

The Roastery Sustainability Report 2019

ORIGIN

ENVIRONMENTAL AUDIT 2019

Last year we released our first Roastery Sustainability Report. It was a demonstration of our commitment to the highest levels of corporate responsibility. To triple bottom line sustainability. At home as well as in our sourcing practices.

Our inaugural report was a marker in the sand. It outlined our work energy consumption and emissions at that point - as well as data gathered from 2016 and 2017 - and the measures we intended to take to reduce these.

This report is the annual follow up. It shares the steps we've taken, looks at our 2019 carbon footprint vs 2018, and lays out our next steps for continual improvement. As with the 2018 report, this isn't fully comprehensive, but we'll continue to build on it over time.

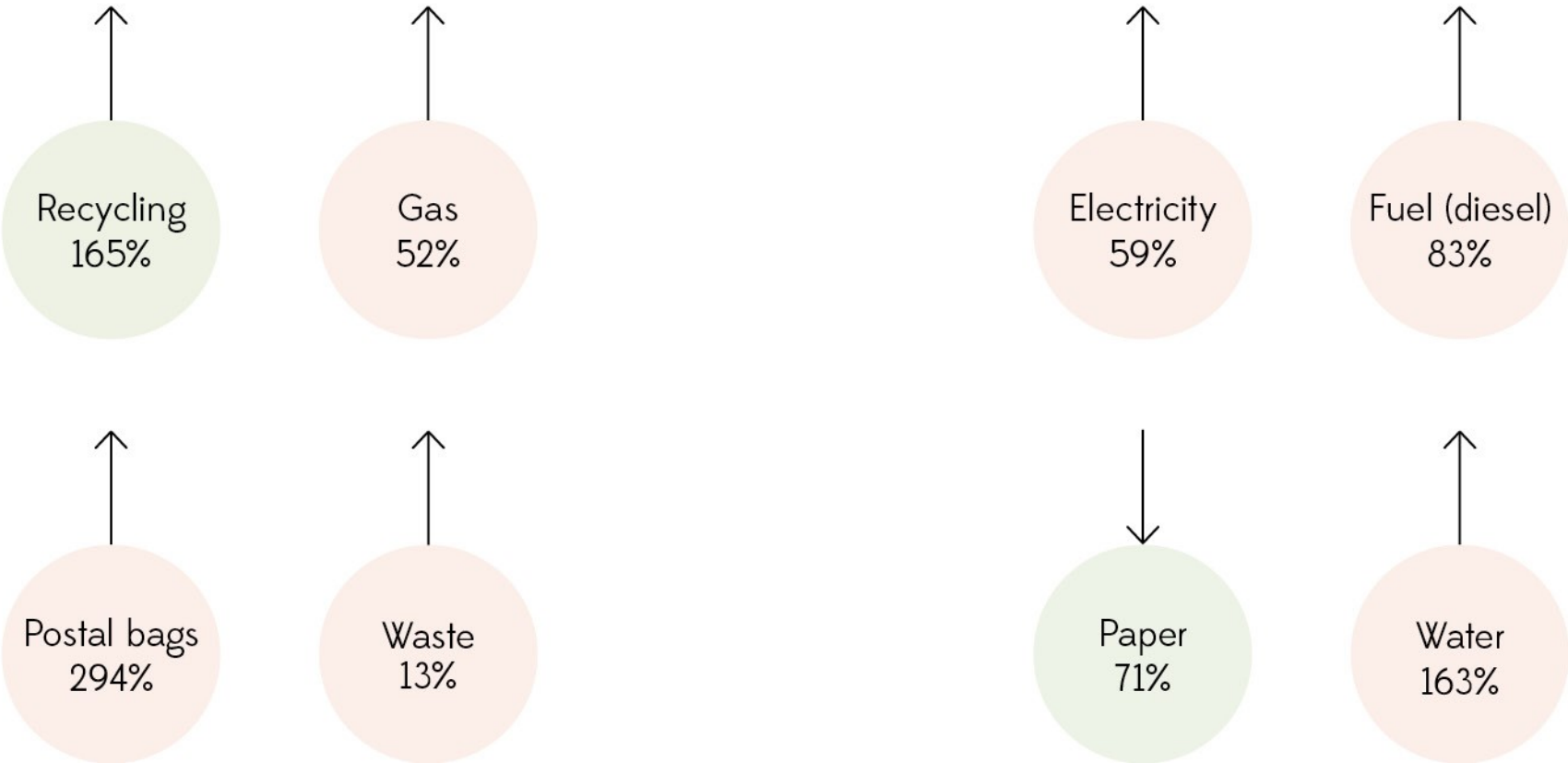
This report has been compiled and written by our EMEA qualified Sustainability Officer.

