

PUBLIC ENGAGEMENT AND COMMUNITY INVESTMENT IN ELECTRICITY NETWORK DEVELOPMENTS: AN ECONOMIC APPROACH

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A timely development of national infrastructures is a prerequisite for economic growth and is generally associated with significant economic and social returns. Such undertakings include electricity transmission networks, which following ambitious environmental targets to limit climate change, must expand in order to connect the growing number of dispersed renewable energy generation facilities. Despite their economic benefits, new grid developments often involve adverse environmental and social impacts on affected areas and give rise to community opposition. Failing to reach agreement on facility siting and deployment causes lengthy and costly delays to the development of the sector planning process and can even jeopardise the policy objectives altogether.

From an economic point of view, local opposition is due to externalities caused by the grid projects and imposed on the affected communities. Theoretically, given standard economic assumptions of rationality, perfect information and zero transaction costs, a solution that internalises the externality can be achieved. However, the practical application of financial compensation encounters several problems, including the difficulty of estimating exact costs and benefits of infrastructure projects and the public perception of compensation as a bribe. Other measures implemented to foster acceptance and to increase the local retention of profits include the provision of *Community Benefit Schemes*. These are particularly popular in wind developments and have been, with some success, implemented in countries such as Denmark and Germany.

Contrary to renewable energy developments and other single location facilities, new transmission projects have received comparatively little attention from researchers. This is particularly the case with regards to compensation or community benefit provision, despite some similarities in type and level of resistance from local communities. The shared characteristics between single location facilities and transmission developments include large sunk costs, negative externalities, public goods and information asymmetries. However, differences including regulation and natural monopolistic features complicate matters in the case of transmission developments, necessitating an innovative approach.

Using established economic theory and concepts, and the experiences from other locally unwanted facilities, this paper investigates the potential of financial compensation as a solution to ensure more efficient planning and implementation of power system and transmission projects. By outlining the specific economic characteristics of grid developments we discuss how potential compensatory frameworks could be devised for economically beneficial and socially acceptable outcomes.

The nature of the environmental goods, which are the source of the stakeholder conflicts, indicates that communities, legally speaking do not have entitlement to direct compensation. Additionally, individual compensation is problematic from a practical point of view due to time and information requirements, thus increasing project transaction costs. Instead, the issue can be approached at a societal level where, collectively, a decision can be made on how to redistribute any potential social surplus. Rather than compensation as a solution, the concept of “community investment” is explored and directions for further research are suggested.

It is evident that a financial approach is not an easy way out of a complex problem and aspects beyond the economic and technical matters must be considered when devising a solution. The heterogeneity of projects, communities and stakeholders renders the potential of one-way instrumental solutions, indicating a need for an open, participatory and communicative approach.

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