Seminar on Mainstreaming Energy Sustainable Development Goals (SDGs), Targets and Indicators into Statistical Programmes in Select Africa Countries

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The Uganda Energy Sector Perspective and Mainstreaming Energy SDGs into Statistical Programmes, Uganda

By

Peter Opio

Uganda Bureau of Statistics

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Background – Energy Sector

- The energy sector in Uganda comprises of both traditional and conventional energy sources that are either locally produced or imported.
- The most prevalent used energy sources that are locally produced are fuel wood and charcoal (solid fuels) since the country is predominantly agricultural based
- The use of solid fuel in Uganda is almost universal, with 96 percent of households using solid fuel for cooking
- These are the most dominant energy sources at both the supply and demand levels. Other energy sources that are in use include petroleum products, electricity and renewable energy sources.

Background

- Access to electricity stands at about 20% nationally
- The growth in electricity demand is at 10% per year which in the past has not had matching supply resulting in a deficit which had to be met using thermal power.
- To meet the growing energy demand, GoU has had to provide additional generation capacity at competitive prices to meet the growing energy demand

Current Status of Generation Plants

	Plant	Installed Capacity MW	Available at peak MW
	Nalubale and Kira	380	200
	Bujagali	250	250
	Thermal Plants	100	100
	Cogeneration by Sugar Plants	31.5	17
	Mini Hydro's	68.5	37
	Off Grid Thermal Plants	2	2
	Total	**832**	**606**

ENERGY SECTOR PLANS

1. Increase per capita energy consumption from 69.5kwh to 675 kWh through stepping up of generation capacity to 3,885 MW by 2025.

However, Current installed Capacity- 832 MW

(New power projects to include:

Karuma:	600 MW,
Isimba:	188 MW,
Ayago:	600 MW

ENERGY SECTOR PLANS

- Orianga: 400 MW,
- Geothermal: 100 MW,
- Modern biomass: 150 MW,
- Small hydropower projects: 150MW,
- Solar thermal: 200 MW,
- Oil &Gas and Heavy Fuel Oil: 700 MW.

PROGRESS IN IMPLEMENTATION OF ENERGY SECTOR PLANS

- **Bujagali (250MW):**

- Construction of this project was completed and commissioned on October 8, 2012. This has created a power surplus of about 100 MW.

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

Karuma (600MW):

- Sinohydro has mobilized man power (both from China and Uganda) and some construction equipment with which work has been progressed at several fronts.

- Sinohydro has carried out certain design changes in the diversion channel, dam axis, power house adits, and various facilities.

- Access roads to the dam area, power intake area, main access tunnel (MAT) area, escape and ventilation tunnel (EVT) area and muck dumping yard are being constructed. Surface finishing and protection works are on-going

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

- **Isimba (180MW)*:***
- China Water and Earth (CWE) completed the basic design based on the feasibility study and the tender documents. Site supplementary geological investigation, drilling and rock grouting commenced on October 17th 2013 by M/s Geotech Solutions (U) Ltd which was procured by CWE.
- Site mobilization is in progress. CWE has commenced plant and machinery engineering process with Chinese suppliers.
- **Ayago (600MW)*:***
- By China Gezhouba Group Company Limited (CGGC) - Feasibility study.

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

Small Hydropower Projects/Plants

A. Operational

- Ishasha 6.5 MW
- Nyagak I 3.5 MW
- Bugoye 13.0 MW
- Mpanga 18.0 MW
- Kasese Cobalt 10 MW
- Buseruka 9 MW

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

Small Hydropower Projects/Plants

A. Operational

- Mobuku 1-Kilembe Mines 5.0 MW
- Kisizi 0.35 MW
- Kagando 0.06 MW
- Kuluva 0.12 MW

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

Small Hydropower Projects/ Plants

B. Some of the Planned Projects

• Kikagati	16 MW
• Muzizi	44.5 MW
• Nyagak III	4.4 MW
• Nyamwamba	9 MW
• Waki	5 MW
• Siti	21.5 MW
• Rwimi	5.5 MW
• Nengo Bridge	10 MW
• Mount Elgon	10 MW
• Lubilia	5.4 MW
• Kakaka	5 MW

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

Other Planned Power Generation Projects

• Katwe Geothermal	50 MW
• Kabale Peat	33 MW
• Local oil/gas/HFO	53 MW
• Expansion of Kakira Cogeneration	20 MW
• Namugoga Solar Thermal	50 MW
• Expansion of Namanve Thermal	50MW
• Expansion of Kinyara Cogeneration	30MW
• New cogeneration	11.5MW

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

Expand transmission grid from current 1,300 km to 2,750 km and

- **increase transmission voltage from current 132 kV to cover 220kV and 400kV.**

