



HYBRID SOLAR POWER SYSTEM by ProContain and Eaton

For off-grid field camp application

In the beginning there was
nothing...

DAY 1



...then came ProContain...



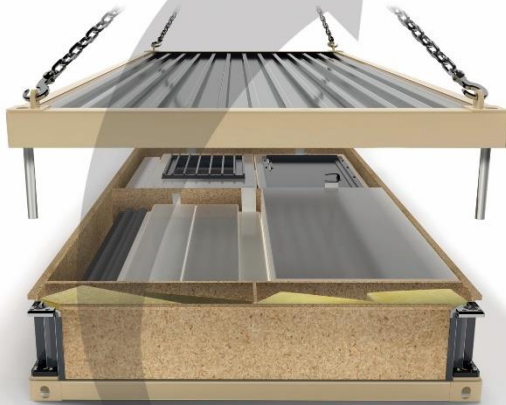
9 PROCONTAIN UPGRADED FLATPACKS

- Available in accommodation or offices version
- Electrical plug and play system
- Easy to transport and to assemble and disassemble

DAY 2

PROCONTAIN

Flatpack concept
Economical and space saving, easy to assemble,
modular and logistically ingenious.

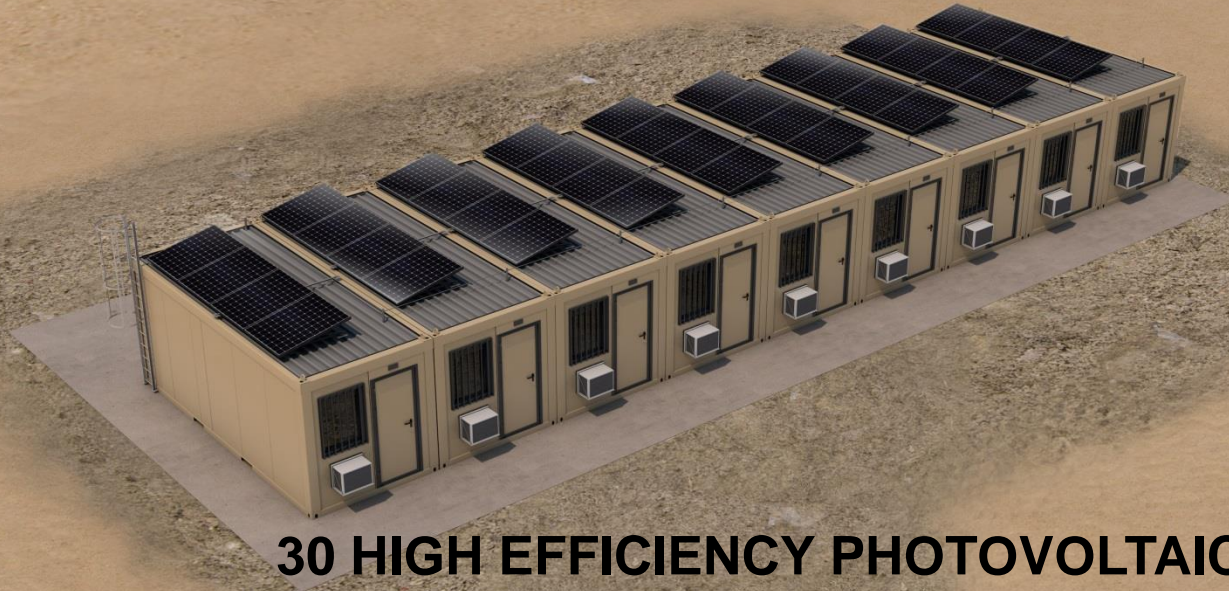


DAY 2



The concept can be upgraded with a Hybrid solar
power system, an innovative energy storage
system combined with solar cells and a
bulletproof, up to FB7 level protection.

...and then there was power...

