



## Investing in Sustainable Geothermal Future

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Size: 104.000 km<sup>2</sup> Population: 310.000



## The Icelandic Development Geothermal utilization

- During Iceland's first 1000 years of settlement geothermal heat was primarily used for washing, bathing and cooking.
- For centuries women carried the laundry to the hot springs now in mid Reykjavík.
- Nevertheless the first known geothermal heating "system" was established by the famous Icelandic poet and historian Snorri Sturluson at Reykholt around 1200.
- In 1909 the first house was heated with geothermal energy.
- After the World War II utilization of geothermal energy increased due to lack of coal.
- Again, influenced by the oil crises 1970-1975, geothermal utilization has grown very fast and stands now for over 50% of total energy used in Iceland

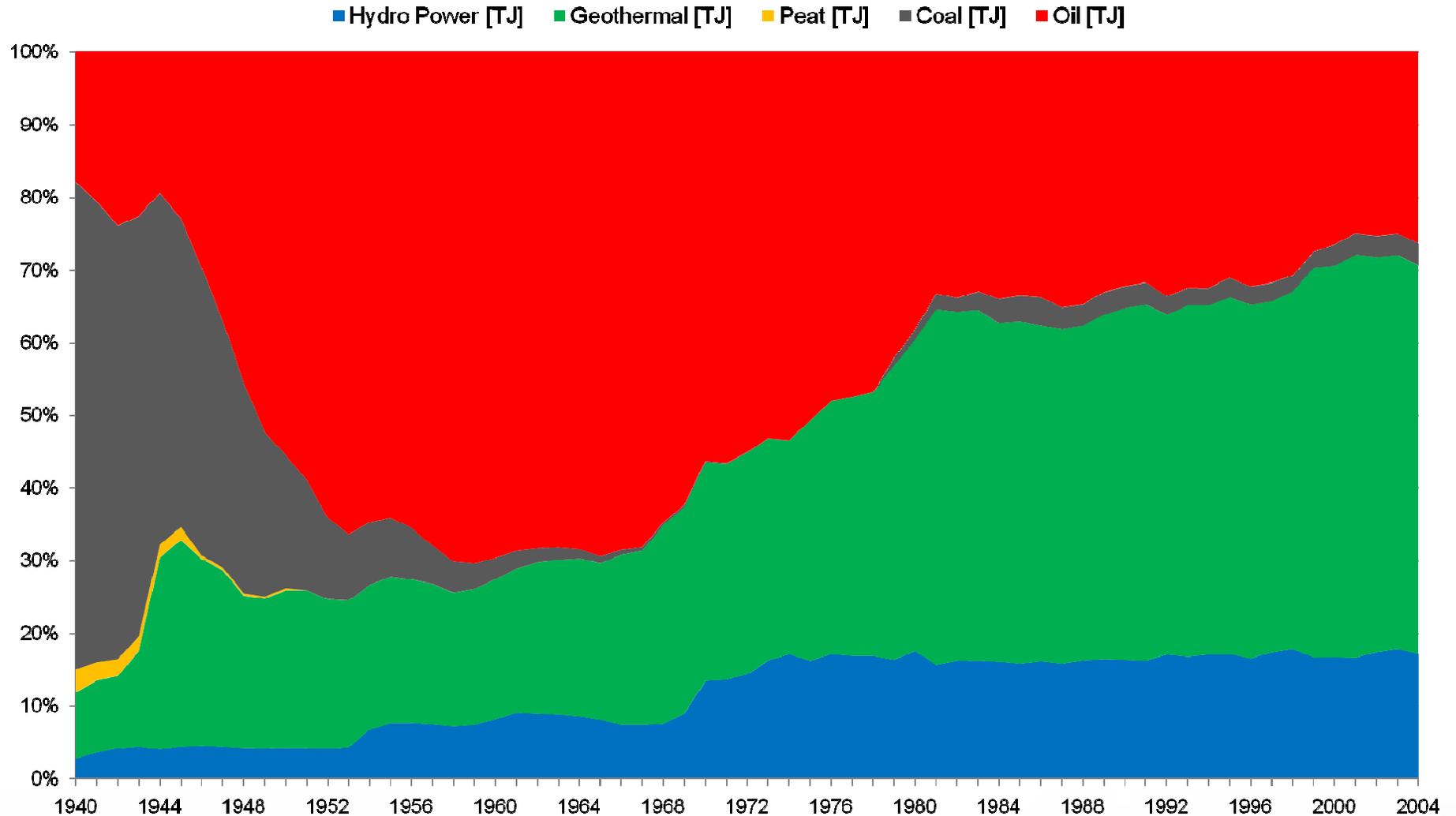


## The Icelandic Development Hydro Power utilization

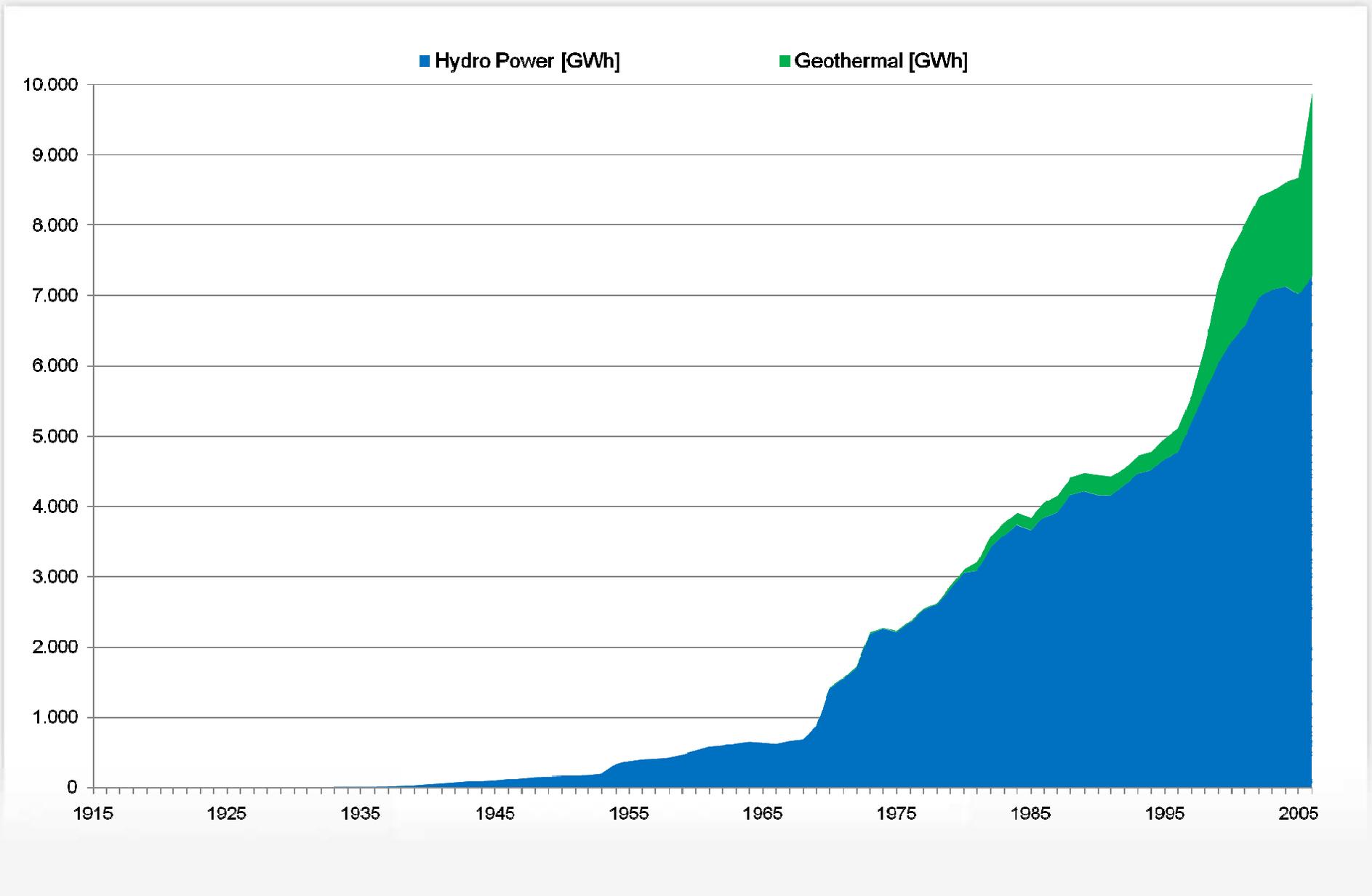
- During centuries rivers in Iceland has flowed to the ocean with all their energy unharnessed. Technology was not mature to capture the energy from the rivers as the first hydro power station in the world was installed 1882.
- The first hydro power station in Iceland was installed 1904 which marked the beginning of the electrification in Iceland based on sustainable resources.
- Installed power 2007 is 2.400 MW and yearly production over 14.000 GWh.
- Produced electrical energy over 35.000 kWh/capita.



