



USAID
FROM THE AMERICAN PEOPLE

USAID Programs Supporting Energy/Electricity Access in Sub-Saharan Africa

**The African Science Academy Development Initiative VI Conference
Theme: Improving Access to Energy in Sub-Saharan Africa**

November 8 – 10, 2010

Cleveland Thomas
USAID/Southern Africa

Why is USAID Supporting Electricity/ Energy Sector Programs in Africa?

- **Sub-Saharan Africa (SSA) Is Way behind Other Continents in Electricity Use and Penetration**
 - On average, urban penetrations of 15-25% and rural of 0-10%
- **SSA Electricity Supplies are Insufficient, Undependable, and Shortages are Common; resulting in:**
 - Use of costly, more polluting, smaller generating sets
 - Additional costs and risks to businesses
 - Africa lagging other regions/continents in economic growth and electricity production
- **Most SSA Governments Lack Sufficient Funds to Finance Their Electricity Investment Needs.**
 - WB estimates of \$40 billion annual new investment required to support annual economic growth targets
 - \$12 billion available from donors, private markets must provide rest
- **Many Other Barriers Constrain Increased Access to Private Sector (PS) Investment**
 - Policy, regulatory, institutional, legal, & other
 - Whereas some African governments are making headway in removing barriers, private companies are responding with projects

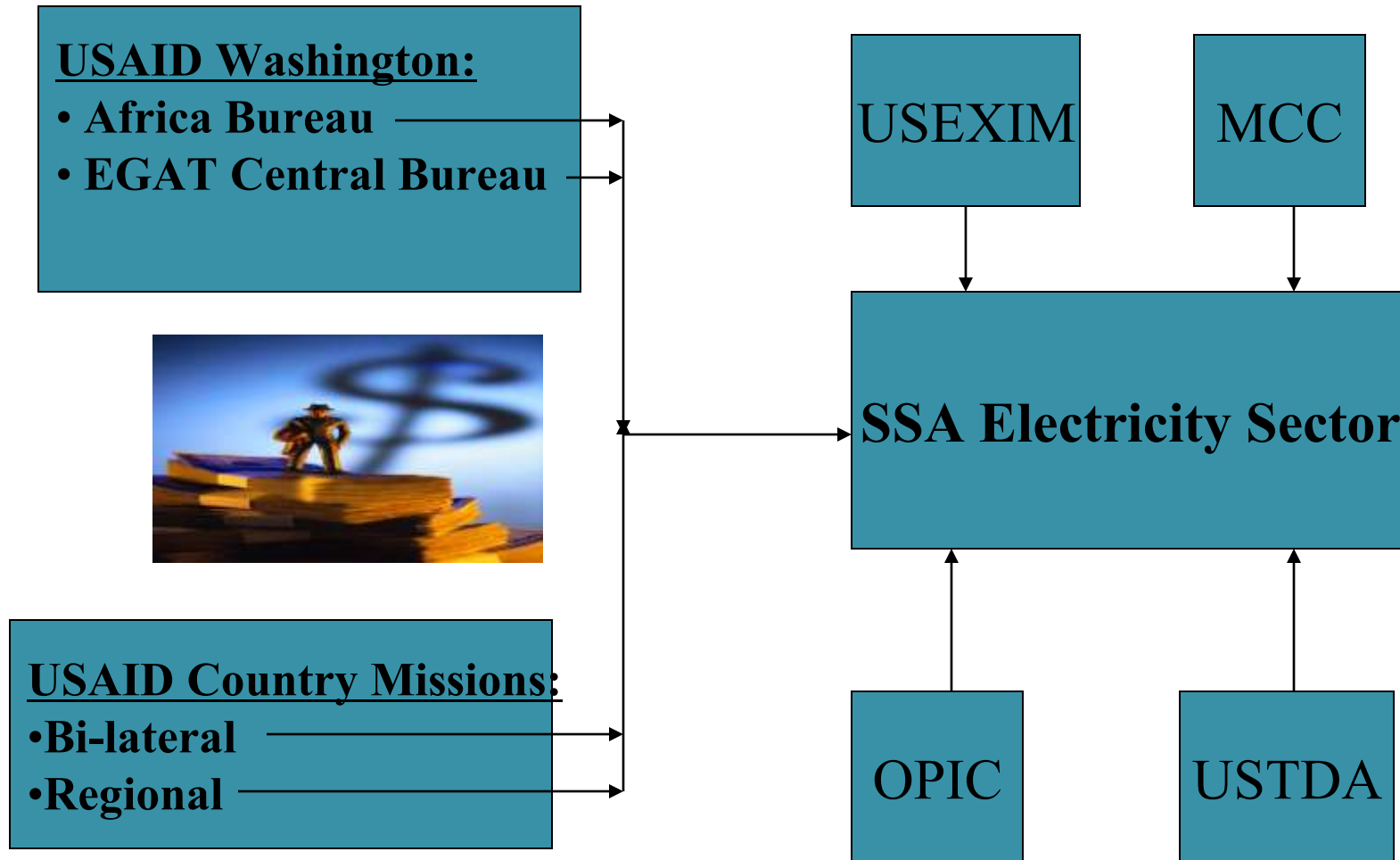
Barriers to Project Development in Africa

