

Installed capacity and potential of wind power

Installed capacity of windpower (MW) - NUTS2

- 0 - 100
- 100 - 1000
- 1000 - 5000

Wind onshore energy potential (MWh/km2) - NUTS3

- 0 - 1
- 1 - 330
- 330 - 1127
- 1127 - 2076
- 2076 - 9403
- No data

*Regions without symbols are missing data regarding the installed capacity of windpower

Investments in renewable energy should follow geographic potentials

Regional patterns of installed renewable energy capacity do not always match geographic potentials.

The variance of regional patterns of renewable energy potential is mainly influenced by climatic and geographic differences across Europe. This variance is visible, for instance, in the concentration of wind energy potential in north-western Europe and the Baltic region, and in the high potential for solar power in southern Europe.

However, as renewable energy installation is also influenced by external factors such as availability of infrastructure and demand, investments are not necessarily made where the potentials are highest for the targeted renewable energy source. For example, when photovoltaic power generation was developed in less-privileged solar regions in central Europe.

The future of renewable energy harnessing should be based on geographic potential. In a territorial foresight in which energy supply and consumption are 100% renewable, European energy production could be dominated by wind power in north-western Europe, solar power in southern Europe, and hydropower in the Alps, Scandinavia, and some parts of south-eastern Europe. Geothermal power would continue to play a relatively minor role, with significant potential for district heating and energy installations in some parts of Italy, France, Hungary and Germany.

In such a future scenario, energy supply may become more decentralized and democratic, with direct involvement of citizens through ownership of energy installations.

Further reading: Possible European Territorial Futures (ESPON 2018).