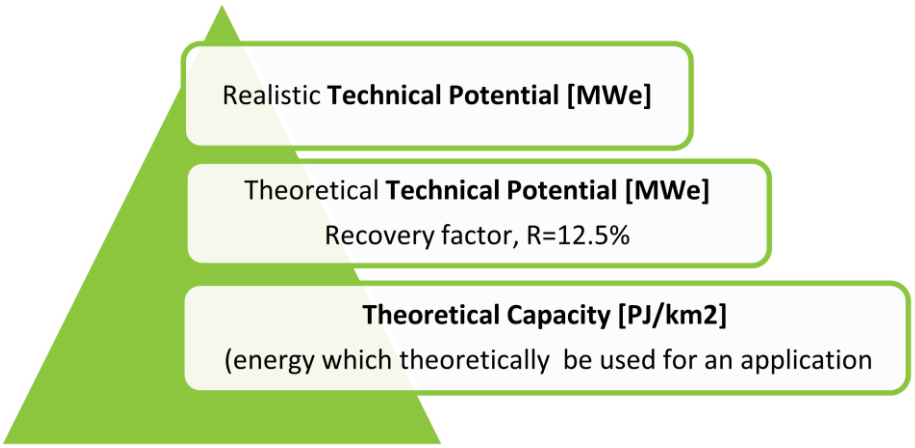
Geothermal Potential

www.geoelec.eu

Resource assessment

The Geoelec project has created a European map showing an overview of the location of geothermal resources which can be developed in 2020, 2030 and 2050. The map is based on a unified reporting protocol and resource classification for geothermal resource assessment.

The resource assessment of the geothermal potential for electricity generation is the product of the integration of existing data provided by the EU-28 countries and a newly defined methodology building on Canadian, Australian, and American methodology.



The geological potential (heat in place) is translated to an economical potential, using a Levelised Cost of Energy (LCoE) value of less than 150 €/MWh for the 2030 scenario and less than 100 €/MWh for the 2050 scenario:

- **The production of geothermal electricity in the EU in 2013 is 6 TWh**
- **The NREAPs forecast a production in the EU-28 of ca. 11 TWh in 2020**
- **The total European geothermal electricity potential in 2030 is 174 TWh**
- **The economic potential grows to more than 4000 TWh in 2050**

Potential 2020 in Europe

Geothermal electricity has experienced significant growth for some years, and the total installed capacity 2013 in Europe now amounts to around 1.71 GWe, producing some 11,38 terawatt-hours (TWh) of electric power every year.

According to the National Renewable Energy Action Plans of the EU Member States, the capacity will grow from 0.9 gigawatts (GWe) installed in 2013 to 1.4 GWe in 2020. The production of geothermal electricity in 2020 is forecasted to be 11 TWh.

In Europe, the total production will increase from 11.4 TWh to 16.7 TWh, with this major increase linked to the rapid growth of the Turkish and Icelandic markets.

The economic potential for geothermal power is much higher in 2020:

- **21.2 TWh for the EU-28**
- **70.8 TWh for the total potential in Europe**

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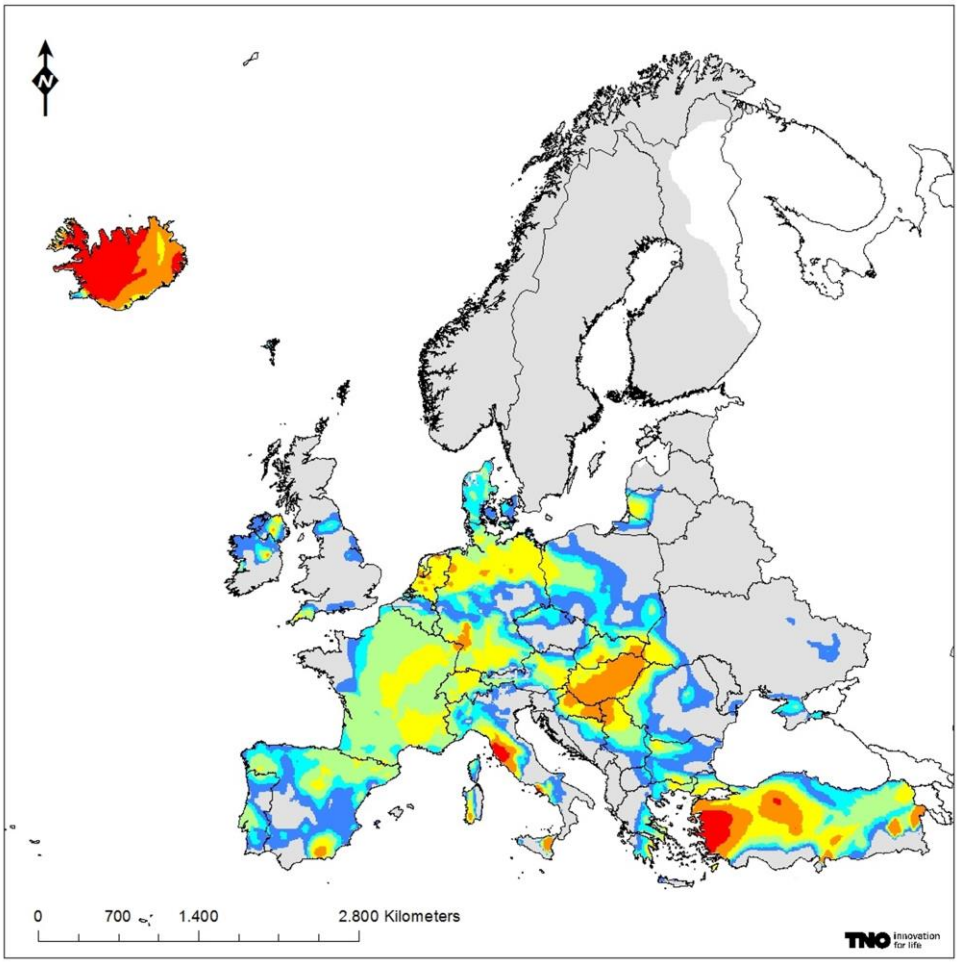
Potential 2030 in Europe



