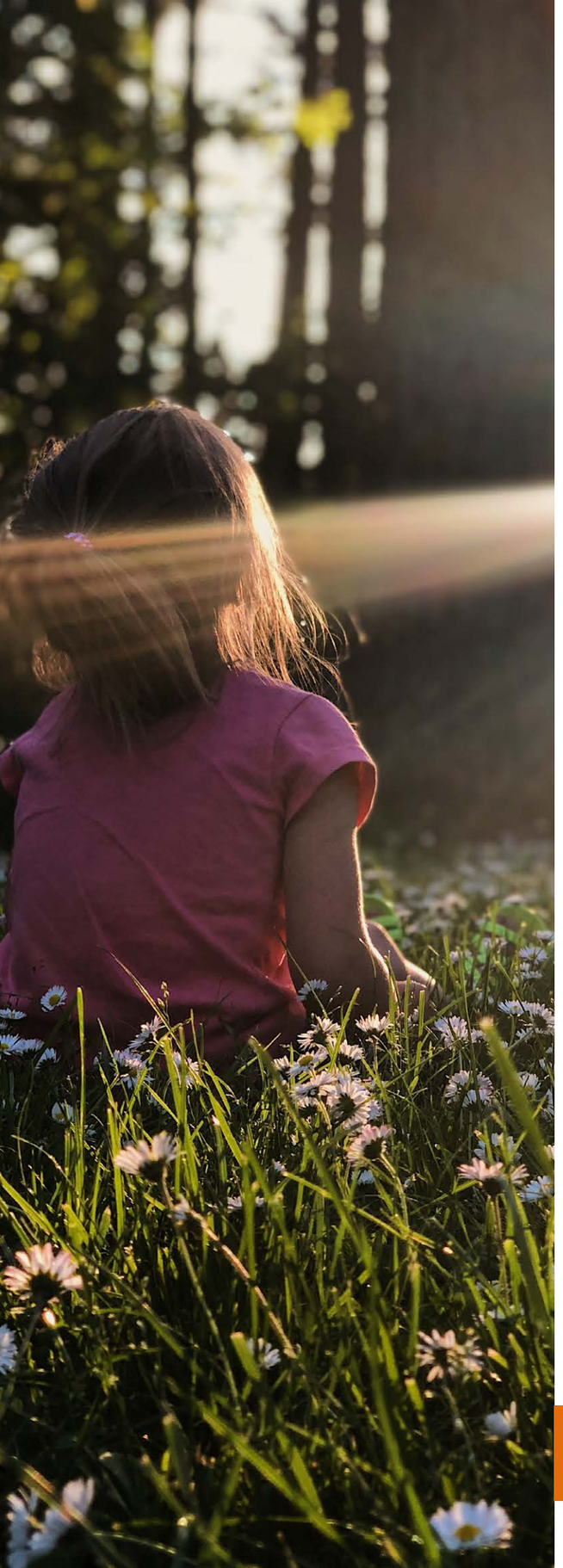
GENERAC MOBILE

MBE Range

MOBILE BATTERY ENERGY STORAGE SOLUTIONS



Generac Mobile looks to the future as a leader of the energy generation

We lead the evolution to more **resilient**, **efficient** and **sustainable** energy **solutions**, having a broad suite of products that support the path towards the **global energy transition**. Our wide range of products helps operators to reduce fuel consumption and CO_2 emissions.

We are committed to deliver **clean** and **efficient energy solutions** across a wide range of commercial and domestic applications.

