



MINISTRY OF ENERGY & ENERGY INDUSTRIES

FEATURE ADDRESS

AN ANNUAL REVIEW OF ENERGY DEVELOPMENT

PLANS AND VISION FOR 2016 AND BEYOND

BY

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Ministry of Energy and Energy Industries

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A pleasant Good Morning to All. On behalf of the Minister of Energy and Energy Industries, the Honourable Nicole Olivierre who regrettably is unable to attend today's function due to pressing commitments, I wish to extend warm wishes and congratulations to the organizers of this Annual Energy Conference. It has become one of the premium events in the energy calendar of Trinidad and Tobago and no doubt will continue to bring regional and international stakeholders of the sector together for reviews, updates and discussions on energy developments and challenges facing the Caribbean and global energy markets.

BACKGROUND

Over the past decade, we have witnessed the significant and dramatic changes to the energy industry. The emergence of the Shale Oil and Gas has seen the resurgence of the USA as a major producer and exporter of these reserves. Combined with this, has been the dramatic decreases in oil and gas prices, since 2014, by more than 50% and the overall supply and demand imbalance due to falling growth rates in countries. These price shocks have led to:

- Cuts in capital expenditure.
- Reductions of operating expenditure.
- Leaner and stronger operations for oil and gas companies.
- Downturn in rig activities.
- Unprecedented reserves write-down.

As one writer puts it "Competition, slumping oil prices and declining energy demands are not the only major factors affected the oil and gas industry. The energy landscape is being significantly reshaped by the trend for Climate Change and the concerted effort to reduce CO₂ emissions and minimize fossil fuels". Surviving these turbulent and challenging times require well planned, robust strategic decisions and properly executed implementation plans.

For a mature oil and gas producing country, like Trinidad and Tobago, the question is how can we effectively continue to explore and develop these depleting resources, while at the same time, not only take cognizance of our responsibility towards ensuring Climate Change but also put in place those measures so necessary to reduce our carbon footprint. The strategic approaches must incorporate plans that will encompass several areas and opportunities for alternative fuels as follows:

ENERGY SECURITY

The leading energy publications suggest that fossil fuels will continue for the foreseeable future to be the dominant primary energy source. The current consumption statistics show that petroleum constitutes 36%, natural gas 27% and coal 18%; a combined total of 81% of energy consumption followed by renewables with 8%, nuclear with 8% and liquid biofuels with 1%. The US Energy Information Administration in its 2016 energy outlook has predicted that, even with the faster growth of renewables, fossil fuels comprising oil, gas and coal will account for 78% of primary energy use by 2040.

Recognising this, Trinidad and Tobago must of necessity continue to gain access to supplies of reserves either by increasing its domestic exploration and development activities on land as well as in its marine areas and/or by expanding its borders to include cross border and across border developments.

NATURAL GAS

In 2016, there was a renewed commitment by upstream companies to bring new gas production on stream. Major projects include bpTT's Juniper, the EOG/bpTT Sercan development and the

bpTT Trinidad Onshore Compression (TROC) project which are all due to commence gas production in 2017 and at peak produce cumulatively 1 BCFD.

The Juniper project, located 80 km or 50 miles off the south east coast of Trinidad in water depths of 360 feet, involves the development of the Corallita and Lantana fields and the construction of an unmanned platform and drilling of five (5) subsea wells. It is expected to produce 590 Mmscf/d of gas and stabilize natural gas supply by 2017.

Another major project, located just 65km or 41 miles off the north east coast of Trinidad and in water depth of 341 feet, is a joint venture between bpTT and EOG Resources to develop the Sercan Field. First gas is expected in 2017 with a production rate of 275 Mmscf/d. This natural gas will be transported via a 4km subsea pipeline tied back to the Toucan platform, which is operated by EOG.

A third project is the Trinidad Onshore Compression (TROC) project involves the installation of an additional inlet compressor at Atlantic LNG's facility in Pt. Fortin. This project will allow for increase flows of natural gas from low-pressure wells and the recovery of an estimated 200 Mmscf/d gas reserves. Start-up of TROC is estimated to be early 2017.

On-going discussions are also taking place between bpTT and the MEEI to develop the Angelin field located 40km east of Trinidad in a water depth of 65metres. With as estimated gas reserves of 915 bcf, if sanctioned, first gas is expected by first quarter 2019.

DEEP WATER EXPLORATION

The year 2016 was also the start in earnest of deep-water exploration. The first deep-water well, the BHP Billiton Le Clerc was completed in Block TTDA 5 located in the South East Coast at a depth of 22,876 feet and encountered gas at its targeted zone. The results are being evaluated. Another deep-water well the BHP Billiton Burroket 1 is currently being drilled in Block 23a off

the North –East Coast of Trinidad in a water depth of 6300 feet and is expected to reach its target zone within the next two months. The approved depth is 27,990 feet. Over the next two years, deep-water exploration will intensify with the drilling of at least six wells.

