ESSEX COUNTY COUNCIL

Scope 3 Carbon Emissions Baseline

Final report

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Essex County Council

Essex County Council has an organisational Net Zero ambition to achieve Net Zero across its core estate operations by 2030.

In their Everyone's Essex plan, Essex County Council has made 5 environmental commitments, including a Net Zero commitment:

"We will work across the council and the county to hit our net zero targets, by ensuring that the council significantly reduces its carbon footprint, whilst also supporting an acceleration in the progress towards sustainable housing and energy, and active and alternative forms of travel across the county."

Essex County Council has ambition to reduce emissions across its supply chain, as evidenced in this report.

The Carbon Trust

We are a trusted, expert guide to Net Zero, bringing purpose led, vital expertise from the climate change frontline. We have been pioneering decarbonisation for more than 20 years for businesses, governments and organisations around the world.

We draw on the experience of over 300 experts internationally, accelerating progress and providing solutions to this existential crisis. We have supported over 3,000 organisations in 50 countries with their climate action planning, collaborating with 150+ partners in setting science-based targets, and supporting cities across 5 continents on the journey to Net Zero.

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Introduction

Essex County Council has a Net Zero ambition to achieve Net Zero across its core estate operations by 2030.

As part of this ambition, Essex County Council (ECC) has already calculated a scope 1, 2 and selected scope 3 carbon footprint. ECC now requires a carbon footprint study to assess emissions sources further outside of the Council's direct operational control, i.e. extended scope 3 emissions. In this report, the results of the scope 3 footprint calculation are presented for the following emissions categories: Purchased Goods and Services, Capital Goods, Investments, Leased Buildings and Commuting; alongside ECC's own calculation for scope 1 and 2 emissions for direct gas and electricity consumption.

Whilst addressing direct organisational (scope 1 and 2) emissions is usually a visible and distinct process, dealing with scope 3 and supply chain emissions involves activities that reside outside the immediate sphere of organisational influence, complicating the decarbonisation process. Such indirect emissions are also typically the largest source of emissions for organisations, and their measurement is the first step towards reducing them effectively.

This report aims to conduct an initial screening and quantification of Essex County Council's scope 3 footprint and identify key contributors from the supply chain.

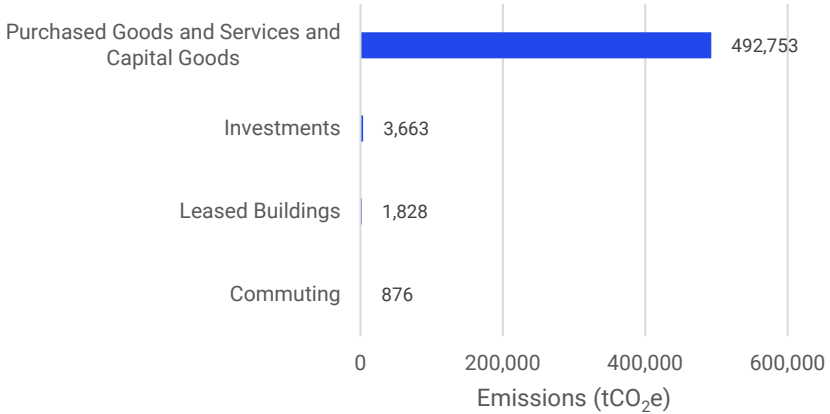
Following this initial work, a Supply Chain Emissions Improvement Plan will be developed to directly engage suppliers who have the current greatest impact on emissions and work to reduce these emissions. The Carbon Trust will also review ECC's existing sustainability criteria and procurement policy and develop a recommendations report.

Scope 3 footprint summary FY 2020/21

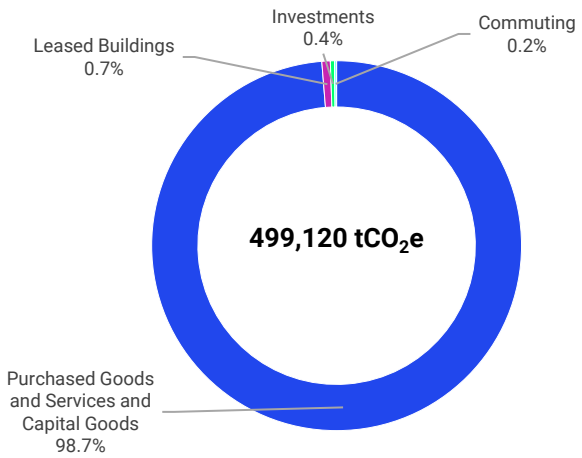
This report focuses on the scope 3 emissions footprint for Essex County Council (ECC) in the financial year (FY) 2020/21. Emissions sources included are: Purchased Goods and Services, Capital Goods, Investments*, Leased Buildings and Commuting.

The carbon footprint for Essex County Council for the financial year 2020/21 from these sources has been estimated at **499,120 tCO_2e.** The graphs below show a breakdown of emissions across emissions categories included in this assessment, both by tCO_2e (left) and as a proportion of total emissions (right).

Purchased Goods and Services and Capital Goods make up ~99% of the footprint. It is commonplace that these supply chain emissions are the most significant contributor to scope 3 emissions of an organisation.



Emissions breakdown by emissions category



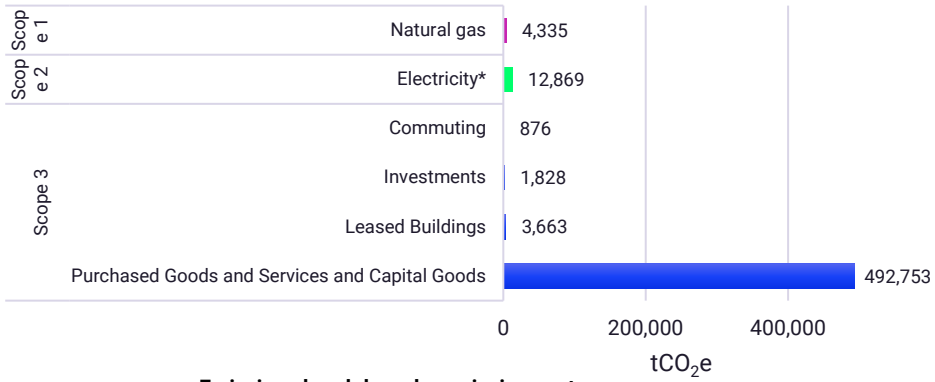
Emissions categories as proportion of total emissions

**This assessment only considered investments in ECC owned entities*

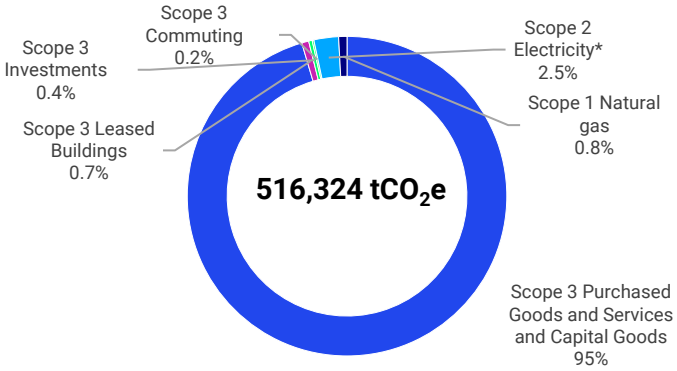
ECC's overall footprint

ECC has calculated their carbon footprint for natural gas consumption (scope 1) and electricity consumption (scope 2) (including transmission and distribution losses (scope 3)) for the financial year 2020/21. This emissions calculation has been reviewed by the Carbon Trust to ensure calculations are robust, and utilising correct emission factors.

