OCEAN ENERGY BAROMETER

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ENGLISH: www.eurobserv-er.org/ocean-energy-barometer-2022/

Ocean energy, also known as marine energy, offers coastal countries the opportunity to significantly diversify their electricity mixes. It is a highly grid friendly source of power due to its very stable and predictable aspect. The European Union is in a unique position to further develop ocean energy technology because of its sea basins in the Atlantic Ocean, Baltic Sea, Black Sea, Mediterranean Sea, and North Sea.

In 2021, the EurObserv'ER marine energy capacity figure for the EU-27, including the 240 MW capacity of the La Rance tidal range plant in France and the 4.5 MW capacity of the Enagas LNG terminal's ocean thermal plant in Spain, rose to 249.2 MW. European companies are focused on being sector leaders by creating marine turbine or wave energy converter concepts for mass production. The tidal stream sector, which uses ocean current energy, has a slight lead because it launched the first commercial projects to benefit from power purchase agreements.

Note that the sector is still largely dependent on the support of the European Union, which partly finances almost all the prototypes.

According to Ocean Energy Europe, which represents 120 tidal stream, wave energy, and other marine energy manufacturers and organisations, 100 GW of capacity using wave energy and tidal currents could be deployed in Europe by 2050 and satisfy 10% of Europe's current electricity needs. The deployment of 100 GW of marine energy would also create a new industrial sector firmly rooted in Europe, and 400,000 skilled jobs along the supply chain.

Table No. 1

Capacity projects using ocean energies having been active during the year 2021 in the European Union*

	Tidal range	Wave energy	Tidal current	OTEC**	Salinity gradient	Total
Total capacity in MW	240	2,085	2,6	4,5	0,05	249,24

**Including demonstrators and prototypes during the test phase.*
*** Ocean Thermal Energy Conversion.*
Sources: EurObserv'ER 2022

249.2 MW

installed capacity across all ocean energy technologies in 2021 in EU-27

Table No. 2

Capacity* and electricity production from ocean energy in European Union in 2020 and 2021 (in MW and GWh)

	2020		2021	
	MW	GWh	MW	GWh
France**	211.8	481.8	211.4	483.8
Spain	4.8	27.0	4.8	19.0
Total EU 27	216.6	508.8	216.2	502.8

Net maximum electrical capacity. ** Electricity production excluding pumped storage. For information, production from pumping of the Rance tidal power plant was 65 GWh in 2020, 66 GWh in 2021. Note: Most countries with marine energy demonstrators or prototypes do not officially include them in the capacity and production data communicated to Eurostat.* ***Sources: EurObserv'ER 2022*

The difference in capacities between Tables No. 1 and No. 2 comes from the fact that Table No. 1 also takes into account the capacity of numerous prototypes, while capacity in Table No. 2 only considers data communicated to Eurostat.

FURTHER INFORMATION

ANNUAL REPORT: "The State of renewable energies in Europe", 20th edition, www.eurobserv-er.org/20th-annual-overview-barometer
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The next barometer will be about renewable energies in transport.

A study carried out by EurObserv'ER

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