



**Government of the Republic of Trinidad and Tobago
MINISTRY OF ENERGY AND ENERGY INDUSTRIES**

ADDRESS

BY

SENATOR THE HONOURABLE FRANKLIN KHAN

MINISTER OF ENERGY AND ENERGY INDUSTRIES

AT

ENERGY CHAMBER'S ENERGY EFFICIENCY AND RENEWABLES

VIRTUAL CONFERENCE 2021

ON

FEBRUARY 1ST, 2021

SALUTATIONS:

The Honourable Marvin Gonzales, Minister of Public Utilities

Dr. Thackwray Driver, President and CEO of the Energy Chamber;

Dwight Mahabir, Chairman of the Energy Chamber;

Energy Company Executives and Industry Leaders;

Other specially invited guests;

Members of the media;

Distinguished Ladies and Gentlemen,

Good morning.

It is my distinct pleasure in participating in the Energy Chamber's 5th Annual Energy Efficiency and Renewables Conference which is aptly titled "Leading the Transition".

Energy Efficiency and Renewables have been at the forefront of the fight against climate change. However that step change has been slow in coming. The turnaround was instigated by the 2016 Conference of the Parties of the UNFCCC, better known as COP21, in France which raised the alarm of an impending environmental catastrophe if the world continued on the same path and which garnered agreement to reduce greenhouse emissions.

Following COP21, investments in renewable energy, mainly solar, wind, wave, hydro and geothermal have been reported to exceed US\$1.0 trillion. There has also been innovation in everything, including energy storage, smart grid, and electricity generation technologies. These developments will improve the efficiency and

viability of renewable energy from wind and solar. With the improvements in energy storage the prospect of transitioning grids to full reliance on renewable energy is now closer than ever.

Jurisdictions from the United Kingdom to New York State have pledged a net-zero carbon economy by 2050. The European Commission launched the European Green Deal – a new growth model and roadmap to achieve climate neutrality in the EU by 2050. Japan has joined the EU and has adopted the 2050 climate neutrality goal, and South Africa, South Korea and China aim to achieve net-zero emissions around mid-century. Canada announced a new law on climate neutrality and President Biden has indicated that the US will move in the same direction.

The Caribbean countries are also at the forefront in the fight against climate change as the region is particularly vulnerable to the environmental and socioeconomic impacts of climate change. These impacts include sea-level rise, water scarcity, coral bleaching, and the increased strength and frequency of tropical storms and hurricanes. I throw my mind back to September 2017, when Hurricane Maria devastated Dominica, causing 65 deaths and damages amounting to over US\$1 billion, virtually obliterating Dominica from the map. About one month later, in an address to the United Nations General Assembly, Dominica's Prime Minister told the Assembly, and I paraphrase, "The issue with climate change is that those that suffer the most are those who did not contribute to it" and this is an issue that needs to change.

Countries in the region have been utilizing their significant renewable energy resources, including biomass, geothermal, hydropower, solar, waste-to-energy, and wind in weaning their economies from fossils. Collectively the CARICOM States have set a target of renewable energy capacity of 28% by 2022 and 47% by 2027. However, a number of countries have set ambitious national targets. Barbados

proposes to be 100% renewable and carbon neutral by 2030, Jamaica 50% of energy from renewables by 2030 and Guyana to reduce its carbon footprint through diversification into renewable energy such as hydropower. Member States in CARICOM can be models for low-emissions development strategies given the congruence of their economic and security interests with the global climate agenda.

Trinidad and Tobago is aligned with the goals of the region. The Government of the Republic of Trinidad and Tobago has pledged its commitment to incorporate RE and Energy Efficiency (EE) into the country's energy mix in the National Development Strategy 2016-2030: "Vision 2030". The Government has taken a number of initiatives as it moves the country to a new era dominated by renewables.

