

Enedis, Distribution System Operator (DSO) heading towards the future

ENEDIS, the main DSO in France : key figures (2017)



38 703

EMPLOYEES

ANNUAL TURNOVER

14 083

MILLION EUROS

36

MILLION
CUSTOMERS



11,4

MILLION ON-SITE
INTERVENTIONS

364 000 NEW
CLIENTS CONNECTED TO
THE NETWORK

376,2 TWh

OF ELECTRICITY TRANSMITTED
ON THE DISTRIBUTION
NETWORK

1 357 779 km OF POWER LINES (MEDIUM AND LOW VOLTAGE)

16 087

NEW FACILITIES THAT ALLOW FOR THE
TRANSMISSION OF RENEWABLE ENERGIES

3 769 MILLION EUROS OF
INVESTMENT

Enedis, the essential grid of the French electricity system

GENERATION

Activity open to competition

Various energy sources, including nuclear, fossil fuels, and renewables such as water, wind and solar power.

TRANSMISSION

RTE

Nationally on lines rated 400,000 V and regionally on lines rated 225,000, 90,000 and 63,000 V.

DISTRIBUTION

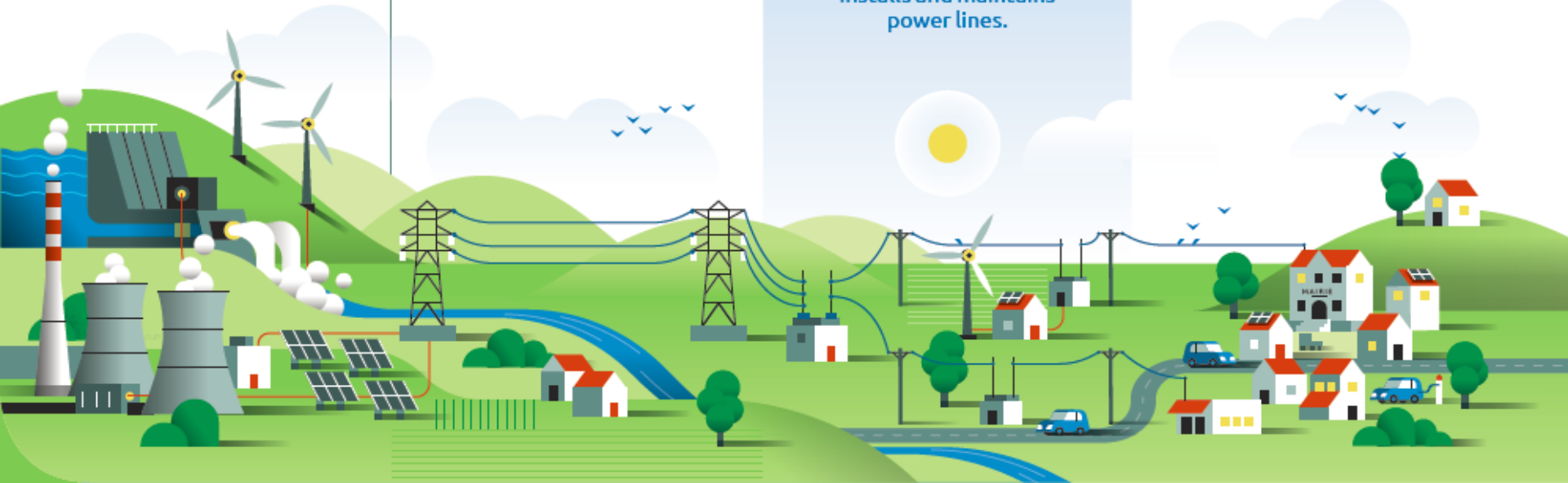
Enedis

Electricity is distributed at two different voltages, medium (20,000 V) and low (230 to 400 V). Enedis operates, installs and maintains power lines.

