



**GOVERNMENT OF TRINIDAD AND TOBAGO
MINISTRY OF ENERGY AND ENERGY INDUSTRIES**

FEATURE ADDRESS

By

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THE TRINIDAD AND TOBAGO 2020 ENERGY CONFERENCE

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THE ENERGY CHAMBER OF TRINIDAD AND TOBAGO

SHAPING THE CARIBBEAN ENERGY FUTURE

HYATT REGENCY

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Shaping the Caribbean's Energy Future

The Annual Energy Conference by the Energy Chamber of Trinidad and Tobago has now been firmly established as the major energy conference in the Caribbean and Latin America attracting the decision makers of operating energy companies and the senior policy makers of energy producing jurisdictions in the region. The Board and Management of the Energy Chamber of Trinidad and Tobago are to be congratulated for this outstanding achievement.

It is my pleasure once again to address this distinguished audience. On behalf of the Government of the Republic of Trinidad and Tobago (GORTT), I extend a hearty welcome to participants of the Conference and wish you a continued engaging and rewarding Conference.

The Caribbean has been renowned for its idyllic environment with its tropical rain forests and biologically diverse marine regions. These resources to a large extent have made the region one of the world's top tourist destination.

The region, however, is extremely vulnerable to climate change and natural disasters, and the damages can surpass the annual gross domestic product (GDP) of some countries. Natural disasters have cost the region an estimated US\$20Bn between 1996 to 2019. Investing to prepare for

climate change and natural disasters will be critical for the region's resilience and the reduction of human and economic costs.

Caribbean countries have therefore been promoting investment in renewable energy systems which are in harmony with the environment, and which facilitate climate adaptation, without compromising sustainable development goals. In 2018 Blue Economy Caribbean was launched as a call for the region to prioritize coastal and marine economies that are sustainable, scalable, inclusive, and environmentally sound.

However, within recent times there has been a shift in the policy pursued by Caribbean Countries with respect to energy security. Caribbean Countries have seen the potential for the exploitation of their latent hydrocarbon resources and are now embracing oil and gas exploration in a major way. Guyana, with its major discoveries, and to a lesser extent Suriname have led the way. Barbados, Grenada, Jamaica and the Bahamas have followed suit and have sanctioned the exploration for oil and gas in their marine areas.

However, the incorporation of hydrocarbon exploitation in the energy strategy of Caribbean Countries could be politically challenging. In Guyana, the current administration came to power on a platform of change and investment in a green economy. In this regard, the Government of

Guyana has developed a green state development strategy intended to put Guyana on a low emissions pathway. The strategy also calls for the reduction of Guyana's dependence of fossils fuels and the achievement of 100% renewable usage by 2025.

The green philosophy and oil and gas extraction are not incompatible. The adaptation of renewable energy has been stymied by the lack of capital and the prioritization of funding to treat with pressing social issues. External financial aid to finance the green economy has been limited and even withdrawn. The successful exploitation of their hydrocarbon resources would present Caribbean Countries with the financial resources to create green economies and maintain the region's appeal as one of the most diverse ecosystems in the world.

Accordingly, oil and gas operations now and in the future must be conducted in a manner that is compatible with the blue economy, fisheries and tourism. Tourism is the mainstay of many economies in the Caribbean. As an industry, tourism is responsible for 20% of imports and 13.5% of employment in the region. For 2019, the Caribbean Hotel and Tourism Association reported that tourism in the region grew by 4.4% over 2018, which was almost perfectly in step with tourism growth worldwide. This growth was achieved despite several major hurricanes.

Given the fragility of the environment in the Caribbean, there needs to be a sensitivity to the potential adverse impacts of oil and gas exploration. To date operators in the region have been responsible in their exploration activities and there have been no major adverse events. Notwithstanding, in relation to offshore exploration, risk assessment, disaster management planning, and disaster recovery, the region requires a common approach. It is therefore important that the countries involved in offshore oil and gas exploration consider the development of an oil spill regional emergency plan. At present Trinidad and Tobago (T&T) has an oil spill agreement with Venezuela. There have also been preliminary discussions between the Ministry of Energy and Energy Industries (MEEI) and Exxon. This matter requires the urgent attention of the Caribbean Governments and the energy companies operating in their marine environment.

T&T has had experience in the development of protocols and in the management of oil spills, and is available, to lend its expertise to the other countries. However, this is only one facet of the technical support that this country can offer to other Caribbean Countries. We have over 100 years' experience in oil and gas exploration and development, an internationally competitive service sector and extensive midstream experience. T&T is therefore positioned to assume the leadership in a new Caribbean Energy Diplomacy. To date the GORTT has executed Memoranda of Cooperation with the Governments of Grenada, Guyana and Barbados.

