

THE ROLE OF UTILITY COMPANIES IN MUNICIPAL PLANNING OF SMART ENERGY COMMUNITIES

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Main achievements:

The project is still awaiting political approval due to objections from the regional governor.

Aim/target in relation to scale:

ZVB aims to become the first large scale (800 dwellings) development project in Norway aiming at a totally zero emission set of buildings based on the Zero Emission Building definitions.

Key Strategic Measures:

Renewable energy strategies is the Key Strategic Measure in this project, where the starting point for the design and location was a solar energy analysis of potential areas in the Bergen city region. Stakeholder involvement and Urban design processes have also been influential.



Furuset Forbildeprosjekt

Case characteristics

Main achievements:

The area regulation plan and the action plan were adopted in the City Council in November 2016. This marks the start of the implementation phase. However, already in the years before relevant projects were implemented as the re-design of a green space, the new-called "Verdensparken". Another project is the construction of an apartment building in Ulholtveien 31 with passive house standard and geothermic and solar energy production.

Aim/target in relation to scale:

The Furuset project – to develop a climate-friendly and attractive neighbourhood - incorporates several sub-goals like the creation of attractive urban spaces, strengthening of the green infrastructure with blue-green connections, a broad and varied supply of residential units and a well-functioning traffic hub.. 1.700 – 2.300 housing units are planned and 2.000 – 3.400 work places. 50 percent green house gas emissions within 2020 is to be reached through waterborn energy supply, environmentally friendly materials, energy efficient buildings and public transport.

Key Strategic Measures:

The most important Strategic Measure in the Furuset Forbildeprosjekt has been Stakeholder Engagement. This has been key and a strong characteristic of the role of public partnership projects that the municipality of Oslo with Futurebuilt pioneers.



Liberalization of utilities and the relationship to municipalities

- Liberalization of energy market (REF)
- In Norway, from a state monopoly situation towards privatization
- From in-house competency on energy in public planning of cities
- Today: the municipalities act as negotiators to achieve their goals through coordination of private stakeholders

Research questions

- a. What is the utility companies' role in shaping definitions and strategies in the planning of SEC (based on the two case studies)?
- b. How do utility companies see their future role in integrated urban energy planning?
- c. Which measures may be taken within municipal planning of SECs to help manage the identified challenges and opportunities?

Data gathering

- 15 interviews with involved stakeholders
- ‘Graphic elicitation’ to understand the process, goals and important stakeholder roles
- Using visual tools to ask participants to ‘think out loud’ while describing the project planning timeline

Findings

- Energy utility companies join the planning of city communities late
- However, once they are onboard, they have quite a large influence on the final design. This is due to
 - Monopoly role on competency on energy
 - Concession (a contract on an area for district heating supply)
 - Traditional political influence that is kept structurally
 - Lack of alternatives and clear definitions of what is going to be implemented

Utility companies' role in defining urban Norwegian energy futures

- Utility companies hold an expertise on energy that is not coupled by in-house competency in municipalities
- A lack of tools to include cost and feasibility, and general experience with the market in the cases gives utility companies strong influence on final design
- Utility companies are forward thinking on the end-user side on energy yet the municipality lack regulations and incentives to include utility companies at an earlier stage in planning

'In the future, Mrs. Hansen can sit in her apartment and tell her TV that she needs to go to the doctor. Then the TV will make sure she has an electric car charged from the carpool waiting for her. And she will have a smart meter in her living room telling her when the electricity prices are low so that she can wash her clothes.'

Representative of utility company

(Translated from Norwegian by authors)

‘we for example propose that we would like some alternative suggestions on what kind of streetlights we want here... but then the utility company which provides for this [other] area say that they will not do this...[other thing that the new alternatives depend on]’

Representative of climate section

(Translated from Norwegian by authors)

Zero Emission Neighbourhoods vs. Smart Energy Communities

Regarding the view on the meaning of SEC, the utility companies operate with two narratives for urban energy futures:

- a. The 'island' of 'Smart Energy Community'. The isolated calculation of a clearly defined area of buildings and infrastructure producing its own energy and seeking independence. This narrative is regarded as a threat to the current conventional grid business model of the major utilities in Norway.
- b. The 'all-encompassing' Zero Emission Neighbourhood where participants believe everything 'down to what is eaten for breakfast' is included.

Conclusions

- a lack of agreement on what a SEC design should include and how it should be planned leads to the involved stakeholders making decisions along the way based on logics constructed by a composition of their individual ideals.
- utility companies' perspectives on future roles and the perceived threat of local energy production had hued their input to the definition and strategies within the SEC planning.
- We see that in the current planning of the two smart energy communities, utility companies become involved late in the planning process. Despite their late arrival to the process, utility companies quickly take a leading role in deciding the definition space of what a smart energy community is within that project, and in the municipality planning practice in general.
- municipalities look to the major utility companies to understand how to realize the final SEC plans. We see that the utility companies add the feasibility aspects and their prioritized agendas of cost/benefit and energy supply security to the discussion
- Utility companies contribute to strategic thinking based on their envisioned future role.
- May be a result of the historically monopolized Norwegian energy market.

Recommendations

- An argument for finding SEC planning approaches that manage to broaden the scope to include more innovative and alternative energy scenarios.
- parts of the reason that utility companies influence the definitions is also that stakeholders perceive that ZEN and SEC thinking is ‘island’ thinking and that this view is impractical in the Norwegian context where connection to the grid is an ideal and the idea of ‘supply security’ is strong.
- A need for research that exemplifies integrated design, which also works aligned with cost/benefit frameworks and that can also work in areas which combine existing and new buildings and infrastructure.
- A clear need for definitions and strategies that can strengthen the role that municipalities must take to manage building, community, and neighbourhood planning towards a zero-emission vision.