



USAID
FROM THE AMERICAN PEOPLE

Collaborative Meeting for Geothermal Risk Mitigation Facility (GRMF) in EA Region

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Today's Discussion

1. Overview of USAID Support for Sub-Saharan African Electricity Development
2. Planned USAID Support of East Africa Geothermal Energy Development
3. Other Ongoing U.S. Government Interest/Programs

USAID Support for Sub-Saharan African Electricity Development

- **Roughly \$30 Million Annual Energy Budget**
- **Washington's Africa Infrastructure Program (AIP) (\$10 million annually)**
 - Ongoing assistance in over 15 SSA Countries
- **USAID Mission Programs (\$20 million annually)**
 - **Mission Countries:**
 - Bi-lateral: Ghana, Nigeria, Kenya, Liberia, Sudan, South Africa
 - Regional Mission Programs: Pretoria, Accra, Nairobi
 - Heavy focus upon in support of private IPPs, three SSA power pools, and gas flaring recovery and mitigation
- **Second Term SSA Energy Initiative**

AFR's Africa Infrastructure Program (AIP)

- **AIP Helps SSA Governments**
 - **Address Barriers Preventing Projects from Achieving Financing**
 - **Support Development of Private Sector Investment Framework)** Create enabling environment/ regulations/ policies/ agreements/ institutional capacity to attract private investment
 - **Equalize Negotiations Between Governments and IPP Developers to Ensure a Fair Deal is Received by *Both* Parties**
- **Each Individual AIP Activity is designed to Address Specific Barriers to Private Investment -- Not pre-defined, but designed to focus on market needs**

GOVERNMENT CAPACITY BUILDING

- Legal, Policy/Investment Framework
- Regulatory Reform
- Tariff Formulation
- Sample Contracts/ Project Templates
- RE Intermittence/Integration Analysis
- Competitive Bidding

DIRECT PROJECT NEGOTIATION SUPPORT

- Project Structuring
- Risk Allocation
- Financial Engineering
- Contract Negotiation Support
- Funds Mobilization
- Environmental, Transmission, Other

Ongoing AIP Capacity Building and Technical Assistance

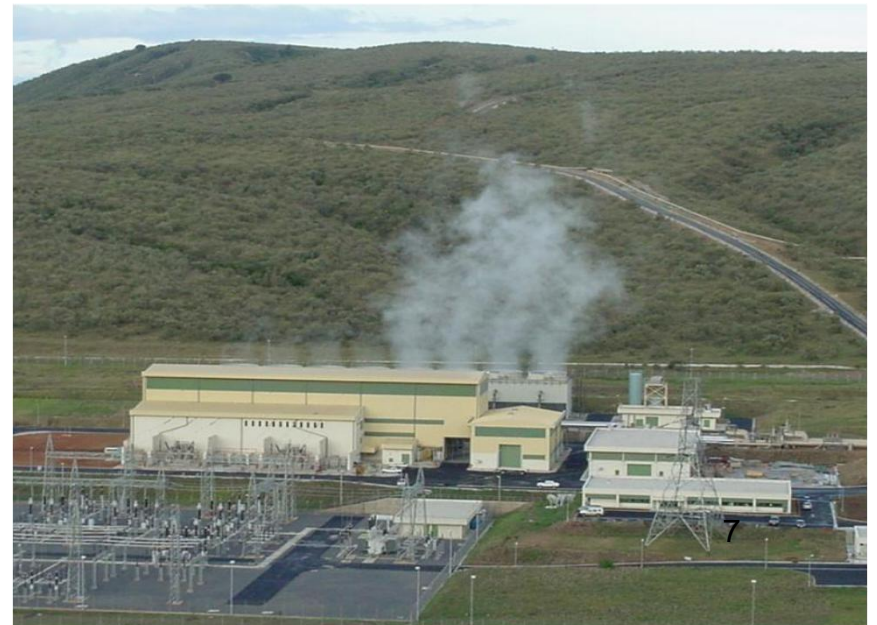
Country	Type	Size (MW)	Description
Namibia	Wind, Renewable	50-100	RE Feed-in Tariff (REFIT), regulation, due diligence, negotiation , integration
Mozambique	Wind, renewable	100+	Regulatory framework, REFIT, integration, evaluation and negotiation
South Africa	Renewable, cogen, wind, hydro	1000+	IRP, REFIT, policy, private investment, EE, RE integration, RE imports, ISMO
Lesotho	Wind	22	Regulation, REFIT, RE framework, Due diligence, negotiation
West Africa	Wind/ solar	Est. 100	ECREE wind and solar mapping, regional policies/ incentives, feasibility
Uganda	Geothermal	150	Private investment needs and policies
Kenya	Wind	300	KETRACO capacity building and negotiation on Lake Turkana Wind
Kenya	Geothermal	400	GDC competitive procurement, REFIT, strategic planning
Kenya	IPP Projects	All	Creation of Independent System Operator (ISMO), Creation of GoK Nat'l Ins. Fund ⁵

