



BELIZE'S EXPERIENCE

TITLE: Energy for Sustainable Development in Belize



Country: Belize

Institution: Ministry of Energy, Science and Technology and Public Utilities

Type of Institution: Public

Other institutions involved: GEF, UNEP and IDB for smaller first project

Webpage: <http://estpu.gov.bz/>

Context

The continued and persistent growth of any country or economy is based fundamentally on energy. Essentially, all production or manufacturing activities require electricity. Modern societies depend on reliable energy supply to sustain their productive capacity and social cohesion. Thus energy is strategically important for developing countries such as Belize.

Belize is abundant in energy resources, particularly biomass (forestry), hydroelectricity, solar and to some extent wind. Although these resources could play a central role in sustaining development, the nation remains highly dependent on imported energy sources. Furthermore, access to energy in rural areas where majority of the population resides, is inadequate and public awareness regarding energy efficiency is low.

Belize acquires its energy from four main sources, specifically, fossil fuels (75.5 per cent), biomass – traditional biomass and bagasse (22.7 per cent), hydro (7.4 per cent) and imported electricity (4.4 per cent). Belize currently imports 100 per cent of refined fossil fuels used. Like many of its Caribbean counterparts, the country is highly vulnerable to fluctuations in the price of petroleum. This has had particularly damaging influence on development plans. The use of oil and gas compounds a complicated dependency on non-renewable resources. Additionally, the use of these energies results in the emission of greenhouse gases, which pose severe environmental threats in the form of global warming and climate change. Furthermore, the cost of electricity is high. The residential rate is 11 to 20 cent US per kWh and commercial rate is as high as 22 cents US per kWh. With most of the country dependent on electric power, the need for each home, business or industry to become more Energy Efficient (EE) is pivotal to reducing the cost of living and maximize economic growth. The rising cost of fuel is directly impacting the business, transportation and public sector.

Taking this into consideration and, given that the current overwhelming dependence on oil and gas for

power generation, heating and transportation is likely to continue for some considerable time into the future, there is need for increasing attention to be given to improving energy efficiency.

In recent times, oil production in Belize has become a significant contributor to the country's gross domestic product (GDP) and export earnings. This natural resource endowment yields approximately 2,800 barrels of crude oil per day and declining; however, this source is not renewable, as proven reserves are estimated at 6.7 million barrels. In light of the above stated, the country has had to re-engineer its energy policy from its 1980 assumptions to create a more robust and sustainable energy policy that maximizes the development of its renewable energy resources, using to the maximum extent possible the resources generated by this fossil fuel resource to develop a sustainable energy sector.

Objectives

The Government of Belize (GoB) is committed to developing a path of **efficient** and **sustainable energy**, and building **resilience** within its energy supply chain(s) by using "effective rules and smart policy frameworks".

Through the creation of an Energy Policy Framework, the Government of Belize has now taken a necessary and bold step to guide the development of the energy sector along a path of efficiency, sustainability and resilience over the next 30 years and to lead Belize down a path of a clean carbon economy.

In this regard, the Ministry of Energy, Science and Technology and Public Utilities, under the auspices of the National Sustainable Energy Strategy is implementing a project entitled "Energy for Sustainable Development in Caribbean Buildings". This project is a part of a regional initiative which is targeted at sustainable energy use through energy efficiency and renewable energy intervention technologies.

Through the implementation of such initiatives, the GoB seeks to: Improve energy efficiency and conservation across all sectors: Industry, Commercial and Residential Buildings. The goal is to achieve a minimum reduction in per capita energy intensity of at least 30 per cent by 2033, using energy utilization and GDP generated in 2011 as the baseline.

Relevance

The country seeks to improve energy efficiency due to reduction energy wastage in buildings by 20%. Less dependence on fossil fuel, thus foreign exchange availability in reserves. Energy intensity reduction by 220 kTCO₂ provided over a ten year period. Overall reduction of GHG emissions.

Implementation

The Belize National Sustainable Energy Strategy 2012-2033 includes a number of programmes and activities to support the development of the country's non-renewable and renewable energy resources and improve energy efficiency and conservation in order to transform Belize to a low carbon economy by 2033. In order to assist the Government of Belize with accomplishing this goal the Inter-American Development Bank approved a Technical Cooperation to promote and support sustainable energy and energy conservation programmes in order to minimize the dependency on fossil fuels in Belize and to reduce carbon emissions. The project aims to assess the potential for Energy Efficiency applications and distributed generation using Renewable Energy and also to support the National Energy Policy of Belize.

