



Asda

Organisational Footprint Report 2019

October 2020

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Executive Summary

This report provides details of Asda’s organisational carbon footprint for 2019. It has been produced in accordance with the GHG protocol and utilises BEIS guidelines and published emission factors for 2019.

Asda’s total organisational footprint for the UK in 2019 is 701,882 tonnes CO₂ equivalent (tCO₂e). This represents a reduction of 10% compared with absolute emissions in 2018. This footprint report provides a breakdown of emissions by scope, business activity, building type and location.

Asda’s target for 2020 is a 30% reduction in absolute emissions from a 2007 baseline. The target was achieved in 2018, as Asda had reduced absolute emissions by 38%. This downward trend has continued, and in 2019 absolute emissions were 44% below 2007 levels. The annual change in emissions since 2007 is seen in Figure 1.

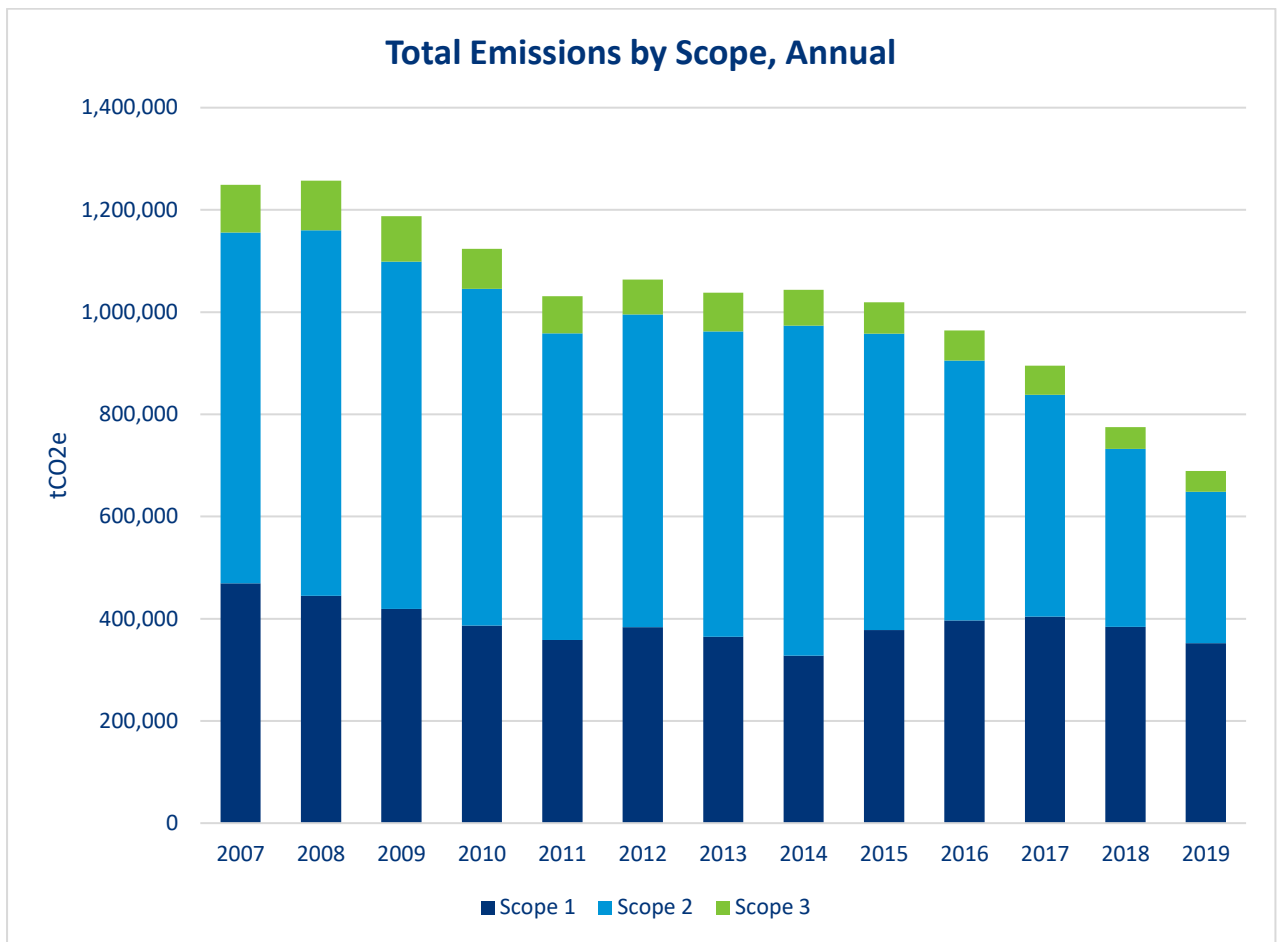
Ongoing carbon reductions have been driven by the improved carbon efficiency of the UK grid, resulting in a significantly lower emission factor for purchased electricity. However, this should not take away from the efficiency improvements Asda has made as well, as this year there has been a significant reduction in direct fuel emissions across Asda’s property portfolio.

