

Focus on Geothermal

Energy for the Weekend

11 December 2020 14.00 - 14.30 CEST

Mapping Geothermal Power Generation



JOCHEN SCHNEIDER
ENERCHANGE



ALEX RICHTER
THINKGEOENERGY

ORGANIZER:



SUPPORTED BY:



<https://www.thinkgeoenergy.com/mapping-geothermal-power-generation-our-approach-to-research-and-our-power-plant-map>



Focus on Geothermal: Alexander Richter: Mapping geothermal power generation

Watch later Share



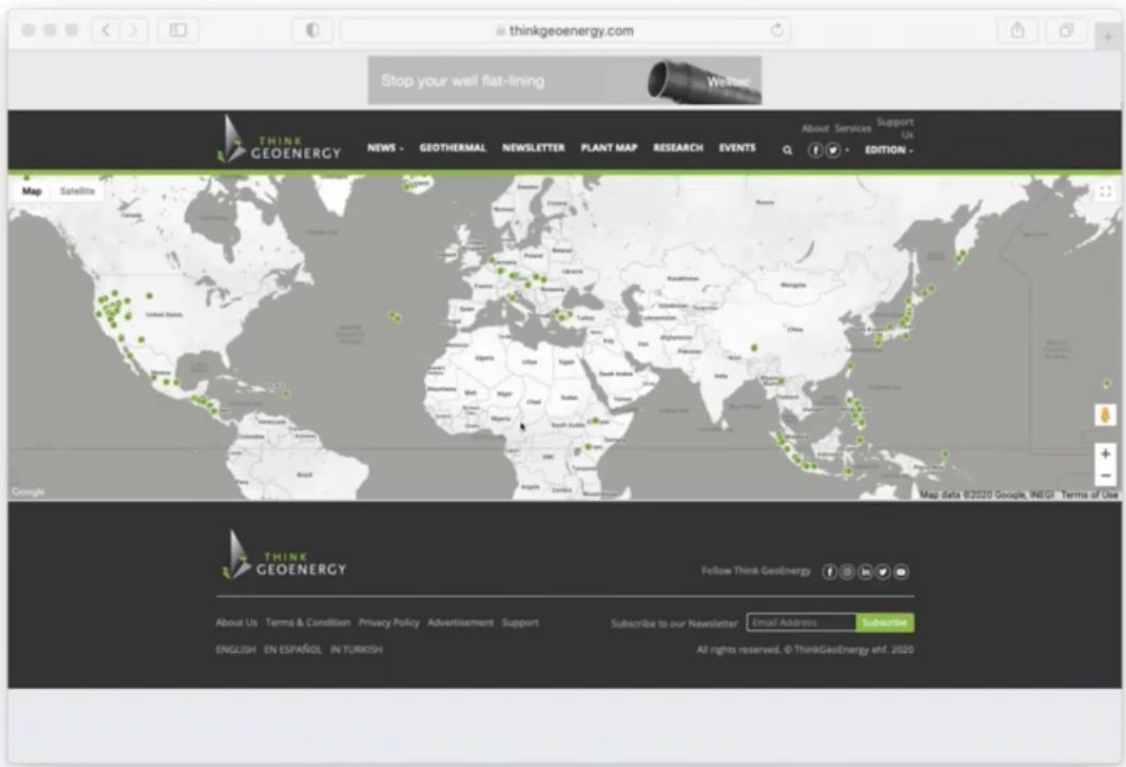
ThinkGeoEnergy

Mapping Geothermal
Geothermal Power Plant Map
Dec. 11, 2020

MORE VIDEOS

1:00 / 46:15

YouTube



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OUR INDUSTRY RESEARCH

General market and bespoke market research for clients

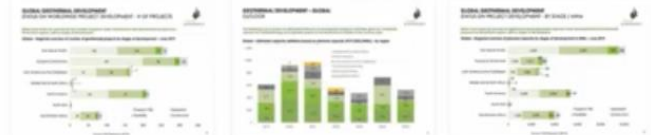


Research work

General updates being made available regularly



Bespoke client research on market opportunities



Country reports – we are currently working on several country market reports in key growth markets for the geothermal sector.

