

# Delivering cost savings for off-grid hybrid telecom power systems

Evolion® batteries



Saft's deep cycling Li-ion batteries are the smart way for mobile network operators to dramatically reduce the fuel and operating costs of their off-grid hybrid power systems.



**SAFT**

# Reliable power for vital communication lifelines

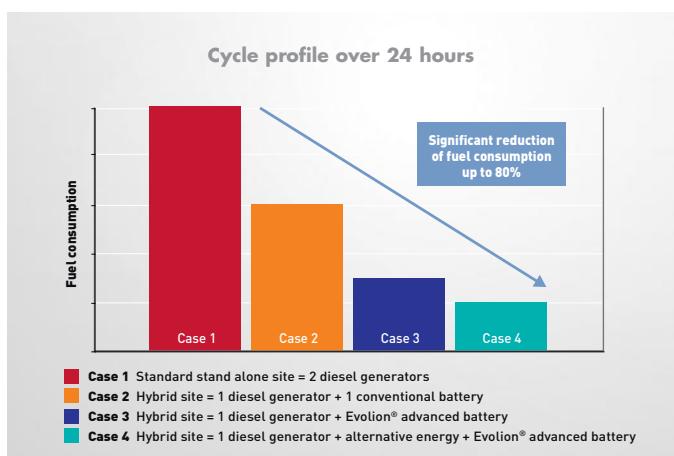


## Mobile networks expand into the off-grid world

Mobile network operators are now deploying their Base Transceiver Stations (BTS) in increasingly remote rural areas, such as the Sub-Saharan regions or South Asia. Since the local grid is frequently intermittent and often non-existent, leading mobile network operators are

now turning to hybrid systems, in which an advanced high performance battery acts as the primary power source, with the recharging current provided by intermittent grid or a single diesel generator along with solar panels or wind turbines. This reduces the generator runtime to only a few hours a day.

## Hybrid power – combining total service continuity with optimized running costs



Hybrid systems based on a dedicated deep cycling battery offer a number of key advantages:

- ensures continuous energy-efficient operation for off-grid BTSs
- dramatically reduces diesel generator runtime for fuel savings
- reduces CO<sub>2</sub> emissions
- increases refueling and service intervals
- cuts maintenance requirements by an average 65%
- provides a quieter and cleaner operating site
- reduces operating costs (OPEX)



# Battery and generator working in hybrid harmony



## The battery supports the load – the generator provides the charge

A hybrid telecom system partners a cycling battery with a single diesel generator. The battery provides the main electricity supply to support the BTS load when there is no power available from other sources. The diesel generator now only has to charge the battery. Instead of running 24/7, the generator runs for just a few hours a day, hence the major reduction in fuel consumption.

Saft's Evolion® deep cycling battery provides significant performance and reliability advantages, allowing a single

diesel to still ensure total continuity of service. The embedded battery management system ensures the communication between the battery and the controller for optimized energy efficiency of the site.

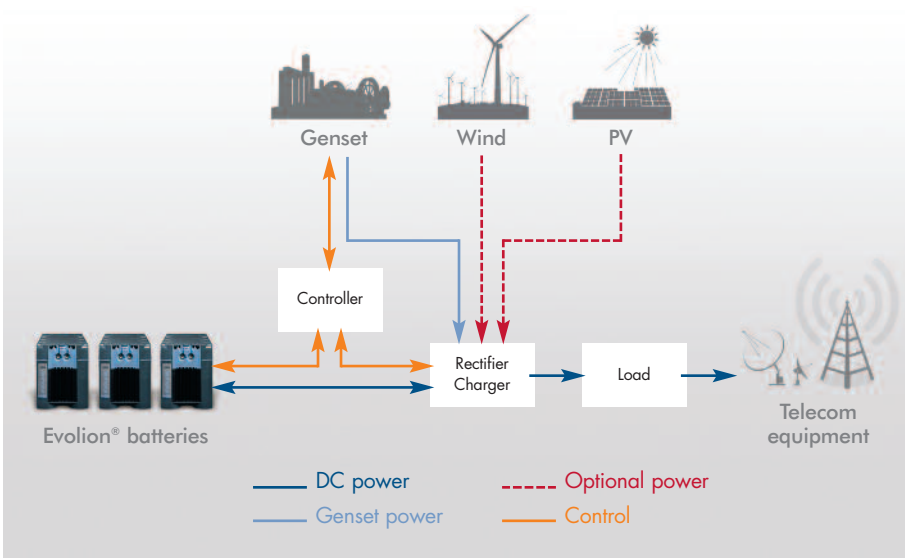
The addition of solar panels or possibly a wind turbine to the hybrid system increases the battery cycling time. This extends the calendar life of both the battery and the generator while further increasing the overall environmental benefits.