ELECTRICITY SUPPLY

Activity open to competition

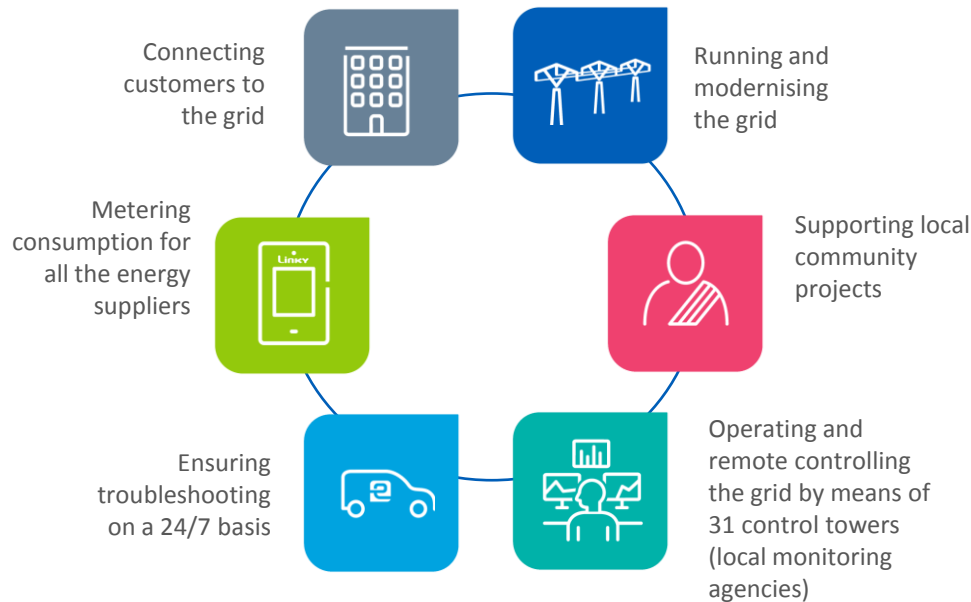
Fully open to competition since July 1, 2007



Our public utility missions

Electricity distribution in France

- The public electricity distribution grid belongs to the local communities
- They entrust their maintenance and development to Enedis
- Enedis is the main manager of the French distribution grid, covering 95% of the country



FIRE, our fast task force

To cope with the natural hazards, FIRE can quickly mobilize at any time **2,000 men** and considerable technical facilities, thanks to its **11 logistic platforms (Serval)**, to work all over the country and reestablish electric power connections as quickly as possible.

The distribution grid: a “central nervous system” for the energy transition

Growing frequency and magnitude of unpredictable weather conditions

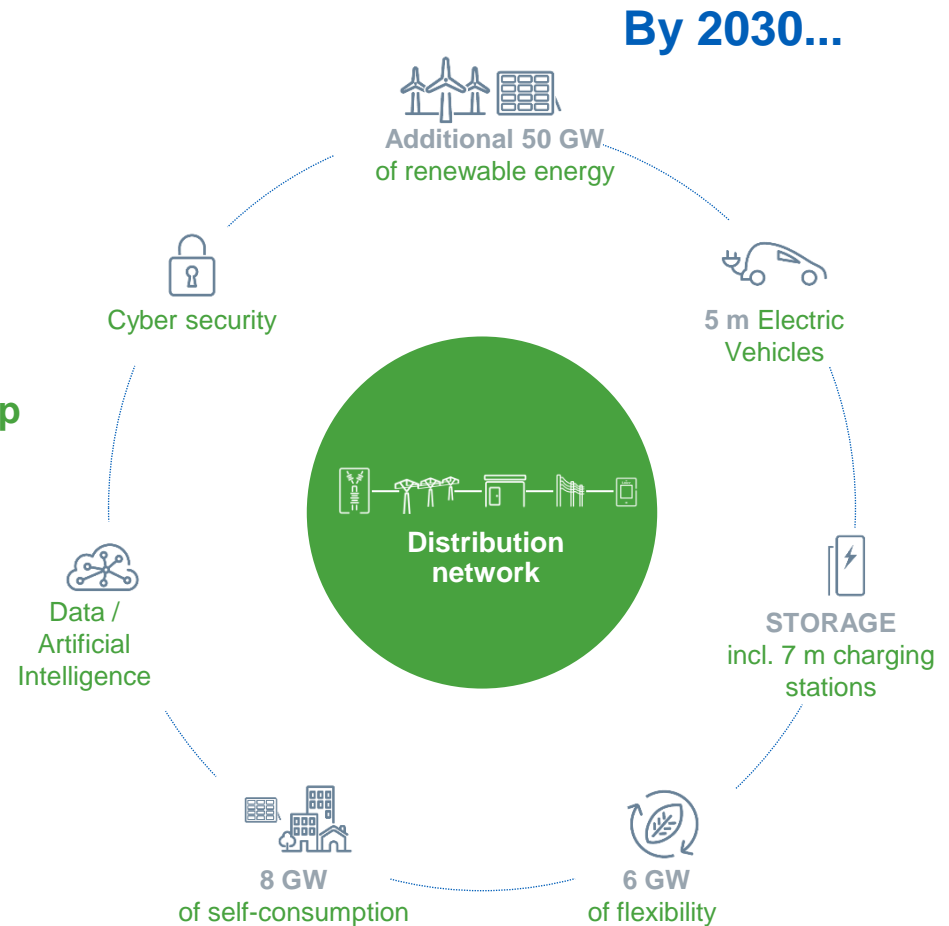
Rising development of renewable energy sources.