SUMMARY

- Origin continues to be zero to landfill and for the first year since we began auditing a higher percentage of waste was recycled than binned.
- tCO2e per £1million turnover has reduced by 9% in the past year.
- Across our London cafes we've achieved a 26%-65% drop in the number of "single use" cups used per KG of coffee.
- We have introduced several new waste streams to allow the recycling of our coffee bags, sacks, chaff & grounds.
- 6.5 tonnes of coffee grounds and chaff were sent to an Anaerobic Digester rather than the incinerator - halving the CO2 emissions.
- We buy 100% green electricity and support the development of green gas in the UK by purchasing our gas for the roastery from Ecotricity, who are building the UK's first large scale green gas plants.
- The volume of diesel we buy has remained the same.
- We have invested in a number of hybrid and electric vehicles to replace older, diesel models.
- We have installed energy monitoring equipment to give us accurate data on how we are consuming electricity and show us where further savings can be made.
- All orders placed on the Origin website are now delivered in fully recyclable outer packaging.
- We attend events on achieving a Circular Economy and reducing our dependency on plastics, supporting research by Exeter University and enabling us to feedback to policy makers as to what help our industry needs to move forward environmentally.

FIGURE 1

HOW HAS OUR DEMAND CHANGED BETWEEN 2016 AND 2019?



CARBON FOOTPRINT

WHAT IS A CARBON FOOTPRINT?

A carbon footprint measures the total greenhouse gas emissions caused directly and indirectly by a person, organisation, event or product¹ and is measured in tonnes of carbon dioxide equivalent (tCO₂e)².

This environmental audit is an “Organisational Carbon Footprint” which encompasses emissions from most of the activities across an organisation, such as ours, including the Roastery’s energy use, the roasting process and company vehicles. There are some exceptions and limitations to this which are highlighted throughout the report.

A future aim would be to produce a “Product Carbon Footprint” which would assess emissions of the whole life cycle of the coffee. From the growing of the raw materials, to the roasting through to its use and final reuse, recycling or disposal.

¹ The Carbon Trust,
<https://www.carbontrust.com/resources/guides/carbon-footprinting-and-reporting/carbon-footprinting> (Accessed 26/9/16)

² As defined by the UK Government as “A universal unit of measurement used to indicate the global warming potential of a greenhouse gas, expressed in terms of the global warming potential of one unit of carbon dioxide. It is used to evaluate the releasing (or avoiding releasing) of different greenhouse gases against a common basis”.

THE GREENHOUSE GAS PROTOCOL STANDARD

This guidance sets out how an organisation should account for their emissions and categorises them into 3 groups or ‘scopes’.