- **Barriers to PS Investment Vary from Country to Country**
- **Typical Barriers Often Include:**
 - Unsupportive regulatory, policy, and legal environments
 - Sub-investment grade distribution company offtakers
 - Non cost-recovering electricity tariffs, poor tariff collections
 - Lack of transmission capacity to end-users
 - Lack of international finance and viable local finance markets
 - PS electricity projects are very costly and high risk
 - Political Instability, excessive corruption
 - Complexity of project finance, and lack of capacity within Governments to evaluate, negotiate, and close projects
 - Et al.

Focus of USAID's Assistance to Sub-Saharan Africa

- **USAID Seeks to Help Eradicate these Barriers and Increase Private Investment Flow to SSA Countries**
 - USAID Electricity/Energy Programs Designed to Provide Foundation for other USAID Programs in health, education, hunger, SME development, trade
- **USAID Programs Focus on Technical Assistance, Capacity Building, Transaction Support, and Best Practices**
 - Very rarely include capital investment/ funding
- **USAID's Principal Clients in the SSA Electricity Sector are Typically Governments -- some private companies**
- **USAID,USG and Other Donors Increasingly Prioritize:**
 - The use of clean and renewable energy technologies, and in the reduction of greenhouse gases
 - The establishment of Public-Private Partnerships
 - Attracting private sector investment

Origin of USAID/USG Assistance to SSA Electricity Sector



What are USAID Country Missions Doing in Energy?

- **USAID/West Africa Regional:** support of the West Africa Power Pool and the West Africa Gas Pipeline
- **USAID/Ghana Bi-lateral Mission:** support GoG in formulating policies, plans, and capacity building to reduce flaring and utilize associated gases from offshore development
- **USAID/Nigeria:** support of other donors, GoN, and private sector in formulating policies and plans to reduce flaring and increase use of associated gases from offshore development
- **USAID/Liberia:** support provision of emergency power; formulating RE policies, and rural energy agency
- **USAID/DRC:** support of CAPP and DRC Regulator
- **USAID/Mali:** biomass, biofuels, waste utilization
- **Overall USAID/African Missions:** significant support of regional power pools (WAPP, CAPP, SAPP and now EAPP)

USAID/Washington Programs Supporting Renewable and Clean Energy for West Africa

- **USAID/EGAT** – EGAT's Energy Team has significant rural, energy efficiency, sector restructuring, and renewable energy skills, experience
 - Also, multiple contracting mechanisms (eg. Energy II IQC, Clean Energy IQC, Exchanges, & large budget).
- **USAID/AFR/SD** – has the Africa Infrastructure Program (AIP) and limited discretionary funding. AIP:
 - Helps advanced SSA electricity projects address barriers preventing them from achieving financial closure (e.g. lack of government experience in negotiating IPP project finance, unsupportive regulatory, policy, and legal environments, etc.)
 - Hires transactional and capacity building advisors (**with actual experience closing deals**) for governments and some developers
 - Emphasizes the clean and renewable energy
 - Seeks to create replicable, private electricity sector success stories
 - Levelizes negotiations between governments and IPP developers to ensure a fair deal is negotiated for **both** parties

Examples of Africa Infrastructure Program (AIP) Assistance

Project Name	Country	Type	Size	Potential Projects (\$M)	Description
1. Lake Turkana Wind Project (LTWP)	Kenya	IPP Wind	300 MW	\$ 684	Capacity building and transaction support to Kenya in discussions re: transmission line, critical to LTWP project closure and other renewable energy (RE) and geothermal projects in region.
2. Mozambique Wind Energy	Mozambique	IPP Wind	Est. 200+ MW	\$ 700+	Capacity building and transactional support to Ministry of Energy establishing RE regulatory framework, tariff structure, solicitation procedures, integration, and negotiation of wind projects into Namibian grid.
3. Namibia Wind Energy	Namibia	IPP Wind	Est. 50-100 MW	\$ 300+	Support Electricity Control Board develop RE regulatory and tariff framework , and help GoN evaluate and negotiate RE/IPP projects.
4. Gas Planning & Market Development	Ghana	Gas Flaring	Est. 1000+ MW	\$ 1,200	Supporting GoG Ministry of Energy efforts to develop gas master plan, regulations, and gas/ IPP markets for associated /flared gas from O&G development
5. Gas Flaring Market Development	Nigeria	IPP Gas	Est. 1000 MW	\$1,500	Capacity Building and TA to Nigerian IPP Association supporting projects using previously flared gas, First Solar in preparing and closing RE projects, and GoN on tariffs and guidelines for RE and IPP projects.

