

CASE STUDY: LANDMARK POWER HOLDINGS' WORKSOP POWER PLANT

ENHANCED FLEXIBLE POWER THROUGH LOW-TEMP HEAT RECOVERY

Landmark Power Holdings is developing a new generation of flexible, high-efficiency power plants to support the UK's transition to a net-zero energy system. As part of its **FLEXPOWER PLUS®** concept, Landmark integrates technologies that increase efficiency and reduce emissions. The 10 MW Worksop project is the first deployment of this concept and brings together partners including MTU Rolls-Royce Solutions, Mitsubishi Turboden, ASCO Carbon Dioxide Ltd., and Climeon. For Climeon, it showcases the integration of low-temperature heat recovery in a high-efficiency power plant.

CASE OVERVIEW

CUSTOMER: Landmark Power Holdings

LOCATION: Rhodesia, Worksop, North Nottinghamshire, UK

APPLICATION: Genset Engines

STATUS: In operation since 2025

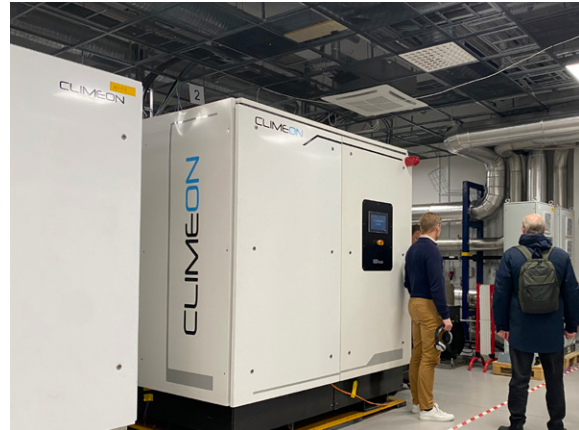
MODEL: Climeon HeatPower 150 (x4)

ANNUAL PRODUCTION: ≈2,300 MWh (70kW per unit)

ANNUAL CO₂ SAVINGS: ≈460 tCO₂*

HEAT SOURCE: MTU Series 4000 Gas Engines – Jacket-Water (~90 °C)

COOLING AGENT: Dry Cooling Towers



THE OPPORTUNITY

The UK energy system is undergoing rapid change as increasing volumes of intermittent renewable generation create a growing need for flexible, reliable power that can support the grid when wind and solar output is low. Landmark Power Holdings' **FLEXPOWER PLUS®** concept addresses this need by combining high-efficiency gas generation with integrated technologies that improve overall performance and reduce carbon intensity.

At the Worksoop site, MTU Series 4000 L64FNER genset engines provide flexible dispatchable power for the local grid. These engines also release a substantial amount of low-temperature heat through the jacket-water cooling circuit—a resource that is traditionally rejected through coolers without energy recovery. By capturing and utilising this low-grade heat, Climeon's HeatPower system directly supports **FLEXPOWER PLUS®** by increasing total plant efficiency and enabling additional electricity production without increasing fuel consumption.

“Our partnership with Climeon is instrumental in enhancing the efficiency of our power plants as we take steps toward a cleaner energy landscape.”

Mick Avison, Founder & CEO, Landmark Power Holdings

CLIMEON'S SOLUTION

At the Worksoop site, Climeon's four HeatPower 150 units are connected directly to the genset jacket-water circuit, using the engines' ~90 °C cooling water as a heat source. The ORC process converts part of this low-temperature heat into electricity and returns the cooled water to the circuit, with the ORC modules cooled by dry cooling towers installed alongside the containerised units. Under site-specific hot and cold water conditions, each unit produces around 70 kW, delivering approximately 2,300 MWh of recovered electricity per year. This increases overall plant efficiency by converting waste heat into additional generation, creating an estimated €210,000 per year in additional electricity revenue. Compared with sourcing the same amount of electricity from the UK grid, this output avoids up to 460* tonnes of CO₂ annually.

*Based on the UK Government DESNZ Greenhouse Gas Conversion Factors and a five-year average grid carbon intensity of 199 gCO₂/kWh.

+€210,000

ANNUAL ELECTRICITY VALUE

Estimated annual value of electricity generated from recovered waste heat