Combining these calculations with the scope 3 footprint calculated by the Carbon Trust demonstrates the scale of the contribution of scope 3 emissions to ECC's footprint, and especially those from Purchased Goods and Services and Capital Goods. The graph to the left shows the breakdown of emissions by scope and emissions category. The graph on the right shows each emissions category as a proportion of total emissions calculated. The emissions from the overall footprint have been estimated to be 516,324 tCO_2e, with scope 3 emissions contributing 97% of this footprint, with the vast majority (95%) from Purchased Goods and Services and Capital Goods.



Emissions breakdown by emissions category



Emissions categories as proportion of total emissions

ECC are in the process of calculating emissions from fleet and business travel for the financial year 2020/21. For business travel, ECC has calculated the average to be 2,243 tCO_2e/year (between 2014/15 and 2018/19).

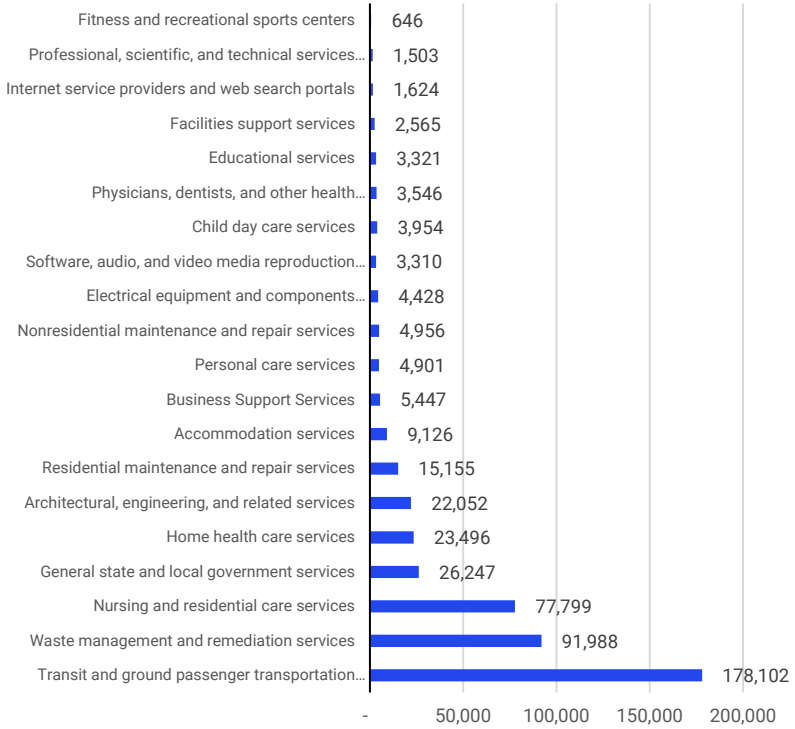
It should be noted that emissions from waste are included within scope 3 purchased goods and services as explained in detail in Appendix 5.
** Emissions associated with transmission and distribution losses related to electricity production are included within the emissions for electricity.*

Footprint summary FY 2020/21: Purchased Goods and Services and Capital Goods

Emissions from **Purchased Goods and Services and Capital Goods** (PG&S and CG) are the largest contributor to the scope 3 footprint at **492,753 tCO_2e (98%).** They arise from upstream activities to create products and deliver services that ECC requires to run its operations.

Emissions have been calculated using EEIO[1] factors to estimate carbon against annual expenditure (~£1.27 billion) across ECC's 2,963 different suppliers. The top 20 EEIO factors by emissions are shown in the graph to the right. These represent 98% of emissions in this category.

- **Transit and ground passenger transportation** represent an estimated 178,102 tCO_2e (36% of PG&S)[2]
- **Waste management and remediation services** represent an estimated 91,988 tCO_2e (19% of PG&S)
- **Nursing and residential care services** represent an estimated 77,799 tCO_2e (16% of PG&S)
- **General state and local government services** represent an estimated 26,247 tCO_2e (5% of PG&S)
- **Home health care services** represent an estimated 23,496 tCO_2e (5% of PG&S)



Top 20 EEIO factors by emissions

[1]*Environmentally Extended Input-Output Factors are emissions factors which estimate global average emissions of a product or service from spend data. They are used in the absence of product or service specific emissions data. A detailed explanation can be found on page 15.*
[2]*Includes ECC Highways spend with Ringway Jacobs*

Recommendations

This report provides Essex County Council with its first detailed view of its scope 3 carbon emissions across key sources.

The measurement of indirect emissions generally relies heavily on the use of proxies and assumptions, particularly when first attempting to estimate scope 3. As such, a core part of a scope 3 emissions management programme is to continually evolve and improve the accuracy of the measurement. For supply chain emissions, this should include sourcing data from third parties, and as such new approaches and responsibilities need to be developed. Exploring this will be the focus of Part 2 of this project.

Recommendations by emissions category are presented here. These recommendations focus on improving data accuracy and scope:

Purchased Goods and Services and Capital Goods

- Establish a consistent method for splitting Purchased Goods and Services and Capital Goods spend for future reporting. This will give a clearer idea of which category emissions are arising from and allow suitable emissions reduction efforts to be made.
- Use the top EEIO categories by emissions presented in this report to focus on the highest emitting procurement areas and prioritise suppliers for engagement. ECC should engage with suppliers to gather emissions information within the contractual elements of working together. This will progress a more accurate measurement of emissions in Purchased Goods and Services and Capital Goods and will be the focus of the Supply Chain Emissions Improvement Plan, as the next phase of this project.

Investments

- Expand the types of investments included in this emissions category, beyond investment in ECC owned entities, to include all equity, cash holdings and pensions.

Leased Buildings

- Improve the accuracy of data collected by collecting actual energy consumption data for those buildings (starting with the largest buildings).

Commuting

- Conduct a regular, more detailed commuting survey to collect more accurate data. A larger number of responses would increase the accuracy of emissions calculations in this category.

Essex County Council Scope 3 Emissions Baseline

Methodology

Greenhouse Gas Protocol

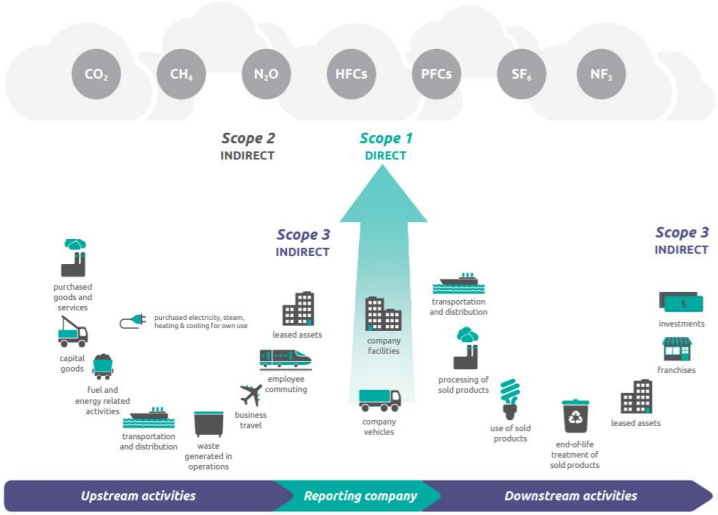
Essex County Council's scope 3 footprint for the financial year (FY) 2020/21 has been measured according to the **GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard and Technical Guidance for Calculating Scope 3 emissions**. The Protocol is the most widely used and accepted methodology for GHG accounting. It provides a framework for businesses, governments and entities to measure and report greenhouse gas emissions that support ongoing reduction efforts in a consistent manner. The standard has been developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

Under the GHG Protocol, emissions are categorised into 3 scopes:

- **Scope 1:** Emissions directly emitted by the organisation (i.e., natural gas burnt in a gas boilers, tail pipe emissions from vehicles).
- **Scope 2:** Emissions indirectly emitted from the consumption of purchased electricity, heat or steam.
- **Scope 3**: All other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, water consumption, waste disposal, etc.

