

MINI-GRID POWER SOLUTION FOR REMOTE AREAS

**ECO-POWER BOX
UP TO 90 kW
5- 288 kWh STORAGE**

MADE IN ITALY
Ascot
www.ascotinternational.com



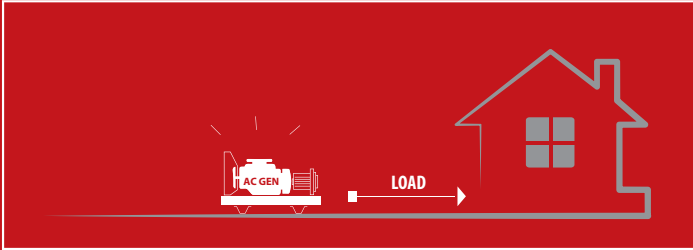
**ANY OFF-GRID / BAD-GRID / EMERGENCY
LOCATIONS DESERVE
AN ECO-POWER BOX**

Ascot 
Energy Everywhere

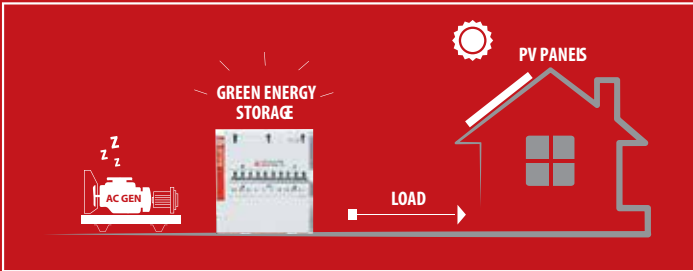
PRODUCT INVENTION

Innovative Product
Designed and Created by Ascot
according to Customer Needs

GENSET 24/7 IN OPERATION



GENSET IN STANDBY MODE WITH ECO-POWER BOX



WE TURN OFF YOUR
DIESEL GENSET

CLEAN ENERGY STORAGE SYSTEM
WITH INTEGRATED
SOLAR/INVERTER CHARGER

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Ascot Gensets are designed and manufactured by Ascot Industrial srl
Ascot Industrial srl is certified to
UNI EN ISO 9001:2015
UNI EN ISO 14001:2015
OHSAS 18001:2007



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THE ASCOT GROUP

PROVIDING ENERGY SOLUTIONS SINCE 1986

ASCOT is an Italian manufacturing group operating internationally in the power energy sector mainly focused on the production of diesel generating sets, hybrid solutions & power plants, designed in accordance to customer's specifications at various climatic conditions.

Originally established in 1986, ASCOT has since expanded its presence in over 60 countries throughout Europe, Africa, Middle East, Asia, and the Americas.

The "Ascot brand" is associated worldwide with high quality and tailor-made generating sets, special power solutions and hybrid technologies. Ascot strives to maintain the highest standards of quality, manufacturing all products in Italy using 100% European components, manpower and standards.

TECHNICAL SERVICE CENTERS

A Centralized Service Center based in Italy coordinates the Node Service Centers located in strategic locations distributed globally.

Through those "nodes" a well-connected network of **Ascot's Partner Service Centers** is controlled and managed to ensure a specialized and high quality maintenance service for all Ascot products.

Ascot Service includes:

- On-Site Service Center
- On-Site Specialized Team
- On-Site Spare parts availability
- On-Site Training Courses
- Network of Technicians



EUROPEAN PRIME QUALITY COMPONENTS



MADE IN ITALY



35000 SQM PRODUCTION AND ASSEMBLY AREA



TAILOR-MADE SOLUTIONS



MORE THAN 30 YEARS OF EXPERIENCE



SERIES PRODUCTION



ECO-POWERED ENERGY SOLUTIONS



INTERNATIONAL PRESENCE



HIGH PERFORMANCE

100 % MADE IN ITALY CERTIFIED



The ASCOT Brand is certified to act according to the IT01 system 100% Original Italian Quality (Registration n. IT01.IT/1857.058.V - www.madeinitaly.org).



