Efforts to Promote the Renewable Energies AND Energy Efficiency in Belize, Ministry of Natural Resources and Environment of Belize

XVI REGIONAL FORUM: "COGENERATION, ENERGY EFFICIENCY AND OTHER RENEWABLE ENERGIES IN CENTRAL AMERICA"

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GLOBAL ENVIRONMENT FACILITY

UNDP

Overview

- Historical Persepctive
- Energy services and energy use scenario
- Oil Import/Production
- Electricity Generation
- Energy Policy Development
- National Energy Policy Support
- Interconnectivity Options
- Renewable Energy Options

BRIEF HISTORICAL PERSPECTIVE

In early 1990's the then Belize Government established among other Ministries that of a "Ministry of Energy and Telecommunications," with the intent of having "Energy" as a priority for Belize. However, apart from a few advances in the petroleum sub-sector, very little was done / accomplished by Government in the "energy" sector.

Notwithstanding, during these same years (early 1990's) the Belize Electricity Limited conducted an exhaustive assessment of the Hydrological Energy Generation Potential in Belize. The goal was to determine the geographical areas of Belize with the potential for hydro-electric generating capacity. This study served, and is serving today, as the foundation / guide for developing Belize's Hydro-electric Potential.

RECENT EFFORTS

In the early part of this decade, the Government of Belize via the then recently established Public Utilities Commission, completed a stock-taking exercise / an assessment of Belize's Energy Sector, with the end product being a set of about one dozen "Policy Recommendations" for the Establishment of a National Energy Policy. These Policy Recommendations, like many other reports, ended up in some shelf.

It was not until recent (2009) that within Government there has arisen a burning interest in developing Belize's "National Energy Policy," perhaps with its corresponding Institutional and Legislative component.

Also in the early part of this decade, despite the lack of a policy or an institution addressing the Energy Sector in Belize, the Department of the Environment took on the responsibility of addressing the "Renewable Energy Sub-sector" in Belize. The Department, due to its legal mandate, did this more from an environmental resource management / protection perspective than from any other.

This focus on the Renewables was brought about due to pressures from the private sector in developing the hydro-electric potential of Belize (via the Chalillo Project) assessed in the early 90's, and from international / regional initiatives in 2003/04 such as this Partnership on Renewable Energy between Finland and the Central American sub-region.

STATUS OF RENEWABLE ENERGY SOURCES IN BELIZE

The Government of Belize now has as one of its priorities the development of its Energy Sector. In a partnership between the Ministries of Public Utilities, of Natural Resources and the Environment, and the Office of the Prime Minister, it is in the process of developing its first ever National Energy Policy.

In the meantime, the Belize Private Sector has advanced its use of Renewable Energy Resources, especially its Hydro-Electric Potential, through the construction of a few Hydro-power plants (Mollejon, Chalillo, Hydro Maya, and Vaca). These have allowed Belize's electricity generating capacity from Hydro to be over fifty percent (50%) of generating capacity.

Belize has also seriously invested scarce resources into exploring and successfully developing its energy generating potential from Biomass. This is exemplified by the recently commissioned BELCOGEN facility, generating electricity from the sugar waste (baggasse).

Both these private sector initiatives (hydro and biomass potentials) have had in some way, even as small as possible, the involvement of the Energy and Environment Partnership Finland/Central America.

FUTURE OF RENEWABLE ENERGY SOURCES IN BELIZE

Belize has targeted other renewable Energy options apart form Hydro, to assess their potential in assisting in the development of our country. These include Solar, Wind, and most importantly Bio Mass, using Forestry and Agricultural Wastes. We have a positive experience with Bagasse in the Sugar Industry.

