

SOLAR GENERATOR IPS ENERGY BOX



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A B O U T U S



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More than 400 orders for IPS Energy Boxes already placed for Europe and the United States.

At **Industrial Packing Solutions** we are dedicated to the design and manufacture of photovoltaic solutions package to bring solar energy to all industries and sectors, with no limits.

Our commitment is to develop products that fit the needs of our customers with the aim of driving the energy transition in sectors that have not yet been able to get started in this area and bring relevant developments that complement and improve existing photovoltaic solutions.

Our team of engineers and technicians have the expertise to deliver optimal implementations of our solar technology for your home or factory building. Additionally, we provide guidance **on the most effective alternatives for energy storage and management.**

A constantly growing R&D team is the engine that drives IPS Energy Box forward to take on new challenges and reach great milestones for the photovoltaic industry.

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IPS ENERGY BOX



The result of all this work is our **IPS Energy Box**, the mobile solar generator that allows the production of photovoltaic energy with Plug&Play technology.

The IPS Energy Box **solar generators** are ready for immediate use, no construction works are required.

This **fully pre-wired** solar generator includes a mounting frame, inverter and electrical panel making it an ideal solution for swift deployment, whether for grid-connected applications or entirely stand-alone setups.

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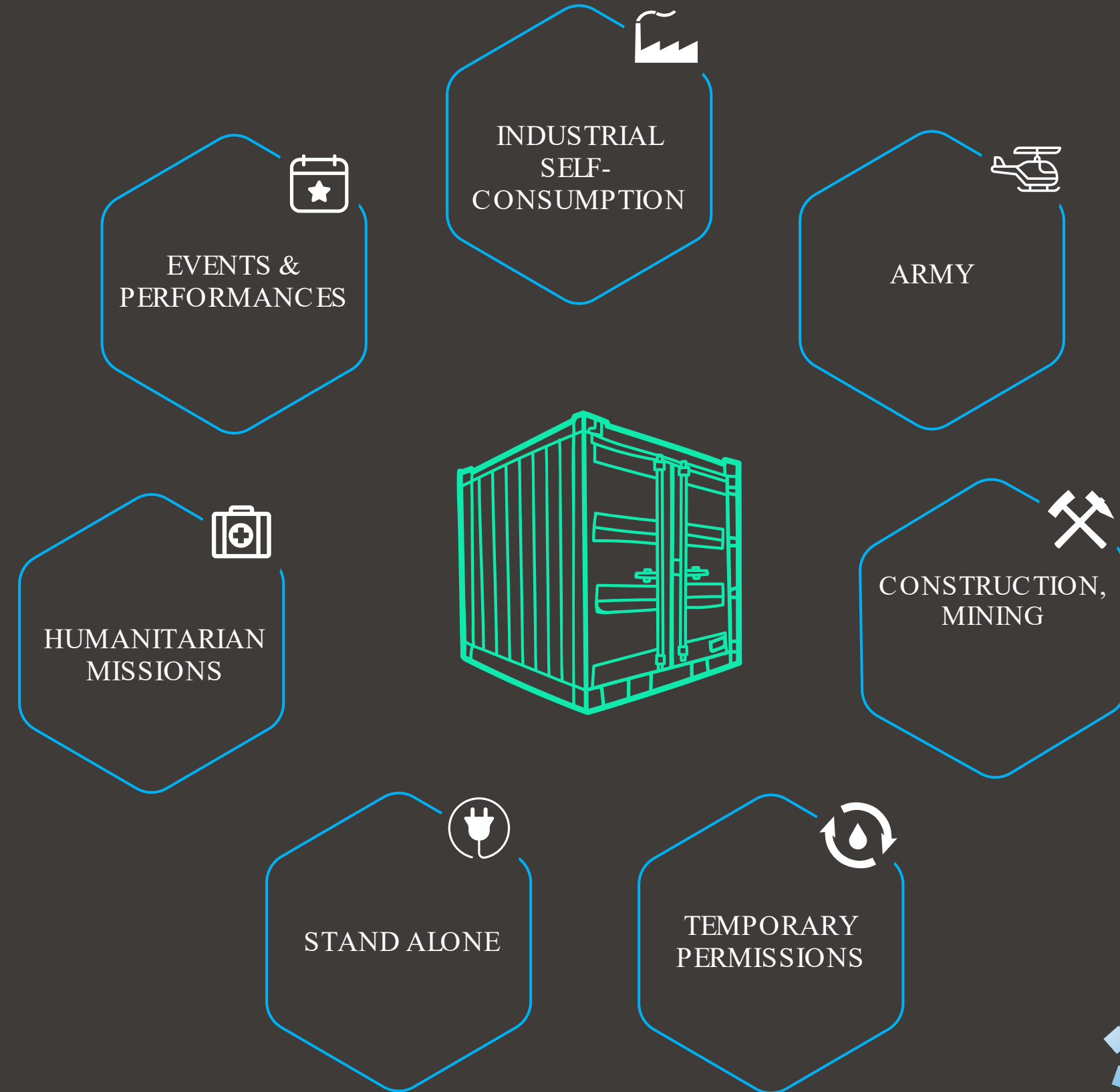
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IPS represents an environmentally sustainable alternative to diesel-powered generators. Its mobility allows operation from any location, including off-grid scenarios if necessary.

