



European Energy Network

The voluntary network of European Energy Agencies - at the heart of the clean energy transition

Name and Country of EⁿR Member

ENOVA- Norway

ENOVA



Name of Project/Programme & Link to website

Large scale demonstration of smart energy infrastructure in North-Senja

<https://www.enova.no/om-enova/om-organisasjonen/strategi/historier/styrker-forsyningsikkerheten-pa-senja-uten-a-forsterke-nettet/>

Description of Project

North-Senja is located on an island with limited grid capacity with increasing need due to electrification of aquaculture, transport (road, sea), food processing industry and tourism. The main goal is to demonstrate load-shifting and peak-shaving, local renewable production and storage as well as a local market for flexibility as means to reduce the need for increased grid capacity.

The project is one of 8 projects supported through Enova's programme "Large scale demonstration – energy systems". The intention of this programme is large scale demonstration of:

- Innovative models for operation of energy systems that includes local production, thermal and electrical storage and integration of electrical and thermal systems
- New solutions which relieves the power system and/or increase the power grid flexibility

New market models which promotes utilization of flexibility both from an end-user, aggregator and power grid perspective.

Aim/Expected Impact of Project

This project "Large scale demonstration of smart energy infrastructure in North Senja" will demonstrate the potential flexibility of the existing power grid, possible technologies as well as the effect of different kind of marked models/price incentives needed to facilitate the necessary flexibility. Electrification, especially of the transport sector, has increased the strain on the power grid. In addition, the Norwegian geographical conditions; more than 1000 islands in addition to remote locations in the fjords and on the mountains where the power supply is constrained. Therefore, the scalability potential is large in Norway (also for off-grid systems). The partners will develop technology that enables realtime load-shifting and forecasting, but also automation systems and business models.

The main goal of the project is to reduce the need for power grid upgradation and reduce the cost for power grid upgradation, which is necessary for the needed electrification.

Involvement of the Agency and Link to the EU Green Deal

Smart Integration

The project in North Senja was selected through a competitive tender run by Enova named "Large scale demonstration - energy systems". The purpose of the tender was to increase the innovation in the energy sector and



contribute to sector coupling (between grid companies, technology developers, local industry and market). The tender was run in cooperation with the energy regulator Norwegian Water Resources and Energy Directorate.

Enova is a member of the steering committee and is responsible for the overall analysis of the impact of the 8 large-scale demonstration projects (2019 to 2025). Enova supports the projects with MNOK 203,3 (Million €17).