

Samsø Fossil Free Island

A Master Plan to transform the island into fossil free communities

A Covenant of Mayors 2016 Case Study

In a nutshell

Covering already the 100% of its electricity demand through renewable energy, Samsø is now committed to move towards a totally fossil free future.



Samsø in numbers

Number of inhabitants: 5,000 inhabitants

CO₂ reduction target: 20% by 2020, baseline 2001

Covenant of Mayor Signatories in the country: 38

Background

The Municipality of Samsø has over the last 15 years actively promoted a progressive climate and energy agenda at local level. In 2011 with the assistance of the Samsø Energy Academy the Municipality developed an iSEAP and a SEAP in the context of the Pact of Islands and the Covenant of Mayors, respectively. The municipality has committed to meet or even exceed the EU's 20% CO₂ emission reduction target by 2020. The Samsø Energy Academy represents a core pillar and driver of "Samsø 2.0", the island's vision for energy transition. With 100% of its electricity demand being met through renewable energy, Samsø is now devising its path to a totally fossil free future. "Samsø 2.0" foresees banning fossil fuels, decarbonizing the transport sector, introducing decentralized and flexible energy systems and increasing energy efficiency in heating and is underpinned by the premise that broad stakeholder partnerships and an open and entrepreneurial mindset are key prerequisites for the implementation of innovative projects benefiting local communities.

Islands pave the way to a fossil free era

The Fossil Free Master Plan puts the vision "Samsø 2.0" in place through a number of subprojects. The financing happens from project to project, with around 70-80% being public-private partnership and only 20% coming from funding or direct subsidy.

The Master Plan is the product of 15 years of effort leading to a shift in the fuel consumption on Samsø from import to net export. As a result, fuel costs of €10 million and 60 million tons of CO₂ emissions per year have been avoided. What the master plan essentially does is to identify the consumption needs that can be met using renewable energy sources. Regarding the transport sector in particular, the activation of investments in low-carbon transport options and accompanying facilities is also triggered by the local community's interest to invest in such options.



Fossil Free Master Plan in numbers

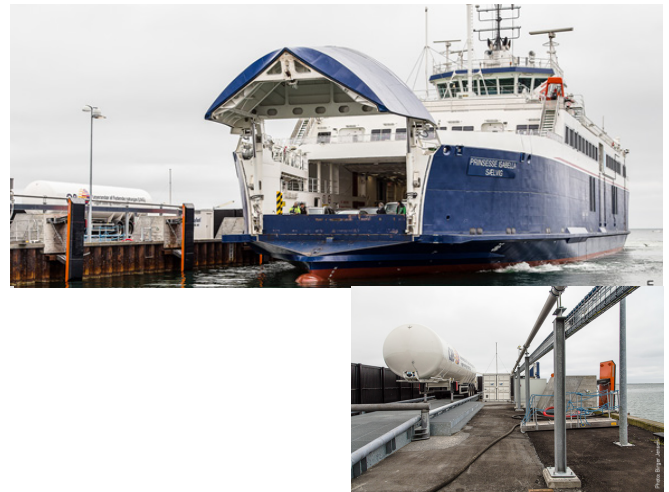
€ 10 million of fuel cost reduction

60 millions tons of CO₂ emission per year

Currently the introduction of a Gas Ferry calls for an investment of approximately €40 million. The investment is needed in order to create a market for renewable energy fuel based on biomass, which produces methane to be used in transport. The total cost for the biogas plant and the accompanying infrastructure facilities is €10 million, while operation is foreseen within the next two years.

The Fossil Free Island Master Plan is a citizens' project at its core. The local municipality implements the projects and Samsø Energy Academy engages citizens towards being more active and claiming ownership of the projects. It has been proved that for a project to be successful a wide range of stakeholders should be on board and willing to invest. For this to happen the academy develops campaigns and visual material so that information is effectively communicated towards local people. What's more the energy academy has produced a Guide for Pioneer Communities, which, combined with open space meetings set the stage for the emergence of a very positive and engaged community.

Ultimately the Fossil Free masterplan demonstrates that islands have the potential to transform themselves into fossil free communities, as a way to address trends related to depopulation, costly fuel imports, lack of economic diversification etc. Islands can become ideal hosts of research and development activities – and at relatively low cost – reducing fuel imports that are environmentally and financially not viable, and thus follow an alternative path to development.



Trunk tank serves as fuel station for the delivery of gas to the ferry in Samsø



Samsø Targets:

Targets for 2020

1. Fuel for transport on Samsø and from the island to the mainland will come from renewable energy.
2. **50%** of the local public fleet of cars will be electric and **40-50%** of the local commercial transport i.e. transport carried out by entrepreneurs, the agricultural sector, taxis, etc. will switch to bio-fuels
3. Energy consumption for heating in industry will be reduced by **5%**

Targets for 2030

1. The energy consumption for heating will be reduced by **30%**.
2. Substantial savings on the electricity consumption: the electricity use for heating in homes will not rise throughout the period until 2030 compared to consumption in 2009

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