New uses to be integrated into the grid : EV, storage, etc.

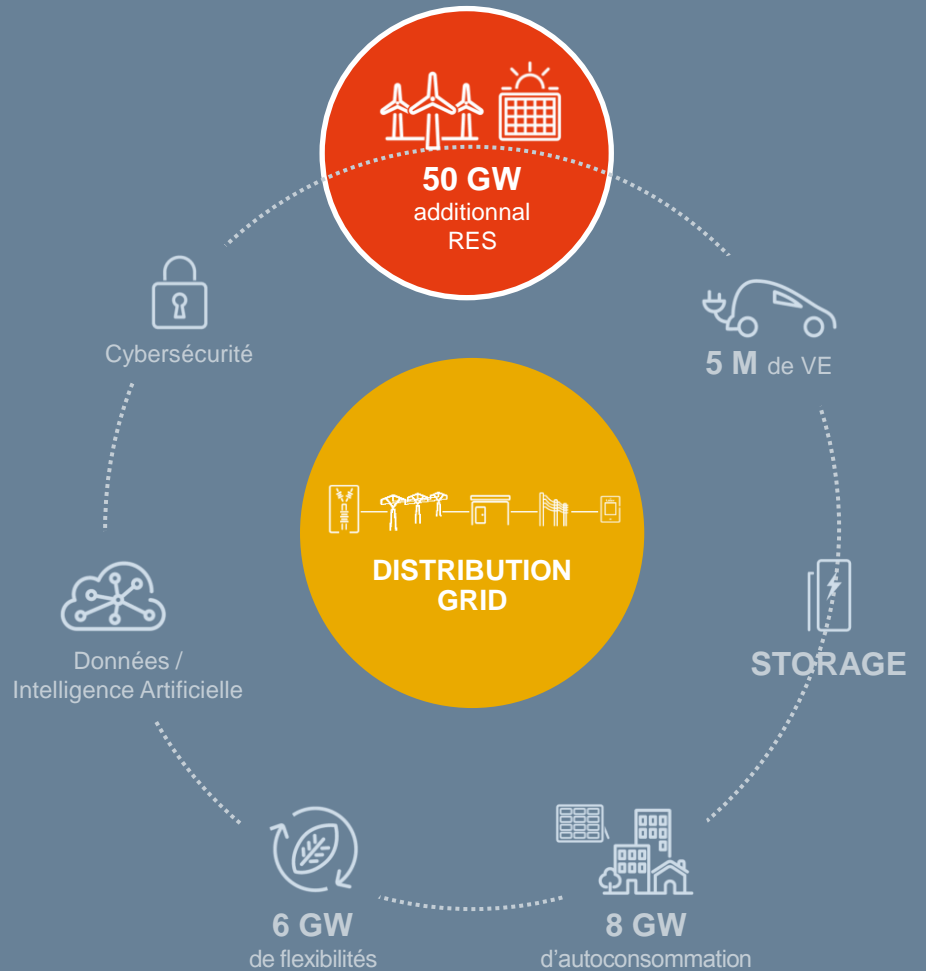
“Local electricity communities” trend picking up pace: self-consumption, blockchain, etc.

Local authorities expecting new energy services to boost regional development.

