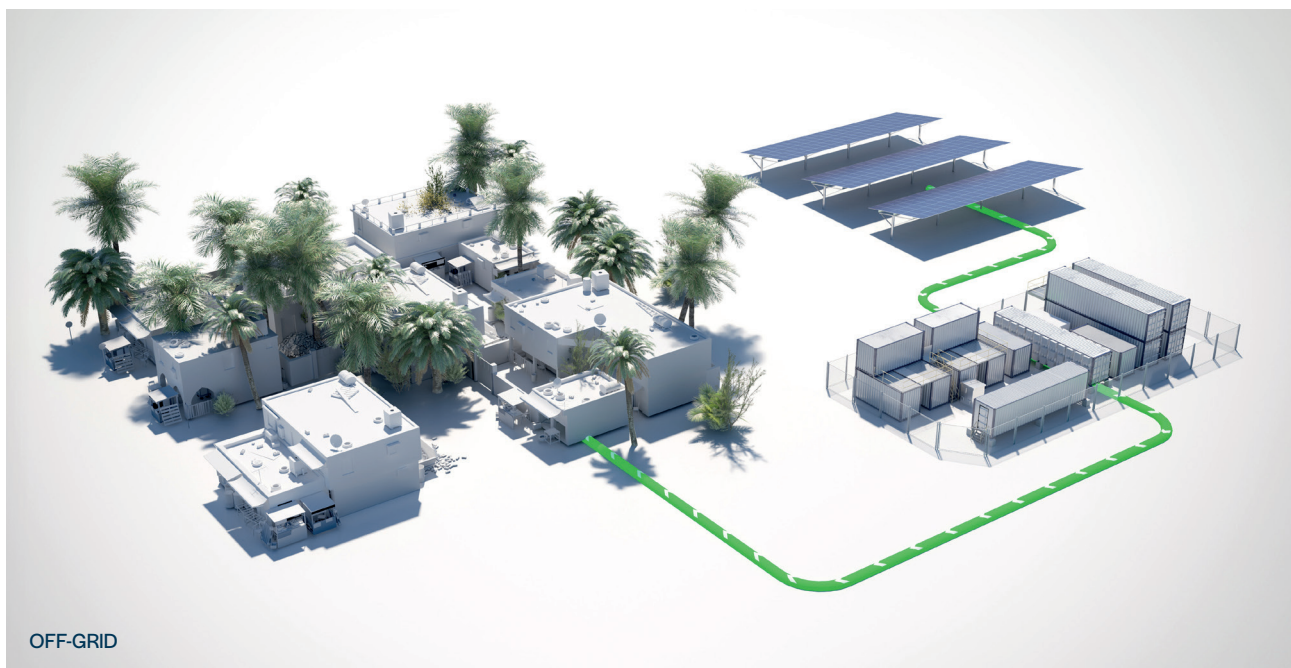


# Battery Energy Storage



# Battery Energy Storage

## Applications

### On-grid

- Ramp control & Power Smoothing
- Time Shift
- Frequency & Voltage Regulation

### Off-grid

- Energy Storage guarantees electricity supply & autonomy
- Time Shift
- Ramp control
- Power Smoothing
- Frequency & Voltage Regulation

The 21<sup>st</sup> century is an energy transition world where energy storage is a game-changer, allowing:

- the integration of a growing number of intermittent renewable energies
- the supply of green electricity on demand
- the grid security
- increased autonomy
- bill reduction
- full independence of power supply in non-connected areas

John Cockerill Energy Storage acts as an EPC integrator and an energy storage solution provider according to each customer's specific needs and best technical-economic features. John Cockerill Energy addresses to a wide range of clients, such as renewable power producers, distribution service operators (DSO), transmission service operators (TSO) (grid support) and Commercial and Industry clients (on/off-grid).

Based on its 200 years of worldwide experience in power generation, John Cockerill provides optimized solutions with hybridization of various technologies if necessary. John Cockerill Energy can propose various kinds of batteries, whether flow, sodium sulfur or Lithium-ion batteries controlled through an enhanced and evolutive Energy Management System (EMS). Moreover, John Cockerill can propose innovative financing solutions to support your ambitious projects all over the world.

John Cockerill Energy offers a range of services including energy efficiency audits to identify and implement the best solutions for your energy use, as well as decreasing of carbon footprint, and efficient energy bill reduction.

John Cockerill Energy Storage has built Europe's largest industrial pilot plant of batteries hybridization at its headquarters in Seraing (Belgium). It consists of 2MWp photovoltaics coupled with 2 types of flow batteries and one type of Lithium-ion batteries and a provision of one sodium sulfur battery for a total of 5.4 MWh of energy storage.

