



**GENESAL
ENERGY**

GENERATOR SETS

DIESEL | GAS | MARINE | HYBRID

PERSONALISED SOLUTIONS FOR ALL YOUR ENERGY DEMANDS



PROJECTS WITH BAUDOIN ENGINES 2020

Our commitment to innovation in the development of generator sets has allowed us to design complete ranges of generator sets with different configuration options that provide great flexibility in responding to customer's power needs.

Some of the high power projects with Baudouin engines carried out in the last year are:

MODEL	POWER	ENGINE	ALTERNATOR	COUNTRY	APPLICATION	DESTINATION
GEN500YC	450/500	BAUDOUIIN	LEROY SOMER	SPAIN	EMERGENCY BACKUP GENERATOR	ATLETICO DE MADRID ACADEMY
GEN440YI	400/440	BAUDOUIIN	WEG	SPAIN	EMERGENCY BACKUP GENERATOR	PILGRIMS CENTRE
GEN500YI	500 STP	BAUDOUIIN	LEROY SOMER	SPAIN	RAILWAY SECTOR	HIGH-SPEED TRAIN STATION IN LEON
GEN1650YC	1500/1650	BAUDOUIIN	MECC ALTE	SPAIN	NAVAL SECTOR	NAVANTIA CÁDIZ
GEN440YI	400/440	BAUDOUIIN	LEROY SOMER	SPAIN	CONSTRUCTION SECTOR	BULEVARD ASTURIAS CAR PARK
GEN440YI	400/440	BAUDOUIIN	LEROY SOMER	SPAIN	NAVAL SECTOR	MALLORCA PORT
GEN440YI	400/440	BAUDOUIIN	MECC ALTE	PORTUGAL	WATER TREATMENT	AGUA PORTO WATER TREATMENT PLANT
GEN1100YA	1000/1100	BAUDOUIIN	MECC ALTE	CAMEROON	POWER PLANT	NACHTIGAL
GEN1100YA	1000/1100	BAUDOUIIN	MECC ALTE	CAMEROON	POWER PLANT	NACHTIGAL
GEN440YA	400/440	BAUDOUIIN	LEROY SOMER	SPAIN	PHARMACEUTICAL SECTOR	COFANO VIGO
GEN660YA	600/660	BAUDOUIIN	LEROY SOMER	SPAIN	FOOTBALL FIELD	ELCHE C.F.FOOTBALL FIELD
GEN825YA	825 kVA STP	BAUDOUIIN	MECC ALTE	SPAIN	EMERGENCY BACKUP GENERATOR	ZONA FRANCA POLICE STATION
GEN1100YC	1000/1100	BAUDOUIIN	LEROY SOMER	TOGO	THERMAL POWER PLANT	LOME PORT THERMOELECTRIQUE PLANT
GEN660YA	600/660	BAUDOUIIN	LEROY SOMER	SPAIN	SHOPPING CENTRE	VALIA MALL (VIGO)
GEN1000YI	900/1000	BAUDOUIIN	LEROY SOMER	SPAIN	SHOPPING CENTRE	VALIA MALL (VIGO)
GEN1500YC	1365/1500	BAUDOUIIN	MECC ALTE	UK	EMERGENCY BACKUP GENERATOR	NESS ENERGY FROM WASTE PROJECT
GEN440YI	400/440	BAUDOUIIN	LEROY SOMER	FRANCE	EMERGENCY BACKUP GENERATOR	CENTRE IN FRANCE
GEN440YI	400/440	BAUDOUIIN	LEROY SOMER	SPAIN	ELECTRICAL SUBSTATION	VILLANUEVA DE LOS ESCUDEROS SUBSTATION
GEN900YI	800/900	BAUDOUIIN	LEROY SOMER	SPAIN	FOOTBALL FIELD	MIRANDES FOOTBALL STADIUM
GEN900YA	800/900	BAUDOUIIN	LEROY SOMER	TUNISIA	WATER TREATMENT	AKOUDA
GEN1100YA	1000/1100	BAUDOUIIN	LEROY SOMER	TUNISIA	WATER TREATMENT	AKOUDA

Our generator sets provide the necessary support to ensure the continuity of the supply in emergency situations or unexpected power outages. We do not only provide the more efficient generator sets, but we also take care of the complete cycle of the project, from design to start-up, offering advice, customized procurement and cooperating with your technical team to ensure the success of the implementation and guarantee the autogenous start-up of your plant.