Examples of AIP Assistance(2)

Project Name	Country	Type	Size	Potential Projects (\$M)	Description
6. Geometric Power	Nigeria	IPP Gas	250 MW	\$ 435	Providing financial and regulatory experts to GP to close project which will use gas previously flared by Shell Oil.
7. Renewable Energy Workshop	Kenya	RE	N/A	N/A	Prepared 2 day RE workshop/ training for Kenya, Mozambique, SA, and Namibian officials on unique development, financing, and operational characteristics of RE technologies and projects.
8. Nigerian Gas Sector Analysis	Nigeria	Gas Sector/ Flaring	750+ MW	\$1300	Gas experts providing gas sector analyses supporting World Bank in provision of Partial Risk Guarantees on gas and power contracts. Three recipient Nigerian IPP Projects will consume previously flared gas.
9. GECAD and CenPower Projects	Ghana	IPP/Gas Flaring	520 MW	\$ 650	Transmission and gas experts supporting GRIDCO negotiate Transmission Service, Wheeling, Grid Connection and Gas Sales Agreements.
10. Electric Sector Policy Support	South Africa	IPP /RE/ CE Devel.	2000+ MW	Major	Assist SA Dept. of Energy addressing structural/ policy/ tariff issues ushering in IPPs, new RE resources, kWh imports, and associated enabling policies
11. Mmamabula Power Project	Botswana	IPP Coal	1200 MW	\$ 2,300	Legal, financial, EPC, market, and env. experts support to GoB in negotiations with CIC Energy on Mmamabula

Ongoing USAID Program of Assistance to the GoSA

- **Supporting 12 Member Inter-Ministerial Committee on Energy in Development of 20-year Integrated Resource Plan**
 - Primary Recipient of Assistance is Department of Energy, also NERSA
- **Eight Areas of Focus Under Discussion with the GoSA Include:**
 - Introduction of Private Generation;
 - Energy Efficiency and Demand-Side Management;
 - Renewable Energy, Incentives, Integration, Resource Mix;
 - Distribution;
 - Regulatory Support re: Eskom;
 - Issues Related to Nuclear Generation;
 - Economic Impact/Impact of tariffs; and
 - Kusile Power Station.

Examples of Additional AIP CE Projects under Consideration in sub-Saharan Africa

Project Name	Country	Type	Size (MW)	Cost (\$M)	Description
West and Central Africa					
GoCV	Cape Verde	Wind	24	50	Assist GoCV - wind regulation & project development
Infraco	Senegal	Wind	40	80	Assist GoS - wind regulation & project development
Lom Pangar	Cameroon	Hydro	5000	Billions	Assist EDC in “lake” project development & financing
ARSEL	Cameroon	Gas-Hydro	n.a	n.a	Assist Regulator in tariff review & CA monitoring
ECOWAS	Sahel	Solar	TBA	TBA	Develop solar mapping of Sahel
First Solar	Nigeria	Solar	25	50	Assist First Solar in dev. first Nigerian solar IPP
East and Southern Africa					
Rusizi II	Rwanda	Hydro	40	20	Hydro rehabilitation of 25 year old dam
Rusizi III	Rwanda	Hydro	145	300	Greenfield hydro with minimal environmental issues
ARGeo	Ethiopia/ Afr. Rift	Geothermal	200	500	Join Steering Committee member to ARGEO, and geothermal sector capacity building
Singide	Tanzania	RE and CE	50	120	24 turbine wind farm
Leasing Co.	Kenya	Drilling	n.a	TBA	Equipment leasing reducing geothermal costs
ZESCO	Zambia	NPC	TBA	TBA	Capacity Building for ISO/IMO & IPP mobilization

Thank You!

For Further Information:

Cleveland Thomas
Regional Energy Advisor
USAID/Southern Africa
Pretoria, South Africa
27 (0)12 452 2205
cothomas@usaid.gov

Alain Rosier
Project Manager
Nexant, Inc.
Washington, DC
202 974-0614
arrosier@Nexant.com