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25 Years
1995-2020

THE ENVIRONMENTAL MANAGEMENT AUTHORITY'S WORK FROM HOME EXPERIENCE

PART ONE – SEPTEMBER 8, 2020

In April 2019, the Environmental Management Authority (EMA) embarked on a pilot 'Work From Home' (WFH) programme. This proved to be advantageous for the EMA to maintain business continuity during the COVID-19 restrictions and 'stay at home' measures, announced by the Government of the Republic of Trinidad and Tobago (GoRTT) in March 2020.

WORK FROM HOME FRAMEWORK

The EMA developed a WFH Policy and employees were required to indicate willingness to participate in the programme, peruse and subsequently sign a '*Work from Home Agreement*'. Given resource constraints, employees were required to utilise their personal devices at home. Units were encouraged to assess their processes and ensure measures were in place to effect these processes remotely. This included the digitising of the regulatory application submission process.

To evaluate the WFH programme, the following metrics were implemented and assessed monthly:

1. Carbon Footprint – vehicular use
2. Productivity and Efficiency
3. Finance – expenditure such as utilities

The EMA, through surveys, assessed Employee Wellness and Customer Service.

The EMA employees' vehicular contribution to greenhouse gas (GHG) emissions is the first metric analysed in Part 1 of this publication.

GHG EMISSIONS INVENTORY FOR EMA'S EMPLOYEES

The EMA began tracking the organisation's vehicular GHG emissions in June 2019 to determine the impact of WFH, offered to some staff, during renovations to the Port of Spain office.

The methodology used to determine this GHG inventory is in accordance with the GHG Protocol and the International Standardisation Organisation (ISO) 14064-1 guidelines and specifications, which provides specific tools to quantify, monitor, report and verify GHG emissions. ISO 14061-1 is part of the ISO 14000 series of international standards for environmental management.

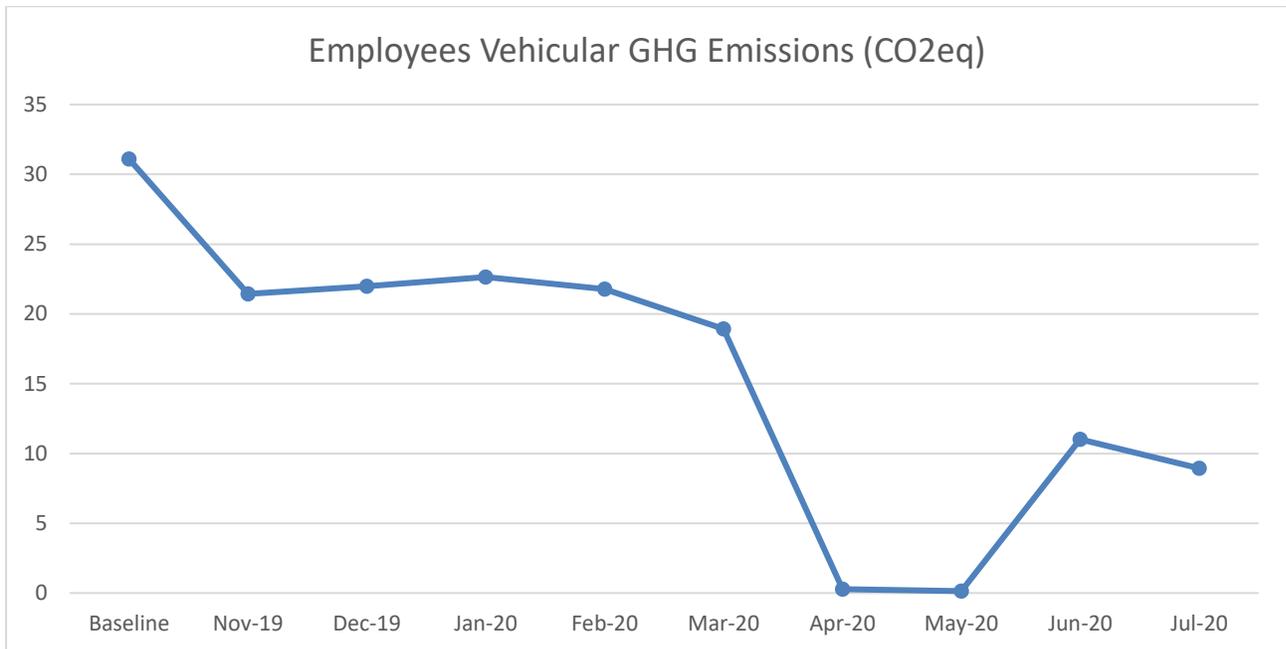
Factors used in the EMA's GHG emissions inventory were obtained from the Greenhouse Gas Protocol Calculation Tools website (<https://ghgprotocol.org/calculation-tools>). This source was selected as each tool reflects best-practice methods that have been extensively tested by industry experts and are the most up-to-date. The emissions are presented by giving results in one common unit, the Carbon Dioxide (CO₂) equivalent - CO_{2e}. Data on an average commute by employees, to and from EMA's Offices (offices are located in Chaguanas, Port of Spain, San Fernando, Valencia and Tobago) for a typical month (i.e. 20 working days), before implementation of WFH, was collected for 136 employees up to April 2019. Based on this data, the employees' commute, produced a total of 31.094 metric tonnes of CO_{2e} emissions. This information is presented in Table 1 and Figure 1.

