



HIMOINSA
A YANMAR COMPANY

20MW

Capacity market

United Kingdom

Supplying 20 MW with HGY generators for the capacity market in the United Kingdom

HIMOINSA has delivered 10 HGY Series generator sets for a mission-critical project that operates exclusively on HVO100 fuel.



HIMOINSA, an international leader in the design and manufacture of power technology solutions, and part of Yanmar Energy Systems, is supplying ten HGY Series generator sets, with a total **critical power output of 20 MW**, ensuring a reliable supply of low-carbon energy.

This capacity market project requires generator sets that are ready to supply power at any time. The ten units installed work in synchronisation with each other and with the grid under a smart control system, which ensures stable and safe operation at all times. Real-time remote monitoring, combined with communications redundancy and fixed load export, allows the plant to maintain a constant flow of electricity without interruptions.

This project with the HGY Series is a milestone in terms of **sustainability, efficiency and reliability**, combining the most advanced technology, such as the HIMOINSA generator set with the Yanmar YG engine, operating exclusively with HVO100, which allows the power plant to guarantee NOx emissions below 190/Nm³, reducing them to a minimum thanks to the existence of an SCR and a class-leading power density of up to 37.9 kWm/L.

"HIMOINSA has already supplied equipment for the capacity market in the United Kingdom, including both diesel and gas generators, but with this project we are emphasising the maximum performance and efficiency of HGY generators with Yanmar engines. We are convinced that we are providing our customer with a complete solution. Equipment designed with the latest technology, guaranteeing low emissions and maximum performance. Without a doubt, this is one of the most competitive solutions currently available in the power generation sector for mission-critical projects," explains **Clive Dix, Managing Director of HIMOINSA Power Solutions**.

A sustainable solution | Minimizing carbon footprint

What is the first power station in the United Kingdom to operate with HVO100 incorporates advanced after-treatment systems and operates **exclusively on HVO100 fuel**. This renewable plant-based biofuel significantly reduces the carbon footprint compared to conventional diesel, while ensuring stable and reliable performance in mission-critical applications.



For exhaust gas treatment, the generator sets incorporate a latest-technology **Selective Catalytic Reduction (SCR) system**. This system injects a urea solution into the hot gas flow, causing a chemical reaction that converts nitrogen oxides (NOx) into nitrogen and water vapour, compounds that are harmless to the environment.

The HGY Series has also been designed to comply with the most demanding environmental regulations, such as the Mid Combustion Plant regulation adopted by DEFRA (Department for Environment, Food & Rural Affairs) in the United Kingdom. This regulation applies to generation plants between 1 MW and 50 MW, especially those that can operate more than 500 hours per year.

In addition, the SCR system installed in the HGY Series is integrated with the engine's electronic control unit, allowing **real-time monitoring of parameters such as temperature, pressure and NOx concentration**. This connectivity ensures comprehensive process control, reduces the risk of incidents and extends the service life of components. Thanks to this approach, **NOx emissions are kept below 190 mg/Nm³**, positioning the plant at the forefront of sustainable power solutions in Europe.

The combination of SCR with the exclusive use of HVO100 makes this power plant a benchmark: **not only does it meet the most rigorous sustainability standards, but the plant also benefits from exceptional power density, reaching up to 37.9 kWm/L**, which means a lower carbon footprint, greater efficiency in the use of resources and a significant reduction in life cycle costs.

Advanced acoustic engineering

The project required an advanced acoustic solution. The HGY Series incorporates the latest technology acoustic engineering solutions, allowing **soundproofing levels to be set at 80 dB(A)** at maximum output. This flexibility ensures that the plant can adapt to the strict acoustic requirements of the British environment, minimising its impact on the local community and complying with the highest environmental standards.

To this end, each generator set has been designed with **acoustic panels of different densities** on the walls, ceiling and floor, using mineral wool and specialised foams that effectively absorb sound waves. In addition, the **exhaust silencers** integrated into the system guarantee a **reduction of between 30 and 45 dB**, keeping noise under control even during peak operation.

HIMOINSA has worked with its acoustic engineering team to offer an advanced solution. The system is completed with optimised air flow, channelled through **dual-module ventilation and self-regulating remote cooling**, which adjusts the flow rate according to thermal requirements. This design not only ensures maximum efficiency in heat dissipation but also reduces the noise level associated with air movement and auxiliary load consumption. In this way, the plant can operate intensively in an urban environment in the United Kingdom, maintaining supply reliability and complying with the highest European environmental standards.