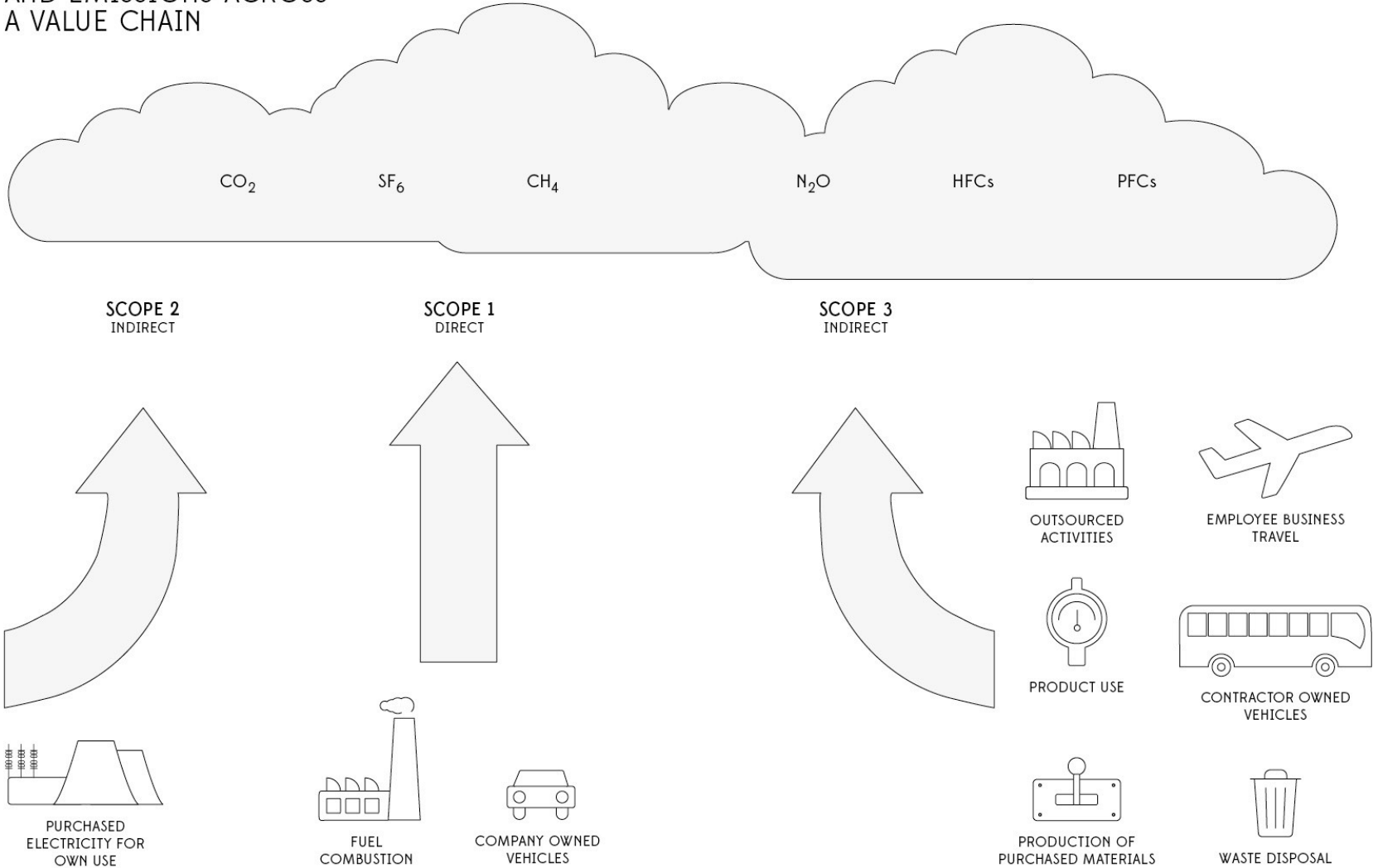
SCOPE 1: Direct activities resulting from activities within Origin’s control for example on-site fuel combustion (eg. Roasters, boilers), manufacturing and process emissions and company vehicles.

SCOPE 2: Indirect emissions from any electricity or heat used. Although we are not directly in control of the emissions, by using the energy we are indirectly responsible for the release of CO₂.

SCOPE 3: Any other indirect emissions from sources outside of our control for example business travel by means not owned or controlled by Origin, outsourced transportation, purchased materials, waste disposal and water consumption.

All organisational footprints must include scope 1 and 2 emissions, it is optional to include relevant scope 3 emissions.

OVERVIEW OF SCOPES AND EMISSIONS ACROSS A VALUE CHAIN



WHAT IS A TONNE OF CO2?

1 tonne of CO2 is produced by driving a car for 3,001 miles or travelling by train for 10,321 miles.

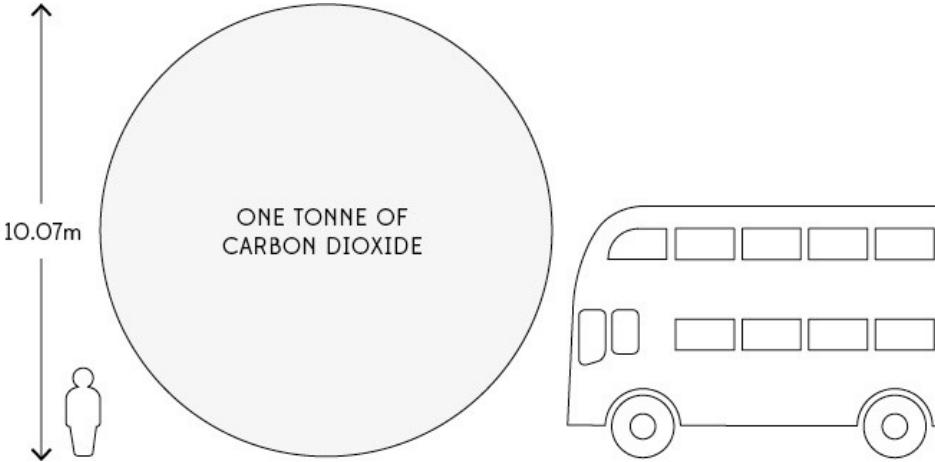
Our total annual emissions of CO2 at The Roastery is 85 tonnes (a detailed breakdown of this is provided in the next section of the report).

