

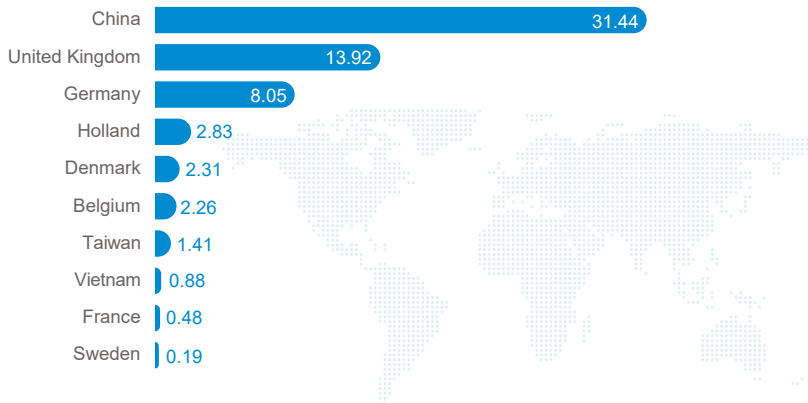
What is offshore wind power?

It is power produced by wind, through **wind generators installed in the sea.**

In which countries is there offshore wind power?

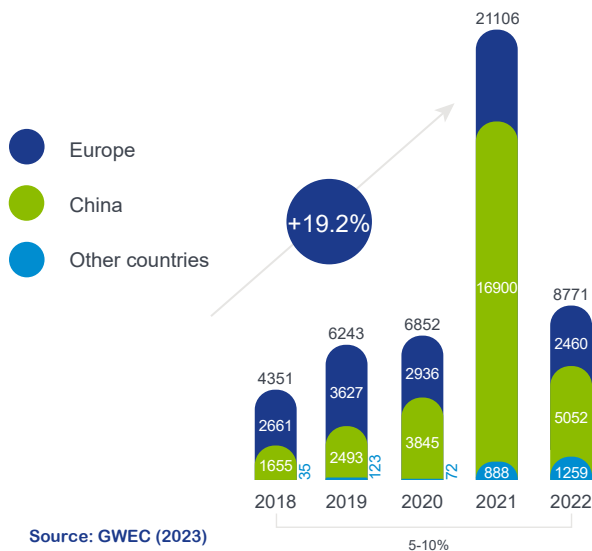
The world has currently over **64 GW Offshore Wind Energy Capacity** installed in China, the United Kingdom and Germany, among others.

The top 10 countries - Offshore Wind Energy World Ranking



Source: GWEC (2023)

New offshore wind power installations per year in the world (in MW)



Source: GWEC (2023)

In Brazil

Does Brazil have offshore wind power?

Not yet, but we are on our way. The process to define regulations has been started by the competent authorities.

- The bill No. 576/2021 advanced to the Federal Senate, being received and renumbered to Bill No. 5,932/2023. The bill awaits its report and aims to discipline the exploration and development of power generation from installation sources offshore and the use of the sea.

Check how the projects under analysis by IBAMA are distributed throughout Brazil

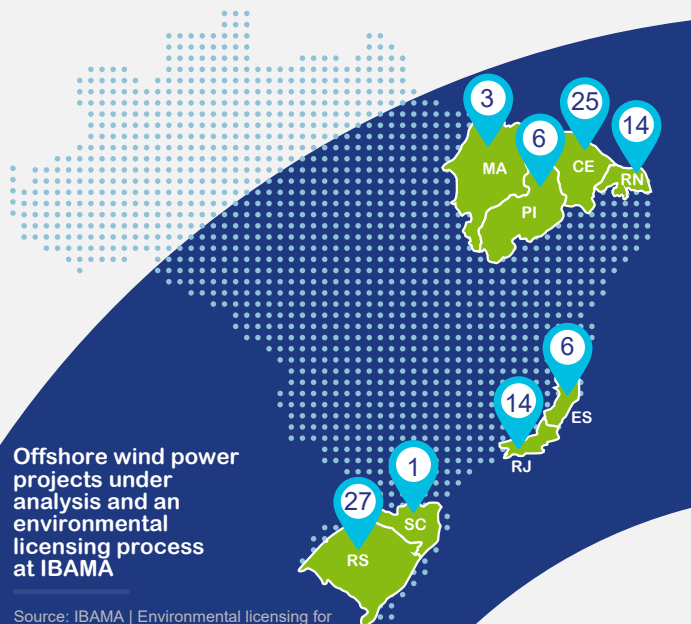


Source: IBAMA | Environmental licensing for offshore wind powers opened at Ibama by January 19th, 2024

