



Aurelia Turbines Oy
Robinson Project

Small gas turbines and their role in the
decarbonisation of the energy system

Tony Hynes
Commercial Director

EU GREEN WEEK 2021 PARTNER EVENT

ZERO #EUGreenWeek
POLLUTION
for healthier people and planet

Develop an integrated energy system tailored to islands with industrial activities coupling locally available energy sources, electrical and thermal networks and innovative storage technologies, and to demonstrate it on the island of Eigerøy, Norway.

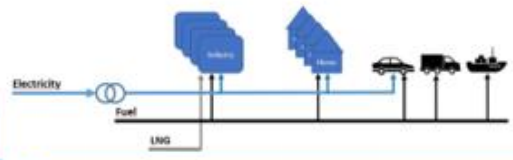

Aurelia will demonstrate the A400 running on syngas, bio-methane and H2 mix up to 30%.

Eigerøy

Eigerøy's current energy profile

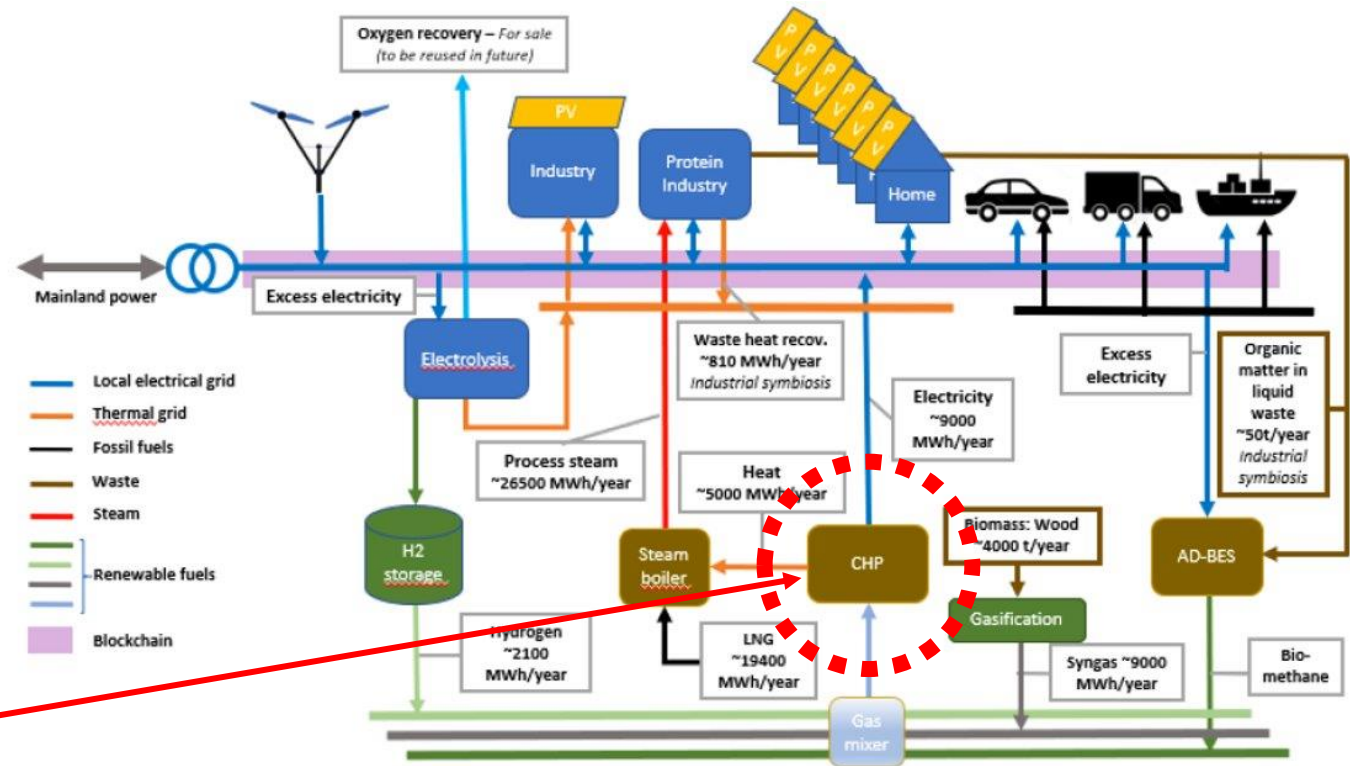
- ▶ **Electricity:** ~100% is imported from the mainland with minor share of wind and solar. (Eigerøy is connected to the mainland by an undersea cable: average load 7,9MWh/hour, peak demand 18,5MWh/hour)
- ▶ **Thermal:** 6950 MWh liquid fuel; ~ 26500 MWh/year LNG

Basic facts	
Size	20 km ²
Population	~2500 (about 800 households)
Climate	Relatively high temperatures in winter and low in summer; relatively high wind speed
Industrial profile	A new fish industry has been implanted in January 2019, increasing the island's need for electricity and steam. Moreover, new industries are to be established in the next years; they will increase the island's energy demand and require an upgrade of the existing energy system.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 957752

- 400kWe electrical power & 1MWth energy
- 40% electrical efficiency
- Fuel from: wood gasification
biomethane
30% hydrogen
- Low O&M...no lubricants
- Low emissions (NOx < 30ppm CO < 65ppm)
- CO2 abatement potential c. 1800t/a
- High availability (95%)
- Modular



EU GREEN WEEK 2021 PARTNER EVENT



- Localised heat & power
- Suitable for chilling & cooling
- Demand side control
- Economic cost of ownership
- Fuel flexibility creates opportunities
- Low exhaust emissions
- No liquid contaminants
- Scalable for island energy needs
- Sustainable island energy
- Empowers island populations



EU GREEN WEEK 2021 PARTNER EVENT





Fuel

- Detailed specification

Combustion characteristics

- Detailed emissions

Purchase

- Gas turbine
- Combustion
- BoP

Build

- Gas Turbine
- Fuel train
- Interfaces

Delivery

- March 2023



EU GREEN WEEK 2021 PARTNER EVENT