PROJECTS WITH BAUDOUIN ENGINES

Spain:
Emergency power
for the Navantia
San Fernando
shipyard

PROJECT SUMMARY

Application

Naval Sector

Place

Cadiz (Spain)

Power Range

1,500 / 1,600 kVA

Supply

GEN1650YC

Customer's need

To supply power for the dry dock's bilge pumps which operate continuously as water is not permitted in the area due to the presence of working personnel.



EMERGENCY POWER FOR THE NAVANTIA SAN FERNANDO SHIPYARD

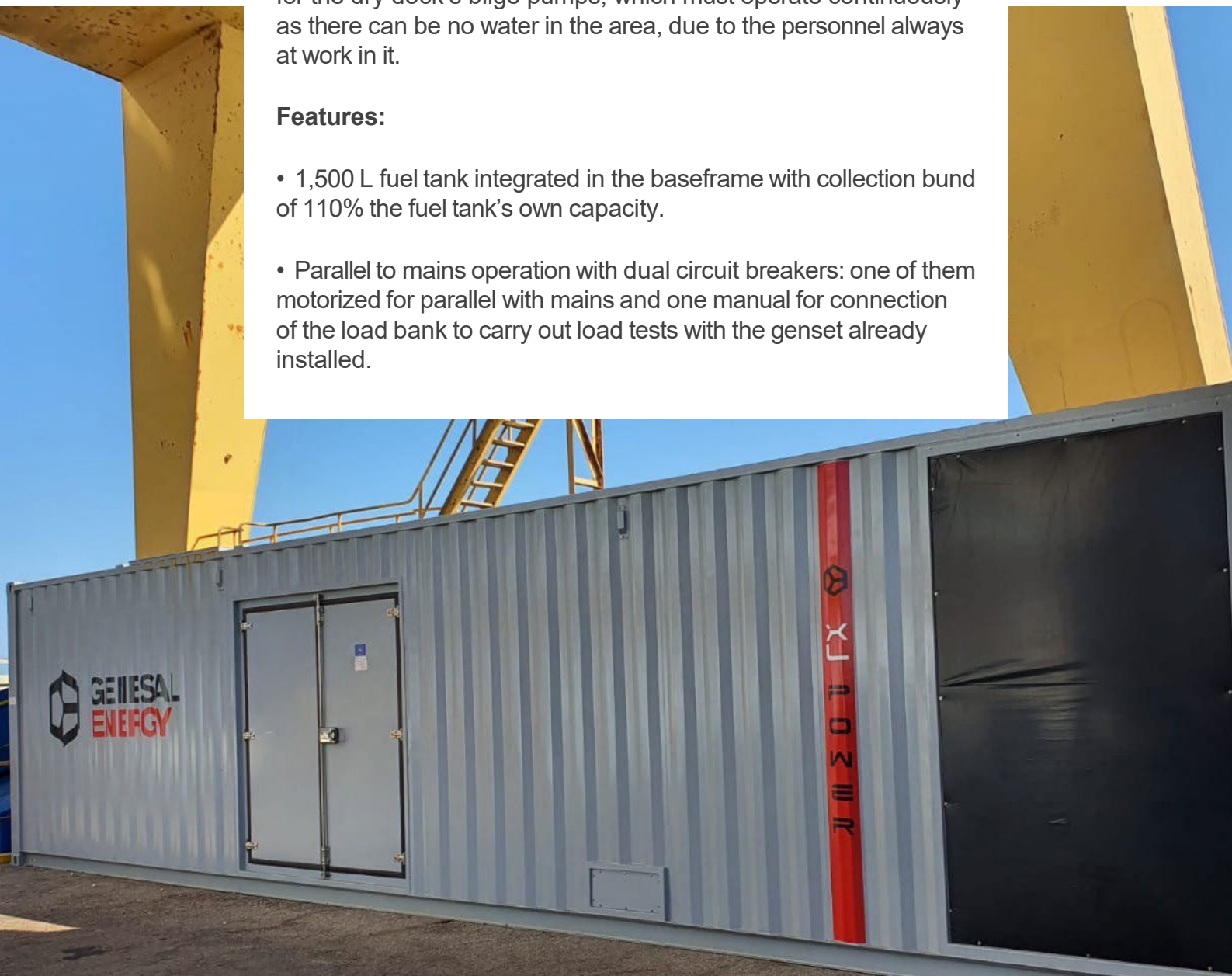
Avoiding issues in first-rate installations and infrastructures is one of our specialties thanks to our R&D department. As such, with innovation as our banner, at Genesal Energy we can offer complete, personalized and cutting-edge solutions like the ones we designed for Navantia and its San Fernando shipyard, in Cádiz.