The World Economic Forum in its 2020 Report on the Global Energy Transition reported that a majority of countries have improved energy transition readiness by targeting better access to capital and investment and increasing the level of political commitment. Notwithstanding, the World Economic Forum has advised that current policies and countries' pledges could lead to global warming well above the emissions pathways set out in the Paris Climate Change Agreement. According to the latest United Nations Environment Programme Emissions Gap Report countries must increase their nationally determined contributions threefold to achieve the goal of holding the increase in the global average temperature below 2 degrees Centigrade and fivefold to limit the increase to 1.5 degrees Centigrade. The achievement of these objectives have been made more challenging by the Covid-19 pandemic which has the potential to derail the strides made by countries in transforming their energy systems.

Trinidad and Tobago currently lies at the median in relation to the progress made by countries in transitioning their energy systems. As a Small Island Developing State we are acutely aware of the effects of climate change on the environment and as an

oil and gas exporter we are aware of our responsibility to mitigating the effects of global warming. It is with this recognition that the Government in its 2030 vision has placed the environment at the forefront of social and economic development and established short, medium- and long-term goals aimed at achieving a balance between the environment and social and economic development. Our goals include improvement in energy efficiency, as articulated by the Honourable Minister of Public Utilities, incorporation of renewable energy in the energy supply and a reduction in our carbon footprint.

The key to achieving our goals is first to understand the enormity of the undertaking so that the appropriate solutions can be devised. It is now mandatory that every country is required to account for and provide the progress in addressing the country's emissions. In order to ensure the accuracy of the data on emissions the Government has developed a Mitigation, Reporting and Verification System which streamlines data protection with International Practice. The Environmental Management Authority is charged with the responsibility to validate the data before it is incorporated in the National Inventory. At this time reporting by companies on their emissions is voluntary but steps are being taken to make such reporting mandatory.

We have already embarked on the inclusion of renewable energy in energy mix through a solar project which is being undertaken by a Consortia of BP, Lightsource Bp and Shell, which has been well articulated by the previous speaker.

The Solar PV project, while highly beneficial, utilizes a substantial amount of valuable real estate. The same applies to onshore wind energy which utilizes almost twice amount of land for the same energy output as solar. In a country with limited land resources the judicious utilization of these resources is paramount. Other

countries have addressed this issue by harnessing the potential energy stored in the oceans and sea and in offshore wind and wave projects to generate electricity. Trinidad and Tobago is an archipelagic state with exclusive economic zone, of 74,199 square kilometres, which is approximately fifteen times the country's land mass. Our EEZ has been largely un-utilized with exception of our deep-water oil and gas exploration which in itself is a recent and successful undertaking. We now have an opportunity to harness the energy potential stored in our marine environment from sources other than hydrocarbons in the form of wave and/or offshore wind energy.

Wave energy has been successfully exploited in the Caribbean. A case in point is the island of Bermuda. However wave energy is at an early stage of development as there are a number of innovations and trends taking place within the sector. Offshore Wind Energy offers a more promising alternative for a coastal country like Trinidad and Tobago, particularly as the technology can be deployed in both shallow and deep water. Over the next decade, offshore wind, which includes bottom-fixed in the shallow water and floating in the deeper water, is projected to become one of the most competitive sources of electricity, commensurate with fossil fuels, solar PV and onshore wind.

The Energy Information Administration of the USA has projected that by 2050 renewables would be responsible for 50% of electricity generation. If Trinidad and Tobago is to keep pace with the global developments we have to systematically increase the percentage of electricity produced from renewables which is currently targeted at 10% of total electricity generation. There are challenges to this, as articulated by the Minister of Public Utilities. There are current plans by the Ministry of Energy and Energy Industries to conduct an onshore wind assessment. This will be expanded to include offshore wind. The results of these activities will inform the expansion of renewables into the domestic energy mix.

