

# EEM - Electricidade da Madeira SA

Clean energy for EU islands  
[www.euislands.eu](http://www.euislands.eu) | [info@euislands.eu](mailto:info@euislands.eu)

- Madeira Archipelago, Portugal
- Island with low RES share: Porto Santo (13%)
  - Peak power 7.5MW, high seasonality;
  - RES installed: 2 MW PV and 0,66 MW wind;
  - High volatility of wind and PV resources;
  - Installed BESS (5MW/3MWh) to provide grid stability;
  - Second battery (8,9 MW/17,8 MWh) in the installation phase;
  - Safe operation of the electrical system without fossil components if RES available;
  - Ongoing studies to harness the complex wind resources of the island;
  - Planned the reinforcement of wind and photovoltaic power (>5 MW/2 MW);
  - Expected RES share around 60%-70%, in short term.

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- Island with higher RES share: Madeira (30%)
  - Peak power: 154 MW, 880 GWh energy demand (2022);
  - Wind: 63 MW, PV:30 MW (15 MW is distributed), Hydro: 69 MW;
  - 16,5 MW, 100 MWh hydro pumping storage;
  - BESS 15 MW/15 MWh, ongoing project to double capacity;
  - Installation of synchronous condenser (15 MVA, 10s);
  - Safe operation of the electrical system without fossil components if RES available;
  - Challenging expansion of wind and PV due to island's complex orography;
  - Environmental impact on RES expansion, most of the interesting areas are ecological reserves;
  - New paradigm: Storage system from a few tens of MWh to the GWh scale.
  - Medium/Long term RES share: 55% / 95%