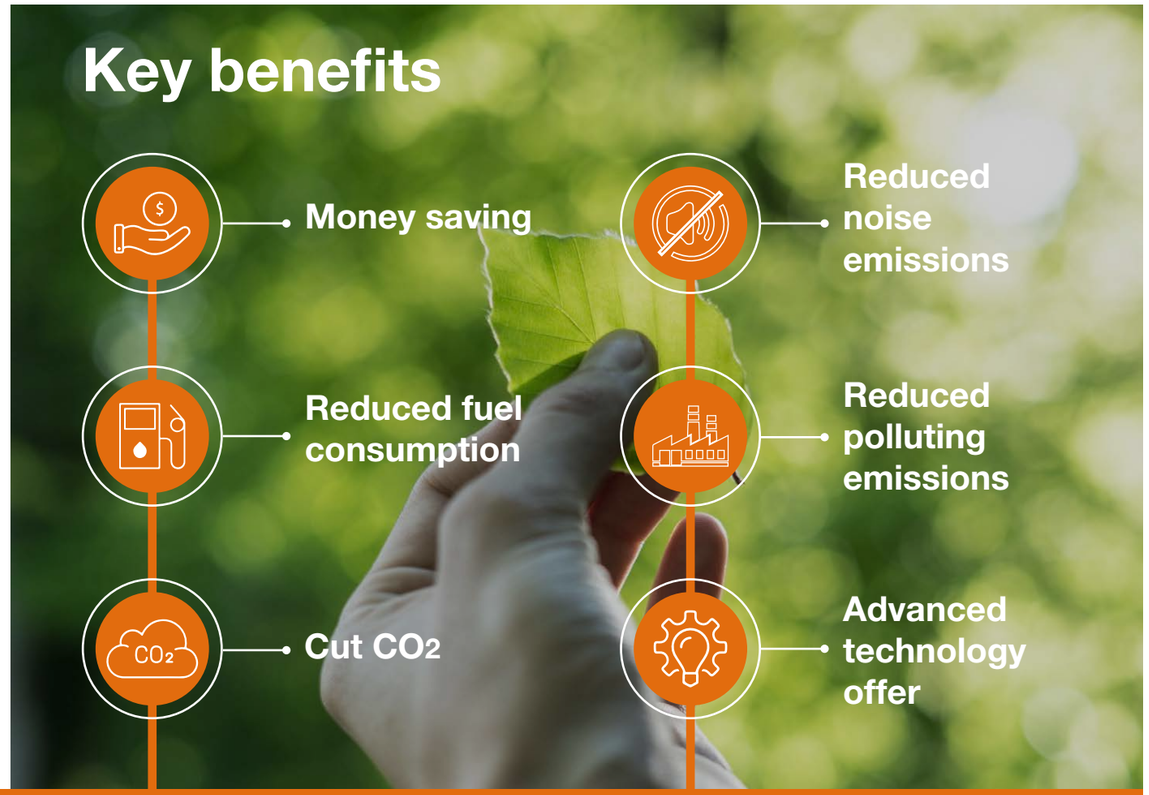
Generac Mobile provides **the widest range of hybrid and environmentally friendly power products**, including battery energy storage solutions.

MBE Range
Mobile Battery Energy Storage Solutions

Today's energy grid is facing an unprecedented set of **challenges**: a need to **transition** away from fossil fuels towards renewable energy sources, spiking demand due to the **increased electrification** of electric vehicles, homes and consequently **infrastructure instability**.
With its broad suite of products, Generac Mobile can support this energy transition, offering a dedicated range of battery energy storage solutions to reduce fuel consumption and CO_2 emissions.

HOW IT WORKS

The MBE range is a battery energy storage system that allows the **storage of energy from multiple sources:** generator, solar or the grid. **Energy can be redistributed**, at a later time, to a site that needs power. When one of our battery energy storage systems is deployed onto the site, it is possible **to have a clean**, **green solution** that can power the site during those periods of low energy demand, such as overnight or during the weekend. This allows customers to utilise **reliable, green, clean energy** in almost any application.



Technology and features

MBE models are available with lead acid and lithium ion batteries:
- lead acid is a proven technology that is tried, tested and cost less.
- lithium ion is a modern and premium technology.