Direct and indirect emissions can be defined according to operational control, such that:

- Direct GHG emissions are emissions from sources that are operationally controlled by ECC.
- Indirect GHG emissions are emissions that are a consequence of the activities of the reporting entity, but occur at sources controlled by another entity (for example, a power plant that generates the electricity consumed by ECC, or a waste-water treatment site that processes ECC's wastewater).



Above: Emission scopes, as defined by the GHG Protocol.

Methodology

A carbon footprint is calculated by applying activity data (e.g., litres of vehicle fuel, kWh of electricity/gas) to an associated emissions factor:

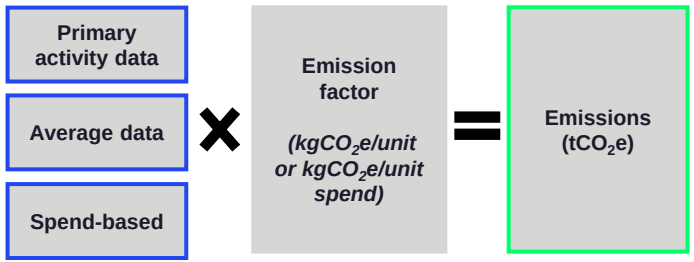
- Where possible, primary activity data should be collected throughout the reporting period for use in the footprint calculation. Emission factors are updated annually and published by the UK Government's department for Business, Energy and Industrial Strategy (BEIS)[1].

If activity data is not available, various benchmarks and proxies can be used:

- Benchmarks can be used to approximate activity data. For example, typical electricity consumption per m^2 of a building.
- When input data is scarce, proxy factors can be used in place of the BEIS factors to approximate emissions from the available input data.

For this footprint, activity data has been prioritised to assess the footprint but proxy approaches such as using spend (£) have featured heavily due to the nature of scope 3 emissions sources.

Emissions are calculated by multiplying activity data by an appropriate emission factor



What is a carbon dioxide equivalent (CO_2e)?

There are multiple greenhouse gases that prevent solar radiation from escaping the atmosphere and contribute to global warming[2]. Each gas contributes towards this effect in different magnitudes. To account for this in reporting, a common unit of carbon dioxide equivalent (CO_2e) is used, which allows the impact of greenhouse gasses to be expressed in terms of the amount of CO_2 that would create the same amount of warming[3].

The calculated footprint for both the Council therefore covers the main GHG's, but it is reported in terms of carbon dioxide equivalent.

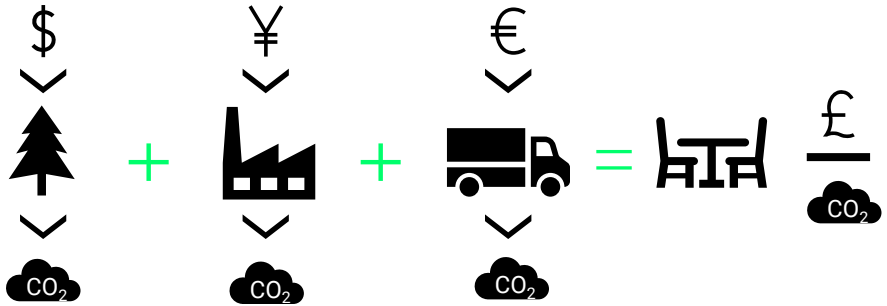
1 UK Government's conversion factors for greenhouse gas (GHG) reporting: https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
2 There are seven key greenhouse gases: Carbon dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF_6), Nitrogen trifluoride (NF3).
3 For example, carbon dioxide has a Global Warming Potential (GWP) of 1, whilst methane has a GWP of 24, therefore we can say that 1 tonne of Methane is equal to 24 tonnes of CO_2e (tCO_2e).

Environmentally Extended Input-Output Factors

In the absence of direct volumetric/activity data, emissions for **Purchased Goods and Services and Capital Goods** have been estimated using our proprietary database of over 400 Environmentally Extended Input-Output (EEIO) Factors to derive full 'cradle to gate' emissions **utilising expenditure information from Essex County Council's procurement system**.

EEIO values are used to calculate the hidden, upstream, indirect or embodied environmental impacts associated with downstream consumption activity. The factors are based on a model of the economy, known as the "input-output" model, which describes in monetary terms how goods and services produced by different sectors of the economy are used by other sectors to produce their own output. These monetary "accounts" are then linked to information about the greenhouse gas emissions of different sectors of the economy. By using the input-output model, emissions can be attributed to final products and services bought by consumers. The result is an estimate of the total upstream emissions associated with the supply of a particular product or service.

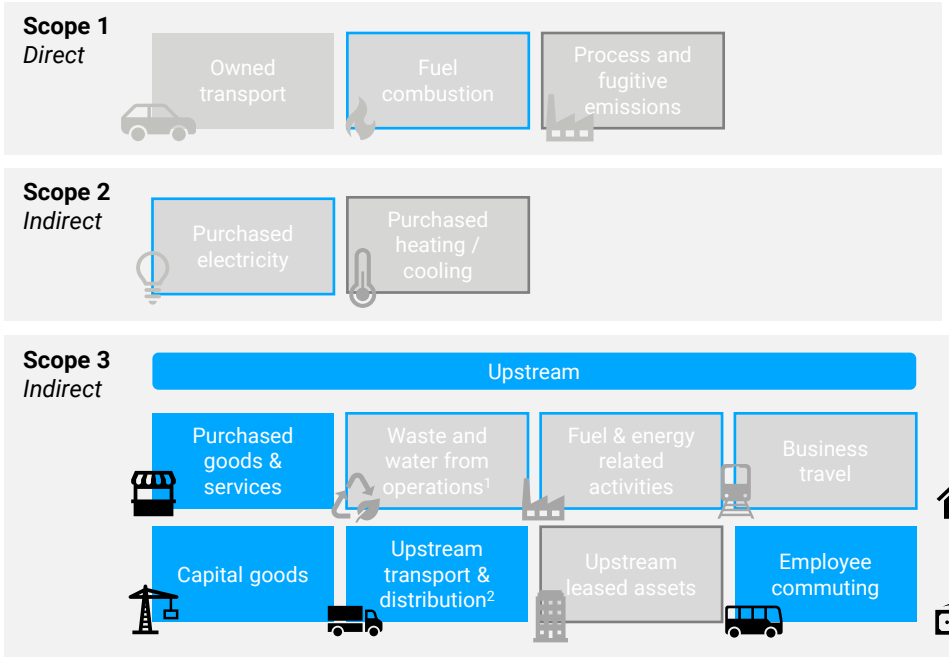
EEIO factors are useful for providing a broad estimate of the emissions from procured goods and services and capital assets, however, they reflect the general emissions of a sub-sector and not of the specific supplier of that good or activity. It is recommended that EEIO factors are used initially to identify emission hotspots within the supply chain that can then be further refined through primary data collection (e.g. through acquisition of third party held data).



Above: an illustrative example of how emissions for furniture may be calculated by looking at the economic spend and emissions created of each stage of the product's supply chain (cradle to gate).

Emissions boundary

The boundary of this assessment was agreed upon by Essex County Council, and includes the following scope 3 emissions defined under the GHG Protocol.



The selection of emission sources was reviewed against the perceived magnitude, data availability, sphere of influence and ability to achieve reductions through direct action. Commentary on emission sources excluded from this assessment can be found in ***Appendix 1*** ***and*** ***Appendix 2***.

