

# Climate Change Topic Paper 2022



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## INTRODUCTION

- 1.1 Climate change is the defining issue of our time. It represents the biggest long-term challenge the world has ever faced. The effects of climate change are far reaching and will affect our natural environment, our economy and way of life.
- 1.2 This Topic Paper supports the South Tyneside Local Plan policies in addressing climate change effects in our Borough. The report provides borough-wide carbon emission trajectories and carbon budgets. The paper specifically addresses the emerging planning policy position within South Tyneside within the context of national planning legislation and guidance on climate change. It also details the sustainability considerations incorporated within the identification of spatial strategies and the development of planning policies within the Local Plan.

## CLIMATE CHANGE

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- 1.3 Since the 1800s, human activities have been the main driver of Climate Change, primarily due to burning fossil fuels like coal, oil and gas. This, along with clearing land and forests, landfill and increases in transport are having a detrimental impact on the planet.
- 1.4 Greenhouse gas concentrations are at their highest levels in 2 million years and these emissions continue to rise. As a result, the Earth is now about 1.1°C warmer than it was in the late 1800s. Our climate is changing around us faster than predicted with more frequent and extreme storms to unprecedented heatwaves. The last decade (2011-2020) was the warmest on record with 2015-2020 being the hottest years ever recorded. A changing climate impacts crop growth and human health and it places certain species at an increased risk of extinction. Global warming is not something that we can put aside and deal with in the future; the devastating impacts are being felt across the world right now.
- 1.5 While science tells us that Climate Change is irrefutable, it also tells us that it is not too late to change course towards a sustainable and brighter future. This will require fundamental transformations in all aspects of society, including how we grow food, use land, transport goods, and power our homes and businesses. By addressing the climate crisis we can deliver a diverse range of benefits, ranging from cleaner air and water, abundant affordable energy, true energy security and improved connection to the natural world.

1.6 Low-carbon technologies are already playing a significant role in the fight against climate change. These new and efficient technologies are helping to reduce emissions, creating a cleaner more sustainable world. At the same time, we are looking to the natural world to help provide solutions which take a holistic approach. Known as nature-based solutions, these interventions can sequester carbon, while supporting biodiversity and vital ecosystem services such as the provision of fresh water, clean air, food security, and, indirectly, improved livelihoods and wellbeing. Whilst technologies represent part of the solution, there is an important role for behavioural change towards more sustainable consumption and lifestyle practices. The places we live can be designed to facilitate this, with greater priority given to sustainable travel, better access to sustainable food, and systems that design out linear waste.

### INTERNATIONAL AGREEMENTS AND TREATIES

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- 2.1 There has been long standing international recognition that as a society, we need to tackle climate change and the United Kingdom has been a party to a range of international agreements. Whilst these agreements, technically, have no effect in domestic law, they do however provide a key starting point in setting the context for the role that the planning system and local plans can play.
- 2.2 **The United Nations Framework Convention on Climate Change**, sometimes called the Earth Summit, was signed in 1992. It had the objective of stabilising human greenhouse gas (GHG) emissions at a level that prevents dangerous climate change. The treaty created a framework that allowed binding agreements to be set and a method of monitoring the emissions of individual states. This led to **The Kyoto Protocol** in 2005, which put a binding obligation on the countries that ratified the treaty) to limit or reduce emissions of greenhouse gases between 2008 and 2012. The UK signed up to a second phase after that date. *The Bali Conference* in 2007 brought together over 180 countries to discuss how climate change should be addressed after the Kyoto Protocol ended. The result was the Bali road map, which called for “deep cuts in global emissions”.
- 2.3 **The Paris Agreement (2015)** is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century. More recently, this has been cemented by the Glasgow Climate Pact and the Paris Rulebook, agreed at COP26 (2021).

### NATIONAL LEGISLATION AND POLICY

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- 2.4 The key legislative provision in respect of climate change that bears directly on authorities in the preparation of local plans is 19 (1A) of the **Planning and Compulsory Purchase Act 2004** which states: that “Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change.”
- 2.5 The **Climate Change Act (2008)** commits the UK government by law to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050 to help mitigate impacts of future climate change. With energy use from the built environment accounting for a significant proportion of the UK's total carbon emissions, the Government has identified both the planning system and building regulations as having key roles to play.
- 2.6 The Climate Change Act requires the government to set legally-binding ‘carbon budgets’ to act as stepping stones towards the 2050 target. A carbon budget is a cap on the amount of greenhouse gases emitted in the UK over a five-year period. Budgets must be set at least 12 years in advance to allow policymakers, businesses and individuals enough time to prepare. Once a carbon budget

has been set, the Climate Change Act places an obligation on the Government to prepare policies to ensure the budget is met.