Moreover, IPS facilitates integration with energy storage systems, providing the flexibility to adapt this solar generator to varying circumstances based on the specific needs at any given time.

This makes IPS Energy Box an exceptionally suitable product for a diverse array of sectors.



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Flexibility is key: IPS Energy Box's mobility brings advantages across several domains. Being a pre-built mobile solar installation, eliminates the need for administrative or bureaucratic process during deployment.

We've devised solutions to streamline deployment, ensuring ease and effectiveness. In this way, the panels can be unfolded or folded within approximately two hours, no matter the weather conditions.

The design of the IPS Energy Box incorporates built-in wheels, enabling the solar generator to seamlessly adapt to various terrains and withstand **extreme weather conditions**.

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Everything is rolling along with IPS Energy Box.

Literally. The IPS's design includes wheels so it can adapt to any type of terrain, making it easier and faster to unfold and fold the panels.

Our wheels are designed to withstand weather and sun exposure.

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42,78 kWp
10 ft.

Power installed	42,78 kWp
PV Modules	EX 465-166 (HC) or similar (Tier 1 List) 92 panels x 465 Wp
Inverter	Huawei 50KTL-M3 or similar
Surface Are	122 x 3 yd (L x W) 61 x 8 yd (L x W) – Split Mode
Solar Panel Inclination	15°
Recommended orientation	E-W
Wheels	14,37 ø x 3,35 (in)
Ground Anchoring	Pikes / Counterweights
Weight	6.500 (kg.)



106,72 kWp
20 ft.

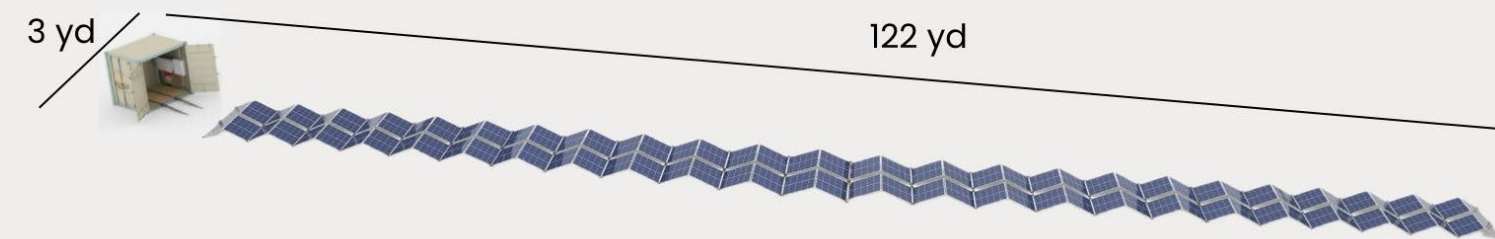
Power installed	106,72 kWp
PV Modules	EX580TC(B)-144(HC) (182) BF or similar (Tier 1 List) 184 panels x 580 Wp
Inverter	Huawei 100KTL or similar
Surface Are	122 x 7 yd (L x W) 61 x 14 yd (L x W) – split mode
Solar Panel Inclination	15°
Recommended orientation	E-W
Wheels	14,37 ø x 3,35 (in)
Ground Anchoring	Pikes / Counterweights
Weight	13.500 (kg.)