Table 1. Provides the overall breakdown of emissions by emission Scope.

	2018 tCO ₂ e	2019 tCO ₂ e	% Change
Scope 1 Emissions	383,785	365,932	-5%
Scope 2 Emissions	348,253	298,538	-14%
Total Scope 1 and 2 Emissions	732,038	664,470	-9%
Scope 3 Emissions	43,075	37,413	-13%
Total Scope 1, 2 and 3 Emissions	775,113	701,882	-10%

Table 1: Asda’s absolute carbon emissions by scope for 2019, comparison to 2018 provided

Figure 1: Change in annual emissions by scope since 2007



Introduction

Introduction and Methodology

This Corporate Greenhouse Gas (GHG) Report covers Asda and subsidiaries' GHG emissions for the period 1st January 2019 to 31st December 2019. The report complements a Microsoft Excel based Organisational Footprint Model, in which the carbon footprint has been calculated by the Carbon Trust using primary consumption data. This data has been provided by Tom Williams and Ayesha Fitzwilliam Hall at Asda.

This report meets the requirements of the Companies Act 2006 (Strategic and Directors' Reports) Regulations 2013 with respect to GHG reporting. The summary table in section 2.1 meets the Streamlined Energy and Carbon Reporting requirements

The GHG accounting follows the methodology set out by the WRI/WBCSD Greenhouse Gas Protocol. The BEIS guidance and emission factors for 2019 have been used to produce the 2019 organisational footprint.

Asda's entire UK operations have been included within the scope of this footprint, including all offices and retail stores, along with all depots and distribution centres operated by Asda. Also included within the boundary is International Procurement & Logistics (IPL), a subsidiary of Asda providing sustainable supply chain solutions. A breakdown of emissions by business activity is contained within this report.

Asda have been calculating an organisational carbon footprint since 2007, the base year for measurement. Asda have an existing target to achieve a 30% carbon reduction by 2020, this report calculates the organisational carbon footprint for 2019, and provides commentary on any changes from 2018. Included in this report is a breakdown of emissions across a range of metrics. The contents of this report may be used to communicate the carbon footprint to internal and external stakeholders across the business.

In addition to the organisational footprint, this report contains a summary of energy consumption and emissions aligned to the requirements of SECR, along with recommendations on how to monitor energy consumption and report emissions.

1. Organisational Footprint 2019

1.1 Total Carbon Emissions - by Scope

The total carbon footprint has been calculated for the entirety of Asda's organisational boundary, categorised into the respective scopes as defined by the GHG Protocol. The full breakdown of emissions is shown in table 2.

	2018 tCO ₂ e	2019 tCO ₂ e	% Change
Scope 1	383,785	365,932	-5%
Direct Fuel	113,483	106,349	-6%
Direct Fuel, Vehicles	147,225	150,536	2%
Refrigerants	123,077	109,047	-11%
Scope 2	348,253	298,538	-14%
Electricity	348,253	298,538	-14%
Scope 3	43,075	37,413	-13%
Business Travel	6,770	4,729	-30%
Electricity - T&D	29,571	25,346	-14%
Waste	3,852	3,649	-5%
Water	2,883	3,689	28%
Total	775,113	701,882	-10%

Table 2: Asda's absolute carbon emissions by scope for 2019, comparison to 2018 provided

Scope 1 refers to direct emissions from fuels such as natural gas or diesel used onsite, vehicles owned and operated by the organisation, and any fugitive emissions associated with refrigerant gases.

Scope 2 consists of indirect emissions from the generation of purchased electricity consumed in operations. Asda reports Scope 2 emissions using the GHG protocol location-based approach, this means that all electricity is accounted for using the average UK grid emissions intensity of 0.2556 kgCO₂e/kWh.

Scope 3 emissions are all other indirect emissions that arise as a result of Asda’s activity, but are under the operational control of another entity. The GHG protocol defines 15 different categories of Scope 3 emissions, however Asda currently report against four categories. The categories Asda is reporting on are defined in Section 1.1.3.

Scope	2019 Annual Carbon Emissions - tCO ₂ e
Scope 1	365,932
Scope 2	298,538
Scope 3	37,413
Annual Total	701,882

Table 3: Asda’s absolute carbon emissions by scope, 2019

2019 Annual Carbon Emissions - By Scope

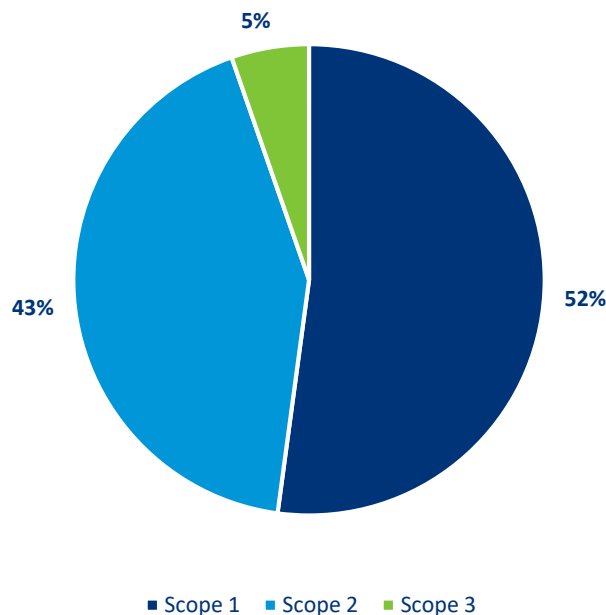


Figure 2: Percentage split of Asda’s emission by scope

1.1.1 Scope 1

Asda has achieved a reduction of 5% for scope 1 emissions when compared to 2018. This has been driven by a significant reduction in emissions related to direct fuel combustion, as well as a reduction in the volume of refrigerant gas top ups.