We supplied a 1,650 kVA genset for the shipyard, prepared to operate at full power and guarantee power supply to all equipment located in the dry dock.

The main objective was specifically to supply emergency power for the dry dock's bilge pumps, which must operate continuously as there can be no water in the area, due to the personnel always at work in it.

Features:

- 1,500 L fuel tank integrated in the baseframe with collection bund of 110% the fuel tank's own capacity.
- Parallel to mains operation with dual circuit breakers: one of them motorized for parallel with mains and one manual for connection of the load bank to carry out load tests with the genset already installed.



PROJECTS WITH BAUDOIN ENGINES

Spain:
Emergency
power for a
pharmaceutical
center

PROJECT SUMMARY

Application

Pharmaceutical Sector

Place

Spain

Power Range

400 / 440 kVA

Supply

GEN440YA

Customer's need

At Genesal Energy we've designed, manufactured and supplied a generator set for an important robotic pharmaceutical distribution center, with the goal of providing power in mains failure situations for its warehouse.



Emergency power for a pharmaceutical center to guarantee the robotic management of 20,000 products.

Pharmaceutical warehouses or distribution centers store and supply medication to the different pharmacies. In these facilities, keeping strict control of the temperature (between 15°C and 25°C) and humidity is key in the correct care of their goods. For this reason, this type of facilities needs to have emergency generator sets to face any potential mains failure which would result in a catastrophe and the loss of goods.

At Genesal Energy we've designed, manufactured and supplied a generator set for an important robotic pharmaceutical distribution center, with the goal of providing power in mains failure situations for its warehouse in Spain which has just been expanded and fit with a robotic plant for the preparation of orders.



Bespoke solution

After its construction phase, the distribution center will manage a volume of 20,000 pharmaceutical product references in a warehouse with a surface of 5,000 square metres.

In the face of the inability to transport the assembled generator set to its definitive location -due to its weight and dimensions- our team of technicians opted for dividing the base frame in two parts and putting together the engine-alternator assembly in the genset room.

In order to channel the air and exhaust outlets, we developed a vent and the exhaust piping accordingly and assembled them on-site. The base frame fuel tank was also eliminated due to the dimensions of the room in which the genset was to operate, opting for a double-walled external fuel tank instead which would also increase the its autonomy.

Features

- Split base frame.
- Approved double wall fuel tank of great capacity.
- The genset powers two supply sources.

PROJECTS WITH BAUDOIN ENGINES

Spain:

We shield the
power supply at
the new Fábrica
Nacional de
Moneda y Timbre
(Royal Spanish
Mint)

Project summary

Application

Contingency-prepared gensets

Location

Spain

Power Range

2xGEN700YI + GEN1100YI + GEN1400YI

Customer's need

Four emergency generator sets to reach the power requested in the installation.



A modular canopy guarantees the maximum soundproofing of the custom-designed generator sets.

The design of the new industrial plant has taken into account efficiency and sustainability criteria, both in terms of energy and materials, in order to reduce the environmental impact. From a technological point of view, the factory will be equipped with the most advanced printing machinery and equipment, which require a constant source of electrical power and, therefore, first class emergency equipment.

Description of the project

The generator sets will be used to provide back-up power for the building and auxiliary services.

After carrying out a detailed study of the site, and in order to achieve the required power, we designed four units: two 630/700 kVA units, one of which has a synchronisation panel with mains return without zero crossing, one of 1,000/1,100 kVA and a fourth of 1,250/1,400 kVA.