- Emissions not included in this assessment, but already measured by ECC
- Emissions not included and not relevant or material for ECC
- Emissions measured and included in this assessment

[1] This category relates to waste and water from ECC's operations. It does not include emissions from ECC's statutory waste disposal services, which are included in Purchased Goods and Services. This report was collated before ECC brought recycling facilities in house. In future, waste disposal emissions for recycling recorded in Purchased goods and services will be calculated from energy consumption of recycling facilities under Scope 1 and 2. Additionally, for this calculation waste and water from ECC's operations are included within the Purchased goods and services to avoid double counting. See Appendix 5 for more detail.

[2] Upstream transport and distribution emissions are accounted for in EEIO factors. Hence the calculation of this emissions category is wrapped up in Purchased goods and services and Capital goods.

Scope 3 Emissions included

The table below gives descriptions of each emissions source included in this footprint. Detail on the data provided for each emissions category can be found in ***Appendix 3***.

Emissions Source	Description
Purchased goods and services	Extraction, production and transportation of goods and services purchased by ECC in the reporting year. Operational waste has been included in the category as spend (***Appendix 5***).
Capital Goods	Extraction, production and transportation of capital goods purchased by ECC in the reporting year.
Commuting	Transportation of employees between their homes and work in the reporting year. This takes place in vehicles not owned or operated by ECC.
Investments	Emissions associated ECC's investments in entities in the reporting year.
Downstream Leased Assets	Buildings leased by ECC to other entities in the reporting year that are not already included in Scope 1 and Scope 2 assessment.

Essex County Council Scope 3 Emissions Baseline

Scope 3 carbon footprint

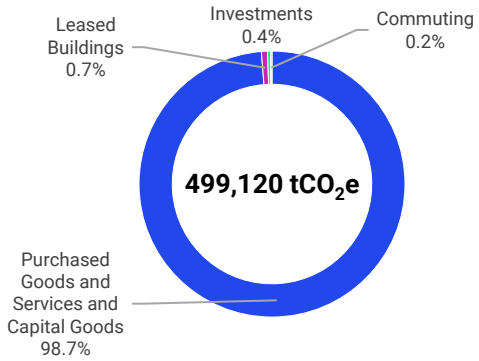
Scope 3 emissions summary FY 2020/21

Emissions overview

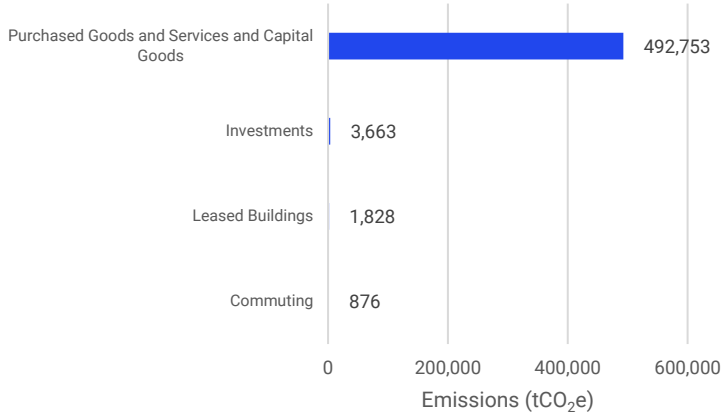
Scope 3 emissions arise from indirect operations and third party services as a result of Essex County Council's operations. The total scope 3 emissions have been estimated as **499,120 tCO_2e.**

- **Purchased Goods and Services and Capital Goods** was the largest contributor to emissions, representing **~99%** (492,753 tCO_2e) of the total scope 3 carbon footprint.
  - **Leased Buildings** contributed only **0.7%** (3,663 tCO_2e) of the total scope 3 carbon footprint.
  - **Investments** contributed **0.4%** (1,828 tCO_2e) to the total scope 3 carbon footprint. This figure was calculated only included investments in entities owned by ECC. For a full coverage of investments, other categories of investment should be included, such as bonds, funds, investment portfolios and cash holdings.
- The remaining 0.2% of the footprint consisted of emissions from **Commuting**

The pages below provide a breakdown of each emissions category and information related to the assessment methodology.



Emissions categories as proportion of total emissions



Emissions breakdown by emissions category

Scope 3 emissions summary

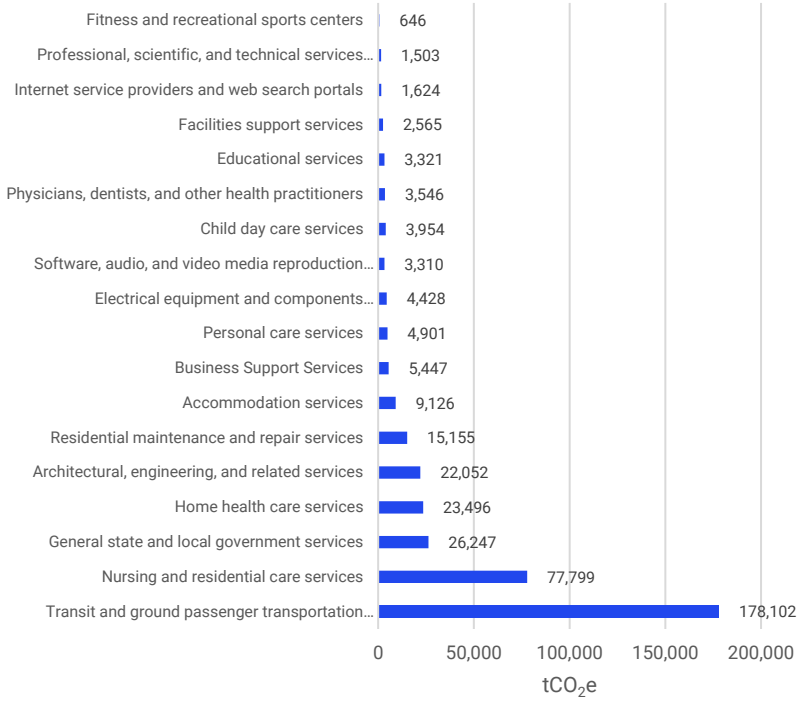
Purchased Goods and Services and Capital Goods

Emissions from **Purchased Goods and Services and Capital Goods** (PG&S and CG) were the largest contributor to the scope 3 footprint at **492,753 tCO_2e (~99%).** They arise from upstream activities to create products and deliver services that ECC requires to run its operations.

Emissions have been calculated using EEIO factors to estimate carbon against annual expenditure (~£1.27 billion) across ECC's 2,963 different suppliers. The top 20 EEIO factor categories by emissions are shown in the graph to the right. These represent 98% of emissions in this category. For details on the mapping of spend to EEIO factors, see ***Appendix 4***.

- **Transit and ground passenger transportation** represent an estimated 178,102 tCO_2e (36% of PG&S)*
- **Waste management and remediation services** represent an estimated 91,988 tCO_2e (19% of PG&S)
- **Nursing and residential care services** represent an estimated 77,799 tCO_2e (16% of PG&S)
- **General state and local government services** represent an estimated 26,247 tCO_2e (5% of PG&S)
- **Home health care services** represent an estimated 23,496 tCO_2e (5% of PG&S)

ECC should use the categories presented here to focus on the highest emitting procurement areas and carry out more in-depth analysis of relevant suppliers (see next page). This will also be the focus the Supply Chain Emissions Improvement Plan as the subsequent part of this project.