Gas consumption across the portfolio has decreased slightly, suggesting that assets are being operated more efficiently, or that electrification of assets has replaced some gas consumption. As mentioned above, refrigerant gas emissions have decreased significantly. In absolute volume of gas, refrigerant gas usage has actually increased by about 6%. However, R404A, one of the highest GWP gases has decreased in use significantly, and has been replaced by lower emission alternatives. The net effect of this is a 11% reduction in refrigerant gas emissions.

Previous footprint calculations included an estimated volume of fuel oil as no data could be provided. Again in 2019 no fuel oil is present in the data, and no evidence has been provided this year that there is any significant fuel oil consumption. Therefore, it is assumed that fuel oil consumption has remained consistent with both 2017 and 2018. This is an area where data collection improvements could be made. For IPL, fuel and LPG consumption has been provided by month.

For the fuel consumed by the delivery fleet, this has increased by 2% to 150,536 tCO₂e. This is likely driven by an increase in demand for home delivery services. The fleet is also fully diesel fuelled, indicating a transition to electric vehicles is not yet commercially viable.

1.1.2 Scope 2

Asda's Scope 2 emissions have reduced by 14% to 298,538 tCO₂e in 2019. In absolute consumption terms, electricity usage has decreased from 1,230GWh to 1,168GWh. In the previous year's analysis electricity consumption had increased, therefore suggesting that Asda have managed to successfully implement energy efficiency projects.

As well as the energy efficiency improvements, Asda also benefit from the continued decarbonisation of the UK grid. In 2019 the average UK grid electricity factor is 0.2556 kgCO₂e/kWh, compared to 0.28307 kgCO₂e/kWh in 2018, a 10% improvement.

Asda continue to report Scope 2 emissions using the location-based approach. Choosing to also report using the market-based approach would allow Asda to influence their own electricity emissions by procuring renewable energy. This is an approach that should be considered for future reporting.

1.1.3 Scope 3

Asda's Scope 3 emissions have reduced by 13% to 37,413 tCO₂e when compared to 2018.

Asda report on the following Scope 3 categories: Business Travel, Waste from Operations, Fuel and Energy Related Activities, and Water consumption¹.

¹ Note that 'water consumption' is not one of the GHG protocol's 15 categories for Scope 3. This is a partial calculation, emissions related to water consumption should be accounted for in category 1: Purchased Goods and Services.

The most impactful change from 2018 in absolute emissions is the 30% decrease in business travel emissions, a significant reduction. This is driven by a large decrease in air travel passenger km's, in total nearly 5,000,000 fewer passenger kilometres were travelled in 2019, 25% less than 2018. In particular, long haul journeys reduced by a noticeable amount, suggesting successful implementation of technology such as video conferencing.

Although water-related emissions have increased by 28%, the absolute change in emissions is negligible, and may reflect typical year on year consumption variance. It should be noted that the only water data that was able to be provided was 12 months from October 2018 to October 2019. It is assumed that the 12 months are representative of the full year's consumption.

The emissions related to waste transportation and end of life treatment have decreased 5%. Asda continue to receive good data from waste contractors on the volume and fate of waste, as well as the distance travelled by waste vehicles.

As Fuel and Energy related emissions are calculated from fuel consumption, the reduction in gas and electricity consumption has a notable contribution to this. This category also benefits from the same grid intensity improvements as detailed in section 1.1.2.

1.2 Total Carbon Emissions - by Activity

Table 4 gives the breakdown of Asda’s overall carbon emissions split by business activity. The majority of emissions (61% of the total) are associated with the fuel and electricity consumed for energy on Asda’s sites. The logistics fleet fuel emissions and emissions from refrigerant gases make up the other high impact activities. Emissions from business travel, waste disposal and water consumption make up 1.6% of the total.

As data is available at the store level on a monthly basis for both gas and electricity, it is possible to analyse monthly trends, as shown in Figure 4.

