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# Offshore wind in France



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# France assets for the offshore wind energy

- **11 million km<sup>2</sup>** of maritime zones under France's jurisdiction
- France has the second largest wind resource for offshore wind power in Europe, after the UK with a potential of offshore wind estimated by ADEME at **200 GW** constituted mainly by **floating wind (150 GW)**
- A clear ambition to develop **40 GW of offshore wind by 2050** (50 wind farms, Macron 2022 in his Belfort speech)
- Thus, a **committed administration favoring the development of offshore wind power** at lower cost, with a strong focus on floating wind with the Ministry of Ecology in charge of the upstream studies to define the project zones (public debate, Environmental Initial State studies and definition of the calls of tender).

# French strategy: part of a global and European dynamic

## ➤ Paris Agreement (2015)

Containing global warming under 2°C

## ➤ European Green Deal

Carbon neutrality by 2050

## ➤ UE Key targets for 2030

- At least 40% cuts in greenhouse gas emissions (from 1990 levels)
- At least 32% share for renewable energy
- At least 32.5% improvement in energy efficiency

## ➤ UE recognises that offshore wind is key to meet these targets

EU Strategy to harness the potential of offshore renewable energy for a climate neutral future (2020) proposes to increase EU's offshore wind capacity from its current level of 16 GW to at least **60 GW** by 2030 and to **300 GW** by 2050.

# The French energy policy: reaching carbon neutrality and increasing the share of renewable energy

## Energy transition for Green growth Act (2015) & Energy-climate Law (2019)

- **National Low-carbon Strategy** → Outlines the French roadmap for reducing greenhouse gas emissions by 2050.

**Offshore wind is key to achieve the objectives set by this strategy. Therefore, an ambitious offshore wind program was defined in the**

- **Multi-Annual Energy Plan (2023-2028)** → Establishes the priorities for government action regarding energy policy in the next decade, shared in two 5-year periods.



40 less greenhouse gas emissions in 2030 compared to 1990

2050 - Carbon neutrality



Reduce final energy consumption by 50% in 2050 compared to 2012



30% less fossil fuel consumption in 2030, compared to 2012



Increase the share of renewable energies to 33% of final energy consumption by 2030 and to 40% of electricity production.



Diversify electricity production and reduce the share of nuclear energy to 50% by 2035

Sources : Programmations pluriannuelles de l'énergie (PPE), Loi transition énergétique pour la croissance verte (LTECV), Loi énergie-climat (LEC).

# Multi-Annual Energy Plan – Agenda for offshore wind energy for the 2023 – 2028 period

**Multiannual Energy Plan** - Agenda of future commercial tenders for offshore wind (attribution date)

**Despite some delays, all these volumes will be attributed.**

<u>Grant date for the call for tenders</u>	2019	2020	2021	2022	2023	>2024
<b>Floating wind turbine</b>			250 MW <i>South Bretagne</i> (€120/MWh)	2 x 250 MW <i>Mediterranean Sea</i> (€110/MWh)		1000 MW per year, fixed or floating, depending on prices and resources, with target prices converging towards the market price for fixed wind
<b>Fixed wind</b>	600 MW <i>Dunkirk</i> (€45/MWh)	1000 MW <i>Eastern English Channel</i> <i>North Sea</i> (€60/MWh)	500 – 1000 MW <i>Sud-Atlantique*</i> (€60/MWh)		1000MW (€50/MWh)	

*Table 7: Calls for tender for offshore wind (the dates indicated are the dates on which a winner will be selected, following a pitch procedure; prices indicated are the target prices for the calls for tender on the basis of which the maximum prices will be fixed). **The projects assigned starting in 2024 will primarily focus on the expansion of existing floating offshore wind farms using a shared connection.***

