Fuel cell made simple.
Now shipping, worldwide.





Green Power for Mobile Working Group

Cebu, September 21st-22nd 2010

In brief

- ✓ Founded Jan. 2005, HQ in Torino, factory in Aosta. ElectroPS designs and manufactures innovative fuel cell systems for back-up power applications.
- ✓ **Lead by co-founders, VC-backed, several awards, growing revenues, increasing orders from returning customers, global installation base (Europe, Americas, Asia) and a big market to win.**



Global Cleantech 100

GLOBAL MOBILE AWARDS 2010
EMEA TOURNAMENT
CATEGORY WINNERS

GSMA Associate Member

- ✓ 2009 The Guardian "**Global Cleantech 100**". World Finalist at 2010 GSMA Mobile Innovation Grand Prix and Winner the EMEA leg of in the category "**Most Innovative Product Enabling a Greener World**".

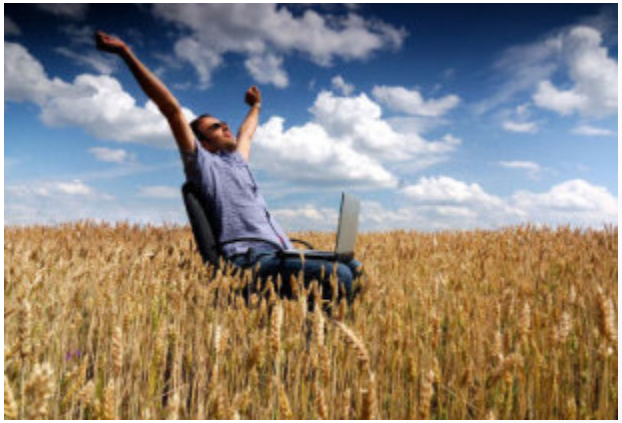
Value proposition

- ✓ ElectroPS products allow end-users to get rid of batteries and gensets thus **eliminating: fuel logistics, heavy maintenance, frequent substitution, fuel price uncertainty**.

From expensive logistic and maintenance



To peace of mind and savings



REFERENCES


中国移动通信
CHINA MOBILE


TELECOM
ITALIA


国家电网公司
STATE GRID
CORPORATION OF CHINA


AIRWAVE


viom
NETWORKS


Digicel
jamaica


vodafone


autostrade per l'italia


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TOTAL


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EGEA
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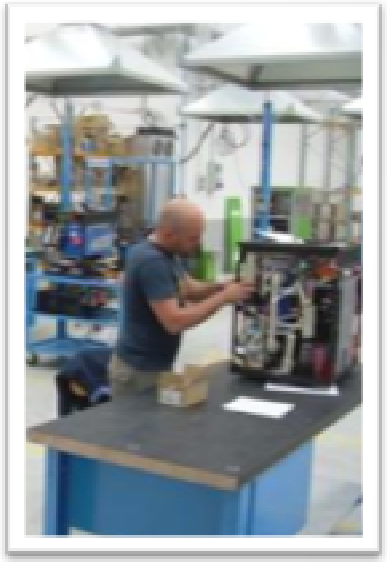

REGIONE
PIEMONTE


HADELAND
Energi


SardegnaRicerche

Our factory in Northern Italy to ship all over the world







Member of CISQ Federation
RINA
ISO 9001 - ISO 14001
Certified Integrated Systems

RoHS compliant 2002/95/EC

The products



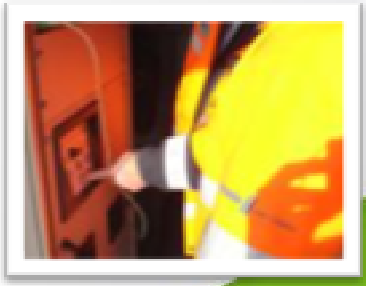
✓ Characteristics:

- Family of power systems: **1,5**; **3**; **6** and **12 kW**.
- **CE**, **CSA** (US), **CTTL** (China) certifications.
- **ElectroSelf**, the first-ever **self-recharging** fuel cell system: **no** need for hydrogen **logistics**, therefore immediate savings.
- Two proprietary technology platforms (**Airtech** and **DOX**) to fulfill different needs both with guaranteed operative stack lifetime of **10,000 hours**.