In addition, the MEEI is currently reviewing the results of the data collected from the seismic survey conducted by BHP Billiton in 2015 with the view of determining the prospective areas.

Other significant natural gas developments include the on-going discussions between this country and Venezuela on the development of the across –border Dragon Field and the two cross border fields namely, the Shell-operated Loran/Manatee Field and the bpTT/Repsol-operated Manakin/Cocinia Field. It is anticipated that with respect to the Dragon Field, an incremental supply of gas of up to 300 Mmscfd can be made available to this country via a pipeline from Venezuela’s Dragon field to Pt. Lisas and Pt. Fortin.

CRUDE OIL

Oil production has been on a steady decline due to aging fields and the lack of major discoveries. The majority of the country’s oil bearing acreage is held by state owned Petroleum Company of Trinidad and Tobago which through lease operators, farm outs and joint ventures, currently accounts for approximately 41,000 barrels of oil per day or 57% of the country’s oil production which at August 2016 averaged 71,182 barrels of oil per day.

In its new strategic plan, Petrotrin proposes to implement measures aimed at increasing production to approximately 45,000 barrels of oil per day by 2017 and to approximately 60,00 barrels of oil per day by 2020.

These measures include improved reservoir management, recompletions, aggressive workover and enhanced secondary recovery primarily steam flooding to increase production in existing fields. In 2017, Phase 1 of the South West Soldado Redevelopment Project is due to be commissioned and will add an initial production of 2,000 barrels of oil per day. To maintain the

momentum the company will be seeking new commercial partnerships under third party arrangements to aggressively optimize oil production from its Trinmar's assets.

Concomitant with the action being undertaken by energy companies to prove up their acreage the Ministry proposes to recommence the offer of new acreage for exploration in the new year.

CREATING OPPORTUNITIES

In terms of hydrocarbon production, the region's participation in the global energy sector has until now been dominated by Trinidad and Tobago. The recent major oil find in Guyana is likely to evolve further as there is a growing and sustained interest by energy corporations in the deep-water plays of the Caribbean countries. It is a welcomed development for the region as a whole. For Trinidad and Tobago, it affords an opportunity to export its knowledge and skills and seek greater utilization of its infrastructural assets, such as its ports.

Recently an Energy Services Trade Mission visited Guyana to explore the opportunities emanating from the recent oil and gas discovery and was warmly received. A few companies are already engaged in providing services and others stand to benefit from interest shown in the services they provide.

This country's reach has taken also taken us into international countries. As part of the African Initiative programme that was started in 2008, this country recently signed a General Cooperation Agreement with Ghana, while NGC is pursuing with the Ghanaian state-owned company, Bulk Oil Storage and Transportation Company Limited (BOST) commercially viable opportunities in the Ghanaian energy sector.

POLICY FORMULATION

2016 has been a year in which policy formulation has been a major focus and which has been occasioned by several consultations with various segments of the domestic energy sector. The consultations were driven by the the need, among other things, to determine a way forward for this country's natural gas development; the advancement of a national energy policy for Trinidad and Tobago, as well as an assessment of the integrity of assets in the domestic energy sector.

Facilities Audit

The facilities audit was commissioned to determine the state of affairs of the integrity of facilities in the energy sector in relation to established HSE standards and the recommended action to bring compliance with such standards.

The outcome of the audit was quite revealing with a wide variation in asset management ranging from poor to excellent within the domestic energy sector comprising upstream, midstream and downstream companies.

It reflected that overall there is a need for improvement in the management of the asset base of the domestic energy sector. Given this recognition the consultant DNV GL Oil & Gas, is currently finalizing individual reports for transmission to companies which will provide a detailed assessment of their asset management, highlighting their strengths and weaknesses. In parallel the Ministry is strengthening its capability in the regulation of companies on the integrity of their installations and in the management and identification of the associated risks.

Natural Gas Master Plan

The Trinidad and Tobago energy sector revolves primarily around the production of natural gas that accounts for approximately 90% of hydrocarbon production on a barrel of oil equivalent. Within recent years there been a decline in reserves and production of gas from existing acreage

that has been compounded by the global decline in prices and the need to ensure value optimization throughout the chain.

In 2016, the consultants, Poten and Partners (UK) Ltd completed the Natural Gas Master Plan. The plan is designed to chart a way forward in addressing the complex challenges facing the Trinidad and Tobago gas industry and provide a route map for the development of policy and strategy.

