PAVING THE WAY FOR A LOW-CARBON SOCIETY: SOCIAL ACCEPTANCE AND ELECTRICITY GRID EXPANSION IN EUROPE

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Kurzfassung

The expansion of existing electricity transmission grids is a necessary step in the conversion to a carbon-free society and mitigating the negative effects of climate change. Without new transmission lines, linking the burgeoning European network of small scale renewable electricity generators with centers of demand would not be possible. The lack of social acceptance for these projects has proven to be a major hurdle to grid expansion. Local stakeholders often experience negative effects from nearby projects, which lead them to oppose these developments, causing delays in completion. These delays threaten the success of the European Union's (EU) plan to transition to renewable generation sources and decrease carbon emissions.

While a surfeit of past research has done well to characterize the social acceptance problem, grid developers are now in need of implementable tools that have been proven to improve social acceptance and aid in reaching a compromise with locals. A reduction in delays and funds spent reaching a compromise between locals and developers would constitute real savings to society.

To aid this effort, this project presents data from an unprecedented survey of social acceptance of energy infrastructure that was conducted across the EU-27. Survey participants responded to the construction of a hypothetical power line near their neighborhood. Some respondents were told that this power line has one of three auxiliary benefits to their region or community. The results from an econometric model explain social acceptance as a function of individual perceptions, characteristics, and information regarding ancillary benefits of the planned development.

The results show that positive information regarding new grid developments can have a substantial impact on the social acceptance of such projects. In particular, we show that understanding the importance of grid expansion for the national energy supply makes locals much more accepting of new transmission lines, and that emphasizing any economic benefits to the region, or environmental benefits from decreased carbon emissions can significantly improve acceptance. Finally, it is discussed that the optimal benefit to emphasize varies by nation, due to strong heterogeneity between national responses to new developments and ancillary benefits of these developments. The findings suggest that there exists a substantial potential for information and awareness campaigns to increase public acceptance to power lines. Thus, developers and policy makers would do-well to include awareness increasing efforts in their acceptance-improving strategy in order to minimize delays in construction, and enable the EU to transition to a low-carbon society.

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