

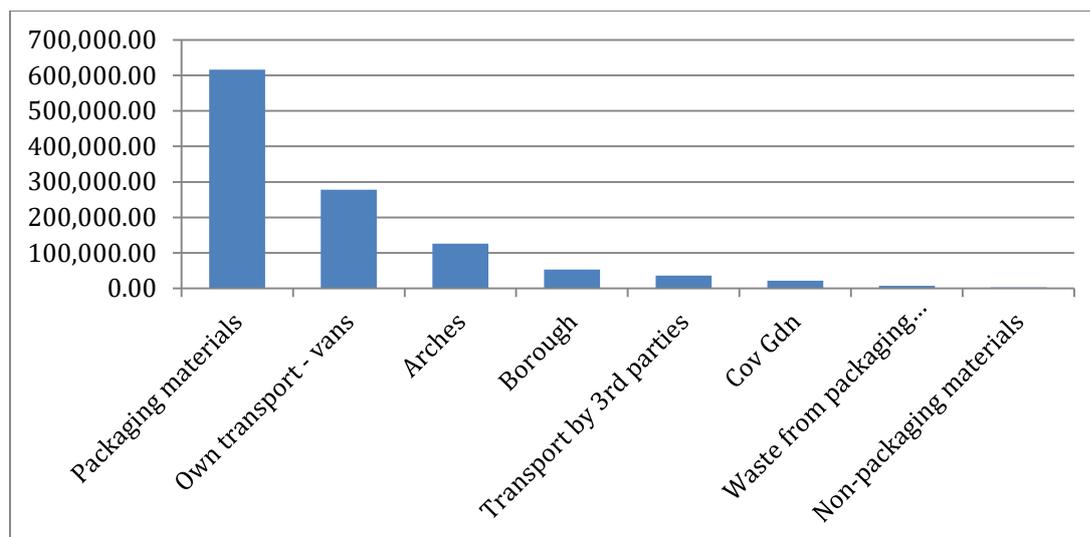
# **NEAL'S YARD DAIRIES: CARBON FOOTPRINT 2015**

**November 2016**

## Executive Summary: Headline findings

- The total carbon footprint for Neal’s Yard Dairies (NYD) for 2015 is an estimated 1,135 tonnes CO<sub>2</sub>e.
- NYD sold 532 tonnes of cheese that year, so the footprint / tonne of cheese is 2.13tonnesCO<sub>2</sub>e / tonne cheese.

Emissions were calculated for each building / process, and the breakdown of the emissions is shown in the graph below.



### Individual items and how they contribute to the overall footprint

- Tote bags, ice packs, electricity use and emissions from NYD’s vans are the biggest, individual contributors to the total footprint. Together they make up 91% of the total footprint. If NYD wants to reduce its carbon footprint, these are the general areas we should focus on.
- Plastic carrier bags were not one of the top contributors (only 6 tonnesCO<sub>2</sub>e).
- Waste emissions are quite low. This is because waste is recycled, reused or incinerated rather than sent to landfill. The emission factor for incineration is far lower than for waste sent to landfill.

	tonnesCO <sub>2</sub> e	% of footprint
Tote bags	550	48%
NYD own transport - vans	278	25%
Arches electricity	113	10%
Borough electricity	46	4%
Ice packs	28	2%
Cov Gdn electricity	22	2%
<b>Total</b>		<b>91%</b>

# Neal's Yard Dairies Carbon Footprint – 2015

## What is a carbon footprint useful for?

It provides an estimation of the GHG impact of NYD and its value chain activities during 2015. It is useful for understanding which items are the biggest contributors to the carbon footprint, and where NYD should therefore focus its efforts if it wants to decrease its carbon footprint. NYD will be able to measure its footprint in future years and compare it to 2015 (by comparing emissions / tonne cheese sold).

## How is the carbon footprint calculated?

- Cool World Consulting (CWC) calculated the footprint on behalf of NYD, based on data provided by NYD.
- We decided which processes would be included, and which would be excluded (see graph below).
- CWC obtained first-hand data where possible (e.g. fuel receipts for vehicles owned by NYD, electricity consumption from utility bills). Where this was not available, CWC was provided with estimates (e.g. from waste disposal companies).
- CWC then multiplied quantities (e.g. kWh of electricity) by the relevant emission factor (usually the government emission factors e.g. for electricity), and that equals the estimated emissions for that item. Emissions are measured in terms of kgCO<sub>2</sub>e (carbon dioxide equivalent).
- E.g. for electricity for the Arches, the calculation was: 225,673kWh x 0.50035 (emission factor for electricity) = 112,915kgCO<sub>2</sub>e.
- The carbon footprint is calculated in line with the Greenhouse Gas Protocol – an international standard for carbon footprinting<sup>1</sup>.

