



Newark and Sherwood District Council Climate Emergency Strategy

September 2020



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Foreword

Introduction from Cllr David Lloyd, Leader of Newark and Sherwood District Council

To be completed

Introduction from David Reilly, Director of Cities and Regions at the Carbon Trust



In June 2019, the UK Government committed to reducing the UK's net emissions of greenhouse gases by 100% relative to 1990 levels by 2050. The public sector is key to delivering this ambition.

There is a global movement of local authorities declaring climate emergencies. Declarations have been made in over 20 countries, by local authorities representing around 290 million people. By declaring a climate emergency, local authorities are acknowledging the need to act on the causes and impacts of climate change. However, delivering on these declarations requires robust and measurable change with support of a viable action plan to promote transparency and accountability.

The Carbon Trust is pleased to have partnered with Newark and Sherwood District Council on its Climate Emergency Strategy and Emissions Reduction Action Plan. The Strategy will help Newark and Sherwood Council become a carbon neutral organisation by 2035, delivering the most efficient savings and driving a positive contribution to the environment, whilst working with stakeholders and businesses to positively influence change in the District.



Newark and Sherwood District Council understands how important climate change is for our community.

In the 2018 Resident Survey, 90% of respondents said it was important or very important to be able to live in a sustainable way.

The Council has made significant progress in reducing its direct organisational emissions since first working with the Carbon Trust in 2011. The Council's declaration of a climate emergency in 2019 has brought renewed focus to this work.

The United Nations Intergovernmental Panel on Climate Change has warned that we have 10 years to make the necessary changes to limit a rise in global temperatures to 1.5°C. Failure to act will see a marked increase in sea levels and flooding, extreme and abrupt changes to weather patterns, crop failures, extinctions of plant and animal species and global economic disruption and crisis [1]. The increased frequency and intensity of weather events that we have experienced locally highlight why this is such an important issue for Newark and Sherwood District Council to respond to.

At the 2018 Global Climate Talks in Poland, the UK along with over 200 nations agreed that action on climate change, with a much greater role strongly implied for Local and Regional Authorities like Newark and Sherwood District Council, is necessary in assisting Governments to achieve their carbon reduction ambitions. In June 2019 the UK Government set a national target of achieving net zero emissions of greenhouse gases by 2050.

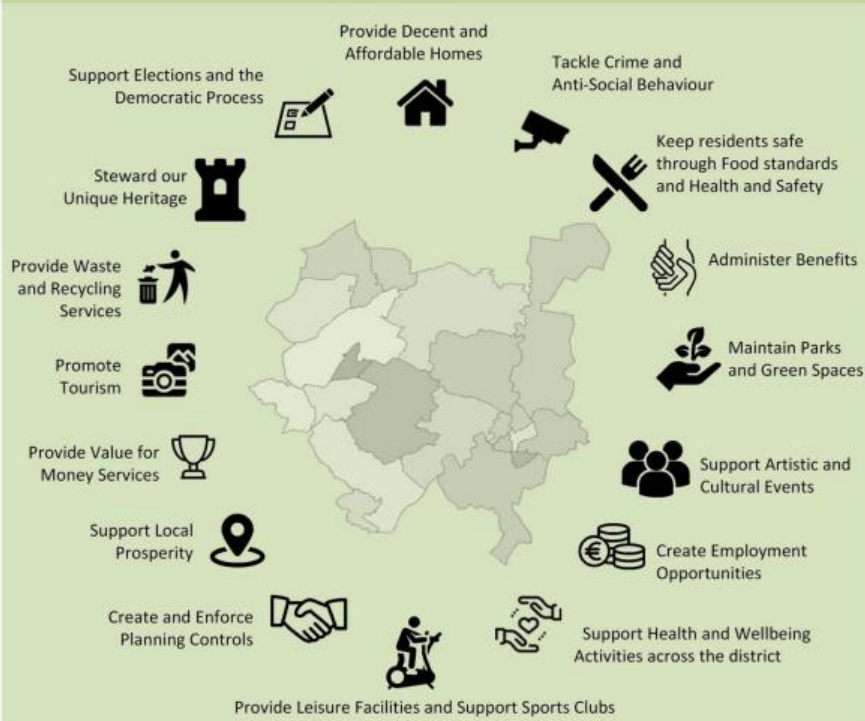
At Full Council in July 2019, Newark and Sherwood District Council declared a climate emergency. The following actions were recommended:

- **Audit existing environmental practice within the Council**
- **Establish data to determine the carbon footprint of Newark and Sherwood District Council**
- **Consider the Council's contribution to the district carbon footprint more widely**
- **Engage with stakeholders**

All of the above actions have been brought together in this Climate Emergency Strategy to provide a robust and measurable way for the Council to take action to reduce its operational carbon emissions, whilst driving change in the broader District.

Purpose of the Climate Emergency Strategy

Newark and Sherwood District Council provides the following services



Newark and Sherwood District Council provides a range of essential services across the District. This Climate Emergency Strategy sets out the framework and roadmap for reducing carbon emissions across the Council's own operations in providing these services. The strategy will include:

- The target that the Council is aiming to achieve
- A shortlist of the carbon reduction projects that will be undertaken to reach this target
- Additional actions the Council will take to reduce, eliminate or offset its own carbon emissions
- How progress will be monitored and reported on
- How the Council will continue to engage and support others; individuals, businesses and community organisations to drive broader action in the District.

This strategy will be reviewed annually to enable new issues, challenges, opportunities and solutions to be considered.