A new concept of modular canopy as opposed to the traditional container.

Given the special characteristics of the equipment, the versatility of the container was sought in order to reduce noise levels as much as possible and the modular canopy with the designation 5000 M was implemented in its construction.

The result is a modular canopy of variable length depending on the desired power and noise level. Unlike the container, this new canopy concept allows us to add air inlet and outlet modules, with different attenuation options.

“This new modular canopy can store generator sets with power ranging from 900 KVA to 1650 KVA, and also makes it possible to make better use of the production area inside, as in the initial stages of manufacture the dimensions are smaller than those of a container”, explained by the Engineering Department.

Another of the advantages of the cabin is the assembling time, which is much shorter than the time required for the assembly work in a container, so costs are also reduced on this front, which is undoubtedly another advantage for the customer.



PROJECTS WITH BAUDOIN ENGINES

Spain:

We will guarantee
power supply to the
biggest shopping
center in Vigo

PROJECT SUMMARY

Application

Shopping Center

Place

Spain

Power Range

600/660 kVA + 900/1,000 kVA

Supply

GEN660YA + GEN1000YI

Customer's need

Emergency power supply for the shopping center.



Vialia will open its doors in 2021 and will do so with Genesal Energy emergency power. We supplied two generator sets of great power, 600/660 kVA (GEN660YA) & 900/1000 kVA (GEN1000YI) each designed to guarantee power supply for the building, which shall become Vigo's biggest shopping center.

Guaranteeing the electricity supply in shopping centers is so important that the location of the generator sets is already included in the construction projects of such buildings. Actually, it is all about designing a detailed contingency plan since in the event of a blackout of failure in the supply, energy must continue in order to avoid the closure of premises and serious economic losses. We have designed two large generator sets for Vialia, the new shopping center in Vigo. One of them has been mounted on our new 6 meter canopy.

Features GEN660YA

- Genset with external fuel tank of great capacity.
- Special baseframe for gensets of this size.
- RS485 module.

Features GEN1000YI

- New 6 meter canopy: for a soundproof genset of this power rating and characteristics, a new 6 m canopy has been developed as an alternative to the 20 foot container to reduce size, lead time and costs.
- The design of the canopy is characterized by being Heavy Duty. It's modular, allowing for the installation inside it of engine-alternator assemblies of up to 1,250 kVA.
- Allows an easy access to the control panel and circuit breaker, both located in their own cabinets with their own access door to the outside. It simplifies maintenance tasks due to its numerous doors on both sides.
- External fuel fill connector, machinable cover for the control cable outlet and power cable outlet with rubber cover for improved isolation, and lifting lugs.
- RS485 module.



PROJECTS WITH BAUDOUIN ENGINES

Africa:
Emergency power
for Togo's first
thermal power plant

PROJECT SUMMARY

Application

Thermal Power Plant

Place

Togo (AFRICA)

Power Range

1,000 / 1,100 kVA

Supply

GEN1100YC

Customer's need

Our client asked for the generator set to be managed, controlled and monitored completely via its control panel.



Togo's first gas power plant will feature emergency power by Genesal Energy, who will participate in the project through a generator set prepared to face any setback and guarantee the facility's correct operation.

In this type of combined cycle power plants, there are essential loads which must be powered permanently, such as the treatment plant systems or specific lubrication unit pumps designed to remain operative in any circumstance.

Therefore, in the event of an emergency situation like a power outage, it will always be possible to bring the whole system to a safe shutdown. This is precisely the function of the generator set supplied by our company for the thermal power plant, with a production capacity of 65 MW and which has led to an energy revolution for the Togolese citizens.

Features

- Genset with EI-120 fire resistance.
- Genset container divided in three separate chambers: genset room, control room and fuel tank room.
- Fire detection and extinction system via nebulized water in the genset and fuel tank rooms.
- Cooling system for genset room temperature control.
- Air conditioning system in control room.
- C5 surface treatment, according to ISO 12944-2:2018 norm.
- Bespoke control system based on PLC.
- AGM type batteries.
- Engine liquid collection tray.
- Automatic breaker with power output busbar adapted to client's installations.
- Engine cooling liquid recirculation and heating system to provide adequate startup temperature for the genset.
- 2,000 L double-walled fuel tank.
- Fuel tank leakage detection system.

