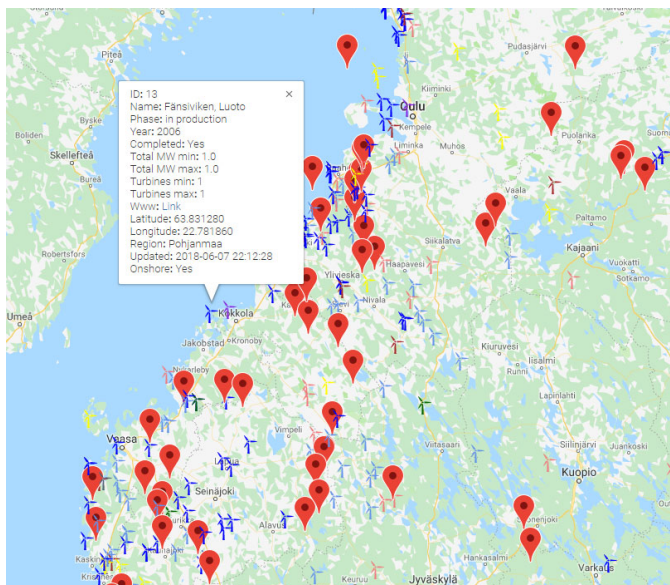


1.1 FINLAND: CASE STUDY 1. LARSMO VINDKRAFT AB

Case study report for Finland: Community owned energy project from initiation to completion
Centria University of Applied Sciences
Larsmo Vindkraft Ab

1 Introduction

Larsmo Vindkraft Oy was founded in 2001 by a few private individuals from the Larsmo area, which is located near Kokkola in western Finland. The goal was to gather funds for wind measurements and eventually to build a Wind Power plant in the Larsmo region. The idea originally came from a local resident Lars-Erik Östman, a forest engineer who is interested in sustainability issues and renewable energy.



2 Description of community

Larsmo is a municipality of Finland, located in the Ostrobothnia region. The municipality is bilingual with Swedish as the majority language and Finnish as the minority language. The municipality consists of an archipelago of about 360 islands. Larsmo Vindkraft Oy owns one wind power plant and consists of around 200 shareholders most of which are private individuals from the region.

3 Renewable Energy Project

The project consists of one privately owned wind power plant located in Larsmo:

- Wind turbine: 1MW
- Supplier: Winwind Oy
- Hub height 65m
- Rotor diameter 60m
- Estimated production 2.2 million kWh, which corresponds to the consumption in 110 electric heated houses

- The power plant starts at 3.0 m/s
- Achieves maximum power 1000 kW at 11 m/s
- Remote control and monitoring from Oulu

There have been some technical difficulties in the last couple of years and therefore the production has been slightly lower.

4 Ownership structure and financial model used

When the limited company was originally established in 2001, there were only a few shareholders and the initial capital was 15 200 €. The focus was to find a suitable location for the power plant, conduct wind measurements and find a power plant supplier. Only after that, they would start to seek new shareholders and investors.

After a suitable location and supplier was found, the entrepreneurs managed to raise 20% of the needed capital from shareholders and the rest was financed with a 20-year loan of 540 000 €. The company later received around 65 000 € in investment aids from the Finnish Ministry of the environment. The company eventually consisted of 200 shareholders, most of which are private individuals from the Larsmo area. The municipality of Larsmo is also a shareholder in the company.

5 Implementation Process

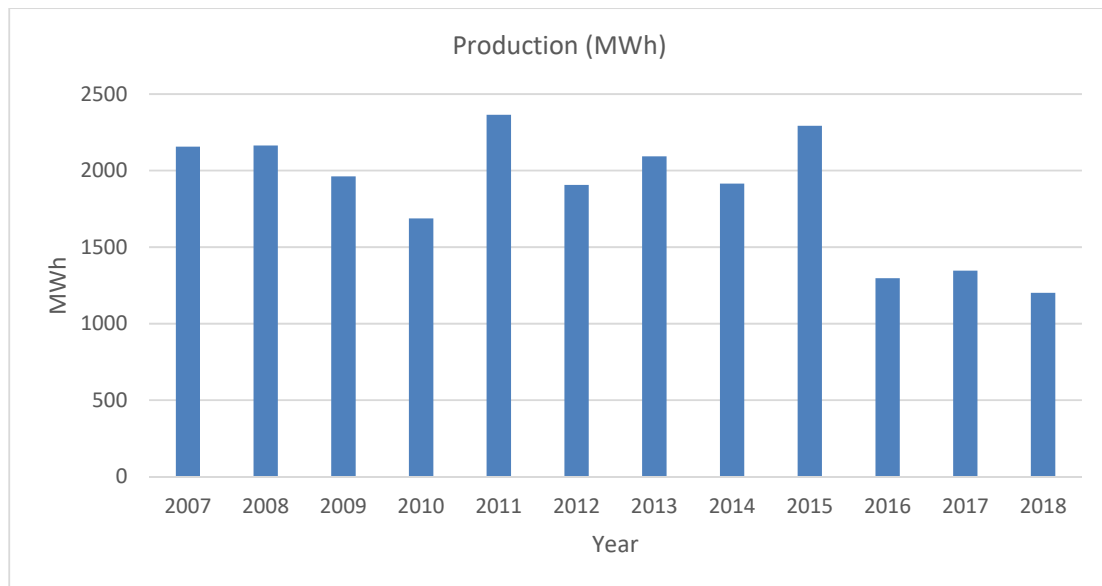
Wind measurements were made around Larsmo, and an area in Fränsviken was chosen due to good wind conditions. After a suitable location was found, the plants construction permit was applied in 2004 from the local municipality. The permit was granted later that year, but was immediately appealed by local residents. Resistance from local residents was intense throughout the whole construction process, and continued after the wind power plant was in operation.

The Administrative Court in Vaasa handled the appeal, and found the construction permit to be eligible. The opponents then appealed to the Supreme Administrative Court but their case was dismissed. When the building permit was finally granted, a fundraising campaign was started and eventually the company obtained a total of shareholders 200.

The construction work started in 2005 and in September the road and land construction work was finished. Local entrepreneurs did all the harvesting and roadwork. All the construction and installation work regarding the power plant was the responsibility of Winwind Oy. The power plant construction work was finished in June of 2006 and after some testing and adjustments, the supply of electricity to Jakobstad Energiverk began a few days before midsummer in 2006.

When the plant had been running for some months, residents near the plant complained about the noise. Larsmo Vindkraft then had to carry out noise measurements in addition to the environmental permit. A company named Pöyry Oy conducted the noise measurements, and the levels were found to be below the limit values.

The power plant has now been running for over 12 years, and has mostly needed only regular maintenance work. However, in recent years since 2016, the plant has had some technical issues and therefore the energy sales has been slightly less than in the previous years.



6 Project results: Lessons learnt & post- project benefits

The proceeds from the sale of energy have mainly gone to loan repayments. The company has not reviewed any tariff subsidies for energy sales because the minimum total power requirements are not met. Due to the low price of electricity in recent years, the plant has not been as economically profitable as expected. In 2011, the company paid out a small dividend to the stakeholders, in addition to this, stakeholders have not financially benefited from the project.

Things entrepreneurs would do differently now:

- More info events for local residents, this could reduce resistance
- Choose a more secure supplier
- Raise a larger share of own equity, 30-40%
- Do not assume that the price of electricity will rise
- It would be good if the company could use some of the electricity themselves or find customers from the region
- You should use a third-party consulting company, who acts as a technical advisor

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