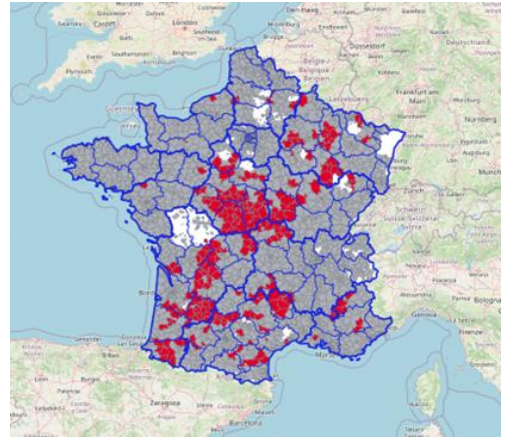


## SUCCESS CASE 1.2026

# CAPCA

## MAPPING RENEWABLE ENERGY HOSTING CAPACITY TO ACCELERATE THE ENERGY TRANSITION



### THE CHALLENGE

The acceleration of the energy transition has led to a massive increase in renewable energy (RES) connection requests across France. By the end of 2025, more than one million renewable energy producers were connected to the public electricity distribution grid, illustrating the rapid growth of Distributed Energy Resources (DER).

This dynamic creates new challenges for grid operators:

- Supporting a rapid increase in connection requests within a limited timeframe
- Managing heterogeneous network capacities across territories, with some areas reaching saturation
- Providing clear and transparent information to project developers to help them design viable projects
- Anticipating network constraints linked to existing and planned projects

In this context, project developers need better visibility to identify where new renewable generation can be connected efficiently to the grid.

### THE SOLUTION

To address these challenges, Enedis, in collaboration with the French transmission system operator RTE, developed CAPCA (Cartographie Prospective des Capacités d'Accueil), a mapping tool providing insight into grid constraints and connection opportunities. CAPCA offers a geographical visualisation of network saturation levels, allowing users to assess the feasibility of renewable energy projects from a grid perspective.

The tool includes:

- A national map of network zones, indicating grid friendly zones.
- Integration of generators already connected, existing connection requests and planned network developments, particularly within S3REnR frameworks, that are regional planning schemes in France that anticipate and coordinate electricity network investments to facilitate the large-scale integration of renewable energy sources.

CAPCA complements existing planning tools by providing user-friendly, accessible and visual information to support early-stage project decisions.

This map focuses exclusively on medium- and low-voltage renewable generation connection projects (MV/LV) and does not cover energy storage or consumption connection projects.

## MAIN ACHIEVEMENTS

- Provision of a transparent and publicly accessible mapping tool helping developers plan their future renewable projects
- Improved visibility on network constraints and opportunities at a local level
- Ability to anticipate saturation zones, where no new capacity is available for several years
- Integration of forward-looking data, including generators already connected
  - projects already requested for connection
  - planned network reinforcement works
- Regular updates of the data to reflect evolving network conditions (latest update: April 2026)

CAPCA contributes to a more efficient allocation of projects across the territory, reducing the risk of infeasible or delayed developments.

## KEY SUCCESS FACTORS

- 1. Transparency towards stakeholders:** Providing open access to indicative data helps project developers make informed decisions early in the process.
- 2. Integration with regulatory frameworks:** CAPCA is aligned with S3REnR planning schemes, ensuring consistency with national and regional investment strategies.
- 3. Simple and intuitive visualization:** The use of colour-coded maps makes complex network constraints understandable for non-expert users :
  - **Red:** Saturated zones (no capacity available in the short term, not before 5 years)
  - **Grey:** Non-saturated or partially saturated zones (capacity subject to confirmation)
  - **White:** Areas not served by Enedis
- 4. Continuous data updates and improvement:** The tool is regularly updated and enriched, ensuring relevance as the network evolves.

## WAY FORWARD

CAPCA is part of a broader ambition to enhance transparency and efficiency in renewable energy integration. Future developments aim to:

- Refine the qualification of available capacities in non-saturated zones
- Improve the level of detail and reliability of the data provided
- Further support stakeholders in optimising project siting decisions
- Work with other French local distribution system operators to integrate their network constraints into the map, which are currently represented as white areas.

By strengthening visibility on network constraints, CAPCA contributes to accelerating the deployment of renewable energy while preserving grid reliability.