THINKGEOENERGY RESEARCH

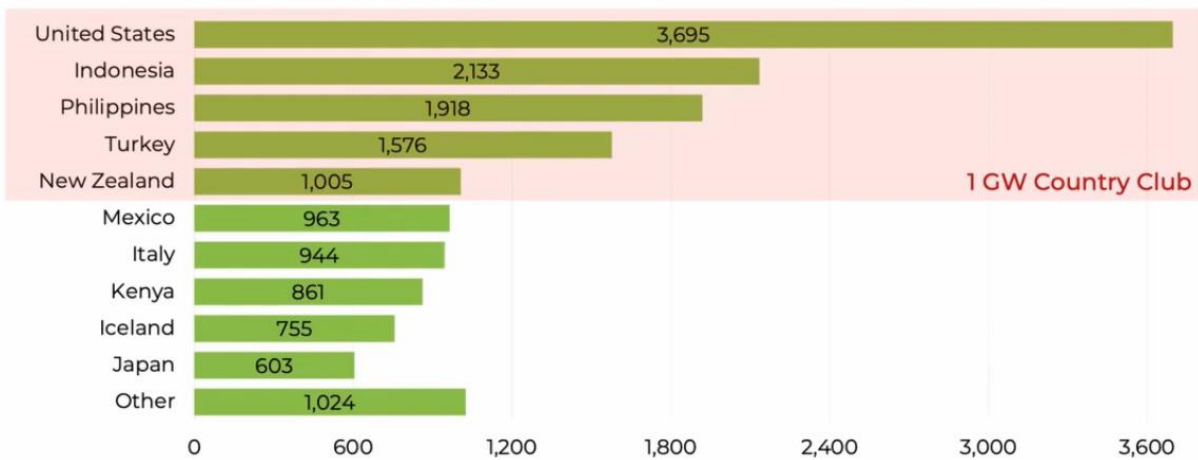
What kind of data?

Plants	Name, location, MW installed, MW operating, technology, turbine, units, wells, resource temperature, developer, operator ...
Projects	Name, location, MW planned, development stage, planned technology, developer, companies involved, financing ...
Companies	Role/ Category, products, services, projects, location ...

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TOP 10 GEOTHERMAL COUNTRIES - POWER

Installed Capacity in MWe, December 2020 - Total 15,477 MW

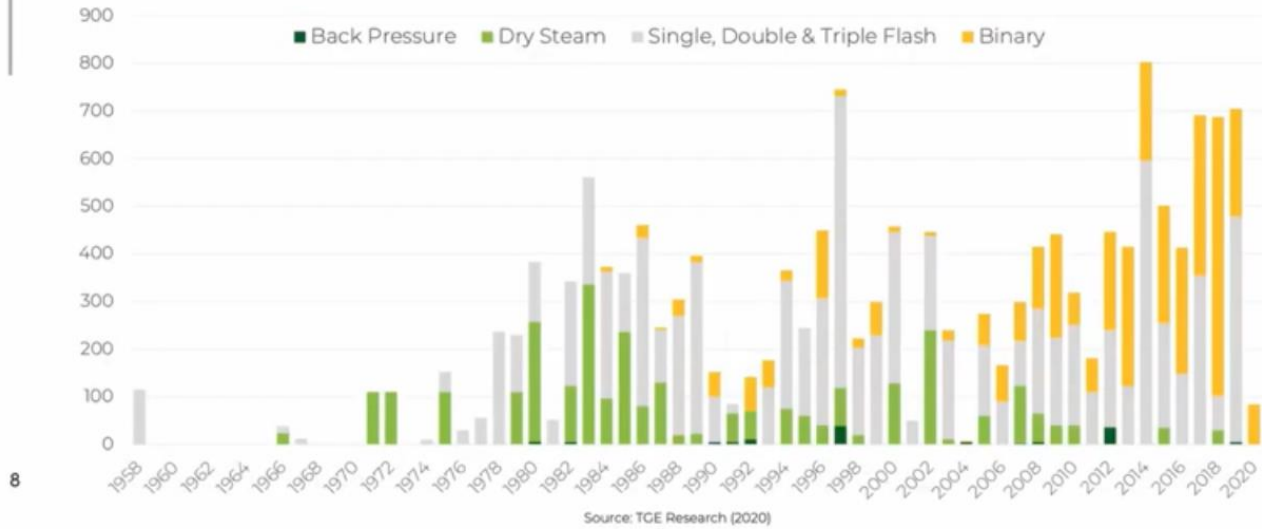


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Source: TGE Research (2020)