## The Icelandic Development Total energy mix



## The Icelandic Development Total electricity production



## The Icelandic Development Clean Sustainable Domestic Energy

- All electricity production from renewable resources
- All electricity from domestic energy resources
- New industries based on clean energy resources
- Harnessing domestic sustainable resources has been of huge impact on the Icelandic society:
  - Environmental
  - Economical
  - Social
  - Cultural
- Geothermal and hydro energy will be part of the solution to the foreseeable world energy shortage.
- The Icelandic experience in transforming from fossils to clean sustainable energy systems can help other countries to find their way towards a more sustainable future.



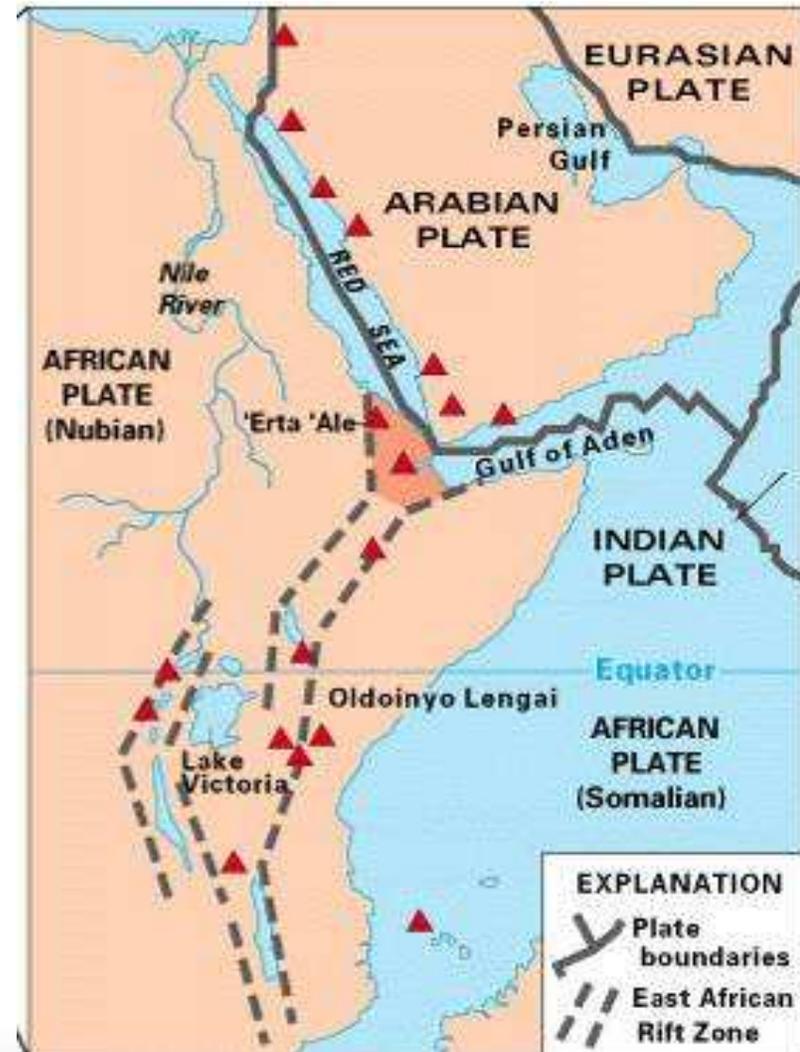
## Background of Reykjavik Energy Invest