✓ Advantages we have:

- a family of products,
- a self-recharging fuel cell system,
- a high degree of product scalability and flexibility,
- flexibility of installation both indoor and outdoor,
- safety standards (H^2 re-circulation),
- our HMI (over 30 parameters).



Product family

- ✓ **Fuel cell systems for backup power**. The optimal solution for applications with **long non frequent blackouts** when fuel logistic is not an issue. **Four** power sizes:
  - 1,5 kW (Electro1,5)
  - 3 kW (Electro3)
  - 6 kW (Electro6)
  - 12 kW (Electro12)

- ✓ **Self-recharging fuel cell systems**. The optimal solution for **frequent blackouts** or for **off-grid applications integrated with renewables**. **Four** power sizes:
  - 1,5 kW (ElectroSelf1,5)
  - 3 kW (ElectroSelf3)
  - 6 kW (ElectroSelf6)
  - 12 kW (ElectroSelf12)

- ✓ With each product we also provide **gas storage solutions**.

- ✓ **Same footprint for each power size** thanks to our Core Module Technology.







Wide scale deployment Telecom operator

Italy

Wide scale 100+ units deployment completed in 2009.

100 more units are being installed in 2010.







Strictly c

Installation China

Henan

ElectroPS demonstrates its capability to operate under stressing blackout conditions: 85 blackouts for more than 4800min total running time over three months (1 single blackout 43hours)











Strictly confidential

Installation Power Utility China

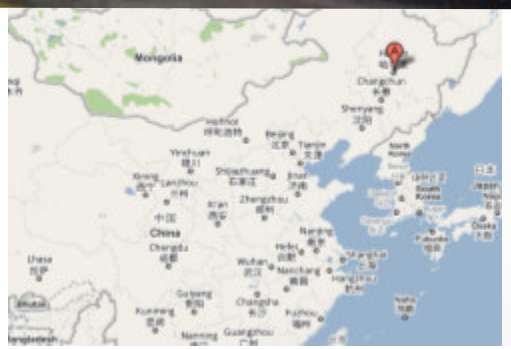
Harbin, Heijlongjang

ElectroPS demonstrates its capability to substitute huge footprint 220Vdc battery banks in a voltage switching station.