The next step was to compare data between the baseline emissions and the emissions produced during WFH. Baseline emissions refer to the production of GHG that have occurred in the past and which are being produced prior to the introduction of any strategies to reduce emissions.

Table 1. EMA Employee GHG emissions from May/June 2019 to July 2020

Year	Month	No. Employees submitting data	Total GHG Emissions (CO ₂ eq)	GHG Emission % Reduction
Baseline during normal operations after September 2018			31.094	
2019	May/June	36	23.806	23
	July	36	24.718	21
	August	36	24.249	22
	September	36	22.464	28
	October	32	21.861	30
	November	47	21.435	31
	December	49	21.975	29
2020	January	58	22.647	27
	February	57	21.783	30
	March	63	18.935	39
	April	146	0.276	99
	May	146	0.139	100
	June	86	11.025	65
	July	91	8.931	71

Figure 1. Employee Vehicular GHG Emissions



Before WFH was implemented, the total EMA employee GHG emissions was 31.094 metric tonnes of CO_{2e}. An initial decrease was observed in May/June 2019 as the WFH was implemented, followed by a slight increase in July 2019. This increase may be attributed to commute to other offices as a result of the temporary closure of the Port of Spain office, as well as an increase in the conduct of site visits. There was a clear decrease towards November 2019; with 21.435 metric tonnes CO_{2e}. Calculations produced for December 2019 showed a slight increase to 21.975 metric tonnes CO_{2e} and 22.647 metric tonnes CO_{2e} for January 2020. These fluctuations may have resulted from several factors, including staff being on vacation leave during the Christmas season, attending external meetings and site visits. There was a slight reduction in February 2020 and an even greater reduction in March 2020 which continued to April and May due to a larger number of staff members WFH due to COVID-19 restrictions. As restrictions lifted in June 2020 and July 2020, there was an increase to 11.025 and 8.931 metric tonnes CO_{2e}, respectively.

For the period November 2019 to February 2020, based on a total of 136 employees with 119 vehicles, the employee GHG emissions (metric tonnes CO_{2e}) had reduced by an average of 29%. A reduction of 39% was observed for March 2020 and 100% reduction in April and May. The greater reduction can be attributed to the entire staff WFH, due to the COVID-19 pandemic restrictions. With restrictions lifted in June and July 2020, a reduction of 65% was observed for June 2020, and a reduction of 71% for July 2020.

Several assumptions were made in completing the baseline and WFH emission calculations. These included:

1. All gasoline vehicles were manufactured between 2005 and present;
2. All diesel vehicles were manufactured between 1983 and present;
3. Vehicles that were indicated as hybrid and gasoline were assumed to be gasoline. No categories for hybrid vehicles were present in the calculation tool;
4. The category 'local bus' was used for 'maxi-taxi';
5. Where it was indicated that the person travelled to work but did not specify whether taxi/maxi-taxi/bus, the mode of transport was assumed based on where he or she resided and at which EMA office he or she was based. For example, if a person lived along the East-West Corridor and worked in Port of Spain, it was assumed that the mode of transport was local bus (maxi-taxi) and the maximum capacity of 12 persons per maxi-taxi was used;
6. In some instances, the distances provided did not include distance covered by employees using personal vehicles for site visits, meetings, workshops, conferences and training;
7. A 20-day period per month was used to estimate the distances travelled by staff, assuming that no leave was taken;
8. Where persons indicated that they travelled to work using various modes of transport (taxi and maxi-taxis), 'local bus' was used to determine the mode of transport;
9. Where a range was provided for the number of persons in the vehicle, the maximum capacity of seating was used;
10. Where persons are not working from home, their distances submitted for the period May/June 2019 was utilised.

DISCUSSION

The GoRTT, as a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) has recognised the importance of addressing climate change both from mitigation and adaptation perspectives. The National Climate Change Policy defines the framework for a low carbon development plan and the GoRTT has developed a Carbon Reduction Strategy for the power generation, transportation and industrial sectors.

All parties of the UNFCCC were required to submit their perceived realistic emission reduction targets consistent with their developmental agenda. These Nationally Determined Contributions (NDCs) became legally binding under the Paris Agreement. Trinidad & Tobago signed the Paris Agreement on April 22nd 2016, and in doing so cemented its contribution of:

- An overall reduction of emissions from the Oil & Gas Heavy & Petrochemical Industries (OGHI), Power Generation and Transportation sectors by 15% of 2013 baseline by 2020;
- An unconditional reduction of emissions from the public transportation sector by 30% of 2013 baseline by December 31st 2030.

Through the implementation of the WFH initiative, the EMA has achieved a decrease in GHG emissions from a reduction in employee commute. From the data, with 50% of the EMA employees working from home, there was a 30% decline in GHG emissions. While this decrease and variations in emissions may be attributed to various factors, overall reduction in emissions is evident.

The EMA is advocating, that if nationally, WFH or a similar plan is implemented to effect vehicular reduction, this can assist with meeting the Paris Agreement contributions.

END

Please contact the EMA's Emergency Response Hotline at 680-9588 in the event of an environmental incident. For complaints, email us at complaints@ema.co.tt or visit our website at www.ema.co.tt

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