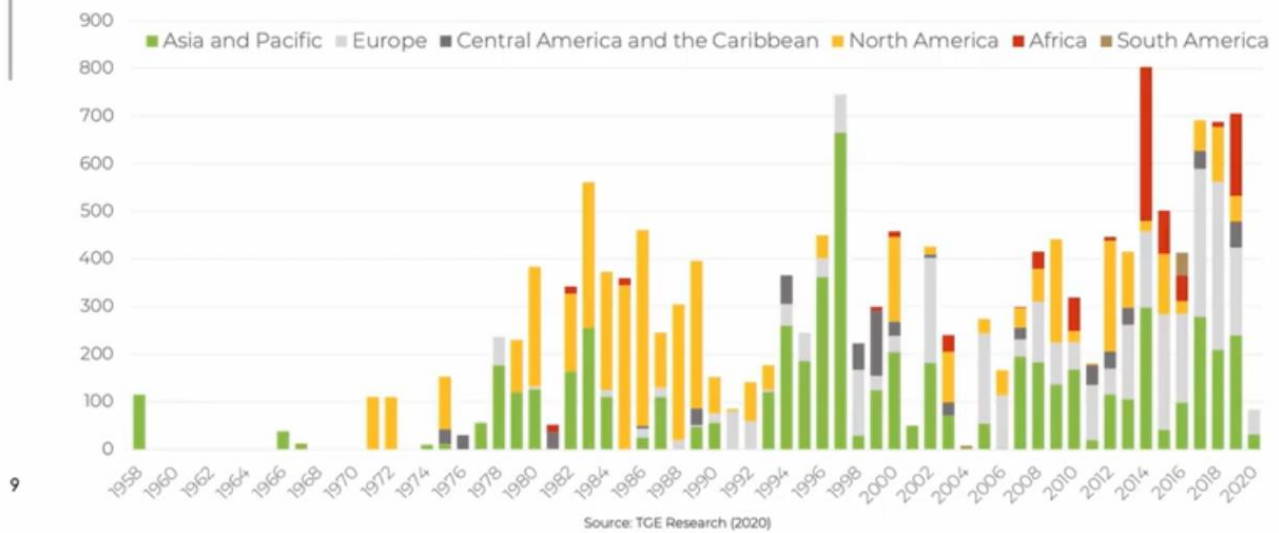
GEOTHERMAL DEVELOPMENT

By technology & year (MW)



GEOTHERMAL DEVELOPMENT

By region & capacity (MW)



GEOHERMAL DEVELOPMENT

Comparison of development in different countries/ technologies

GEOHERMAL DEVELOPMENT – INDONESIA VS. TURKEY
POWER GENERATION CAPACITY ADDITIONS 2006-2017(MW) + PLANNED 2018



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Sources: TGE Research (2018), Pertamina (2018), Inohid Sukabung (2017), JEDDER (2018), Enel Atlas (2018)

Source: TGE Research (2020)

Indonesia vs. Turkey

Much talked about comparison of development in both countries done in 2018 and shared widely.

Highlighting the impact on policy decisions in Turkey on development and the lack thereof in Indonesia.

THINKGEOENERGY GEOHERMAL POWER PLANT MAP

What kind of data?



On the map

Plant/ Plant Group Name
Country
Capacity Installed
Technology

In the database

Plant
Plant Group
Location & Country
Region
Operator
Developer
Capacity Installed
Capacity operating
Technology (turbine) & units
COD
Suppliers
Wells (production, injection, not used)
Resource temperature
....

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Source: TGE Research (2020)

THINKGEOENERGY GEOTHERMAL POWER PLANT MAP

Ulubelu, South Sumatra



Source: TGE Research (2020)

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Click onto satellite view on map.

THINKGEOENERGY GEOTHERMAL POWER PLANT MAP

Ulubelu PLTB , South Sumatra



Ulubelu Units 1 & 2, Units 3 & 4

Location: South Sumatra, Indonesia
Operator: PT Pertamina Geothermal Energy

Unit 1 & 2:
COD 2012
2x 55 MW Single Flash units by Fuji Electric
Wells: 13 production wells, 6 reinjection wells (5 well clusters)

Unit 3 & 4:
1x 55 MW Single Flash unit by Fuji Electric (COD 2016)
1x 55 MW Single Flash unit by Fuji Electric (COD 2017)
Wells: 12 production wells, 5 reinjection wells (6 well clusters)

Production zone temperatures: ~ 275 °C

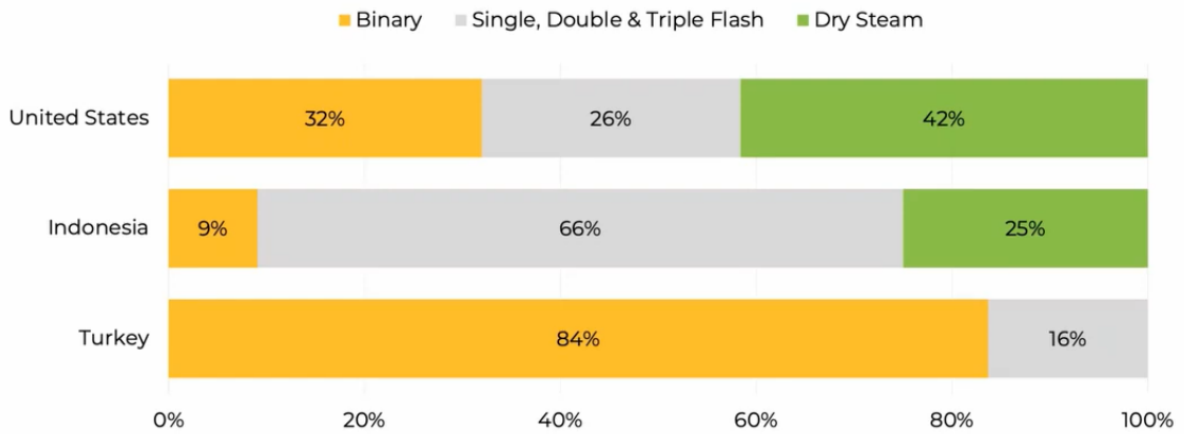
EPC: Sumitomo Corp.
Financing: World Bank, IBRD, CTF, JICA

