

## Biggest terrestrial wind farm in France

Projet de Parc Éolien terrestre  
**MONT DES QUATRE FAUX**

[www.parc-eolien-mont-des-quatre-faux.fr](http://www.parc-eolien-mont-des-quatre-faux.fr)

The "Mont des Quatre Faux" Wind Farm project located in Pays Rethélois and Argonne Ardennaise (south of French Ardennes) will provide 63 wind turbines that are 200 m tall.

Planned production is over 700,000 MWh a year; equivalent to the annual electricity consumption of over 280,000 people, heating included.

Commissioning expected from 2020.

Available and competitive space, qualified workforce and significant and consistent wind resource will encourage new and developed wind turbine maintenance and production activity in French Ardennes.

## Energy sector partners in French Ardennes:

ADEME



Agence de l'Environnement et de la Maîtrise de l'Énergie

**ADEME: Agency for the Environment and Energy Management.**

This government agency offers its expertise and advice to businesses, local authorities and the general public. It also helps funding projects.



**ALE 08: Ardennes Local Energy Agency.**

Its main tasks are:

- Providing information, advice and training on issues, techniques and effective energy harnessing methods.
- Helping to set up technical, economic, legal and financial projects.

**climaxion**  
anticiper • économiser • valoriser

**Climaxion: special regional aid programme.**

Issued from collaboration between the ADEME, Grand Est Region and French government, Climaxion supports territories as they implement tangible energy transition and circular economy solutions. This programme offers financial support to companies for studies and investment that will limit environmental impact and consumption of resources (water, energy and materials).

In French Ardennes, all players (French government, local authorities, Chambers of Commerce, energy carriers, ADEME, ALE 08, etc.) are working together within the Energy Transition Group to develop renewable energies and encourage new economic sectors to emerge in the field.

**Ardennes development is your business partner to support you in your projects**

Development   Setting up   Investment   Information



**Tell us about your project !**

[www.ardennes-developpement.com/en](http://www.ardennes-developpement.com/en)

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Agence de Développement Économique

**Grand Est**  
ALSACE CHAMPAGNE-ARDENNE LORRAINE  
L'Europe s'invente chez nous

# Renewable energy

Energy transition: an asset for economic growth

## French Ardennes At the cutting edge of the energy mix

Historically producer of nuclear, hydroelectric, wind and anaerobic digestion energy, French Ardennes region has been running since 2010 a plan to develop renewable energy production.

The region is now a destination of choice for any company committed to sustainable development thanks to its favourable environment, excellent location close to the rest of France and Northern Europe, industry expertise, attractive tax advantages and more...

A full range of natural resources

Innovative know-how

Growing economic potential

Energy transition: an asset for economic growth - 2020

French Ardennes are using 30.6% renewable energy as a whole, and the region is experiencing strong sector growth :

**35**

wind farms built  
(850,000 MWh)

**20**

hydroelectric power stations  
(60 000 MWh)

**12**

biogas installations  
(68 000 MWh)

Source: Ardennes Local Energy Agency (ALE) 2018

[www.ardennes-developpement.com](http://www.ardennes-developpement.com)

**ARDENNES DÉVELOPPEMENT**  
Agence de Développement Économique



# Renewable energy share in French Ardennes

Wood energy

53,7%

Wind energy

39,1%

3% Biogas 2,6% Hydroelectric energy

Solar thermal energy 0,1%

1,0% Geothermal energy Photovoltaic energy 0,5%

Source: Energy Transition Group – 2018

IN 2018, FRENCH ARDENNES PRODUCED 2,270 GWH OF RENEWABLE ENERGY. THIS COUNTS FOR 30.6% OF THE REGION'S ENERGY CONSUMPTION.

BIOMASS AND WIND ENERGY REPRESENT OVER 90% OF THE RENEWABLE ENERGY PRODUCED IN FRENCH ARDENNES. WIND ENERGY AND BIOGAS PRODUCTION IS ABOVE THE NATIONAL AVERAGE (7.1% FOR WIND).

## HYDROELECTRIC ENERGY

Hydroelectric energy is produced by converting hydraulic energy (waterfall or flow) into electrical energy.

20 hydroelectric power stations are in operation.

Excellent hydroelectricity production potential:

- New facilities being built
- Existing installations being optimised

### EDF PUMPED STORAGE POWER PLANT (STEP)

in Revin - Saint-Nicolas - Les Mazures

Ranked 3rd in France for total installed capacity (800 MW available in 2 minutes).

### HELLIOGREEN TECHNOLOGIES

Having gone through French Ardennes incubator RimbaudTech, this business has developed a dismantlable micro-turbine that is safe for aquatic species in partnership with additive manufacturing platform PLATINIUM 3D.

## PHOTOVOLTAIC ENERGY

> 1278 installations  
The installation of solar panels can be a relevant and cost-effective solution in case of roof renovation.

Alveolaire, the Ardennes manufacturer of polypropylene packaging, is one of the first industries in the Grand Est to have installed self-consumption photovoltaic panels.

## BIOGAS

This technique produces renewable heat, electricity, gas and fuel. In French Ardennes, most fermented organic matter comes from agricultural run-off.

- > 10 agricultural facilities
- > 2 industrial installations

Smurfit Kappa

AN INDUSTRIAL EXAMPLE: SMURFIT KAPPA PAPER MILL IN RETHEL.

Produces biogas by putting sludge from its water treatment plant through an anaerobic digestion process. This biogas is diluted with natural gas and used in the boiler to dry the paper.

H<sub>2</sub> DINAMHYSE

H<sub>2</sub> DINAMHYSE: Launched in March 2019 in Grand Est region by the DINAMHYSE consortium, "Club Hydrogène" aims to speed up hydrogen development as part of the energy transition.

## WOOD ENERGY

### (Thermal production)

With over 378,000 acres of woodland and forests, the forestry sector is the main source of wood energy in the Ardennes.

- > 17 industrial heating systems
- > 52 local authorities
- > 10 farms

The 1st- and 2nd-line wood processing industries (sawmills, joiners, etc.) produce scrap wood. These sub-products can be used as fuel.

## WIND ENERGY

### Main production area

Grand Est region:  
2nd biggest wind power region in France in terms of installed capacity

French Ardennes  
has 9,822 MW of installed capacity (see map): equivalent of 70% of France's total installed capacity.

### Development potential:

Grand Est and Hauts-de-France are the leading French regions in terms of current projects (over 4,000 MW).

Panorama ENR du 30 juin 2018



12 permits issued (148 wind turbines/496 MW)

17 ongoing projects.

## Dedicated education

Available and qualified workforce

Wind farm maintenance technician training Lycée Bazin high school in Charleville-Mézières

Highly skilled workforce across a range of high-level areas: mechanics, hydraulics, electronic engineering, IT and composite materials.

Global BZEE (Bildungszentrum für Erneuerbare Energien) certification, plus GWO (Global Wind Organisation) certification coming soon

Partnerships with companies in wind power sector

## New funding tool for renewable energy projects

An investment company currently being created that can provide equity and support for all renewable energy projects.