- 2.7 Amongst its provisions, **the Planning Act (2008)** introduced a requirement on local development plans to include policies which ensure that they make a contribution to both climate mitigation and adaptation.
- 2.8 **The Flood and Water Management Act (2010)** addresses the threats of flooding, coastal erosion, and water scarcity, exacerbated by climate change.
- 2.9 The **Planning and Energy Act 2008** sets out powers for local authorities to require a proportion of the energy need related to new development to be sourced in the locality of the development, through renewable or low-carbon generation. Local authorities also currently have the power to set energy efficiency standards for residential development. However, this is set to be repealed to make Building Regulations the sole authority regarding standards.
- 2.10 The revised **National Planning Policy Framework (NPPF)** (2021) provides a framework within which local plans are prepared. Paragraph 8 makes clear that ‘mitigating and adapting to climate change, including moving to a low carbon economy’ is a core planning objective. To be in conformity with the NPPF, local plans should reflect this principle, ensuring that planning policy clearly and comprehensively deals with climate change mitigation and adaptation. The NPPF also highlights climate change as a key part of strategic planning policy which local authorities are legally obliged to set out in their local plans.
- 2.11 Section 14 of the NPPF sets out the national objectives regarding climate change. Paragraph 152 underlines that tackling climate change and supporting the transition to a low carbon future is key and that the planning system should help to shape places in ways which support this move. Paragraph 153 expects local plans to take proactive approaches to mitigating and adapting to climate change in line with the Climate Change Act 2008 with regard to the implications for flood risk, coastal change, water supply, biodiversity and landscapes and the risk of overheating from rising temperatures. Amongst its measures, the NPPF requires:
  - Policies that support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts;
  - New development avoids increased vulnerability to the range of impacts arising from climate change and can manage the risks through adaptation measures (such as green infrastructure);
  - Through its location, orientation, layout and design, new development minimises energy consumption and reduces greenhouse gas emissions;
  - An increase in the use and supply of renewable and low carbon energy and heat plans;
  - Taking a positive approach by identifying suitable areas for renewable energy generation and its supporting infrastructure, and by maximising the opportunities for community-led and decentralised energy production;

- Having a holistic understanding of climate adaptation, ranging from flood risk to managing coastal change.
- 2.12 Elsewhere, the NPPF addresses several adaptation-related policy issues:
- Section 8 outlines the wider role of high-quality open spaces in delivering environmental benefits including addressing climate change.
  - Section 9 emphasises the need to encourage sustainable transport modes and locate development with a view to reducing the need to travel;
  - Section 11 recognises the multi-functional role undeveloped land can perform including flood risk mitigation cooling/shading and carbon storage.
  - Section 12 highlights the role of trees in urban environments and their role in helping to mitigate and adapt to climate change.
- 2.13 The **National Planning Policy Guidance (NPPG)** introduced in March 2014 identifies addressing climate change as a core land use planning principle that should be reflected in Local Plans and states that spatial planning should support the delivery of appropriately sited green energy and influence the emission of greenhouse gases (Climate Change, para. 1). The NPPG notes that every area will have different challenges and opportunities for reducing carbon emissions from new development and identifies information on carbon emissions at local authority level published by DECC as valuable in informing emission reduction options (Climate Change, para. 7).
- 2.14 The NPPG gives specific examples of climate change mitigation and adaptation actions:
- Providing opportunities for renewable and low energy technologies and for decentralised energy and heating
  - Promoting low carbon design approaches to reduce energy consumption in buildings
  - Considering future climate risks when allocating development sites
  - Considering the impact of and promoting design responses to flood risk
  - Considering availability of water and water infrastructure for the lifetime of the development and design responses to promote water efficiency and protect water quality
  - Promoting adaptation approaches in design policies for developments and the public realm; and
  - Integrating mitigation and adaptation actions though maximising summer cooling through natural ventilation in buildings and avoiding solar gain, district heating networks that include tri-generation or through the provision of multi-functional green infrastructure.
- 2.15 The impact of climate change needs to be taken into account in a realistic way. In doing so, local planning authorities should consider:

- Identifying no or low-cost responses to climate risks that also deliver other benefits, such as green infrastructure that improves adaptation, biodiversity and amenity
- Building in flexibility to allow future adaptation if it is needed and
- The potential vulnerability of a development to climate change risk over its whole lifetime.

## LOCAL POLICY – CLIMATE CHANGE STRATEGY/ EMERGENCY DECLARATION

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- 2.16 South Tyneside Council declared a Climate Change Emergency in July 2019, recognising its role as part of the global community, working together to limit the impacts of climate change by being proactive locally and demanding action from Government, which commits to a sustainable future.
- 2.17 South Tyneside Councils Climate Change Emergency Pledge will support this delivery by:
- Declaring a “Climate Emergency”
  - Taking all necessary steps to make South Tyneside Council carbon neutral by 2030
  - Leading by example by establishing South Tyneside Council as a champion for a carbon neutral future for the Borough. This includes using the Council’s advocacy role to influence actions across all our communities and across the region that promotes carbon reductions
  - Calling on the Leader and Chief Executive to write to the Government to pass the necessary legislation and provide the powers and resources necessary to deliver the Councils climate change goals
  - Producing a comprehensive Climate Change Strategy that sets clear and unambiguous targets for carbon reductions, including interim targets, support by a five-year Action Plan
  - Preparing a report for Full Council on at least an annual basis setting out performance against agreed targets, recommending any amendments in the published Action Plan
  - Convene a “Climate Emergency” summit to raise awareness on the impacts of climate change, providing expert support and advice and seek commitments from partners and stakeholders
  - Ensure that all Council strategic decisions, policies and strategies are in line with the shift towards carbon neutrality by 2030
- 2.18 The [Sustainable South Tyneside Strategy and Action Plan \(2020-2025\)](#) provides a platform of collective actions and a shared vision for a successful and vibrant future supported by a prosperous and flourishing natural environment. The Strategy and Action Plan is driven by our climate change objectives, in which the Council strives to become carbon neutral, while ensuring we play our part in meeting wider National and International targets.
- 2.19 South Tyneside Council understands its position well in relation to a clear emission reduction programme. Our sustainable ambitions shape the strategic decisions being made, embedding a culture of “climate first” across all Council activities.



