

Involvement of the World Bank in Developing Geothermal

GEA Global Geothermal Showcase and Forum
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Overview

1. History of funding geothermal projects worldwide
 2. Pipeline of projects being considered
 3. ESMAP - Active and planned programs for technical assistance (TA)
- Total funding by WB (IBRD and IDA) is around US\$ 1.4 billion, thereof \$ 0.8 billion for projects under preparation. All figures are rounded / estimated and only focused on main issues (not complete).

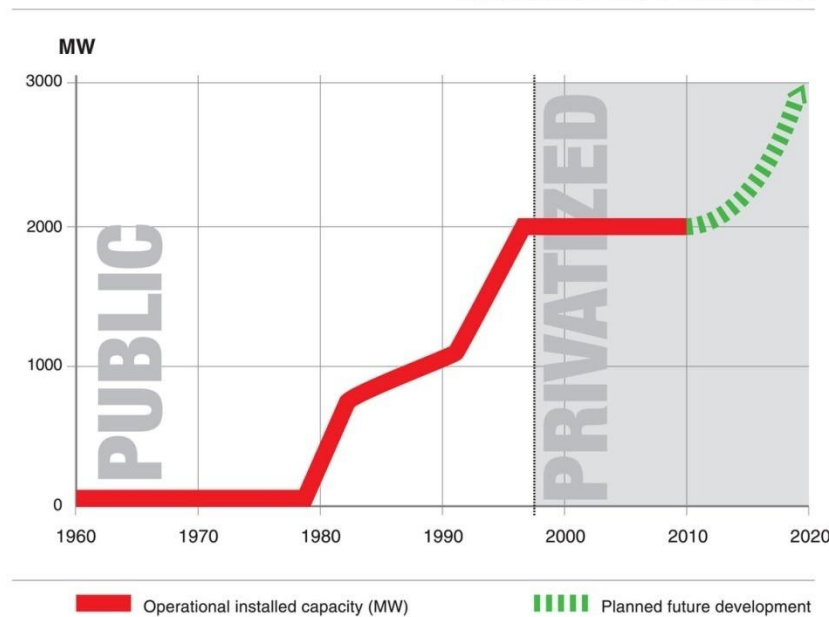
History of WB Involvement in Geothermal

- 1980: First 4 loans to Kenya (until 1988) to finance the development of the Olkaria field, building Olkaria I and preparing Olkaria II. Amount approx. \$ 120 m.
- 1982: Philippines \$ 36 m.
- 1983: Ethiopia, TA project, exploration, \$ 7 m
- 1984: Djibouti, again 1989, total \$ 15m., for resource mapping of geothermal areas and a few test drillings.

History of WB Involvement in Geothermal

- 1994-5: Philippines, Leyte and Bacman projects, 3 loans, \$350 m. for total 700 MWe.

Development of Power Generation from Geothermal in Philippines
Before and After Privatization



History of WB Involvement in Geothermal

- 1996 – 2000: Lithuania and Poland, geothermal heating projects, total \$ 45 m.

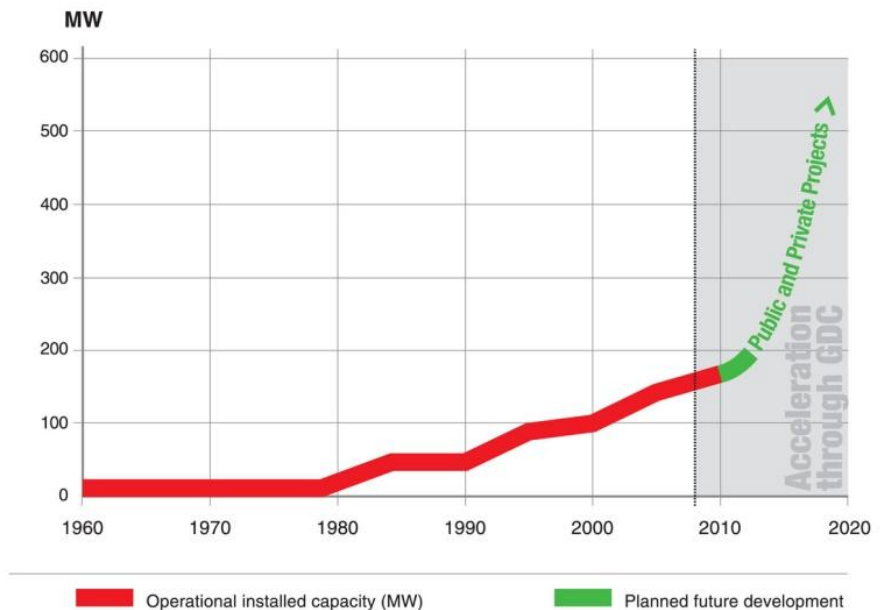
Pipeline of Projects being considered

- ARGeo (African Rift Geothermal Development Program) under preparation since 2001, risk mitigation fund for drillings and TA in 6 East-African countries (October, 2010).
- Indonesia geothermal projects, total of 250 MWe power & T&D & TA, \$ 500m. (Oct. 2010)
- Ethiopia Geothermal, TA & drillings for Aluto Langano, \$ 10m. (June 2010).

Pipeline of Projects being considered

- Kenya, extension of Olkaria by 280 MWe, \$ 300m., to KenGen through GoK. (May 2010). Includes T&D & TA.

