



The National Gas Company of Trinidad and Tobago Limited

**Clean Energy Conference – Day 1: Energy Efficiency and Renewable Energy in a
Hydrocarbon Economy
Arthur Lok Jack Graduate School of Business
2017 June 08 | 8:35 am – 8:45 am**

Sponsors' Remarks: The National Gas Company of Trinidad and Tobago Limited Mark Loquan,
President

SALUTATIONS

Mr. Selwyn Lashley, Permanent Secretary of the Ministry of Energy and Energy Industries

Ms. Vashti Jitman, Permanent Secretary of the Ministry of Public Utilities

His Excellency Mr. Arend Biesebroek, Ambassador of the European Union

Mr. Luis Bertran, Secretary General of the International Gas Union

Other senior members of the government and diplomatic community

Members of the Energy Chamber

Ladies and gentlemen

If you've been following the news, you are no doubt aware that the US is now one of the only three countries in the world that are not part of the Paris Agreement on climate change. We know the rationale for the US pull-out, but what of the other two? Syria, under siege at the time of the conference did not attend; the other refused to sign, out of protest. As a small state, at great risk despite not being a major contributor, Nicaragua felt the targets set by the high-emission states were not aggressive enough. From their point of view, signing the pact is an otherwise moot point. Long-before the Paris Agreement, Nicaragua was already a green energy leader. They were already at 50%, with a target to reach 80%. The US, the 2nd largest producer of carbon emission in the world, was only targeting 13%, for the same period.

Trinidad and Tobago, as a small island state at the cusp of the equator and the start of the hurricane-belt, is similarly vulnerable. Our government remains firm in its commitment to achieve 10% of energy from renewable sources by 2021.

This is neither an insignificant nor unambitious target. It translates to potentially 350 MW¹ of electricity, from a starting point of essentially, zero.

It is a telling, if not troubling statistic, that in the 10 years or so, since the Energy Chamber identified the issue of energy efficiency and renewable energy as an urgent agenda for our sector, less than 1% of our energy comes from renewable sources. This is so, despite:

- An abundance of readily available sun, sea, wind and biomass
- Numerous studies commissioned by the government, industry bodies and even two within the NGC Group of companies
- Multiple offers of free technical support and funding from developmental agencies
- A number of well researched and tested pilot efforts among our universities, T&TEC and my own Group of companies, which suggest that:
 - solar power could reduce energy consumption by over 40% per household, and
 - had we started an aggressive energy efficiency programme on the Point Lisas Industrial Estate, using 2008 as a reference point, by 2023 emissions could have been reduced by 15 % to 3.2 million tonnes CO₂e, i.e. a natural gas equivalent of 58.1 million MMbtu.²

1 2017 PSIP pg 77: "Demand is estimated to grow from 1400 MW to 3000 MW by 2018." Using a factor of 5% p.a. based on IDB study, demand by 2021 will be 3472

2 2011, Consultancy Services for the Establishment of Frameworks for Energy Efficiency Policy and Programme, CBCL for National Energy Corp, Final Report, pgs 7, 49.

In the 10 years or so since we started this conversation at a sectoral level and elevated it to the national platform, several tax incentives have been introduced to encourage development of a renewable and alternative energy industry and utilization of solar-powered equipment. Legislation has been passed to ensure that companies in the energy sector, which account for over 50% of energy consumption and 47%³ of carbon emissions, pay a Green Levy tax to ensure funding is available for green projects. Government completed its framework for renewable energy in 2011. So why has so little progress been made compared to the rest of world? Let's look at some figures:

- 26% of world's energy supply now comes from renewables, compared to our 0.2%.
- Cumulative installed PV capacity across the globe grew exponentially from 10GW in 2006 to 177 GW in 2015
- The cost of unsubsidized utility-scale solar power has fallen dramatically to one-third of the price it was in 2010, and by as much as 40% in the last year. Chile recently set a record at US 3 cents / KW.
- US 3 cents/kw is the average cost of electricity in Trinidad and Tobago – except it is very subsidized.

Our country has a long-standing reputation of being the tiny nation that does big things. Despite having less than 1% of the world's proven gas reserves, we are the world's largest exporter of ammonia and methanol and the 7th largest exporter of LNG. In 2012, we achieved another world ranking – 2nd highest carbon emissions per capita. As an industrialized, energy intensive country, our per capita consumption of electricity is three times the Caribbean average and double the world average⁴. 96% of electricity is now gas-fired and, with 97% electrification, visitors and returning nationals alike will agree that flying into Trinidad at night is one of the most beautiful visual experiences. We shine bright like a diamond.