- 2.20 The Climate Change Strategy provides a framework for South Tyneside Council, detailing the necessary steps and actions that must be taken to drive and deliver change, reducing emissions from our buildings and operations, along with the services we provide. The strategy commits to a wide range of actions, including areas that investigate and implement, where feasible new and sustainable sources of on-site energy generation and supply.
- 2.21 The strategy and supporting five-year action plan sets-out the Council's objectives across 11 key delivery themes:
- Reducing Emissions from Council Buildings
  - Street lighting
  - Transportation and Staff Travel
  - Environment and Biodiversity
  - Schools
  - South Tyneside Homes Operations
  - Procurement
  - Policy
  - Adaptation
  - Cultural Change and Awareness
  - Championing a Carbon Neutral Future
- 2.22 The Council's aspirational target of carbon neutrality by 2030 will be extremely challenging. To achieve this target the Council has set interim reduction targets of:
- 25% reduction within 3 years (March 2023)
  - 50% reduction within 5 years (March 2025)

## ROLE OF PLANNING IN CLIMATE CHANGE

- 3.1 Planning policy and decision-making can make a significant contribution to reducing these levels of carbon emissions, through its influence over spatial planning, the energy performance and design of new development, transport, and green infrastructure. Effective local and strategic plans can help deliver sustainable development and help address the challenges that climate change brings and can also help communities reap the economic, social and environmental benefits of such action in the long terms. Development and infrastructure brought forward through the local plan must be resilient and adaptable to climate changes in order to avoid costly repairs, retrofitting or rebuilding further down the line.
- 3.2 Local Plans can encourage more sustainable development from the small scale (e.g., improving energy and water efficiency of dwellings), to the strategic (e.g. encouraging the sustainable distribution of growth, increasing accessibility and reducing the reliance on carbon emissions from private and public transport).
- 3.3 Local plans must be consistent with national planning policies in terms of delivering both sustainable development and tackling climate change. All aspects of sustainable development fall within two categories:
  - Climate Change Mitigation: which refers to the Plan’s measures to prevent further climate change. We can do this mainly by reducing the amount of greenhouse gas emissions we produce.
  - Climate Change Adaptation: which refers to the adjustments that can be made to natural or human systems in response to the actual or anticipated impacts of climate change, to mitigate harm or exploit beneficial opportunities.
- 3.4 As well as ensuring development proposals will mitigate and adapt to the impacts of climate change, Local Plans should reflect the local authority’s overarching aims in building up resilience to climate change and managing long term risk. Action on climate change should be an integral part of plan-making and should be embedded and integrated in policy preparation. Local Planning Authorities are therefore likely to need to evaluate planning applications through a climate change lens and ensure future local plans clearly set out the decision-making framework.

## CLIMATE CHANGE MITIGATION

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- 3.5 A key element of planning policy is to reduce carbon emissions across all areas it can influence. While the framework for reducing emissions is set out through national guidance, it is acknowledged that much of the implementation will need to be at the local level and that Local Plans should set high expectations in all areas within its control that affect climate change.
- 3.6 The core purpose of planning is to create places that enable people to live happy and healthy lives. It is not possible to achieve this aim without addressing both climate change mitigation and

climate change adaptation. Many of the adverse impacts of climate change, such as extreme heat, flooding or water scarcity, vary spatially but will result in costs to businesses and householders. Solutions to these problems need to be developed locally. Planning can do this directly through, for example:

- Consenting and delivering low carbon and renewable-energy developments, while preventing fossil fuel extraction
- Encouraging a wide range of behavioural change, such as enabling people to make personal choices through, for example, the creation of green and walkable streets
- Locating development as near to existing key services and facilities as possible
- Delivering decentralised energy supplies and promoting its use in existing buildings
- Ensuring new development are as energy efficient as possible

3.7 Planning offers the opportunity to set and implement the long-term strategic vision necessary to deal with impacts such as sea level rise – and, crucially, it operates within a local democratic context, allowing communities to participate. Planning is a key part of our national survival system. It should embed the principles of net zero carbon and climate resilience at all levels; nothing should be planned without having successfully demonstrated that it is fit to take its place in a net-zero emissions future.

## **CLIMATE CHANGE ADAPTATION**

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3.8 Planning policy should also aim to ensure development adapts to the impacts of climate change such as more frequent flooding, higher summer temperatures and worsening air pollution.

3.9 Adapting to climate change addresses consequences and can include:

- Considering future climate risks when allocating development sites to ensure risks are understood over the development’s lifetime;
- Determining the location, scale, mix and character of development to ensure that its density, layout, building orientation and landscaping make it resilient to climate impacts
- Considering the impact of and promoting design responses to flood risk for the lifetime of the development;
- Considering availability of water and water infrastructure for the lifetime of the development and design responses to promote water efficiency and protect water quality;
- Ensuring that the design of buildings helps them remain cool in summer and warm in winter.

## IMPACTS OF CLIMATE CHANGE – NATIONAL AND LOCAL

- 4.1 Climate Change is already having visible effects on the world with rainfall patterns changing, and sea levels rising. These changes can increase the risk of heatwaves, floods, droughts, and fires.
- 4.2 Climate Change will increase the risk of different problems around the world. Though developed countries produce most greenhouse gas emissions, developing countries are predicted to see most of the severe effects. With fewer resources to adapt to these changes, the impact on people in developing countries is expected to be higher. It is also recognised that the most deprived within the UK will be worst hit by climate change, with less resilience to cope with its impacts.
- 4.3 Global climate is projected to continue to change over this century and beyond. The magnitude of climate change beyond the next few decades depends primarily on the amounts of heat-trapping gases emitted globally, and how sensitive the Earth's climate is to those emissions.
- 4.4 Across the UK, changes we expect to see to our climate will include:
- Warmer and wetter winters
  - Hotter and drier summers
  - More frequent and intense weather extremes
- 4.5 This is likely to result in changes to the intensity of some weather types we experience today and a shift from our usual weather patterns, including:
- Increased temperature in coastal seas around the UK
  - Less frost and snow
  - Longer and more frequent warm and hot spells
  - Shorter and less frequent cold spells
  - Breaking many high temperature records

