

# Carbon Footprint Report

**2018-19**



ACH Consulting Ltd

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## Carbon Footprint Report

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### Document Status

Rev #	Author		Reviewer	
	Name	Signature	Name	Signature
1	Rupin Kumar Engineering Technician		Debbie Keal Business Manager	

ACH CONSULTING LTD

3 Kawakawa Place, Westgate

PO Box 84-287, Westgate 0657

T: 09 839 7050 E: info@achconsulting.co.nz

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## Executive Summary

ACH Consulting has produced the following Carbon Footprint Report for the April 2018 - March 2019 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 back to our previous years to inform trends and analysis.

ACH emitted a total of 109.13 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) for the financial year of 2018-2019, equivalent to approximately 3.67 tCO<sub>2</sub>e per Full-Time Equivalent (FTE) employee. This is an increase of 4.9% on last year's carbon dioxide emission per full-time equivalent employee. Since monitoring of our carbon footprint commenced, our overall carbon emissions have stayed reasonably static alongside an increase in staff of 30.4%. Ultimately, we are becoming a more efficient organisation.

During the 2018-19 financial year, carbon emissions due to transport were the largest contributor at almost 90% of total emissions. This is on-trend with previous reports and continues to be an area to focus on.

ACH commenced recording landfill waste at the start of this financial year and has been included in this report. The addition of recording landfill waste has led to an increase in total emissions in this period, contributing to 1.41% of total emissions.

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

1. Ensure vehicle fleet is maintained correctly to optimise fuel economy and gas emissions, including regular services for vehicles.
2. When a vehicle is upgraded, consider Electric Vehicles (EV) or hybrid options to reduce carbon emissions significantly.
3. Minimise vehicle use by using phone calls, video calls or email where possible.

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## 1. Introduction

### 1.1 What is a Carbon Footprint?

A Carbon footprint is a total amount of Carbon Dioxide (CO<sub>2</sub>) 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 2018-19 year, ACH employed approximately 30 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 2018-19 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. As a result of recommendations from the previous report, ACH has begun tracking waste to landfill from this period.

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 and taxi fares. Office waste data recording has commenced as at March 2018 and will continue to be included in future years.

### 1.4 Methodology

The Greenhouse Gas Protocol ([www.ghgprotocol.org](http://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.

**Table 1 - Datasets used in ACH 2018-19 Carbon Footprint Report**

GHG Protocol Scope	Transaction type	Unit	Emission factors
Scope 1 - Gross direct emissions	Company car (Diesel)	Litre	0.00272
	Company car (Petrol)	Litre	0.00236
	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

## 2. ACH Carbon Footprint

### 2.1 Data summary

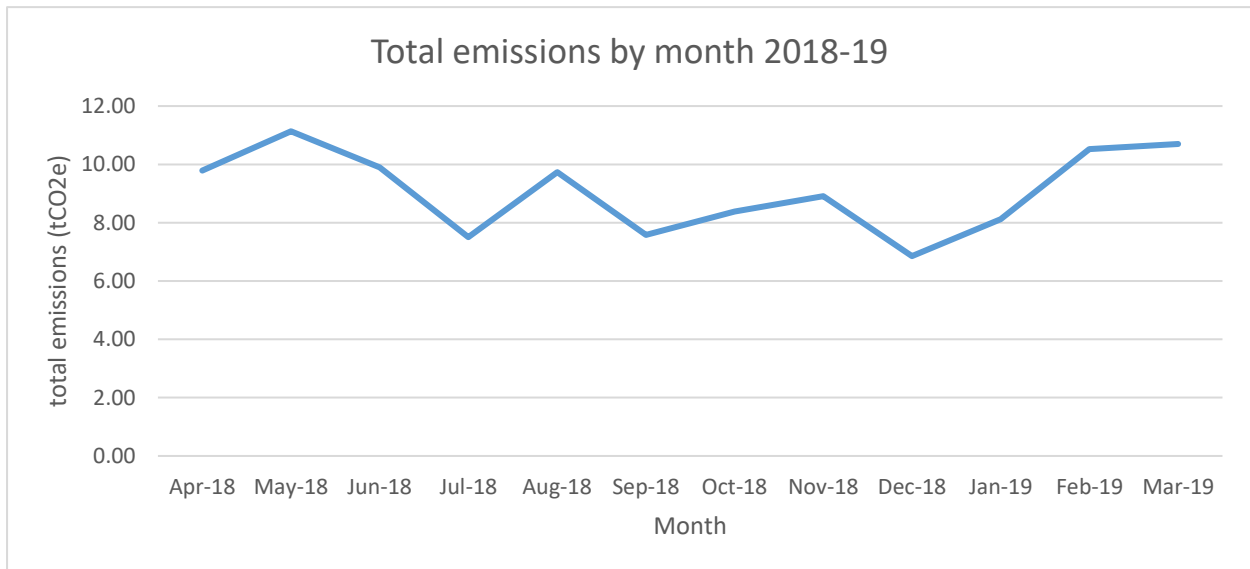
ACH emitted a total of 109.13 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) for the 2018-19 financial year. This equated to approximately 3.67 tonnes per Full-Time Equivalent employee, based on an average of 30 FTE's for the year.