This is versus a calculation of 120 tonnes in 2018.

WHY CALCULATE OUR CARBON FOOTPRINT?

Quantifying our greenhouse gas emissions sources will help us to understand what impact our organisation is having on climate change.

By calculating our carbon footprint we can take steps towards reducing it. It will enable us to identify and prioritise areas for reducing emissions.



**THE SCOPE
OF THIS AUDIT**

This audit aims to quantify the direct and indirect emissions resulting from the processing of green coffee, along with the head office activities based at The Roastery in Helston.

The reporting period spanned 1st January to 31st December 2019.

TABLE 1
ORIGIN'S ACTIVITIES INCLUDED IN EACH SCOPE AS DEFINED BY THE GREENHOUSE GAS PROTOCOL

Scope 1 Emissions	Scope 2 Emissions	Scope 3 Emissions
Fuel used by company vehicles	Electricity purchased	General Waste
	Gas purchased	Recycling collected
		Copier paper
		Water & sewerage

TABLE 2
ONSITE ACTIVITIES AT THE ROASTERY AND THEIR ASSOCIATED CARBON DIOXIDE EQUIVALENT EMISSIONS

Activity/Service/Product	Usage/Production per year	Emissions (tCO ₂ e)
Domestic Air Travel ¹	Not Available	Not Available
Gas	244 MW _h s	45
General Waste	117 Large bins	0.2
Fuel Cards (Diesel)	11,000 litres	28
Electricity	43 MW _h s	11
Recycling	138 Large Bins	0.1
Food Waste	82 Bins	0.1
Water & Sewerage	245 m ³	0.2
Copier Paper	15,000 sheets	0.1
		TOTAL - 85

¹ Unfortunately, we have not been able to quantify our air travel for 2019, we hope to rectify this for 2020.

KEY PERFORMANCE INDICATORS

TONNES OF CO2e PER EMPLOYEE

In 2019 there were, on average, 22.5 FTE at The Roastery. As shown in Table 2 the total emissions from The Roastery were 85 tCO2e.

TABLE 3
TONNES OF CO2e PER FTE (FULL TIME EMPLOYEE)

2016	2018	2019
4.4	3.7	3.8

Comparing 2016 and 2019 totals shows a reduction of 16% in tCO2E per FTE, however, as is discussed later in the report, despite Origin making significant improvements in recycling rates this reduction is more to do with changes in the UK electricity supply and the methods by which our waste is disposed of in Cornwall. In the past year, we have marginally increased our tCO2e per FTE however this is not surprising, given that we have increased the production of roasted coffee by 15% since 2018.