This strategy uses a baseline year of 2018/19 to set targets and measure emissions reduction from going forward. 2018/19 is the most recent available dataset, with the Council's carbon emissions measured at **2,165 tCO₂e** and. District emissions of **987,800 tCO₂e**

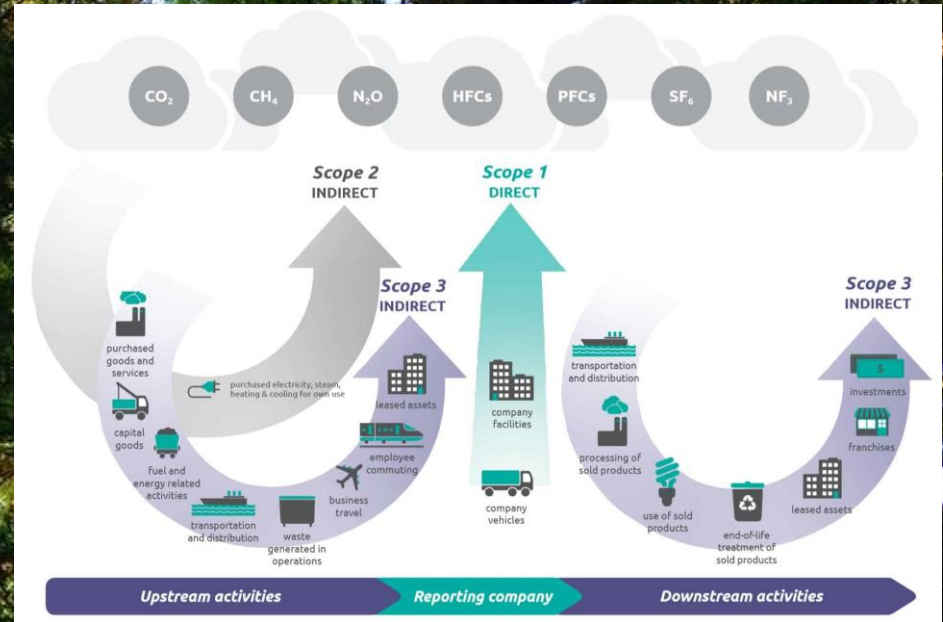
One tonne of CO₂e (tCO₂e) is the equivalent to the average emissions of one passenger on a return-flight from Paris to New York or driving 6000 km in a diesel car.

During the 2018-19 data collection period Newark and Sherwood Homes, a separate company, provided housing management services on behalf of the Council. From 1 February 2020, housing has been reintegrated into the Council. Data collection and subsequent analysis recognises the differences at the time of collection but looks forward to full integration.

The Greenhouse Gas Protocol

The World Resources Institute Greenhouse Gas (GHG) protocol is the globally accepted carbon accounting standard. The Council will take into account both direct and indirect organisational emissions for its own operational estate:

- **Direct GHG emissions** are emissions from sources that are owned or controlled by the reporting entity.
- **Indirect GHG emissions** are emissions that are a consequence of the activities of the reporting entity, but occur at sources owned or controlled by another entity.
- The GHG Protocol further categorises these direct and indirect organisational emissions into three broad scope categories:
- **Scope 1:** All direct GHG emissions.
- **Scope 2:** Indirect GHG emissions from consumption of purchased electricity, heat or steam.
- **Scope 3:** 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, electricity-related activities (e.g. Transmission & Distribution losses) not covered in Scope 2, outsourced activities, waste disposal, etc.



Newark and Sherwood District Council Carbon Footprint

Newark and Sherwood District Council has set a target of becoming a carbon neutral organisation by 2035.

The target incorporates emissions sources that have good data availability, to allow for consistent and accurate monitoring and reporting, and are within the Council's sphere of influence, allowing the Council to achieve reductions through actionable changes. This includes¹:

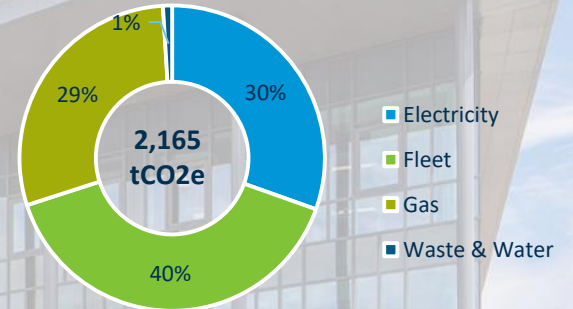
- Energy consumption in the Council-operated buildings;
- Fuel consumption in the Council's fleet;
- Disposal and treatment of waste generated by the Council (including water)

The Carbon Trust measured the Council's footprint from these emission sources, and for the financial year 2018/19 was **2,165 tCO₂e**. It is the Council's intention to reduce these emissions as much as feasibly possible by 2035, and offset any residual emissions with good quality offsets. Appendices A-C detail the methodology for calculating the footprint and the footprint breakdown.

To act as a comparator, the sources of carbon emissions from Newark and Sherwood District has been calculated using data from the UK's Greenhouse Gas Inventory. The Inventory estimates the carbon dioxide emissions at local authority level across the UK. In 2018/19 the total carbon footprint of the District was 987,800 tCO₂e, comprised of petroleum products (43%), gas (26%), electricity (16%), coal (8%) and manufactured fuels (7%).

¹ Emission sources are often categorised by scopes, as defined by the World Resources Institute (WRI). The Council's target is entirely inclusive of scope 1 and 2, and includes some elements of scope 3 (disposal and treatment of waste)

NSDC emissions broken down by source FY 18/19



Comparison of Newark District Emissions to NSDC Emissions for the FY 18/19 (tCO₂e)





NSDC Climate Emergency Target

Priority project identification

In order to understand the emissions reductions that could be achievable by 2035, 'hotspot' areas have been identified. These are areas that offer the most potential for emissions reductions. The two key hotspot areas for Newark and Sherwood District Council are:

- **Energy consumption in council-operated buildings**
- **Fuel consumption in the Council's fleet**

Through interviews with NSDC officers and independent analysis, the Carbon Trust has developed a shortlist of priority projects that could be feasibly implemented in these areas. Implementation cost, energy savings and carbon savings from these projects have been calculated, although more detailed feasibility studies will be required before any project is taken forward. The following slides detail some of these projects and the cumulative impact of how these projects will help the Council achieve carbon neutrality by 2035.

Although the focus has been on larger projects in the Council's hotspot areas, this is not a definite list of all that is possible. The Council will continue to seek out project opportunities that achieve emissions reductions alongside their primary benefits. Importantly, the Council will assess all projects for their emission reduction potential, to ensure that at least they won't have an adverse impact on the Council emissions.

'A carbon neutral organisation will measure its carbon footprint, and develop and implement a Carbon Management Plan (including a reduction target). Residual emissions will then be offset by high quality, certified carbon credits.'