### INCREASED TEMPERATURE

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- 4.6 Climate change is causing warming across the UK. All of the UK's ten warmest years on record have occurred since 2002. Heatwaves, like that of summer 2018, are now 30 times more likely to happen due to climate change.
- 4.7 Extreme weather could become more frequent and intense. Not every summer will be hotter than the last – but temperature records are expected to be regularly broken, while heatwaves are likely to be longer and happen more often.
- 4.8 The Met Office climate projections for the UK indicate significant temperature rises in the decades ahead for both winter and summer, with the greatest increases in the South. The hottest day recorded in the UK came in July 2019, with 38.7°C measured in Cambridge. If global average

temperatures rise by 2°C above pre-industrial levels, days at least as those recently recorded could become more frequent and widespread. A 4°C rise in global average could see parts of the UK reaching temperatures above 42°C.

## CHANGES IN RAINFALL PATTERN

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4.9 The UK climate projections suggest increases in winter rainfall in most parts of the country, as well as drier summers. Currently, over a quarter of the UK has 20 or more days without rain each summer month. This could grow to more than half the country if we reach 4°C global warming. Summer rains may also become heavier in many places, although total rainfall is expected to decline.

## WIDER IMPLICATIONS TO SOUTH TYNESIDE

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4.10 The impacts of climate change in South Tyneside and changes in our local weather will have implications on our:

- **Transport Infrastructure** - Higher temperatures, more severe storms and flooding, sea level rise, and extreme winds will impact local transport infrastructure affecting reliability and capacity, increasing road and rail disruption, and damage to energy and internet networks.
- **Buildings including schools, hospitals and businesses** - Increased temperature and precipitation, extreme winds and flooding will impact our buildings: building fabric will be affected by damp due to flooding and intense rain; structural damage due to high winds and subsidence caused by drought. While warmer summers will cause a greater need for cooling, increasing the energy demand.
- **Health and Wellbeing** - Direct impacts of climate change such as flooding and heatwaves and indirect impacts such as increased air pollution or infectious diseases are some of the likely impacts on health and wellbeing.
- **Animals and Plants** - Increased temperatures, flooding and extreme weather events will affect local biodiversity in many ways including changes in distribution and abundance, the timing of seasonal events and habitat, above all changing the composition of our plant and animal communities. Our coastal habitats are particularly sensitive to climate change due to sea level rise.
- **Food quality and availability** - The rearing of animals or growing of crops is very weather sensitive. Extreme weather conditions and changes to average daily temperatures and rainfall patterns associated with climate change will have a large impact on agricultural production and livestock farming.

4.11 Global changes will also have a local impact. South Tyneside may be affected by:

- **Food shortages** - As a changing climate affect global food production, South Tyneside may see food supplies affected.

- **Mass immigration** - More than 1 billion people face being displaced within 30 years as the climate crisis and rapid population growth drive an increase in migration.
- **Further pandemics** - Degraded natural environments increase the likelihood of new virus outbreaks around the world.
- **Financial Risks** –Climate-related risks may also affect how the global financial system responds to shocks, which will have a knock-on effect in the UK banking system.
- **Loss of land to sea-level rise** – Coastal areas will be particularly vulnerable.