Table 2 below shows a breakdown of emissions by source. The greatest proportion of emissions resulted from car usage for travel to project sites or project sites/related meetings. The next largest contributor was electricity, followed by air travel and landfill waste. The lowest contributor to emissions was taxi fares.

**Table 2 - Emissions by Source**

Emission Source	Total (tCO2e)	Percentage of Emissions (%)
Company car- Diesel	35.37	32.41
Company car - Petrol	27.77	25.39
Staff Mileage	34.69	31.79
Electricity	8.00	7.33
Air travel - domestic	1.76	1.61
Landfill waste	1.54	1.41
Taxi	0.003	0.0027

The analysis of emissions per month is illustrated in Figure 1 below—initially, the total emissions peaks in May at 11.13 tCO2e. December yielded the lowest total emissions at 6.85 tCO2e, followed by a gradual increase to end the financial year 10.69 tCO2e. A reason for the rise in total emissions from 2017-18 could be due to the implementation of tracking landfill waste which was not recorded in the previous report.



**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:

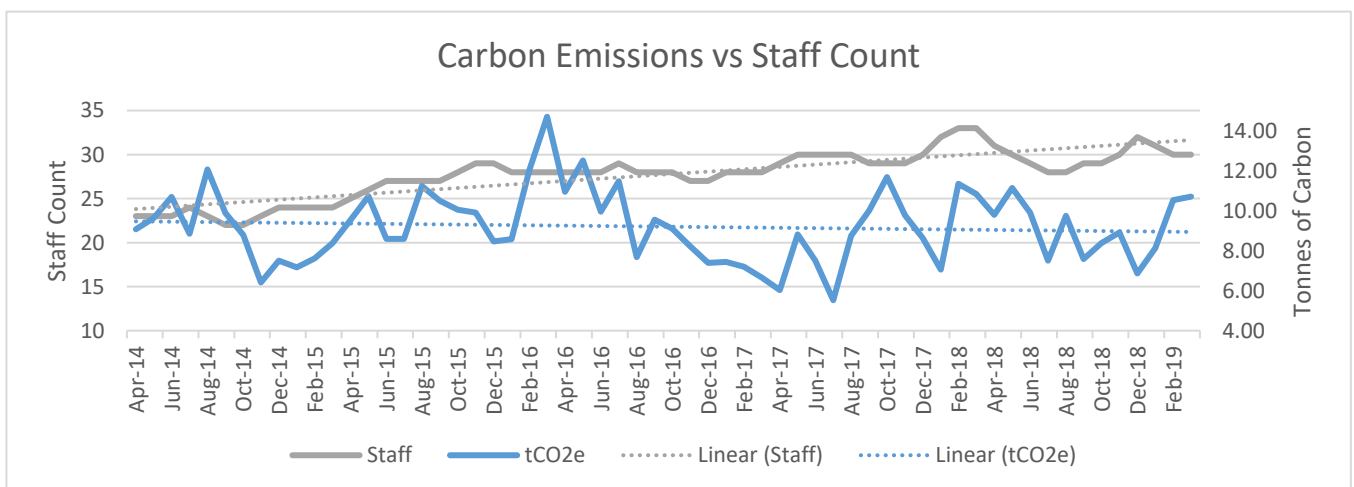
- The introduction of tracking landfill waste throughout this financial period follows the GHG protocol and allows ACH to gain a better understanding of their total emissions due to indirect sources.
- To improve our emissions, we have upgraded a Ford Ranger from a 9.0 L fuel economy to a newer 8.4 L diesel.
- We have provided all staff with keep cups to reduce takeaway disposal cup use.

## 2.3 Comparison between the base year and previous year

Table 3 - tCO <sub>2</sub> e per staff - Comparison					
Financial year	2014-15	2015-16	2016-17	2017-18	2018-19
tCO <sub>2</sub> e	106.1	122.84	108.06	105.87	109.13
Staff (FTE)	23	27	28	30	30
tCO <sub>2</sub> e/staff (FTE)	4.55	4.48	3.86	3.5	3.67

ACH emitted a total of 109.13 tonnes of carbon dioxide (tCO<sub>2</sub>e) for the 2018-19 financial year with an average of 30 FTE's resulting in 3.67 tonnes of carbon dioxide per FTE. In comparison to previous years, the 2018-19 financial year has had the second-lowest carbon footprint per FTE. Comparatively to the base year in 2015-15, there has been a 19.34% reduction in tonnes of carbon dioxide per FTE which shows a positive trend. As staff numbers continue to increase, such a successful result shows that ACH is on target for lowering its carbon emissions and thus their carbon footprint.

As shown in Figure 2 below, as staff count trends upwards, carbon emissions trends downwards.



**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 almost 90% 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 updating fleet, 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 amount 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.