Carbon Footprint Report

2019-2020
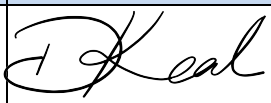
ACH Consulting Ltd

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Executive Summary

ACH Consulting has produced the following Carbon Footprint for the April 2019 - March 2020 financial year. A carbon footprint is a valuable use of data available within the business to quantify carbon emissions during a specific year. This is then related to our previous years to inform trends and analysis.

ACH emitted a total of 129.69 tonnes of carbon dioxide equivalent (tCO2e) for the financial year of 2019-2020, equivalent to approximately 4.18 tCO2e per Full - Time Equivalent (FTE) employee. This is an increase of 13.9% in last year's carbon dioxide emission per full-time equivalent employee. The reason for the increase from the previous year is due to the increase in air travel fares in May and August 2019.

During the 2019-20 financial year, carbon emissions due to transport were the largest contributor at 89% of total emissions. This is on-trend with previous reports and continues to be an area to focus on. ACH is committed to improving in this area by:

1. Replacing the Toyota Corrolla with 7.7L fuel economy with a new 6.4L Hyundai in the 2019-20 period.

2. Expanding our vehicle fleet by purchasing a Toyota Rav4 Ltd 2020 (Hybrid) in the 2019-20 period.

This report contains recommendations of ways ACH can work to reduce emissions for transport which was the primary leading carbon source. Some of these recommendations and others include:

- Properly maintained cars can improve fuel economy and gas emissions, therefore, ensuring regular services for vehicles, inflated tyres and clean oil and air filters.

- When upgrading vehicles, Electric Vehicles (EV) or Hybrid's should be considered as a low-carbon alternative.

- Minimise vehicle use by using phone calls, video calls or email where possible.

Contents

1.   Introduction

1.1   What is a Carbon Footprint?

A Carbon footprint is a total amount of Carbon Dioxide (CO_2) emitted, typically expressed as tonnes of carbon dioxide, by the activities of an individual or organization. The information collected over time helps us to understand trends, inform management planning and provide a strategy for the organisation to improve their sustainability performance through the reduction of their carbon footprint.

1.2   About ACH Consulting

ACH Consulting (ACH) is a structural and civil engineering consultancy based in Auckland. Our main services include structural engineering, public infrastructure, forensic engineering, land development, and stormwater, wastewater and water supply services. For the 2019-20 year, ACH employed approximately 31 full-time equivalent staff (FTE's).

ACH wishes to understand their carbon footprint better and inform management planning to demonstrate an ongoing commitment to reducing their environmental impacts. ACH's responsibility to measure and understand its carbon footprint allows it to identify opportunities for improvement and to take actions to lower its emissions. This supports our ongoing commitment to meeting the ISO 14001: 2015 standard, and our commitment to ensure our customers can make an informed choice when engaging consultants. This is especially true for our clients with a large social responsibility, such as our local Government.

1.3   Scope and Boundary of the Carbon Footprint

ACH's carbon footprint was calculated for the 2019-2020 year and compared against the carbon footprint of preceding years and the base year of 2014-15.

The boundary of the footprint includes all of ACH's operations. However, the scope was limited to available data such as vehicle use (company and personal), air travel, taxi travel, landfill waste and electricity use.

The operational boundary for ACH's carbon footprint report includes the following:

• Scope 1: Transport in company vehicles and employee-owned vehicles

• Scope 2: Purchased electricity used within the building.

• Scope 3: Domestic air travel, taxi fares and office waste data.

1.4   Methodology

The Greenhouse Gas Protocol (www.ghgprotocol.org) has informed the development of ACH's carbon calculator and the reporting process. Table 1 identifies the various datasets for ACH that were entered in the carbon calculator and the emission factors used.