“Li-ion technology for the perfect deep cycling battery”

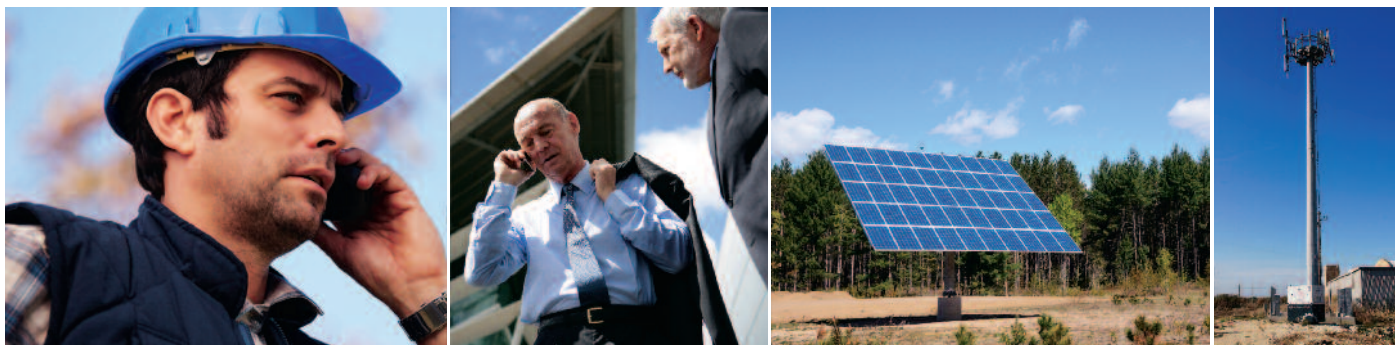
Selecting the right battery is the critical factor in the overall performance of the hybrid system. This includes choosing not only the optimum chemistry, but also the dimensioning and integration of the battery package. Typical factors that need to be considered include: reliability, operating temperature, energy storage density, energy efficiency, fast charging characteristics, smart management capabilities, battery life-cycle and the capability to support frequent deep cycling.

Evolion® is Saft's advanced telecoms battery that offers all the proven advantages of Li-ion technology in a compact, cost-effective maintenance-free module that is perfectly adapted for hybrid power installations.

## Off-grid hybrid telecom power system operation



# Evolion<sup>®</sup> – the power at the heart of hybrid telecom systems



Saft has developed the Evolion<sup>®</sup> battery module to meet the key requirements for off-grid hybrid telecom power systems:

- smart battery management with built-in monitoring and communication
- fast efficient charging
- deep cycling capability: 4300 cycles at 80% DOD (depth of discharge) and 8200 cycles at 50% DOD at + 20°C
- safe and reliable maintenance-free operation with sealed for life design
- fully compatible with existing telecom equipment
- easy and fast installation in 19" and 23" equipment racks and in remote cabinet compartments
- compact and lightweight: 15% to 50% smaller and 4 to 10 times lighter than conventional batteries
- reliable operation over a wide temperature range of - 40°C to + 75°C – with no need for external cooling or heating



► To obtain the complete Evolion<sup>®</sup> brochure, please go to [www.saftbatteries.com](http://www.saftbatteries.com)



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