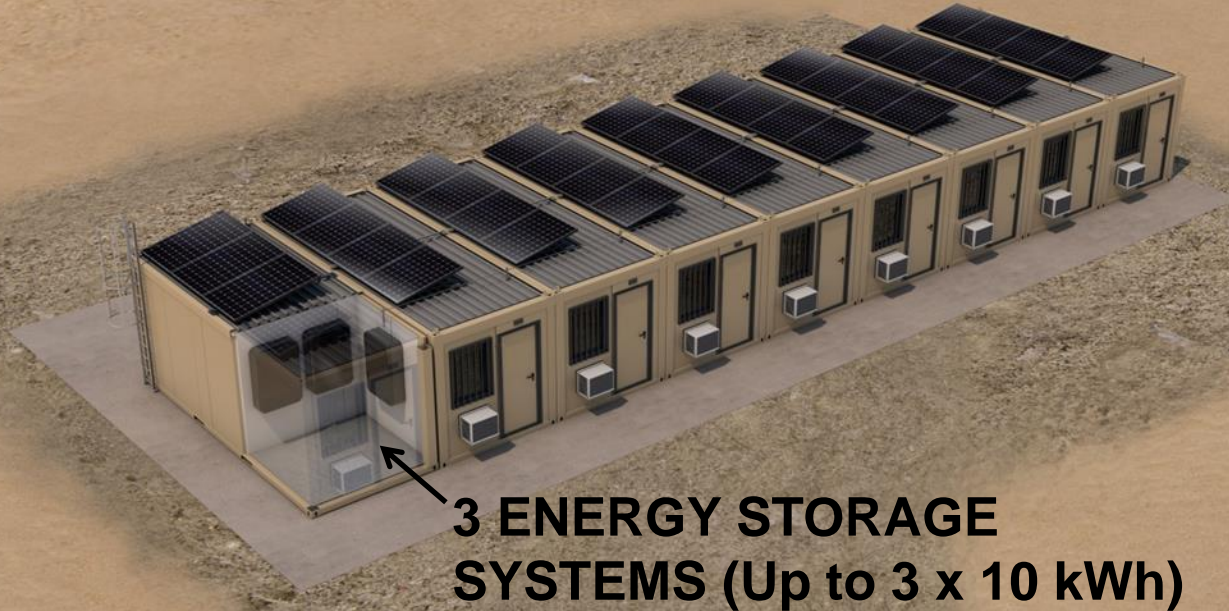


DAY 3

30 HIGH EFFICIENCY PHOTOVOLTAIC MODULES

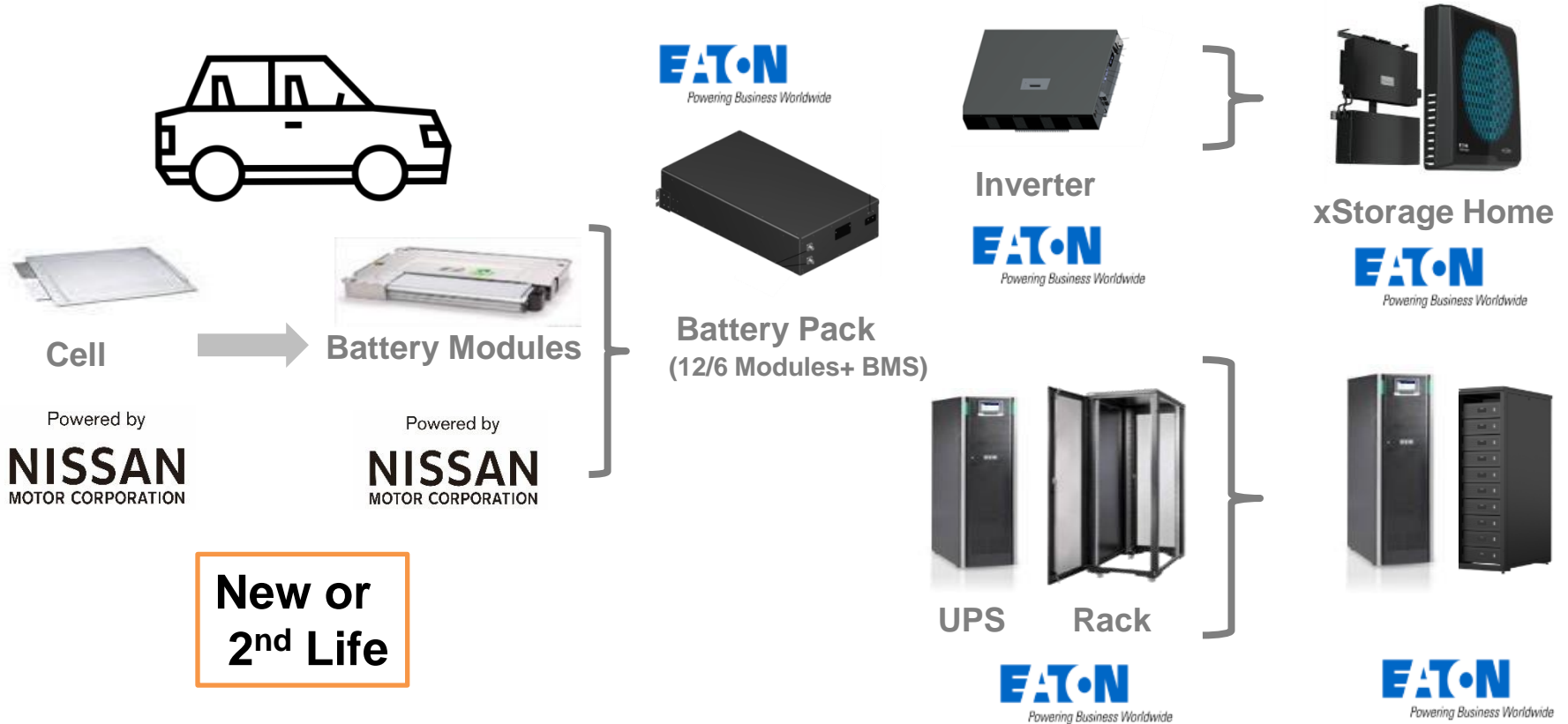
- Nominal power 300WC
- 25 years performance and product warranty
- TÜV Sand&Dust testing for desert conditions certification
- 96% recyclable (PV Cycle) – ROHS EU
- Manufactured in France
- Easy to clean with water / compressed air

...and then the ability to
store the power with **EAT•N**
Powering Business Worldwide