Key Challenges of Power Sector in Caribbean

- Some **IPPs** but majority **vertically integrated** public utilities
- **High dependency on imported** oil products for power generation
- Large **fiscal** and **macroeconomic** impacts
- **Small, fragmented** and **insolated** power systems
- No existing cable or pipeline **interconnections**
- Some of the **highest electricity tariffs** worldwide
- Increasing concern about **environmental impacts**
- **Electricity demand** is growing fast
  - Source: World Bank

Key Drivers For Sustainable Energy in Region

- **Energy Security**
  - Need to diversify using indigenous resources as a hedge against rising oil price on world market
  - Search for lower cost options

- **Environmental Concerns and Climate Change**
  - Governments are more and more concerned about the environmental impact of fossil fuel generation
  - Global thrust to migrate to low carbon economies
  - Trinidad and Tobago has high per capita carbon emission

Source: Caricom Energy Unit

Energy Scenario in Belize

- Regulate, Supply & Distribution
- Regulator: Public Utilities Commission (PUC)
- Suppliers:
  - BECOL
  - Belco Gen
  - Hydro Maya (hydro)
  - Mexico (CFE)
  - BEL
- Distributor: Belize Electricity Limited, (BEL)
- Co-ownership which retards fare economic supply of energy to users.

Oil Import/Production

- Belize Natural Energy Limited (BNE) discovered oil in a field near Belmopan, which is currently it is producing 3200 Bbl/day of very good quality oil
- Esso (subsidiary of Exxon), has been the only importer for long time,
- PetroCaribe has been operational but is currently defunct.
- LPG from Mexico City;
- Yearly imports of the four main products, all transportation fuels (regular and premium gasoline, diesel oil and kerosene), amount to some 46 Million gallons

Electricity Generation

- Installed generation capacity is 89 MW with peak demand around 74 MW.
- Electricity demand mainly comes from residential sector (56%), industry and commerce (37%) and public lighting (7%).
- Around 50% of electricity is imported from Mexico's CFE through an agreement to supply 15 MW of firm capacity and up to 40 MW on economic basis.
- BEL generates from diesel (18 MW) and gas (20MW) burning plants, mostly peak energy, accounting for 7% of the energy supply.

Electricity Generation

- 43% is produced using hydro plants.
- Belize Electric Company (BECOL) owns the largest commercial hydroelectric plants (Mollejon 25 MW and Chalillo 7 MW), producing approximately 43% of the country's electricity,
- Belcogen has an agreement to sell 13.5 MW to BEL using bagasse from the production of sugar by Belize Sugar Industries

Renewable Energy Options

- The production of bio-ethanol is still being studied
- 20 MW of wind power could be produced in the Baldy Beacon region
- 50 kWp the solar potential for isolated off-grid applications

Energy Policy Development

- The Ministry of Public Utilities, Information and Broadcasting has hired a team of local consultant to undertake the baseline studies for the drafting of Belize's National Energy Policy.
- The consultants have been working in collaboration with the Ministry of Natural Resources and the Environment, which has the vested focal point for Energy.
  - Develop a comprehensive TOR and establish a National Energy Security Committee
  - Develop an Energy Security Roadmap
  - Develop a National Renewable Energy Policy Framework to be included in National Energy Policy
  - Develop a National Energy Policy
  - Connect the development of the National Energy Policy to the NREPS Process which will manage the national consultation of the National Energy Policy.

National Energy Policy Support

- The CARICOM Secretariat has offered Belize technical support for the conception of the Draft Energy Policy, which will be amalgamated into the Regional Energy Policy for the Caribbean.
- The Organization of American States (OAS) will be providing technical experts to undertake baseline studies
- Training has also been proposed to enhance Belize's capacity in sectors that will assist in the development of the baseline studies for the Draft Policy Paper.
- The International Development Bank (IDB) has formally agreed to a grant to assist in the formulation of the country's National Energy Policy. Technical support for baseline studies will be provided which will results in a draft report of Belize's status.
- This month Belize became the 27th Signatory country to the Lima Convention and formally joined with OLADE to secure the necessary technical assistance and database acess to complete its Energy Balance and Capacity Building.

Interconnectivity Options

- ***SIDS Dock Limited (SIDS DOCK)*** because it is designed as a **"docking station,"** to link with the global financing markets and technology development.
- ***Central America Electric Integration*** and the SIEPAC *Project*
- ***Regional Energy Solutions for Power Generation in the Caribbean***