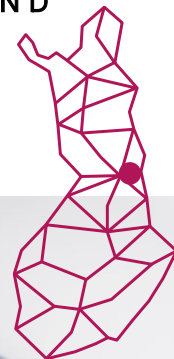


INVEST IN

The hydrogen refueling station

SUOMUSSALMI
FINLAND



The hydrogen refueling station in Suomussalmi is a trailblazing initiative that combines the green transition, on-site hydrogen production, and the transformation of the logistics sector. The station enables heavy-duty vehicles to transition to zero-emission energy and provides locally produced hydrogen for regional transport companies, public transit, and potential hydrogen-related projects. Several companies in the area have already expressed interest in utilizing hydrogen to meet their logistics or energy needs, highlighting the region's readiness to embrace clean energy solutions.



TECHNICAL DETAILS

- **Location** : Suomussalmi, near the town center
- **Production Technology**: AEM Electrolyzer (Anion Exchange Membrane)
- **Hydrogen Production Capacity**: 432 kg/day
→ 157,680 kg/year
- **Electricity Connection**: 1 MW (from the grid or renewable sources)
- **Electricity Consumption**: approx. 47 kWh/kg
→ 7.4 GWh/year
- **Refueling Pressure**: 350 bar,
Storage Tank Capacity 1000 kg



EFFICIENCY

- **Efficiency of the AEM Electrolyzer**: approx. 71 % (based on LHV)
- **Production Cost (electricity only)**: approx. 1.88 €/kg
- **Total Production Cost (incl. all operational expenses)**: approx. 2.46 €/kg



PROFITABILITY CALCULATION

- **Annual Sales**: 157,680 kg × 7 € = 1,103,760 €
- **Electricity Cost**: 7.4 GWh × 0.07 €/kWh = 518,000 €
- **Other Operating Costs**: 60,000 €
- **Total Costs**: 578,000 €
- **Annual Gross Margin**: 1,103,760 € – 578,000 € = approx. 525,760 €



PAYBACK PERIOD

- **Total Investment**:
 - AEM Electrolyzer: 1,5 M€
 - Refueling Station: 1,6 M€
 - Site Infrastructure (incl. 1 MW connection): 0,425 M€
 - **Total**: ~ 3,525 M€
- **Payback Period**:
3,525 M€ / 525 760 € ≈ 6,7 years



INFRASTRUCTURE AND CONSTRUCTION

- **Earthworks**: 150 000 €
- **Asphalting (2000 m²)**: 40 000 €
- **1 MW Electricity Connection**: 120 000 €
- **Water Connection**: 10 000 €
- **Fencing, Yard Area, Lighting**: 30 000 €
- **Safety Zones, ATEX Compliance**: 15 000 €
- **Permits and Regulatory Processes**: 25 000 €
- **Planning and Supervision**: 35 000 €
- **Total**: 425 000 €



TARGET GROUPS AND BENEFITS

- Heavy-duty transport (trucks, delivery vehicles, buses)
- Municipality's own fleet
- Logistics companies and contractors
- Zero-emission transportation in Eastern Finland



Pioneering, sustainable and bringing the hydrogen economy to life – in Suomussalmi.



Co-funded by
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INVEST IN
SUOMUSSALMI