## Uncertainties and exclusions

### Excluded due to lack of data:

- Bermondsey shop
- Employee commuting
- Business travel
- Emissions from consumption of the cheese by the consumer – e.g. refrigeration emissions from domestic refrigerator.
- Emissions from the manufacturing and waste disposal of the vans owned by NYD.
- Emissions from transporting waste from the buildings.
- Rest of world shipping is paid for and organised by the customer, so not included.

### Excluded due to being less than 1% of the footprint

- Packaging waste
- Many of the non-packaging materials that are in small quantities.

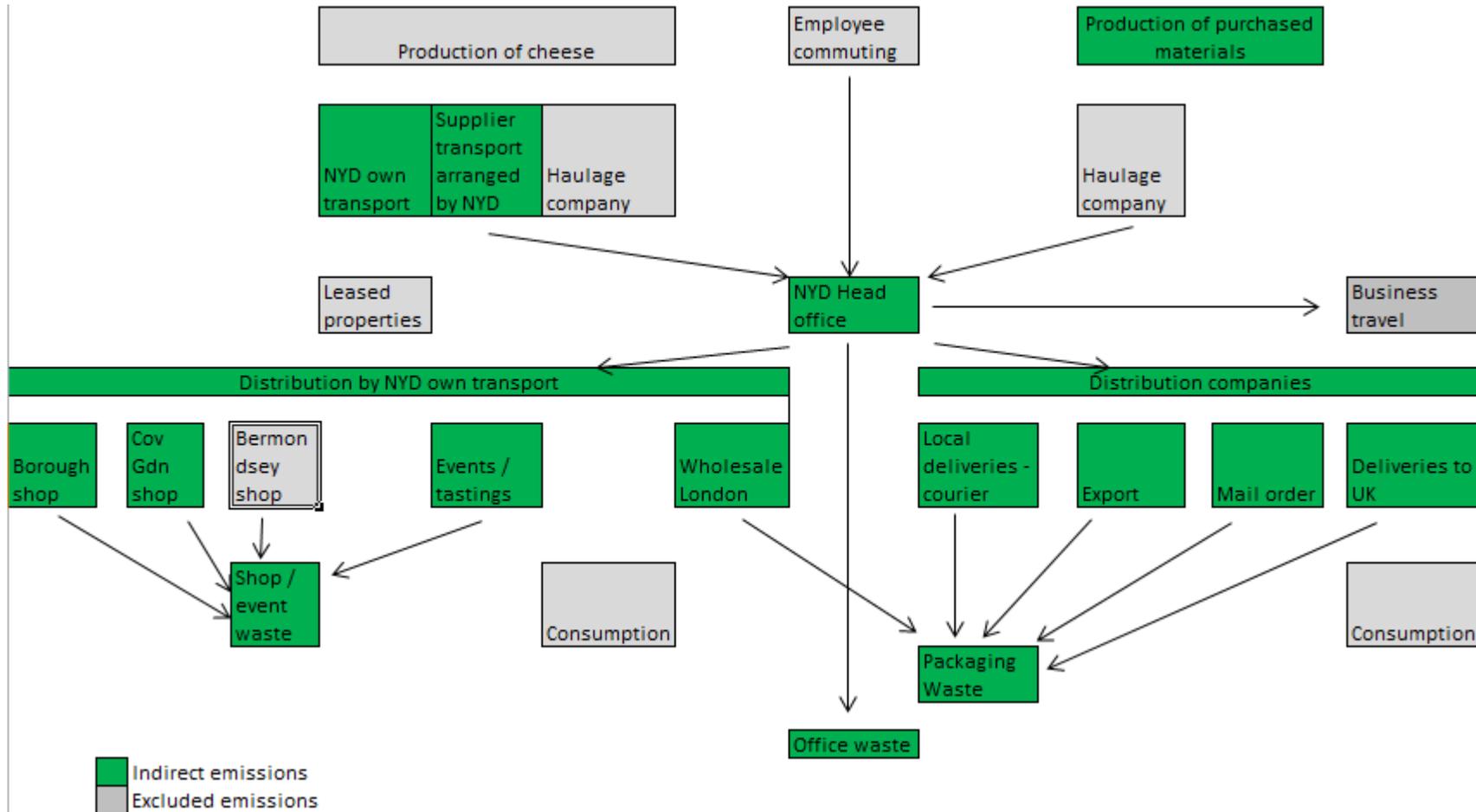
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<sup>1</sup> GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. This standard is designed to account for the emissions generated from corporate value chain activities during the reporting period (usually a period of one year), and covers the six main greenhouse gases: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>).