*\* In this context, an offshore wind installation off Oléron may be assigned*

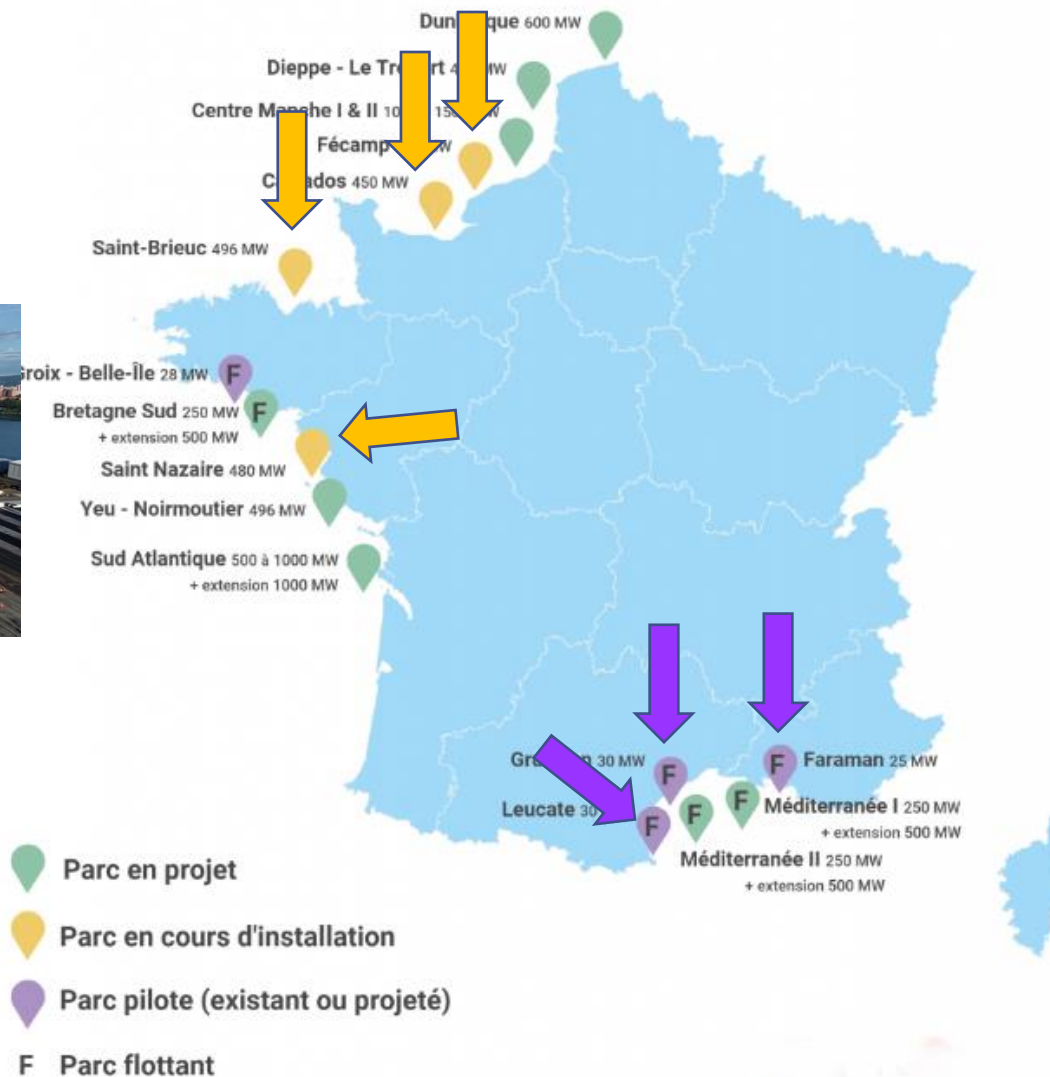


# 7 fixed wind farms and 4 pilot floating projects have already been awarded

- 4 fixed wind farms in construction (Saint Nazaire, Saint Briec, Fécamp, Courseulles) to be commissioned between 2022 and 2024



- 3 floating pilot wind farms in construction (PGL, EOLMED, EFGL) to be commissioned between 2023 and 2024 (Mediterranean Sea)



