



CASE STUDY



HAY DRYING FACILITY

Carrier AquaForce Ground Source Heat Pumps Power Premium Racehorse Feed Drying Facility



-  Hay Drying Facility
-  United Kingdom
-  2021

Project description

Two high-efficiency 1.5MW Carrier heat pumps are being used to dry Lucerne hay, a premium feed in demand by UK racehorse breeders and trainers. The ground source heat pump (GSHP) system was installed at a specialist farm near Coventry by OMNI Heat and Power Ltd.

Installed with support under the Renewable Heat Incentive (RHI) scheme, the hay drying facility uses two Carrier AquaForce® 30XWHV water-source variable-speed screw heat pumps to upgrade energy extracted from a series of boreholes, which tap an underground aquifer. The Carrier heat pumps upgrade the water temperature from 0deg C from the boreholes to 35deg C exiting the system. It is then used to evenly and consistently dry Lucerne hay.

Background

To further enhance efficiency, the heat pumps are equipped with Carrier's Greenspeed® intelligence inverter drive and control system, which matches the speed of the compressor to the current load. This optimises performance, reduces energy use, cuts carbon emissions, and minimises running costs for customers.

AquaForce heat pumps are Carrier's premium solution for commercial and industrial applications requiring maximum quality and optimal performance, especially at part load. They deliver outstanding energy efficiency, excellent reliability, low sound levels and, for contractors, rapid installation and commissioning on site.



KEY BENEFITS

- Running costs minimisation
- Performance optimisation
- Carbon emissions and energy use reduction

TECHNOLOGIES

- 2 X Carrier AquaForce® 30XWHV water-source variable-speed screw heat pumps

Challenges and Solutions

The project demonstrates Carrier's capability to support innovative, efficient solutions to help meet its aim of reducing customers' carbon footprint by more than one gigaton, part of Carrier's 2030 Environmental, Social & Governance (ESG) Goals.

"The Carrier system is highly efficient and enables an excellent conversion of the ground source energy into useable heat," said Bradley Martin, Director of OMNI Heat and Power Ltd. "We worked closely with Carrier, who provided timely technical support during the project."

"We believe heat pumps are a technology whose time has come," said Bradley Martin. "They make use of 'free' energy, cutting running costs for end users and reducing carbon emissions into the environment. It is a win-win for all concerned. I have no doubt that heat pumps will play a key role in the decarbonisation of the UK's heating infrastructure in the years ahead."