All ASCOT's Products are certified to be:

A | DESIGNED AND MANUFACTURED ENTIRELY IN ITALY

- Based on company's own project and design
- Made with Italian/European components
- Complete work traceability in Italy

B | MADE WITH NATURAL QUALITY MATERIALS

- Quality, first choice materials
- Raw materials origin full traceability
- Natural materials or natural compounds

C | BUILT ACCORDING TO TRADITIONAL WORKING METHODS

- Use of company's specific workmanship
- Use of traditional workmanships techniques

D | MADE IN OBSERVANCE OF EMPLOYEES, HEALTH AND SAFETY STANDARDS

- Ethical treatment of employees
- Manufactured according with the Hygiene Healthcare and safety regulations

MINI GRID POWER SOLUTION FOR REMOTE AREAS

ASCOT ECO POWER BOX GUARANTEES CONTINUITY, SECURITY AND HUGE SAVINGS

The Eco Power BOX is a clean energy storage system designed to reduce to zero the running hours of an existing diesel generator or to be a perfect substitute of a generator while configured in stand by application with a reliable grid.

The innovative and integrated system when connected between the load and the main source acts as a stabilizer and in the same time guarantees the cleanness and continuity of the power with substantial energy cost savings. The embedded deep cycle batteries, associated with a special controller that manages the sources, guarantees the autonomy and load stability during the operation of 24 hours.

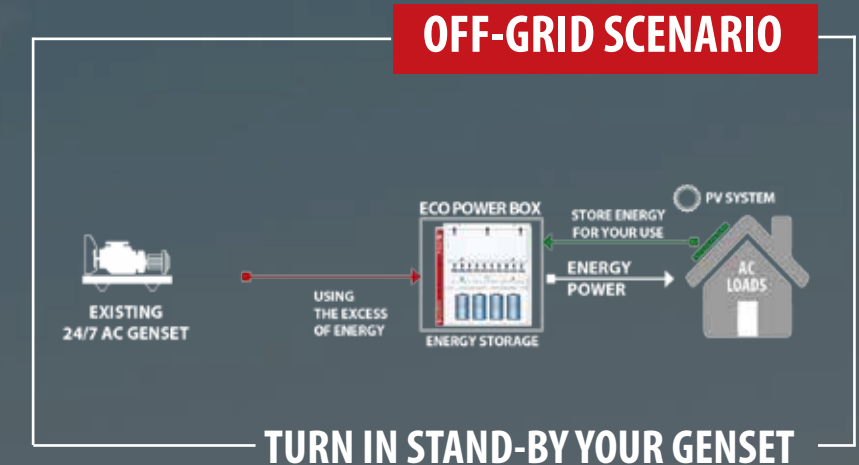
MICROGRID DEFINITION

A microgrid is a system that interconnects electrical loads (and distributed generation sources) and that has the ability to operate both in connection with the National electrical system and autonomously (in the so-called "island" mode). In particular, low environmental impact microgrids, which therefore integrate generation plants from renewable sources and electrical storage systems such as batteries, are gradually spreading, driven by:

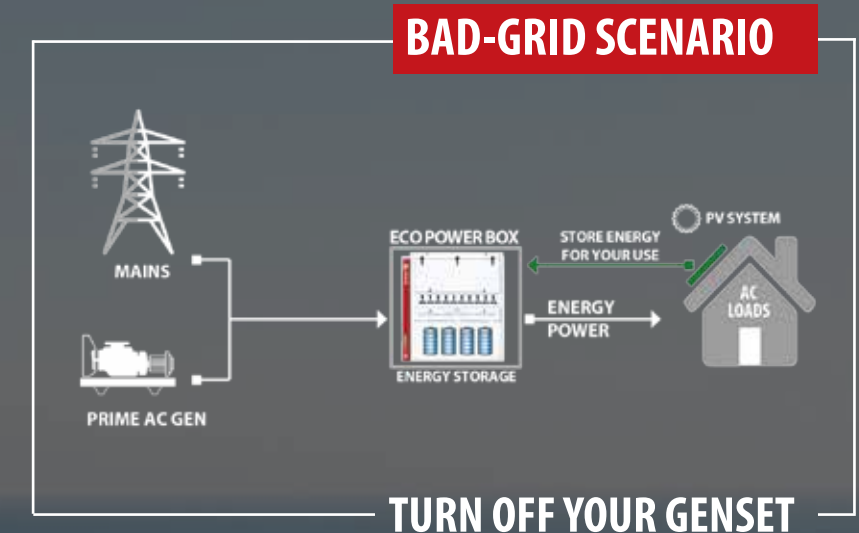
- environmental sustainability characteristics for energy supply;
- decrease in the costs of electricity storage technologies (e.g. batteries) and renewable generation systems (e.g. photovoltaic system);
- development of intelligent control systems, which allow active management of electrical loads and storage and essentially reduce the costs of energy supply.

APPLICATIONS

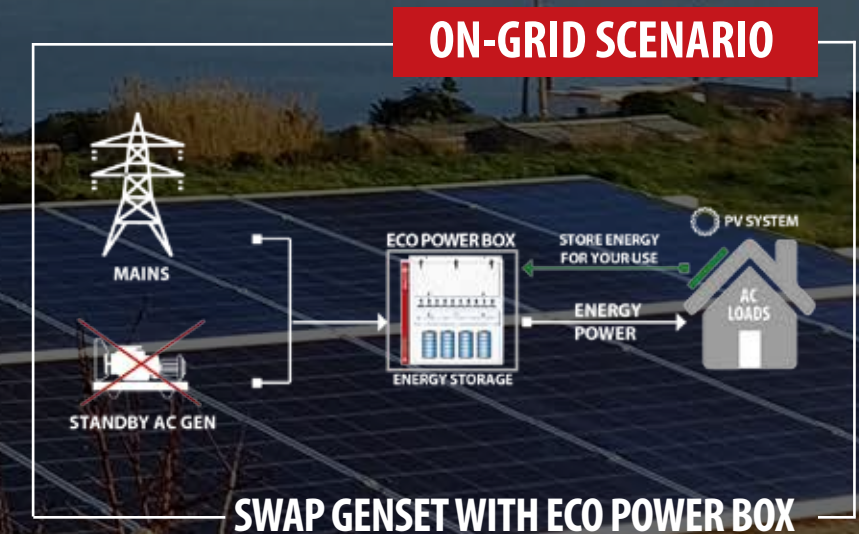
In **OFF-GRID** Scenario the **ECO Power BOX** drastically reduces the running hours of an existing 24H/7 genset especially when associated with solar panels.



In **BAD-GRID** Scenario the **ECO Power BOX** reduces down to zero (without solar) the running hours of an existing prime power genset (12H/7). It turns the existing genset from prime to stand-by application.



In **ON-GRID** Scenario the **ECO Power BOX** is the perfect substitute of a standby genset and guarantees the continuity power for 24H. You can store energy produced by the PV plant and use it whenever you need. You can also have the smallest breaker as the peak power will be carried out by the ECO Power BOX decreasing drastically the energy providers fixed costs.



ATM APPLICATION NEW DESIGN



CLEAN ENERGY STORAGE SYSTEM

ECO POWER BOX


Bank ATM application: 5 kW

The Eco Power Box is a clean energy storage system designed to reduce drastically the running hours of an existing diesel generator in an off grid or bad grid scenario. In case of good grid the Eco Power Box can perfectly substitute your genset while configured in a standby application.

The new model, **slim and small**, specially designed for ATM applications, ensures that your system never collapses, and backs up for small load range (0 - 4 kW).