Activity	2019 Annual Carbon Emissions - tCO ₂ e
Energy Consumption	430,233
Vehicle Fleet	150,536
Refrigerants	109,467
Business Travel	4,729
Waste Disposal	3,649
Water	3,689
Annual Total	701,882

Table 4: Asda’s absolute carbon emissions by activity type for 2019

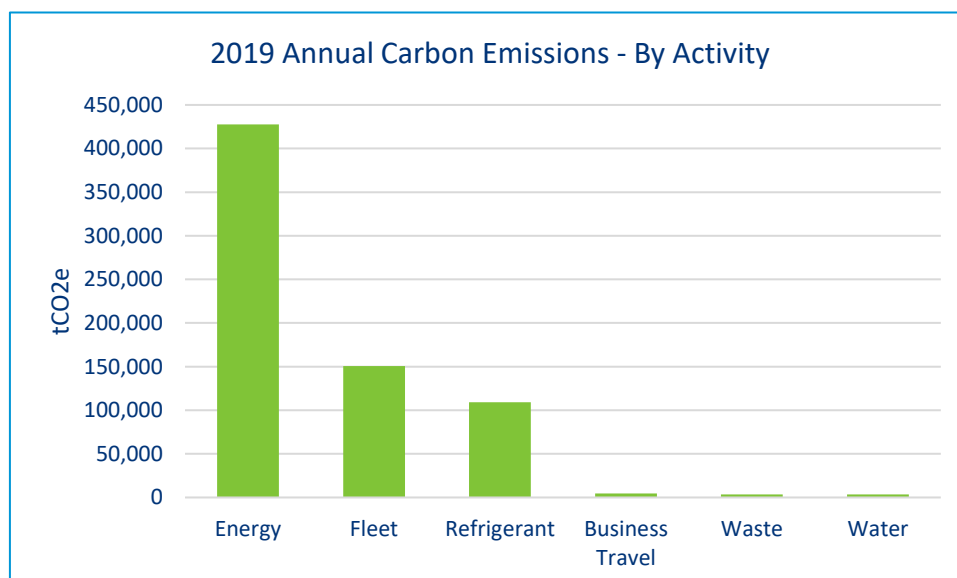


Figure 3: Total annual carbon emissions by activity

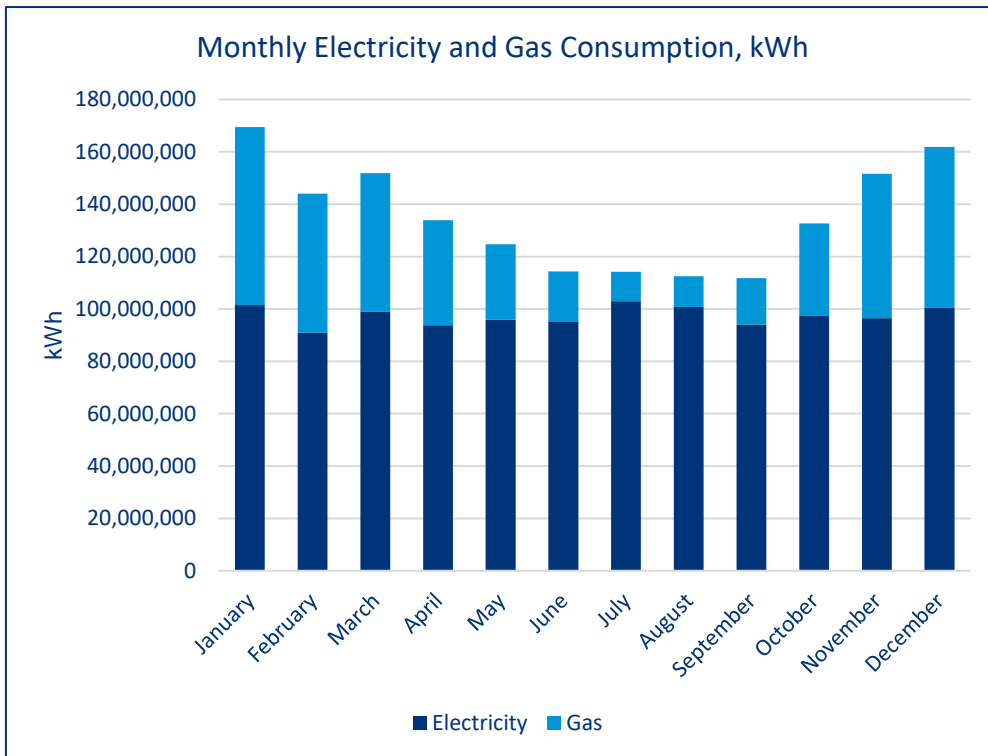


Figure 4: Monthly gas and electricity consumption, kWh

The monthly analysis shows that electricity consumption remains relatively constant throughout the year. Gas however is much more seasonal. As gas is predominantly used for heating, it is expected that the lowest months of gas consumption are in the summer months.

1.3 Total Carbon Emissions – by Location Type

Where possible emissions related to energy and fuel consumption have been allocated to a specific property or location type, as flagged in the received data. The analysis in Table 5 breaks this down by a range of different locations, and the percentage split is summarised in Figure 5.

This total includes all scope 1 and 2 emissions, excluding emissions related to the delivery fleet, which are not possible to allocate to a location type. Where data has not been allocated to a specific asset, it is grouped as ‘unspecified’.

As would be expected given the number of properties, the majority of emissions (83%) are attributed to activities within retail stores.