GHG Protocol Scope	Transaction type	Unit	Emission factors
Scope 1 - Gross direct emissions	Company car (Diesel)	Litre	0.00269
	Company car (Petrol)	Litre	0.00245
	Personal mileage	Km	0.00231
Scope 2 - Gross indirect emissions	Purchased electricity	kWh	0.000138
Scope 3 - Gross other indirect emissions	Taxi fares	$	0.000102
	Domestic air travel	Km	0.00016
	Waste disposal	Kg	0.00184

Table 1 - Datasets used in ACH 2019-20 Carbon Footprint Report
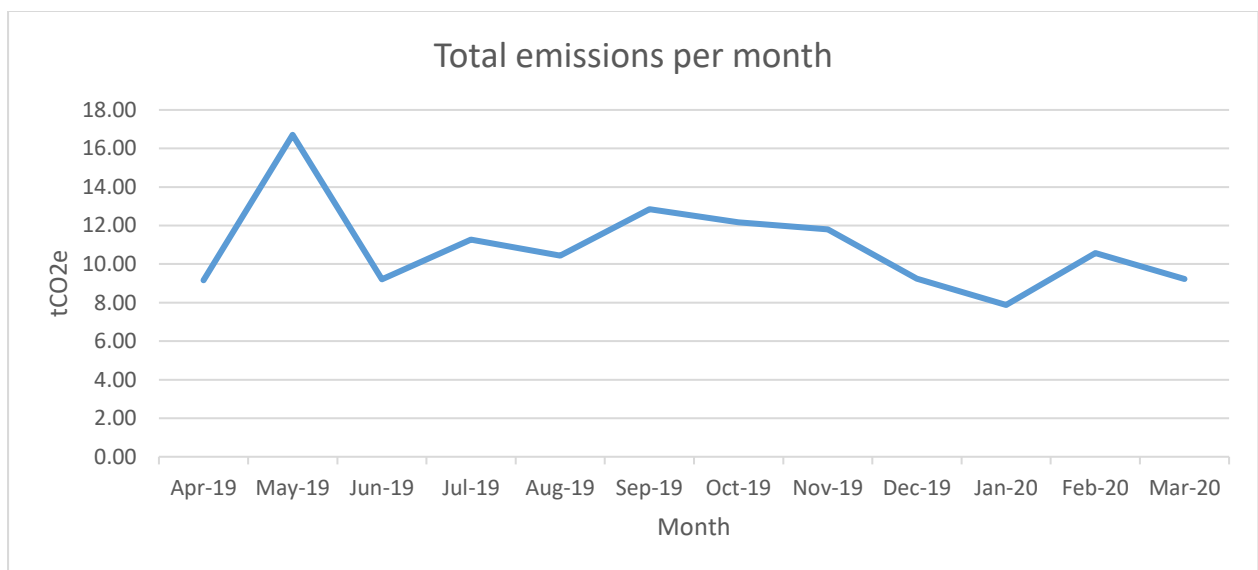

2.   ACH Carbon Footprint

2.1   Data Summary

ACH emitted a total of 129.69 tonnes of carbon dioxide equivalent (tCO2e) for the 2018-19 financial year. This equated to approximately 4.18 tonnes per Full-Time Equivalent employee, based on the average of 31 FTE's for the year.

Table 2 below shows a breakdown of emissions by source. The greatest proportion of emissions resulted from car usage for travel to project sites/ related meetings. Staff mileage was the greatest emissions source during this financial year. This was due to COVID-19 and social distancing requirements; staff were more reliant on using personal vehicles to travel. The next largest contributor to emissions was electricity, followed by Air travel, Landfill waste and Taxis. Air travel fares include; a trip to New York and flights from and to Christchurch.

Emission Source	Total (tC02e)	Percentage of Emissions (%)
Company car- Diesel	33.46	25.8
Company car - Petrol	30.75	23.71
Staff Mileage	51.15	39.44
Electricity	7.95	6.13
Air travel - domestic	4.79	3.69
Landfill waste	1.58	1.22
Taxi	0.008	0.0006

Table 2 - Emissions by Source

The analysis of total emissions per month is illustrated in Figure 1 below. May 2019 yielded the greatest total emissions over this period, due to the contribution of Air travel fares, at 16.71 tCO2e. Gradually emissions lessened over the rest of the period and ended at 9.23 tCO2e in March 2020.