# The economic benefits of offshore wind development

## Strong commitment of industry and territorial authorities :

### ➤ Several offshore facilities in France :

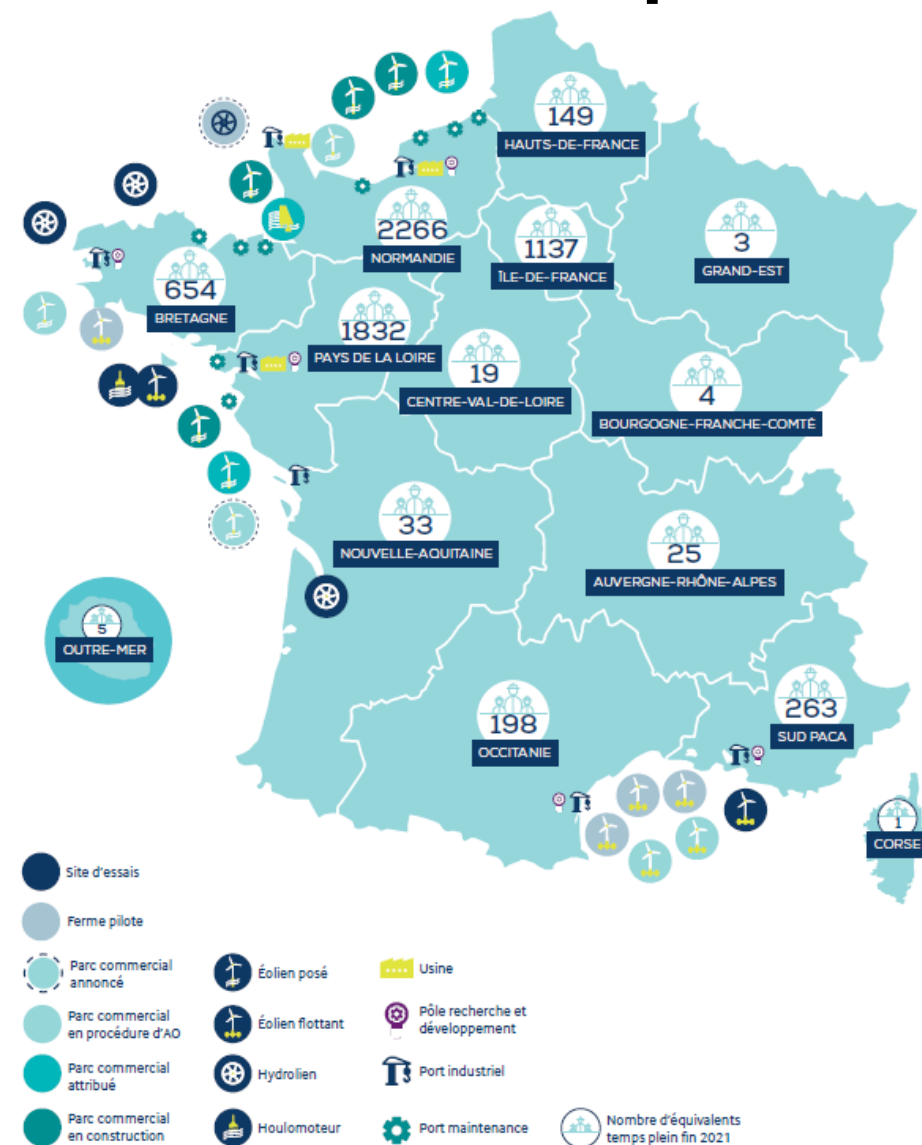
- General Electric factory (nacelle assembly) in Saint-Nazaire,
- LM Wind factory (blades) in Cherbourg
- CDA factory (offshore substations) in Saint Nazaire,
- Siemens-Gamesa factory (nacelles and blades) in Le Havre.

### ➤ Territorial authorities' strong investment to support those projects :

- Investment in regional infrastructures (Brest and Port La Nouvelle's port facilities, especially for floating wind)
- Co-investment with the State for plant construction (Cherbourg, Le Havre)

### ➤ The offshore wind industry already generates local employment (close to 6600 jobs in 2021, +36% in 1 year)

### ➤ French industries target 20 000 direct and indirect jobs in France in 2035 in the 40-GW 2050 trajectory path (Offshore Wind Industry Pact signed in March 2022) with a local content of 50% of the wind farms CAPEX



# Biodiversity conservation and cohabitation of activities

## Conservation of the environment ...

- According to the biodiversity protection policy and the UE policy, the French government works to protect and to reduce risks for the biodiversity
- France has 9 marine natural parks. In a logic of cohabitation of activities, the development of offshore renewable energies is possible.
- EU Natura 2000 legislation allows to implant offshore wind farms if an environmental evaluation is undertaken. Offshore wind farms have to respect the local biodiversity
- Offshore wind farms are submitted to the « Avoid, reduce and offset » sequence.

## ...and cohabitation of activities are key components of the offshore wind program

- France strongly supports the cohabitation of all activities at sea with offshore wind
- Whenever it is possible and secure, fishing is allowed inside windfarms
- The Minister of Ecology is responsible for the creation of an observatory dedicated to the studies of environmental initial state in the 3 French seabords (Channel, Atlantic, Mediterranean)



Photo 2 : Grands dauphins (Virginie Wyss - Cohabys)



# France supports innovations and industry for the floating offshore wind – The France 2030 program

The France 2030 program supports the Advanced Technologies for Energy Systems (called TASE) in which floating Wind is belonging

- Call for projects for R&D, floating wind demonstrators and technological brick projects coordinated by consortiums (called DEMO-TASE) or SMEs (called PME-TASE)
- Industrialization and supply chain development with the call for interest INDUS-TASE
- Port Infrastructures with the call for interest INFRA-TASE



# And what about next actions

## ➤ 2 Call for tender for pre-commercial floating wind farms

- Bretagne Sud project (250 MW) awards expected in 2023 (among 10 candidates)
- Mediterranean projects (2 X 250 MW) with the launching of the competitive dialogue

## ➤ Bottom-fixed awards

- 1 GW Centre Manche 1 off Normandy awards expected in 2022 (among 6 candidates)
- Launching of a new project in Normandy (Centre Manche 2, 1.5 GW)

## ➤ The preparation of the Multi-Annual Energy Plan (2029-2033)

- This workshop allows the concretization of the long-term French roadmap in the mid-terms



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