ENERGY STORAGE



BATTERIES CAPACITY
150 Ah | 24kWh

8 h
BATTERIES AUTONOMY



SINGLE PHASE



ATM APPLICATION



ECO POWER BOX
CLEAN ENERGY STORAGE SYSTEM

EXCLUSIVE FEATURES

- SMALLEST FOOTPRINT AND SIZE
- 24/7 CONTINUITY OF SERVICE
- BACK UP/PRIMARY SOURCE
- COMPACT AND LIGHTWEIGHT



MODEL ECO POWER BOX
CLEAN ENERGY STORAGE SYSTEM
24 kWh | 150 Ah



ECO POWER BOX
CLEAN ENERGY STORAGE SYSTEM

TECHNICAL DATA | MODEL ECO POWER BOX

FEATURES	
ENERGY STORAGE SYSTEM	EPB 5S 150
Type of batteries	Lead Acid
Nominal voltage battery bank	-48 Vdc
N° of cells	8
Battery bank nominal capacity	150 Ah
OUTPUT @ 20°C	
Rated AC power	5 kVA
Max AC power	10 kVA
Rated AC voltage	230 Vac
Rated AC frequency	50 Hz
INVERTER	
Type	Single phase
DC input voltage range	38-66 V
Output voltage	230 V
Continuous output power @ 25°C	5000 VA
CHARGER	
Input voltage range	45-65 Hz
DC current battery	70 A
WEIGHT AND DIMENSIONS	
Dry Weight	400 kg
Dimensions [LxWxH]	940 x 590 x 1640 [mm]

USAGE BENEFIT

The EPB constitutes the perfect device when the clients wish to reach the following results:

- 99,9% ATM up time;
- No Micro Interruption;
- No-break intervention;
- Clean energy for electronics and components;
- Up to 8 hours autonomy in case of grid failure;
- High quality services;
- Huge money saving avoiding continuous repairs;
- Ecofriendly product at zero emission;
- Opportunity to benefit of green certificate.

APPLICATIONS

GOOD/BAD GRID configuration | Once connected with grid it is a perfect substitute of a standby genset.

OFF GRID configuration | Once connected with a PV system it drastically reduces the genset running hours.