Source: TGE Research (2020)

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THINKGEOENERGY GEOTHERMAL TECHNOLOGY

Share of technology by country (MW)

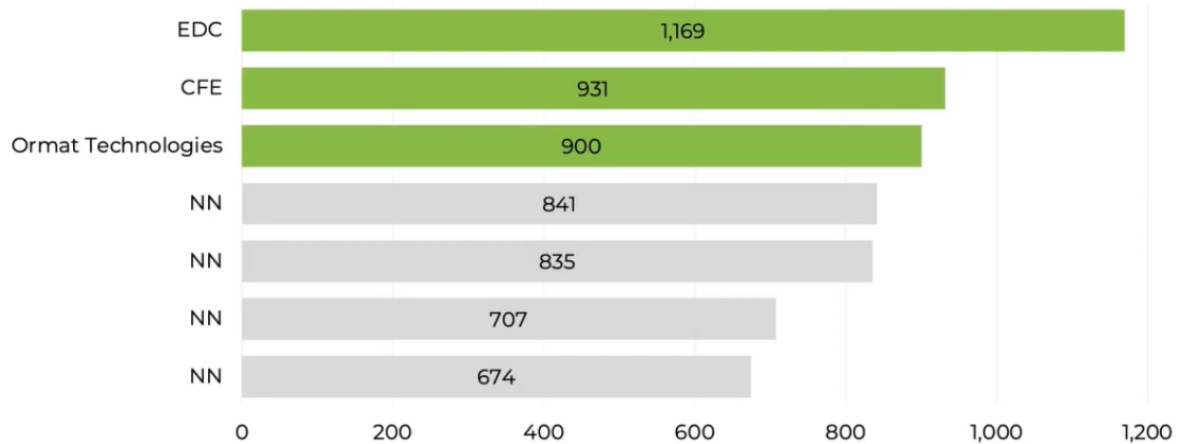


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Source: TGE Research (2020)

TOP GEOTHERMAL OPERATORS

Based on operating capacity in MWe



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Source: TGE Research (2020)

OUTLOOK

So what is next for ThinkGeoEnergy?

- Establishment of international research team.
- Set-up of dedicated research site with specific research documents, such as country overviews, regional overviews and more – to launch January 2021.
- Launch of larger-scale research reports for sale on our website.
- Ongoing desktop research for clients in the sector with an international research team in place.


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GET IN TOUCH


Alexander Richter

Founder & Principal


ThinkGeoEnergy
Alexander Richter


 +354 618 5304


 alex@thinkgeoenergy.com

 Grensásvegur 9,
108 Reykjavik, Iceland

PiensaGeotermia
Carlos Jorquera


 +56 (9) 6-2284610


 cJORQUERA
@thinkgeoenergy.com

 Santiago/ Chile

JeotermalHaberler
Cannur Bozkurt

 +90 533 366 7743

 info@jeotermalhaberler.com

 Izmir/ Turkey



@thinkgeoenergy

Questions and Answers with Alex

Binary: have tech use secondary fluid boils at lower temperatures to turn turbine. More complex and closed systems at 70 C or 280 C. Allows geothermal generation at different regions.

Flash: Power from turbine from steam, use steam directly. Dry steam use directly in turbine, flash condenses to water, wet steam, remove water, dry steam to turn turbine. Use wet steam as resource.

Data on power plants comes from both developers and operators and national data bases like power regulators. Often different capacity numbers on units from country to country.

Free information will not share project data on public map, but will share map and operating data.

As soon as plant shows commercial operation it will appear onto map.

As soon as plant changes process operations in plant it will ripple into map with press releases and news reports form plants to update the map and be current with actual operations.

Installed capacity versus operating capacity: only report on installed capacity even though not operating at full capacity.



IGC Online Meeting
WEBINAR


Press Esc to exit full screen

Focus on Geothermal

Energy for the Weekend


18 December 2020 14.00 - 14.30 CEST

Recent earthquakes in Strasbourg: first lessons learned from seismic observations


JOCHEN SCHNEIDER
ENERCHANGE


JEAN SCHMITTBUHL
EOST - UNIVERSITÉ DE STRASBOURG

ORGANIZER:
ENERCHANGE
agenceur für erneuerbare energien

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