- Reykjavik Energy has been one of the main leader in transforming the energy system in Iceland.
- Reykjavik Energy is the world's leading authority in the utilization of geothermal energy - through over 70 years of supplying geothermal water for domestic heating and developing new steam fields for power production.
- Reykjavik Energy Invest (REI) is 100% owned by Reykjavik Energy.
- REI intends to use its unique position to lead development of geothermal energy on a world-wide basis.
- This puts REI in a leading position as an investor in a profitable utilization of geothermal energy.

## Opportunities in the East Africa Rift

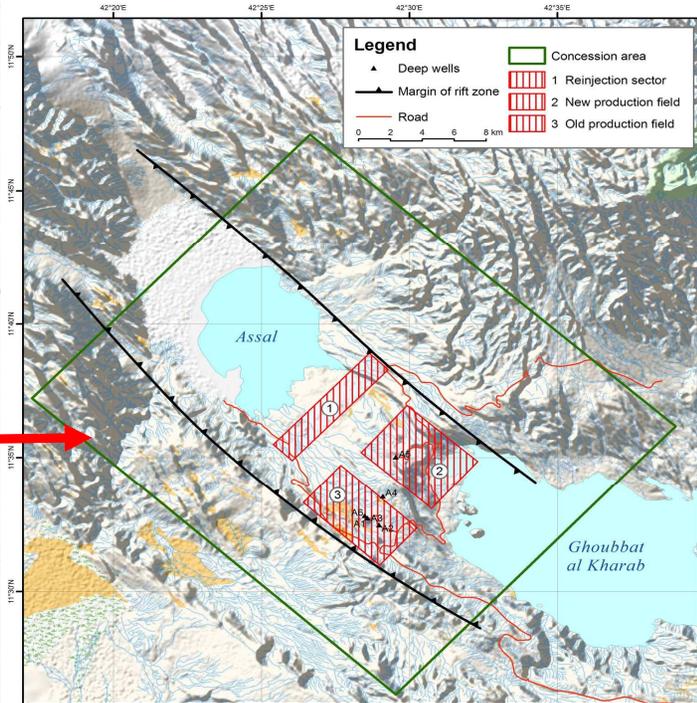
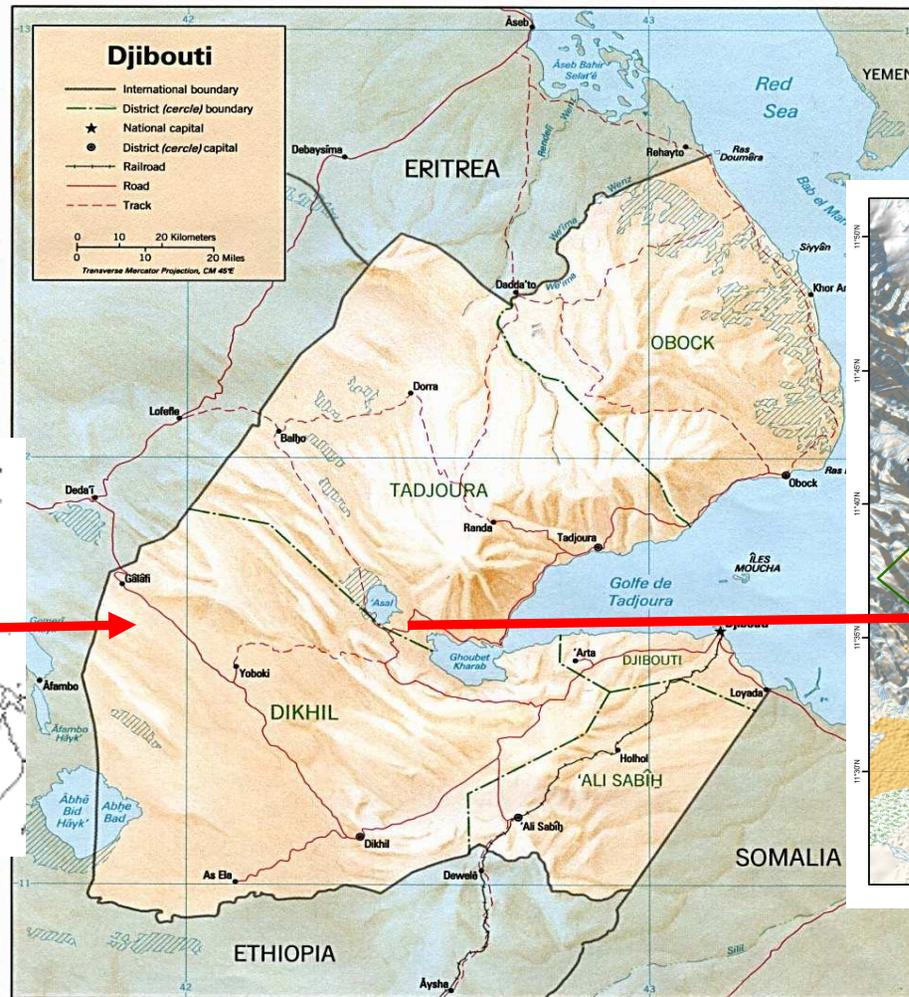
- The African Rift Valley hosts many volcanoes and geothermal systems.
- Possible generating potential is estimated between 7-14.000 MW.
- Current generation ~150 MW.
- The rift goes from Yemen thru Eritrea, Djibouti, Ethiopia, Kenya, Uganda and to Tanzania.
- REI has started up a project in Djibouti and is in cooperation with governments in the region examining possibilities on geothermal development on the East African Rift.
- Prospects are promising.



## Djibouti – East Africa



Size: 23.000 km<sup>2</sup> Population: 700.000



## Djibouti: Assal Rift – exploration

- All electricity in Djibouti generated with oil.
- Total geothermal potential estimated up to 900 MW (8 sites).
- Contract between the Government of Djibouti and Reykjavík Energy on a exclusive licence for geothermal exploration signed in February 2007.
- Pre-feasibility study completed before end of March 2008.
- Heads of Terms for a Project Agreement with the Government and a Power Purchase Agreement with Electricité de Djibouti will be signed April 2008.
- Initial plans are for a 50 MW plant in the first phase, later extension to 100-150 MW.





- All electricity produced by oil and gas.
- Geothermal potential not been estimated, expected to over 1.000 MW.
- Demand to day 800 MW.
- Lol signed between REI and Government of Yemen on geothermal development in January 2008.
- Further discussion on cooperation in April 2008.