Ascot
Energy Everywhere



WORKING PRINCIPLE

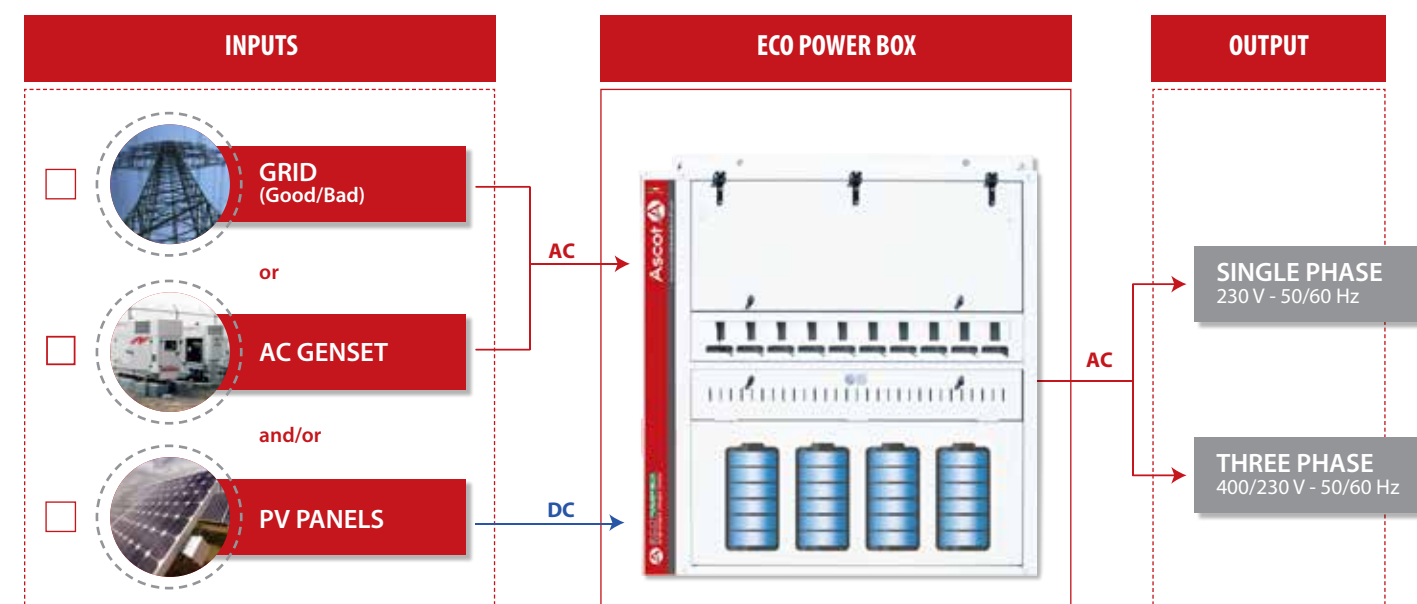
MADE IN ITALY

THE ENERGY STORAGE SYSTEM

The principle is based on the same concept of storing water from rain; therefore the same principle is applied to the Eco Power Box system to store the energy generated by the sun or grid into the batteries to be used when needed.

In function of the load required, the PV panels will be able to generate all the electricity needed while the generator (if present) will run only as back up when needed, as the load will be provided by the energy stored in the Eco Power Box.

This system will lead to reductions of up to 100% of the fuel consumption of the actual and existing generators and the associated high maintenance cost.



MODELS

SINGLE PHASE

- EPB 3S
- EPB 5S
- EPB 8S
- EPB 10S
- EPB 15S

THREE PHASE

- EPB 15T
- EPB 24T
- EPB 30T
- EPB 45T



HUGE SAVINGS WITH ECO POWER BOX

Ascot
Energy Everywhere

CLEAN AND ECO FRIENDLY WITH ZERO EMISSIONS

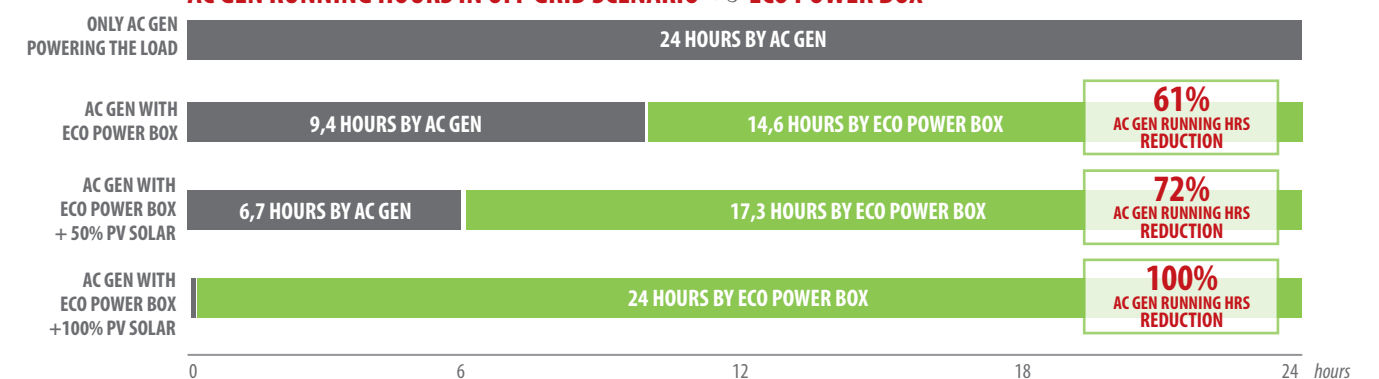
Criteria for Hybridize

- When you are in the presence of an application with high load variability during 24 hours
- When the average load is remarkably low compared to the maximum load.

When should I hybridize?

