

How local communities can transition to sustainable energy systems

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What makes for a successful transition to a low-carbon energy system? Local involvement, perceived fairness and information sharing, according to new research from Lund University in Sweden.

The researchers studied two cases, one in Samsø (Denmark) and one in Feldheim (Germany) of successful implementation of low-carbon energy systems. Samsø is the world's first 100 percent renewable energy-powered island, and has been labeled as one of the most inspiring examples of a sustainable energy community. Feldheim was the first energy self-sufficient settlement in Germany, with community-owned electricity and heating grids that are wholly supplied by local renewable energy. The village is portrayed as an energy transition model for small communities, and an example of the successful integration of a community energy [system](#).

The implementation of low-carbon energy systems is crucial for the transition to sustainable cities and communities. In spite of that, there is often opposition from the public when it comes to planning and implementation.

In a new study recently published in the *Journal of Applied Energy*, researchers from Lund University studied which factors play a role in the transition to low-carbon energy systems and how communities and decision makers deal with conflicts during the transition.

The researchers found that the key to achieving these two successful

transitions was the involvement of the local population, and the opportunity to be involved in the decision-making process. The researchers also found indications that a fair, transparent and open process might be more important than the distribution of project benefits.

"We found that intensive information and consultation processes were critical to overcome social, technical and economic barriers to implementation. We also found it was important for the communities to find fair solutions for those who were burdened with either negative or positive effects," says Henner Busch, researcher at The Department of Human Geography and one of the authors of the study.

The study highlights what policy makers, project developers and practitioners need to take into account during the planning and implementation phases. This specifically provides valuable insights into how low-carbon energy transitions can be effectively managed, and how communities can respond to the challenge of [energy](#) transitions.

"Perceived fairness by those affected by the change is pivotal to increasing the perceived legitimacy of transition outcomes. If this is done correctly, even contested projects can be realised. This includes that stakeholders find the space to discuss and disagree. Communication channels and [information sharing](#) are therefore of prime importance," concludes another author, Professor Luis Mundaca, from the International Institute for Industrial Environmental Economics.

More information: Luis Mundaca et al. 'Successful' low-carbon energy transitions at the community level? An energy justice perspective, *Applied Energy* (2018). [DOI: 10.1016/j.apenergy.2018.02.146](https://doi.org/10.1016/j.apenergy.2018.02.146)

Provided by Lund University

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