



MANUFACTURING OF COMPONENTS FOR
RENEWABLE ENERGY OR ENERGY STORAGE

INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

Giga Arctic: Building a European future for clean batteries to accelerate the renewable energy transition

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

| Project Factsheet

Giga Arctic aims to establish a state-of-the-art lithium-ion battery giga factory with an annual capacity of 29 gigawatt hours (GWh) in Mo I Rana, Norway. The factory will use a unique cell manufacturing technology that does not require binders and hence reduces the number of manufacturing steps. Giga Arctic battery cells will be deployed in energy storage systems, which are key to providing stability and flexibility in green energy systems that are built on renewable energy sources. The project is expected to lead to a 100% relative greenhouse gas (GHG) emission avoidance compared to the reference scenario.

Giga Arctic introduces a leap forward in battery manufacturing efficiency, combining a novel battery cell manufacturing technology with a bespoke, state-of-the-art production facility. It will deploy 24M's cell manufacturing technology currently tested at pilot scale, to produce premium batteries at significantly reduced cost and with equally reduced footprint. The core innovation is a battery structure which

COORDINATOR

FREYR BATTERY GIGA ARCTIC AS

LOCATION

Norway

CATEGORY

Energy Storage (ES)

SECTOR

Manufacturing of components for production of renewable energy or energy storage

AMOUNT OF INNOVATION FUND GRANT

EUR 100,000,000

EXPECTED GHG EMISSIONS AVOIDANCE

27,847,298 tonnes CO₂ equivalent

STARTING DATE

01 January, 2024

ENTRY INTO OPERATION DATE

31 October, 2028

FINANCIAL CLOSE DATE

30 April, 2025

* Calculated vs. the 2021-2025 ETS benchmark of 6.84 tCO₂e/tH₂, not taking into account additional carbon abatement due to substitution effects in the H₂ end use application, i.e. conservative estimate.

eliminates the use of binder and solvents in the production process and subsequently eliminates the need for a drying process. The process reduces the use of non-active materials by allowing thicker electrodes than conventional technologies. This reduces energy consumption, investment cost (CAPEX), factory footprint and material input compared to current state-of-the-art processes. With a capacity of 29GWh, Giga Arctic will avoid 27.8 million tonnes of CO2 equivalent absolute GHG emission avoidance over the first ten years of operation.

The project contributes to key energy, climate and industrial policy objectives by enabling the uptake of clean and efficient (in terms of energy and resources) battery manufacturing capabilities in Europe. The project accelerates the establishment of a European battery value chain, contributing to strategic autonomy objectives and European technology leadership on battery cell manufacturing. The project also drives the development of a clean battery value

chain by boosting energy efficiency, circularity and responsible sourcing. As a key impact, Giga Arctic supports the deployment of renewables and the green transition by providing novel, cost-efficient, high-performing energy storage solutions.

Giga Arctic establishes a Nordic-centric supply chain for batteries and advance battery recycling through partnerships in the value chain. Giga Arctic is expected to play a significant role at the local level, by providing new employment opportunities. Over 1200 jobs will be created in the Nordland region, and five times more jobs will be indirectly created in the upstream value chain. New knowledge and competences on battery technologies will be built in Europe, to further accelerate the transition of the continent.

Giga Arctic opens the doors to future investments in innovative battery technologies. Further expansions to the project site are to be expected, as well as new gigafactories in Europe using 24M's technology.

| Participants

FREYR BATTERY GIGA ARCTIC AS

Norway

FREYR BATTERY NORWAY AS

Norway