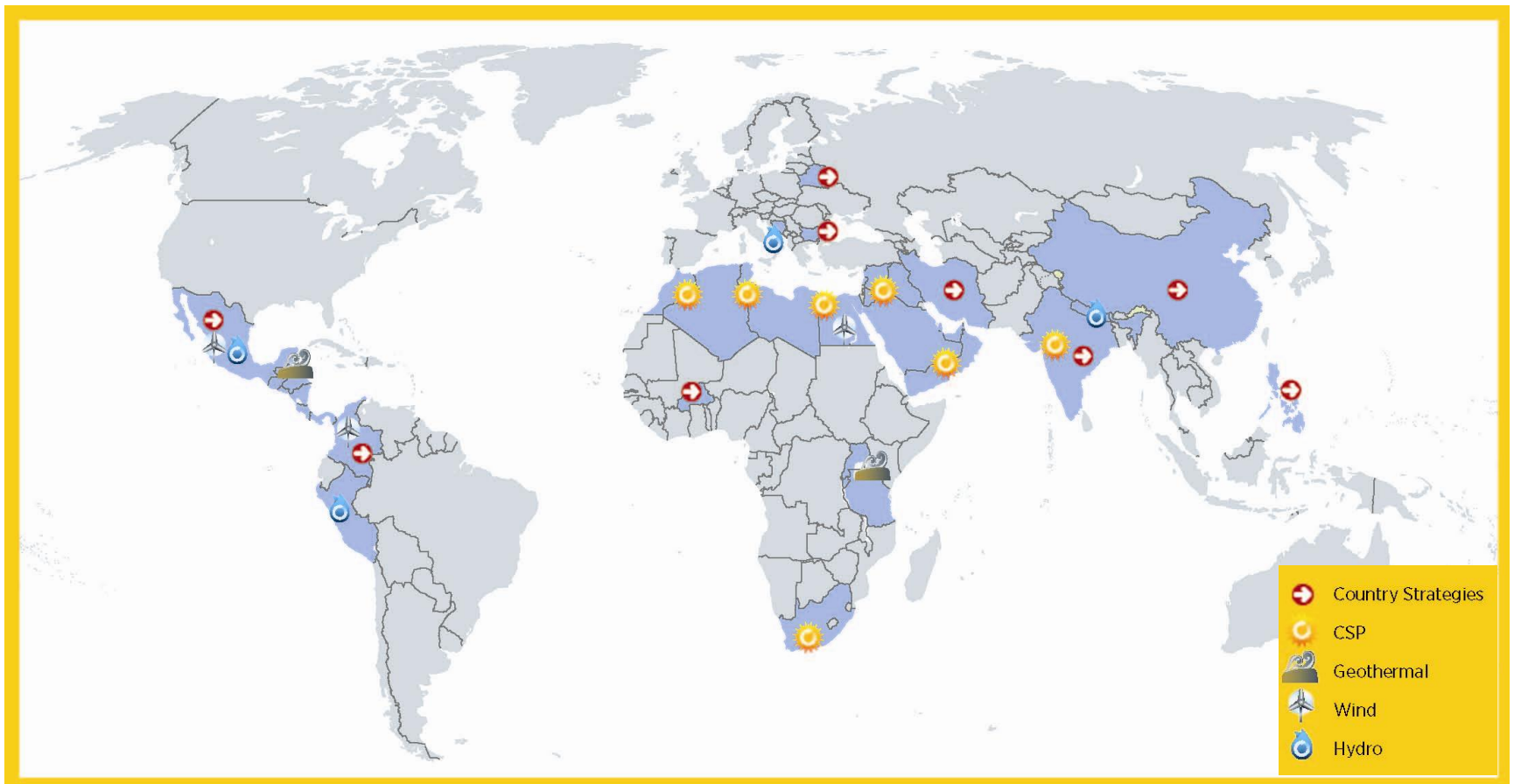
Development of Power Generation from Geothermal in Kenya



What is ESMAP?

- The **Energy Sector Management Assistance Program** (ESMAP) is a global, multi donor technical assistance program aimed at promoting environmentally sustainable energy solutions for poverty reduction and economic growth.
- ESMAP's product lines include targeted technical studies, strategic advice, best practice dissemination, and pre-investment work.
- ESMAP is administered by The World Bank, and governed and funded by a Consultative Group (CG) composed of representatives of Australia, Austria, Canada, Denmark, Finland, France, Germany, Iceland, the Netherlands, Norway, Sweden, the United Kingdom, and the World Bank.

Geothermal activities are part of ESMAP's Renewable Energy Market Transformation Initiative (REMTI), which will help countries address the preparatory work needed in the earlier stages of program development by providing technical assistance, knowledge sharing activities, and capacity building training to facilitate access to financing.



ESMAP TA on geothermal (2010 -11)

- Cooperating with Latin-America, developing Road-Maps for all 6 Central-American countries, showing the actual status, risks, bottlenecks, and the way forward.
- Cooperating with Africa, developing Road-Maps for several East-African countries, starting with Rwanda, Uganda and Tanzania. The Road Maps will enable the countries to apply for funding or grants from other donors and multilateral organizations. Activity still at last prep. stage.



Thank you!

Questions?

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