Location Type	2019 Annual Carbon Emissions - tCO ₂ e
Stores	423,644
Depots	2,813
Distribution Centres	31,327
Home Shopping Centres	1,447
Petrol Filling Station	1,829
Offices	1,289
Unspecified	76,930
Annual Total	539,280

Table 5: Asda’s absolute carbon emissions by location type for 2019

2019 Annual Carbon Emissions - By Location Type

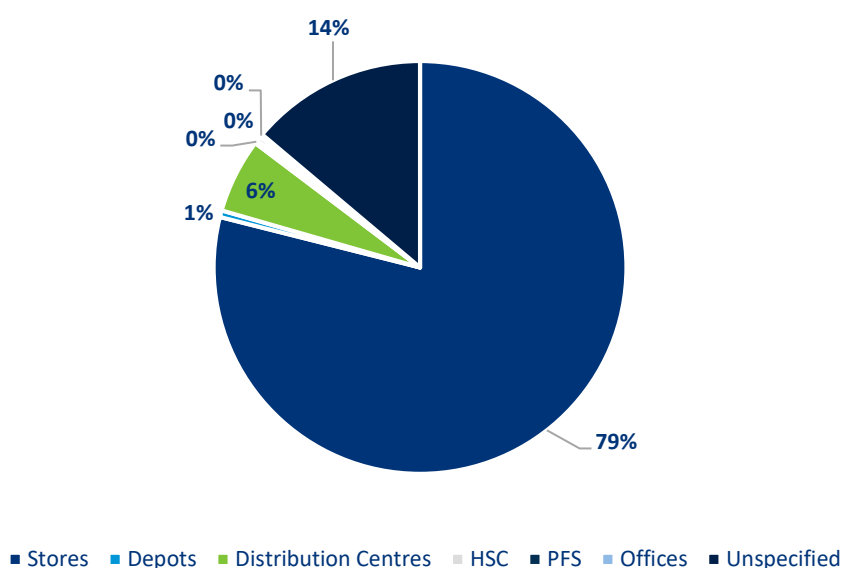


Figure 5: Asda’s annual carbon emissions, by location type

1.3.1 Total Carbon Emissions - by Store Format

Looking at the most significant source of emissions by location type, the stores, it is possible to break this down further. The total emissions related to stores are 423,644 tCO₂e, and of this, 79% is allocated to the 'Hypermarket' store format. Table 6 provides the full breakdown of emissions.

Store Format	2019 Annual Carbon Emissions - tCO ₂ e
Convenience with fuel	3,436
Supermarket	53,812
Hypermarket	333,169
Unspecified	33,226
Annual Total	423,644

Table 6: Asda's absolute carbon emissions by store format for 2019

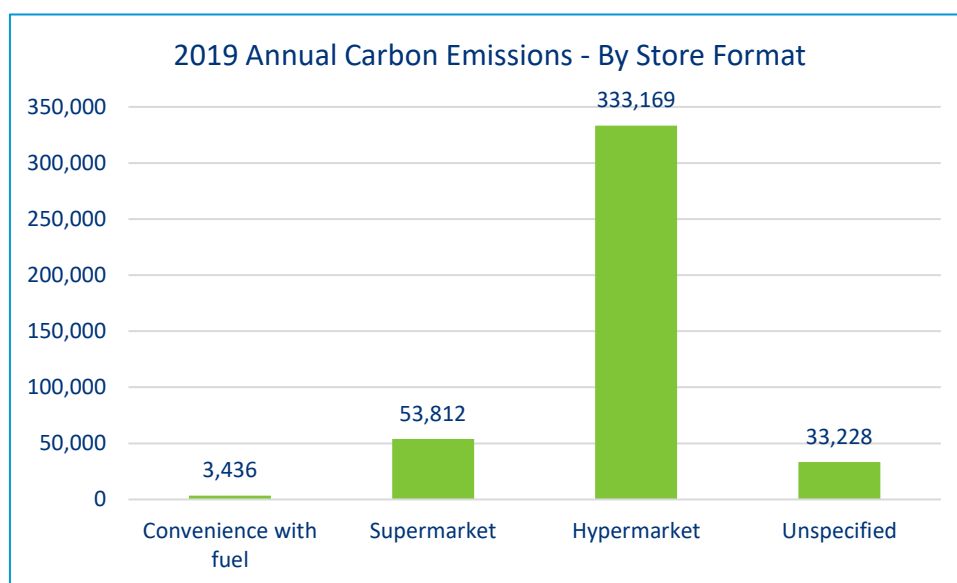


Figure 6: Asda's annual carbon emissions by store format where available

1.4 Total Carbon Emissions - by Region

Using the same scope of emissions as analysed in section 1.3, it is also possible to allocate the location types to specific regions across the UK. Again, where it is not possible to allocate emissions to a specific location, these have been grouped as 'unspecified'.

