ON THE GREEN AGENDA

NGC AND ITS SUBSIDIARIES PARTNER WITH UTT ON CLIMATE CHANGE MITIGATION PROJECT

> Climate change is the single biggest thing that humans have ever done on this planet. The one thing that needs to be bigger is our movement to stop it.
>
> – BILL MCKIBBEN

There is no doubt that we need to act with urgency on a global scale to address climate change. However, when it comes to mitigation strategies, one size does not fit all.

Variations in geographies, economic structures, and different development metrics from country to country, can mean that even tried-and-tested mitigation plans could falter if not tailored to local circumstances.

This also means that even though the fight against climate change is a global one, at the individual country level, a degree of independent effort is required. Countries must determine what unique opportunities exist to bring greenhouse gas (GHG) emissions down in their local contexts, and what strategies must be implemented to seize those opportunities. This can be most effectively achieved through collaboration among State, industry and academia.

Partnering in research

NGC and its subsidiaries have made climate change mitigation an axis of their business strategy, and there has been significant investment in several initiatives, focused on energy efficiency (EE), renewables (RE) and emissions reduction.

Some recent examples:

- In 2020, the Company launched the EnergySmarTT app to raise consumer awareness around more efficient energy use in the home. The team is currently working on extending the functionality of the app, to add more useful services and support greater uptake of energy efficient products practices.

- Work is underway with partners along the energy value chain to advance RE projects such as solar and green hydrogen, reduce emissions from operations through reduced venting, and even produce carbon neutral LNG cargoes.

NGC Group partners UTT on Climate Change Mitigation Project | CONTINUED

In order to expand on this work, and recognising that the most impactful programmes are those that are grounded in research, NGC and its subsidiaries have decided to partner with the University of Trinidad and Tobago (UTT) on a special Climate Change Mitigation Project.

In December 2020, both state entities signed a Memorandum of Understanding (MOU) in relation to climate change research, with the overarching objective of helping Trinidad and Tobago meet its international emissions reduction commitments and play its part in the global fight.

The general objectives of the MOU for this Climate Change Mitigation Project are as follows:

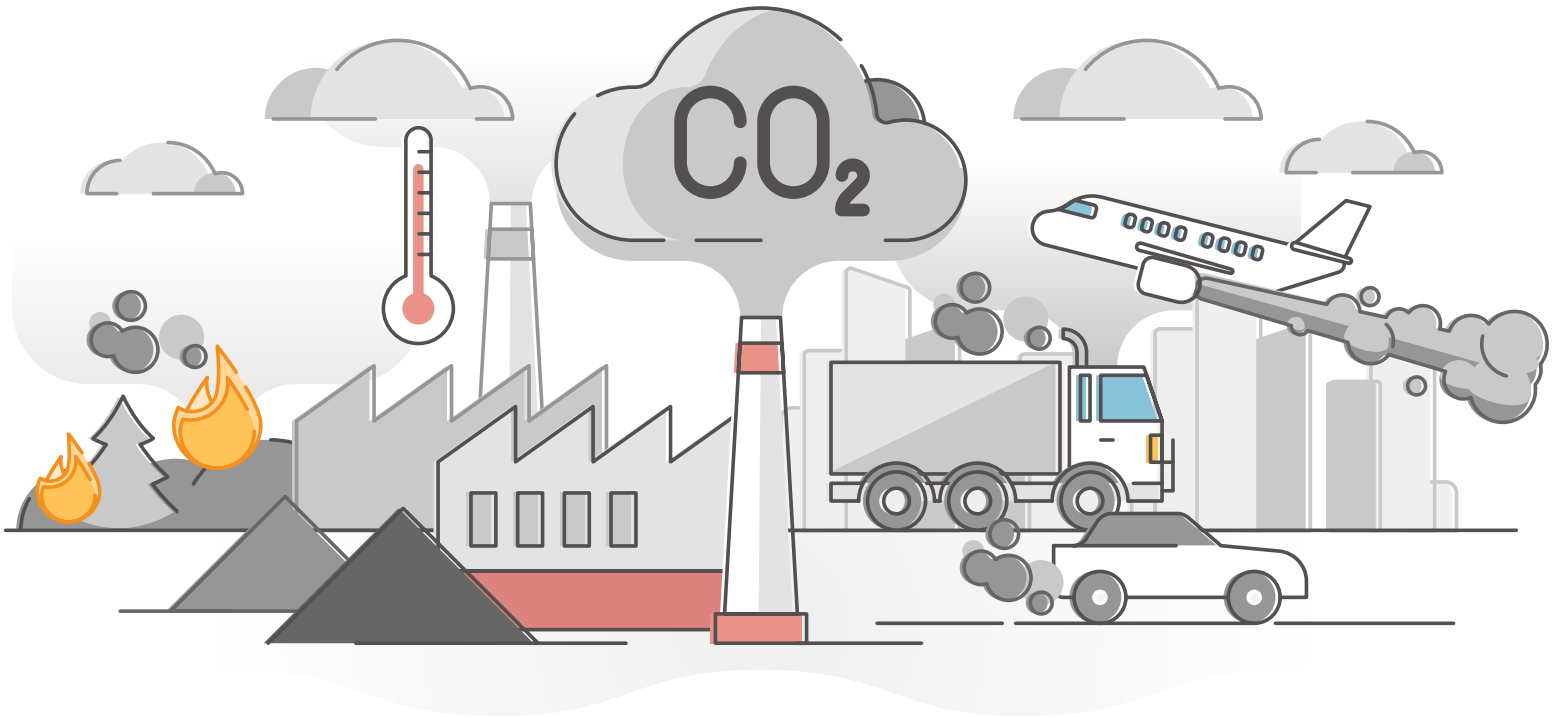
a) Promote further cooperation among NGC, its subsidiaries and UTT in renewable energy, energy efficiency and GHG emissions research
b) Facilitate the exchange of knowledge, research and capabilities among all parties
c) Produce data and reports for public awareness and education on RE, EE and GHG emission studies
d) Provide, develop and exchange information on GHG reduction technologies and strategies which include industrial, power generation, and transportation sector applications
e) Pursue relevant and related studies

