Speech: Minister of Energy and Mining

Future Outlook of Power Generation, Transmission and Distribution in Jamaica

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Thank you Chairman.

I am very pleased to be invited to present Jamaica's Future Outlook for Power Generation, Transmission and Distribution at this Power Summit.

Jamaica welcomes and supports wholeheartedly initiatives geared toward **mitigating climate change, promoting energy security and efficiency and ending energy poverty.**

The world and more so, Small Island Developing States are seized, more than ever before, with the need to reduce the dependency on fossil fuels.

For most of us, and certainly for Jamaica, the need to hugely improve energy efficiency and promote the development of indigenous resources is of equal importance to our economy as is achieving a high quality of life for our citizens - this we set as our development goal. We must take the necessary steps to ensure energy security, to advance sustainability and mitigate against the effects of climate change – the latter being a phenomenon that poses a very real threat to our economies.

Jamaica is over 90% dependent on imported fossil fuels to meet its energy needs. The sharp rise in oil prices during 2008, and its general volatile behaviour have put into sharp focus the need to diversify our energy base.

The volatility of the oil market – as the recent developments in the Middle East have so graphically shown the world – presents a very real risk for Jamaica. But it has also presented us with the opportunity and impetus to move rapidly to implement our energy sector development program.

The Government of Jamaica is committed to significantly reducing Jamaica's fossil fuel dependence by diversifying the energy base to include renewable energy and by promoting energy conservation and efficiency (ECE) initiatives.

We have taken a quantum step in this direction with our natural gas strategy – and I will speak to this more, later. But while we focus on diversification, we also recognize that energy conservation and efficiency is the **"first fuel"** – the best and most immediate means of saving the country's scarce foreign exchange and releasing funds for other important national priorities.

Jamaica and my ministry are actively promoting a number of policy responses to address these issues of energy security and has recently finalized Jamaica's National Energy Policy 2009 – 2030 which gives priority attention to these and a number of related areas.

STRUCTURE OF THE POWER SECTOR

I will now give you a brief overview of the Jamaican power sector. The Jamaica Public Service Company is the island's only electric utility. It serves approximately 590,000 customers, 525,000 (approximately 89 percent) of which are residential consumers. This customer group is responsible for approximately 35 percent of the billed energy sales.

Small commercial customers make up 10 percent of the Company's customer base and consume 22 percent of the billed energy. The remaining customer base is made up of large industrial consumers making up less than 1 percent of the customer base, but consuming 43 percent of total energy billed.

The generation of electricity was fully liberalized in 2004. This has allowed independent power producers (IPPs) access to the JPS grid to generate and supply power to the utility for distribution. IPPs now provide 30 percent of total electricity generation.

POWER SECTOR CHALLENGES

The Jamaican power sector continues to grapple with a number of critical issues, which if not urgently addressed will have a profound impact on our country's development prospects. These issues include:

- The significant dependence on liquid fossil fuels for power generation
- The cost of power driven by the existing fuel mix
- An aged fleet of existing generating plants
- Inefficiencies in the production and delivery of electric power, and
- The level of reliability and stability of the power supply

Recognising these risks, we have formulated a number of strategies that will result in workable solutions and achieve a secure, sustainable and economical energy supply in the country. Among the strategies are:

- Energy diversification
- Energy efficiency and conservation, and
- The development of the renewable sector – where economically feasible

The extent to which these strategies can be effectively pursued depend to a large degree on the promotion of investment in technology, and the strengthening of the institutional and regulatory frameworks.

Access to financing is generally regarded as the biggest barrier to the introduction and expansion of renewable energy and to investment in energy efficiency. Traditionally, sources of financing tended to be highly collaterized, with repayment terms that made it very difficult for organizations and, indeed, individuals to make the decision to invest more aggressively in these areas. There is definitely a need for

more creative funding instruments and mechanisms to mobilize more private funding for investment in the energy sector. This is a challenge that prospective financiers should address and it calls for more collaborative public-private partnerships.

CURRENT MIX OF GENERATION TECHNOLOGIES

As you can see, our power sector is dominated by expensively operated and inefficient fossil fuel plants which account for 93% of our generating technologies. Currently, renewable energy technologies account for only 7% of our generation technologies – a situation that we are committed to change. Within the last two years the contribution of RE capacity has moved from 5% to 9%, which means that we are on our way to meeting the 2012 target of 11% of renewables in our energy mix.

POWER SECTOR POLICY AND STRATEGY

Aligned to the National Energy Policy 2009-2030, is our soon to be finalized Power Sector Policy, which will take into account the Government's Energy Conservation and Efficiency strategy, the fuel diversification strategy, the goals of the country's national development plan – **"Vision 2030 Jamaica".** The necessity to ensure the least cost development of the energy sector is critical to achieving these goals.