**Uncertainties**

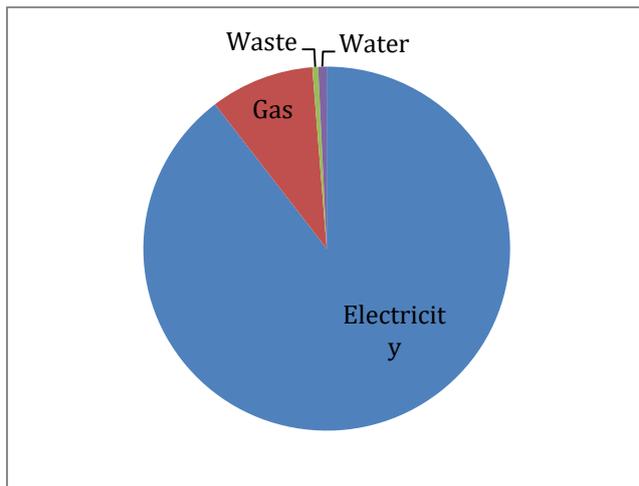
- Covent Garden water use is not metered.
- Recycling from Covent Garden is sent to HQ – uncertain what % of the recycling at HQ comes from Covent Garden.
- Transport emissions by third parties estimated based on averages.
- Emissions from Eurotunnel. Tonne.km factor not available.

### Inclusions (green) and exclusions (grey) for NYD footprint



# Arches

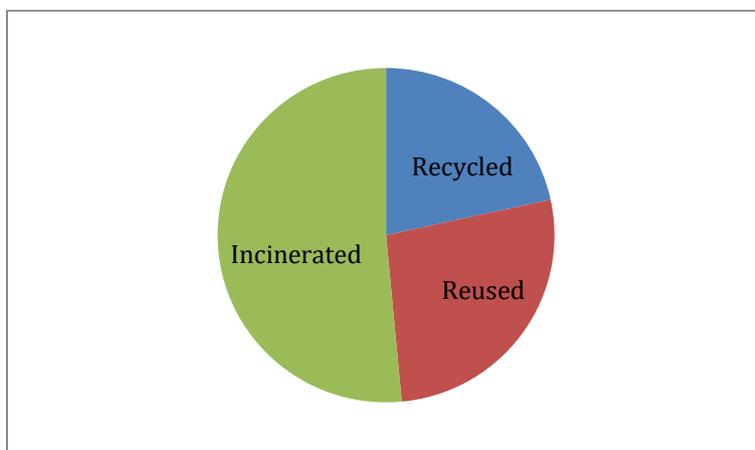
		Emissions (kgCO <sub>2</sub> e)
Electricity	225,673 kWh	112,915
Gas	5,585 m <sup>3</sup>	11,559
Waste (incl. Cov Gdn recycling)	42 tonnes	648
Water	892 m <sup>3</sup>	938
<b>Total emissions</b>		<b>126,061</b>



## Waste breakdown

22% of waste from Arches is recycled. Note this includes recycling from Covent Garden.