Diamonds, as you know, come at a cost.

Trinidad's competitive advantage of low cost production comes in no small part from a fairly reliable supply of very cheap electricity. With some industrial sectors paying as little as US 2

³ At 2012 Values, per NGC 2012 Greenhouse Gas Inventory and Emission Reduction Opportunities Report

⁴ Energy Dossier: Trinidad and Tobago, IDB, pg 18: Electricity Consumption in KWh/capita (2012 values): TT - 6510, Caribbean and Latin America - 2045; World - 3045

cents/kw, it is small wonder that there has been little impetus to reduce consumption or convert to renewable energy – natural gas after all is in principle “clean energy”.

Moreover, with consumers unaware of the true economic cost of electricity, and commercial arrangements that allow our power generators an unlimited supply of gas, at no direct expense to them, there is even less incentive to pursue energy efficiency in a meaningful way.

We need to change that mindset. We, as energy leaders, entrepreneurs, educators, researchers and citizens, need to resolve this issue of seeming inertia and leave here with concrete, targeted actions that will support the national goal of 10% by 2021 and more.

The urgency of meeting this target goes beyond mitigation of catastrophic climate change. It will resolve a more pressing and immediate issue that threatens the country's viability and our quality of life.

Power generation currently consumes about 280 mmscf/d. This is the equivalent of 5 ammonia plants or 30 cargoes of LNG and 20% of our total sales. With a forecasted growth in demand of at least 3% p.a., and a historical average of 5%, the continued use of natural gas for power generation is unsustainable. As it stands, the sector remains challenged by persistent gas curtailment, at a time when we can least afford it, given the concomitant fall in commodity prices. Attendant to our role as domestic aggregator and our mission to create exceptional national value from our natural gas we have built into our strategy two imperatives, among others:

1. To secure and stabilize our gas supply
2. To drive energy efficiency

The low-price advantage for electricity assumed a supply of royalty gas to the Government; that was stopped in September 2016. While there has been no change in supply for power generation, NGC has had to fund the subsidy. The estimated value of lost revenue to NGC is US\$50 Million/TT\$325 Million per annum. In the absence of new commercial arrangements, by 2020, the cumulative value foregone could be as much as TT\$2 Billion. Is this the best use of our resources? Would the country not benefit more if our gas was sold for commercial use, with the real value captured as dividends, taxes and re-invested funds?

The government's target is not an impossible one. Regionally, Dominica has been able to achieve 28% of renewables in just 4 years. Costa Rica, having converted to 98% of electricity

from renewables, is now targeting 100% carbon neutrality by 2021. The good news about starting from behind is that we have the benefit of the learnings of others. We do not need to gradually evolve, we can make quantum leaps using best practice examples from around the world. The framework for change is known:

- MEEI and the RIC must accelerate the legislative agenda that will allow for a feed-in tariff and net metering to enable T&TEC to incorporate and re-sell renewable energy.
- The Bureau of Standards and other regulatory bodies must accelerate the implementation of new standards for building, fixtures, appliances and motor vehicles to support energy efficiency and carbon emissions.
- The private sector must step up and invest in manufacturing of components for renewal energy and the provision of related services.
- Consumers – residential, commercial and industrial alike, must become energy conscious and conservative.
- Ministry of Education must integrate energy consciousness and conservation into school curricula at all levels to ensure sustainable change.

Energy Efficiency and renewables are not just good for the environment, they are good for the economy. One of our investment projects in this arena promises to create 3,000 jobs during construction and over 2,000 permanent jobs thereafter. You will hear more of this from National Energy. NGC CNG will speak to the unexpected cluster development that emerged following the introduction of the alternative fuel to the market.

The NGC Group of Companies commits to driving energy efficiency across the country in concert with the state, value-chain partners and the people of Trinidad and Tobago. Our target is to reduce gas-use for power generation by at least 50 mmscf/d by 2020. What is your target?

I thank you for the opportunity to address you this morning and for your support of this conference. It is a very timely intervention as we work together, as a country, to achieve our energy efficiency goals.

Thank you.

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NGC President, Mark Loquan, delivering Sponsor's Remarks at the opening of the Energy Chamber's Clean Energy Conference on June 08, 2017 at Arthur Lok Jack, GSB.

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