



RESULTS AND RECOMMENDATIONS 01/2021

Municipalities as energy pioneers: a study of Vestsiden Secondary School in Kongsberg

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Purpose of the study

This study analyses renewable energy innovation at the local government level (Kongsberg Municipality) in Norway. The municipality has implemented innovative energy technologies in a school building. Vestsiden Secondary School in Kongsberg has rooftop solar panels, battery and hydrogen power storage, as well as an advanced control system. We investigate the puzzle of why the municipality chose such innovative investments, facing technical complexities, and substantially higher costs. The research provides knowledge about what contributes to the adoption of new energy solutions in the public sector.

The issue is relevant for the low-carbon transition for several reasons:

- Energy investments of this type can play a role in evening out power peaks in the electrical grid and thereby reducing the need for grid reinforcements.
- Knowledge about what makes municipalities succeed in their energy and transition strategies is vital to further stimulate energy transition at the local government level.
- Knowledge about whether, and how, the organisation of local governments impacts initiatives for climate and energy transformation.

Research questions

We have asked:

1. What enables a municipality and a municipal real estate company to implement innovative energy investments in buildings?
2. How does the organisation of real estate management affect the possibility of innovative thinking about this type of investment?

Who has participated in the research group?

The project team included Tor Håkon Jackson Inderberg (The Fridtjof Nansen Institute), Iris Leikanger, and Hege Westskog (Centre for Development and the Environment, University of Oslo). The study was part of a larger research project in the research centre Include, Flexeffect, led by Karina Standal at CICERO Center for Climate Research.



What did we find?

The study shows that autonomy in decision-making and the organisational enabling of taking long-term investments into account in an investment context are important factors in paving the way for innovative energy investments by a public actor. We show that the existence of a strong and politically insulated entity, in the form of a municipal real estate company with a shielded mandate to prioritise energy savings and environmentally friendly investments, facilitate institutional focus on the targets. Combined with a strong culture of innovation and Kongsberg's local identity as a 'Technology Town' ingrained in industry, the municipal organisation, and the local population, this enabled the municipality to be an innovative front-runner within building energy technologies.

Political support is, of course, also important. Kongsberg's municipal real estate company is subject to overarching political control. Both in the organisation of real estate management in the municipality and decisions on the development of buildings, including cost frameworks, political entrepreneurship has been demonstrated at the right time.

However, the study also indicates that a strong and successful investment in energy solutions in municipal buildings may have its downsides. Climate change mitigation efforts may be limited to this area, with a focus on technological solutions. This may come at the expense of other measures, and it may also make it more difficult to work across different sectors in the municipality on this topic.

Implications

Organisational autonomy and long-term perspective

The study shows that autonomy in decision-making, particularly in the form of organisational protection of long-term investments, is important for budgeting for innovative energy technologies in municipalities. This can be achieved through a municipal enterprise as in this study, where the enterprise is kept somewhat separate from day-to-day political decisions, but results are not necessarily bound by a specific organisational model. There are likely to be several organisational paths to achieve similar results.

Space for entrepreneurship

Formal structures, like organisational models and protected mandates, are not the only element that matters. It is worth noting that the municipality and the municipal real estate company have managed to develop a collaborative culture that promotes both administrative and political entrepreneurship. This is an important element for succeeding in efforts for low-carbon energy transitions.

Adaptation to local context

Other studies have pointed to the importance of local context in local governments' work on environmental and climate issues. Our findings support this and further imply that political measures and their framing must be adapted to the local context. Such adaptation would likely contribute to a greater degree of legitimacy for climate and environmental initiatives.



For more information about the project, see:

- [Energy investments at Vestsiden junior high school – Include](#)
- [Institutional context, innovations, and energy transitions: Exploring solar photovoltaics with hydrogen storage at a secondary school in Norway - ScienceDirect](#)