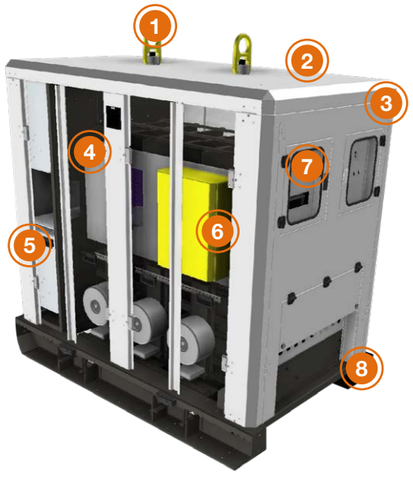
	LEAD ACID BATTERIES	LITHIUM ION BATTERIES
COST	Cost effective solution. Immediately available in large quantities	With higher initial costs at first glance appear to be less cost effective but due to a greater lifecycle, their lifetime value could equalise, if batteries are appropriately cared
CAPACITY & WEIGHT	Energy density of 50+Wh/l	Energy density of 125+Wh/l. These batteries can pack more energy into a smaller place. The weight of these units is half of the lead acid equivalent units
LIFESPAN*	Expectation to last for 2000-3000 cycles	Expectation to last for over 3000 cycles, as used as directed
CHARGING TIME **	Generally have a lower rate of charge	Generally able to accept a higher rate of charge
HOT & COLD ENVIRONMENTS	Accept a charge at low temperature	Perform better at higher temperatures and cannot be charged below freezing point

*A lifespan of a battery in “cycles” if you discharge a battery and then recharge it then this is one cycle
**Charging time may change depending on the size of the batteries and on the amount of energy used to charge

ONLY ONE INTERFACE
A single user friendly interface all in one

EASY MONITORING
Easy understanding of energy flows and easy access to info

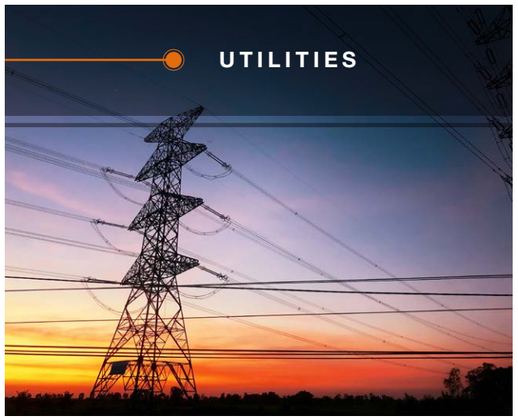
FLEXIBLE CONNECTION
Wide access and modular combinations available

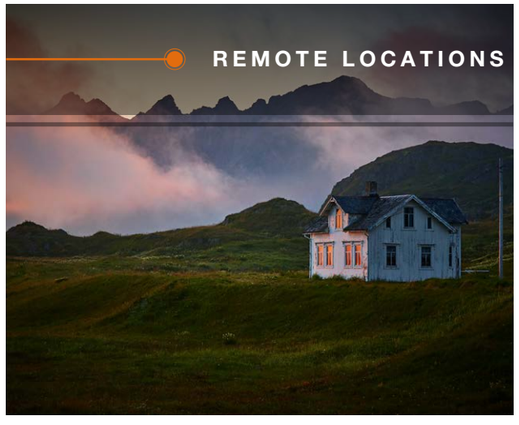


1. Stress-tested lifted apparatus
2. Enclousure suitable for transportation and outside installation
3. Ruggedised weatherproof enclosure
4. High capacity, high cyclic life battery system
5. High power bi-directional PCS
6. Advanced EMS with GPS location and GSM remote comms
7. Breakers, RCD’s and manual timer
8. Skid base for handling with lashing for transportation

Energy for several applications

Generac Mobile delivers clean and efficient energy solutions across a wide range of commercial and domestic applications. Our solutions are mobile power banks with different enclosures configurations (canopy, container, trailer mounted) for construction, events, utilities, remote off-grid for commercial or domestic and EV charging.





SX PLUS Series

MBE SX PLUS is a portable power unit that is low noise emission and maintenance free. Energy that is stored within the internal battery is converted, electronically, into AC power. Once all the energy has been used up, the unit can be recharged by one of several means: connecting to a mains power supply, from a conventional generator or, to be truly green, you can connect solar panels. You can use the unit while it is being charged.

