WORLD BANK / GEF

GEOTHERMAL ENERGY DEVELOPMENT PROGRAM
for
Europe and Central Asia Region

(GeoFund)

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Karlsruhe, Germany, November 11, 2008

Summary of Presentation:

The GeoFund for Europe and Central Asia region was created by the World Bank with US$25 million GEF grant. The GeoFund can provide support geothermal development in the region through three windows; technical assistance, geological risk insurance, and direct investment funding. One of the first subprojects was a geothermal power pilot project in Hungary sponsored by MOL (Hungarian Oil and Gas Company) and its partners. The project was supported by the geological risk insurance of US$3.72 million for the drilling of two wells. The outcome of the drilling was not successful and the GeoFund paid part of the insured amount as agreed under the contingent grant agreement. The geological risk insurance scheme worked as designed. However, lessons can be drawn from the experience to further improve the instrument and its effectiveness. Extensive pre-drilling exploratory work, clear exclusions of non-geological risk events, monitoring method, cost itemization and expense cap, clear definition of parameters and testing method, dispute resolution, etc. would be the key areas for improvement. GeoFund is open to new donors and contributing partners. In the medium term, co-insurance arrangement with private risk insurers would also help scale up the GeoFund resource as well as enhance risk assessment technologies.

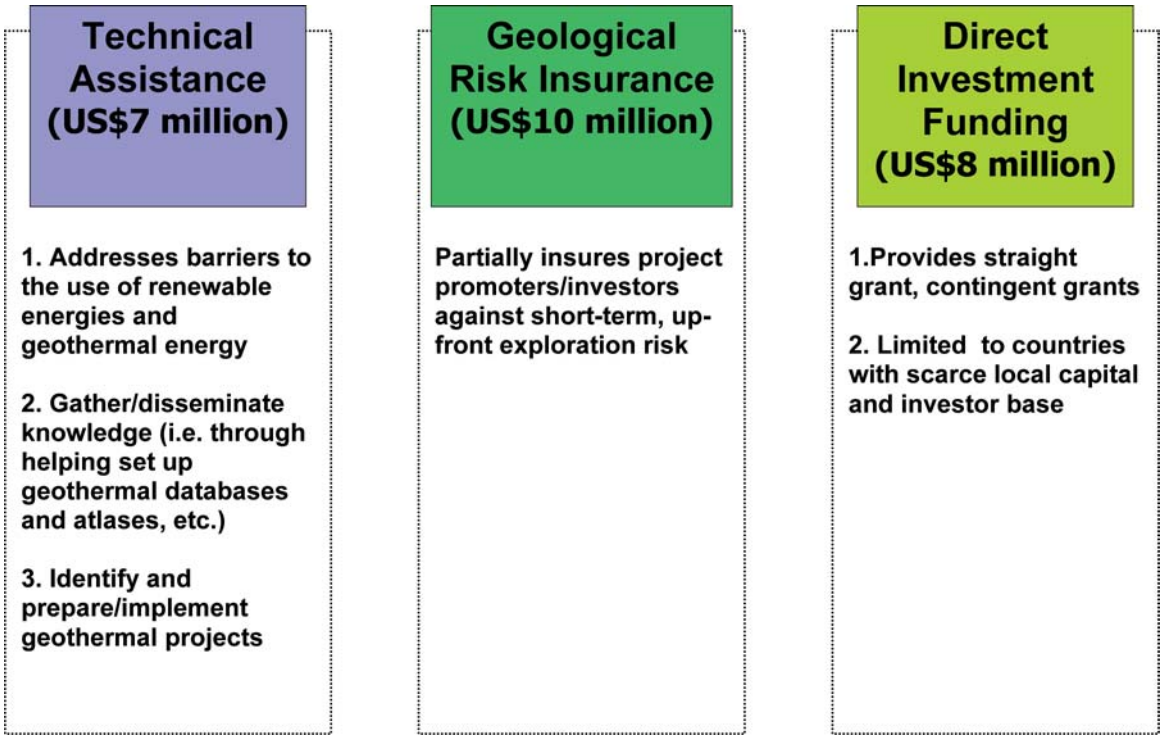
WB/GEF GeoFund Program Outline

- The GeoFund Program approved in November 2006
- ECA region-wide, multi-country program including;

