ORANGE, BACK UP BATTERIES MONETIZATION
Commercial, Demand Response

Orange uses Flexcity's platform to monetize its backup batteries: create value on French Demand Response (DR) services from connected devices and operating them with Flexcity's smart algorithms.

| The context

Orange is one of the largest operators of mobile and internet services in Europe and Africa. To operate their network for fixed telephone and broadband internet they have thousands of sites across the territory. The operation of these sites is critical and must support delivery of a 24/7 telecommunication service.

Continuous operation is guaranteed during power outages, thanks to backup batteries installed at each site. The batteries store sufficient energy to keep the site operational for an extended period without external power supply. To be aware that the backup will not be down in case of an incident on the grid, Orange monitors the state of charge of the batteries on more than 8,000 sites via their in-house monitoring platform.

| Veolia's solution

Orange chose Flexcity and its platform, to connect, manage, control the fleet of batteries. This storage capacity is monetized on the most adequate **Demand Response services** of RTE (the French Transmission System Operator of the grid) while ensuring the security of power supply of these sites.

Flexcity's Platform makes use of a high performing algorithm to control a distributed group of assets, As such, Orange delivers the required amount of energy to the grid operator, while respecting each individual technical limits and availability.
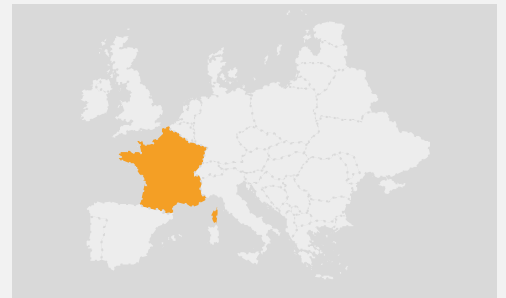
France, multi sites

Contract Facts:
Active since 2017
Type: Demand Response
(Reserves & Capacity)

Approx. **8 000 batteries**
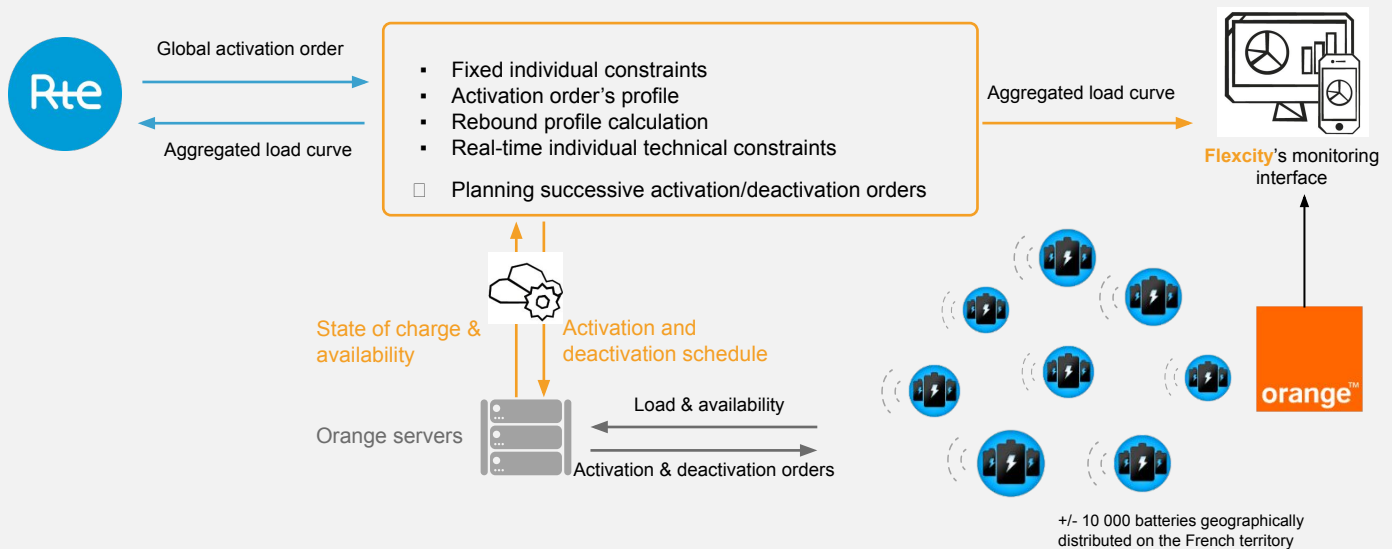
Technology Innovation Award
Paris Smart Energy Expo 2017

orange™

FLEXCITY
by Veolia

Controlling distributed flexibility, generating gains

To pilot more than 8 000 batteries of Orange, Flexcity brings additional remote control functions to Orange's monitoring systems by connecting it to Flexcity's Platform. This connection allows Flexcity's Platform to receive real-time availability and state of charge of batteries. It activates and deactivates groups of batteries to successfully deliver grid support during a Demand Response activation by RTE, the french power grid transmission operator. Flexcity has transformed a passive monitoring interface into an active platform delivering energy services.

Via this project it was the first time in France that a DC metering system of distributed sites was validated for load measurement by the grid operator. This has leveraged the potential of the batteries with a near-zero investment in metering & control equipment from Orange.

Global activation order

- Fixed individual constraints
- Activation order's profile
- Rebound profile calculation
- Real-time individual technical constraints

☐ Planning successive activation/deactivation orders

Aggregated load curve

Aggregated load curve

Flexcity's monitoring interface

State of charge & availability

Activation and deactivation schedule

Orange servers

Load & availability

Activation & deactivation orders

+/- 10 000 batteries geographically distributed on the French territory

| The benefits

Flexcity's solution for large-scale Automated Demand Response with small flexible units offers multiple benefits to Orange:

- Creating additional revenues with back-up capacities
- Monitoring and active remote control of its fleet of batteries
- Contributing to security of supply and CO_2 emission reduction with "green" curtailments.

Flexcity interacts with Orange's technical manager to gain insight regarding critical operational limits. Also the behavior of the batteries and the rebound effect of the sites is correctly modelled. Thanks to the meters and monitoring system of the sites, Flexcity's solution offers a very low CAPEX for software development. Flexcity also interacts with the grid operator on required changes in market regulation. Energy market expertise combined with high-performance technology has resulted in an immediate profit by monetizing more than 20 MW on grid services.

▶ *https://www.flexcity.energy/en*

"We are very proud of this smart grid world premiere that contributes to the French electricity grid's stability while creating immediate and substantial ROI".

***Hervé Mallet**, Energy Director, Technical & IS Department, Orange France*

PLANET

Flexcity brings intelligence into the energy system to drive the energy transition.

WOMEN & MEN

A team ensures 24/7 operation of the Flexcity platform.