Among other things, the Power Sector Policy will establish procedures that will create incentives for the utility company to implement:

- Transmission and distribution loss reduction strategies
- Heat rate improvement strategies
- Customer power factor improvement programmes; and,
- Demand side management programmes that will achieve a target peak reduction of 30 MW.

Already several projects under this program have been developed as part of the first Three Year Energy Action Plan which outlines seven (7) flagship projects. Chief among them are:

- Modernization of the country's energy infrastructure:
  - This includes the replacement of over 300MW of old and inefficient electricity generators with the introduction of Liquefied Natural Gas;
  - Expansion of renewable energy in the fuel supply mix and
  - The Petrojam Refinery upgrade

- Continued exploration for oil and gas which has yielded at least two promising leads which are being aggressively pursued

- We are also focusing on the development of the country's renewable energy potential, with an emphasis on hydro, wind, solar and biomass and importantly,

- Promoting Energy Conservation and Efficiency in the public sector

I referred earlier to our major fuel switch project in Jamaica. We have gone to market for 480MW of new generating capacity for gas fired combined cycle plants, which as I said before, is set to revolutionize and transform our energy infrastructure and our economy, even as we plan for the smooth introduction of new and more efficient energy technologies.

The need for a strong and transparent Legislative & Regulatory framework for the promotion of investment in the energy sector is not lost on us! We are committed to developing this important element, and are in the process of reviewing and finalizing policies that will govern the:

- Premiums to encourage investment in renewables, including feed in tariffs
- Implementation of Net Billing and Smart Grids to support connection of renewable sources to the electric utility grid
- Concessionary financing for the development of renewables and retrofitting for improvement in energy efficiency, and
- The development of incentives that will allow for greater deployment of renewables and energy efficiency.

We have recently compiled information on the financing required to address the generation, transmission and distribution challenges – estimated to be in the order of US$1.5B over the next 5 -7 years.

FUEL DIVESIFICATION – NATURAL GAS (FUEL OF CHOICE)

I will now spend some time discussing opportunities for investment in our fuel diversification projects. Jamaica's Office of Utilities Regulation Least Cost Expansion Study recommends the commissioning of 360 MW (3x120MW) of Natural Gas-fired combined cycle capacity in 2014. Of this amount, 292 MW will be for displacement of aged, inefficient capacity and the remainder for demand growth requirements

Over the next 20 years, approximately 1400 MW of new fossil fuel power plant capacity will have to be constructed in Jamaica, to meet the increasing demand for electricity and to displace aged power plants, depending on the penetration of renewables and possibly nuclear power in the next 10-15 years.

Approximately 800 MW of this new capacity needs to be constructed in the coming decade. Overall, the total capacity that will be required by 2029 to both meet the

increasing demand for electricity and displace aged existing plants is estimated at 1360 MW with a total cost of approximately US$ 5.77 Billion.

In the next decade, the investment envelope is estimated at US$ 6.0 to 8 billion depending on the mix of technologies that will be deployed.

This is an imperative for our country. According to the OUR's estimates, in a "Business As Usual Case", the total capacity that will be required by 2029 to both meet the increasing demand for electricity and displace aged existing plants is estimated at 1280 MW with a total cost of approximately US$ 8.18 Billion. The cost to Jamaica would be US$2.4 billion more than the cost to pursue a Natural Gas Only strategy.

This highlights the urgency for significant investment and the appropriate institutional framework to attract this interest in Jamaica.

We must also note that the fuel diversification objective will not be sufficiently achieved under the Natural Gas (only) expansion strategy. And as such, there is a place for the structured development of renewable and other sources of energy.

RENEWABLE ENERGY DEVELOPMENT

The Government is committed to leading the continued development and promotion of renewable energy options that will reduce the country's dependence on imported fossil fuel by increasing the percentage of renewables in the energy mix from the current level of about 9% to 11% by 2012, 15% by 2020 and 20% by 2030.

The main renewable energy technologies that are of interest to Jamaica, and those that have recently engaged the interest of the local, multilateral and bilateral agencies are **solar and photovoltaics, wind, mini-hydro and biofuels/biomass, including bagasse –** which will expand the role and add value to the outputs of our well-established sugar industry**.**

Additionally, a suite of renewable energy projects have been identified for financing, to include, hydro, biodiesel, waste to energy, and solar. Through a GOJ and Inter-American Development Bank (IDB) Technical Assistance Program, we are currently conducting wind mapping studies across Jamaica, supporting further development of prospects for the Caribbean's first wind farm - Wigton Wind Farm - and others are to come.

