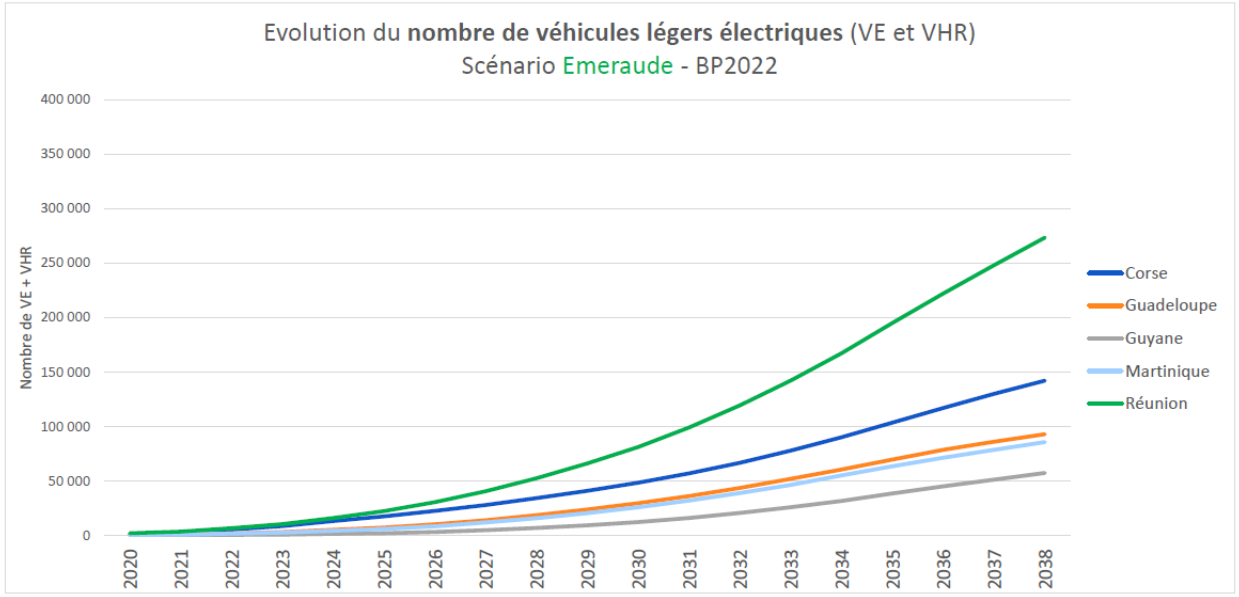
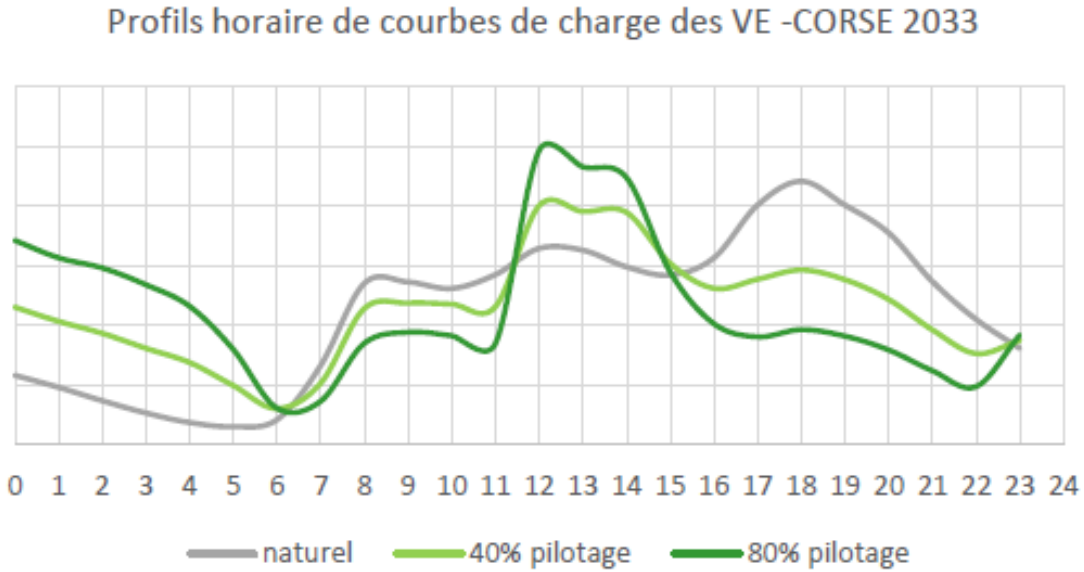
EDF-SEI

Electric vehicle charging management will be essential to ensure that the integration of electric vehicles into the electrical system is smooth and sustainable





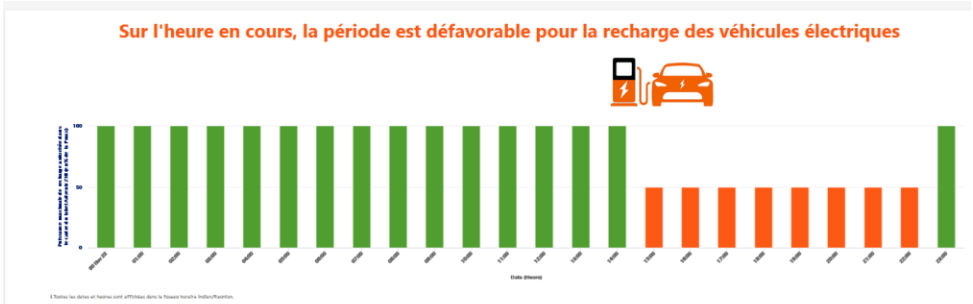
- EDF SEI long-term electrical systems modeling scenarios show that electric mobility could account for 5 to 11% of total electricity consumption in French non-interconnected zones (NZIs) in 2033

- Widespread and dynamic charging management increases gains for the system and the community by limiting the increase in peak consumption, facilitating the integration of renewable energies, and reducing the number of starts of production facilities.

EDF SEI recommandations for electric vehicle charging

- Adapt the power of charging solutions to mobility needs (maximum of 7,4 kW for individuals and 22 kW for businesses and on-street charging stations).
- Systematically implement charging management for all segments :

Segment	Technical solution	Financial incentive / regulatory framework
Individuals	Automatic charging management during tariff off-peak hours using a connection between the charging station and the digital meter. The vehicle can only charge during off-peak hours.	Time-of-use tariff + subsidies for Demand Side Management : the French regulator has approved a subsidy for individuals in NIZs who install a charging solution connected to the digital meter.
Businesses, on-street charging stations	Charging management based on EDF SEI's EV signal through CPO's information system. CPOs can query the EV signal on EDF SEI's open data and use this data to adapt the power of their Internet-connected charing stations.	Advenir NIZ Program : French government program that provide financial incentives for charging stations. In NIZs, these subsidies are conditional on implementing recharging management based on EDF SEI's EV signal.



- Barriers to massive recharging management : driver acceptability, the cost of smart charging solutions, regulated tariffs that dot not provide sufficient incentive for individuals, etc.

- Future projects :
  - Testing V1G/V2G technologies with flexibility operators
  - Updating the valuation of smart charging solutions
  - Defining a remuneration mecanism for consumers and intermediate operators in the case of dynamic charging in a regulated environment.