## CARBON BUDGET AND CARBON TRAJECTORIES

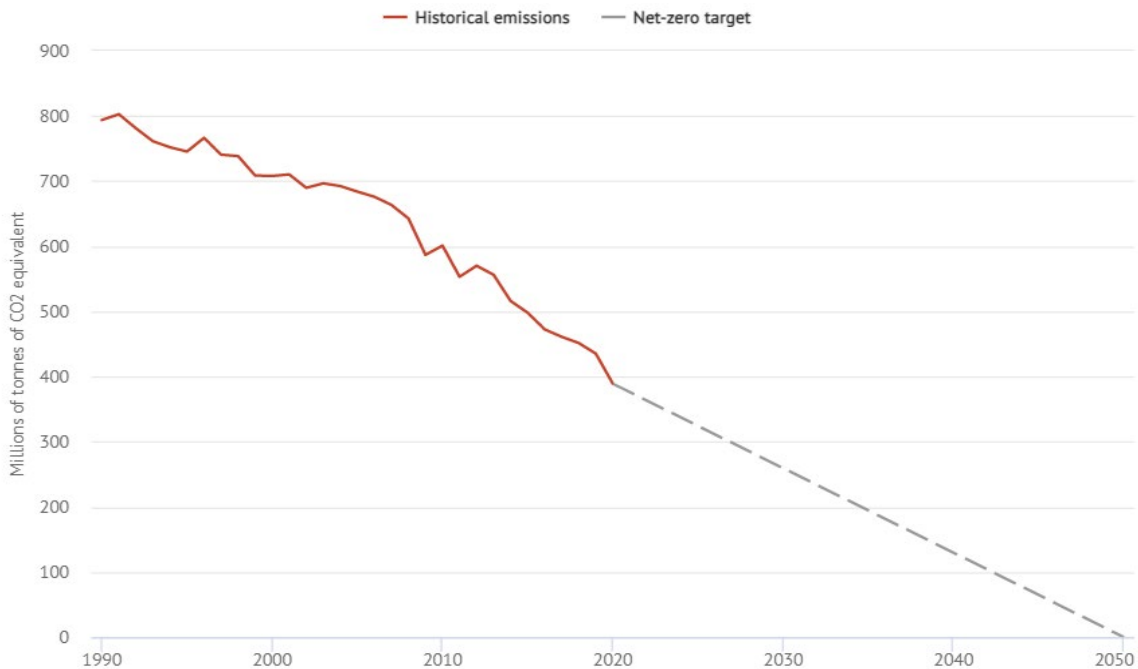
### UK EMISSION POSITION

- 5.1 In 1990, the UK's greenhouse gas emissions stood at 794m tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e). This is conventionally taken as the baseline for the UK's climate goals, including the net-zero target under the Climate Change Act and the international pledge under the Paris Agreement.
- 5.2 The UK's net-zero target is to cut greenhouse gas emissions to "at least 100%" below 1990 levels by 2050. (It should be noted that the target currently does not directly include emissions from international aviation and shipping).
- 5.3 UK emissions have fallen 51% below 1990 levels over the past 30 years (Fig 5.1). This is halfway to net-zero, with another 30 years to reach the target (progress would have been slightly slower if the figures included international aviation). The target also excludes emissions associated with UK consumption of goods and services imported from overseas).

**Fig 5.1** UK greenhouse gas emissions 1990 - 2050

The UK is now halfway to net-zero greenhouse gas emissions

Emissions in 2020 were 51% below 1990 levels

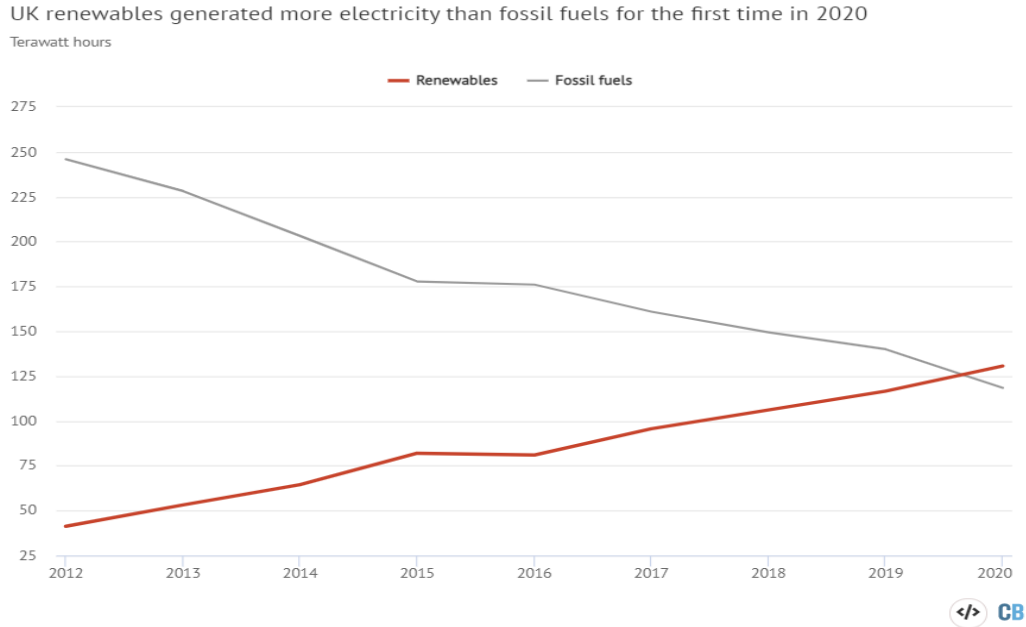


UK territorial greenhouse gas emissions 1990-2020, millions of tonnes of CO2 equivalent, as measured in the national inventory, and the net-zero target for 2050. The inventory excludes international aviation and shipping, which the [Climate Change Committee recommends](#) should be included in the UK's target. The inventory also excludes emissions associated with the [consumption](#) of goods and services made overseas, but imported into the UK. Source: [Emissions](#) data from the UK [Department for Business, Energy and Industrial Strategy](#) (BEIS) and Carbon Brief analysis. Chart by Carbon Brief using [Highcharts](#).

- 5.4 The fall in emissions between 1990 and 2019 have been to major changes in just three key areas, which collectively account for approximately 90% of the reductions, this includes:
- Electricity supplies that no longer rely on coal (approx. 40%)
  - Cleaner industry, including manufacturing and waste industry emissions controls on landfill methane, halocarbons and nitrous oxide, as well as more efficient industrial processes and a shift away from carbon-intensive manufacturing (approx. 40%)
  - A smaller and cleaner fossil fuel supply industry, with lower methane emissions from coal mines and leaky gas distribution pipes (approx. 10%)
- 5.5 Slower progress has been made on the gas used to heat homes and offices, which by 2019 made up a fifth of the UK's emissions. Meanwhile, almost no progress has been made on transport, which was by 2019 responsible for more than a quarter of the UK's emissions and was the single largest contributor.
- 5.6 The electricity sector is where the largest majority of UK emissions cuts have occurred over the past decade, during which the country's power supplies have been transformed. The UK has significantly expanded its capacity of windfarms, solar parks and bioenergy plants, meaning the 43% share of electricity generated by renewables was larger than from fossil fuels for the first time in 2020.



**Fig 5.2 Electricity generation in the UK– fossil fuels and renewables**



UK electricity generation from renewables (red) and fossil fuels (grey) from 2012-2020, terawatt hours. Source: BEIS and Carbon Brief analysis of data from BM Reports. Chart by Carbon Brief using Highcharts.