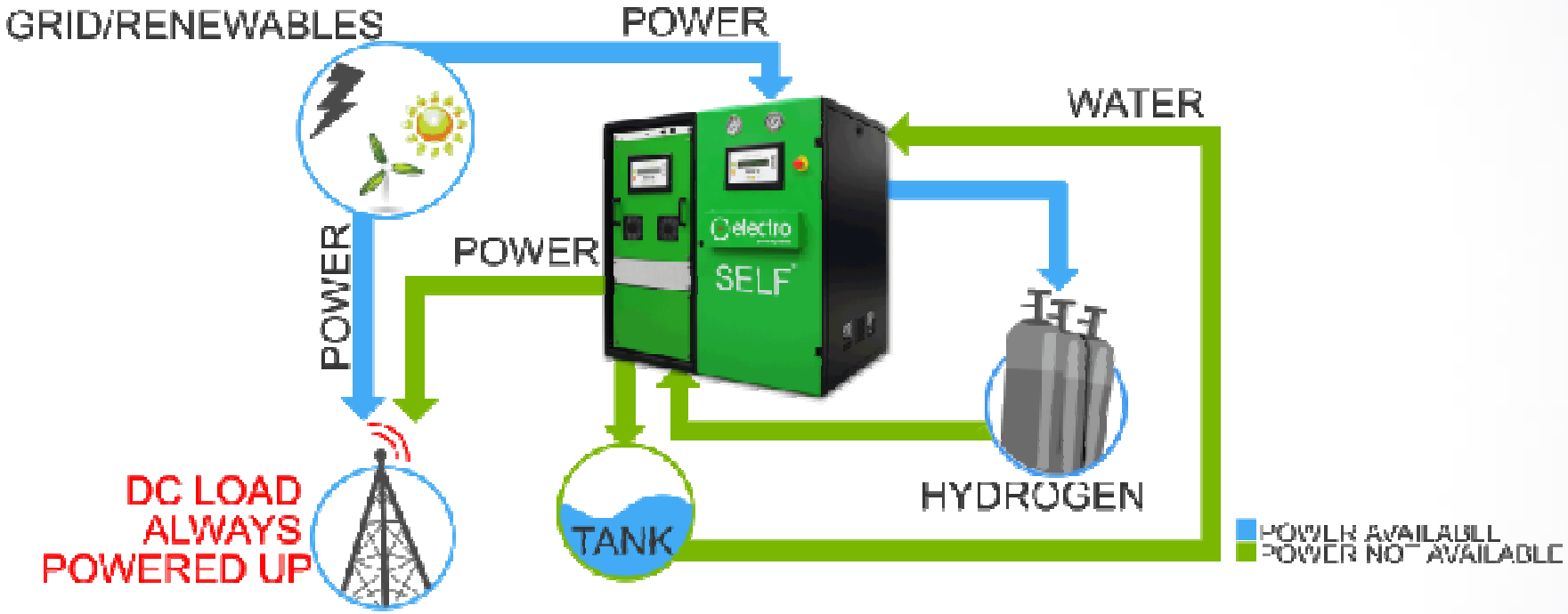


INTRODUCING ELECTROSELF™

- ✓ It's the world's first entirely self-recharging hydrogen fuel cell.
- ✓ It changes the economics of backup power making fuel cell **adoptable everywhere**.
- ✓ It enables greener networks in developing markets.
- ✓ Designed to optimize and extend both renewable and grid power.
- ✓ Field trials in **EU**, **Asia** and **Americas**.
- ✓ CE certified.
- ✓ **Product evolution: next generation of self-recharging fuel cell will dramatically reduce the time for cylinder refilling.**



HOW DOES IT WORK?



- ✓ ElectroSelf™ is a closed system which is completely self-recharging.
- ✓ It engages automatically whenever external power fails.
- ✓ Whenever power is available it automatically generates its own hydrogen (and oxygen) from water.

ELECTROSELF™ INDOOR Italy







ELECTROSELF™ OUTDOOR Installed in a Jamaican raw land site

- ✓ It's the world's first entirely self-recharging hydrogen outdoor fuel cell.