TONNES OF CO2e PER £1M TURNOVER

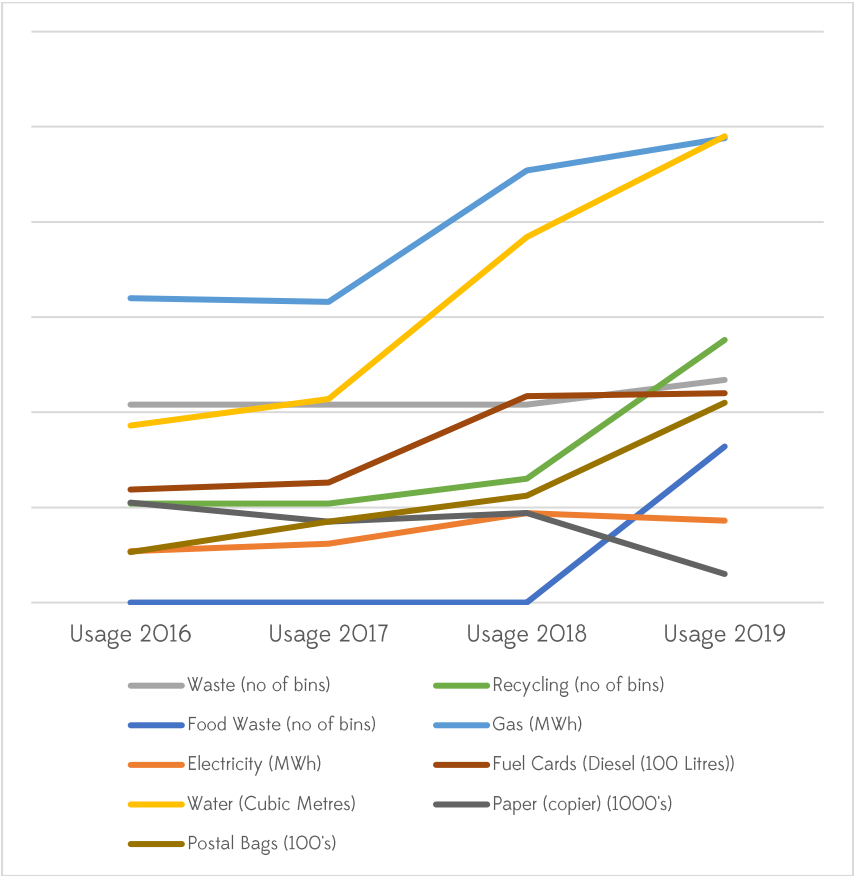
TABLE 4
TONNES OF CO2e PER £1M TURNOVER

2016	2018	2019
X	12	11

Our turnover increased by £1 million between 2018 and 2019 yet as can be seen in Table 4 the tCO2e per £1m turnover reduced by 9% which is extremely encouraging and indicates that economic growth in the company can be achieved without increasing our carbon footprint.

FIGURE 2

CHANGE IN USAGE 2016 TO 2019



DISCUSSION

There has been a significant increase in the amount of gas consumed, recycling collections and postal bags used between 2018 and 2019.

Our consumption of water has more than doubled since 2016. We have also introduced food waste collections to the Roastery.

Interestingly our electricity use has dropped slightly, and our diesel fuel consumption has remained the same.

These increases correlate with the growth of the business and a significant increase in the amount of coffee roasted (the coffee roasters being the main user of Gas on site).

Throughout 2019 we have purchased our energy from Ecotricity, who provide us with 100% green electricity and 19% green gas.

WHAT CHANGES HAVE WE MADE IN 2019?

In September, we successfully applied for a grant to install state of the art energy monitoring equipment in the Roastery. This will provide us with a detailed dataset of real time electricity use 24/7. This will be highly advantageous to the company, as it will allow us to see a full year's dataset and allow us to calculate where savings can be made and how we can ensure our operations are running as efficiently as possible.

We regularly audit our waste production and work hard to reduce the amount that ends up in the general waste bin. We regularly trial new recyclable products to see if they are fit for purpose including coffee cups, bags and packaging material.

Throughout 2019 we introduced a number of new waste streams to allow us to move away from general waste collections and increase recycling rates.

These included:

1. FOOD WASTE COLLECTIONS

For our coffee ground and chaff, amounting to some 6.5 tonnes during 2019 (these are also available for collection by gardeners as they make great compost).

2. COFFEE BAG RECYCLING

We are working hard to find a truly recyclable coffee bag that can be recycled at the kerbside

while preserving the coffee.

Currently all the bags we use in the Roastery and across our cafes are collected by First Mile and sent to a specialist recycling factory.

We also invite our customers to bring their bags to any of our cafes or the Roastery for us to recycle in this way. Throughout 2019 we recycled 4,200 bags in this way which otherwise would have been thrown in the bin.

3. COFFEE SACK RECYCLING

In May we found a company that recycles coffee sacks into carpet underlay and pipe lagging, we have since sent 400 sacks to be recycled in this way, we also sell our sacks in our cafes with all proceeds going to the charity Crisis.

In addition to these measures, our engineering department continue to dispose of any WEEE via the correct channels.

2019 is the first year that the Roastery has sent more waste to recycling than to the incinerator via the general waste bin. We will keep working hard to reduce our general waste further.

Throughout 2019 we have been researching electric and hybrid vehicles to reduce our dependency on fossil fuels. At the start of 2020 we had replaced a number of our fleet with hybrids and will continue to do so, as and when their leases come up for renewal. This is one of the main areas we want to work on reducing as it will make a significant difference to our carbon footprint.