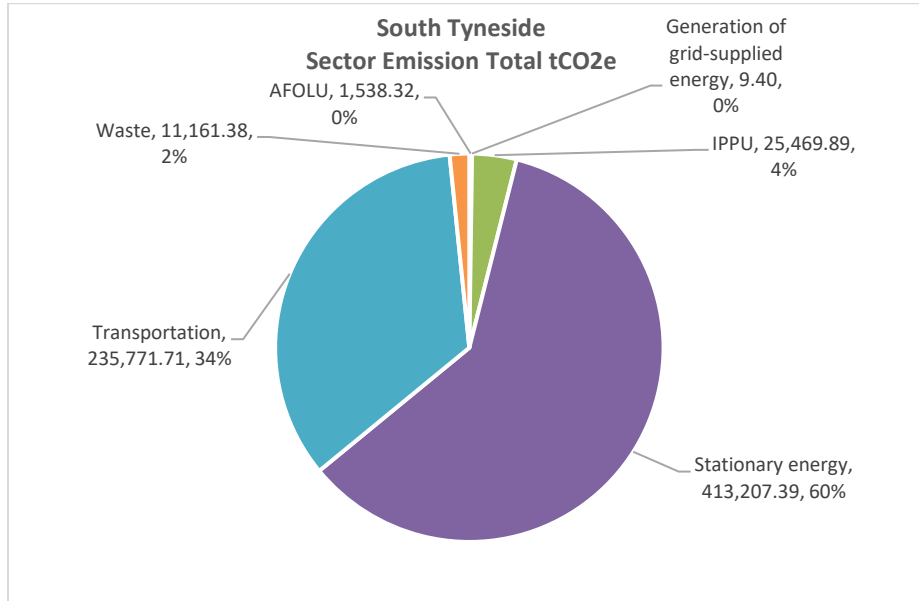
BEIS and Carbon Brief Analysis 2021

## SOUTH TYNESIDE EMISSION POSITION

- 5.8 A local authority focused emission tool has been used to provide a greenhouse gas emission (GHGs) inventory following the Global Greenhouse Gas Protocol for South Tyneside. The tool helps to provide an understanding of the current emission position, while supporting the development of credible decarbonisation pathways in line with emission reduction targets.
- 5.9 In 2018, South Tyneside's emission position was 687,158.09 tCO<sub>2</sub>e (Fig 5.3). Emissions are focused around key headline areas, which include:
- **Stationary energy** - greenhouse gas emissions generated through the combustion of fuel in buildings, manufacturing industries, construction processes and power plants. This includes fugitive emissions. Fugitive emissions relate to emissions lost due to leakages that occur when extracting, processing and transporting fossil fuels.
  - **Transportation** - greenhouse gas emissions produced through the combustion of fuel or use of electricity during journeys travelled by road, rail, air or water for inter-city and international travel.
  - **Waste** - emissions relating to the disposal and treatment of solid waste and wastewater which produces greenhouse gas emissions through incineration, aerobic and anaerobic decomposition.

- **Industrial Processes and Product Use (IPPU)** - emissions produced from the physical or chemical transformation of materials.
- **Agriculture, Forestry and Other Land Use (AFOLU)** - greenhouse gas emissions produced through methane created by livestock, nutrient management for agricultural purposes, and land use change altering soil compositions.