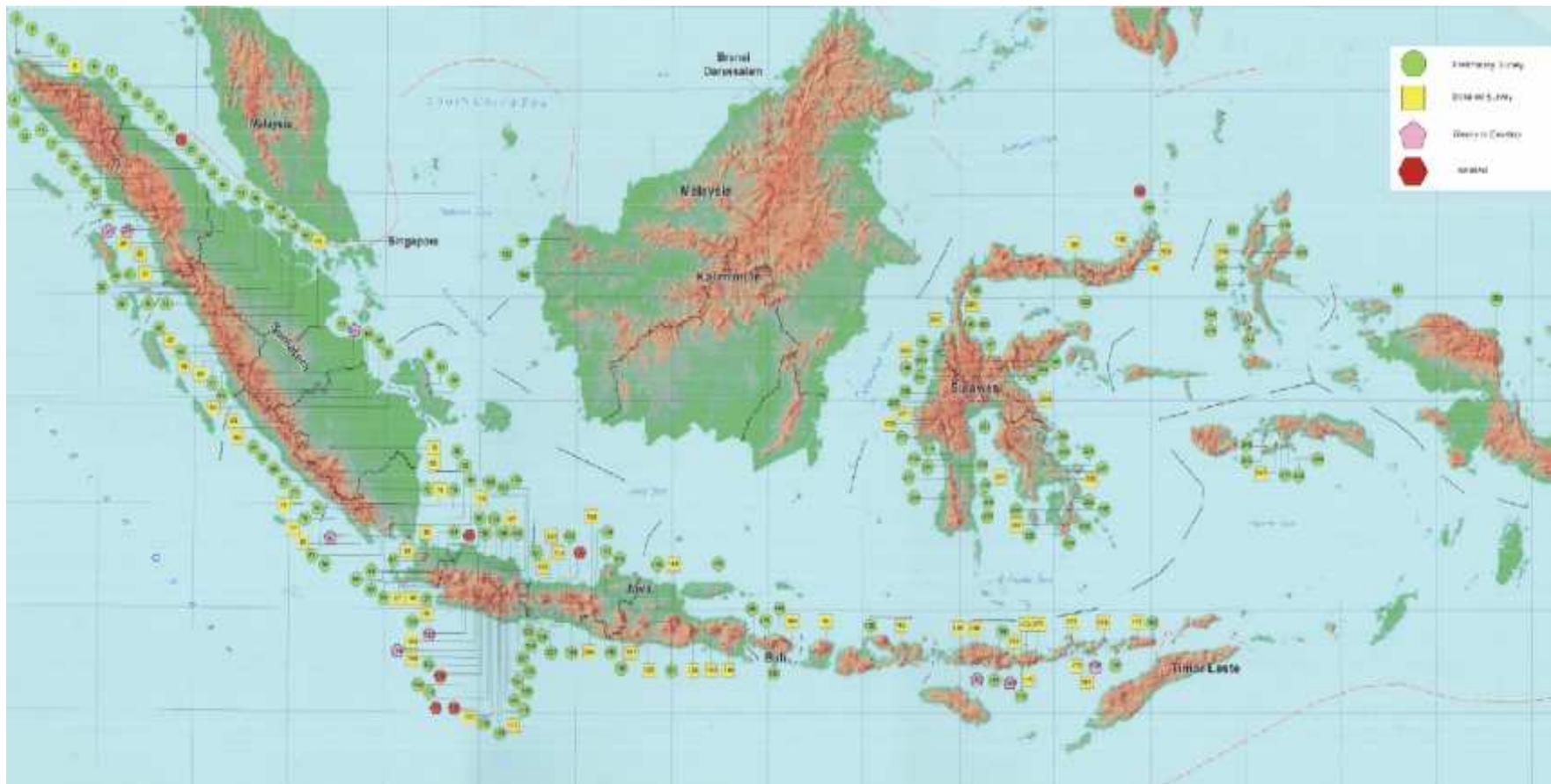
- Electricity produced by hydro and oil.
- High potential for geothermal power production, estimated up to 2.500 MW.
- Producing electricity by hydro, oil and gas.
- MOU between REI and EEPKO on cooperation in developing a minimum 100 MW geothermal power plant in Tendaho-region.
- Preparation to be finished en of August 2008.
- Exploration drilling expected to start no later than Q1 2009.