Carbon Trust definition



Hotspot: Energy consumption from Council operated buildings

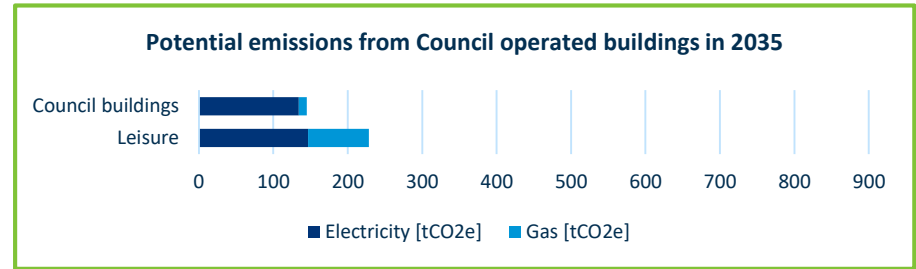
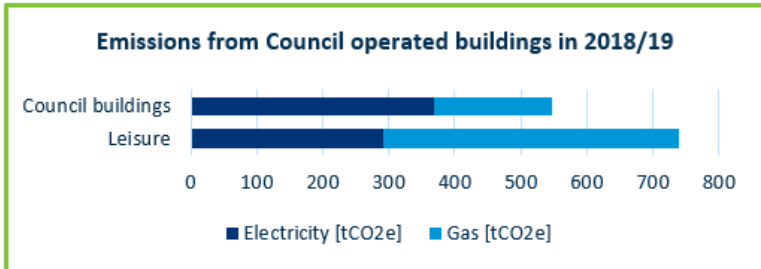
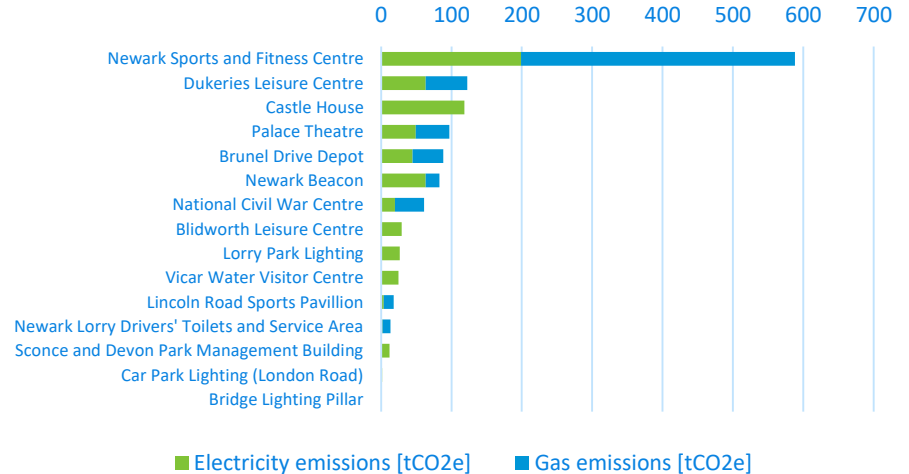
Newark and Sherwood District Council own a range of buildings across the District. Active4Today Ltd is the preferred operator of Newark and Sherwood District Council leisure centres and sports development, including Newark Sports and Fitness Centre, Dukeries Leisure Centre and Blidworth Leisure Centre.

The Carbon Trust identified the top 10 buildings by their carbon emissions in the Council's 2018/19 carbon footprint (graph to the right) and considered a range of emission reduction opportunities that could be applied to achieve the Council's 2035 target.

Electricity and gas consumption are the dominant emissions sources for all buildings. Numerous measures can be put in place to reduce these emissions.

As the national grid decarbonises it is recommended that heat sources are generally electrified where possible (through the installation of heat pumps). This will help reduce gas consumption significantly and the emissions associated with heating Council operated buildings.

Electricity and gas consumption across NSDC operated buildings (tCO2e)



Hotspot: Energy consumption from Council operated buildings

Leisure Centres

Emission reduction project opportunities were identified at Newark Sports & Fitness Centre, Blidworth and Dukeries Leisure Centres. Measures included:

Electrification of Heating

- Installation of Ground Source Heat Pump at Newark, Air Source Heat Pump at Lincoln Road Sports Pavilion
- Reduce reliance on gas
- kWh savings: 1.3 million kWh
- Lifetime CO2 savings: 3,100 tCO2e

Lighting Upgrades

- Upgrade all old light fittings to new LED luminaires
- Fully upgrade all buildings in the short term
- kWh savings: 72,000
- Lifetime CO2 saving: 72 tCO2e

Solar PV

- Install solar PV arrays across all viable roof spaces
- Solar will offset increased electrical loads from electric heating
- kWh savings: 133,000 kWh
- Potential CO2 reduction: 195 tCO2e

Council Buildings

Emission reduction project opportunities were identified across Castle House, Palace Theatre, National Civil War Centre, Vicar Water Visitor House, Newark Beacon, Lorry Park service area and Brunel Drive Depot. Measures included:

Electrification of Heating

- Installation of Air Source Heat Pumps at all sites
- Reduce reliance on gas
- kWh savings: 581,000 kWh
- Lifetime CO2 savings: 2,005 tCO2e

Lighting Upgrades

- Upgrade all old light fittings to new LED luminaires
- Fully upgrade all buildings in the short term
- kWh savings: 59,000 kWh
- Lifetime CO2 savings: 69 tCO2e

Solar PV

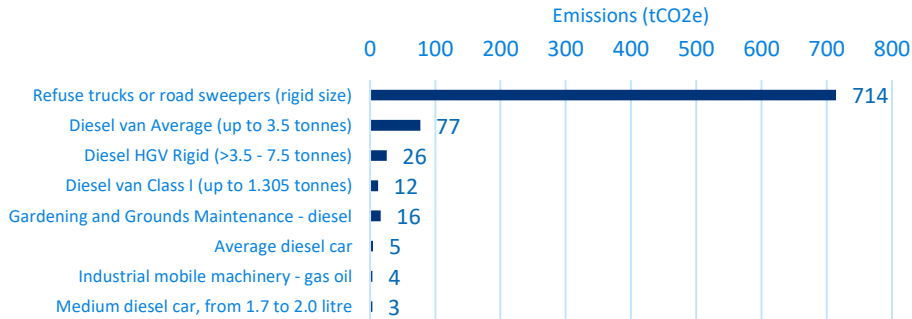
- Install solar PV arrays across all viable roof spaces
- Solar will offset increased electrical loads from electric heating
- kWh savings: 137,000 kWh
- Lifetime CO2 savings: 187 tCO2e