Top 20 EEIO categories by emissions

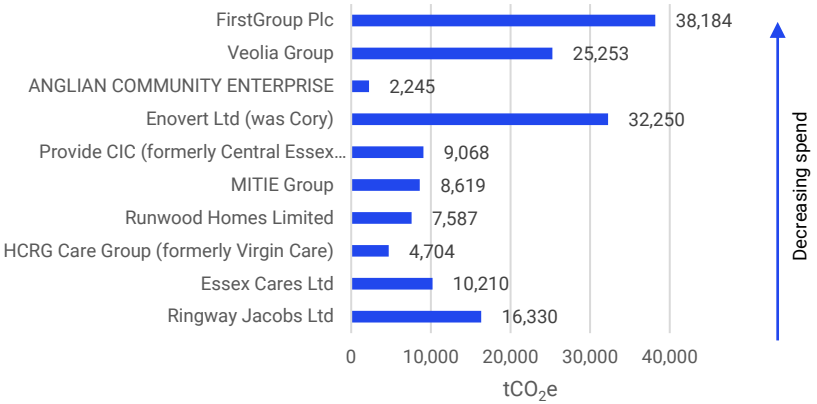
** Includes ECC Highways spend with Ringway Jacobs*

Scope 3 emissions summary

Purchased Goods and Services and Capital Goods

In addition to reviewing EEIO categories, it is useful to also look at carbon emissions per supplier, where the data allows.

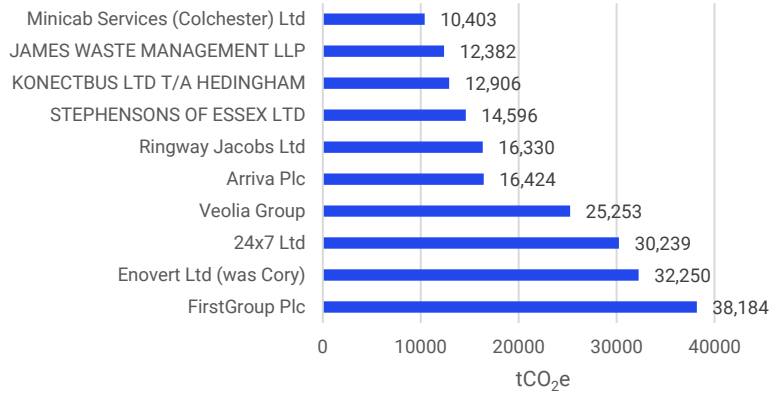
The emissions of top 10 suppliers of PG&S by spend is shown in the graph to the left. This represents approximately £448 million, equating to around 134,469 tCO_2e (~27% of PG&S emissions). The top spend is with Ringway Jacobs Ltd (£124 million) compared to £43 million with Essex Cares Ltd, and £36 million was HCRG Care Group (formerly Virgin Care).



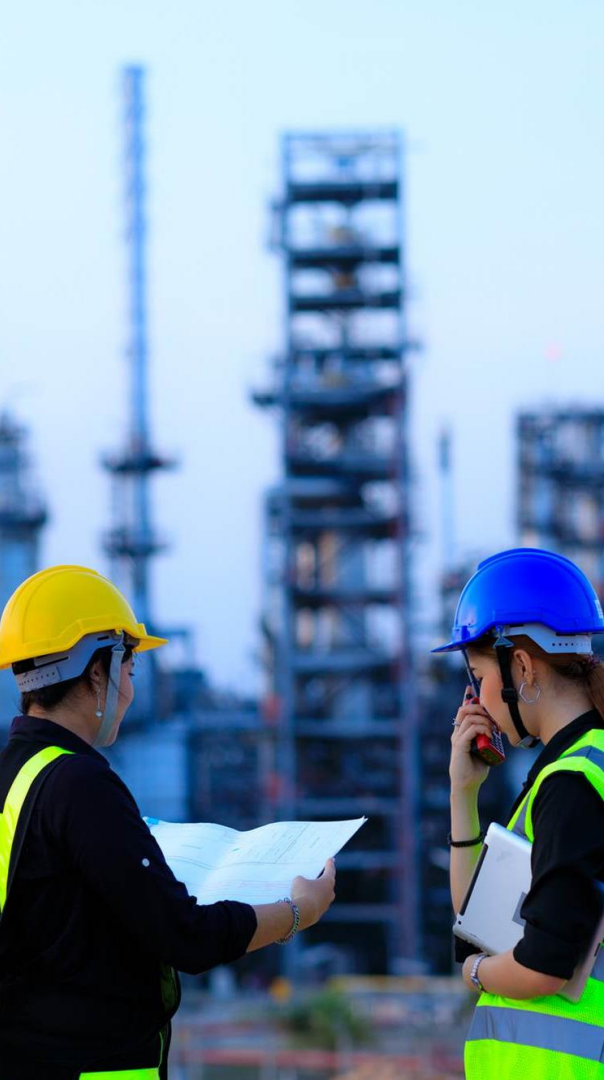
Emissions from top 10 contracts by spend

The emissions of top 10 suppliers of PG&S by carbon emissions is shown in the graph to the right. This represents approximately £311 million of spend, equating to around 216,767 tCO_2e (~44% of PG&S emissions). The top emissions contracts are with FirstGroup Plc (38,184 tCO_2e), and Enovert Ltd (32,250 tCO_2e).

Through further analysis of this data, key suppliers to target for supply chain engagement will be identified and engaged.



Emissions from top 10 contracts by emissions



Scope 3 emissions summary

Purchased Goods and Services and Capital Goods

Combination of Purchased Goods and Services and Capital Goods

Due to limitations of the current financial system, no split could be made between Purchased Goods and Services and Capital Goods expenditure at a supplier level. This is because suppliers associated with Capital Goods* spend could not be identified to allow for application of EEIO factors to the spend data.

ECC estimated the Capital Spend for FY 2020/21 to be £197 million. This is approximately 16% of the total spend across Purchased Goods and Services and Capital Goods for this year.

It is expected that emissions from capital goods will vary significantly year-on-year, in line with planned construction works or other projects across the Council. As such it is helpful to allocate such works under the banner of “Capital Goods/Assets” to enable a more realistic view of “peaky” emissions versus those that are more consistent year-on-year (i.e. PG&S).

Moving forwards, ECC should establish a consistent method for splitting Purchased Goods and Services and Capital Goods spend for future reporting. This will give a clearer idea of which category emissions are arising from and allow suitable emissions reduction efforts to be made.

To progress a more accurate measurement of emissions in Purchased Goods and Services and Capital Goods, ECC should engage with contractors to gather emissions information within the contractual elements of working together. This emissions data could be supplier specific (related to the organisational footprint of the supplier) or product/service/project specific (related to the product carbon footprint of the supplied product/service/project). A demonstration of the initial steps needed to engage suppliers and gather this data will be taken in the next phase of work.

**Capital goods are final products that have an extended life and are used by the company to manufacture a product; provide a service; or sell, store, and deliver merchandise. In financial accounting, capital goods are treated as fixed assets or as plant, property, and equipment (PP&E). Examples of capital goods include equipment, machinery, buildings, facilities, and vehicles.*

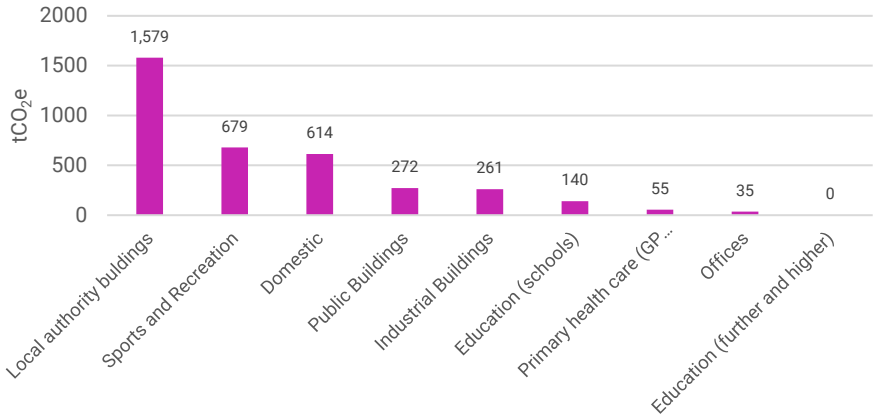
Scope 3 emissions summary

Leased Buildings

Emissions from l**eased buildings** were estimated to be **3,663 tCO_2e (0.7% of the footprint presented).** Site names and floor areas were provided and the building type was confirmed by ECC. The buildings were sorted into 9 building categories. All buildings, except industrial buildings, were assumed to have typical energy performance, allowing CIBSE* benchmarks to be used to estimate energy use by each building. Industrial buildings were assumed to have good energy performance. This is due to a lack of CIBSE benchmarks for typical practice buildings.