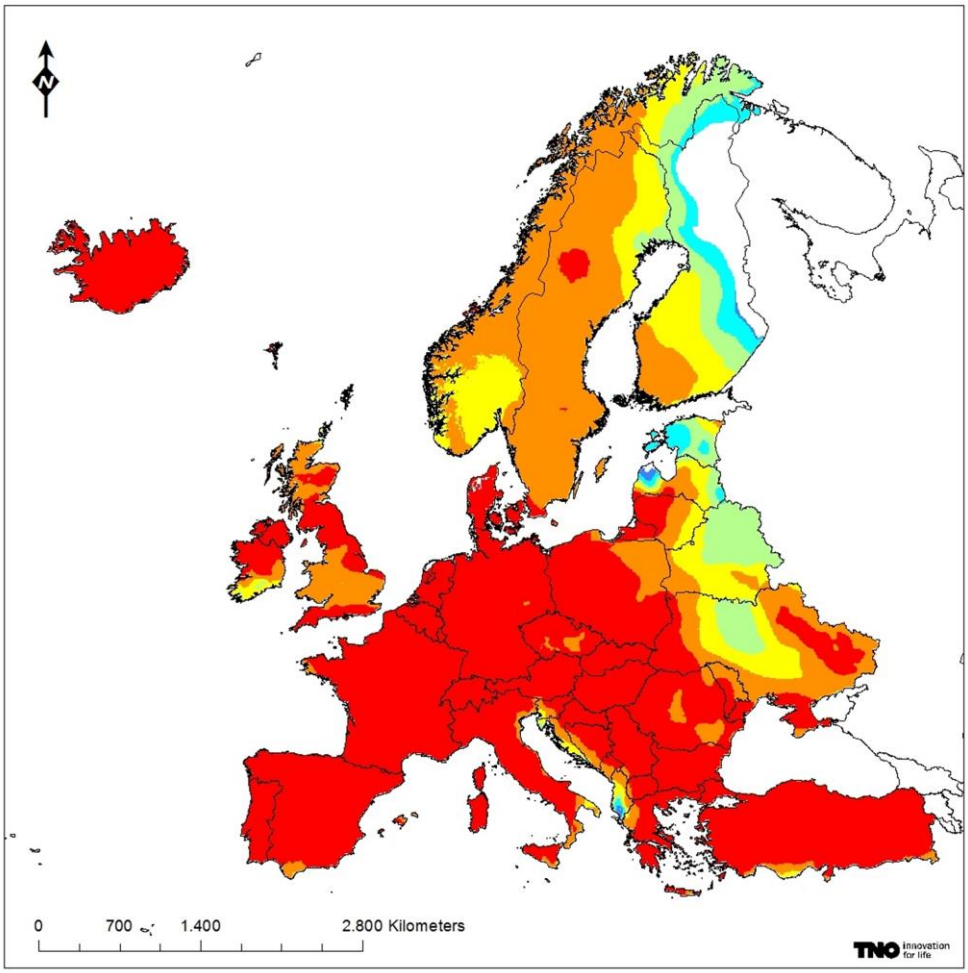
The economic potential for geothermal power in 2030 is:

- 34 TWh for the EU-28
- 174 TWh for the total potential in Europe

Cut off Value in MWh

- < 100
- 100 - 150
- 150 - 200
- 200 - 250
- 250 - 300
- 300 - 400
- > 400

Potential 2050 in Europe



The economic potential for geothermal power in 2050 is:

- 2570 TWh for the EU-28
- Ca. 4000 TWh for the total potential in Europe

Cut off Value in MWh

- < 100
- 100 - 150
- 150 - 200
- 200 - 250
- 250 - 300
- 300 - 400
- > 400