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Sustainable electricity Grid Development and the Public: An Economic Approach

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Increasingly, local communities oppose the construction of new transmission lines in their areas. At the same time, in many cases the new lines are needed to transport renewable energy from remote parts of the countries to demand centres. Opposition to grid development projects causes lengthy delays and places financial and practical strain on the projects.

The structure of the electricity industry is in transition due to the emergence of smaller but more numerous electricity generation facilities. Also, the general public and local communities are increasingly active and engage with energy and environmental issues. As a result, the traditional decision making frameworks and processes are proving less effective in solving the present time conflicts between local communities and other stakeholders.

This paper proposes an economic approach to resolve such conflicts. We discuss how compensation, benefit sharing, and property rights can play a role in reducing community opposition to new grid developments. We argue that these methods need to be part of an overarching societal strategy and policy towards environmental effects of grid development.

We then propose that such impacts can be addressed within the framework of 'weak' versus 'strong' sustainability. The environmental impact of a grid development can be viewed in terms of weak and strong sustainability. If a grid development project is deemed to produce a net socio-economic surplus this implies the project can compensate for the environmental damage of the project. This compensation can be in the form of creating an equivalent benefit or value elsewhere.

Within this framework, the wider society as a whole must decide on the acceptable form of the transformation and conversion of the value of the natural assets affected by a grid project while preserving their total value – i.e. whether the natural asset affected should be transformed into another form of natural asset or into physical, financial, social, or human capital. This decision should be part of a high level and long-term sustainability strategy that informs the decision-making framework and processes.

Finally, we suggest that the concepts of 'collective negotiation' and 'menu of options' in regulatory economics can be adapted to operationalize this sustainability-based approach to community engagement with new grid projects.

The suggested mechanism can be in the form of collective negotiations between the communities and developer with the consent of the regulator and policy makers. The efficiency and acceptance of the outcome of collective negotiations can then be further improved through the use of a menu of options an established concept in regulatory economics. This paper provides a conceptual framework that unlocks an area of potential empirical research. Future studies should examine the practical application and the process of operationalizing the sustainability approach.

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