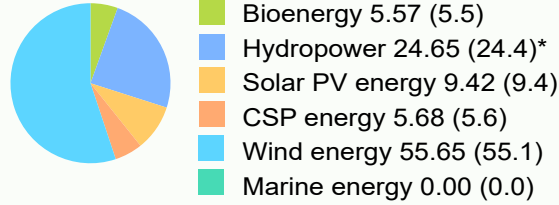


Spain • Renewable energy • Hydrogen, Marine, Solar, Wind

Gross electricity generation from renewable sources by 2019, TWh (%)



Total: 100.97 (100)

Source: Renewable Energy Statistics 2021 © IRENA
* excluding pumped storage

CSP Parabolic type with thermal storage plants over 100 MW, MW:

- 1 Andasol 1-3, 150.0
- 2 Extresol 1-3, 150.0
- 3 Valle (Arcosol & Termesol), 100.0
- 4 Aste 1A-1B, 100.0
- 5 Manchasol, 100.0
- 6 Termosol, 100.0

CSP Parabolic type plants over 100 MW, MW:

- 1 Extremadura Solaben, 200.0
- 2 Solnova, 150.0
- 3 Helioenergy, 100.0
- 4 Helios, 100.0
- 5 Palma del Río, 100.0
- 6 Solacor (El Carpio), 100.0

Major hydrogen fueling stations:

- 1 Centro Nacional del Hidrogeno (Puertollano)
- 2 Ajusa – Don Qhyxote (Albacete)
- 3 EXPO Zaragoza 2008, Zoilo Rios
- 4 Walqa Hydrogen

CSP Linear fresnel type with thermal storage plants over 1 MW, MW:

- 1 Puerto Errado, 31.4

Key wind turbine manufacturers in Spain:

- 1 Gamesa Corporation (17 plants in 11 autonomous communities);
- 2 Vestas Espana (4 plants in 4 autonomous communities);
- 3 Acciona Wind Power (3 plants in Navarra and Valencian);
- 4 GE Renewable Energy (2 plants in Valencian and Castile & Leon).

Sources: Wikipedia; Gamesa Corporation; Vestas; Acciona Wind Power; GE Renewable Energy.

Wave power plant, MW:

- 1 Mutriku, 0.3

Major Compressed Hydrogen Plants:

- 1 Tarragona, Air Products
- 2 Puertollano, Air Liquide
- 3 A Coruña, Air Liquide
- 4 Aviles, Praxair
- 5 Gajano, Air Liquide

Solar PV power plants over 35.0 MWe, MWe:

- 1 Francisco Pizarro, 590.0*
- 2 Nunez de Balboa, 500.0
- 3 Mula, 493.7
- 4 Don Rodrigo (Sevilla), 175.0
- 5 Picón 1/2/3, 150.0
- 6 Olmedilla de Alarcon, 60.0
- 7 Puertollano, 52.0
- 8 Carpio de Tajo, 50.0
- 9 La Nava, 49.0
- 10 Fuente Alamo, 36.5