- Always in Off Grid and Bad Grid application to drastically cut the Genset Operation costs from 60 up to 100%
- In On Grid Application to guarantee the continuity of power and/or to reduce the charge per kWh during on peak hours

AC GEN RUNNING HOURS IN OFF GRID SCENARIO Vs ECO POWER BOX*



MAIN APPLICATIONS (GOOD-GRID - BAD-GRID - OFF-GRID SCENARIOS)



- PRIVATE VILLAS
- RURAL VILLAGES
- SMALL FARMS














- HOSPITALS
- REFUGEE CAMPS
- REMOTE OFFICES



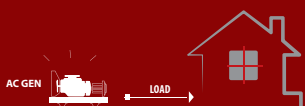
- PETROL STATION
- REMOTE BANKS
- RAILWAYS

PERFORMANCE DATA | MODEL ECO POWER BOX WITH PzS BATTERIES

Notes:
 (*) - Referred to 80% DoD and related Average Load
 (n) 1 housing unit = 1 kw average power

ACTUAL OFF GRID SCENARIO (Fig. 1)							SAVINGS WITH ASCOT ECO POWER BOX (Fig. 2)						
DAILY ENERGY CONSUMPTION						GENSET RUNNING HOURS WITHOUT EPB [hr / day]	ECO POWER BOX			GENSET RUNNING HOURS WITH EPB [hr / day]	SOLAR PV PANELS RATED [kWp]	GENSET RUNNING HOURS WITH EPB + SOLAR [hr / day]	
TYPICAL APPLICATION	DAILY ENERGY [kWh/ day]	CONTI- NUOUS POWER [kW]	MAX POWER FOR 15 MIN. [kW]	INRUSH POWER FOR 2-10 SEC. [kW]	GENSET POWER [kVA]		EPB MODELS	STORAGE BATTERIES CAPACITY	STORAGE BATTERIES AUTONOMY ^(*)				
								 [kWh]	 [h]				
S SINGLE PHASE													
 ① HOUSING UNIT	24	2,4	3	6	10	24	EPB 3S	120	5,76	4,60	12,1	3,24	5,6
								240	11,52	9,22	8,1	4,32	3,3
								400	19,20	15,36	6,1	6,48	0
 ② HOUSING UNIT	48	4	5	10	15	24	EPB 5S	240	11,52	4,62	12,1	6,48	5,6
								625	30	12	9,5	9,72	1,8
								980	47,04	18,82	9,3	12,96	0
 ③ HOUSING UNIT	72	6,4	8	16	20	24	EPB 8S	240	11,52	3,07	13,5	9,72	6,7
								980	47,04	12,54	9,2	12,96	6,8
								1240	59,52	15,87	9,1	21,60	0
 ④ HOUSING UNIT	96	8	10	20	30	24	EPB 10S	320	15,36	3,07	13,5	12,96	6,7
								980	47,04	9,41	9,6	17,28	2,7
								1550	74,40	14,90	9,4	25,92	0
 ⑥ HOUSING UNIT	120	12	15	30	40	24	EPB 15S	400	19,20	3,07	14,5	17,28	6,1
								1240	59,52	9,52	8,9	21,60	2,5
								1960	94,08	15,05	8,7	30,24	0
T THREE PHASE													
 ⑥ HOUSING UNIT	120	12	15	30	40	24	EPB 15T	400	19,20	3,07	14,5	17,28	6,1
								1240	59,52	9,52	8,7	21,60	2,4
								1960	94,08	15,05	8,4	30,24	0
 ⑨ HOUSING UNIT	216	19,2	24	48	70	24	EPB 24T	980	47,04	4,18	12,7	30,24	5,6
								2000	96	8,53	9,4	38,90	2,6
								4000	192	17,07	9,1	56,20	0
 ⑫ HOUSING UNIT	288	24	30	60	80	24	EPB 30T	980	47,04	3,14	14,4	38,90	6,6
								2480	119,04	7,94	9,7	51,80	2,7
								4650	223,20	14,90	9,4	73,40	0
 ⑱ HOUSING UNIT	360	36	45	90	100	24	EPB 45T	1240	59,52	3,17	14,3	51,80	6,1
								3100	148,80	7,94	9,0	64,80	2,5
								6000	288	15,36	8,6	90,70	0

