European Commission

CHEMICALS

INNOVATION FUND

Deployment of net-zero and innovative technologies

GAP: FFI Holmaneset -Green Ammonia Production to fill the GAP in Europe's energy supply-

The Innovation Fund is 100% funded by the EU Emissions Trading System

| Project Factsheet

FFI Holmaneset – Green Ammonia Production to fill the GAP in Europe's energy supply

The GAP project will lead the way in green ammonia (NH3) production for Europe with a large-scale production plant in Norway. Using renewable energy from the Norwegian transmission grid, electrolysis will be used to produce approximately 226 kilotonnes per year (kt/yr) of liquid green ammonia. First production is targeted for 2027 and the green ammonia will be shipped to domestic and European markets. Relative greenhouse gas (GHG) emission avoidance is expected to be 100% compared to the reference scenario.

The project presents a significant opportunity to contribute to Europe's mission to transition to a clean energy economy, creating one of the first green ammonia value chains in Europe and kick starting the green ammonia market. Expanding the

COORDINATOR
HOLMANESET H2 AS

LOCATION
Norway

CATEGORY
Energy intensive industries (EII)

SECTOR
Chemicals

AMOUNT OF INNOVATION FUND GRANT
EUR 203,766,000

EXPECTED GHG EMISSIONS AVOIDANCE
3,531,568 tonnes CO2 equivalent

STARTING DATE
01 January, 2024

ENTRY INTO OPERATION DATE
30 November, 2027

FINANCIAL CLOSE DATE
31 July, 2025

Updated on 02 December 2024

deployment of existing technologies to a commercial installation will shift the economics of green hydrogen and ammonia production towards a sustainable pathway. Whilst there is strong demand for green hydrogen derivatives such as ammonia, the price gap with fossil alternatives means that the technology has not yet reached a scale and maturity where it can compete. This project seeks to bridge that gap to help propel the value chain onto a viable footing. The 300 megawatt (MW) Holmaneset plant will run a 280MW alkaline water electrolysis (AWE) using hydropower and water. The total expected production of green ammonia during operation is expected to exceed 1 125 000 tonnes, resulting in a total expected greenhouse gas emission avoidance of more than 1.7 million tonnes CO2 equivalent.

As this project will demonstrate, ammonia is not only a versatile fuel, but also an energy carrier for long distance transport of hydrogen. The project directly contributes to the REPowerEU target for an increase in the renewable share for hydrogen used in industry. Establishing a large, integrated green hydrogen and ammonia production facility and related value chain will help many EU industries enhance their competitiveness on their path to net zero. The project will also support the fast transition to climate neutrality as set out in the EU's Green Deal Industrial Plan.

The production facilities will contribute to increased employment in the small community of Svelgen in Bremanger, Western Norway, with an estimate of 35-70 jobs directly linked to operation. There will also be indirect employment opportunities through the contracting of local suppliers. In addition, the region has the potential for future ammonia offtake, with a strong maritime industry, ship building, supply bases and shipping companies. The oxygen emitted from the production process is also suitable for use by the fish farming industry in the region.

| Participants

HOLMANESET H2 AS	Norway
FORTESCUE METALS GROUP LTD	Australia