

Trinidad and Tobago and Climate Change. Are we rising to the Challenge?

Trinidad and Tobago is a signatory to the Paris Climate Change Agreement. With this, we have indicated that we support worldwide efforts to reduce carbon dioxide emissions thus reducing the effects of climate change. We acknowledge that anthropogenic climate change is in fact occurring, and that we must do our part to reduce carbon dioxide emissions which have steadily risen since the industrial revolution in the late 1800s and early 1900s due to the combustion of fossil fuels. That the Earth's temperature rises with increasing levels of greenhouse gases is a fact that we have known for a long time, Arrhenius documenting this in his famous paper of 1896 entitled "On the influence of carbonic acid in the air upon the temperature of the ground". The effect he documented is unfolding exactly as he predicted. Human beings have added a tremendous amount of carbon dioxide and other greenhouse gases to the atmosphere, adding to the peak of the natural warming process. We are now in uncharted territory, and are, in fact, already seeing the effects of anthropogenic climate change. How do we mitigate and adapt to these changes, especially in light of the fact that we in the Caribbean form a series of small island states which are especially vulnerable? In 2017, we saw Maria, a category 5 hurricane form in record time. The islands in Maria's path have been utterly devastated. The latest climate models project between a 1-3 % increase in average global temperatures by the year 2100 if we do nothing, and this will have devastating effects worldwide. We will not be immune to these effects. Sea level monitors in Port of Spain, Point Fortin, Galeota and Scarborough are all online and accessible, and support models showing that sea level rise is taking place at the rate of about 2.7mm/year +/- 0.4mm. If we have a high tide while rains fall in Port of Spain, there is the inevitable flood. It is frightening to think what may happen to Trinidad and Tobago should we be hit by even a category 1 hurricane. You can ignore the scientific facts at hand, but it will be to your peril. Climate change is happening, but is Trinidad and Tobago doing its part to mitigate against the effects of global climate change?

The available data shows that Trinidad and Tobago is in the unenviable position of being the second highest emitter of carbon dioxide per capita in the world at about 38.2 metric tons/person, being surpassed only by Qatar, at 40.3 metric tons/person (we may have surpassed them by now). This isn't surprising given that we are one of the few small island developing states that are net exporters of energy. We export oil and natural gas products, and have

six of the largest ammonia plants in the world. We as a country have gotten rich using our fossil fuel wealth, but with these riches comes tremendous responsibility. Our response to the per capita carbon statistic is usually that we shouldn't be looking at the per capita emissions, but the total emissions by country, in which case Trinidad and Tobago perhaps contributes less than 1% of the global total, which officials tout as being tame by comparison. This is an abdication of our responsibility to the world, especially our Caribbean neighbours. It is irresponsible for us to cite the overall contribution and we ought to take the necessary steps to reduce this, especially in light of the fact that the population of Trinidad and Tobago is predicted to decline over the next ten years, thus increasing our per capita carbon emission value if we take a business as usual attitude.

Trinidad and Tobago knows what to do, and we have publicized this to the world. As a signatory to the Paris Climate Agreement, Trinidad and Tobago has submitted to the UN its Nationally Determined Contribution or NDC (available online). This document is meant to show the world what each country plans to do to contribute to the overall reduction of their greenhouse gas emissions. For example, Trinidad and Tobago has committed itself to a 20% reduction in greenhouse gas emissions in the public transportation sector by 2030. The NDC for Trinidad and Tobago is based in large part on a 2015 study done in Trinidad and Tobago entitled "Strategy for reduction of carbon emissions in Trinidad and Tobago, 2040", available online on the Ministry of Planning and Development's website. This was funded by a grant to Trinidad and Tobago from the Inter-American Development Bank. All of the calculations for mitigation of GHG emissions for Trinidad and Tobago were done in this study, including cost benefit and cost efficiency analyses, prioritizing those strategies which would be most cost effective for us to accomplish. At the top of this list are those strategies which are categorized as having negative cost efficiency, meaning that we would not only reduce our GHG emissions, but also make money, a win-win. At the top of the list, is the promotion of vehicle energy efficiency and fuel switching in maxi-taxis followed by buses. We have already started working on these strategies, and these have led to our saving millions of dollars in fuel costs in buses in Trinidad and Tobago. We have no excuse. The studies have been carried out, and many of the highlighted strategies will make us money. We are not short on policy documents, but where is the action? We don't have an adaptation plan to

