

The IEA Geothermal Trend Report

- an Annual Survey on Geothermal Applications and Developments

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About Working Group 10

The Geothermal Trend Report, an annual publication by the IEA Geothermal (or IEA-GIA), provides an overview of geothermal energy data in the member countries. The work for this report is accomplished within Working Group (WG) 10 – “Data Collection and Information”. All member countries are required to provide statistical data on the utilisation of geothermal energy.



Geothermal energy uses and manifestations. Photos: Ganz, Mongillo (Iceland, centre), Agemar (Hellisheidi, 2nd from right)

Aims & Objectives

- Collect essential data on geothermal energy uses, trends and developments in IEA Geothermal member countries in a standardized way
- Publish these data in an annual report available as hardcopy and on the IEA Geothermal website for public distribution (www.iea-gia.org)
- Provide a brief overview of data trends such as running capacities, electricity and heat use as well as CO₂ and fossil fuel savings

Structure

Operating Agents: Leibniz Institute for Applied Geophysics (LIAG), Germany; Federal Office of Energy (BFE), Switzerland

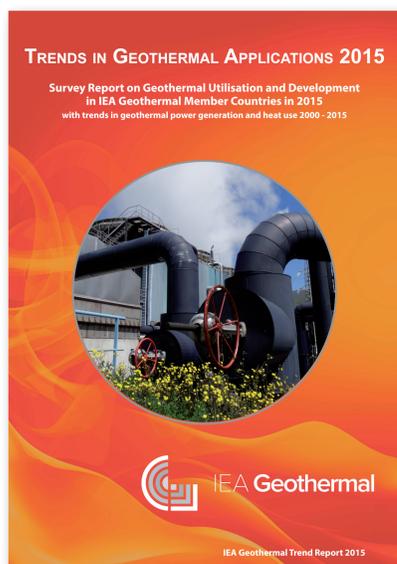
Working Group Leader: Josef Weber (LIAG, Germany)

Participants: all IEA Geothermal country members and two sponsors

LIAG's work within WG 10 is funded by the German Federal Ministry for Economic Affairs and Energy (BMWi) as part of the project “GeoFaces”, project number 0324025A.

The Geothermal Trend Report

Working Group 10 started its work with data from 2010. The Geothermal Trend Report for that year was published in a first issue in 2012 as “Trends in Geothermal Applications - Survey report on geothermal utilization and power development in IEA-GIA member countries in 2010 with trends in geothermal power generation and heat uses”.

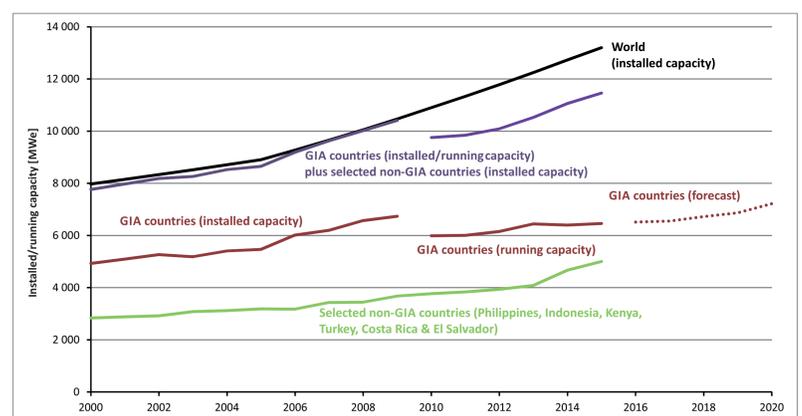


IEA Geothermal Trend Report 2015 (Weber et al. 2017)