Following the receipt of the plan, a Committee was appointed by Government to review and to make recommendations on the aspects of the plan that could be adopted. In reviewing the plan, the Committee held consultations with the Energy Industry and other stakeholders and has formulated recommendations for the way forward. In so doing the Committee has sought to address a number of issues facing the industry such the gas supply situation including access to Venezuelan gas, the equitable sharing of revenue along the gas value chain and roles of the relevant Government Agencies. The Committee has recently submitted its Report and recommendations for consideration.

ALTERNATIVE AND RENEWABLE ENERGY FORMS.

While efforts are being undertaken to increase sources of supplies of oil and gas and improve overall management systems within the sector of Trinidad and Tobago has also taken deliberate steps to broaden its energy mix to include alternative forms of energy.

In this regard, the utilization of Compressed Natural Gas and hybrid vehicles together with the promotion of renewable energy, wind, solar and waste to energy together with energy efficiency are key aspects of this country's energy initiatives.

Alternative Energy Forms

Implementation of the CNG initiative is being undertaken by a subsidiary of NGC, NGC/CNG company. It is planned that the first phase will entail the construction of 22 new CNG stations, the conversion of approximately 17,500 vehicles and the training of new CNG service technicians. Currently there are six (6) CNG stations in operation, in addition to two (2) new, dedicated CNG stations located at the NGC Field Office in Point Lisas and at the PTSC Compound in City Gate, Port of Spain.

A new multi-fuel station was recently opened at St Christopher's, Wrightson Road while six (6) others are proposed at Trincity, O'Meara and Tumpuna Road, Arima, Starlite, Diego Martin, Mc Bean, Couva and Munroe Road, Uriah Butler Highway. In the case of Trincity the liquid fuels part of this station is already in operation. The UNIPET Santa Flora station is currently being retrofitted while existing service stations at Mon Repos, San Fernando, Beetham Highway and Main Road, Chaguanas are being upgraded and a new station is being established at Cove, Tobago.

On the demand side, effort is being undertaken to promote usage in state and public entities. To this end, NGC currently has a fleet of 205 CNG vehicles while Petrotrin has a fleet of 106 CNG vehicles. Additionally, the Vehicle Management Corporation of Trinidad and Tobago (VMCOTT) recently awarded a tender for provision of CNG-Diesel vehicles for the Trinidad and Tobago Postal Corporation (TTPOST). WASA has engaged NGC CNG for development of a refueling station at its St. Joseph headquarters. Additionally, PTSC has thirty-five (35) dedicated CNG buses in its fleet; another thirty-five (35) is currently being procured.

In addition to CNG vehicles, incentives have been offered for the use of hybrid vehicles.

I now turn to Renewable Energy

A major aspect of this country's energy policy is the promotion of energy efficiency, and renewable energy sources, including wind and solar, as the means to increase energy security and to reduce our reliance on fossil fuels to power our economy. In keeping with our policy it is our intention to maximize, where practicable, the use of renewable energy such as solar and wind through incentives; concessions and enabling legislation.

In April 2016, Trinidad and Tobago became a signatory to the Paris Agreement committing to reduce emissions in power generation, transportation and industrial sectors. In respect of power generation, the Government has set a target of 10% renewable power generation by 2021. This will entail a combination of several factors, among which will include as follows:

- a. amendments to the Trinidad and Tobago Electricity Commission Act and the Regulated Industries Commission Act, to facilitate access by Independent Power Producers to the national electricity grid system.
- b. the undertaking of a Waste to Energy Project which is to be established at the Beetham Landfill Estate in Port of Spain.

It is anticipated that the Waste to Energy Facility will contribute to the modernization of the Integrated Municipal Solid Waste System in Trinidad and Tobago by improving its economic, environmental and social performance, while concomitantly contributing to the attainment of the country's sustainable energy targets.

OTHER ACTIVITIES

Trinidad and Tobago as part of the Caribbean will continue to promote awareness and the use of renewables through such activities as "CARICOM Energy Month" and through specialized

programmes that are developed with the Ministry of Education for schools and in communities. In addition, this country's continuing membership in such organizations as the Caribbean Renewable Energy Forum (CREF) and the International Renewable Energy Agency (IRENA) will continue to provide the impetus to reduce this country's carbon footprint.

Energy irrespective of its form will continue to drive economic development. The challenge is to produce energy while protecting the environment. Trinidad and Tobago is committed to doing its part.

Ladies and gentlemen, in these turbulent and challenging times, the onus is on each of us to do our part to ensure Climate Change and to reduce our Carbon Footprint. It requires the collaboration of all the stakeholders. I have only highlighted a few of this country's energy developments as we re-position ourselves to overcome the challenges that face us today. Thank you to the audience for your patience and to organizers for affording me this opportunity and I wish you much success in upcoming programmes.

Ladies and Gentlemen, I thank you.