



GENESAL
ENERGY
Pure Energy

Protecting what matters most with reliable energy

Tailored energy solutions for
critical infrastructure

GENERATOR SETS FOR THE DEFENCE SECTOR

GENESAL EXPLAINED

Who are we? Energy engineering with a global vision

Genesal Energy designs and manufactures advanced, tailor-made energy solutions, created to ensure continuity in the most demanding environments.

With more than 30 years of experience, we have made reliability, customisation, innovation and sustainability the cornerstones of our strategy.

With a presence in over 40 countries, we are a comprehensive partner delivering turnkey projects, from the study phase to after-sales support.



More than 20 electrical and mechanical engineers designing innovative solutions



Over 70% of turnover from bespoke and special projects.



Three decades earning and maintaining the trust of our clients.



Our own industrial and technological centre, Generlab

The beating heart of our innovation, a laboratory where we develop new technologies and move towards a more sustainable energy model.

Military power solutions

Thanks to technological innovation, we have designed generator sets specifically for military and defence requirements.

These gensets are capable of operating under extreme conditions, adapting to the environment in which they are deployed.

All projects are executed under strict confidentiality protocols.



**Wherever a stable and secure
power supply is required,
that's where we are.**

Born for the field

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Our generator sets are designed for high-demand missions. From mobile camps to critical telecommunications and support infrastructures, they provide continuous energy in any operational scenario. Designed to be deployed wherever needed, they offer the reliability required for every mission.

Unlimited strength

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Built to withstand the harshest environments: storms, humidity, salt fog, hail, sand and corrosive atmospheres. Our gensets maintain maximum performance with no power loss in temperatures ranging from -34 °C to +49 °C, enduring both polar cold and desert heat. With a reinforced chassis, full autonomy in extreme conditions, and the capacity to absorb impacts of up to 20 G, they guarantee energy supply where other systems cannot reach.





Tactical versatility

The modular design allows each solution to be adapted to the needs of the operation. We comply with STANAG standards and offer soundproof enclosures, system redundancy, and uninterruptible power supply (UPS) systems to ensure continuous and interruption-free electrical supply. Reliable and flexible power for every tactical scenario.

Operational mobility

Our compact generators are designed to move across unpaved terrain, operate at altitudes above 3,000 metres, and be transported in C-130 Hercules aircraft. Their rapid deployment and ability to operate in extreme conditions make them an essential ally for military operations anywhere in the world.



PROJECT REFERENCES

Tested for every demand

Our generator sets are designed to operate in extreme conditions, making them ideal for tactical missions and demanding military environments.

They can adapt to a wide range of scenarios, meeting all kinds of requirements and complying with STANAG standards.

Super-silent generators for shelters. Trailer-mounted for transport. Cooling systems adapted for operation at very high temperatures.

Compact and lightweight, wide range of power ratings available.

Robust, reliable, super soundproofed. Adapted to military transport systems.

2xGEN200DC

WE SUPPLIED TWO POWER PLANTS FOR A MOBILE 3D RADAR SYSTEM

Technical data

Prime Power: 2x180 kVA

Standby Power: 2x200 kVA

Voltage: 400 / 230 V

Frequency: 50 Hz

Engine: Deutz

Alternator: Leroy-Somer



The project consists of two identical generator units housed in ISO-10 shelters or containers, each equipped with an engine, alternator, fuel tank, switching, control and synchronisation panels, network monitoring system, and uninterruptible power supply (UPS).

When the radar system is deployed in facilities with their own electrical supply, the power plant can monitor the grid and, in the event of a failure, automatically switch to the UPS system, starting one of the gensets to take over the electrical supply until normal conditions are restored.

Compact, lightweight, quiet, and easy to transport, these generators are designed to operate in extreme conditions, making them an ideal solution for tactical military operations.



Location

Spain



Power Range

2xGEN200DC



Client requirements

Two operational power plants for a tactical radar system, providing the necessary electrical power for full system operation in normal mode, autonomously and without dependence on external energy sources.

GEN10TPGS + GEN20TPGS GEN30TPGS + GEN50TPGS GEN60TPGS

44 GENERATOR SETS FOR POWERING MILITARY TELECOMMUNICATIONS EQUIPMENT

Technical data

Prime Power: 10 / 20 / 30 / 50 / 60 kVA

Voltage: 400 / 230 V

Frequency: 50 Hz

RPM: 1,500

Engine: 2xDeutz

Alternator: 2xLeroy Somer



Redundant generator sets featuring two engines and two alternators installed in each enclosure. Designed as mobile units, they are mounted on single- or double-axle trailers (depending on the genset's power rating) and built to be suitable for both public road circulation and off-road operation. They can also be transported by sea, air, or rail.