These agreements are not limited to technical co-operation but also include economic co-operation.

These new developing oil and gas economies do not have the domestic infrastructure in place to monetize their oil and gas resources. T&T is prepared to collaborate with them in the monetization of cross-border fields and hydrocarbon resources. There have been complementary exchanges with the respective Governments on this matter. The Honourable Prime Minister of Barbados has indicated that Barbados is not averse to the marketing of gas discoveries in T&T given its spatial and infrastructure limitations. As regards Grenada, the National Gas Company of Trinidad and Tobago (NGC) has a commercial agreement in place for the purchase of gas from Global Petroleum Group Limited (GPG), the company that holds a Production Sharing Agreement with the Government of Grenada. NGC continues to liaise with GPG, the Operator of the Grenada offshore project. In 2020, GPG plans to undertake an appraisal-drilling programme to further assess the feasibility of bringing the gas to market. This will provide an indication of the quantity and quality of gas available for sale to the NGC. In relation to Guyana, there have been preliminary discussions on co-operation in the domestic energy sector. Such co-operation could include the supply of gas as feedstock to the domestic downstream industries and crude oil for the Guaracara Refinery when it restarts.

The consummation of defined areas of co-operation with the developing oil and gas economies will provide a positive benefit to the domestic energy sector. However, these developments will take time. In interim, this Government has been working closely with the upstream operators to improve the domestic oil and gas supplies, with positive results. In 2019, there were thirteen (13) exploration wells consisting of five (5) exploration wells in deep-water, four (4) exploration wells in shallow water and four (4) exploration wells on land. All, except two (2) of the exploration wells, one (1) a deep-water well and the other well on land, found some form of hydrocarbon. A testimony to the prospectivity of geology of T&T. In 2020, there will be nine (9) exploration wells consisting of one (1) exploration well in deep-water, four (4) exploration wells in the shallow water and four (4) exploration wells on land.

In 2019, Ryder Scott completed the audit of the 2018 natural gas reserves. The audit confirmed that the Government's strategies were working, as proved reserves remained essentially unchanged between 2017 and 2018 despite production trending upwards. A combination of new wells, better well performance and the re-evaluation of gas in place contributed to the improved performance.

In 2020, upstream companies will be undertaking major developmental activity aimed at improving gas supply and fulfilling contractual

arrangements. Shell Trinidad and Tobago plans to execute two development projects (Barracuda in the East Coast and Colibri in the North Coast) for a total of investment of approximately US\$1.2Bn. The Barracuda Project (East Coast Marine Area) was sanctioned (FID) in November 2019. Shell has scheduled the drilling of two (2) horizontal development wells in the Bounty and Endeavor Fields tied back to Dolphin Production facilities commencing March 2020. The Colibri Project (North Coast Marine Area) is to be sanctioned in March 2020 and will consist of four (4) horizontal development wells in the Casra, Orchid and Iris Fields tied back to Poinsettia production platform. The drilling of the development wells are scheduled to start in the fourth quarter 2020. A rig will arrive in February 2020 for drilling on the Barracuda Project and another in July 2020 for the Colibri Project.

BPTT continues to undertake significant activity to support production and manage decline on its existing fields. The Galeota Expansion Project is nearing completion with start up in the first quarter 2020. The jacket for the Cassia Project (fabricated in Trinidad) is due for completion in the first quarter 2020 and installation thereafter with the topside arriving in early 2021. A new semi-submersible rig will arrive in country in the third quarter 2020 to commence drilling of the wells for BPTT's Matapal Project. Front-end engineering and design (FEED) work has been awarded to progress its Cypre Project. Significant turnaround activity on

Cassia and Juniper will take place in 2020 to bring their new projects on line as well as upgrades and replacement activity across BPTT's platform, pipeline and onshore infrastructure.

BHP is expected to have a new Jack-up rig working in the third quarter 2020 to start drilling the Ruby wells. BHP will have a heavy lift installation vessel in the country to install the Ruby platform and to lay pipelines to connect the Ruby Field to the Angostura Field. This will take place in the second quarter 2020.

EOG Resources drilled the Osprey East well in 2019 and discovered hydrocarbons. In 2020, EOG plans to commence construction of a new platform and pipeline for the Osprey East Development.

Other operators include Touchstone, which is projected to bring its COHO-1 well in the Ortoire block on stream in mid-year and De Novo, which expects to take an investment decision in the second quarter 2020 on the development and production of the Zandolie Field in Block 1a.

Consequent on development works being undertaken by upstream companies several gas fields will come on stream over the next five years, commencing in 2020 with BPTT's fifth Angelin Well. In the following four (4) years, offshore gas developments include a suite of BPTT's

projects such as Cassia C compression, Shell's Barracuda and Colibri Projects and EOG's East Osprey Project. Arising from the recent historic agreement between T&T and Venezuela for the independent development of Cross Border Fields, the Manatee Field will be developed by Shell and is projected to come on stream in 2024. This is a major resource, which can provide up to 400Mmscf per day of natural gas over a fifteen (15) year period.