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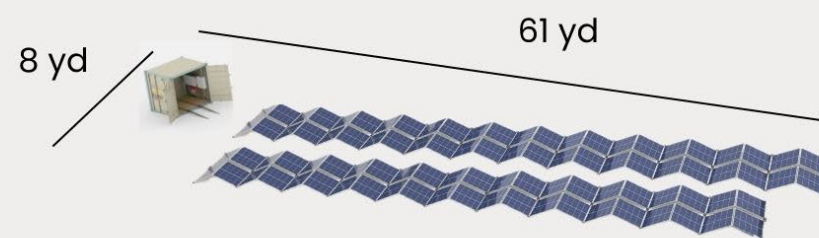
IPS ENERGY BOX

10 Feet Model

Standard version:

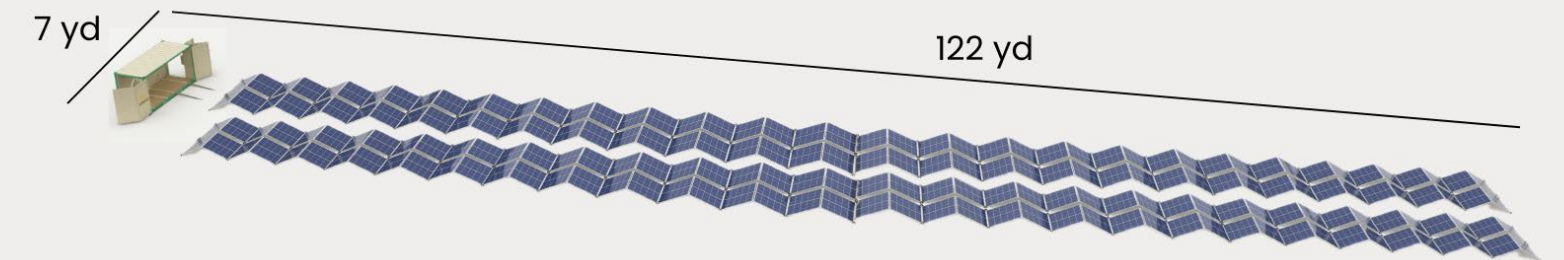


Split Mode

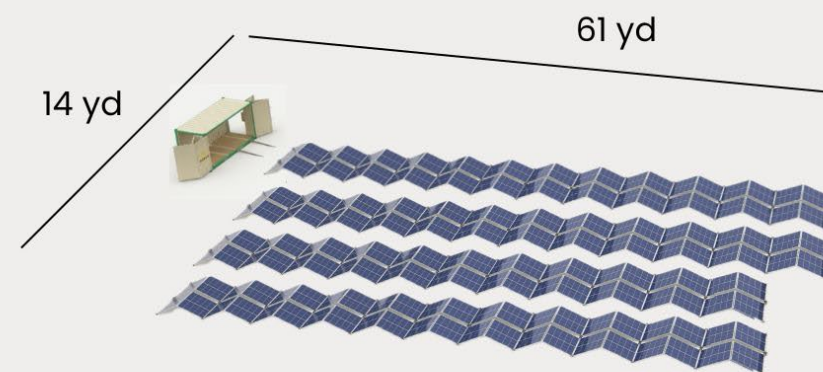


20 Feet Model

Standard Version



Split Mode



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In order to anchor the structure to the ground and make it wind resistant, we have developed a **ground fixings system** using plates.