KEY FEATURES:

- Li-Ion and AGM battery
- Automatic generator start/stop
- Low noise and emissions
- Plug and play
- Maintenance-free
- Stackable (up to 2 units)

TECHNICAL DATA	SX PLUS **5/25** AGM	SX PLUS **10/25** Li
Output power (Continuous)	5 kVA	10 kVA
Output power peak (5s)	10 kW	20 kW
Voltage	230 V	230 V
Frequency	50 Hz	50 Hz
Phases	1	1
Battery Type	AGM	Li-Ion LMN
Battery Nominal Capacity	25 kWh	25 kWh
Usable energy AC side (@80% DoD)	20 kWh	20 kWh
Length x Width x Height (mm)	1096x1066x1185	1096x1066x1185
Weight max (kg)	850	560
Protection rating (IP)	44	44
Operating temperature range (°C)	-20/+45	-10/+45

MX Series

MBE MX is a universal Battery Energy Storage System (BESS) ideally suited to a range of applications, delivering reliable power in the most cost effective and environmentally sensitive way. Energy stored within the unit is converted electronically into AC power. Power can be derived from connection to an external grid supply, from a diesel generator or solar PV or wind turbine. Energy is automatically managed from any or all of these energy sources to ensure the most efficient, lowest maintenance and best environmental impact is achieved. Remote communication ensures real time monitoring and maintenance can be effected from any location in the world.

KEY FEATURES:

- Deep cycle automotive NMC battery (Li-Ion models)
- Advanced EMS with touch screen control
- GSM Remote monitoring
- Full system DC isolator with pre-charge
- Auto Full system bypass
- Single to three phase conversion
- Solar PV charge controller MPPT (optional)
- EV Charge point (optional)
- Custom input / output sockets

TECHNICAL DATA	MX **10/40** Gel	MX **15/37** Li	MX **20/37** Li	MX **30/50** Li	MX **30/75** Li
Output power (Continuous)	10 kVA	15 kVA	20 kVA	30 kVA	30 kVA
Output power peak (5s)	15 kW	30 kW	40 kW	60 kW	60 kW
Voltage	230 V	400/230 V	230 V	400/230 V	400/230 V
Frequency	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
Phases	1	3	1	3	3
Battery Type	Gel lead acid OPzV-S	Li-Ion NMC	Li-Ion NMC	Li-Ion NMC	Li-Ion NMC
Battery design life to 80% DoD	2000 cycles	3000 cycles	3000 cycles	3000 cycles	3000 cycles
Battery Nominal Capacity	40 kWh	37.5 kWh	37.5 kWh	50 kWh	75 kWh
	32 kWh	30 kWh	30 kWh	40 kWh	60 kWh
Usable energy AC side (@80% DoD)	1600x1020x1708	1600x1020x1708	1600x1020x1708	1600x1020x1708	1600x1020x1708
Length x Width x Height (mm)	1930	850	850	980	1150
Weight max (kg)	34	34	34	34	34
Protection rating (IP)	-20/+45	-10/+45	-10/+45	-10/+45	-10/+45
Operating temperature range (°C)					

LX Series

MBE LX is a universal Battery Energy Storage System (BESS) ideally suited to a range of applications, delivering reliable power in the most cost effective and environmentally sensitive way. Energy stored within the unit is converted electronically into AC power. Power can be derived from connection to an external grid supply, from a diesel generator or solar PV or wind turbine. Energy is automatically managed from any or all of these energy sources to ensure the most efficient, lowest maintenance and best environmental impact is achieved. Remote communication ensures real time monitoring and maintenance can be effected from any location in the world.

KEY FEATURES:

- Deep cycle automotive NMC battery (Li-Ion models)
- Advanced EMS with touch screen control
- GSM Remote monitoring
- Full system DC isolator with pre-charge
- Auto Full system bypass
- Single to three phase conversion
- Solar PV charge controller MPPT (optional)
- EV Charge point (optional)
- Custom input / output sockets

TECHNICAL DATA	LX **20/60** Gel	LX **30/60** Gel	LX **45/75** Li	LX **45/90** Gel	LX **45/125** Li	LX **60/125** Li
Output power (Continuous)	20 kVA	30 kVA	45 kVA	45 kVA	45 kVA	60 kVA
Output power peak (5s)	40 kW	60 kW	90 kW	90 kW	90 kW	120 kW
Voltage	230 V	400/230 V	400/230 V	400/230 V	400/230 V	400/230 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Phases	1	3	3	3	3	3
Battery Type	Gel lead acid OPzV-S	Gel lead acid OPzV-S	Li-Ion NMC	Gel lead acid OPzV-S	Li-Ion NMC	Li-Ion NMC
Battery design life to 80% DoD	2000 cycles	2000 cycles	3000 cycles	2000 cycles	3000 cycles	3000 cycles
Battery Nominal Capacity	60 kWh	60 kWh	75 kWh	90 kWh	125 kWh	125 kWh
Usable energy AC side (@80% DoD)	48 kWh	48 kWh	60 kWh	72 kWh	100 kWh	100 kWh
Length x Width x Height (mm)	2012x1183x2012	2012x1183x2012	2012x1183x2012	2012x1183x2012	2012x1183x2012	2243x1183x2012
Weight max (kg)	2994	3039	1630	3995	1970	2024
Protection rating (IP)	34	34	34	34	34	34
Operating temperature range (°C)	-20/+45	-20/+45	-10/+45	-20/+45	-10/+45	-10/+45