Massive digitalisation of our lives



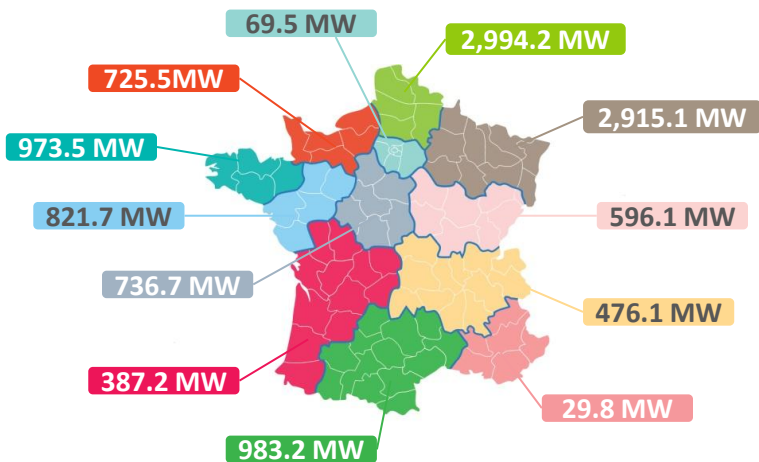
Growing intermittency of power generation



Support new renewable energy developments (NRE)