The greatest contributor was mapped to the broad category “local authority buildings”, these include community centres, residential care homes and day centres (1,579 tCO_2e, 43% of emissions in this category). A breakdown of building types in each category can be seen in the table below.

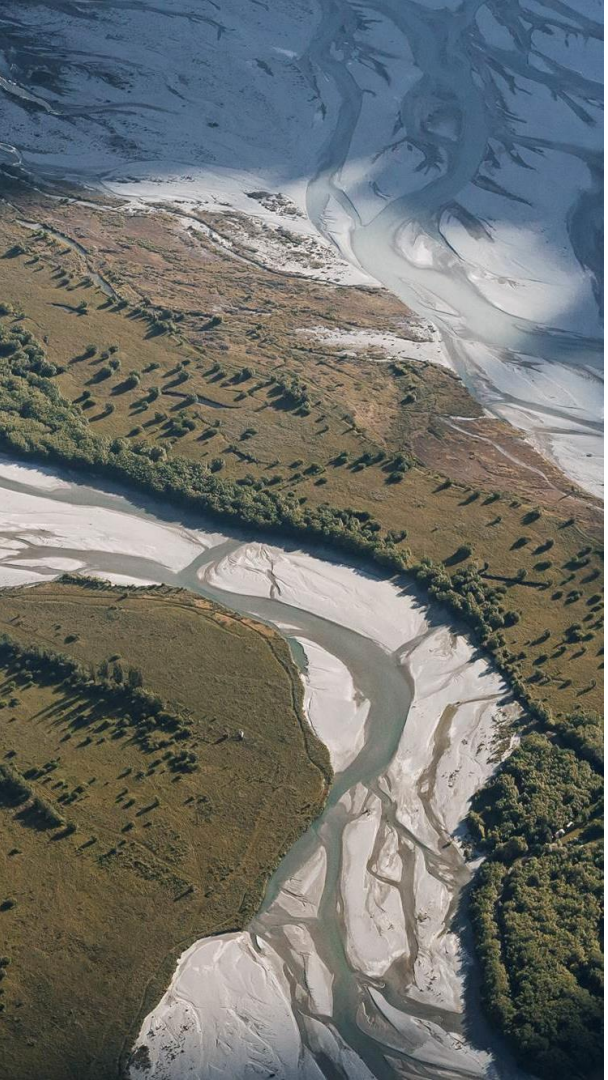
In future, to improve accuracy, energy consumption data for leased buildings (starting with the largest buildings) should be collected to allow emissions to be calculated for actual energy consumption.



Emissions by building category

Building Category	Building Type	Emissions (tCO_2e)
Domestic	Residential, self catering/flats	614
Education (schools)	Primary School	134
Education (schools)	Secondary School	7
Industrial buildings	Post-1995; =5000 m2	150
Industrial buildings	Post-1995; >5000 m2	110
Local authority buildings	Community centres	176
Local authority buildings	Residential care homes	1,225
Local authority buildings	Day centre	168
Local authority buildings	Town hall	11
Offices	Local government office	35
Primary health care (GP Practice/Dentist)	Health Centres and Clinics	55
Public buildings	Catalogue stores	206
Public buildings	Museum	66
Retail	Catering, bar/restaurant	28
Sports and Recreation	Combined centre	679

Chartered Institution of Building Services Engineers



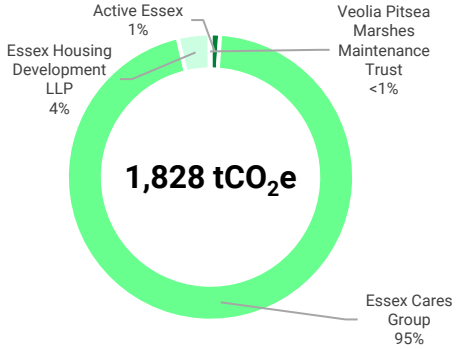
Scope 3 emissions summary

Investments

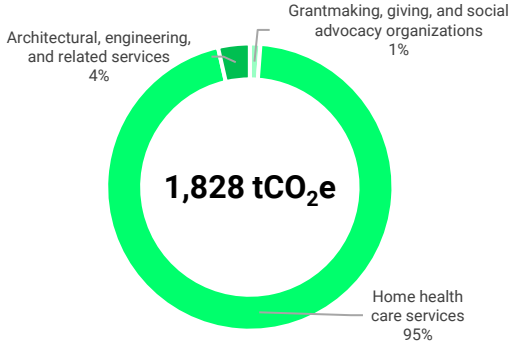
Emissions from investments have been estimated at **1,828 tCO_2e, contributing 0.4%** to the scope 3 emissions carbon footprint calculated. Investment emissions measured are those arising from investment in entities owned by ECC during FY 20/21. Emissions were estimated by applying annual revenue to an EEIO factor which describes the organisations activities where possible. For Essex Housing Development LLP, revenue was not available, so expenditure was applied. Additionally, Essex Cares Group reported organisational emissions of 1,741 tCO_2e in their annual report for 2021, and this figure was used in calculations.

The total value of these investments was ~£46 million across charities, healthcare and housing development organisations. A breakdown of emissions by organisation and organisation types cab be seen below.

ECC should work to expand the types of investments counted in this emissions categories in the future to include all equity, cash holdings and pensions.



Emissions by organisation



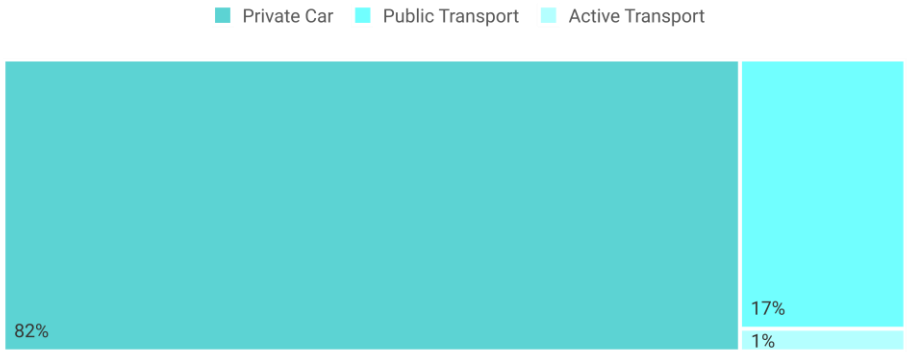
Emissions by EEIO category

Scope 3 emissions summary

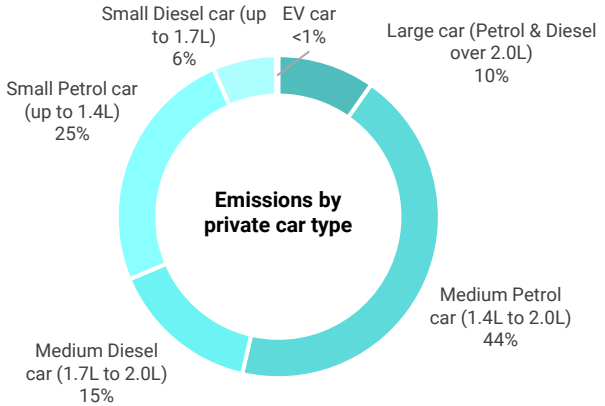
Commuting

A commuting survey was distributed to staff requesting details on the distance, frequency and mode of transport during FY 2020/21. 1.3% of ECC's 7,000 staff completed the survey. Whilst a fairly low sample size, rather than using national level benchmarks, this sample was extrapolated to an estimate representing all ECC staff. Total commuting emissions have been estimated at **876 tCO_2e which contributes 0.2% of the total scope 3 carbon footprint**. The majority of commuting miles are covered in private cars, of which 44% are medium size petrol cars. Less than 1% of cars used for commuting were hybrid or electric vehicles.