Several outcomes are expected from this collaboration over the three-year term of the MOU.

Firstly, the partnership will allow NGC and group members to feed empirical data from their operations and other GHG emissions projects[1] into research undertakings at UTT. By making such data available to researchers, the companies will facilitate a better academic understanding of the local emissions profile. It will also build a clearer picture of how and where emissions are lost in operations, and allow for targeted innovation around industrial tools and processes.

Investment attention is both a prerequisite and a consequence of increased innovation. Research and development require funding, particularly when prototypes must be created and tested. Through this MOU, NGC and its subsidiaries will commit support to relevant research, ideation and prototyping in the areas of EE, RE and GHG reduction. Successful projects can then be marketed to attract other investors, creating a positive feedback loop and strengthening the capacity for innovation, entrepreneurship and real-world deployment.

[1] Read more about the Company's efforts to reduce methane emissions on page 4 of this issue.



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This MOU and the attendant research findings will enrich the body of literature around climate change mitigation. The more we know, the more we can teach. Raising public awareness and education can help drive climate action at the individual level, and ultimately strengthen the collective national effort to bring emissions down.

Project underway

The Climate Change Mitigation Project has kicked off with an important first task. In order to track its progress toward meeting emissions reduction commitments, Trinidad and Tobago must be able to measure and inventory its GHG output.

L to R: Mr. Dominic Rampersad, President PPGPL; Mr. Curtis Mohammed, President NGC CNG; Prof. Prakash Persad, President (Ag.) UTT; Mr. Mark Loquan, President NGC; Dr. Vernon Paltoo, President National Energy; Ms. Wendy Seow, General Manager LABIDCO

Even though this inventory process is underway, current emissions estimates may be inaccurate due to the absence of country-specific emissions factors.

An emissions factor (EF) is a value that helps quantify the amount of pollutant released during an activity - for example, the volume of carbon dioxide emitted per unit of fuel burned. The Intergovernmental Panel on Climate Change (IPCC) has established EFs for a range of fuels and emitters using averages of aggregated world data. Because these are global averages, the IPCC EFs do not allow for the most accurate calculations of emissions from local activities. Different grades of crude, for example, sourced from different wells, might emit marginally different amounts of CO_2. The actual emissions factor for Trinidad and Tobago crude might be higher or lower than the global average. Even marginal differences can add up to statistically significant numbers.

To start addressing this shortcoming, the UTT team is currently working on developing a country-specific EF for natural gas combustion. That is, they are seeking to determine exactly how many units of carbon dioxide equivalents are emitted when a unit of natural gas is burned in domestic industry. To do this, the team is analysing five years' worth of compositional data of both inlet and residue gas provided by Phoenix Park Gas Processors Limited (PPGPL). The team is aiming to submit an EF specific to natural gas combustion in Trinidad and Tobago for UNFCCC acceptance by the end of 2021.

Given the significance of the current exercise being undertaken by UTT within the framework of the Climate Change Mitigation Project MOU, There is no doubt that this partnership can have big impact in the years to come, and the fight ahead. ■