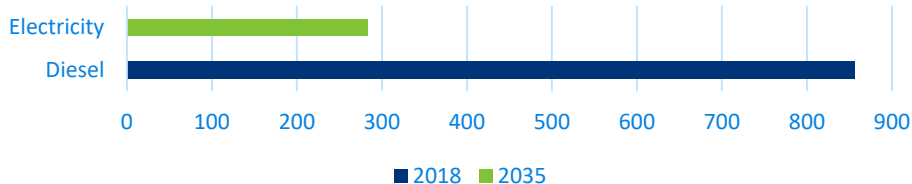
Improvements to data monitoring. Implement a defined process for energy management and utility data collection moving forward. In order for the Council to achieve its Carbon Neutral target it is vital that the year-on-year energy consumption of all assets is recorded appropriately. A digital Automatic Monitoring and Targeting (aM&T) system should be employed, along with a dedicated job role to centrally manage this process.

Hotspot: Fuel consumption in the Council's fleet

Total Emissions from Council owned fleet vehicles FY18/19 (tCO₂e)



Modelled change in fleet emissions with full electrification by 2035



Emission Reduction project opportunities



Fleet electrification

- Full electrification of Council fleet vehicles is the most effective way for the Council to decarbonise fleet vehicles and should be implemented where possible. Alternative fuels may be determined more suitable for some vehicles, but this will reduce the carbon reductions achieved.
- Annual carbon reduction of 554.37 tCO₂*



Using telematics systems

- The Council has already introduced telematics systems across all vehicles that are capable of providing information. The Council should continue to use these systems to monitor the efficiency of the fleet driving and introduce training if improvements can be made.



Detailed review of EV transition and installation of EV charging infrastructure

- The Council is actively carrying out fleet and depot reviews to quantify carbon reduction and transitions to EVs across their fleet of vehicles. This will allow the Council make the most effective transition to a fully electric fleet.

**The fleet operated by Newark and Sherwood District Council during the baseline FY 18/19 consisted of 64 vehicles. Updated information regarding the Council's fleet of vehicles has been provided for the FY 19/20, covering 131 vehicles. Information relating to vehicles for the FY 19/20 has subsequently been used to quantify this opportunity.*



Pathway to target

Analysis shows that the identified projects could **reduce the Council's emissions by 1,613 tCO₂e by 2035.**

The pathway includes the expected decarbonisation of the national grid. (The carbon intensity of grid electricity is decreasing as the proportion of electricity generated from renewables increases and conventional fossil-fuel power generation is phased out.) From an emissions perspective this increases the attractiveness of electricity as a fuel source and is a significant contributor to the Council's expected emissions reduction.

Key points in the pathway include:

2020 / 2021 – LED rollout and Solar panel installation

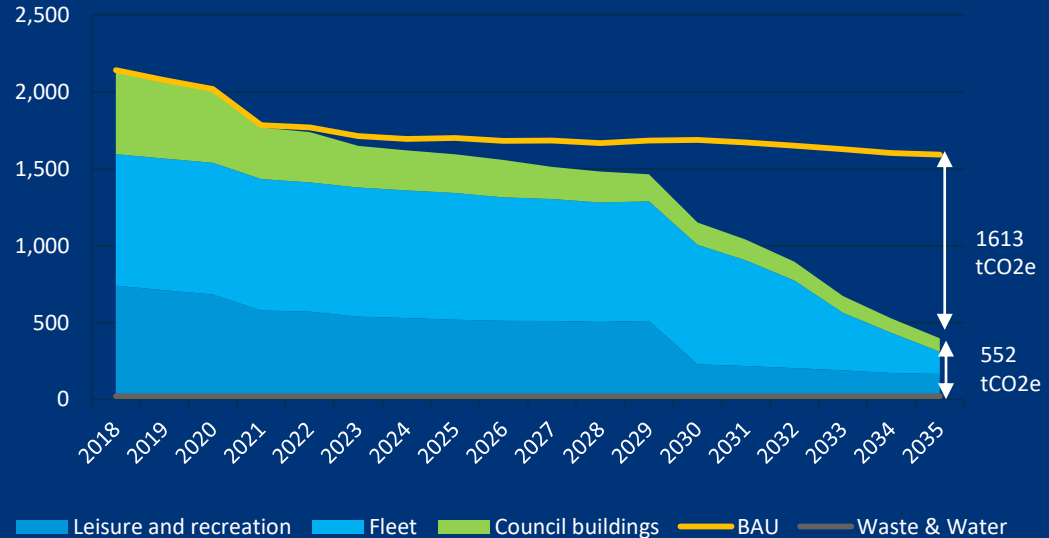
2022 to 2029 – Transition fleet to electric vehicles, waste management improvements

2029 / 2030 – Heat pump installation

The two highest impact projects – fleet electrification and installation of a GSHP at Newark Sports and Fitness Centre – both involve the displacement of fossil fuel with electricity. **Electrification will be critical for the Council to achieve their decarbonisation target.**

However, the electrification of the conventional technologies (e.g. vehicles, gas boilers) often requires supplementary measures and infrastructure, and should not be viewed as a like-for-like replacement. The Council will ensure it's aware of the requirements associated with electrification and plan a strategy for its' successful implementation across transport & heat.

Pathway to 2035 carbon neutral target





Gap to target

The scenario shows that NSDC will have approximately **552 tCO₂e** of residual emissions in 2035. This is a significant reduction on the baseline but still represents a gap to the Council's target. To close the gap further, the Council will:

Implement best practice across the estate

The scenario presented does not account for incremental progress in energy efficiency, building controls, and behavioural shifts. NSDC will consider a review of building management systems (BMS), end-of-life procurement guidelines, and employee engagement to optimise the use of assets under the Council's control. NSDC will ensure their climate emergency target is imbedded into broader Council policy and processes, so that no other activity is inadvertently having a detrimental effect on reaching the target.