Ongoing AIP Capacity Building and Technical Assistance (2)

Country	Type	Size (MW)	Description
Rwanda	Hydro, geothermal, other	200	REFIT, RE policies and regulation, project evaluation and negotiation
Nigeria	Flared Gas	1,450	For BPE, Presidential task Force on Power, and other GoN agencies, tariffs, vesting of new generation and transmission cos., voltage management, gas flare down policies, planning, monetization and infra. development
Nigeria	Renewable, hydro	56	Wind/hydro strategy for Cross River State, REFIT, due diligence, negotiation
Nigeria	Flared gas	188	Financial restructuring of IPP
Ghana	Flared gas planning	1,000	Gas sector planning, regulations, policies, development of private projects
Ghana	Flared gas markets	610	Support of GRIDCO and MoF on agreements, credit enhancement
Cameroon	Gas/ hydro	250-2000	Concession, agreements, tariff, regulations
East Africa	Geothermal	500	Partner with AUC and KFW in GRMF

Problems Facing EA Geothermal Development

- **Barriers Specific to Geothermal Development (Upstream):**
 - **Up-front drilling costs** – \$4-7 million per well, private sector unwilling
 - **Poorly understood resources** – Ethiopia/Kenya are most advanced
 - **Competing governmental priorities** – e.g. health, education, housing
 - **Limited human and technical capacity** – assessing/developing geothermal resources and attracting private investment
- **Barriers Specific to Private Sector (PS) Investment (Downstream)**
 - Lack of appropriate regulations, tariffs, policies, laws
 - Weak laws and Concession Agreements not protecting private investment
 - Non-cost recovering electricity tariffs
 - Weak in-country institutional capacity
 - Lack of available local/int'l finance
 - Complexity/lack of project finance closing and negotiation experience
 - More



Planned USAID Support of EA Geothermal Planned Ongoing Activities

- **Ongoing AFR Support of EA Geothermal**
 - **Uganda:** AIP and KFW/Kigali recommendations Permanent Secretary Ministry of Energy on policies, enabling environment, and incentives to attract private geothermal investment
 - **Kenya: ARGEO** – support for The Fourth African Rift Geothermal Conference, Nairobi Kenya, November 2012
- **USAID: What is Our Contribution to EA Geothermal?**
 - Upstream technical assistance and capacity building in establishment of enabling environment supportive of private investment
 - USAID is not a source of debt or equity – although other organizations of the USG are: OPIC, USEXIM, USTDA, MCC, DCA, possibly other
- **USAID plans to support \$7-10 million/year of TA and capacity building to EA geothermal for next several years**
 - **Additional contributions from other agencies from the USG**
- **Possible Second Term USG Initiative Supporting SSA Energy**

Planned USAID Support of EA Geothermal Planned/ Ongoing Activities Programs

1. **USAID Has Entered into a Public-Private Partnership (PPP) with GEA to Achieve Several Objectives:**

- Make US geothermal expertise available to EA countries in developing their geothermal resources
- The business development/TA concept
- Allow US companies to become familiar with EA geothermal officials, and contribute knowledge, services, opportunities
- Allow US to be contribute to EA geothermal markets

• **The GEA PPP Will Support:**

- Matching EA governments with geothermal technical requests and matching them with US industry experts/ expertise
- EA and US industry geothermal conferences, seminars, workshops, and trade missions
- Geothermal training /seminars for EA government personnel, EA stakeholders, and AFR missions and US embassy personnel