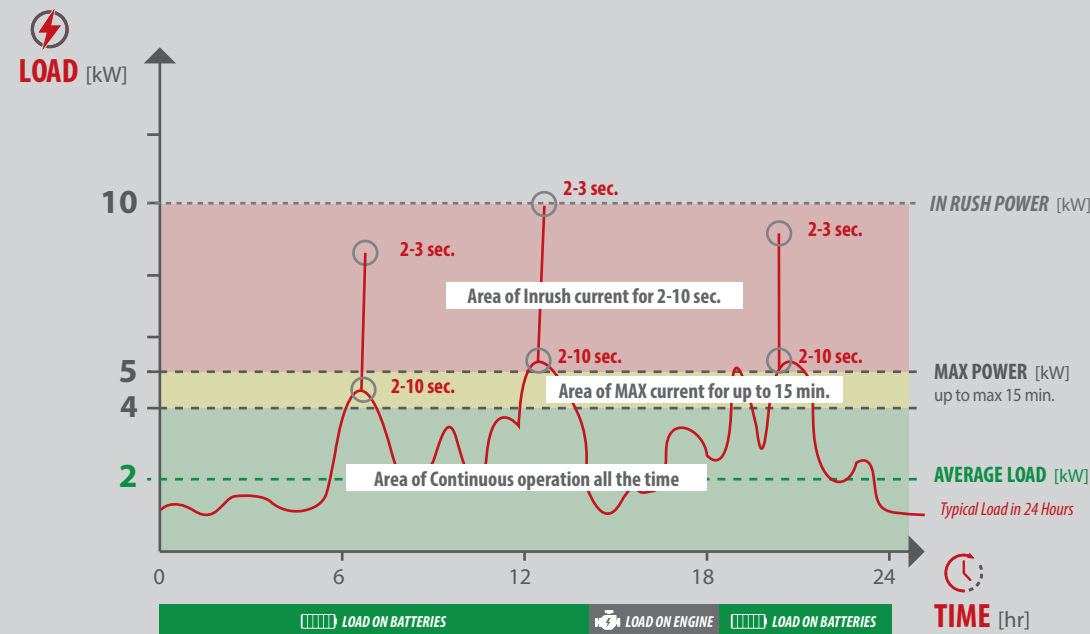
(Fig. 1)
OFF GRID SCENARIO
GENSET 24/7
IN OPERATION




(Fig. 2)
OFF GRID SCENARIO
GENSET IN STANDBY MODE
WITH ECO POWER BOX



PERFORMANCES AND SAVINGS OF THE MODEL EPB 5S OFF GRID SCENARIO WITH ONLY AC GENSET



ENERGY STORAGE


BATTERIES CAPACITY
980 Ah 47 kWh
AUTONOMY
18,8 h
19,5 h
LOAD ON BATTERIES
4,5 h
LOAD ON ENGINE

SOME OF THE MAIN BENEFITS CHOOSING ECO POWER BOX

- Stable voltage with no damage to utilities;
- With a limited 3kW single phase connection to the mains you can enjoy 10 kW single or three phase output;
- 24H power availability regardless of mains outages;
- In Bad Grid or Good Grid application scenario there is no need for back up AC Gen;
- No noise, no smoke, no fuel, no pollution. It can be installed Indoors;
- Maintenance free and 10 Years Lifecycle;
- Plug & Play with Solar Systems.

REMOTE CONTROL

COMPLETE SYSTEM MANAGEMENT

WITH REAL TIME WEB-BASED m2m TECHNOLOGY



The Ascot's Remote Control is a Remote Management System (RMS) that monitors continuously all relevant parameters of the system and manages all the hybrid/generators spread out in the territory.

The informations are collected by the modem and it is stored in the internal memory. Through a laptop or mobile device connected to the NET, you can monitor and manage all the data, including start, stop and reset functionalities, without installing a specific software.