Additions to the estate

Additions and/or changes to the estate will be captured in the Council's reporting. If the Council is involved in any new build projects, the energy performance of the building will be a core component throughout the design, procurement, and construction phases of the project.

Offsetting

Even under an extreme decarbonisation pathway, it is likely that NSDC will still have some residual emissions in 2035. To address this the Council will consider the formation of a robust offsetting strategy with high quality credits, to match these residual emissions. The exact level of offsetting required by NSDC is still not clear and guidance is expected to progress between now and 2030. (The World Resource Institute and the Carbon Trust are developing a new accounting standard for GHG removal, which is due for public comment in 2021). Therefore at this stage, the Council commits to developing an offsetting strategy as the sector develops, including the principles of:

- a. **Reductions before offsetting.** Offsetting should only be explored after efforts to achieve reductions within an organisation's emission boundary have been explored.
- b. **Additionality.** The reductions achieved should be additional to what would have happened in the absence of the project.





Other carbon reduction opportunities

Newark and Sherwood District Council's Indirect Emissions

The Carbon Trust has identified other emissions that occur within the Council's value chain, but are outside of the Council's direct control (called Scope 3). These emissions were a total of **866 tCO₂** in 2018/19.

For many organisations the majority of their greenhouse gas (GHG) emissions lie outside their own operations in their Scope 3.

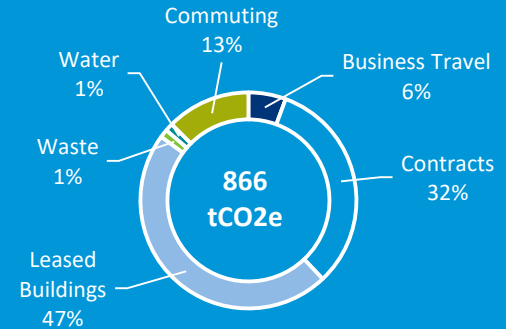
Measuring Scope 3 emissions can allow organisations to:

- Assess where the emission hotspots are in their supply chain;
- Engage suppliers and assist them to implement sustainability initiatives;
- Improve the energy efficiency of the products they use;
- Positively engage with employees to reduce emissions from business travel and commuting.

The **indirect nature of Scope 3 emissions make primary data harder to obtain**. Where actual data is not available, benchmarks and/or proxies are often used to approximate emissions. Additionally, as emission reductions are ultimately reliant on a third party, there are fewer direct actions that a reporting organisation can take to reduce their indirect emissions.

Due to the above factors, emissions have only been included in the Council's target where the data is robust and therefore an emission reduction can be demonstrated (waste and water). For other emission sources in the Council's Scope 3 actions have been identified to improve data collection and measurement. These actions will be included in the Emissions Reduction Action Plan.

Newark and Sherwood District Council Scope 3 breakdown



Emission sources in the Scope 3 footprint:

- Council procured goods (e.g. paper) and services (e.g. construction contracts)
- The energy consumption in leased buildings owned by the Council but operated by a third party
- Companies that the Council holds an equity investment in
- Employee commuting to work
- The extraction, production, and transportation of fuel and energy consumed by the Council
- Disposal and treatment of waste generated by the Council (including water)
- Emissions associated from business travel

Other carbon reduction opportunities

Leased buildings

Leased buildings are buildings that are owned by Newark and Sherwood District Council, but leased to and operated by a third party. Therefore NSDC has less control over the emissions of these buildings.

The total emissions from leased buildings contribute **408 tCO₂e** to the Council's carbon footprint. This calculation has been based on floor area, with a proxy applied for the type of building to calculate emissions. Actual data from leaseholders will give a much more accurate picture of the emissions associated with these buildings.

Data collection programme



It is recommended that Newark and Sherwood District Council work with their leaseholders to establish a data collection programme that will improve the understanding of consumption on these sites. Through a programme of engagement, they can then work with leaseholders to implement carbon reduction measures. Primary measures should be:

Building Fabric Upgrades

LED Lighting

Solar PV

Electrification of Heat

Encourage uptake of green tariffs

Contracts

The emissions associated with all contracts totals **598 tCO₂e**, accounting for 18% of total NSDC emissions.

For the 2018/19 carbon footprint, all figures were calculated based on the monetary value of the contract and an economic sector proxy.

Data collection programme



It is recommended that Newark and Sherwood District Council work with their suppliers to establish a data collection programme that will improve the understanding of the emissions associated with the different contract activities. If suppliers are required to disclose their emissions to the Council, this will help propagate GHG emissions throughout the supply chain.

Collaboration with other Local Authorities and Agencies

Newark and Sherwood District Council will also work with other local authorities and agencies to identify policy areas where reductions may be possible. For example, with planning.

Other carbon reduction opportunities

Business travel and Commuting

Total business mileage and commuting emissions were estimated to be **156.6 tCO₂e**, approximately 4% of the Council's total footprint.

Opportunities to reduce the emissions associated with both these activities largely evolves around reducing the total journeys and mileage being completed by Council employees. The Covid-19 pandemic has started to change working patterns and reduce commuting, through increased remote working. Employee travel can be reduced through:



Remote working



Car share incentives



Encouraging public transport



Employee engagement



Video conferencing

Waste Management

The waste generated by the Council's buildings was 499 tonnes in 2018/19, producing **10.6 tCO₂e**. Waste and water is included in the Council's carbon neutral target as the data available for these emissions is good. Progress towards reducing emissions in waste and water will be tracked as part of the progress against this target.

Currently 76% of the Council's waste by mass is incinerated. To reduce emissions as a result of waste disposal, a waste management protocol following the simple waste hierarchy of 'Reduce, Reuse, Recycle' should continue to be implemented and a new target set beyond the Council's current strategy (2006-2020).