## Indonesia – South Asia

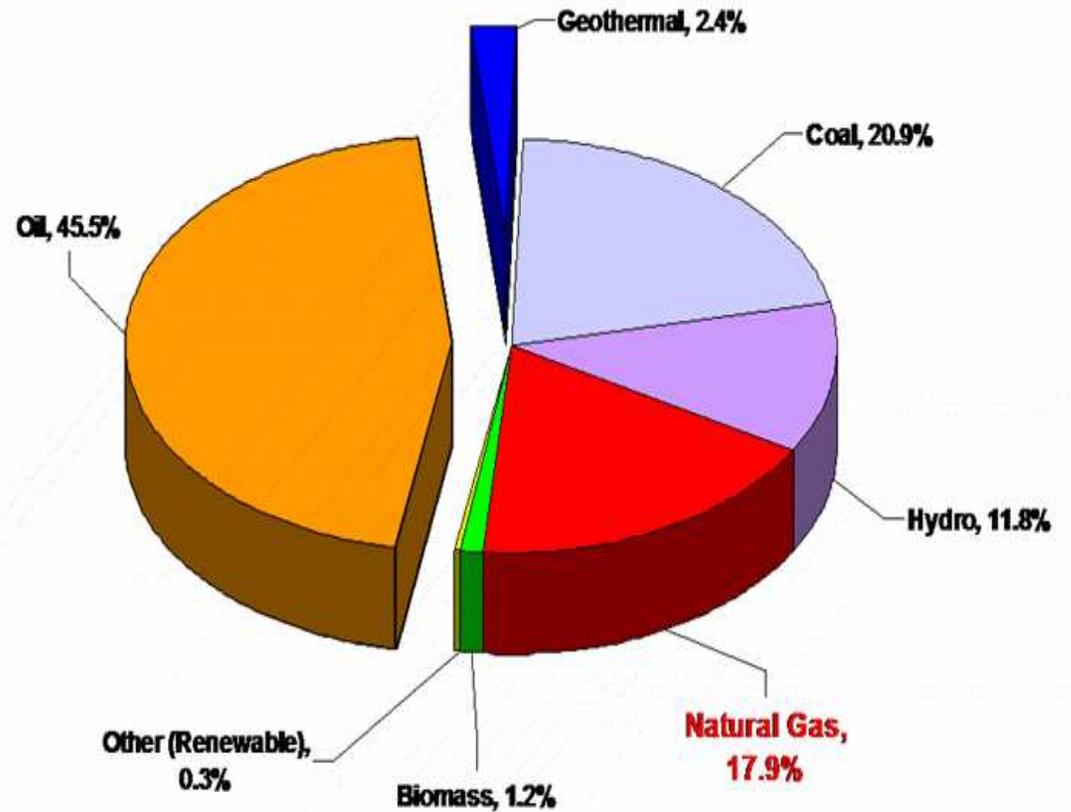


## World's Largest Geothermal Potential – 30.000 MW



## Energy Capacity 2006

Form of energy	Capacity (MW)
Oil	16,201
Gas	6,361
Coal	7,460
Hydro	4,200
Geothermal	852
Biomass	445
Other (renewable)	98
<b>Total</b>	<b>35,572</b>





- Geothermie Bouillante
- Geothermal power plant 16 MW owned by BRGM and EDF.
- REI has been examining possibilities to go into cooperation with BRGM on further geothermal development in Bouillante on Guadeloupe.



Bouillante I - II Geothermal Power Plant

## Why Geothermal ?

- Base load power
- Emits little or no greenhouse gases
- Green renewable
- Domestic energy resource
- Attractive economics



## How Can REI Contribute?

- Fast developer of geothermal power plants.
- Decades of experience on developing geothermal fields, installing and operating plants.
- Human resources.
- Social responsibility.
- Financing.
- Interest from international investors.
- Development in cooperation with local government and partners, based on local environmental conditions.



Thank you