The remote controller is transmitted to the web by a local area network (LAN) protocol/ RS485 or by 4/5G modem with dual sim. Data collected are trasmitted to the web and accessible in www.ascotremotecontrol.com portal which provides power monitor, control data analysis and management function across an entire network of sites.

- GPS POSITION
- REAL TIME ALARM COMMUNICATION
- REAL TIME USER FRIENDLY REPORTS
- TREND GRAPHS

«THE REAL TIME USER FRIENDLY REPORT TO CHECK ALL PERFORMANCES OF SINGLE OR MULTIPLE MACHINES»



STATUS



ALARMS

Device monitoring

Date	Alarm	Location	Author
05/04/19 12:14:42	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm
05/04/19 11:11:07	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm
05/04/19 13:10:14	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm
05/04/19 09:02:36	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm
05/04/19 10:02:49	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm
05/04/19 14:13:39	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm
05/04/19 08:17:18	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm
05/04/19 08:17:22	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm
05/04/19 13:17:47	WARNING_ALARM_ACTIVE	This alarm happens when low oil pressure pressure, high coolant temperature pressure, fuel level warning, high battery temperature pressure, battery connection open or load on, low CO open battery charger failure, low disabled under park, low oil level, low speed pressure, low fuel and over current pressure, floating.	Check manual alarm

REPORTS ON-THE-FLY

Report on the fly

Fuel Report

From 05/01/19 to 05/04/19

Machine	Date	Fuel level	Fuel consumed	Fuel level start	Fuel level end	Fuel level start	Fuel level end	Fuel level start	Fuel level end	Fuel level start	Fuel level end	Fuel level start	Fuel level end	Fuel level start	Fuel level end	Fuel level start	Fuel level end	Fuel level start	Fuel level end
MG001	05/01	100	4199	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG002	05/01	100	4177	100%	91.88	97	33	100	97	100	97	100	97	100	97	100	97	100	97
MG003	05/01	100	4141	100%	91.88	92	52	100	97	100	97	100	97	100	97	100	97	100	97
MG004	05/01	100	4010	100%	91.88	111	49	100	97	100	97	100	97	100	97	100	97	100	97
MG005	05/01	100	4174	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG006	05/01	100	4178	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG007	05/01	100	4027	100%	91.88	91	37	100	97	100	97	100	97	100	97	100	97	100	97
MG008	05/01	100	4071	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG009	05/01	100	4099	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG010	05/01	100	4086	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG011	05/01	100	4099	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG012	05/01	100	4088	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG013	05/01	100	4099	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97
MG014	05/01	100	4099	100%	91.88	94	40	100	97	100	97	100	97	100	97	100	97	100	97



MULTI USER ACCESS

The RMS has an access system with different licenses:

- Report User;
- Service User;
- Administrator (with unlimited functions).

REAL TIME ALARMS

All alarms, if occurred, are communicated in real-time to the web portal, selected e-mail addresses, and via SMS service.

Trend Graphs give the possibility to view trends in engine rpm and temp., battery level, output power and fuel level.

GPS MAPS

By the GPS antenna you can locate the hybrid/genset spread out in the territory.

PERFORMANCE GRAPHS & REPORTS

This function generates the report performance for single or groups of machines. It is possible to select a range of dates (weeks or months) : the report is based on daily average. Five different kinds of reports can be generated:

Performance Report

- Alternative power source hours per day;
- Generators hours per day;
- Total hours on batteries per day;
- Average load on site;
- Power availability.

Fuel Report

- Fuel level start/end date;
- Daily average fuel consumed;
- Fuel consumed/refilled;
- Generators running hours;
- Energy delivery per day.
- Unexpected fuel consumed.

Status Report

- Total running hours;
- Time to lack of fuel;
- Service scheduler;
- Total hours of service delay;
- On line / Off line.

**“ WE BRING ENERGY
ENERGY IS OUR PASSION,
EVERYWHERE.
PASSION IS OUR ENERGY. ”**

Follow Us!



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REBOX
RANGE SYSTEM

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Energy Everywhere

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Ascot Industrial srl
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