Figure 1: Total emissions per month

2.2   Improvement Initiatives

Several initiatives have been implemented over the financial year to reduce our carbon footprint whilst pursuing the organisation's strategic goals. Initiatives involve:

- Replacement of the Toyota Corolla with 7.7L fuel economy with a new 6.4L Hyundai
- Expanded our vehicle fleet by purchasing a Toyota Rav4 Ltd 2020 (Hybrid)

2.3 Comparison between the base year and previous year

Financial year	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
tCO2e	106.1	122.84	108.06	105.87	109.13	129.69
Staff (FTE)	23	27	28	30	30	31
tCO2e/staff (FTE)	4.55	4.48	3.86	3.5	3.67	4.18

Table 3 - tCO2e per staff - Comparison

ACH emitted a total of 129.69 tonnes of carbon dioxide (tCO2e) for the 2019-20 financial year with an average of 31 FTE's resulting in 4.18 tonnes of carbon dioxide per FTE. The reason for the increase in carbon dioxide per FTE from 2018-19, was due to the increase in Air travel fares in May and August of 2019. There was a 173.16% increase in carbon dioxide emissions in 2019-20 from air travel compared to the previous year (2018-19).
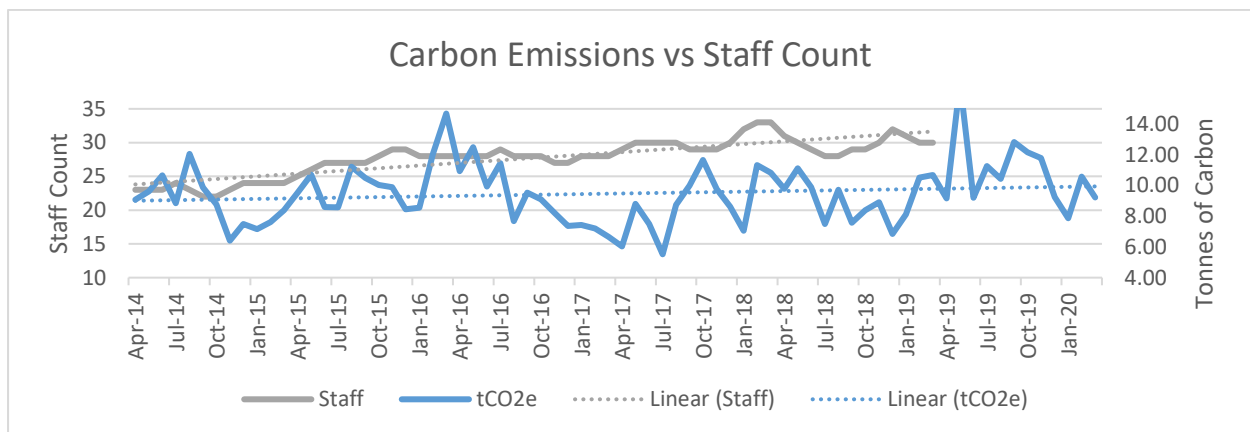

Figure 2: Carbon Emissions vs Staff count

3. Recommendations

ACH Consulting has continued to implement new initiatives to improve its carbon footprint. We have implemented strategies to reduce our emissions and monitor and improve the accuracy of recording emissions.

As ACH work towards becoming carbon neutral a continued focus on improving the efficiency of our vehicle fleet, reducing waste and improving the accuracy of total emissions tracking has seen positive impacts on our carbon footprint.

To continue improving in this area, and to work towards carbon neutrality, ACH need to continue to record and report on carbon emissions regularly. Sharing with staff carbon footprint goals and progress towards carbon neutrality can encourage staff to contribute to ideas for improvement.

3.1   Further strategies

As detailed in this report, the ACH activity with the largest footprint is transport, making up 89% of total emissions. Ideas for reducing car emissions are:

- Properly maintained cars can improve fuel economy and gas emissions, therefore, ensuring regular services for vehicles, inflated tyres and clean oil and air filters.

- Keeping tyres at optimum inflation can reduce fuel consumption by 4% (EECA)

- Tyre brands which meet the EECA Energy Wise Standard can reduce fuel consumption by 7%.

- Minimise company car use by using technology, such as phone calls and video calls to replace face to face meetings. This decreases gas emissions but also improve efficiencies in time management.

- When upgrading vehicles, Electric Vehicles (EV) or Hybrid's should be considered as a low-carbon alternative. Converting all fleet to EV's can be a long term goal for ACH as it will significantly decrease the number of carbon emissions from transport.

Within the office recommendations include:

- Encourage the use of reusable coffee cups, lunch boxes and stationery.

- Encourage staff to print only when necessary.