Our web sales have increased significantly throughout 2019, hence the increase in postal bag use. By the end of 2019 we had changed the coffee bags and their postal packaging to allow them to be sent in fully recyclable cardboard boxes that fit through the letterbox, a great achievement that will lead to a significant reduction in non-recyclable postal bag use in 2020.

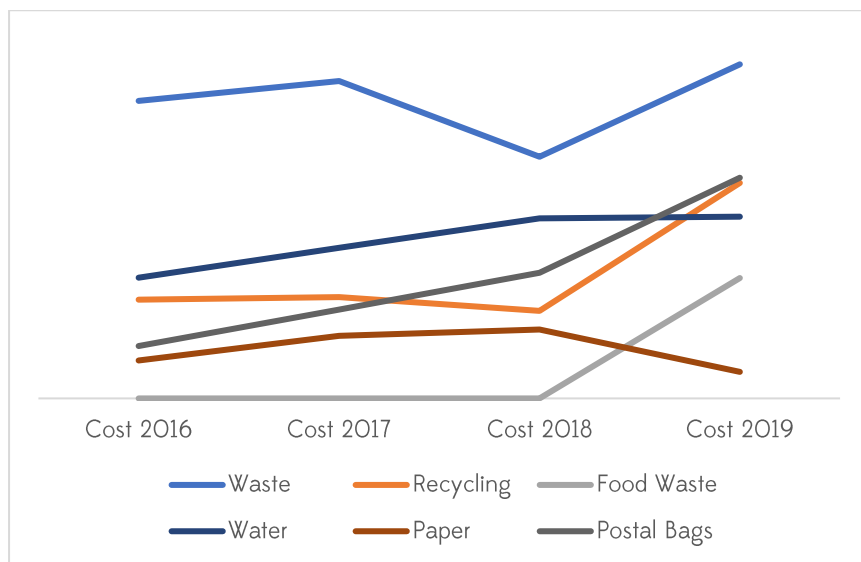
RECOMMENDATIONS

As the company grows we will continue to increase our use of fuels. It is important to evaluate options to generate our own energy and reduce our water consumption.

We have been in discussions with renewable energy consultants to look at installing an Anaerobic Digestion (AD) plant to produce our own green gas onsite, fuelled by our waste coffee chaff and grounds. Unfortunately, the technology is currently not available for a project on a small scale like ours. We will closely monitor industry developments on AD as our gas consumption continues to increase and we grow as a business.

See appendix A for more details

FIGURE 3
CHANGE IN SPEND 2016 TO 2019



Our electricity costs and usage are actually lower than in 2018, this is due to a drop in electricity prices. There also seems to be some discrepancy in our meter readings, so we look forward to having accurate data for 2020 from our new energy monitoring system.

	COST 2016	COST 2017	COST 2018	COST 2019
GAS	£7,340	£6,242	£8,314	£9,248
ELECTRICITY	£5,377	£3,803	£8,290	£6,726
FUEL (DIESEL)	£7,859	£7,691	£14,330	£14,906

The most significant cost increases are seen in our waste, recycling and food waste collection cost. Individual costs for collections have risen sharply in 2019, making it even more important for us to work on reducing our volume of waste. We hope that our diesel costs will reduce in 2020 through replacing a number of our diesel vehicles with hybrids.

DISCUSSION

Please note that the largest costs to the company come from our Gas, Electricity and Diesel consumption. These have been excluded from the above graph and table, as they are much greater than the other aspects of the business and skew the data. Please see the table that follows, for information on these. Interestingly they have not changed significantly compared to 2018.