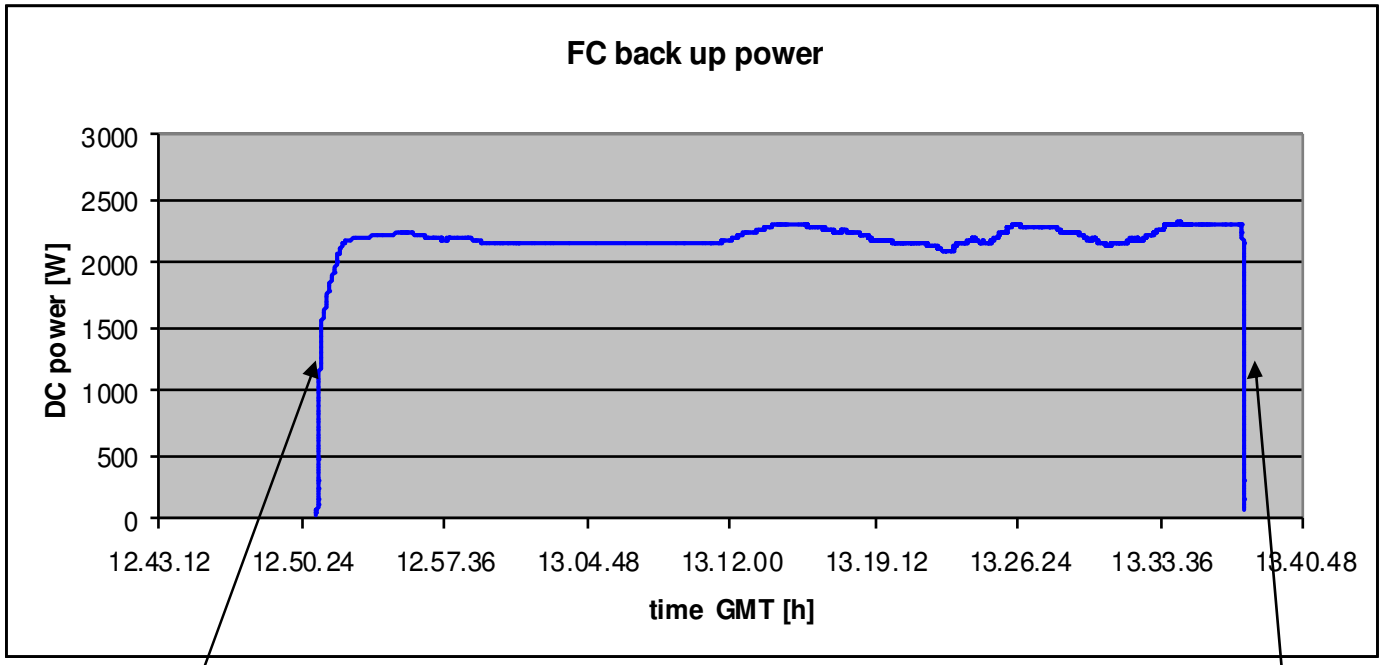






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Fuel cell supplies the load

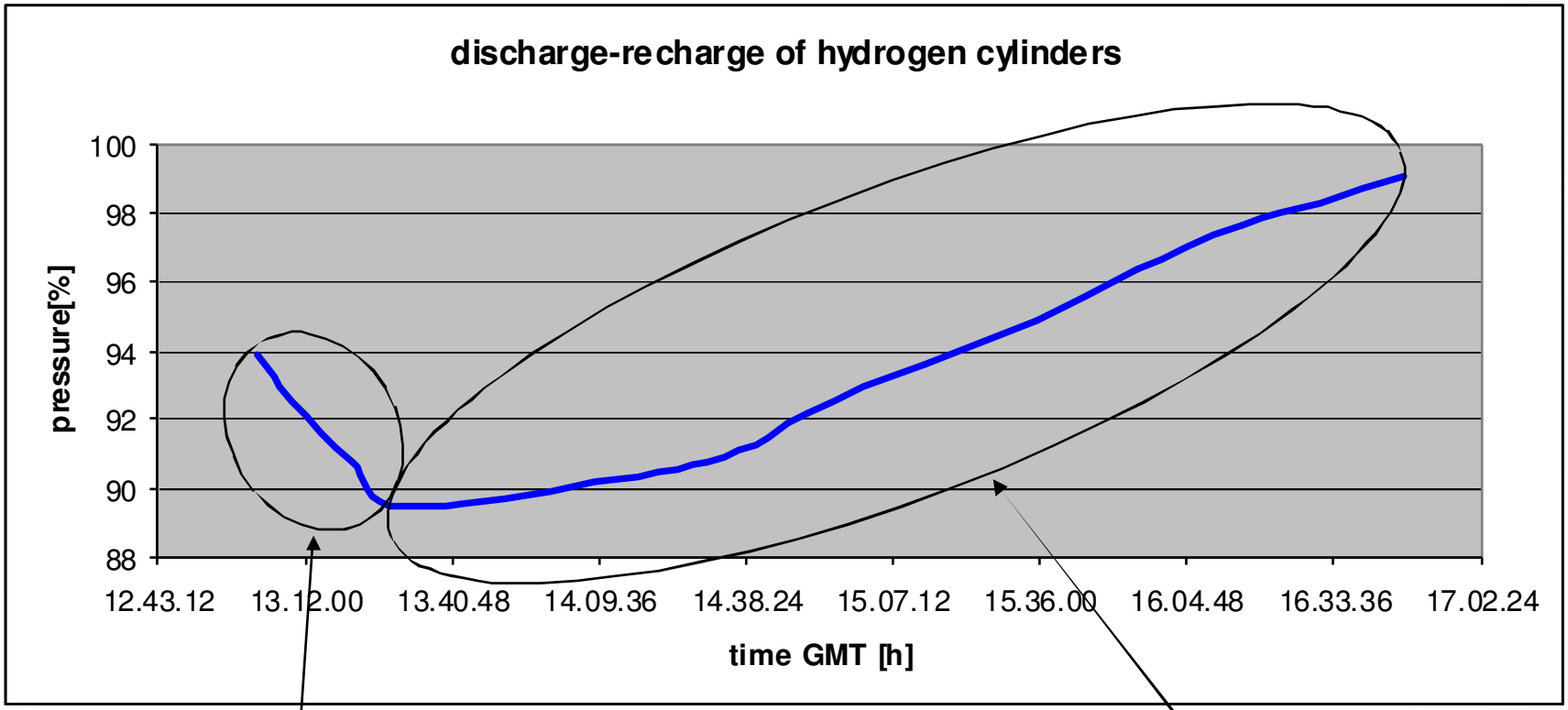


Grid off

The fuel cell system follows the load when power outage occurs

Grid on

Hydrogen consumption and generation



Pressure decreases during outage

Pressure increases after grid is back on

ELECTROSELF™ OUTDOOR installed on Indian rooftops

- ✓ It's the world's first entirely self-recharging hydrogen outdoor fuel cell.









Strictly confidential

Technological features (1)

- ✓ Advanced proprietary liquid-cooled stacks. ***Benefits:***
  - **Less footprint, less costs,** less ventilation required (thus **indoor installations** always possible).
  - Less subsystems to control and lower risk of failure than paralleled systems (i.e. **higher reliability**).
  - The **greatest** power output **scalability** (the bigger the power output, the lower the €/kW ratio).
- ✓ Hydrogen re-circulation and shut off valves. ***Benefits:***
  - **Higher flexibility and easier installation** (the safety area is in the orders of cm, not meters).
  - **Increased safety** (no hydrogen discharge in the air).
  - **Higher efficiency** (less hydrogen consumption).
- ✓ Highest power density and multiple voltage output. ***Benefits:***
  - You **need less footprint (i.e. less costs and more flexibility) to install the power needed**.

Technological features (2)

