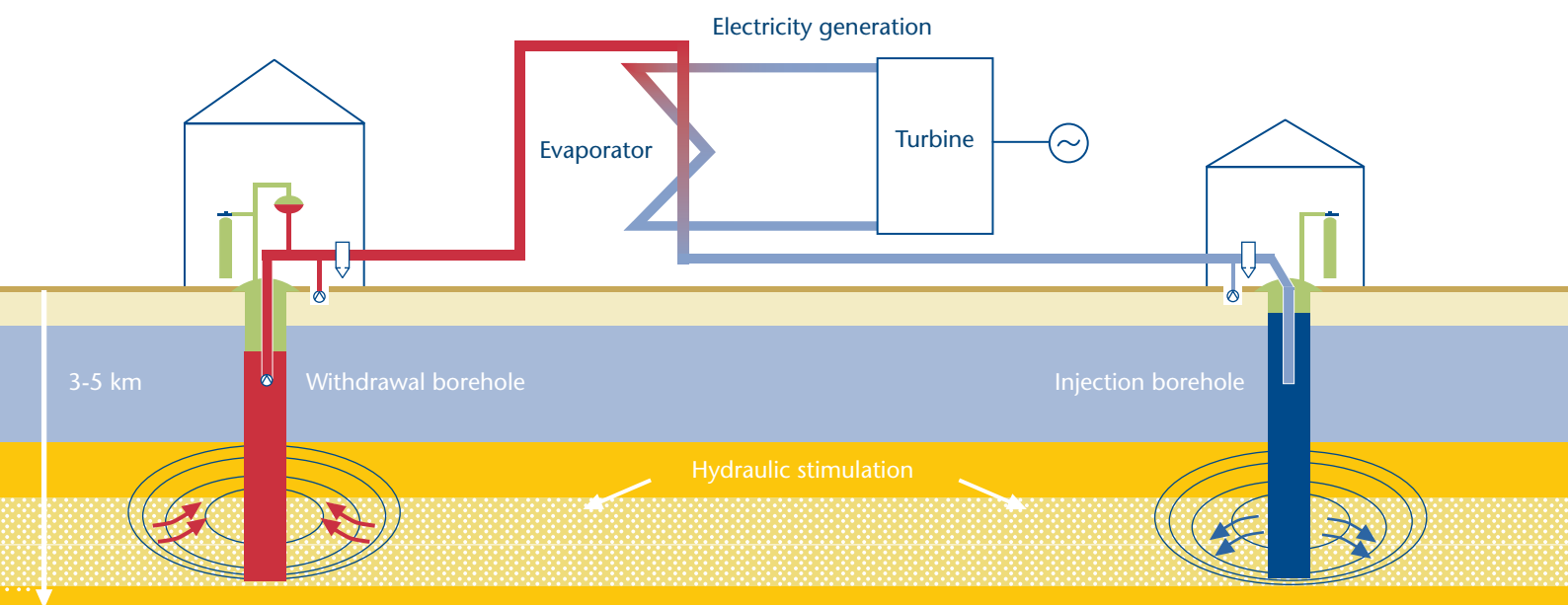


# Electricity from geothermal heat



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Geothermal units run 24 hours a day regardless of the weather and the season to provide renewable energy around the clock. Geothermal is thus indispensable for a sustainable future supply of energy because it can cover the base load for electricity.

While Germany has great geothermal resources, they have hardly been tapped. Geothermal technologies therefore have great expansion and innovative potential. If we manage to tap this potential through research and development, geothermal will make up a significant part of renewals by 2010.

Drilling down some 3-4 km to where temperatures are high enough for electricity generation is an expensive affair. Research and development can incrementally lower current financial risks. After all, for geothermal to be a common application, such drilling has to become less expensive, the effectiveness of underground fissures more reliable, and projects more economic overall. Geothermal technology projects must be able to reliably implement planning regardless of the location. To this end, hydraulic experiments and drilling measurements are currently being conducted under process conditions at the 4.3 km deep research borehole at Gross Schönebeck.

Germany's geological substrate is typical of Central Europe. Technological developments that are successful year therefore represent export items that can be used in numerous similar locations.

## Research and development requirements

- Development of new exploration methods, e.g. geophysical methods of improving the accuracy of required deep drillings
- Development of stimulation methods to increase the economic yield of geothermal boreholes
- Greater efficiency of energy conversion of low-temperature heat for electricity and cooling
- Better integration of geothermal in (current) energy systems
- Mapping of technical feasibility of multiple systems in areas with normal geothermal conditions (medium depths between 3000 and 4000 m)
- Ensuring sufficient, long-term thermal water circulation and optimal conversion technologies above ground