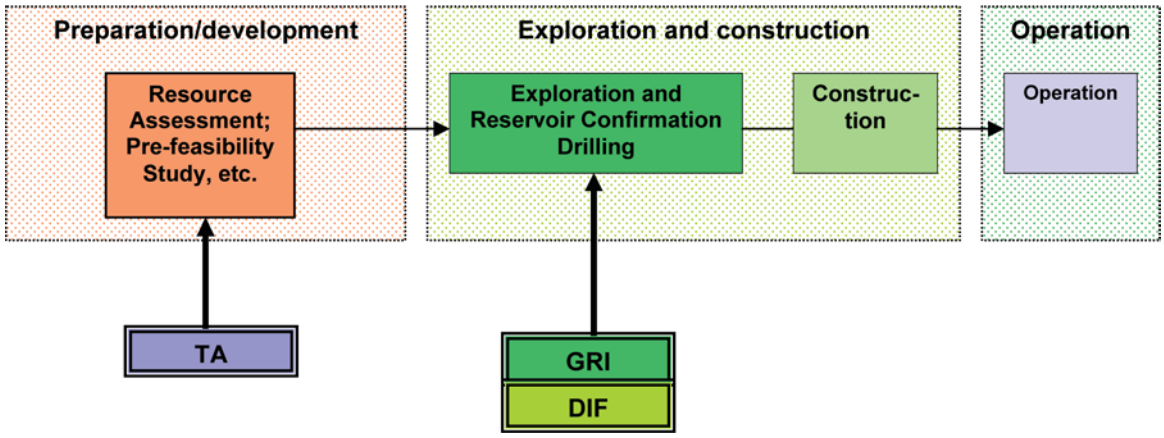
  Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Georgia, Kazakhstan, Kirgizstan, Macedonia, Moldova, Montenegro, Romania, Russia, Serbia, Ukraine, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan

- Market intervention responsive to medium and long-term market conditions existing in the participating countries
- To build sustained market capacity to develop and finance geothermal projects on commercial terms using private capital
- With $25 million GEF grant, about 10 projects with total project cost of $200 million are envisaged for GeoFund support over 8 years

GeoFund Instruments



Stages of GeoFund Support in Geothermal Project Development



GeoFund Institutional Arrangement

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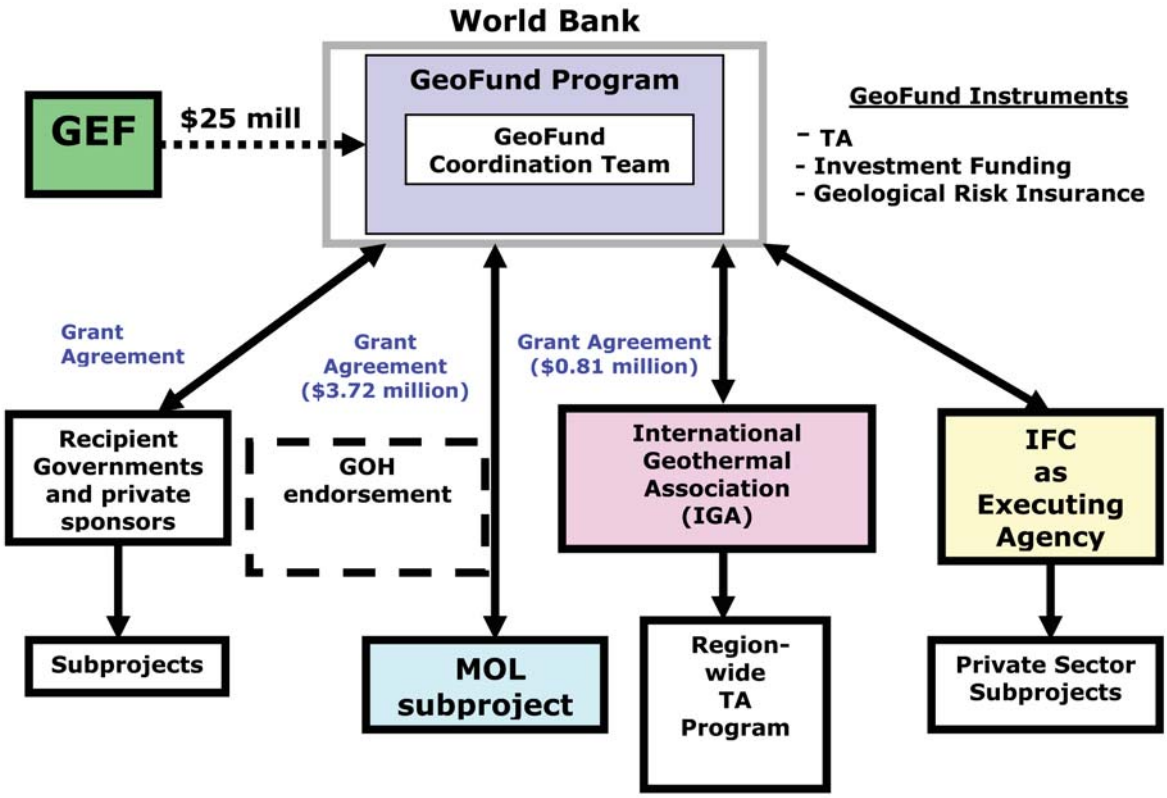

