WIND ENERGY

Definition

Wind power refers to the extraction of kinetic energy from the wind to generate electricity. In early 2017, the total installed capacity reached 153.7GW, placing wind energy as the second largest form of power generation capacity in Europe.

Wind energy generation is categorized by the type of wind turbine (horizontal or vertical axis), and the on- or off-shore location of the turbines. The predominant use is of horizontal axis turbines, with vertical axis turbines more commonly used in urban or built environments.

(a) *Onshore wind energy generation* is land-based with developments ranging in the size (height of tower and diameter of rotor blades) and the number of turbines. Energy capacity of turbines (currently) range up to 3.6MW, with a rotor diameter of 130m. Developments may be classified as small, medium or large scale the definitions of which vary by country.

(b) *Offshore wind energy generation* is marine, sea or lake, typically employing turbines of a larger capacity than onshore, with capacity up to 8MW, and a rotor diameter of 164m.

Related terms

Energy landscape, Visual impact, Visual impact assessment, Marine energy

Keywords

Wind farm, Wind park, Wind turbine

Figure 29a Onshore wind farm near Diepholz, Germany, with the currently world's highest performing onshore wind turbine, i.e. the Enercon-126, with a hub height of 135m (443 ft), rotor diameter of 126m (413 ft). (Photo: Olaf Schroth 2015)

Figure 29b Offshore wind production in Wirral Penninsula - West Kirby, Wales, United Kingdom. (Photo: Elsie Roulston 2016)

Figure 29c Old and new wind power use in Terras Altas de Fafe, Portugal. (Photo: Filipa Soares 2013)

Source

http35: https://ec.europa.eu/research/energy/index.cfm?pg=area&areaname=renewable_wind

http36: https://windeurope.org/about-wind/statistics/

Translations: Wind onshore energy Bosnia and Herzegovina Energija vjetra na kopnu Bulgarian Енергия от вятърни генератори Croatian Energija vjetra na kopnu/na obali Czech Větrná vnitrozemská energie Danish Landvindmøller Dutch Wind op land Esperanto Venta energio surtera Estonian Maismaa tuuleenergia Finish Tuulivoima *(general term)* French Energie éolienne terrestre German Onshore-Windenergie Greek Αιολικό Πάρκο Hebrew יבשתית רוח אנרגיית	Hungarian Szárazföldi szélenergia Italian Energia eolica on-shore Islandic Vindorka á landi Latvian Sauszemes vēja enerģija Lithuanian Vėjo energetika sausumoje Montenegrin Energija vjetra na kopnu Polish Energia wiatrowa on-shore Portuguese Energia eólica em terra Romanian Energie eoliană terestră Russian Ветроэнергетика на суше Slovenian Vetrna elektrarna na kopnem Serbian Енергија ветра на копну Spanish Energía eólica Swedish Onshore vindkraft
Translations: Wind offshore energy Bosnia and Herzegovina Energija vjetra u priobalju Bulgarian Енергия от вятърно морски генератори Croatian Energija vjetra u/na moru Czech Větrná pobřežní energie Danish Havvindmøller Dutch Wind op zee Esperanto Venta energio ekstertera *(surmara)* Estonian Avamere tuuleenergia Finish Merituulivoima French Energie éolienne en mer *(offshore)* German Offshore-Windenergie Greek Θαλάσσιο Αιολικό Πάρκο Hebrew בים רוח אנרגיית	Hungarian *(nyílt*Tengeri szélenergia Italian Energia eolica off-shore Islandic Vindorka á sjó Latvian Jūras vēja enerģija Lithuanian Vėjo energetika jūroje Montenegrin Energija vjetra na moru Polish Energia eólica no mar Portuguese Energia eólica em terra Romanian Energie eoliană maritimă Russian Офшорная ветроэнергетика Slovenian Vetrna elektrarna na morju Serbian Енергија ветра на мору Spanish Energía eólica marina *(offshore)* Swedish Offshore vindkraft