



# Wind energy

Contemporary European Politics  
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# The past of the Wind energy



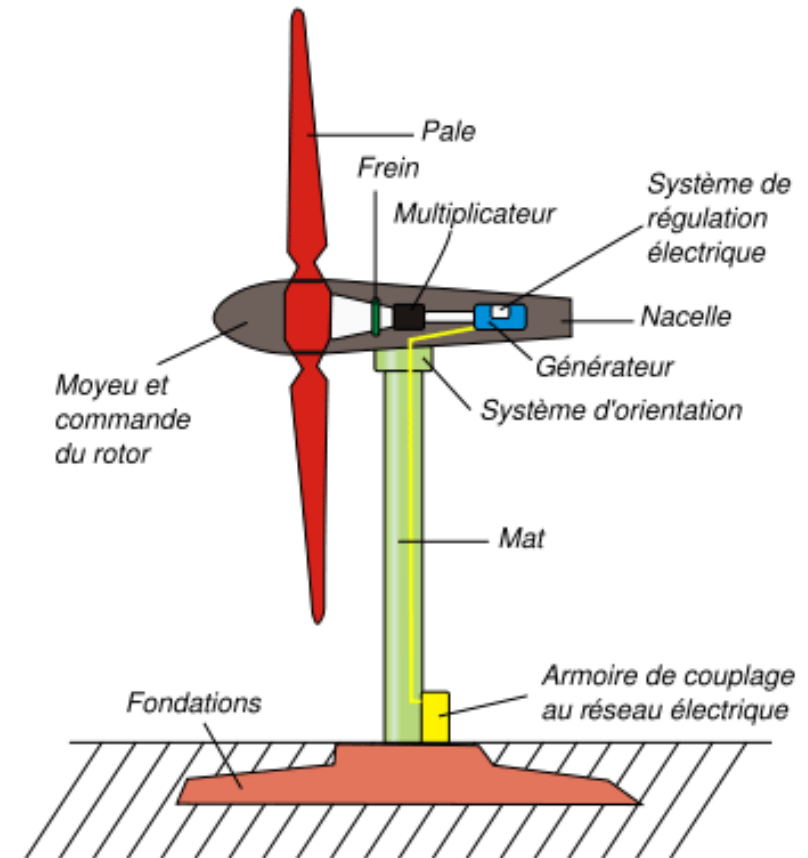
- Wind : the first natural resources being used to facilitate human life
- Thanks to the wind : create a windmill
- Windmill : to convert the energy of wind into rational energy : to mill grain, pump water
  
- Today : wind energy is used to produce electricity

# What is it ? How it works?

Wind turbines:

- \* Blades
- \* Rotor
- \* Pole
- \* Nacelle
- \* Electric motor

Wind energy →  
Form of solar  
energy

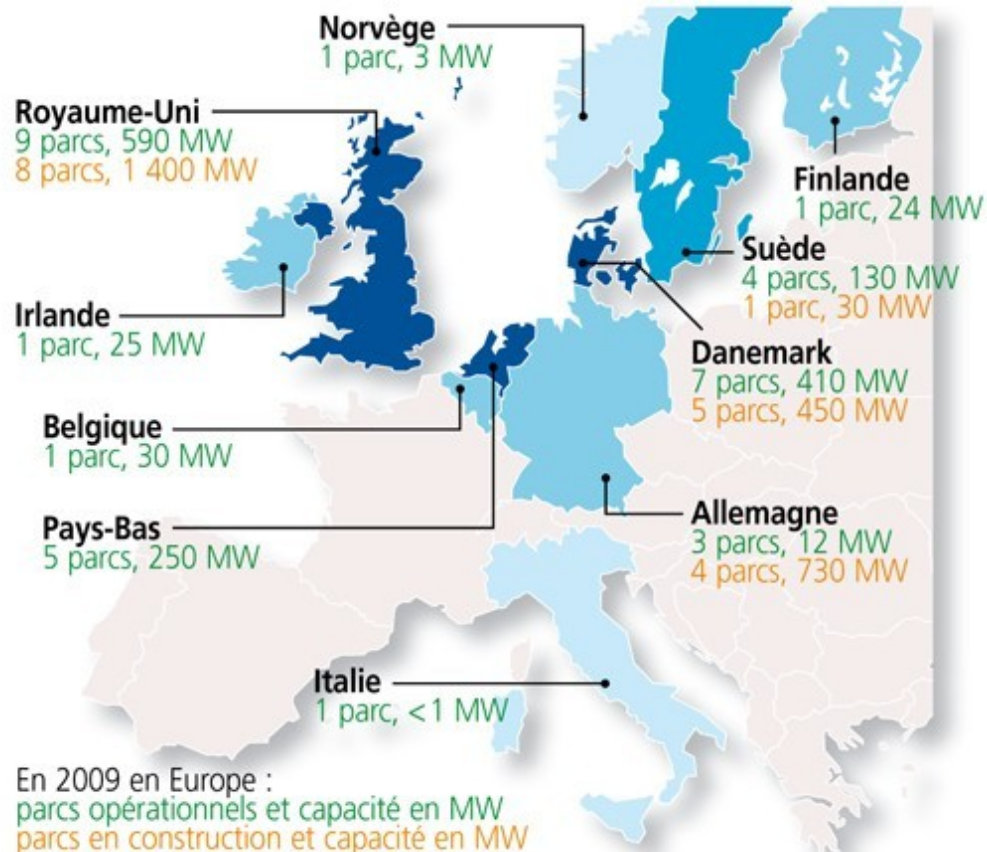


# Advantages and pitfalls

- Disadvantages
  - More expensive than nuclear or thermal energy.
  - Requires subsidies
  - Depends a lot on the wind strength
  - Hurting bird and bat
- Advantages
  - Knowledge of how manage changes
  - Can cover about 20% of electricity demand



# The present of the Wind energy (in Europe)



## European Union climate and energy package

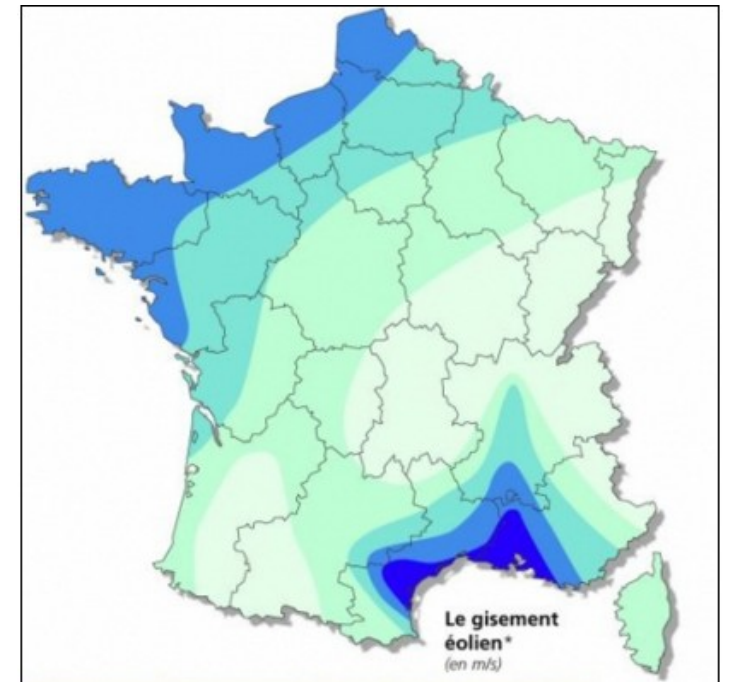
→ Mesures adopted by the members to fight against climate change

### The 2020 package

- 20% cut in greenhouse gas
- 20% of EU energy from renewables
- 20% improvement in energy efficiency

# The present of the Wind energy (in France)

- Need of windy areas, (In blue, in the picture)
- 5074 MW in 2010 → 9000 MW in 2014
- 1,5% of French electricity production in 2009 → 3,5% in 2014
- 11000 employees



# Future of the wind energy (Europe)

- Objectives for 2035
  - 40% cut in greenhouse gas emission
  - 27% of renewables energy
  - 27% of energy savings

EU estimates that wind electricity could account for 13% of the electricity consumed in 2020.

1/3 of the electricity : offshore

Offshore : to generate electricity from wind.

3 countries : UK-Germany-Danmark

offshore installed capacity will increase to 40 GW in 2020 from 6.5GW in 2013

# Future for the Wind energy (in France)

- Wind power: the best short time development potential
- France release too much CO<sub>2</sub>, by using fossil fuels
- Plan “Renewable Energies” → 19000 MW wind turbines on land, and 6000 MW at sea
- Offshore is indispensable





# Future of wind energy in general

- Floating wind turbines
  - New generation of offshore wind turbines
  - Use in higher funds to 50 meters Deep
  - They provide Access to denser energy
  - The first will be installed in 2020
- Flying wind turbines
  - More efficient and less expensive than wind turbines
  - Between 400m and 10000m
  - At a large amount, they can satisfy the entire energy needs of the planet
  - Easy maintenance and installable, no noise
  - Electricity is cheaper





Conclusion