They allow the structure to be secured with **spikes** and/or **counterweights**. The design has a hole for the spike to go through and having a flat part allows double insurance by placing concrete counterweights or other available material to secure the structure.

For each case, the need for ground fixings will be studied to determine exactly how many are required to protect the installation, depending on its location and exposure to the wind.

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The kilowatt peak (**kWp**) represents the maximum power output achievable by a photovoltaic system under optimal conditions, such as when the sun is at its zenith and sunlight conditions are optimal.

Nevertheless, the actual electricity production may vary based on several factors, including the orientation and inclination of the solar panels, actual sunlight duration, temperature, shadows, and other influencing variables.

We possess the capability to perform on-the-spot calculations for the installation of the **IPS Energy Box** solar generator, thanks to a team of specialized engineers adept in this type of study.

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20-25



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On average, a well-designed photovoltaic installation can produce an annual output ranging from 1000 to 1500 kilowatt hours (kWh) per kilowatt-peak (kWp).

Therefore, with a **105 kWp** installation, annual production could be approximately between 100,000 and 150,000 kWh.

On average, a typical home consumes around 4,000 to 5,000 kWh of electricity per year. This indicates that the **IPS Energy Box 20ft** has the capacity to supply the energy required to power **20-25 homes**.



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IPS Energy Box also has other applications:

- **Complete autonomy:** We present a solar generator in stand-alone mode that operates independently of the grid, providing absolute freedom to users who won't be dependent on a connection point.
- IPS is **effortlessly scalable:** simply plug in as many units as needed to establish a mobile solar power plant, without encountering any power or technical limitations.

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A WIDE RANGE OF OPTIONS

IPS Energy Box is a fully pre-wired solar generator with a mounting frame, inverter, and electrical panel for rapid deployment, both grid-connected or completely stand-alone.

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3 Different Installation Options Available



Grid-Connected Model



Model With Batteries for Energy Storage



Total Island Mode Model

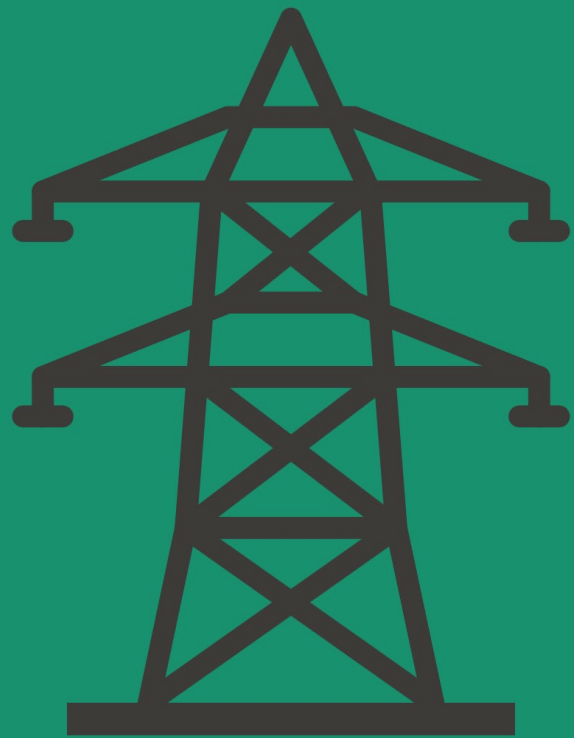


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A WIDE RANGE OF OPTIONS

1

GRID-CONNECTED MODEL



This represents the standard configuration, requiring continuous connection of the inverter to the electrical grid.

This mode allows for versatile setups of the IPS Energy Box, accommodating total discharge, complete self-consumption, or mixed self-consumption with discharge modes.