Indicative reductions from improved waste management

Current waste practice

Total waste to incineration – 499 tonnes

Emissions produced – 10.6 tCO₂e

If a 20% reduction was applied to landfill waste

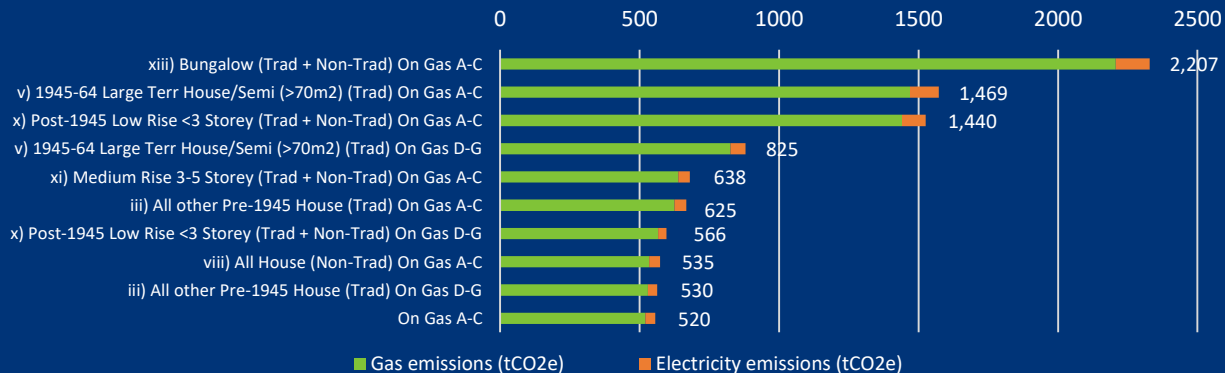
Total waste to incineration – 399 tonnes (saving of 100 tonnes)

Emissions produced – 8.5 tCO₂e (saving of 2.1 tCO₂e)



- Newark and Sherwood Homes (N&SH) was brought back into Council control in early 2020 – the same time at which work on this strategy and data collection was being undertaken. Whilst the emissions from Council owned housing were not included in the carbon neutral target, it is important that these emissions are addressed as part of the decarbonisation of the District.
- The carbon emissions from the Council owned housing stock was a total of **17,130 tCO₂e for 2018/19**. This includes the emissions associated with gas and electricity consumption across 5467 properties, alongside emissions associated with 67 vehicles, previously owned by Newark and Sherwood Homes.
- 81% of emissions from N&SH activities are associated with **gas consumption** across the housing stock. **Over 5000** of the properties are currently connected to the **gas grid**.
- As the Council seeks to reduce the emissions associated with the housing stock, it will be vital that **sources of heat are electrified** through the use of technologies such as **Ground/Air Source Heat Pumps**, alongside other measures. The electrification of heat sources therefore plays a crucial role in the proposed decarbonisation strategy for housing.

Top 10 highest emitting Archetypes across Newark and Sherwood Homes



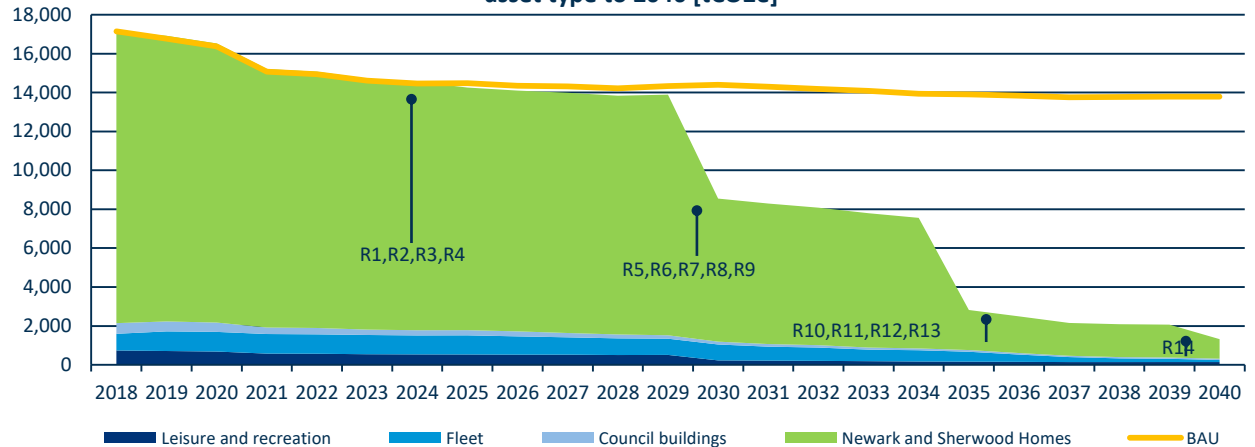


The Carbon Trust undertook analysis to show an indicative pathway of how emissions from the Council's housing could be reduced if a range of decarbonisation measures were rolled out to 2040.

Some dwellings are already fully powered by renewables. Other measures included the installation of Solar PV, installation of Heat Pumps, roll out of LED lighting and double glazing and insulation.

This indicative pathway shows how the current housing could improve its energy efficiency and heating. A full feasibility study is required to assess the financial implications. Actions to decarbonise the housing stock will be included in the Emissions Reduction Action Plan.

Indicative pathway for decarbonisation of NSDC housing stock, showing emissions by asset type to 2040 [tCO₂e]



Phasing of carbon reduction project opportunities*

2025 Implementation Year

- R1: Ambient Ground Loop Heat Pumps & EE measures
- R2: Ambient Ground Loop Heat Pumps & EE measures
- R3: Individual ASHPs average size 5kW
- R4: Individual ASHPs average size 6kW

2030 Implementation Year

- R5: Individual ASHPs 8kW
- R6: Individual ASHPs average size 8kW
- R7: Package of insulation and glazing measures
- R8: Whole house deep retrofit to zero energy standard
- R9: Package of insulation and glazing measures

2035 Implementation Year

- R10: Shared ambient loop heat pumps
- R11: Individual ASHPs 6kW and EE measures
- R12: Individual ASHPs and EE measures
- R13: Whole house retrofit, ASHP, Solar PV and Battery Storage

2040 Implementation Year

- R14: Shared ambient loop GSHP and EE measures

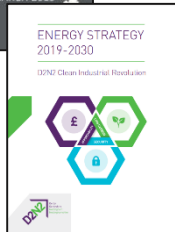
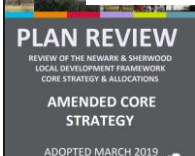
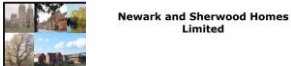
* Carbon reduction measures have been tailored to the current Archetypes present across N&SH.