Clearly, private sector investment will be critical for the development of this sub-sector.

Wigton Wind Farm's completed expansion of the 20.7 MW wind farm to 38.7 MW will:

- Provide 55 GWh of electrical energy, capable of powering approximately 24,000 homes;
- reduce consumption of imported fuel by approximately 32,400 barrels of oil and save the country US$3.2M of foreign exchange (based on current prices which average US$70/barrel of oil),
- avoid the emission of approximately 45,954 tonnes of carbon dioxide, and
- contribute to the long term lowering of the overall fuel charge component on consumers' electricity bill as fossil fuel energy is substituted by renewable energy.

With the expansion of Wigton we have increased the share of wind energy from 1.3% in 2009 to 4% at the start of 2011 on our national grid.

Several other renewable energy projects are under development, including, for example a Wave Energy Project for isolated coastal communities.

SPECIAL UPDATE ON HYDRO

I will now present a special update on investment opportunities in the Hydropower sector.

Jamaica presently has about 24 MW of Hydropower capacity in nine (9) plants across the island. This produces on average 160,000 MWh of energy annually and hence avoids the importation of 92,000 Bbls of oil for electricity generation and the emission of 112,000 tonnes of CO_2.

We have presented here a suite of 16 proposed hydro projects with a combined total capacity 95 MW. These projects are at varying stages of analysis and development; and we have recently identified three new sites for early development – Laughlands, Great River and Back Rio Grande.

The total anticipated capacity will be around 20 MW with an anticipated 82 GWh per annum of power generation.

A Request for Proposals (RFP) for interested investors to develop a suite of small scale hydropower projects will be issued in July 2011. This RFP will have a draft Power Purchase Agreement and preliminary approvals related to the Clean Development Mechanism. Financing will be based on the investors approach.

All of these are designed to present for investors workable and implementable projects with a reasonable return on investments.

ENERGY EFFICIENCY AND CONSERVATION

Let me now focus on a flagship project for Energy Efficiency and Conservation that we are currently implementing. While we recognize that the fuel switch project is a game changer for us, we must as a country and public sector use energy substantially more responsibly than we have in the past.

With Technical Assistance support from the IDB, the Ministry is implementing a programme to complete energy audits throughout the entire public sector with the aim of designing an investment programme to achieve the targeted minimum 15% reduction in energy consumption and improved efficiency. But this will not be limited to the public sector, as we will embark on a public awareness campaign using the achievements in the public sector as a model for the rest of the country.

This program is also aligned to the major World Bank Energy Security and Efficiency Enhancement Project to be implemented over the next 3-5 years. This program, which will also support energy efficiency initiatives and public education, will as a priority, target the:

- Further development of the legal and regulatory framework to:
    - Increase Private Investment and Transition to Cleaner Fuels
    - Strengthen the regulatory framework for private-public partnership in the energy sector
- Provision of technical advisory services and promotion of renewable energy in particular for hydro, wind resources and biomass, energy efficiency, and gas including:
    - promotion of private sector investment in solar and wind energy, including the dissemination of results of an on-shore wind resource assessment to potential investors
    - investment promotion activities for identified small hydro sites, and
    - accelerating the development of cost-effective privately-financed generation in the power sector

In real terms we are also channeling funds through our development bank – Development Bank of Jamaica (DBJ) to facilitate and encourage private sector investment in conservation and efficiency to allow this sector to compete more effectively in the global market place. This program will also extend a line of credit to approved financial institutions to provide retail financing to the private sector for energy efficiency and renewable energy investments.

CONCLUSION

So, many of you will have heard perhaps less than congratulatory opinions about doing business in Jamaica. We in the Ministry of Energy and Mining are here to change that perspective.

We have outlined investment possibilities and we have defined a c**lear policy framework**. We have **set clear targets**, and we are **facilitating funding and new business development**. We have forged **strategic partnerships with our tertiary institutions** to ensure that you will have the technical skills to develop your businesses in Jamaica. These, we all know, are the keys to productivity and competitiveness.

Jamaica has embarked on a program to **improve the ease of doing business in and with our country**. To this end, we have the support of the Ministry of Finance and the Public Service, and our investment promotion agency JAMPRO.

The Finance ministry has recently revised the country's tax policies and made several significant advancements that ease the interface between business and the tax departments; and JAMPRO, has in February 2011 launched an investment map. This map is a strategic web tool developed to add an interactive and visual dimension to presenting investment opportunities in Jamaica and for research on Jamaica.

I am here to invite you to Jamaica and to be a part of this transformation.

THANK YOU!