What is the potential of Brazil for offshore wind power?

About **700 GW** in locations up to 50m deep

(according to the Offshore Wind Power Roadmap Brazil published by EPE).



Offshore wind power projects under analysis and an environmental licensing process at IBAMA

Source: IBAMA | Environmental licensing for offshore wind powers opened at Ibama by January 19th, 2024

Offshore wind power and creation of jobs

According to IRENA, an estimation of **17 job positions for each offshore wind power MW are needed, throughout the 25 year lifespan of a 500 MW projec.**

Jobs required to install an offshore wind farm

Capacity installed (MW) Project Lifespan

Jobs required to install an offshore wind farm	Capacity installed (MW)	Project Lifespan
8.644	500	25 anos
17.287	1000	25 anos
34.574	2000	25 anos

Source: These data were calculated based on the IRENA studies ascertained by GWEC. The calculator that was used belongs to the GWEC and is called Global Wind Statistics: Job Creation Potential.

Benefits of Offshore Wind Power



Creation of jobs



Does not emit greenhouse effect gases



Contributes to complying with the reduction of **greenhouse effect gas emission goals**



Cooperates for **energy security**, with less variation in relation to other renewable sources



Higher capacity factor when compared to other renewable sources



The costs of this technology are reducing

For fixed-based technology, for example, a decrease between 35 and 49% is expected for the LCOE (Levelized Cost of Energy) within the next five years, according to the 2021 Global Wind Report by GWEC.

Value Chain Study: Offshore Wind Power

ABEEólica, COPPETECH-UFRJ and Essenz Soluções

The study contains 11 technical notes, aiming to present paths to **develop value chain for offshore wind farms, considering planning and technological expansion in the national scope.**



Port Infrastructure and Logistics

Some national ports are already preparing to supply the demand for offshore wind power. Ports in the South, Southeast and North-east have shown planning and been working toward adapting facilities to receive future offshore wind power projects.



Transmission Planning and Expansion

Offshore wind farms have four main challenges to observe regarding transmission planning:

- Project Localization
- Alignment of Schedules
- Maritime Transmission Infrastructure
- Environmental Aspects



Possible Socio-Environmental and Economic Benefits of the Offshore Wind Power Technology

Scenarios developed from the study show that offshore wind farms can corroborate avoiding about 37 to 112 mtCO₂ accumulated emissions by 2050.



Status of Technological Innovations

Technological innovations include steps of previous planning, turbines, port infrastructure and logistics, Electrical Infrastructure, Foundations, Operation and Maintenance. Such innovations aim to cooperate in reducing costs, providing technological advances, increasing efficiency in supply chain and creating new markets



The Role of the Source with Regard to Energetic Transition

The roles the offshore wind power industry can bring to the context of energetic transition and safety:

- Input to produce green hydrogen
- Reduction in the emission of greenhouse effect gases
- Complementation to other energetic resources



Creation of jobs

The scenario show that, once fully developed, offshore wind power has the potential to create between 72 and 163 thousand jobs by 2050.



Global Offshore Wind Alliance (GOWA)

Brazil has joined the Global Offshore Wind Alliance, composed of countries that support the development of offshore wind technology around the world. GOWA aims to:

- Support the creation of structural policies and an efficient offshore wind value chain.
- Create an international community to drive the development of the offshore wind industry.
- Work as a multi-sector stakeholder group supporting the role that offshore wind energy will play in the energy transition.

Click here to access the official ABEEólica website and see the complete study