The Energy for Sustainable Development for the Caribbean Countries project activities in Belize proposes a mix of policy and demonstrations and is intended to reduce energy intensity from electricity use by 20 % from the business as usual (BAU) scenario. It is intended that the project activities will serve as harbingers toward an "energy efficient economy" within the Caribbean and commercial uptake of

successful models will be encouraged.

Worthy to note is the Private Sector's advancement in its use of Renewable Energy (RE) 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).

The project activities in Belize will target sustainable EE retrofitting of building through Energy Service Company (ESCOs) via the development bank, along with the adoption of enforceable EE codes for the improved design and construction of buildings. Alternate measure will be considered for building using little or no cooling equipment, which will include the regulating and labelling of widely, used appliances via legislation and public awareness campaign. These activities will be strengthened and collaborated through the Caribbean Community Climate Change Centre (5Cs) with the other four countries each taking the lead in particular area. These interventions aim to realise the reduction of the energy intensity from electricity use in Belize buildings by 20% within the targeted time period.

Component one of the project seeks to establish an Assessment and Monitoring System for GHG production and Environmental Impact from Buildings. This process entails a series of audits to determine energy demand and usage in buildings particularly based on the power usage of equipment in electrical devices in buildings.

As a founding member of the Small Island Developing States Sustainable Energy Initiative – SIDS DOCK, in December 2009, Belize committed to the collective SIDS DOCK goal of increasing energy efficiency by 25 per cent (2005 baseline) and to generate a minimum of 50 per cent of electric power from renewable sources and a 20-30 per cent decrease in conventional transportation fuel use by 2033. SIDS DOCK is a mechanism developed by its Member States to provide assistance to its members with transformation to a low carbon economy by 2033, in order to generate financial resources to support adaptation to climate change. The development of a sustainable energy policy in Belize will reflect the overall SIDS DOCK goal of achieving a low carbon economy in Belize by 2033. Of significance, in February 2012, Belize was selected by the 30-Member States of SIDS DOCK to be the Host Country for the SIDS DOCK institution, providing critical start-up and long-term support, while positioning the country to derive significant early benefits from the organization's presence.

Belize is also committed to the UN Secretary-General's Sustainable Energy for All Initiative (SEFA), signed on 8 May 2012 at the Alliance of Small Island States (AOSIS) Ministerial Conference on "Achieving Sustainable Energy for All (SEFA) in SIDS – Challenges, Opportunities, Commitments," in Bridgetown, Barbados 7-8 May 2012. The Declaration emphasizes that achieving sustainable energy for all in SIDS includes providing all households with access to modern and affordable renewable energy services, while eradicating poverty, safeguarding the environment and providing new opportunities for sustainable development and economic growth. The SEFA initiative has identified three interlinked objectives which underpin the goal of achieving sustainable energy for all by 2030:

- Ensuring universal access to modern energy services;
- Doubling the global rate of improvement in energy efficiency;
- Doubling the share of renewable energy in the global energy mix.

As we supply and use energy more efficiently we become less dependent on it and consequently are less affected when disruptions occur. Similarly, shifting our dependence from foreign fossil fuels to renewable energy sources result in greater environmental and social sustainability, but also reduce our vulnerability- and hence boost our resistance to external price shocks. This makes the tasks for policy makers easier. These goals are mutually reinforcing and any action that helps to achieve one of them is likely to help achieve the other.

Good practices and concrete lessons

As the Government of Belize embarks on a revision of the nation's energy policy, it recognizes the importance of understanding critical role of reliable, sustainable and indigenous sources of energy in achieving the country's potential for development. The vulnerability of the economy in the last decade, faced with insecure energy supplies, must be addressed. First of all, a short, medium and long term policy providing guidance on how to address energy needs must be adopted.

Secondly, legal and institutional frameworks must be adapted to favor new investments in sustainable energy supplies that will yield affordable energy services. A secure, competitively priced, and environmentally sound energy supply is a basic requirement for a competitive economy. Without an energy supply with these characteristics, sustained economic growth, employment and prosperity are at risk. These components are all essential, though their relative importance differs. In certain instances, they are clearly complementary, while in others they appear to be mutually competitive. Policy decisions sometimes involve tradeoffs between one objective and another. For example, improvement in energy efficiency will address all objectives of the energy policy. Similarly, investment in renewable energy sources will address environmental protection and security of supply (though not necessarily competitive pricing).

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