Links to broader Council policies & strategies

The Climate Emergency links to a range of other policies, strategies and initiatives that the Council has already implemented. Some key links, and recommendations on how the strategies can be aligned are set out below:



NSDC Housing Asset Management Strategy



Strategy	How this links to the Climate Emergency Strategy	Recommendations to enhance action in the District & ensuring alignment with this Strategy
Newark & Sherwood Community Plan 2019 – 2023	The plan sets out what the Council intends to achieve over the next four years to improve residents' quality of life and enable those who live, work and invest in Newark and Sherwood to prosper and fulfil their potential. Includes actions for accelerating the supply of new homes, improving transport infrastructure and enhancing the District's natural environment.	A carbon emissions assessment of the activities set out in the Community Plan would be helpful to understand whether the activities are contributing to an increase of carbon emissions in the District and drive low carbon options to be considered for infrastructure and housing construction.
Asset Management Strategy 2016 – 2026	The Asset Management Strategy highlights that the Council's assets must be continually maintained to meet wider community and environmental agendas. The plan aims to improve the energy efficiency of homes, this includes where possible the identification of opportunities to utilise renewable energy sources and associated technology to reduce carbon emissions.	The Asset Management Strategy should be aligned with the emissions reductions required by the Council's target, in particular for Newark and Sherwood Homes. More detailed work will be required to understand the most cost effective carbon reduction opportunities for N&SH housing stock.
Newark & Sherwood's Local Development Framework 2019	Sets the Local Development Framework for the District, including the Core Strategy DPD, Site Allocations DPD and Wind Energy SPD. Includes Core Policy 10 in relation to the District's commitment to tackling climate change.	In line with the LDF review timescales, ensure policies that drive the highest possible climate mitigation and resilience for development across the District.
D2N2 Energy Strategy 2019 – 2030	Sets a 2030 vision for the D2N2 LEP to be a national pioneer in clean growth and test-bed for work class energy systems innovation.	The Council could work with the D2N2 LEP to identify local businesses that could drive clean growth and pilot local energy projects that would be well suited to the Newark and Sherwood District.



Governance, Monitoring and Reporting

Monitoring and Reporting

- **All of the actions detailed in this Strategy have been included in an Emissions Reduction Action Plan**, with an assigned timeline and ownership. This includes actions to meet the target, to progress the decarbonisation of Council owned housing and improvements required to data collection for indirect emissions.
- The Council's Carbon Footprint will be updated on an annual basis. Progress against the Emissions Reduction Action Plan monitored regularly and **reported to the Policy and Finance Committee on an annual basis**.
- In addition to monitoring progress towards the target, officers will continually monitor how local plans and policies can support the ability of the Council to reach their target.

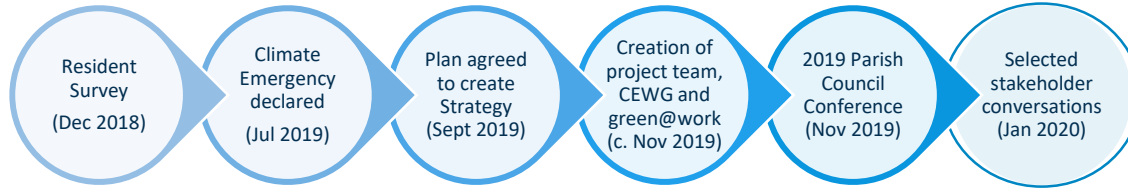
Governance

- The Council's **Climate Emergency Working Group** was established in July 2019 with elected member representatives (Chairs and Vice Chairs) from the Leisure & Environment, Homes & Communities, Economic Development, and Policy & Finance committees to oversee the production of this Strategy.
- The Council recognises the importance of having the correct oversight and organisational procedures in place to maintain a focus on carbon reduction over time and manage the implementation of this Strategy. In order to embed this Strategy in Council activities, instead of maintaining the separate CEWG, going forward overall responsibility for the Climate Emergency Strategy and Emissions Reduction Action Plan will sit with the Policy and Finance Committee, with reporting to other Committees as required.
- **Knowledge sharing and integration across internal council-led teams will be crucial to success**, as will initiatives that can be driven forward by the residents, organisations and businesses across the borough.
- To this end, the Council has created a new role of Environmental Policy and Project Officer to develop and implement environmental working, with oversight from the Director of Communities. This new role will also seek to engage with stakeholders. A project team of officers has been created to support the creation of this strategy. The project team will be refocused to support the delivery of relevant actions.



Newark and Sherwood District Council recognises that effective engagement with a range of different stakeholders from across the Council and District will be a key facilitator towards successful climate emergency strategy.

Engagement to date



Next steps

In line with the Newark and Sherwood Community Plan objectives, the Council will:

- Build on previous engagement undertaken across the Council, such as the “Greener, Safer, Cleaner” and “Greening Newark and Sherwood” agendas, to develop an initial list of stakeholders to continually engage with.
- Complete internal in-depth stakeholder mapping exercise to identify, map and prioritise key stakeholders from across the Council. This will ensure that key stakeholder needs are identified and understood with the relevant resources being targeted effectively.
- Develop the appropriate tools to accurately plan and track all stakeholder interaction and store stakeholder information.