As all of Asda's operations fall within the United Kingdom, UK specific emission factors have been used to calculate the carbon impact. However, going forward Asda may wish to consider using the market-based approach for electricity emissions. The reason for this is that certain UK countries may begin to implement their own climate targets, such as Scotland's commitment to be Net Zero by 2045, and Asda may want to communicate how they are contributing to such targets.

Region	2019 Annual Carbon Emissions - tCO ₂ e
England	383,433
Scotland	52,059
Wales	22,844
Northern Ireland	4,918
Unspecified	76,026
Annual Total	539,280

Table 7: Asda's absolute carbon emissions by UK region for 2019

2019 Annual Carbon Emissions - by Region

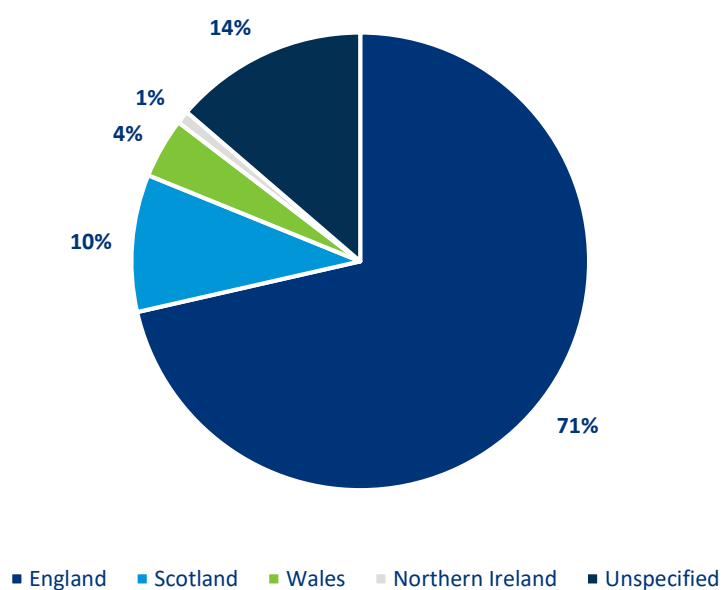


Figure 7: Asda's annual carbon emissions by region

1.5 Carbon Emissions - International Procurement & Logistics

Asda operate the subsidiary International Procurement & Logistics (IPL) and include emissions from this entity within the group carbon footprint. The total carbon emissions calculated in section 1.1 include those of IPL.

Monthly gas, electricity, fuel and water consumption data has been provided for all ten IPL sites. Spade Lane includes one month of estimated consumption, which has been extrapolated based on the known 11 months of consumption.

Separating out the known IPL consumption from the group total carbon footprint, IPL makes up just over 1% of Asda's overall Carbon Footprint. The majority of IPL's emissions are Scope 2 emission from electricity consumed on site, as shown in table 8. IPL have achieved a 15% decrease in carbon emissions when compared to 2018 (11,666 tCO₂e).

Scope	2019 Annual Carbon Emissions - tCO ₂ e
Scope 1	1,493
Scope 2	7,673
Scope 3	727
Annual Total	9,893

Table 8: IPL's absolute carbon emissions by scope for 2019

IPL 2019: Total Emissions by Scope

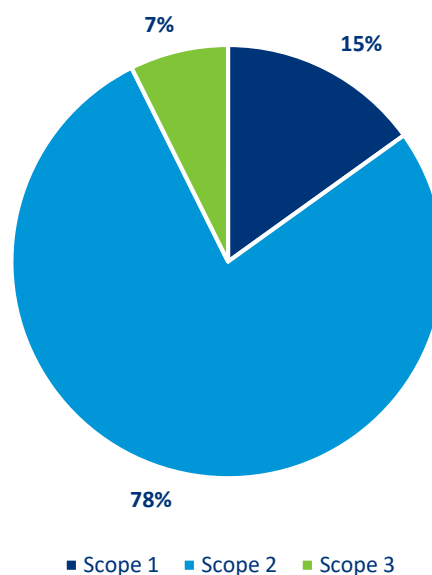


Figure 8: IPL's annual carbon emissions by scope

1.6 Data Quality & Verification

For the calculation of the carbon footprint, data has been provided to the Carbon Trust by Tom Williams and Ayesha Fitzwilliam Hall. The data is sourced from different stakeholders and data collection systems across the Asda group.

In order to verify that the data provided is accurate and a true representation of Asda's activities, the Carbon Trust has carried out a sample of data verification checks to a limited level of assurance. These checks were carried out to ensure that data could be traced back to a verifiable data point, such as an invoice or meter reading, and that there were no material errors in the activity figures provided.

Due to the ongoing Covid-19 situation in the UK in 2020, an in-person site visit to validate data sources has not been carried out this year for Asda's footprint. Queries, data requests and data checks have been carried out remotely via email or video conferencing.

1.7 Recommendations

Given the number of properties included within Asda's organisational footprint boundary, the level of energy consumption data collection is good, and the Carbon Trust is confident there are no material errors in the files provided. Any instances of estimations have been highlighted, and the supporting log 'Wal-Mart UK Asda 2019' is helpful to show the quality assurance process in place.