Control panel

For the combined cycle power plant in Togo, and according to the client's needs, a generator set capable of being entirely controlled and monitored from its control panel was designed. The electrical schemes consisted in a diesel generator set connected via a protection breaker mounted on its container to a supply panel in the client's facilities, and through this panel, all essential systems would be powered. As far as control equipment goes, apart from the PLC in charge of managing the genset's operation, a protection relay was installed as well as a synchronizer for parallel to mains operation.

PROJECTS WITH BAUDOIN ENGINES

Cameroon:
Supply of three
generator sets
to the largest
hydroelectric power
plant

PROJECT SUMMARY

Application

Hydroelectric power plant

Place

Cameroon

Power Range

2x1,000/1,100 kVA
100/110 kVA

Supply

2xGEN1100YA + GEN110YI



We have increased our presence in Africa with the supply of three generator sets to the largest hydroelectric power plant in Cameroon

The largest hydroelectric power plant in Cameroon will be powered by Genesal Energy. We participated in the project through the supply of emergency power to the electrical construction, which will allow the country to increase its installed electrical capacity by 30%.

The power plant is undoubtedly a key infrastructure in the development of Cameroon, where the electricity supply network, together with the transmission network, are the great pending issues of a country that spires to become the greatest emerging economy of Central Africa in the next 5 or 20 years.

¿Why is this a special solution?

In facilities of this kind, there are essential loads that must be powered permanently for the correct operation of the plant, as for instance, water treatment systems or lubrication pumps that need to run continuously so that a safe shutdown can be guaranteed in the event of an emergency situation, (e.g., a power outage). This is precisely the role played by one of the supplied generators.

Difficult location

The difficult conditions of the location where the hydroelectric power plant is built forced our engineers to take additional steps to avoid any risk and guarantee the gensets' operation at any time and in any situation. Thus, a fuel transfer system has been designed allowing the fuel to be pumped or transferred in such a way that, if any part of the system is out of service, the other can be used without problem, ensuring the control unit's continuous power supply.

Features:

- Custom fuel transfer system, both automatic and manual, for 4 fuel tanks, two of 1,000 L and two of 10,000 L capacity.

PROJECTS WITH BAUDOUIN ENGINES

UK:

Emergency
power for one
of Scotland's
most sustainable
recycling plants

PROJECT SUMMARY

Application

Medium voltage

Place

UK

Power Range

1,365/1,500 kVA

Supply

GEN1500YC

Customer's need

A medium voltage generator set capable of supplying energy to the plant in case of emergency and with the capacity to start the gas turbine, at any time of the year.



Medium voltage on demand

The project was made-to-measure, which is essential in this kind of plants that are not capable of being put into operation through the conventional public electricity grid. Thus, once the analysis was carried out, at Genesal we designed a Black Start medium voltage generator aimed to feed a motor that turns the main turbine, which is used to start the turbine after a programmed shutdown. Besides, the generator is able to directly supply medium voltage power (11,000V).

It is possible for our medium voltage generators to incorporate the transformers for electrical measurements in the alternator's own connection box. Likewise, we can install external transformers by means of medium voltage cells, which can be also special, as for instance a genset's earthing neutral busbar grounding or switchgear with an automatic breaker for protection. This is the case of the generator chosen for the recycling plant: we integrated the switchgear in a separate room inside the soundproof container itself including a cable connection point prepared for the customer to easily connect the cables.

Features

- 3,000 L fuel tank installed inside the container including leak sensor.
- Real-time consumption monitoring.
- Medium voltage switchgear inside container.
- Control panel in indoor air conditioning room.
- Air inlet and outlet attenuators to guarantee a noise level of 85 dBA@1m.
- Motorized louvers to ensure air conditioning inside.
- Fire dampers. Manufactured with an intumescent panel to seal in case of fire.
- Integrated fire protection system, including detectors, alarms, and CO2 discharge according to the British standard.
- Soundproof panel, with RF-60 specifications, to guarantee the genset's fire resistance.
- Upper air inlet with water retention and decanting system for genset's air intake, maintaining a safe IP with the generator in operation.
- Drip tray inside the generator to collect any liquid spill.