The units must be able to operate in extreme climatic conditions, withstanding temperatures between -32 °C and +49 °C, as well as heavy rain, ice formation, solar radiation, dust, sand, fog, and other adverse conditions.

Features

- Withstand a thermal shock of up to 13.4 °C/min.
- Resist impacts up to 20 G.
- Resist jolts of 40 G, 6 ms, 1,000 pulses.
- Withstand free fall from 50 cm.
- Dust and sand ingress protection.
- Full-power operation up to 3,000 m altitude.



Location
Spain



Power Range
GEN10TPGS + GEN20TPGS
GEN30TPGS + GEN50TPGS
GEN60TPGS



Client requirements
Soundproofed generator sets (65 dB at 7 m), integrated in a specially designed enclosure meeting the client's dimensional and weight requirements.

3xGEN825PC + 3xGEN550PC + 4xGEN1375PC

GENESAL ENERGY GENERATOR SETS DESIGNED TO OPERATE AT FULL PERFORMANCE IN THE QATAR DESERT

Technical data 3xGEN825PC

Prime Power: 3x750 kVA

Standby Power: 3x825 kVA

Voltage: 415 / 240 V

Engine: Perkins

Alternator: Leroy-Somer

Technical data 3xGEN550PC

Prime Power: 3x500 kVA

Standby Power: 3x550 kVA

Technical data 4xGEN1375PC

Prime Power: 4x1,250 kVA

Standby Power: 4x1,375 kVA



These ten custom-built generator sets were developed by our engineers after a detailed analysis of the environmental conditions in which they would operate, with temperatures exceeding 40 °C.

In the bespoke manufacturing process, every detail is designed specifically for its operating environment. In this case, the containers were built to meet desert climate requirements, with custom fuel tanks, transfer systems, external filling ports, and anti-dust filters to prevent sand ingress and ensure optimal performance in desert conditions.

Features

- Engine and alternator sized to provide required power at design temperature.
- Sand filters.
- Custom fuel tank.
- Transfer system and external filling port.



Location

Qatar



Power Range

3xGEN825PC +
3xGEN550PC +
4xGEN1375PC



Client requirements

The client required high-autonomy generator sets capable of transferring fuel from an external tank and suitable for trailer-mounted transport to different locations. They also needed to operate in desert environments with sandy conditions and high temperatures.

2xGEN330VC

POWER TO SUPPORT MAJOR EMERGENCIES: CUSTOMISED GENERATORS SUPPLIED TO THE UME

Technical data

Prime Power: 2x300 kVA

Standby Power: 2x330 kVA

Voltage: 400 / 230 V

Frequency: 50 Hz

RPM: 1,500

Engine: Volvo Stage V

Alternator: Leroy-Somer



At Genesal Energy, we took part in renewing the UME's high-power generator fleet by manufacturing, supplying, and installing containerised units housing two gensets rated at 300 kVA (PRP) and 330 kVA (ESP). These gensets can operate in parallel, individually, or alternately depending on service hours.

The aim of the renewal plan was to guarantee the power supply required for UME operations, enabling efficient management of interventions typically carried out in remote areas far from the power grid.

The generator set was designed to meet the unit's operational demands, comprising two diesel engines and two alternators coupled by flexible discs, capable of absorbing vibrations and withstanding load peaks, thus ensuring uninterrupted operation even in extreme situations.

The project was awarded to Genesal Energy after winning the public tender launched by the Ministry of Defence and was carried out according to the client's technical specifications. The units were adapted to withstand adverse weather conditions, facilitate maintenance, guarantee power supply under any circumstances, and comply with STAGE V emissions standards.



Location

Spain



Power Range

2xGEN330VC



Client requirements

To provide the power required for UME operations, ensuring a reliable and continuous power supply to support their missions and manage interventions effectively.

5xGEN20RI

WE SUPPLIED FIVE MOBILE LIGHTING TOWERS FOR MILITARY APPLICATIONS

Technical data

Prime Power: 5x18 kVA

Standby Power: 5x20 kVA

Voltage: 400 / 230 V

Frequency: 50 Hz

RPM: 1,500

Engine: Raywin

Alternator: Stamford



Among similar projects, Genesal Energy designed and manufactured bespoke generator sets for a client requiring medium-power supply in variable locations.

Based on this need, the engineering solution involved the development of special, customised generator sets equipped with panels featuring dedicated sockets and outputs for lighting tower power supply.

As stated by the Engineering Department, “each generator set is anchored to the trailer supporting the tower, allowing the entire assembly to be transported together.” The units also include an integrated contactor switching system, allowing connection to a nearby power grid when available at the operating site.



Location:
Spain



Power Range:
5xGEN20RI



Client requirements

Trailer-mounted generator sets designed to power lighting towers and facilitate their transport and deployment in different locations.

Features

- Special socket panels.
- Dedicated outputs.
- Internal switching system.



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