* under construction

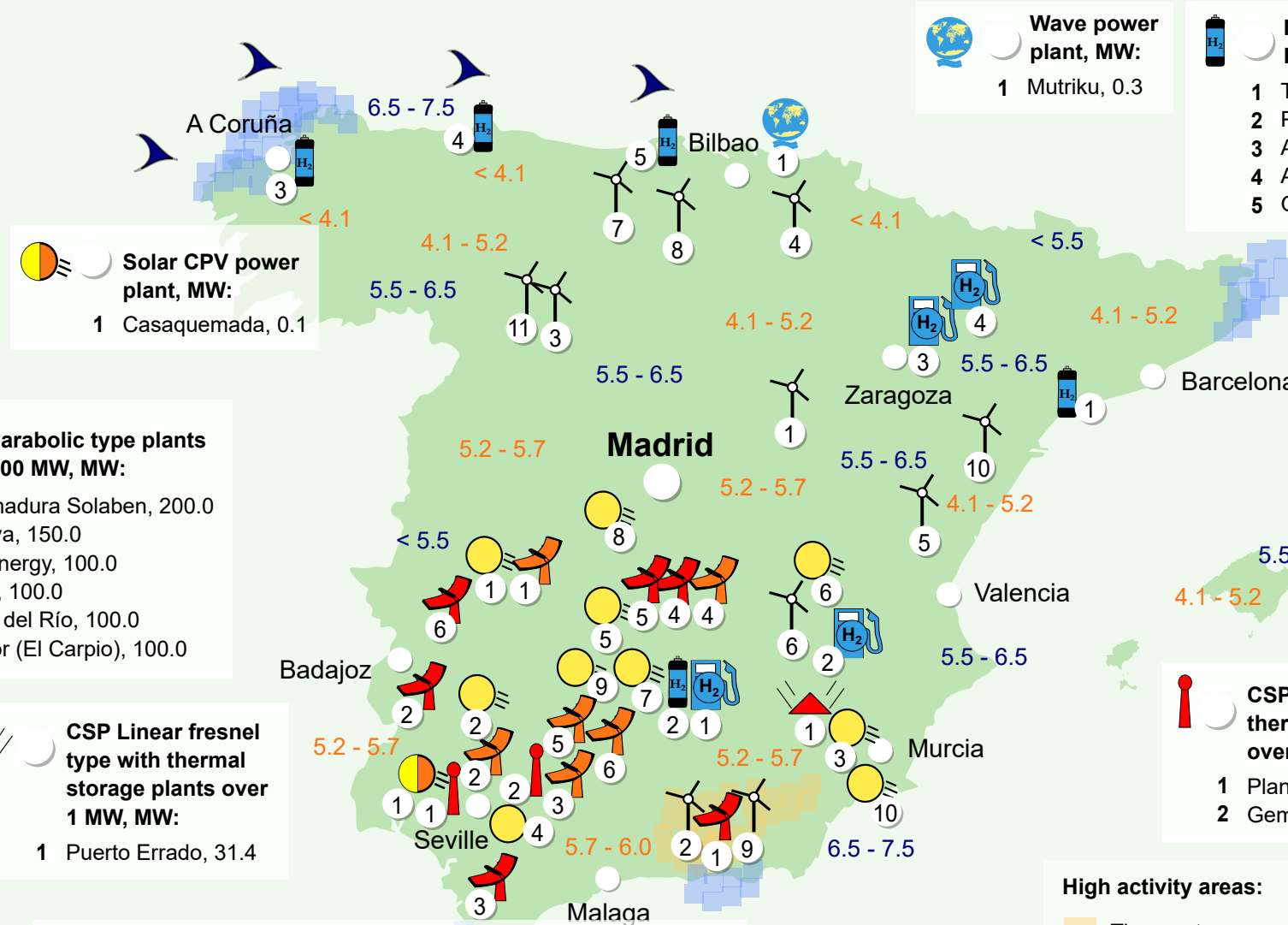
Major wind parks over 95 MW, MW:

- 1 Maranchon Wind Park, 208
- 2 El Marquesado Wind Park, 198
- 3 San Lorenzo A-B-C-D, 150
- 4 Las Llanas de Codés, 126
- 5 Alto Palancia I-III, 104
- 6 Casa del Aire I-II, 100
- 7 La Lora I-II, 99
- 8 Páramo de Poza I-II, 99
- 9 Dolar I-III, 99
- 10 Torre Miro I-II, 99
- 11 Peñafior III-IV, 98

High activity areas:

- The most common solar DNI intensity is over 6.0 kWh/m² per day, distributed in some area of Andalucia region and in the Canary islands.
- The most common wind speed is over 7.5 m/s per year at 50 m are distributed along country coastline with the Atlantic Ocean in the northwest and southwest, the Alboran Sea in the south, the Gulf of Lion in the northeast, some places of the Canary islands.
- Avg wave power potential is 40 - 60 kW/m per year.

Sources: Energydata.info; Wikipedia.



Solar CPV power plant, MW:

- 1 Casaquemada, 0.1

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