	tonnes
Recycled	9
Reused	11
Incinerated	22
<b>Total waste</b>	<b>42</b>



## Covent Garden

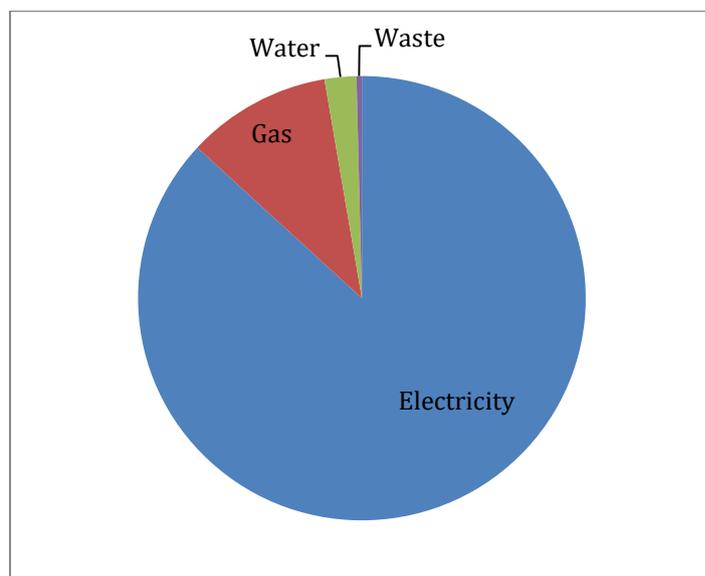
	Quantity	Emissions (kgCO <sub>2</sub> e)
Electricity	43,429kWh	21,730
Waste	9.97 tonnes	209
Water	15 m3	16
Gas	0	0
<b>Total</b>		<b>21,955</b>

Notes:

- All waste incinerated
- Recycled waste taken to HQ so not counted here.
- Water use estimated by water company (not metered).

## Borough Shop

	Quantity	Emissions (kgCO <sub>2</sub> e)
Electricity	92,149 kWh	46,107
Gas	2,733 m3	5,557
Water	1,157 m3	1,217
Waste	9.73 tonnes	204
<b>Total</b>		<b>53,085</b>



- 23% of waste is recycled.

## Transport owned by NYD

- 10 vehicles (4 of which have now been sold).
- 104,230 litres diesel purchased with Shell and BP fuel cards.

diesel (litres)	Emission Factor	Emissions (kgCO <sub>2</sub> e)
104,230.07	2.6704	278,335.98

## Transport not owned by NYD

- Emissions are calculated using a tonne.km emission factor. For this, you need estimates of the amount of cheese transported and distance travelled.
- **Incoming transport** – includes emissions from transporting cheese to NYD, where NYD organises the transport.
- **UK transport** – UK deliveries including Wholesale (WS) Domestic, Export and Mail order, using 3<sup>rd</sup> parties who use lorries, motorbikes and vans to deliver the cheese.
- **Export** – includes deliveries to Paris, New York, Barcelona, Milan, Berlin and UPS wholesale account export and UPS mail order export. It does not include transport emissions from distributing the cheese within those countries.
- **For UK and Export** deliveries by UPS, the average distances were estimated by calculating the average distance for the locations most frequently delivered to (top 28 for wholesale and top 30 for mail order).

	Emissions (kgCO <sub>2</sub> e)	Cheese (tonnes)	Emissions (kgCO <sub>2</sub> e/tonne cheese)
Total incoming transport	9,701.82	195.66	49.59
Total UK transport	2,225.46	69.83	31.87
Total export	24,382.01	233.17	104.57
<b>Total</b>	<b>36,309.30</b>		