We also need to deepen the adoption of solar energy by the population, including the local private sector, as this has not taken off despite tax concessions, import duty exemptions and zero rating of VAT on PV Systems and wind turbines. To improve the adoption of solar energy systems we will be introducing, in the not too distant future, Feed-In Tariffs which will provide an economic incentive to persons to install solar PV systems in their residences or business places. An Inter-Agency Team led by the Ministry of Energy and Energy Industries is in the process of finalizing a Feed-In-Tariff Policy which will inform the legislative amendments to the T&TEC Act and Regulated Industry Commission Act required for RE grid integration.

Energy efficiency is an area of focus being pursued by the Government as well, and this will be championed of course by the Ministry of Public Utilities. Also on the Government's agenda is green hydrogen. The Minister of Finance in his 2021 Budget Statement announced that Government, as part of its energy efficiency agenda, was pursuing opportunities for the production of green hydrogen through the electrolysis of water, and a lot has already been said during the morning about the project with Newgen.

These measures, as significant as they are, will not be sufficient to achieve the carbon reduction target of 103 million tonnes of carbon dioxide by 2030. They need to be augmented by other solutions. An effective solution would be carbon capture, utilization and storage. To this end the Ministry of Energy and Energy Industries in collaboration with the University of the West Indies, the University of Trinidad and Tobago and Heritage Petroleum Company Limited has been pursuing a project aimed at the management of carbon dioxide emissions. The aim of the project was to identify reservoirs with the potential for storage of carbon dioxide and for the stimulation of oil production.

We are fortunate, as I was discussing with the CEO of Atlantic LNG just the other day. If we capture the carbon, there are reservoirs and depleted oil fields in areas nearby, such as Guapo, where the carbon dioxide can be stored.

From the exercise a number of onshore provinces with potential for carbon capture and storage (CCS) were identified. It is intended to build on this expertise by expanding the scope of the exercise into a major CCS project to quantify the volume of storage available in depleted hydrocarbon reservoirs and saline aquifers throughout Trinidad and Tobago (A National Carbon Storage Atlas) and to implement CCS along the entire value chain. A Team comprising representatives of the Ministry of Energy and Energy Industries, the University of the West Indies and the University of Trinidad and Tobago will be appointed with a mandate to identify reservoirs both on land and in marine areas with a view to accelerating the implementation of carbon capture and storage of carbon dioxide in these reservoirs.

As countries and corporations trend to a rebalancing of their energy mix the reality is that the increase in energy demand by a growing global population, rising incomes and poverty alleviation measures cannot be met in the medium term by renewable technologies and energy efficiency. The US Energy Information Administration has projected that there will be a 50% increase in world energy usage by 2050 with renewables accounting for 28% of primary demand, fossil fuels oil, gas and coal accounting for 69% of primary demand, and nuclear energy accounting for the remaining 3%.

In face of the contribution of fossil fuels to energy usage, the key to the abatement of the negative impacts is the investment in low carbon technologies and the rebalancing of portfolios.

The oil and gas industry has the resources and skills of the industry to tackle emissions from some of the hardest-to-abate sectors. This includes the development of carbon capture utilization and storage low-carbon hydrogen, biofuels, and offshore wind. Scaling up these technologies and bringing down their costs will rely on large-scale engineering and project management capabilities, qualities that are possessed by large oil and gas companies.

Three-quarters of the CO₂ captured today in large-scale facilities is from oil and gas operations, and the industry accounts for more than one-third of overall spending on these projects. If the industry can partner with governments and other stakeholders to create viable business models for large-scale investment, this could provide a major boost to deployment.

The transformation of the energy sector now requires close collaboration with the oil and gas industry due to the high capital cost for the conversion to renewables. Oil and gas companies need to clarify the implications of energy transitions for their operations and business models, and their commitment to climate change abatement. This process has started and energy companies commitment to reduce emissions are being clearly articulated.

In December 2020 it was reported that eight energy majors announced an agreement to apply a common set of "energy transition principles" across their businesses, including a commitment to industry decarbonization, in an effort to combat climate change.