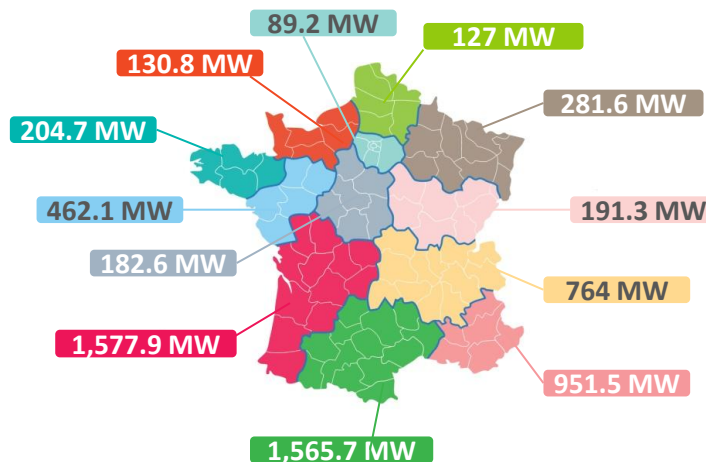
Installed windfarm



1,511 connected installations
11,708.60 MW*



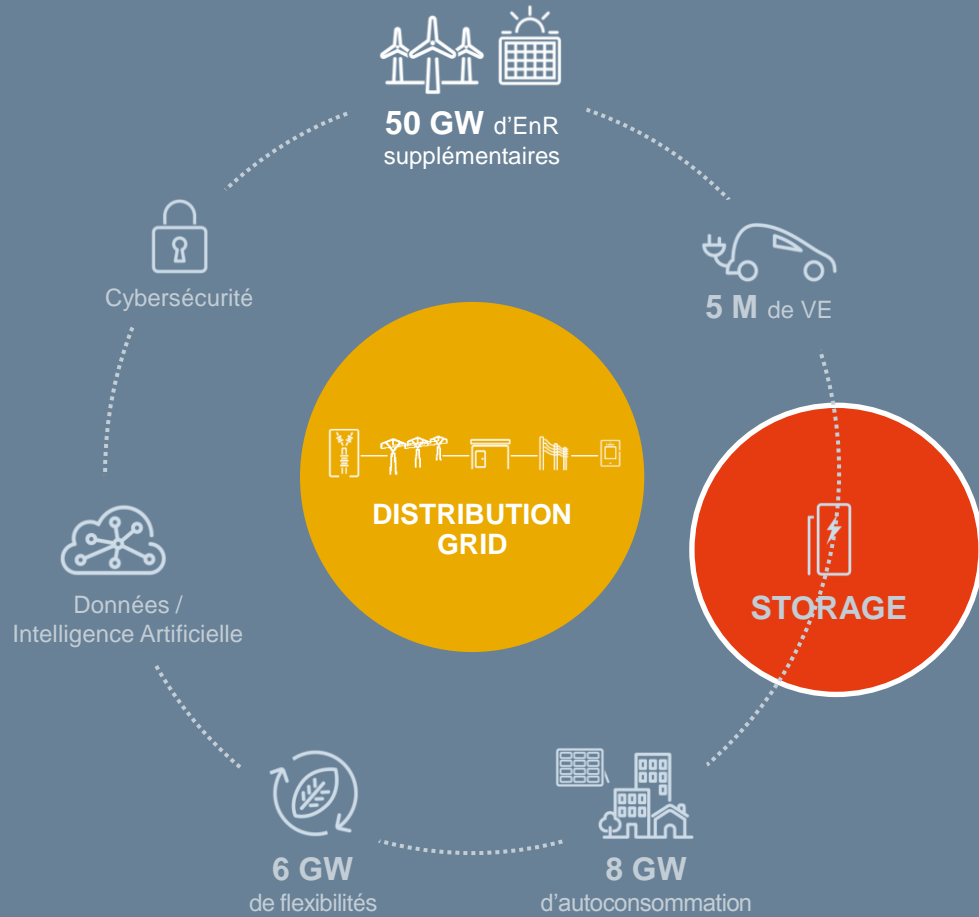
Installed photovoltaic inventory



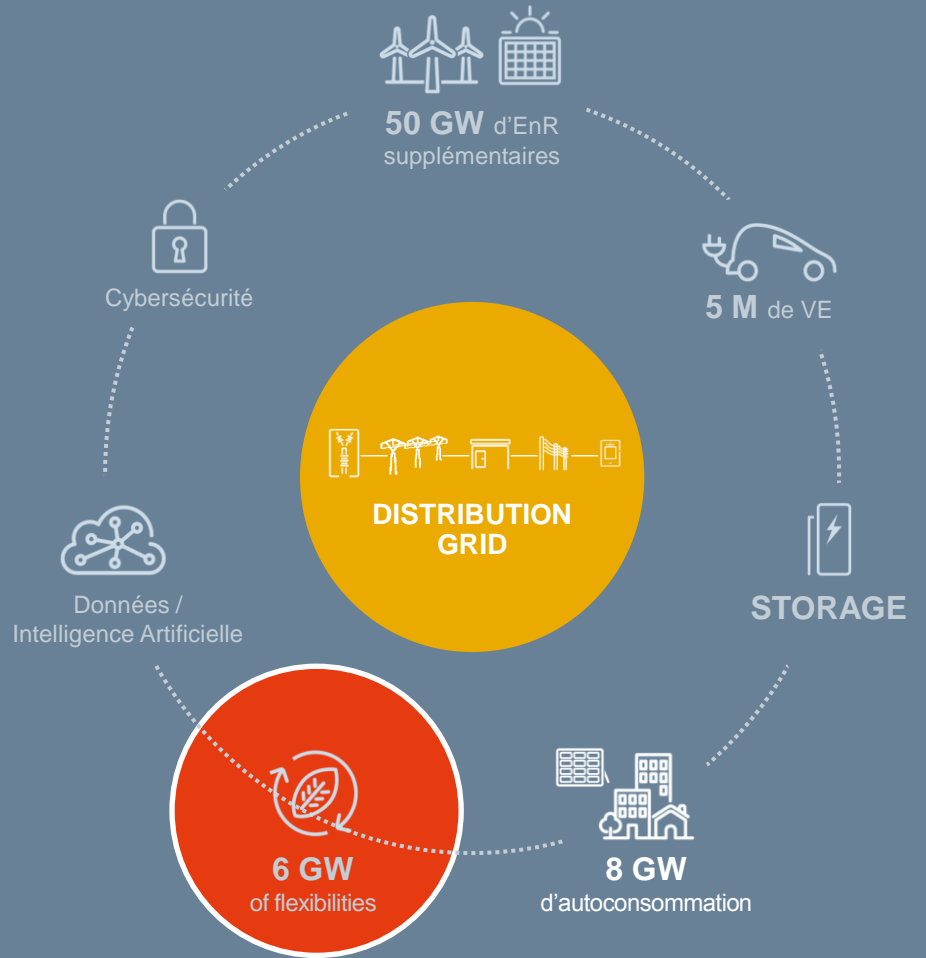
371,839 connected installations
6,528.36 MW