The stand alone solution

Ideal way to meet needs of low noise environments like night operations, remote telecom applications, or to resolve low load challenges

QUIET TECHNOLOGY
Reduced noise emissions

COMPACT DESIGN
Power solutions for wide range of applications in a compact and portable solution

FAST CHARGING
Ready to perform. Charging time according to BESS model

CLEAN TECHNOLOGY
CO_2 savings

The hybrid solution

In hybrid mode, this technology is compatible with any diesel genset. In any demanding application like events and costruction sites, where low loads or peaks can be a problem for the generator, the hybrid solution is ideal to improve the overall performances of the site

EASY TO CONNECT
Energy management system (EMS) and smart start with a single monitoring interface

MODULAR SOLUTION
Helping generator to manage and optimize peaks of power, improving performances

ENVIRONMENTALLY FRIENDLY
Reduce fuel consumption typically between 40%-80% with corresponding reduction in CO_2 emissions. Improve air quality and reduce noise

PLUG AND PLAY
Easy connection for solar panels or any genset

The hybrid mode

With the solutions in hybrid mode, users can reduce fuel consumption between 40%-80%, with a reduction of CO_2 from 50% to 94.7% during operations. In the example below, a cost saving analysis.

Hybrid power systems manage the operation of diesel generators: when power demand is low the generator turns off, when the battery runs low or power demand increases the generator is turned on. The result is less running hours, more efficient consumption of fuel, less emissions, less maintenance.

100kVA 50% REDUCTION EXAMPLE

Standard Diesel Generator	Data	Hybrid power solution	Data	Hybrid power solution fuelled by HVO	Data
Hire Period (d)	28	Hire Period (d)	28	Hire Period (d)	28
Hire Period (h)	672	Hire Period (h)	672	Hire Period (h)	672
Generator Runtime (h)	672	Generator Runtime (h)	336	Generator Runtime (h)	336
Silent Runtime (h)	0	Silent Runtime (h)	336	Silent Runtime (h)	336
Fuel consumption (l)	6.921,6	Fuel consumption (l)	3.460,8	Fuel consumption (l)	3.460,8
CO2e Output (kg)	21.845	CO2e Output (kg)	10.922	CO2e Output (kg)	1.162
CO2e Reduction (%)	0	CO2e Reduction (%)	50	CO2e Reduction (%)	94,7
Fuel Cost (1.9 €/l)	€ 13.151,04	Fuel Cost (1.9 €/l)	€ 6.575,52	Fuel Cost (2.15 €/l)	€ 7.440,72
Hire Cost*	€ 715	Hire Cost*	€ 2.384	Hire Cost*	€ 2.384
Total Cost	€ 13.866,04	**Total Cost**	€ 8.959,52	**Total Cost**	€ 9.824,72

Study based on comparison between 3 potential site setups: 1) Running the site in the conventional manner, operating a diesel generator fueled with standard diesel running 24/7. 2) Running the site utilizing a hybrid power solution (combining the generator with a battery storage system) fueled by conventional standard diesel. 3) Running the site as per the existing site setup utilizing a hybrid power solution (combining the generator with a battery storage system) fueled by HVO (Hydrotreated Vegetable Oil). The cost saving analysis has been developed with the red diesel cost in UK as initial indicator. An exchange rate of EUR 1,192 has been applied (average exchange rate 2022).
* Hire cost based on average UK rental price 2022.

Battery storage deployed with generator to supply site welfare unit

How it works
24h on site

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