DAY 4

EATON WITH NISSAN TECHNOLOGY

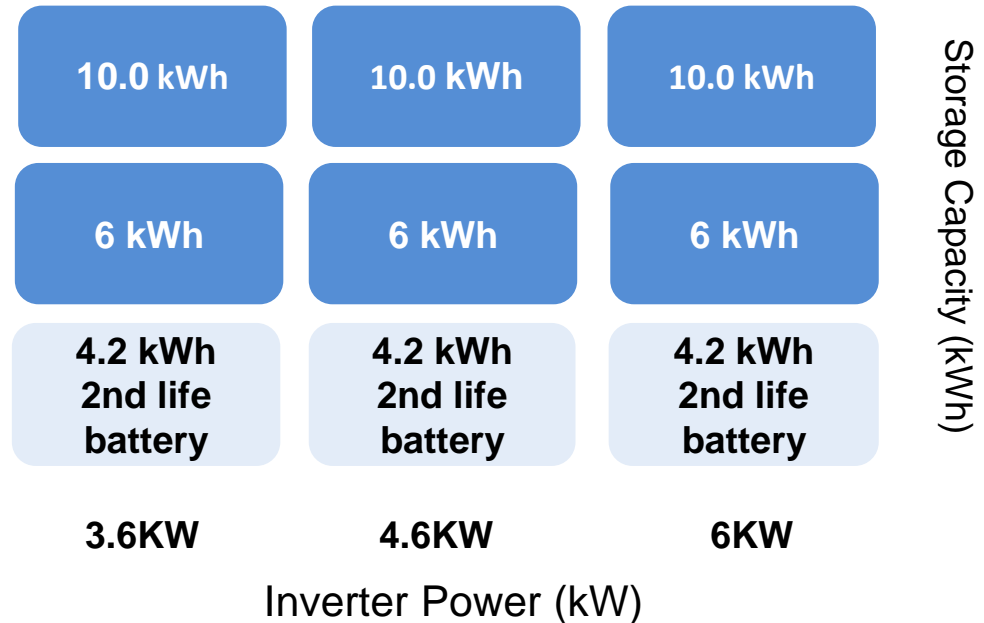


DAY 4

XSTORAGE HOME MODULAR INTEGRATED SOLUTION

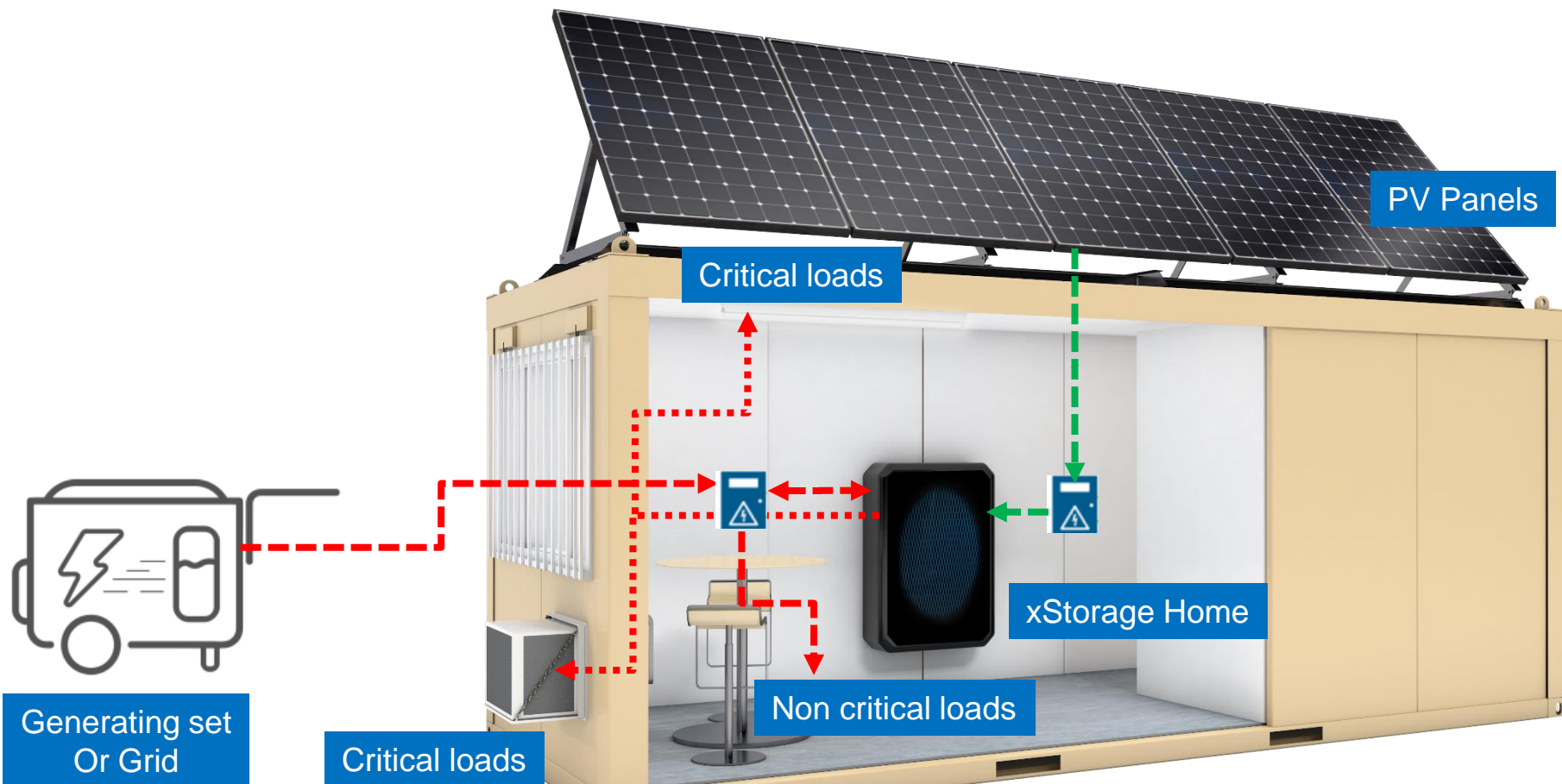


Modular & integrated – combinations of inverter size and batteries



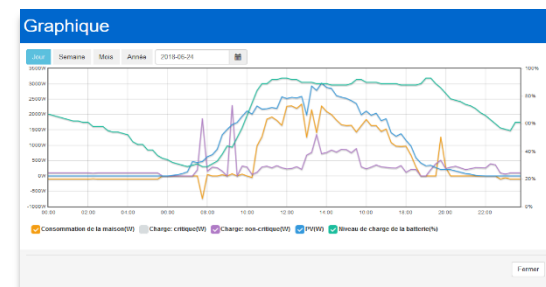
DAY 4

XSTORAGE HYBRID SOLAR SYSTEM PRINCIPAL SYNOPTIC



DAY 4

- DC current
- AC current
- AC back-up



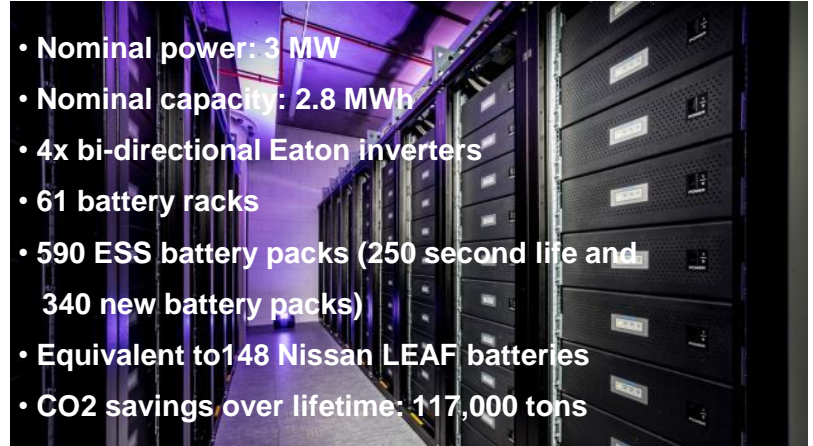
JOHAN CRUIJFF ARENA PROJECT

3MW – 2,8 MWh



Johan Cruijff Arena project



- 
- Nominal power: 3 MW
 - Nominal capacity: 2.8 MWh
 - 4x bi-directional Eaton inverters
 - 61 battery racks
 - 590 ESS battery packs (250 second life and 340 new battery packs)
 - Equivalent to 148 Nissan LEAF batteries
 - CO2 savings over lifetime: 117,000 tons

Eaton's Energy Storage System is designed to

- reduce the use of generators and provide clean and dependable energy on event day.
- support reduced energy costs by minimizing peak demand charges
- improve network stability
- reduce infrastructure costs while providing critical system power requirements