Ladies and Gentlemen, let me pause for a cause. Yesterday, at this Conference opening ceremony, the Honourable Prime Minister gave a comprehensive discourse of the local and regional energy sector.

He outlined the emergence of the Caribbean as a major oil and gas province (in particular Guyana and Suriname). He also outlined the positive aspects of the local gas sector---we have been able to increase gas production from 3.3Bcf/d in 2016 to 3.6Bcf/d in 2019 and projected 4.0Bcf by 2024.

He further outlined the development project that will come on stream in the next 3-4 years.

- BPTT Matapal, Cypre and Cassia C Compression
- Shell Colibri and Baracuda Project

Then he highlighted the most positive news of all---what he called a game changer.

- That there has been agreement between T&T and Venezuela to independently develop their respective share of the Loran Manatee Gas Field which could bring 270-400Mmscf/d of gas to Trinidad by 2024/2025.
- He indicated that at this time there is a temporary pause to the Dragon Project because of US sanctions. Lo and Behold, the newspapers headlines this morning are:
 - Dragon Cage from the Newsday
 - Dragon can't Dance from the Express and
 - Gas Deal Off from the Guardian

Based on the current developments, the outlook for gas production is positive. It is projected that gas production could reach 4Bcf per day in the near term. This projection does not include gas production from the deep-water blocks, cross-border and across-border fields. BHP has declared commercial potential for its deep-water discoveries and is currently preparing the assessment plans, which will inform its development and marketing of gas from these blocks. The development of cross-border fields Kapok-Dorado and Manakin-Cocuina could follow the same approach adopted for the Loran-Manatee, which will accelerate

such development. The development of the across border Field Dragon is on hold due to US trade restrictions but can be activated on short notice.

The outlook for oil production is also very positive, with production projected to rise by 2020 to the levels achieved in the early part of the last decade, which is in excess of 90,000Bp/d. New oil from Rio Claro, the Ortoire Blocks and significantly BHP Ruby Delaware field in block 3a is driving this increase in production. Heritage is also playing its part, as there has been a steady increase in its oil production. The company has been ramping production by a mixture of strategies, which include horizontal drilling, workovers, and enhanced oil recovery projects. In February 2020, the company intends to bring on stream its Mobile Offshore Production Unit (MOPU), which will add compression to the South West Soldado Field and add on average 2000BOP/D to existing production. By year-end 2020, Heritage expects its oil production to reach 44,000Bp/d an increment of 5000Bp/d on 2019 production.

The MEEI buoyed by the recent success on land by Touchstone and Lease Operators in the Ortoire and Rio Claro blocks, has been taking a close look at Onshore Southern Basin.

In 1989, Exxon, Total, Chevron, Trintoc and Trintopec formed the Southern Basin Consortium to explore the southern part of Trinidad for

structures similar to the El Furrial Oil Field, which became the highest producing oilfield in Eastern Venezuela. In its exploration programme, three onshore wells were drilled between 1994 to 1995 Rocky Palace, Iguana River and Ste. Croix. These wells tested Cretaceous fold structures and penetrated Cretaceous sandstones, which were modeled by Exxon to be deep-water turbidities', encased in shales. The sandstones all contained residual oil with no full saturation oil sand being penetrated. Following the drilling of these wells, the Consortium continued an aggressive exploration programme campaign targeting Cretaceous, late Oligocene and Mid-Miocene reservoirs along the 'El Furrial' trend extension. There was limited success, which lead to the consortium relinquishing large portions of the license due to the poor seismic quality and unfavorable drilling results.

The search for another 'El Furrial' Giant was rejuvenated in 1999 with BHP's Angostura Discovery which uncovered Oligocene, shallow marine sands, similar to those found at El Furrial, implying that the trend also extends offshore into the Columbus Basin. A Cretaceous source was confirmed for the hydrocarbons discovered in the Angostura reservoirs. This was a significant discovery.

Onshore exploration declined for most of the 2000's and was re-ignited with success, in the recent exploration activity by Touchstone and Lease

Operators. Over two decades have passed and we need to revisit the Southern Basin Consortium Project. Today, we are in possession of new data and new technology with which to develop new basin models to aid in our search for the next onshore discovery and possibly the next major oil field. Accordingly, the MEEI is putting into motion plans to encourage international consultants to work alongside Heritage Petroleum to commission a renewed onshore exploration campaign.

