



INNOVATION FUND

Driving clean innovative technologies towards the market

DECARBOMALT: Renewable heat for large-scale decarbonisation of the malt production process in Croatia

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

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Project summary

The DECARBOMALT project will build a solar thermal heating plant, heat pumps and a storage facility to provide renewable heat to an energy-intensive malt production process in Croatia. The flagship industrial project will bring existing technologies together for the first time at such a scale so as to deliver more than 50% of the total process heat needs of the site at a competitive price.

COORDINATOR

NEWHEAT

LOCATION

BOORTMALT's malting site in Nova Gradiska, Croatia

SECTOR

Renewable Heating/Cooling

AMOUNT OF INNOVATION FUND GRANT

EUR 4 499 338

RELEVANT COSTS

EUR 7 498 897

STARTING DATE

01 December 2021

PLANNED DATE OF ENTRY INTO OPERATION

Q1 2024

An innovative combination of recognised technologies at large-scale

The project is a first-of-its-kind at this scale in EU for industrial applications. This is achieved by a highly innovative combination of renewable energy sources: solar thermal energy, heat storage and two types of heat pumps. DECARBOMALT builds on previous experiences of medium-scale solar thermal projects to push the ambition to offset 54% of the CO₂ emissions of process heat consumed by the site, where the state-of-the-art comparison is currently at 10% for the malting industry. The technology could even offset 100% of the CO₂ emissions with heat pump and heat storage extensions in the medium term.



Photo of the kiln and heating production building

A smart combination to maximise environmental and economic benefits

The proposed smart combination of technologies brings synergies in mutual efficiency increase, larger coverage of the energy needs from the plant, higher supply security and the potential to evolve the solution further alongside the site's development and overall energy transition. It has the advantage of avoiding any combustible materials (fossil or bio-derived) and minimises the use of electricity.

Renewable heat will be delivered through a

heat purchase agreement with a long contract duration between the malting site and a dedicated SPV (special purpose vehicle) created by the project developer, majority investor and grantee NEWHEAT.

A flagship project in renewable heat supported by a pioneer customer

The dissemination of such a heating solution is key for Croatia and the EU's energy intensive industries to tackle the objective of climate neutrality, particles emissions and energy independence by 2050, without creating constraints on the grid infrastructure or due to the cost of energy.

The heat consumer is part of the largest malt producer in the world: the BOORTMALT Group. Working closely with well-established customer will ensure a very good perspective of further development and send a strong message to the market for potential adoption in Europe and globally.

Potential for scale-up to other malting plants and other sectors

As explained above, the technology is extendable to reach 100% of the site's thermal needs. It also has the potential to equip 50% of malting sites worldwide by 2035 (153 potential sites have been identified, with 50% located in Europe), representing a potential offset of 750 000 tCO₂e/year in the EU.

More generally, the DECARBOMALT solution can be applied to many other sectors with similar drying processes, for example in the food industry (e.g. dairy, yeast, starch and sweeteners, gelatine production) and other sectors (e.g. ceramics, building material and pulp and paper). The application development is possible in all parts of Europe because the solar thermal solution enables good performance even in areas with less direct sun such as in Central and Northern Europe. The solution has the potential to be replicated in more than 500 European sites.