (SHETL) identified a need to expand the Beauly-Denny power line in 2004 and applied for permission in 2005. The project involved building a 400kV power line on a distance of 220km through the Scottish Highlands.

Construction of the line did not start before 2012 as the project became the longest public inquiry in Scottish history due to close to 20,000 objections. In 2015, the project was completed and went live. The line was strongly supported by the Scottish Government that promoted the line as an important step towards a low-carbon energy future. The regulator OFGEM approved the project with security of supply and low electricity prices as main reasons.

Although sustainability was the focus of connecting large amounts of renewables to the system, the communities argued that it outweighs the green impact of the project due to disruptions to the environment, scenery and biodiversity. They also missed consultation from an early stage. The inquiry gave a chance to be heard but the communities felt they were not given an opportunity for agreements and criticized the lack of bargaining power. Although the line was completed, not all differences were removed throughout the process. Compensation was paid to two communities.

References:

Tobiasson, W., Beestermöller, C. & Jamasb, T. (2016). Public Engagement in Electricity Network Development: The Case of the Beauly-Denny Project in Scotland. Economia e Politica Industriale 43(2): 105-126.

Tobiasson, W and Jamasb, T. (2016). The Solution that Might Have Been: Resolving Social Conflict in Deliberations about Future Electricity Grid Development. Energy Research & Social Science 17: 94-101.