

MARINE ENERGY

Definition

Marine energy is a common term for the energy of oceans, which can be either carried by ocean waves, ocean current, tidal stream and range, run-of-river, salinity and ocean temperature differences. It is also called *marine power*, *ocean energy*, *ocean power*, *hydroelectricity*, *marine and hydrokinetic energy*. Due to the proximity of oceans to the most populated locations in the world, oceans have a potential of providing a substantial amount of yet unutilized renewable energy. According to the Ocean Energy Europe (the largest network of ocean energy professionals – utilities, industrialists and research institutes), ocean energy can provide 10 % of Europe's electricity by 2050. For this, the industry foresees to build 100 GW of production capacity.

Wave energy encompasses power from surface waves. The size of the waves generated will depend upon the wind speed, its duration, and the distance of water over which it blows (the fetch), bathymetry of the seafloor (which can focus or disperse the energy of the waves) and currents. The movement of water carries kinetic energy, which can be harnessed by wave energy devices. The optimal resources for the wave energy are in the offshore waters where waves are formed by the strong winds that have travelled long distances.

Tidal energy is energy harnessed from the kinetic energy of large bodies of moving water. Tidal streams causing this energy are formed due to the constantly changing gravitation pull of the moon and sun on the oceans. It is a constant movement, which can be due to the relative positions of the sun and moon predicted with perfect accuracy. The best areas for tidal stream exhaustion are areas with a good tidal range or in the narrow straits and inlets, around headlands, and in channels between islands where the speed of the currents are empowered due to the geomorphological funnelling effect.

Related terms

Hydropower, Wind energy

Keywords

Renewable energy

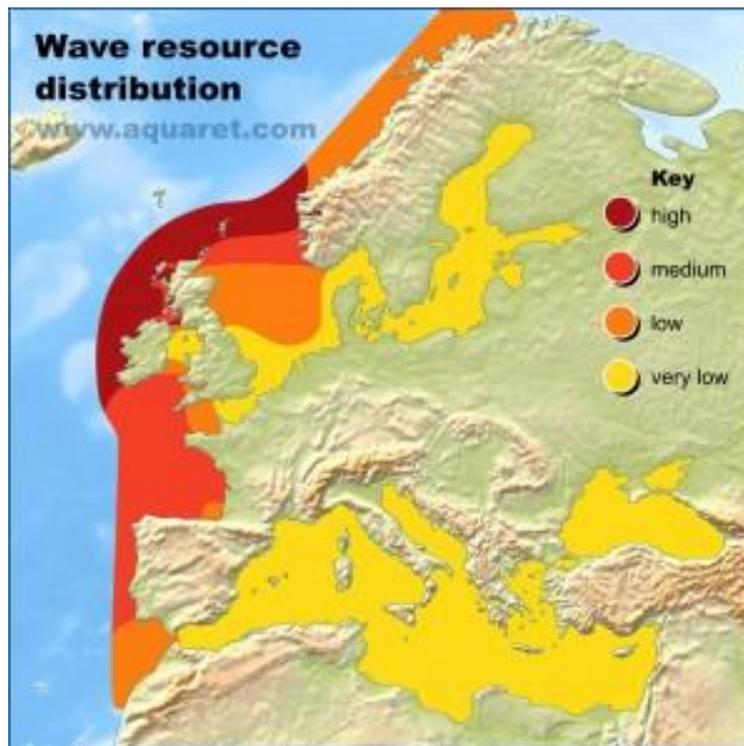


Figure 24 Wave resource distribution in Europe. (Source: <http30> via The European Marine Energy Centre 2017)

Sources

[http31: http://www.emec.org.uk/marine-energy/](http31://www.emec.org.uk/marine-energy/) (The European Marine Energy Centre)

[http32: http://www.oceanenergy-europe.eu/](http32://www.oceanenergy-europe.eu/) (Ocean Energy Europe)

Translations

Bosnia and Herzegovina Energija talasa i morskih struja

Bulgarian Енергия от морето

Croatian Energija valova

Czech Mořská energie

Danish Havenergi (*energy på havet*)

Dutch Maritieme energie

Esperanto Energio de maro

Estonian Mereenergia

Finish Aaltovoima

French Energie marine

German Marine Energie

Greek Ενέργεια των Θαλασσών

Hebrew גלים אנרגיית

Hungarian Tengeri energia

Italian Energia marina

Islandic Haforka

Latvian Jūras enerģija

Lithuanian Jūros energetika

Montenegrin Energija talasa

Polish Energia pływów morskich

Portuguese Energia marinha

Romanian Energie marină

Russian Энергия океана, морская энергия

Slovenian Energija morja

Serbian Енергија таласа и морских струја

Spanish Energía maremotriz

Swedish Marin energi