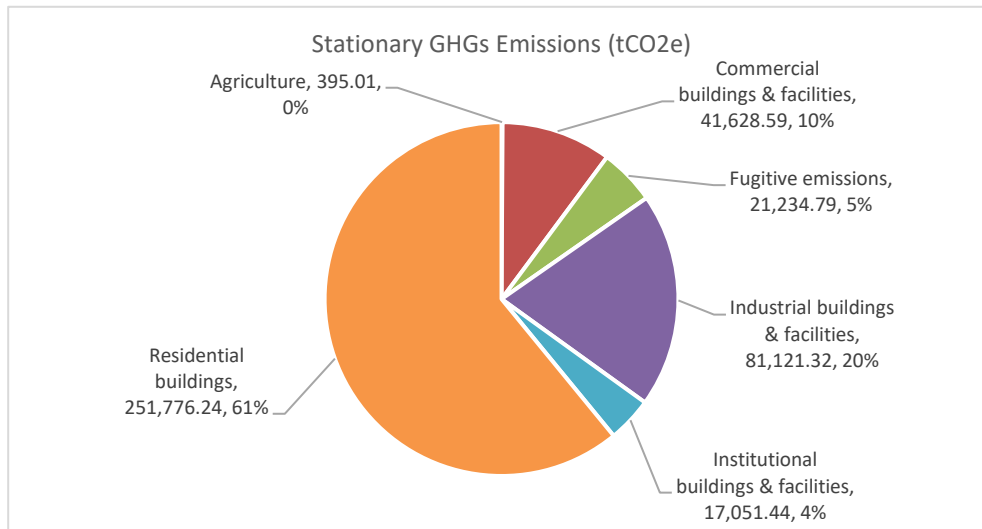
**Fig 5.3**



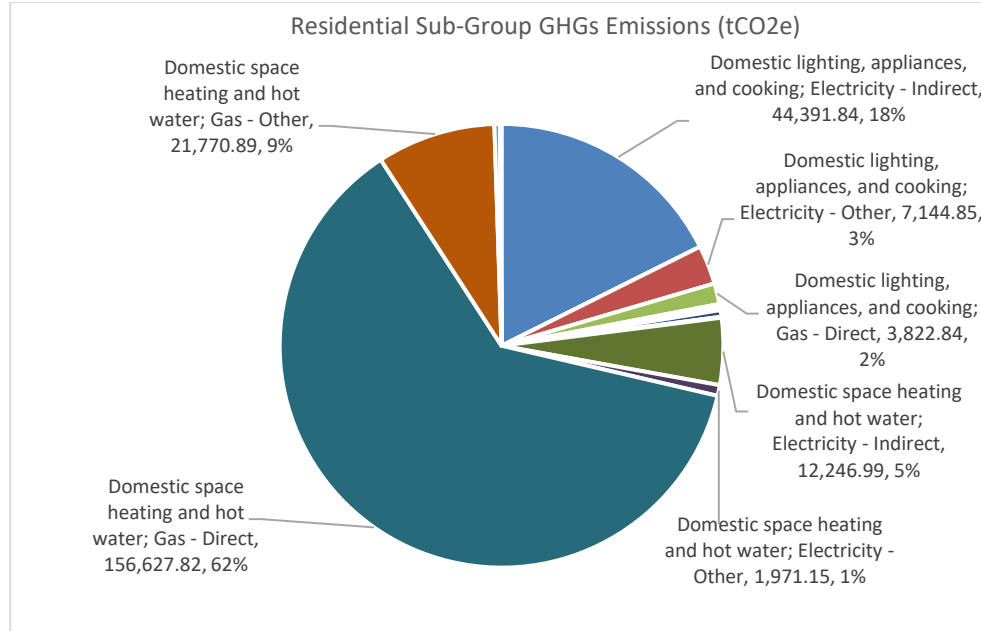
**Stationary Emissions**

5.10 The area with the highest levels of emissions relates to Stationary energy. Stationary emissions account for 413,207.39 tCO<sub>2</sub>e (60%) of borough emissions, with residential buildings making up 61% of the total emissions within stationary emissions (Fig 5.4).

**Fig 5.4**



**Fig 5.5**

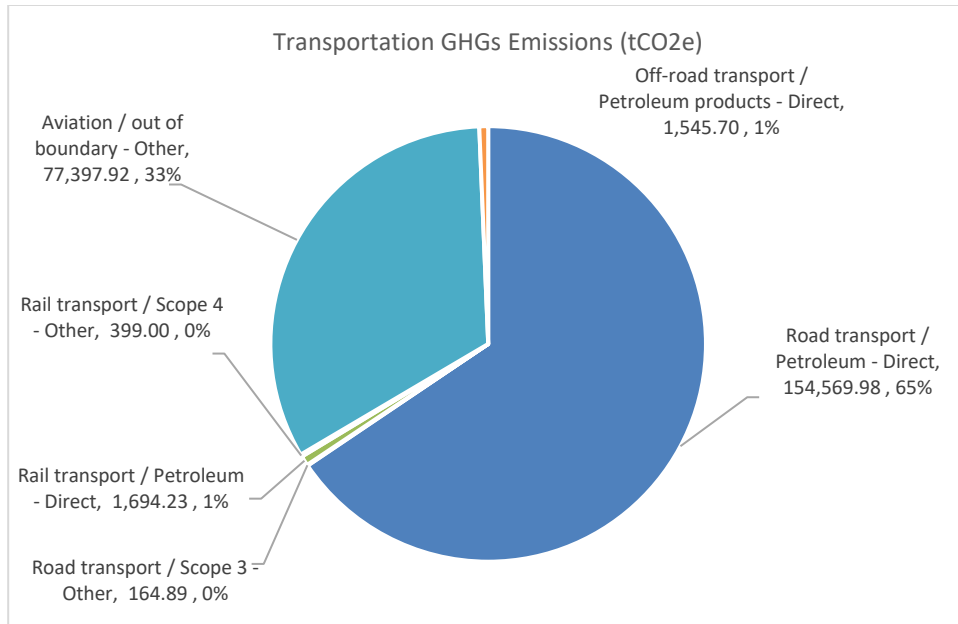


5.11 Emissions within the Residential Sub-Group shows that the highest emission area relates to domestic space heating and domestic water, which account for 62% of total residential emissions (Fig 5.5).

### Transportation Emissions

5.12 Transportation accounts for 235,771 tCO2e (34%) of borough emissions, the second largest area in terms of emissions levels. Road Transport – Petroleum, accounts for 65% of total emissions within Transportation (Figure 5.6).