Using national benchmarks to approximate the figure, commuting emissions would be estimated to be **2,955 tCO_2e, which is significantly higher than the figure calculated from the survey.** However, it should be noted that this benchmark does not account for the impacts of reduced travel and working from home during the Covid-19 pandemic. The Covid-19 pandemic has impacted commuting patterns significantly, and can be seen as an opportunity to reduce emissions. Given the small sample, it is likely that real emissions from commuting will vary significantly from those presented here. ECC should aim to conduct a regular, more detailed commuting survey to collect more accurate data. A larger number of responses would increase the accuracy of emissions calculations in this category.



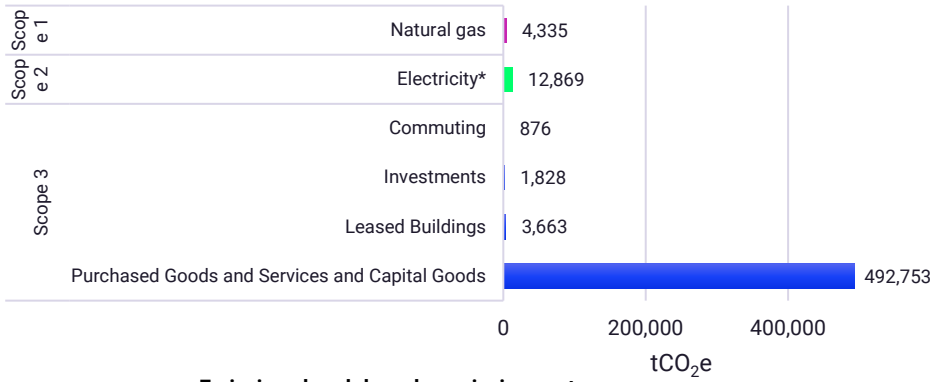
% total milage by transport type



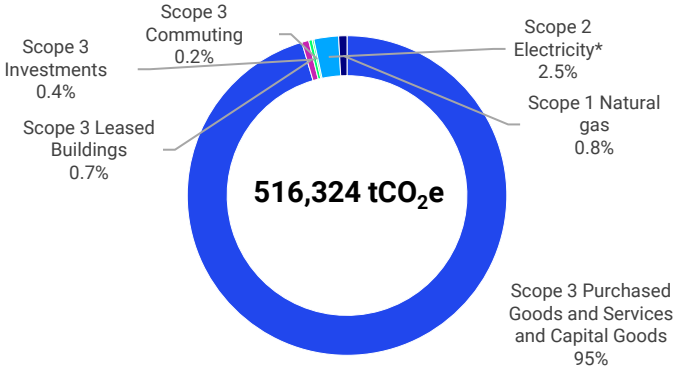
ECC's overall footprint

ECC has calculated their carbon footprint for natural gas consumption (scope 1) and electricity consumption (scope 2) (including transmission and distribution losses (scope 3)) for the financial year 2020/21. This emissions calculation has been reviewed by the Carbon Trust to ensure calculations are robust, and utilising correct emission factors.

Combining these calculations with the scope 3 footprint calculated by the Carbon Trust demonstrates the scale of the contribution of scope 3 emissions to ECC's footprint, and especially those from Purchased Goods and Services and Capital Goods. The graph to the left shows the breakdown of emissions by scope and emissions category. The graph on the right shows each emissions category as a proportion of total emissions calculated. The emissions from the overall footprint have been estimated to be 516,324 tCO_2e, with scope 3 emissions contributing 97% of this footprint, with the vast majority (95%) from Purchased Goods and Services and Capital Goods.



Emissions breakdown by emissions category



Emissions categories as proportion of total emissions

ECC are in the process of calculating emissions from fleet and business travel for the financial year 2020/21. For business travel, ECC has calculated the average to be 2,243 tCO_2e/year (between 2014/15 and 2018/19).

It should be noted that emissions from waste are included within scope 3 purchased goods and services as explained in detail in Appendix 5.
** Emissions associated with transmission and distribution losses related to electricity production are included within the emissions for electricity.*

Essex County Council Scope 3 Emissions Baseline

Next steps

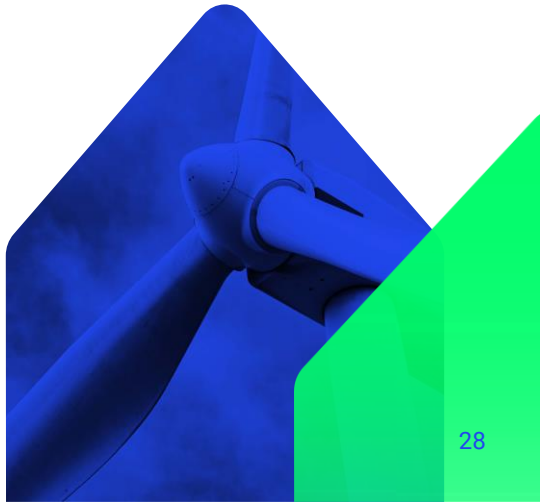
Next Steps

This report has provided Essex County Council with its first extended view of its scope 3 carbon emissions impact across key sources.

The measurement of indirect emissions generally relies heavily on the use of proxies and assumptions, particularly when first attempting to estimate scope 3. As such, a core part of a scope 3 emissions management programme is to continually evolve and improve the accuracy of the measurement. For supply chain carbon, this should include sourcing data from third parties, and as such new approaches and responsibilities need to be developed. Exploring this will be the focus of Part 2 of this project.

For other key scope 3 emission sources such as commuting and leased buildings, the figures presented here contain high uncertainty and so Essex County Council should strive to increase confidence in the figures through collecting more accurate input data.

- For commuting data, this would be conducting more comprehensive and detailed staff surveys to collect data from a wider sample.
- For leased buildings, this could include collecting actual energy consumption data for those buildings (starting with the largest buildings).
- For investments, this footprint only included investments in entities owned by ECC. For a full coverage of investments, other categories of investment should be included, such as bonds, funds, investment portfolios and cash holdings.
- For waste data, improve accounting practices to allow for separation of Mitie waste management of operational waste from other services.



Essex County Council Scope 3 Emissions Baseline

Appendices

APPENDIX 1

Emissions sources included

The following emission sources were included in the scope 3 carbon footprint. Data for each emissions source was collected by ECC and reviewed by the Carbon Trust. Any emissions sources that are currently excluded have also been reporting in Appendix 2 (next page).