## Packaging

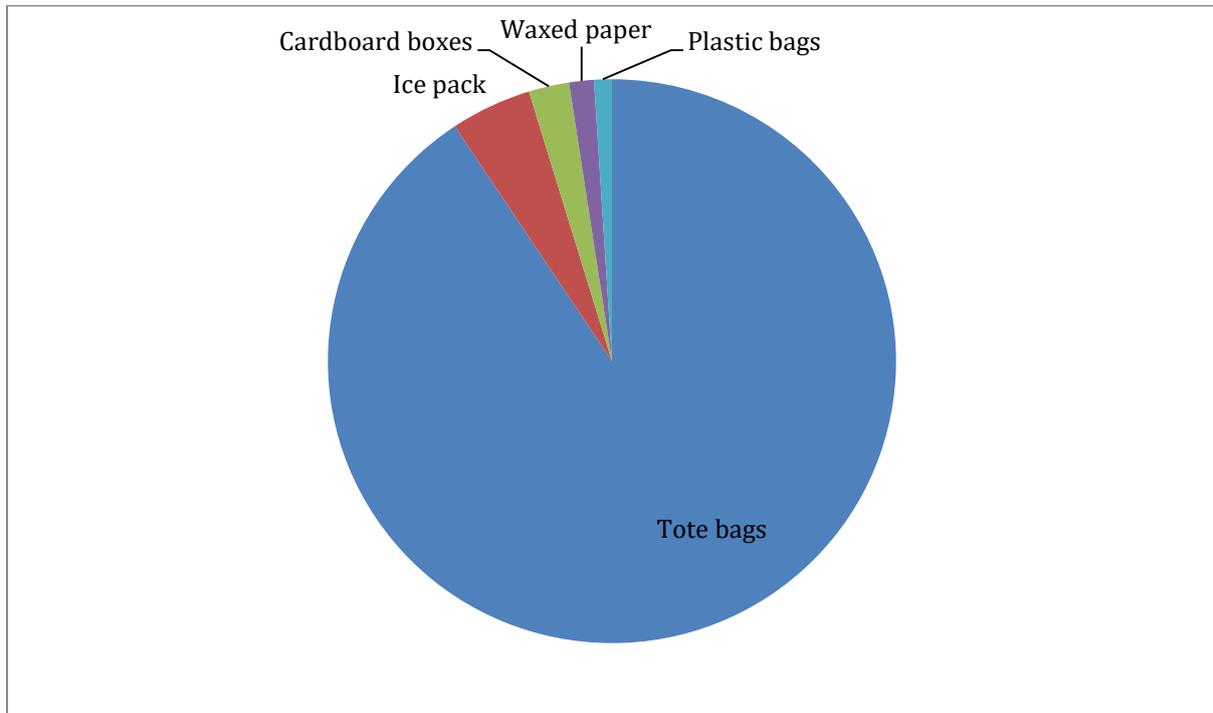
- Emissions from the production of 40 packaging materials were calculated.
- Includes pallets; packaging for selling, storage, and delivery of cheese; other retail packaging (e.g. tubs and lids); distribution packaging and labels; carrier bags.
- Quantities of materials used were multiplied by emission factors for that type of material (e.g. type of plastic, and if known, recycled content).
- Emissions from transporting the packaging materials to NYD were not included.

## Findings

- 5 items are responsible for 98% of the packaging emissions.

- The tote bags are responsible for 89% of the packaging emissions, and 48% of the total NYD footprint.
- Plastic bags were only responsible for 1% of the packaging production emissions.

Top 5 items	Quantity	Emissions (kgCO <sub>2</sub> e)	% of total packaging emissions
Tote bags	1460	550,247.53	89%
Ice pack	9.04 tonnes	27,936.92	5%
Cardboard boxes	19.06 tonnes	13,989.87	2%
Waxed paper	9.10 tonnes	8,544.90	1%
Plastic bags	485 bags (2.34 tonnes)	6,129.01	1%



## How are the emissions for the tote bag affected by reuse?

While a plastic bag is only likely to be reused a couple of times, a tote bag could be reused hundreds of times. The emissions per use are decreased each time the bag is used. Analysis was undertaken to show the emissions per use over different number of uses.

Uses	1	2	10	50	100	200
kgCO <sub>2</sub> e	376.88	188.44	37.69	7.54	3.77	1.88

## Packaging waste

- Emissions from waste for the tote bag are included in the packaging production emissions, so are not counted again here.
- Emissions from the waste treatment of the four other biggest line items were calculated.
- It was assumed that all cardboard is recycled, but the ice packs, plastic bags and waxed paper are not recycled.
- Emissions from waste from packaging materials came to an estimated 7,768.28kgCO<sub>2</sub>e.

## Total footprint

The total footprint for NYD is given in tonnes in the table below.

	tonneCO <sub>2</sub> e	% of total footprint
Packaging materials	616	54%
Transport owned by NYD	278	25%
Arches	126	11%
Borough	53	5%
Transport – 3 <sup>rd</sup> parties	36	3%
Covent Garden	22	2%
Non-packaging goods	3	0%
<b>Total organisation footprint</b>	<b>1,135</b>	

## Reduction strategies

Carrier bags (tote and plastic)	Research into more sustainable options, given likely number of uses, cost
Electricity use at arches	Staff awareness-raising, behaviour change campaign covering energy use and waste. More detailed analysis of electricity use by activity.
Ice Pack	Research into alternatives.
Waxed paper	Research into alternatives.
NYD own transport	Analysis of potential for reduction with different types of vehicles, for future consideration. Transport consolidation.
Increasing recycling rates	Undertake waste audits of one / all buildings to see what waste is being disposed of in recycling and waste bins.

### Next steps

Should maybe look at including emissions that are currently not included, e.g.:

- From transporting waste to Holland.
- Company business travel.
- Staff commuting survey.
- Bermondsey shop.
- Consider the future HQ building.
- Footprint of cheese – which are the biggest impacts and what should cheesemakers focus on if they want to reduce their footprint.