Appendix A – Calculating the carbon footprint

- In order to calculate a carbon footprint there are two primary inputs, the ‘activity’ or volumetric data and the associated emission factor. Activity data is the quantification of the action of the emission source, whether that be kWh of electricity consumed or kilometres driven by a vehicle. The emission factor is the metric of kg of CO₂e produced by one unit of the associated activity. Emission factors are provided for a range of activities by the department for business, energy and industrial strategy (BEIS); these factors are updated annually where required.
- Numerous other activities are more abstract and require a proxy to either transform the activity data in to a value that can be used with a BEIS emission factor, or a proxy emission factor to use with the available activity data. An example of the former would be using the floor area of a building as activity data, then benchmark data of electricity consumed per m² as a proxy and finally combine this with the BEIS emission factors. Another example is to use contract values (£) as activity data and a proxy economic based emission factor (in this case EEIO)

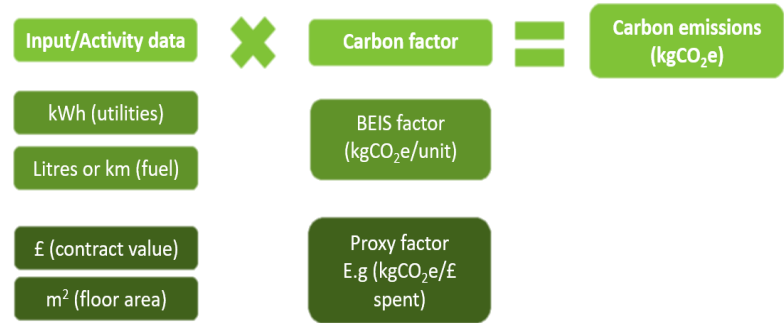


Figure X: Graphic detailing the general calculation methodology to arrive at carbon emissions

Environmentally Extended Input Output

- Environmentally Extended Input-Output (EEIO) factors use expenditure mapped to broad economic sectors to provide a proxy for carbon emissions. The methodology developed by the World Resources Institute and Carbon Trust, allows for the calculation of emissions produced for over 19,000 specific goods and/or services, which are linked to 430 broad economic sectors for which emission factors per pound (£) of expenditure are available.
- It should be noted that EEIO values provide emissions for sector specific goods/services within broad economic sectors but not for the exact individual goods/services. This means that although being able to provide a broad, first iteration emission value; it is not exact – further analysis of the operations of an individual goods/services are needed to determine a more precise footprint. EEIO factors should only be used where first hand activity data is unavailable / difficult to obtain. These factors have therefore only been used for the **councils procured goods and services**.



Appendix B – Scope breakdown of NSDC carbon footprint

Greenhouse Gas Protocol emissions included in carbon neutral target

Scope	Included Elements	Excluded elements
1	Organisation vehicles	
2	Purchased electricity	
3	Business Travel	Capital goods
	Waste & water generated/supplied and disposed of operations	Upstream transportation and distribution
	Purchased goods and services	Upstream leased assets
	Employee Commuting	Franchises (downstream) Investments (downstream)

NSDC emissions footprint for 2018/19

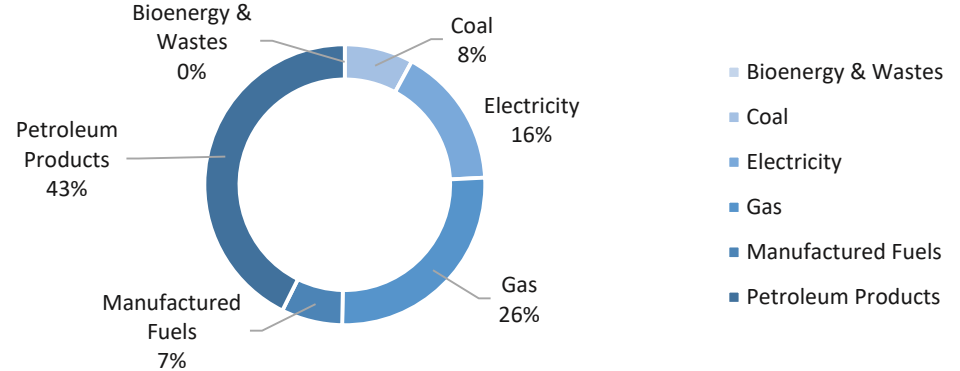
Source	% of total	Emissions [tCO ₂ e]
Electricity	30.4%	658.8
Fleet	39.6%	856.7
Gas	29.0%	628.0
Waste	0.4%	10.7
Water	0.4%	10.2
Total		2164.5

Appendix C – Scope breakdown of Newark and Sherwood District

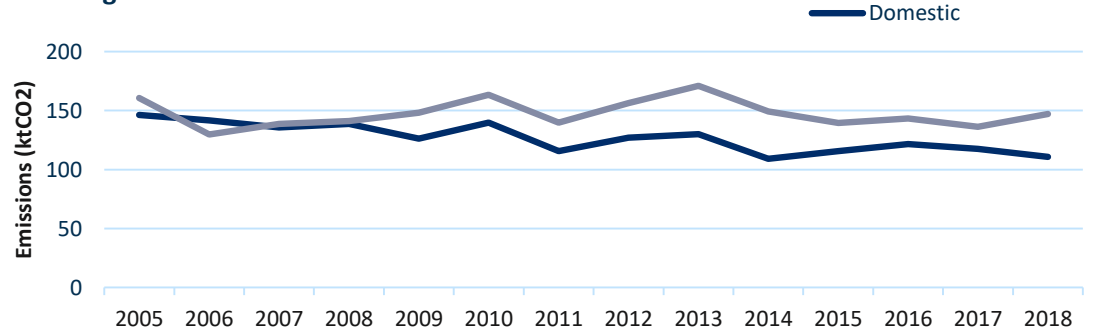
District emissions breakdown in 2018/19

This analysis calculates the sources of carbon emissions from residential and business across the Newark and Sherwood District, using data from the UK's Greenhouse Gas Inventory. The Inventory estimates the carbon dioxide emissions at local authority level across the UK.

In 2018/19 the total carbon footprint of the District was 987,800 tCO₂e, comprised of petroleum products (43%), gas (26%), electricity (16%), coal (8%) and manufactured fuels (7%).



Change in District emissions from 2005 to 2018



Emissions type	Sum of Emissions (ktCO ₂)
Bioenergy & Wastes	0
Coal	78.2158
Electricity	160.747
Gas	257.9206
Manufactured Fuels	69.4656
Petroleum Products	421.4506
Grand Total	987.7996



Appendix D – Emissions Reduction Action Plan

Please see the accompanying document.



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