Scope 3	Category and activity data	Source Data	Data quality and assumptions
Scope 3 (upstream)	Purchased goods and services and Capital Goods	Spend data for FY20/21 was provided.	EEIO factors were used to calculate emissions from spend data
	Upstream transportation and distribution	Spend data for FY20/21 was provided.	Upstream transport and distribution emissions are accounted for in EEIO factors. Hence the calculation of this emissions category is wrapped up in Purchased goods and services and Capital goods
	Leased Buildings	Site name and floor area provided.	Calculated from CIBSE benchmarks for building type per square meter.
	Employee Commuting	Distance, mode and frequency of transport provided.	Calculated from information provided in employee commuting survey. The distance and frequency of transport was used to calculate the milage travelled per month. This distance was then multiplied by a BEIS emission factor related to the size and fuel of the vehicle to calculate emissions for each respondent.
Scope 3 (downstream)	Investments	Expenditure equity investment in entities	Expenditure was used to value investments. The expenditure was the multiplied by an EEIO factor matched to the function of the organisation in which the investment was made to calculate emissions.

Emission sources excluded

The GHG Protocol recognises that there are several reasons why an organisation may exclude sources of emissions from their inventory, either because of relevance or because there are challenges with collecting reliable information. Some emissions categories are not relevant to ECC's operations and have therefore been excluded from this footprint. It is recommended that these are kept under review for inclusion in future years if appropriate.

Scope	Category and Emissions source	Assessment	Reason for exclusion
Scope 3 (upstream)	Upstream leased assets	Not included	No leased assets deemed material
Scope 3 (downstream)	Downstream transportation and distribution	Not relevant	Any transport related to purchased goods is included in Category 1: Purchased goods and services (upstream only)
	Processing of sold products	Not relevant	ECC does not manufacture any goods
	Use of sold products	Not relevant	ECC does not operate any franchises
	End-of-life treatment of sold products	Not relevant	ECC does not manufacture any goods
	Franchises	Not relevant	ECC does not have any franchises

Key Data Sources

A list of data sources provided by Essex County Council (file titles and emails) and the date received by Carbon Trust is included in the table below.

Scope 3	Emissions Category	Data Source
Scope 3 (upstream)	Purchased goods and services and Capital Goods	'2020-21 spend by Supplier & Category' (11/02/22), '20-21 Capex PGS Comparison – SH' (18/03/22)
	Capital Goods	'20-21 Capex by supplier' (07/03/22), '20-21 Capex PGS Comparison – SH' (18/03/22)
	Leased Buildings	'Carbon-Footprint-Data-Collection-Form_ECC Jan 22' (21/02/22)
	Employee Commuting	'Commuting data' (01/03/22)
Scope 3 (downstream)	Investments	'FW Equity investment details' (01/03/22)

APPENDIX 4

Mapping spend to EEIO factors

- Essex County Council provided spend data for Procured Goods and Services and Capital Goods. Each line of spend detailed the supplier, spend and a short description of spend.
- Carbon Trust then matched the spend description to EEIO factors. EEIO factors are categorised by a Broad Category, e.g. Services, Manufactured Products and a Specific Category e.g. Architectural, engineering and related services, Nursing and residential care services.
- Finally, each line of spend was multiplied by the EEIO factor to give carbon emissions from that spend.
- An extract of the footprint calculator, showing spend, supplier, description and the relayed mapped EEIO broad and specific category is shown below.

Supplier	Description	Annual Investment Value (£)	Broad Category 1	Specific Category 1	% Split
Ringway Jacobs Ltd	Highways Maintenance & Civils	£ 123,928,723	Services	Architectural, engineering, and related services	100%
HCRG Care Group (formerly Virgin	Home Care (Elderly)	£ 33,463,084	Services	Home health care services	100%
Runwood Homes Limited	Residential Care (Elderly)	£ 33,200,911	Services	Nursing and residential care services	100%
Provide CIC (formerly Central Essex	Community Services & Advice	£ 26,304,630	Services	General state and local government services	100%
Enovert Ltd (was Cory)	Waste Treatment & Disposal	£ 21,407,516	Services	Waste management and remediation services	100%
Essex Cares Ltd	Home Care (SEN, Disabilities, MH etc)	£ 20,335,691	Services	Nursing and residential care services	100%
ANGLIAN COMMUNITY ENTERPRISE	Health & Social Care (general)	£ 18,984,577	Services	Physicians, dentists, and other health practitioners	100%
Veolia Group	Waste Collection & Recycling	£ 16,762,856	Services	Waste management and remediation services	100%
MITIE Group	FM Services	£ 15,146,026	Services	Facilities support services	100%
FirstGroup Plc	Public Transport	£ 14,045,761	Services	Transit and ground passenger transportation services	100%
MITIE Group	Property Maintenance	£ 14,036,806	Services	Residential maintenance and repair services	100%
Matrix SCM Ltd	Recruitment & Temp agencies inc Welfare to Work	£ 13,913,488	Services	Business Support Services	100%
PEABODY SOUTH EAST	Housing Management Services	£ 13,181,153	Services	Accommodation services	100%
Essex Cares Ltd	Community Care Equipment	£ 12,959,842	Manufactured products	Electrical equipment and components (miscellaneous)	100%
Countyroute (A130) PLC	Highways PFI & Toll Roads	£ 12,804,823	Services	Architectural, engineering, and related services	100%
John Graham Holdings Limited	Property Construction	£ 12,616,441	Services	Architectural, engineering, and related services	100%
24x7 Ltd	Community Transport inc taxis	£ 11,123,297	Services	Transit and ground passenger transportation services	100%
Essex Schools Ltd	Schools PFI	£ 10,956,486	Services	Educational services	100%
Lambert Smith Hampton Group Ltd	Property Management & Estate Agency & Rent	£ 10,016,618	Services	Residential maintenance and repair services	100%
Essex Cares Ltd	Home Care (Elderly)	£ 9,735,173	Services	Home health care services	100%
Thera Trust	Home Care (SEN, Disabilities, MH etc)	£ 8,883,471	Services	Nursing and residential care services	100%
QED (CLACTON) LTD / WATES CONSTR	Property Management & Estate Agency & Rent	£ 8,319,652	Services	Residential maintenance and repair services	100%
JAMES WASTE MANAGEMENT LLP	Waste Collection & Recycling	£ 8,218,964	Services	Waste management and remediation services	100%
THE BARNES GROUP LTD	Property Construction	£ 8,175,155	Services	Architectural, engineering, and related services	100%
Essex Partnership University NHS Founc	Drug, Alcohol & Addiction	£ 8,162,072	Services	General state and local government services	100%
TLC Care Homes Ltd	Residential Care (Elderly)	£ 8,003,159	Services	Nursing and residential care services	100%
HC-One Ltd	Residential Care (Elderly)	£ 7,611,830	Services	Nursing and residential care services	100%

APPENDIX 5

Treatment of waste data

As a local authority, ECC has two types of waste to consider: the disposal and treatment of local authority collected waste (under ECC's statutory duty as a Waste Disposal Authority) and the disposal and treatment of ECC's own operational waste. The collection and treatment of the Council's own operational waste could be separated from the Purchased Goods and Services in order to correspond with the category "Waste and water from operations" set out in slide 16. However, the data available (total spend with Mitie) means it is not possible to separate the spend related to the management of ECC's operational waste from spend on other services provided by Mitie. Tonnage data is available but to avoid double counting of operational waste, the tonnage data has been excluded. Therefore, the emissions associated with disposal and treatment of ECC's own operational waste are included within the Purchased goods and services category.

ECC is aware of the data gaps that currently exist. ECC should work to obtain distinctive data to allow for separate calculations of emissions from services provided by Mitie. This will also help to identify emission reduction opportunities. ECC's waste team is currently conducting a study to determine the carbon impact of a unit of waste transported through the waste processing chain