date, though this is currently being undertaken through a European Union funded project. The current administration has stated that they want to generate 10% of the country's electricity using renewables by 2021 but we are yet to see what the plans are with respect to renewables. Are we going to put up wind farms? Photovoltaics?

The government of Trinidad and Tobago has a vital role to play in helping us reach our NDCs, but they are by no means the only entity to contribute. What role does corporate T&T have in helping drive a change in the country to help reduce GHG emissions and mitigate the effects of climate change? There is growing consensus among corporations that making money alone is not good enough, with many corporations adhering to the triple bottom line - money, people, and environment. Some companies are leading in this vein. Atlantic LNG, for example, has calculated its carbon footprint, based on all of their activities, in an effort to offset their emissions of GHGs. All cars that Volvo makes from 2019 onwards will either be electric or hybrid, signalling a move away from fossil fuels. BP no longer stands for British Petroleum, but for Beyond Petroleum, acknowledging the need to diversify away from petroleum products. Indeed, if they wish to be the providers of energy needs in the future, they see the imperative to invest into renewable energy industries, with growing recognition that fossil fuel industries are on the way out. More and more companies are realising that it is not only good PR to switch to renewables, but it's also profitable.

What can organisations like the Trinidad and Tobago Field Naturalists' Club do in their efforts to reduce our carbon emissions? For starters, they can work to educate people about the issue of climate change, the fact that Trinidad and Tobago has policies and plans in place to reduce our carbon emissions, and to put pressure on the government to fulfil the commitments made in the NDC. We can all educate one another about energy conservation using such devices as activity sensors, conduct energy audits to assess how we can each save energy, and demand that new policies be enacted by government to help us not only meet our commitments, but surpass them. With respect to new policy, at the moment we have no feed-in-tariffs legislation. Feed in tariffs are policy instruments which allow people who have invested in renewable energy technologies to be rewarded for all the electricity they

generate and provide back to the electricity grid. Imagine never having to pay electricity bills for the rest of your life, and instead getting money for generating more energy than you consume. Several countries in the Caribbean have feed in tariffs, including Barbados, Jamaica and Dominica. Why don't we have these in Trinidad and Tobago? One of the reasons this hasn't been pursued in Trinidad and Tobago is that we have one of the cheapest electricity rates in the world, which means there is little incentive to take advantage of some of the subsidies for renewable energy technologies which the government has put in place. We should not only be investing in renewable energy as individuals, but we as a country should be manufacturing the technology. With our abundance of cheap energy, and an abundance of suitable sandy raw materials to manufacture photovoltaics on our doorstep in our neighbour Guyana, this would appear to be a missed opportunity. The government has already signalled that they may be looking at revised utility rates in the not too distant future. Would this perhaps prompt more people to switch to renewables? Would this then prompt us to enact feed-in-tariffs?

Each of us contributes in our own way to the carbon emissions of Trinidad and Tobago. It is each individual doing their little bit to reduce these carbon emissions which will help us resolve this problem. The more people that take this challenge on, the better it will be for all mankind. The government of Trinidad and Tobago has policies in place to help reduce our GHGs and also mitigate against climate change, but we need them to act faster to the challenge at hand. We need to demand better of them, educate the population of the issues, and lobby for new policies such as the enactment of feed-in-tariffs to help us reach our goals. Climate change is one of the biggest challenges to face humanity. I have no doubt that together we can overcome this challenge.

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