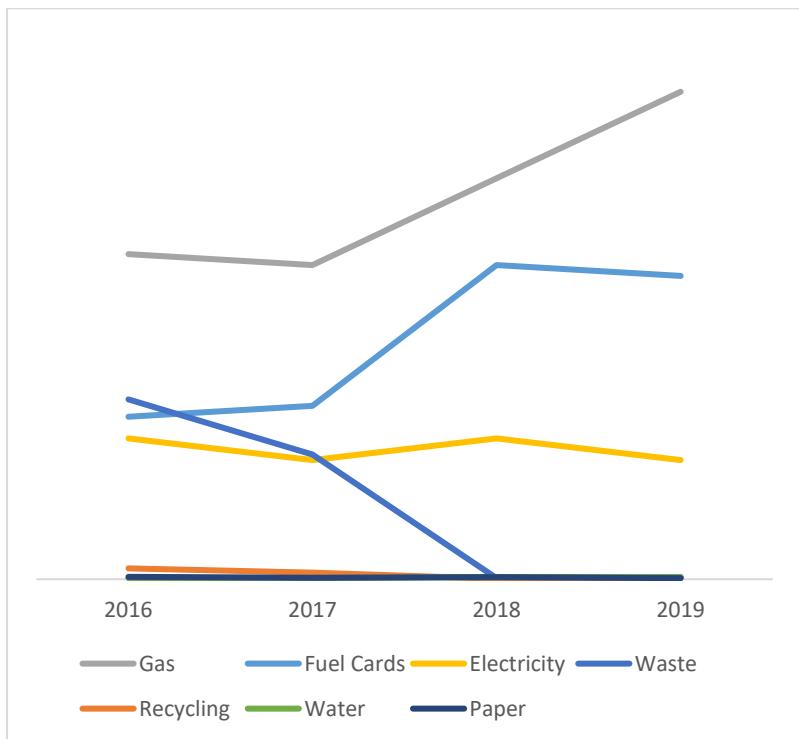
RECOMMENDATIONS

We must continue to find more ways to reduce what we consume and divert what remains away from the general waste bin.

We are continually investigating alternative ways to generate gas and electricity to supplement the amount bought from the grid. This is likely to be a long-term project and there will be upfront costs required.

See appendix A for more details

FIGURE 4
CHANGE IN tCO2e² 2016 TO 2019



TOTAL ANNUAL tCO2e

2016	2017	2018	2019
76	68	79	85

² tCO2e stands for tonnes of Carbon Dioxide equivalent

DISCUSSION

Emissions from our waste and recycling have increased which is to be expected with an increase in the number of collections.

Electricity and Diesel emissions have dropped slightly. The UK as a whole is cleaning up its energy supply and moving towards greener fuel production. Despite Ecotricity increasing their percentage of green gas, our emissions continue to rise due to the significant increase in demand for our coffee roasters as coffee sales increased by 15% between 2018 and 2019. We also introduced a number of weekend training courses at the Roastery requiring heating and hot water.

Despite our diesel consumption increasing slightly since 2018, due to UK diesel now containing more Biodiesel our tCO2e has dropped by 1 tonne.

RECOMMENDATIONS

Along with moving our vehicle fleet towards hybrid and electric rather than diesel, it is important to look toward reducing travel where possible and increasing our use of video conferencing to reduce the impacts of paper manufacturing and travel.

See Appendix B for further details

FIGURE 5

NUMBER OF TAKE AWAY CUPS USED
COMPARED WITH KG OF COFFEE SOLD

CHARLOTTE ROAD, SHOREDITCH

	2017	2018	2019	% Change
CUPS	72,000	57,000	77,000	+35%
KG COFFEE	1,783	1,981	4,046	+104%
CUPS PER KG COFFEE	40	30	19	-37%
% TAKE AWAY			70%	

BRITISH LIBRAY, ENTRANCE HALL

	2017	2018	2019	% Change
CUPS	103,500	106,500	107,100	+0.5%
KG COFFEE	1,642	1,620	2,184	+35%
CUPS PER KG COFFEE	63	66	49	-26%
% TAKE AWAY			100%	

SCORESBY ST, SOUTHWARK

	2016	2017	2018	2019
CUPS	NA	NA	NA	25,000
KG COFFEE	NA	NA	NA	2,505
CUPS PER KG COFFEE	NA	NA	NA	10
% TAKE AWAY				41%

BRITISH LIBRAY, EUSTON ROAD

	2017	2018	2019	% Change
CUPS	71,500	65,400	43,700	-33%
KG COFFEE	1,163	1,188	2,184	+84%
CUPS PER KG COFFEE	61	55	20	-63%
% TAKE AWAY			35%	

DISCUSSION

Figure 5 helps to demonstrate the impact that the introduction of offering money off for customers bringing their own reusable cup has had on Origin's use of single use take away cups (along with changes in consumer habits and awareness of the environmental impact of single use cups).

Southwark opened at the end of 2018 so we cannot yet measure the change.

