Community-owned wind farm on the island of Ærø, Denmark

Wind turbines on Ærø.
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Highlights

- Community-owned wind farm
- A case pioneering the way since the 70s
- A group of local champions paved the way for the island's energy transition
- Local ownership is a key-characteristic
- Local bank-loan system to include everybody in the project

Background information

Ærø is one of the many islands that belong to Denmark. It is located in the South of the country South of the island Fyn East of Jutland. The island has a population of roughly 6.300 inhabitants. In 2007, the two municipalities Ærøkøbing and Marstal were merged to Ærø municipality, which spans the entire island. This part of Denmark has prime conditions for wind and solar energy production. The community has been a pioneer in renewable energy production.

Brief description of what was done

The development of wind energy kicked off Ærø's energy transition, making it one of the many renewable energy projects on the island. Many people across Denmark directly felt the effects of the 1970s oil crises. This experience sparked the interest of engaged citizens to explore alternative energy technologies. In the following years, the people of Ærø set up a number of wind turbines in a manner that can be described as both, pioneering and grass root. For a short period in the 1980s, Ærø hosted the world's biggest windfarm. To help with additional renewable energy projects, the island's community established the Ærø Energy and Environment Office, which took the role of a local intermediary. By 2000, 23 small wind turbines stood on the island. With the help of the Energy and Environment Office, the community made plans to replace the 23 small turbines by a smaller number of big turbines. By 2002, three big wind turbines stood on the island with a capacity of 12 MW producing around 40 GWh accounting for roughly 130% of the electricity consumed by the community on the island.

Project champions and their motivations

The renewable energy development on Ærø started with twelve individuals from different walks of life who all had an interest in technology. All of them had experienced the impacts of the oil crises of the 1970s. Together, they founded a citizen group and gained access to a room in the local school, providing them with a space for regular meetings. Amongst other things, they built their own wooden wind turbines. These early attempts laid the foundation for the community-owned wind farm.

Decision making process

In the 1990s, a consortium of local actors (mayor, farmers, local energy company, and local industry) was formed to compete in the 100% renewable energy island showcase competition by the Danish government. Ærø did not win and the funding was instead awarded to the island of Samsø. Even though the local consortium did not win, they still kept pursuing their goal of developing Ærø into an energy island. After all, the plans to do so were all there.

Ownership model adopted

A shareholder company owns and manages the wind farm. This company is community-owned because only inhabitants from the island had the right to buy shares when the project was initiated. The general assembly of shareholders makes all the important decisions that go beyond daily management.

Financing and economic viability

In 2002, a total of 60 Mio DKK went into the financing of the three wind turbines. The objective of this project was to achieve 100% local ownership and to enable all members of the community to invest and benefit from the wind farm. Shareholders who only invested comparably small amounts

of money own two of the three wind turbines, with the third turbine being financed by a small number of shareholders and a local fund. This local fund invests part of its returns to the inhabitants through local community projects. The bidding process ensured an inclusive character by first selling to those inhabitants who wanted to buy a small number of shares before opening to those who wanted to invest a larger amount of money. Local banks contributed to this inclusive approach by providing bank loans to citizens who were not able to secure the loans with collaterals. Instead, the shares in the wind farm served as sufficient security. Because of favourable conditions, the return on investment in the first year was 18.75 % and within seven to eight years, the investment was paid off.

Project implementation

Technically, the project was unproblematic. Over the years, the community on the island has established a strong direct relationship to the wind turbine producer Vestas. The community gets good service and technical support and in turn, Vestas gets to use the turbines on the island for testing and educational purposes.

Project benefits

Apart from the renewable energy that the wind turbines produce, the project has delivered a number of benefits to the community. Local ownership meant that a considerable amount of money stayed on the island, which resulted in a boost to the local economy. Some people claim that the original wind power project has paved the way for a number of other renewable energy projects on the island, including the three solar district heating plants and the electric ferry project. These projects are said to have created a local identity around renewables energy, making Ærø one of the three well-known Danish “energy islands” (together with Samsø and Bornholm). A final benefit is that the repowering project helped concentrate wind power generation in one place. The three big, slowly spinning wind turbines are less of an eyesore compared to the previous 23 fast spinning turbines scattered across the island.

Barriers

In 2000, the advocates of the wind farm were met with some resistance when they publically communicated the plans for the repowering project. A small but outspoken group of inhabitants with good financial resources resisted the project by initiating a campaign in local media. This campaign included newspaper ads that depicted the new turbines in comparison to local sights such as church towers. This led to concerns that property prices would fall and houses on the island would become unsellable. However, this concern did not materialise.

Furthermore, the project encountered some problems during the phase in which the investment was raised. As described above, a considerable sum came from a local fund, as inhabitants on the island were more hesitant to invest than originally anticipated.

Main lessons learned

- It helps to initiate and implement energy transitions in tight-knit communities where people know each other and work together in other contexts.
- It is very helpful to have a trusted intermediary like the Energy and Environment office, which operates independently from the interests of the municipality or local businesses.

Project champions' recommendation to policy makers:

- Renewables can guarantee price stability compared to fossil fuels, which are volatile to a changing market price. This is good for consumers and energy companies alike.

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Sources:

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