Fleet vehicle consumption data is good, with actual litres of fuel provided, which is typically more accurate than just mileage. One recommendation would be to consider carrying out an audit of the vehicle fleet. Currently it is only assumed that all fuel is diesel, and actual vehicle specifications are not provided. A focused fleet audit would ensure that this useful data is collected, and having vehicle specifications would allow an analysis to be carried out on whether the vehicles are achieving the expected fuel efficiency. Should Asda opt to replace vehicles with electric drivetrain alternatives, then there needs to be the capability in data collection to measure the electricity consumption of these vehicles – currently this would not be possible. Finally, for the delivery fleet it would be useful to track total deliveries to see if the slight increase in fuel consumption is being driven by an increased demand for home delivery services.

Despite the good accounting procedures in place, there is still opportunity for improvement. Previously in last year's analysis it was highlighted that the store master list, and how stores are identified in the data files, do not always match up. This makes it difficult to allocate emissions to specific assets. A manual checking process was carried out by the Carbon Trust this year to improve the matching of data, however improvements could be made to this process. For example, there is still a significant percentage of total emissions that are allocated to 'Unspecified' where it was not possible to match the data to a particular property.

Another recommendation would be to include building and store specifications in a unified master list, this should be data such as sales floor space for stores. This would allow simple energy consumption and emissions benchmarking to be carried out for individual properties, or for specific location types. This comparison could be used to identify good and poor performing properties.

For waste, again previously it was highlighted that the data format between waste contractors differs, which could potentially lead to inconsistencies with how the data is used in CO₂e calculations. However, the previous year's issues with incorrect data appear to have been addressed, and no material errors were found.

Finally, it is also recommended that Asda consider reporting a market-based organisational footprint as well as the location-based footprint. Reporting both approaches is considered best practice, and would also allow Asda to achieve carbon emission reductions through purchasing renewable or low carbon electricity. In order to claim that purchased electricity is renewable, it must be supported by REGOs or certificates from the electricity supplier.

2. Mandatory Carbon Reporting

2.1 SECR Reporting

The Carbon Trust recommends that Asda communicates their carbon footprint publicly with full transparency on the scope of the footprint, and the progress towards Asda's carbon reduction targets. As presented in this report, emissions should be broken down by scope, business activity and region.

New SECR guidelines came into effect from 1st April 2019 with regards to how companies report on environmental metrics within annual reporting. Energy and carbon performance are required to be included in the annual Directors' report as part of the annual filing obligations. Asda are required to report on:

- UK energy consumption
- The associated carbon emissions
- A comparison with last year's performance
- At least one intensity ratio (e.g tCO₂e/£million revenue)
- An overview of any energy efficiency action taken
- An explanation of the methodology used

The contents of this report detail the methodology by which the carbon footprint calculation has been carried out. No intensity metric has been provided to the Carbon Trust, therefore Asda should choose one that is appropriate to the business. A commentary or narrative should be provided on any energy efficiency actions that have been undertaken in 2019, and how they have impacted the carbon footprint.

A summary of Asda's energy consumption and emissions can be found in Appendix 1:SECR, using the suggested format as provided by BEIS. This may be used as the basis for complying with SECR, or Asda may choose to use the data from this report in a bespoke format.

Appendix

Appendix 1: Consumption and Emissions: SECR

	2019		2018	
Energy Consumption: Electricity	1,169,027,078	kWh	1,225,475,692	kWh
Energy Consumption: Gas	454,628,469	kWh	482,072,781	kWh
Asda Consumption: LPG	7,330	Tonnes	7,330	Tonnes
Consumption: Transport	56,024,475	Litres	55,287,372	Litres
Emissions from combustion of gas and fuels (Scope 1)	106,349	tCO ₂ e	113,483	tCO ₂ e
Emissions from combustion of fuel for transport purposes (Scope 1)	150,536	tCO ₂ e	148,588	tCO ₂ e
Emissions from fugitive refrigerant gas (Scope 1)	109,047	tCO ₂ e	123,077	tCO ₂ e
Emissions from purchased electricity (Scope 2, location-based)	298,538	tCO ₂ e	346,895	tCO ₂ e
Emissions from business travel, rail/air (Scope 3)	4,729	tCO ₂ e	5,407	tCO ₂ e
Emissions from disposal of waste (Scope 3)	3,649	tCO ₂ e	3,852	tCO ₂ e
Emissions from water consumption (Scope 3)	3,689	tCO ₂ e	2,883	tCO ₂ e
Emissions related to fuel and energy consumption (Scope 3)	25,346	tCO ₂ e	29,571	tCO ₂ e
Total Reported Emissions	701,882	tCO ₂ e	775,113	tCO ₂ e
Intensity Metric	TBC	TBC	TBC	TBC

Intensity Ratio	TBC	TBC	TBC	TBC
Methodology	GHG Protocol	-	GHG Protocol	-
Energy Efficiency Action:	Provide separate commentary	-	-	-
Third Party Verification:	Carbon Trust, limited level of assurance	-	Carbon Trust, limited level of assurance	-