DAY 4

CALCULATED PERFORMANCES

6kW – 7,5 kWh CONFIGURATION

EATON
Powering Business Worldwide

**PRO
CONTAIN**
BÂTIMENTS HORS-SITE



75% fossil fuel savings



85% autonomy
with our combined solar power and storage solution



2 100 hours / year
generators operation only compared to 8 760 hours without

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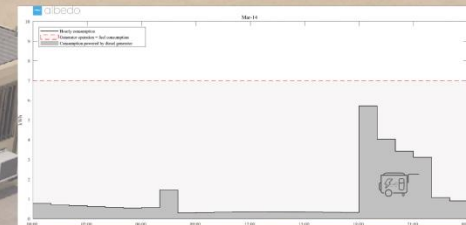
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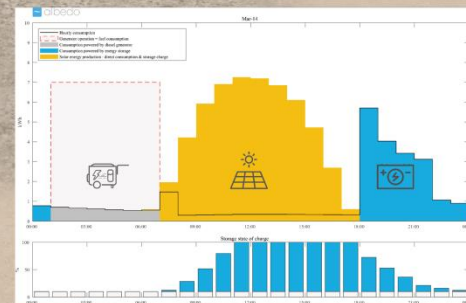
3 ENERGY STORAGE SYSTEMS (Up to 3 x 7,5 kWh)

- EATON xStorage Home - Energy storage solution
- Li-ion battery technology
- 97% maximum efficiency
- Compliant to safety standards IEC 62109 and IEC 62619
- 10 years warranty

UPGRADED FLATPACK DAILY TYPICAL ELECTRIC PROFILE* 27,5 kWh with an evening peak demand



Standard Flatpacks Power supply : 100% diesel generator



Upgraded Flatpacks Power supply : hybrid solar system

- 87% Solar Energy :
 - 18% used direct from panels
 - 69% shifted through energy storage
- 13% Diesel generator