The Group which included BP, Royal Dutch Shell and Repsol agreed to work to reduce emissions from their own operations, to publicly support the goals of the Paris Climate Agreement, to work with governments to develop low-carbon energy

systems and to support carbon capture utilization and storage technology. I must say the BP, Shell and those who operate in Trinidad have already begun to do this. BP, Shell, and Repsol also have committed to a goal of net-zero emissions by at least 2050. Of the major companies BP was the first oil major to commit significant capital to renewable projects, such as wind and solar, from 1980 onwards. Locally, in 2020 BP in a Consortium with Lightsource BP and Shell was approved to undertake the development and operation of a 130 MW facility.

Meeting the challenge of tackling climate change requires unprecedented collaboration between energy companies, governments, investors and other stakeholders. The Government is fortunate to have International Energy Companies BP, Shell, Perenco, EOG and BHP as partners in the development of the country's hydrocarbon resources. We are heartened by their commitment to industry decarbonization in the fight against climate change.

It is an herculean task. Regardless of which pathway the world follows, climate impacts will become more visible and severe over the coming years, increasing the pressure on all elements of society to find solutions. It is with this recognition that several countries have accelerated and or expanded their plans to lower their greenhouse gas emissions. At the recent Summit convened by the United Nations on the 5th Anniversary of the Paris Agreement it was reported that the number of countries coming forward with strengthened national climate plans (NDCs) had increased with commitments covering 71 countries and with a further 27 countries with new and enhanced NDCs.

The recently established Mitigation, Reporting and Verification System will provide an accurate account of emissions generated by industries in Trinidad and Tobago and will enable the upgrading of the country's NDCs.

Ladies and gentlemen, throughout our history we have been in the forefront of developments in the energy sector. The first well ever drilled anywhere in the world that produced oil was in 1857 in La Brea. When oil production began to decline and gas became dominant we restructured the industry around natural gas. This led to the development of the Pt. Lisas model of development based on downstream industries of petrochemicals and metals. We recognized, very early in the game, the potential of LNG and were also among the first countries behind Algeria, Indonesia and Qatar to commence commercial production of Liquefied Natural Gas.

Today we face a daunting but not insurmountable challenge in the rebalancing of our energy mix. We will seek opportunities to work with our stakeholders in our domestic energy sector to develop and implement solutions aimed at reducing our carbon footprint as part of our contribution to the reduction of global warming and in the rebalancing of the country's energy mix.

However, having said that, we cannot throw the baby out with the bath water. As a gas based economy we depend on the monetization of natural gas to produce our major exports and foreign exchange earnings from LNG and Petrochemicals. For decades, 100% of our electricity has been generated from natural gas, which continues to grow in prominence as a transition fuel, by virtue of it being the cleanest of fossil fuels. In this regard, Trinidad and Tobago has been a leader in the transition, having transformed the domestic energy sector from being oil-based to gas based. Based on existing gas reserves and resources, natural gas will continue to play a

prominent role in the social and economic development of Trinidad and Tobago in the short to medium term. Therefore, for the foreseeable future and for our own survival as an economy, natural gas will remain as the transition fuel as we rebalance our energy mix and diversify the economy. Yes, we are committed to becoming a carbon neutral economy and we will get there in a judicious and orderly manner, and in fact, it is the very income from natural gas that will enable us to so do.

In closing let me congratulate the Energy Chamber for what I expect to be another successful conference. Events like this Conference provide the opportunity and the platform for the exchange of ideas and creation of solutions. I am very much impressed with the composition of presenters and the topics to be addressed at the Conference. The Conference therefore has all the ingredients for success and I expect the same.

The message I wish to leave with the Conference is that Climate Change is a global challenge and only by working together we can achieve the pathway to affordable energy, sustainability, and security within a framework that allow us to achieve goals set in Paris Climate Change Agreement. A number of major energy companies have already set the tone and I am confident that other companies will follow. There is opportunity at this Conference to continue the process and I look forward to the outcome of your deliberations.

Please accept my best wishes for a successful Conference.

I thank you