Depending on the inverter type, the grid connection can be three-phase, spanning from 380V to 480V, with a frequency of either 50Hz or 60Hz.

1

Grid Power Supply: enabling the integration of the entire energy produced by the solar generator into the electrical grid.

2

Total Self-Consumption: connected to the grid, the energy produced by the IPS Energy Box is consumed locally."

3

Mixed Consumption: connected to the grid, the energy produced by the IPS Energy Box is consumed locally.

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A WIDE RANGE OF OPTIONS

2

MODEL WITH BATTERIES FOR ENERGY STORAGE

This approach entails enhancing the grid-connected mode with battery integration for storing energy for future use, such as during the night.

The product's autonomy relies on the battery capacity. Depending on the model, a dedicated controller facilitates the management of battery charging and discharging, fostering communication between the inverter and the batteries.

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A WIDE RANGE OF OPTIONS

3

TOTAL STAND-ALONE MODE MODEL

The ideal solution when not connected to the electrical grid, the IPS Energy Box operates autonomously, thanks to its hybrid inverter.

In this way, off-grid installations can be powered by electricity directly generated from the solar source

This model is distinguished by its versatility and efficiency, with hybrid inverters capable of functioning independently or being connected to the grid.

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Using the same case, the following table details the potential fuel and cost economy of the IPS Energy Box 106.72 kWp.

	DIESEL GENERATOR	IPS ENERGY BOX	SAVINGS 1 UNIT IPS ENERGY BOX	MIX DIESEL GENERATOR+ IPS ENERGY BOX
AVERAGE DAILY PRODUCTION	1.232,5 kWh	406 kWh		1.232,5 kWh
TOTAL YEARLY PRODUCTION	449.919,3 kWh	148.036 kWh		449.919,3 kWh
AVERAGE DAILY DIESEL CONSUMPTION	315,6 L € 389,77	0 L € 0	104 L € 128 (-32,95%)	211,6 L
TOTAL YEARLY DIESEL CONSUMPTION	115.203 L € 142.275,70	0 L € 0	37.899 L € 46.805 (-32,95%)	77.304 L € 95.470,44
CO2 EMISSIONS	845,8 kg/day 308,74 t/year	0 kg	278,8 kg/day 101 t /year (-32,95%)	567 kg/day 207,17 t/ year






* Calculated with diesel cost at 1.678€/L

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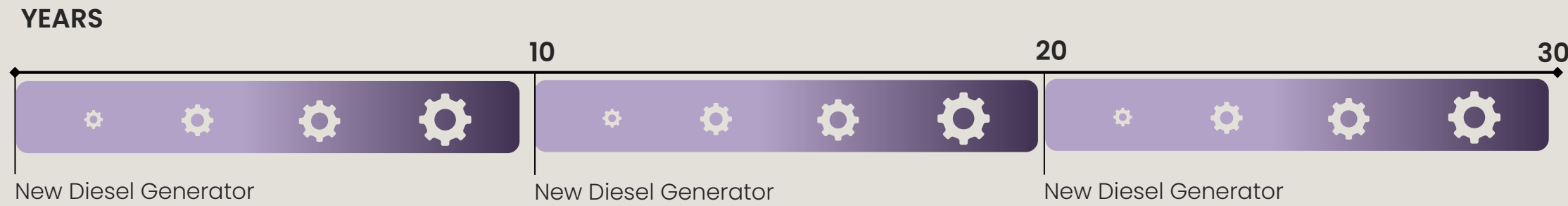
When our IPS Energy Box generator supports the diesel generator it reduces the strain on the engine of the diesel generator. It can extend its service life and reduce maintenance considerably.

CAPTIONS

-  Minor Maintenance
-  Major Maintenance
-  Inverter Replacement
-  Losses in IPS Energy Box efficiency
-  Deterioration of the Diesel Generator

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IPS Energy Box and Diesel Generator Lifelines Estimation



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