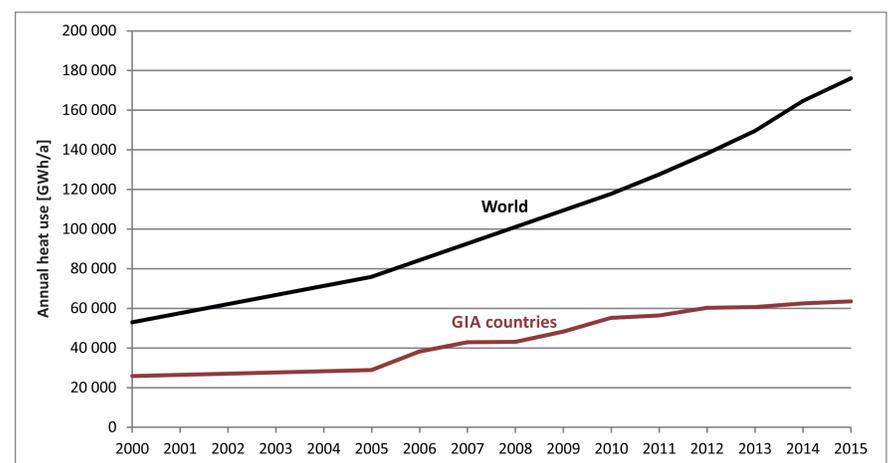
Main contents

- Geothermal power generation
- Direct use of geothermal heat in different categories
- Ground source heat pump applications
- Trends in heat and power use 2000 - 2015
- Comparison with worldwide data (e.g. Bertani 2016, Lund & Boyd 2016; REN21 Global Status Report 2016)
- Data on geothermal power from non-member countries (e.g. Philippines, Indonesia and Kenya)
- CO₂ and fossil fuel savings
- Short information on new facilities

Trends

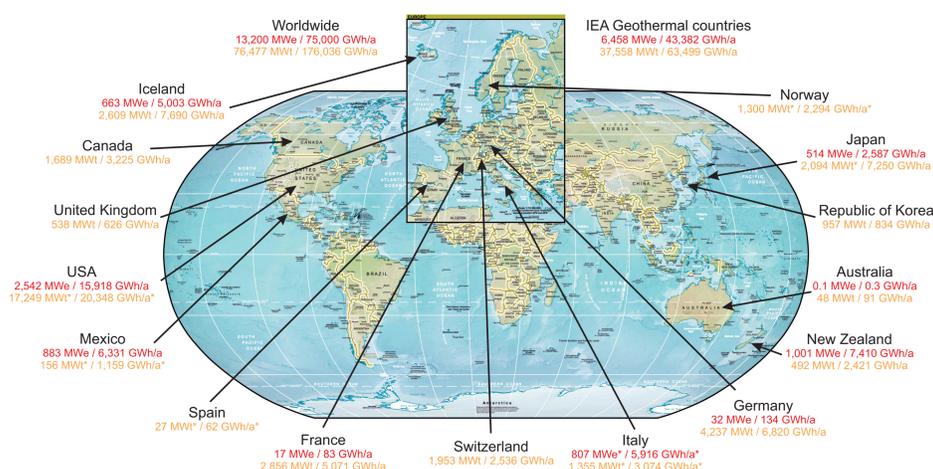


Installed and running capacities [MW] in IEA Geothermal countries, selected non-member countries and worldwide 2000 - 2015, and forecast of the development of running capacities in IEA Geothermal countries until 2020. IEA Geothermal country data: WG 10 country reports (for 2010-2020), IEA Geothermal Annual Reports (for 2003-2009) and Hutter (2000). World and selected non-member countries data: Hutter (2000), Bertani (2005, 2007, 2012, and 2016), REN 21 Global Status Report 2016, IRENA Renewable Capacity Statistics 2017.



Annual heat use [GWh/a] of all geothermal heat uses (direct use and GHP use) in IEA Geothermal countries and worldwide 2000 - 2015. IEA Geothermal country data: IEA Geothermal Annual Reports 2007, 2008 and 2009, and WG 10 country reports 2010 to 2015; world data: Lund & Freeston, 2001; Lund et al., 2005 and 2011; Lund & Boyd, 2016; 2015: estimated assuming a compound annual growth rate of 6.9%.

Geothermal power and heat in IEA Geothermal countries



Overview of geothermal power (red) and heat (orange) utilisation in IEA Geothermal countries and worldwide 2015. Heat related data includes direct uses as well as geothermal heat pump use. Country data: WG 10 country reports 2015, electric capacities are running capacities; world data for power: REN21 Global Status Report 2016, electric capacities are installed capacities; world data for heat: estimated assuming a compound annual growth rate of 7.9% for capacity and 6.9% for heat use. * includes data from previous year. Maps: The World Factbook 2013, CIA (www.cia.gov).

Ongoing work

- Alignment of data collection methodology to allow comparison of geothermal statistics between different organizations (e.g. IEA, EUROSTAT) and increase liability of published data
- Revision of data collection methodology for geothermal heat pumps under the lead of Working Group 8
- Inclusion of cooling applications
- Extension of data from non-member countries through establishing a data sharing concept with the International Geothermal Association (IGA)