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Yanmar engine | Reliability at the highest level

The **Yanmar** engine is developed to offer quality, durability and high performance under the most demanding conditions. These engines feature **common-rail injection systems**, as well as an advanced piston head design and comprehensive fluid analysis that optimise combustion and improve efficiency. The ECU allows for start-up in less than eight seconds and ensures compliance with class G3 of the ISO 8528-5 standard, making the installation a solution with immediate response capacity for any critical power need.



In addition, the ECU incorporates intuitive diagnostic software that enables **remote monitoring and predictive maintenance**, facilitating comprehensive plant management and increasing operational availability. This combination of technological innovation and mechanical robustness makes Yanmar engines the guarantee of reliability on which this 20 MW project is based.

24/7 Connectivity and control

This 20 MW project, configured with ten synchronised and continuously monitored generator sets, ensures a **stable, secure and uninterrupted supply**.



This advanced connectivity reinforces the plant's **ability to adapt** to constant load and guarantees continuity of service even in the most demanding conditions. This consolidates a model of intelligent and redundant supervision, essential in mission-critical environments where reliability is a non-negotiable factor.

360° Solutions: HIMOINSA and Woodlands Power | Technology, Engineering, Installation and Service

The project reflects HIMOINSA's ability to design and manufacture an end-to-end power solution for mission-critical projects. The company's engineering and manufacturing capabilities are complemented by the work of **Woodlands Power**, HIMOINSA's strategic dealer in the United Kingdom, which has aided HIMOINSA engineers for the **installation of the generator sets**, from their arrival through to their commissioning.

As part of this integrated solution, **HIMOINSA** has assigned a **Project Commissioning Engineer** to this project, who supervises the arrival of the generator sets and their commissioning at the facilities. HIMOINSA's role was not only direct technical supervision, but also provided ongoing specialized support, resolving any operational adjustments and acting as a point of coordination between all parties involved. This technical-operational role ensures the customer a solid and controlled execution of each stage of the project, with close monitoring, immediate decision-making capacity and a global vision of the system.

Woodlands Power's involvement working with HIMOINSA engineers ensures that the product, developed to the highest technical standards at HIMOINSA's factories, is delivered to the site with the highest levels of quality, reliability and performance. Woodlands Power, together with the engineering and technical team at HIMOINSA Power Solutions, HIMOINSA's subsidiary in the United Kingdom, have worked collaboratively, leveraging their **local knowledge and operational capacity** to enable the innovation embodied in the design and manufacture of the generator sets to materialise in a real, fully functional installation ready to supply 20 MW of critical power to the British market.



360° accessibility and maintenance

The design of the power plant in the United Kingdom places special emphasis on **ease of access and comprehensive maintenance**. We are dealing with a project that is available to operate and provide continuous power, so ease of maintenance, accessibility and long intervals, (up to 500h for oil changes and 30,000h for major overhaul), represent added value for the customer.

HIMOINSA offers generator sets that have been designed for quick inspection of key components, reducing downtime and simplifying periodic servicing. Thanks to this practical design, the life cycle of the installation is optimised, and maximum equipment availability is guaranteed.

The **Plug & Play solution**, which integrates a copper busbar and internal connectors for the SCR system, allows the installation to be activated with a single click and greatly facilitates wiring and technical service tasks. This 360° approach to accessibility and maintenance ensures that the plant operates with maximum efficiency and reliability, thus backing up HIMOINSA's promise to deliver critical power without interruption.



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Conclusion

The commissioning of this **20 MW continuous power plant** in the United Kingdom confirms the HGY Series' ability to meet the most demanding market needs. Its exclusive operation with **HVO fuel**, together with Yanmar's high power density engines, ensures a stable, efficient and sustainable supply. Thanks to the comprehensive execution by **Woodlands Power**, the project brings all HIMOINSA's engineering to the field and offers the customer a turnkey solution, ready to operate without interruption and with the highest standards of reliability and performance.

Technology, energy and sustainability concentrated in these highlights:

- 10 HGY Series units, 20 MW of continuous critical power
- NOx emissions below 190 mg/Nm³
- Class-leading power density: up to 37.9 kWm/L
- State-of-the-art SCR system: sustainability and maximum efficiency
- Acoustic solutions with configurable levels of 80 dB(A)
- Exhaust silencers: reduction of between 30 and 45 dB
- Optimised airflow and self-regulating 'V' arrangement cooling
- Woodlands Power, local strategic partner, for comprehensive equipment installation
- 360° maintenance: accessible architecture and Plug & Play solution
- Yanmar engines: start-up in less than 8 seconds, maximum reliability
- 24/7 connectivity and control: remote monitoring and uninterrupted operation
- 20 MW of continuous power | Sustainable, reliable and ready for mission-critical applications