Planned USAID Support of EA Geothermal Planned/ Ongoing Activities Programs

2. Support of the African Union Commission/ KfW's East African Geothermal Risk Mitigation Facility (GRMF).

- Work in close coordination with the AUC and KfW providing TA to select GRMF addressing barriers to private investment
- AIP supports governments receiving most GRMF grant requests in addressing commercial and investment enabling environment issues
- Thus, once GRMF drilling is completed, the country's government is better prepared engage with developers in discussions and negotiations necessary to bring those projects to financial closure.
- USAID will be funding this assistance at about \$1-2 million per year

Planned USAID Support of EA Geothermal Planned/ Ongoing Activities Programs

3. Supporting the Direct Use of Geothermal Energy

- Planning to work with GDC because of GDC's strongly stated interest and current activities in this area.
- Focus on business and commercialization aspects of the direct use of geothermal -- especially in Kenya, as a template for other countries.
- Directors of geothermal in agriculture, SMEs, industrial uses and products, anchor for rural electrification
- Integrate direct use with Feed the Future, GC Programs, and/or serving as economic anchor for micro grids and rural electrification
- This work would be funded at approximately \$3 million over two years

Planned USAID Support of EA Geothermal Planned/ Ongoing Activities Programs

4. AIP Assistance Directly with EAC Countries, GDC and GoK

- In discussions with GDC providing assistance related to competitive bidding issues, alternative Business Models, strategic planning, steam sales and pricing
- Support addressing commercial issues related to Menengai and Longonot
- In addition to possible AIP assistance, State Department's Energy Resources Office may also provide support to GDC
 - The office might be interested in supporting investment environment work in Tanzania also.

2. Planned USAID Support of EA Geothermal Planned/Ongoing Activities Programs

V. USAID/ Eastern Africa Mission Support of East African Regional Geothermal Development

- TA in various areas such as : model Geothermal Power Purchase Agreements, and/or steam supply agreements
- Alternative credit enhancement mechanisms for regional Off-takers, Renewable Feed-in Tariff (REFIT)
- Training workshops for EAPP utilities and regulators to strengthen their capacity to be able to undertake planning, contracting and risk allocation of clean energy projects
- TA developing policy and regulatory incentives for geothermal development, and/or developing a regional legal

3. Other Ongoing USG Interest/ Programs and Possible USG Roles

	Exploration	Resource Development	Project Negotiation/ Financial Closure
Geothermal Development Needs	Resource Assessment: <ul style="list-style-type: none"> • Surface Surveys • Drill Exploratory Wells Development of Data Country and Institutional Capacity Building Develop Concession Agreements AU Capacity Building	Pre-feasibility Feasibility Assessment <ul style="list-style-type: none"> • Drill Development Wells • Size Plant to Resource Field • Plant Feasibility Environmental Impact Assessment Laws/Regulations Supporting Private Investment Local Partner Selection PPP Support AU Capacity Building	Contract Negotiation with Project Develop. Companies Select Construction Companies Financial Structuring/ Sovereign Credit Enhancements Negotiations with Project Lenders Plant Construction and Operations
----- Sector Responsible	----- Public	----- Public/ Private	----- Private/ Public
----- US Government Agency Participation	----- USGS BLM USDOE US Universities	----- USAID – AIP USAID – EGAT USTDA Treasury (USDOE) Commerce US Universities	----- USAID – AIP USEXIM OPIC Commerce USAID – DCA??

3. Other Ongoing USG Interest/ Programs and Possible USG Roles

- **State Department**
 - *Global Climate Change Office*: RE Fund
 - *Energy and Natural Resources Office*: TA, Capacity Building
 - *Africa Bureau* –trade missions, engaging US Business
- **Millenium Challenge Corporation (MCC)**: Compact grants, loans and technical assistance
- **Treasury**: Finance Ministerial, MFIs, Seminars
- **USTDA**: Capacity building, TA, feasibility studies – US potential
- **USDOE**: Workshops, exchanges
 - International Office – Trade Missions
 - NREL etc: Workshops, TA
- **OPIC, EXIM**: Finance, guarantees:



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Thank You!

For Further Information:

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