GeoFund First Phase Subprojects

- Hungary
  - US$3.72 million GRI for MOL geothermal power project
  - Contingent grant agreement signed in Nov. 2006
- IGA (International Geothermal Association)
  - US$0.81 million region-wide TA program for more than a dozen activities
  - TA grant agreement signed in Nov. 2006

Geological Risk Mitigation Instrument

- GEF grant-backed experimental instrument in a contingent grant scheme
- Grant payable on geological risk events during exploration phase
- Reservoir risk typically borne by the government in the geothermal power generation projects
- Risk guarantee schemes exist since early 1980s in the U.S., Iceland, France, etc. with mostly publicly-funded resource

- Market-based models in Germany (e.g. Unterhaching by Munich Re)
- Collaboration between the World Bank (GeoFund, ARGeo in Africa) and private sector envisioned for technical advisory and possible co-insurance

GeoFund: Hungary MOL Project

- Project sponsors: MOL Hungarian Oil &Gas Company, Enex (Iceland), Vulkan Kft (Australia)
- Project site: Zala county, south-west Hungary
- Total project cost:HUF 3,900 million ($18.6 million) for 3 megawatt power plant upon full completion
- Exploration phase cost: HUF 880 million for re-completion of two wells and testing
- GRI cover: US$3.72 million (85% of eligible cost)
- Risk parameter: flow rates
- GRI payment: step-down payment from lower to upper threshold flow rate

Hungary MOL Project: Outcome

- Lower threshold value of flow rate not achieved
- Geological anomaly prevented planned exploration
- WB paid out about $3 million
- Verification report reviewed by two WB consultants
- No major technical disputes
- MOL proceeded to further development by forming a dedicated geothermal energy development subsidiary with other partners

Hungary MOL Project: Lessons Learned

- Extensive pre-drilling exploratory work

  - conditions precedent for GRI

- Clear exclusion of on-geological risk elements

  - monitoring and decision points

- Eligible cost itemization and cap on the expense

  - flexibility

- Clear definition of parameters

- Clear definition of testing and verification methods
- Disputes resolution

Partnering with Private Risk Insurers

- Co-insurance scheme

  - fronting/ risk participation or separate

  - parallel

  - first loss/second loss

  - retrocession

  - WB grant subsidy for PRI premium

- Technical advisory service by PRI

Partnership with Other Agencies

- Partnership is open to multilateral and bilateral agencies as well as private sector at both program and project level
- Grant contribution or tied consultant or technical assistance grant
- Private sector participation (banks and insurance companies) for technical expertise and program implementation

WB/UNEP/GEF ARGeo Program for Africa

- WB/UNEP $18 million grant approved by GEF Council in June 2006
- 6 countries (Djibouti, Eritrea, Ethiopia, Kenya, Tanzania and Uganda) in African Rift Valley
- WB for risk mitigation facility and UNEP for technical assistance grant
- Initial subprojects under preparation for approval by early 2009

GeoFund Project Proposals

- “Intent to submit project proposal” for pre-screening
- Detailed project proposals for TA, GRI or DIF
- GeoFund coordination team at the World Bank will process the proposals to seek GEF endorsement and the Board approval

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