Interestingly at the British Library Entrance Hall site, where 100% of coffees sold are take away (i.e. no dine in option), the number of cups used per KG of coffee sold has reduced by $\frac{1}{4}$, indicating that more people are bringing their own cup.

All sites have shown a significant decrease in the number of single use cups used per KG of coffee sold, a positive result indicating that our incentives are working, and that the public are moving towards reusable cups.

We must maintain this momentum and work hard to reduce the number of single use cups we use. We are continuing to trial and research for a truly recyclable take away cup.

WHAT WE'VE ACHIEVED

- Origin continues to operate as zero to landfill and, for the first year, a higher percentage of waste was recycled rather than incinerated.
- We have recycled over 4,200 coffee bags and 400 coffee sacks which previously would have been binned.
- 6.5 tonnes of coffee grounds and chaff were sent to an Anaerobic Digester rather than the incinerator – halving the CO₂ emissions.
- We have supported the development of green gas in the UK by purchasing our gas for the roastery from Ecotricity, who are building the UK's first large scale green gas plants.
- The introduction of the 20p price reduction for bringing a reusable cup continues to work with a 25% – 65% drop in the number of take away cups used per KG of coffee in our shops.
- We have installed energy monitoring equipment to give us real time data on our electricity use across the Roastery, this will be hugely beneficial to ascertain where we can achieve savings.
- We are monitoring closely local and national initiatives on reducing plastics and working towards a circular economy, and have attended many events/webinars including ExeMPLaR (<https://exemplarnet.org.uk/about/>).
- Three more employees have used the cycle to work scheme to purchase a bicycle for their commute to work.

TARGETS & AIMS



- Accurately record and monitor travel, especially flights taken, to enable us to calculate our carbon footprint for travel and to investigate suitable alternatives.
- Look into extending our energy monitoring, to include gas use. Our roasted coffee sales increased by 15% last year, yet our Gas consumption increased by 22%. We need to account for the 7% increase.
- Putting waste in the general waste bin should be a last resort.
- Evaluate the environmental credentials of the raw materials we buy and the suppliers we use.
- Continue to evaluate our vehicle fleet and opt for hybrid or preferably fully electric vehicles when new company vehicles are required.
- Continue to research options for producing our own electricity and gas.
- Continue to research into truly recyclable take-away cups and coffee bags and move to more environmentally friendly options, as soon as practicable.
- Aim to reduce tCO₂e per Full Time Employee (FTE) by 10% by 2021, so that we move from 3.8 tCO₂e to 3.4 tCO₂e per FTE.
- Aim to reduce tCO₂e per £1 million turnover by 10% from 11 tCO₂e to 9.9 tCO₂e per £1 million turnover.

APPENDIX A

RAW DATA: COSTS AND USAGE 2016 – 2019

Environmental Aspect	Usage 2016	Usage 2017	Usage 2018	Usage 2019	Cost 2016	Cost 2017	Cost 2018	Cost 2019
Waste (no of bins)	104	104	104	117	£1,658	£1,769	£1,347	£1,862
Recycling (no of bins)	52	52	65	138	£551	£565	£488	£1,201
Food Waste (no of bins)	0	0	0	82	£0	£0	£0	£671
Gas (MWh)	160	158	227	244	£7,340	£6,242	£8,314	£9,248
Electricity (MWh)	27	31	47	43	£5,377	£3,803	£8,290	£6,726
Fuel Cards (Diesel (100 Litres))	59	63	108	110	£7,859	£7,691	£14,330	£14,906
Water (Cubic Metres)	93	107	192	245	£673	£840	£1,004	£1,013
Paper (copier) (1000's)	53	43	47	15	£212	£349	£384	148.00
Postal Bags (100's)	27	43	56	105	£292	£495	£700	£1,230

KEY:


Increase on previous year	
Reduction on previous year	

APPENDIX B

TONNES OF CO₂e 2016 – 2019

tCO ₂ e	2016	2017	2018	2019
Waste	17	12	0.1	0.2
Recycling	1	1	0.04	0.10
Gas	30	29	37	45
Electricity	13	11	13	11
Fuel Cards (Diesel (Litres))	15	16	29	28
Water & Sewerage	0.1	0.1	0.2	0.2
Paper (copier)	0.2	0.2	0.2	0
Air Travel (Domestic)	0	0	41	N/A
TOTAL	76	68	120 (79 exc Air Travel)	85

KEY:

Increase on previous year	
Reduction on previous year	