DAY 5

ProContain in a growing partnership with

non contractual picture

UPGRADED FLATPACK

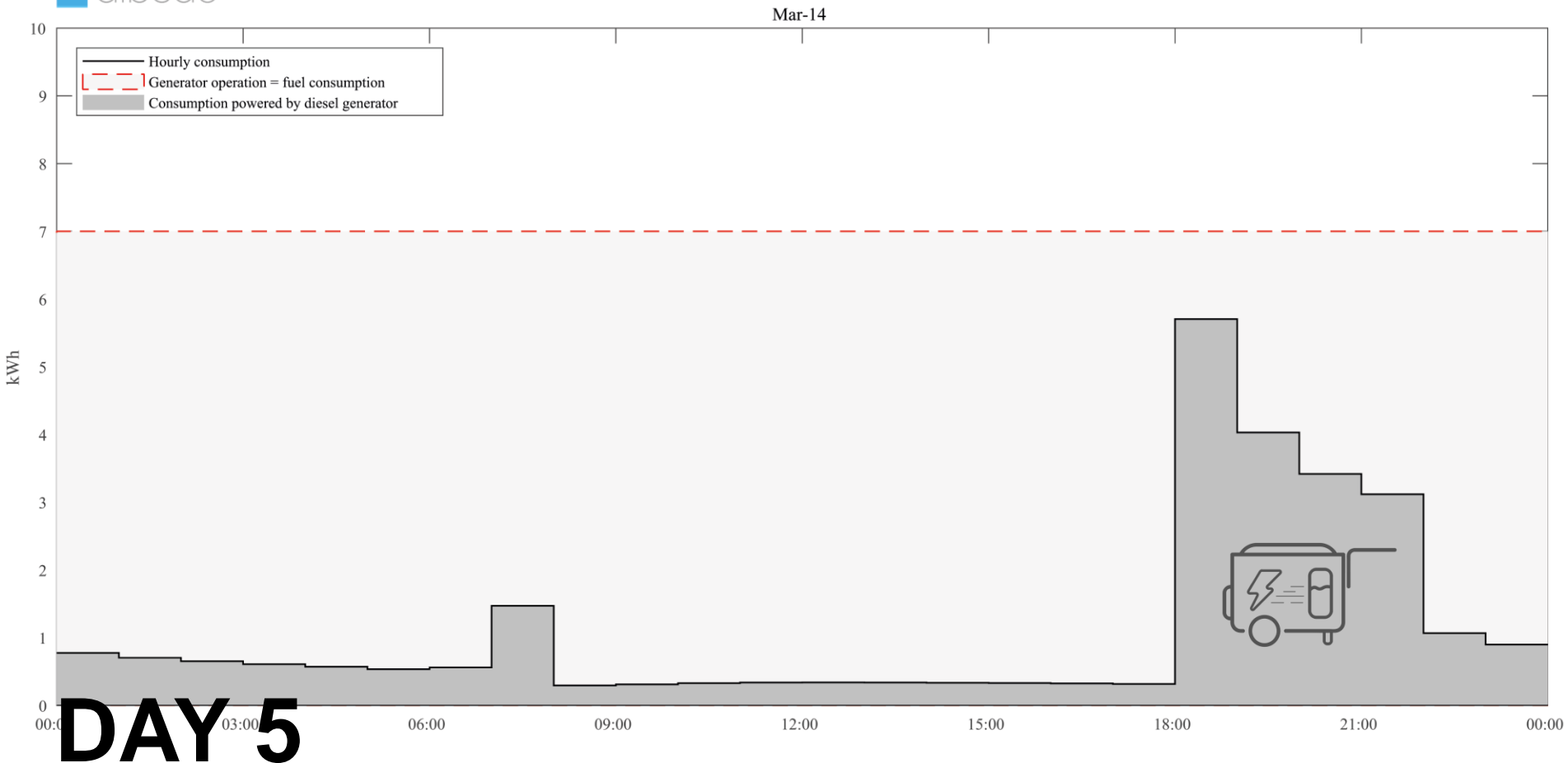
DAILY TYPICAL ELECTRIC PROFILE

27,5 kWh with an evening peak demand in Mali



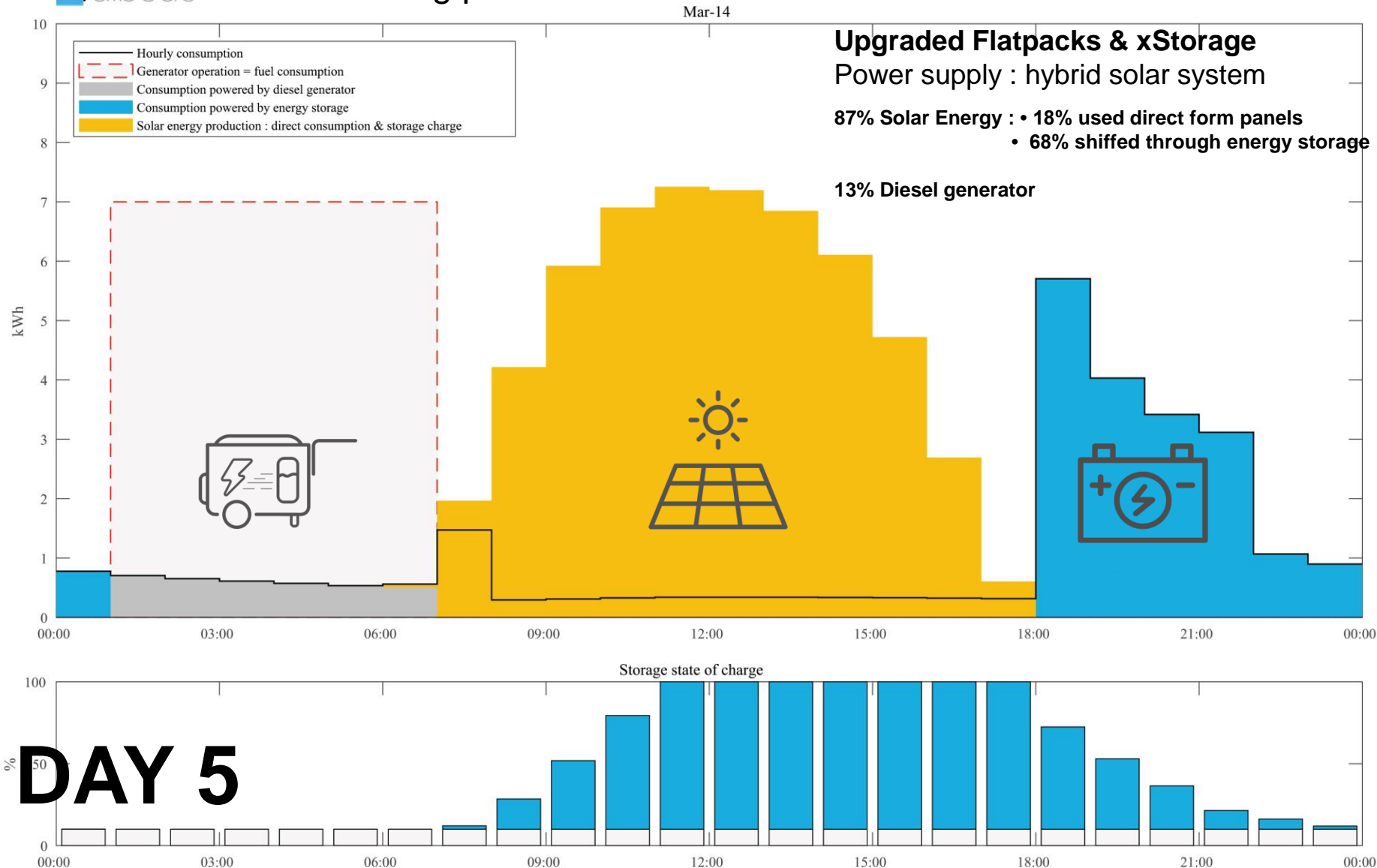
Standard Flatpacks

Power supply : 100% diesel generator



UPGRADED FLATPACK DAILY TYPICAL ELECTRIC PROFILE

27,5 kWh with an evening peak demand in Mali

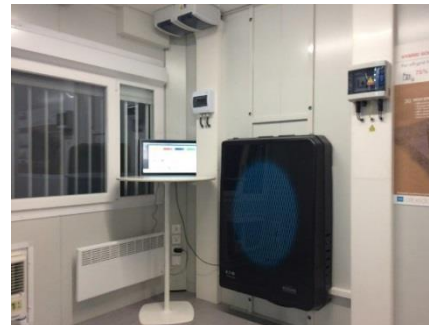


FRENCH ARMY **PROTOTYPE** BORDEAUX / **PRINCIPLE**

Installation configuration

Flatpack modules	3
2 tests	Office / Bed room consumption pattern
PV Panels	Sun Power E20-327
Nb Panels	10
PV Power	3 270 Wp
xStorage Home power	3,6kW
Nominal Capacity	4,2kWh

DAY 6



FRENCH ARMY **PROTOTYPE** BORDEAUX / **RESULTS**



Bed Room consumption pattern

xStorage configuration	3,6 kW/ 4,2kWh
Test period	20 days / July
Power Consumption	391 kWh
PV Production	409 kWh
PV Production coverage	104 %
Autonomy with 4,2kWh capacity -	67 %
Grid injection	39 kWh
Potential Fuel savings	128 L

Office consumption pattern

xStorage configuration	3,6 kW/ 4,2kWh
Test period	24 days / August
Power Consumption	546 kWh
PV Production	424 kWh
PV Production coverage	77 %
Autonomie with 4,2kWh capacity	76 %
Grid consumption	36 kWh
Potential Fuel savings	128 L

First results show reduction of Genset usage
between 67 and 76% with smallest configuration

DAY 6

Test on going with xStorage 6kW / 10kWh capacity

ProContain and **Eaton** did their job

Practice confirmed theory

We need you to experiment further !

DAY 7



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