Heritage Petroleum has also advanced negotiations on offshore exploration with Shell and issued an RFP for a partnership on South West Soldado. The company expects that a decision on this matter will be taken by the second quarter 2020. An RFP has also been issued for a partner for the Jubilee Field, which has an estimated one billion barrels of oil in place.

The recent exploration successes on land, in shallow water and in the deep-water have reaffirmed the prospectivity of T&T as a hydrocarbon province. We intend to leverage on these successes by accelerating the conduct of bid rounds in all areas. In this regard, we have acquired or have access to extensive and new seismic 2D and 3D data, gravity and magnetic data. To facilitate easier and quicker access to data by companies the MEEI is reviewing its current methodology and is looking to establish a platform that will facilitate such access.

In keeping with our mandate of continuous exploration of our open acreage, the Ministry undertook a 2018/2019 Shallow Water Bid Round. We offered six (6) offshore blocks, in water depths less than 400metres, namely Blocks 1(c), NCMA 2, NCMA 3, U(c), 4(c) and Lower Reverse 'L'. We received one bid each, for the three east coast blocks, U(c), 4(c) and Lower Reverse 'L', by a consortium of BPEOC and BG International Limited (Shell). After evaluation of the bids received, the Consortium has been invited to enter into negotiations with the Ministry to improve their bids.

The Ministry has been reviewing its options for a bid-round on land, shallow water and in deep-water. BHP, together with their partners, has been exploring our eastern/northeastern deep-water acreage, with great success. Its recent exploration has unveiled the presence of a working petroleum system. BHP's aggressive deep-water exploration drilling campaign has confirmed the presence of a thermogenic Cretaceous source rock as well as viable biogenic gas sources. The company has declared commercial potential for its several gas discoveries. It is to submit assessment plans, which provide for in-depth appraisal and options for marketing for the MEEI's approval.

Given the recent successes and the strong interest by upstream companies in deep-water exploration in the region, the MEEI will be embarking in

2020/2021 on a new phase of exploration in the deep-water area. At present, approximately 70% of our deep-water acreage is yet to be explored. A request for nominations will be issued within the near future. Interested parties will be allowed to view and/or license data.

The future for domestic energy sector is bright. The fiscal measures put in place and negotiated agreements with the major upstream companies would significantly improve the financial returns from sector. The returns from the sector are instrumental in the transformation of the domestic economy and improvement would help to accelerate the diversification of the economy.

In terms of the energy mix, renewable energy is now in the forefront of change. The movement to renewable energy is relentless and cannot be ignored. Government has pledged its commitment to renewable energy and energy efficiency in keeping with its goal of sustainable development. To create a platform for sustained development the Government has introduced a number of fiscal support mechanisms such as tax credits, import duty concessions and the zero-rating of VAT. The MEEI has led the way with installation of solar lighting in the car parks of community centres and solar PV systems and distillation units in schools. The Ministry's Head Office, Tower C in the International Waterfront Centre has been selected for the implementation of a pilot energy efficiency and energy conservation project. Recently RFPs were issued for a 130

Megawatt Utility Scale Generation Project and the proposals are currently being evaluated.

Based on our strategies we see no conflict between oil and gas exploration and the development of renewable energy. At the best, they can be complementary with the financial resources derived from oil and gas being utilized in the development of renewable energy. However, there is an element of risk, which requires prudent management so to ensure that the fragile Caribbean ecosystems are not compromised.

Understandably, the Governments of the region wish to exploit the economic benefit located in their marine environment. However, members of civil society, environmentalists, hotel operators and fisherfolk may not share their vision. Accordingly, there has to be dialogue with the interest groups and the wider population on the management of oil and gas resources and the balance with regions' fragile ecosystem.

Over the years, the Caribbean has been able to surmount the insularity that once was a feature of the region. There is a danger that the newfound wealth could see countries regressing into old habits. This is a matter that we need to guard against and therefore, we need to keep open the channels of communication.

Overall, discovery of oil and gas by Caribbean countries is a positive development, which will provide the impetus for energy security for the region. There are synergies to be gained and the maximization of the benefits by co-operation among Caribbean countries. T&T has been reaching out to the countries as they proceed with their exploration programmes and we are confident that there is a role for this country in this new dispensation. However, we will need to adjust to the new realities. With each discovery, the cost of energy to Caribbean countries will decline and so too the competitive advantage held by T&T in the production of goods and services. On the other hand, there will be a demand for professional and technical services that abound in T&T. The newfound wealth should be a boon and opportunity for all Caribbean countries in attaining the goal of energy security, while preserving the Caribbean as the tropical paradise that it is.

In closing, I wish to thank the Energy Chamber for the opportunity to provide my perspective on the energy developments taking place in the Caribbean and an update on energy sector of T&T. Please have a successful Conference.

I thank you

Honourable Minister