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

Dissemination of improved household stoves & Renewable Energy Technologies:

- For the past one year, 58,581 additional household improved stoves were disseminated. To-date over 850,000 stoves have been disseminated
- 16 Social institutions with improved institutional stoves
- 20 SMEs with improved institutional stoves and baking ovens
- Installation of PV systems: 35 schools completed and others – on-going
- 25 solar water pumping systems in former Internally Displaced Peoples (IDP) Camps in Lira and Gulu districts

ENERGY SECTOR IMPLEMENTATION PROGRESS CONTD:

Energy Efficiency Programme

1. A draft Energy Conservation Bill prepared to ensure enforcement of energy efficiency measures.

2. Solar water heaters, Voltage stabilizers and efficient lighting fixtures installed in 24 public hospitals.

ENERGY SECTOR IMPLEMENTATION PROGRESS, CONTD:

Energy Efficiency Programme, con'd

3. Efficient lighting fixtures and associated accessories installed in 105 Schools and colleges.

4. Energy efficient streetlights (150W High pressure sodium lamps installed in the Capital City.

5. Compact fluorescent lamps (CFLs) installed in 10 Police barracks and prisons.

Mainstreaming of Energy SDGs into Statistical programmes

- In the NSO, we have a Directorate responsible for Business and Industry Statistics
- Under this Directorate, we have a section responsible for Energy and Infrastructure *Statistics, an initiative of AfDB*
- *The* Section has its own budget line under the overall budget of the Directorate
- It is mandated to compile and disseminate energy statistics
- Hence be able to mainstream SDG Energy into its statistical progms

Mainstreaming of Energy SDGs, con'd

- UBOS conducts surveys that incorporate energy statistics (and indicators) mainly through two ways:
  - Its own regular surveys
    - Stakeholder meetings are usually held to review and incorporate new questions in the data collection instruments. Depending the resource envelop, some indicators can be included in the instrument
  - Administrative data from different entities

Surveys

- Household Surveys, 2016 –
  - UNHS - information on Household conditions such as the main **type of fuel** used for lighting and cooking; cooking technology
  - UDHS- One of the Characteristics is Energy used for Cooking
- Targeted Surveys e.g. Energy for Rural Transformation Survey, 2012 – provides updates on electrification rates – rural/urban
- Departmental Surveys in the Bureau
- Administrative Data from MEMD- Electricity generation/Sales/ number of customers/electricity Tariffs/Energy Loses/Geographical distribution

New Measures being undertaken to entrench SDGs including Energy in the National Statistical System

- Uganda is positioning itself to improve efficiency and coordination in implementation of the 2030 Agenda through modification of existing institutional and coordination frameworks to include 2030 agenda. This is to be done through different levels of political and technical leadership that include:
  - **SDGs Policy Coordination Committee** (PCC) – chaired by the Office of the Prime minister – policy guidance and direction to MDAs
  - **SDGs Implementation Committee** (ISC) – chaired by the Head of Public Service and Secretary to Cabinet – review progress and make recommendations to PCC
  - **SDGs National Task Force** (NTF) – Chaired the Permanent Secretary in the OPM – review reports from TWG
  - **SDGs Technical Working Groups** (TWG) – to engage various ministries in the production of related data - **Data TWG led by UBOS**

Measures being undertaken, con'd

- Formation of technical working groups with relevant agencies: comprising of the Ministry of Energy and Minerals Development; the Ministry of Water and Environment; UBOS, etc
- Focal contact persons selected to represent the sector at NSS fora
- Advocating for awareness and importance of statistics to key government officials and planners through meetings.

CHALLENGES in Energy Sector

1. High power system losses at both technical and commercial levels, which affect efficiency in power consumption.
2. High connection cost to rural households associated with slow demand growth
   - Challenges are: rural areas are characterized by low population densities due to dispersed settlements apart from a significant number of households being poor and
   - Therefore, not only is the connection of a rural consumer very costly, but also demand for electricity grows very slowly.
3. High initial investment cost for power generation infrastructure, characterized by high risk

Challenges in Statistical systems

- Capacity building for various stakeholders to play its role. The capacity of identifying interests of various stakeholders and the ability to synthesize the interests is needed for coordination, technical support, donor coordination, and networking.

- Financing is the major challenge for programmes designed to collect data for monitoring the SDGs for it is expected that the NSO meet the extra work load from their regular budgets.

Way Forward

Projects Land Acquisition – Crosscutting Issue

A permanent solution needs to be found on the issue of land for infrastructure projects.

The cost for projects land acquisition is prohibitive and delays in acquisition affects projects implementation.