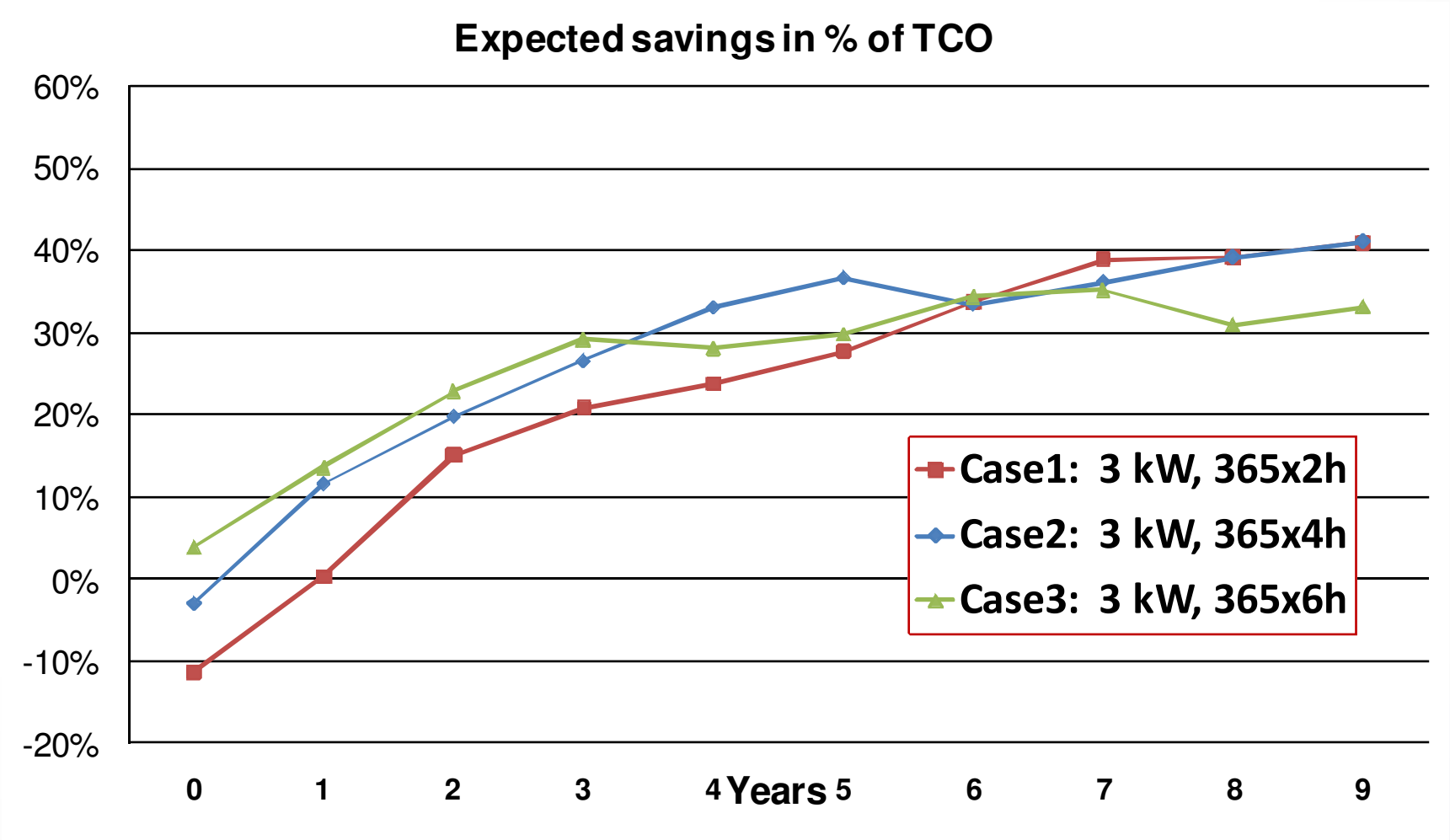
- ✓ An on board control panel with 30 parameters that can be set on-site without a dedicated PC. ***Benefits:***
  - **Flexibility**
  - **Easier installation**
  - **User friendly**
- ✓ Patented start and stop procedure. ***Benefits:***
  - **No hydration issues** (no need for periodic startup maintenance).
  - **Higher stack lifetime** and **reliability**
  - **Unlimited** number of **start-and-stop cycles**.
- ✓ DOX platform. (leveraging direct oxygen injection). ***Benefits:***
  - **doubled stack power density**, reduced BOP, **simpler and cheaper products**. The system can **work at any air quality condition**.

THE MAGIC WORD: **SAVINGS** !

- ✓ **No** need for fuel: **only water.** Energy source is **power grid** (whose price is historically less volatile than diesel) or **renewables**.
- ✓ **Longer lifetime, less replacements**
- ✓ **Remote monitoring 24/7** via TCP/IP, SMS or customized protocols. No need for on-site visits.
- ✓ **No** or **lower air conditioning** requires less energy.
- ✓ **Save** on **square meters** thanks to **reduced footprint.**



Typical TCO


Expected savings in % of TCO
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
0
1
2
3
4
Years
5
6
7
8
9
Case1: 3 kW, 365x2h
Case2: 3 kW, 365x4h
Case3: 3 kW, 365x6h

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