*Connected generation facilities power

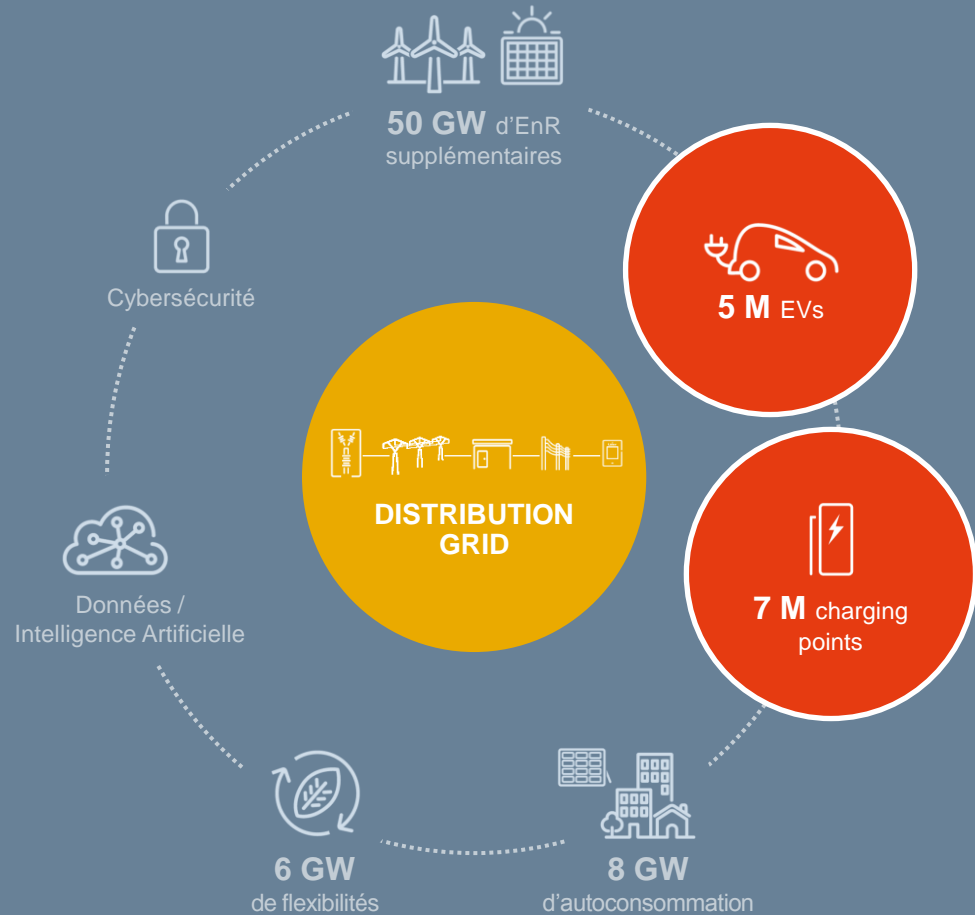
Electricity Storage as a game-changer



The new **local** power paradigm



The automobile industry in electric overdrive



By 2022, our business operations will have been transformed and new activities will have emerged

Transformation of business operations

Roll out ergonomic mobility tools while responding to operator and technician needs thanks to 24/24 management.

Integrate **smart connection offers** and improve lead times and customer satisfaction.

Modify the network's study tools to integrate new uses with a new risk management process.

Move from an incident management approach to a flow and systems management approach (DSO).

Accelerate the construction and digitise the operation of substations.

Enhance metering data services for business sectors and customers.

Automate the updating of asset databases and mapping.

New activities

Monitor and maintain from end to end new communicating objects with specialist teams.

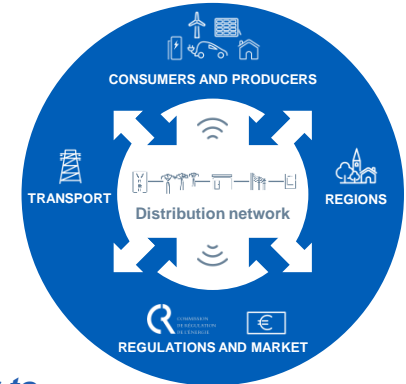
Implement LV supervision that is based on the instrumentation of the network.

Develop *data science* competencies to create value by cross-checking data (assets, real time, external).



Enedis: an integrator of flexibilities and smart technologies

Innovate and accompany the development of renewable energy sources, the electric vehicle and the regions by making use of demonstrators and REI6, in particular.



For example...

- 2018** **Simulation and decision-support** tools shared with local authorities (**TeR@ to simulate your connection online**, etc.)
- 2019** **Smart connection offers** that lower the connection costs and lead times of MV producers
- 2020** Management tools that enable the operator to choose between different **flexibility levers** in accordance with technical and economic criteria
- 2019 - 2021** New **network planning** methods with a risk management policy that integrates flexibilities

In order to...

- Meet the expectations of regions with regards to their projects (eco-neighbourhoods, etc.).*
- Increase the network's reception capacity and integrate renewable energy sources and new uses.*
- Manage the network with external players differently (flexibilities, micro grids, local energy communities, etc.).*
- Develop the expertise of Enedis in network contracting.*



Thank you for your attention



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