Appendix 2: Data Sources

Data Source	Description	Data provided by
2019 Carbon Utilities Reporting	Simple summary of electricity and gas by site	Tom Williams/Ayesha Fitzwilliam Hall
Wal-Mart_UK_Asda2019_Data_Complete	QA Log and energy spend/consumption. Store master site list reference	Tom Williams/Ayesha Fitzwilliam Hall
Copy of CO ₂ e Emissions Summary UK 2019	Business travel data	Tom Williams/Ayesha Fitzwilliam Hall
ALS Miles and Gallon 2019	Fleet consumption	Tom Williams/Ayesha Fitzwilliam Hall
Carbon Footprint Report 2019	Fleet consumption	Tom Williams/Ayesha Fitzwilliam Hall
Online total mileage and Gallons 2019	Fleet consumption	Tom Williams/Ayesha Fitzwilliam Hall
ASDA Carbon Report 2019	Waste – Suez	Tom Williams/Ayesha Fitzwilliam Hall
2019 Carbon Footprint Report	Waste – Veolia	Tom Williams/Ayesha Fitzwilliam Hall
1.2019 KPI Totals All IPL	Waste – IPL	Tom Williams/Ayesha Fitzwilliam Hall
2019 Water Consumption	Water (up to oct 19)	Tom Williams/Ayesha Fitzwilliam Hall
(IPL) Data for Ayesha	IPL Site by site electricity, gas, fuel and water consumption	Phil Hughes

Appendix 3: Emission Factors 2019

Activity	Emission Factor Used	Source
Natural Gas	0.18385	BEIS 2019 emission factor
LPG	2.93686	BEIS 2019 emission factor
Fuel Oil	3217.82	BEIS 2019 emission factor

Refrigerant - 134A	1430	BEIS 2019 emission factor
Refrigerant - CO2	1	BEIS 2019 emission factor
Refrigerant - R1270	1.8	BEIS 2019 emission factor
Refrigerant - R134A	1430	BEIS 2019 emission factor
Refrigerant - R404A	3922	BEIS 2019 emission factor
Refrigerant - R407A	2107	BEIS 2019 emission factor
Refrigerant - R407F	1825	BEIS 2019 emission factor
Refrigerant - R448A	1387	BEIS 2019 emission factor
Refrigerant - R448A N40	1387	BEIS 2019 emission factor
Refrigerant - R448A-N40	1387	BEIS 2019 emission factor
Owned Delivery Fleet	2.59	BEIS 2019 emission factor
Electricity	0.2556	BEIS 2019 emission factor
Solar PV Production	0.2556	BEIS 2019 emission factor
Waste, Food Landfill	626.9729	BEIS 2019 emission factor
Waste, Energy Recovery	0	BEIS 2019 emission factor
Waste, Non-Food Landfill	99.7729	BEIS 2019 emission factor
Waste, Composting	10.2586	BEIS 2019 emission factor
Waste, Recycling	0	BEIS 2019 emission factor
Waste, Hazardous Waste	0.0997729	BEIS 2019 emission factor
Waste, AD	21.3842	BEIS 2019 emission factor

Waste, Reuse	0	BEIS 2019 emission factor
Waste, Transportation of Waste	0.55795	BEIS 2019 emission factor
Electricity T&D	0.02170	BEIS 2019 emission factor
Water	0.344	BEIS 2019 emission factor
Water Treatment	0.708	BEIS 2019 emission factor
Business Travel - Air - Continental - First class	0.59925	BEIS 2019 emission factor
Business Travel - Air - Continental - Business class	0.43446	BEIS 2019 emission factor
Business Travel - Air - Continental - Premium economy	0.2397	BEIS 2019 emission factor
Business Travel - Air - Domestic	0.25493	BEIS 2019 emission factor
Business Travel - Air - Intercontinental - First class	0.55987	BEIS 2019 emission factor
Business Travel - Air - Intercontinental - Business class	0.2336	BEIS 2019 emission factor
Business Travel - Air - Intercontinental - Premium economy	0.2397	BEIS 2019 emission factor
Business Travel - Air - Intercontinental - Economy	0.15573	BEIS 2019 emission factor
Business Travel - Rail - National	0.04115	BEIS 2019 emission factor
Business Travel - Rail - International	0.00597	BEIS 2019 emission factor
Business Travel - Diesel	2.68697	BEIS 2019 emission factor
Business Travel - Lead Replacement Petrol	2.20904	BEIS 2019 emission factor

Business Travel - LPG	1.51906	BEIS 2019 emission factor
Business Travel - Premium Diesel	2.31495	BEIS 2019 emission factor
Business Travel - Premium Unleaded	2.68697	BEIS 2019 emission factor
Business Travel - Unleaded	2.20904	BEIS 2019 emission factor
Business Travel - Air - Continental, Average	0.19562	BEIS 2019 emission factor
Business Travel - Air - Intercontinental, Average	0.15832	BEIS 2019 emission factor

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- > measures and certifies the environmental footprint of organisations, products and services;
- > helps develop and deploy low-carbon technologies and solutions, from energy efficiency to renewable power.

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