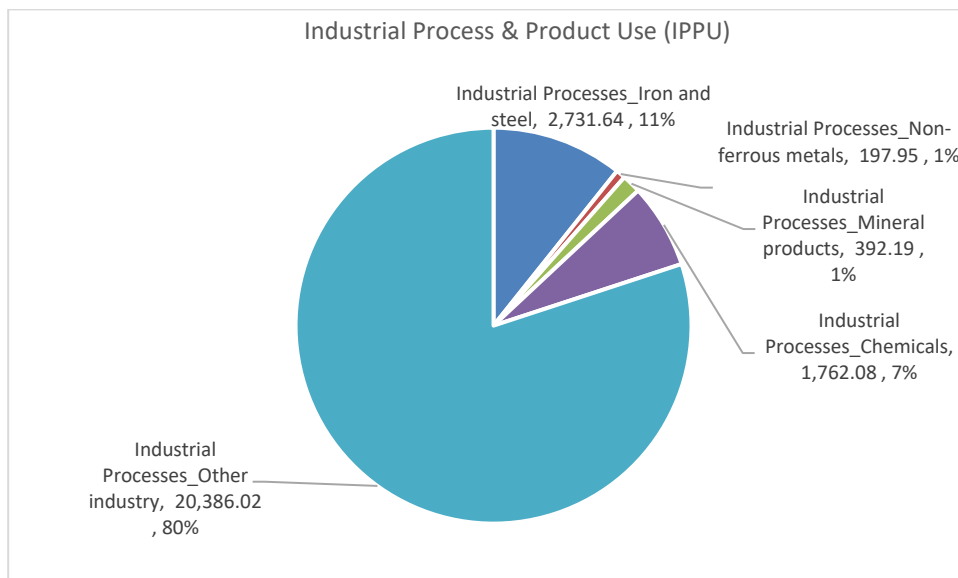
**Fig 5.6**



### Industrial Process and Product Use (IPPU)

5.13 Industrial Process and Product Use accounts for 25,469 tCO<sub>2</sub>e (4%) of borough emissions, the third largest area in terms of emission levels across South Tyneside. Industrial Processes Other Industry accounts for 80% of total emissions within IPPU (Figure 5.7).

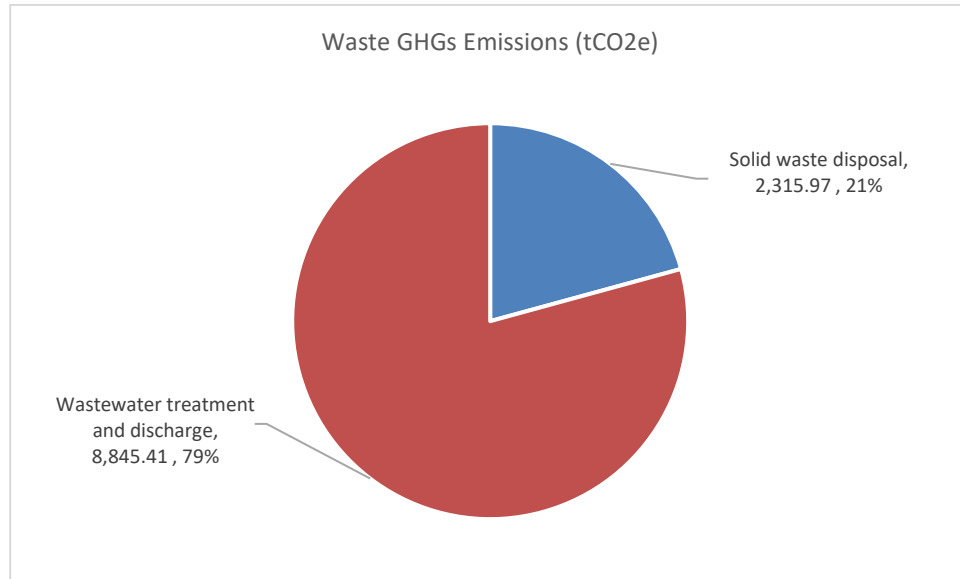
**Fig 5.7**



### Waste Emissions

5.14 Waste accounts for 11,161 tCO<sub>2</sub>e (2%) of borough emissions, the fourth largest area in terms of emission levels within South Tyneside. Wastewater treatment and discharge accounts for 79% of total emissions within Waste (Fig 5.8).

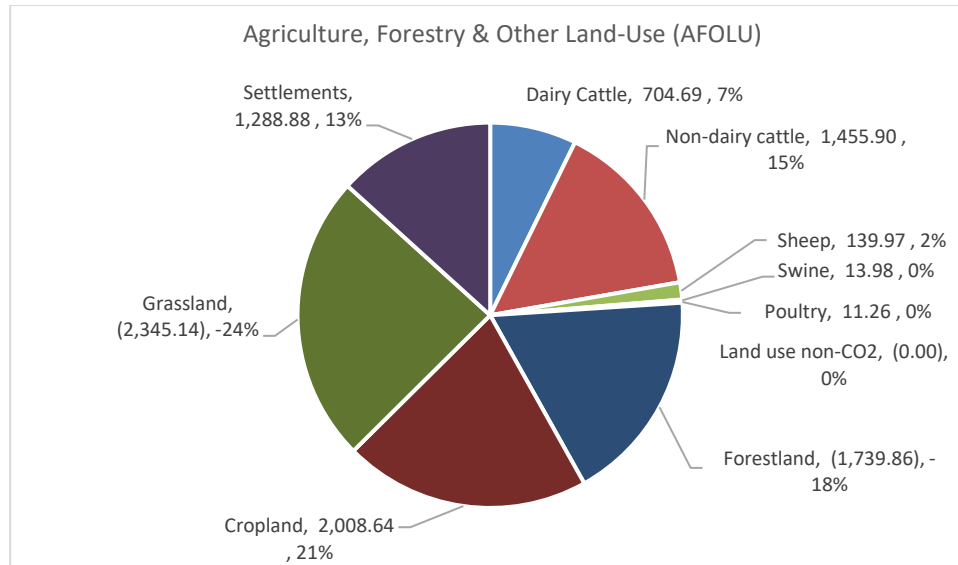
**Fig 5.8**



#### **Agriculture, Forestry and Land-Use (AFOLU)**

5.15 AFOLU accounts for 1,538 tCO<sub>2</sub>e and is the fifth largest area in terms of emission levels within South Tyneside (Figure 5.9). Emissions within AFOLU, can also result in a negative position, in which emissions are being sequestered (taking and storing emissions from the atmosphere). The highest areas of emissions come from Cropland, accounting for 21% of emissions within AFOLU. Grasslands and Forestlands help to sequester 42% of the emissions reported within AFOLU.

**Fig 5.9**

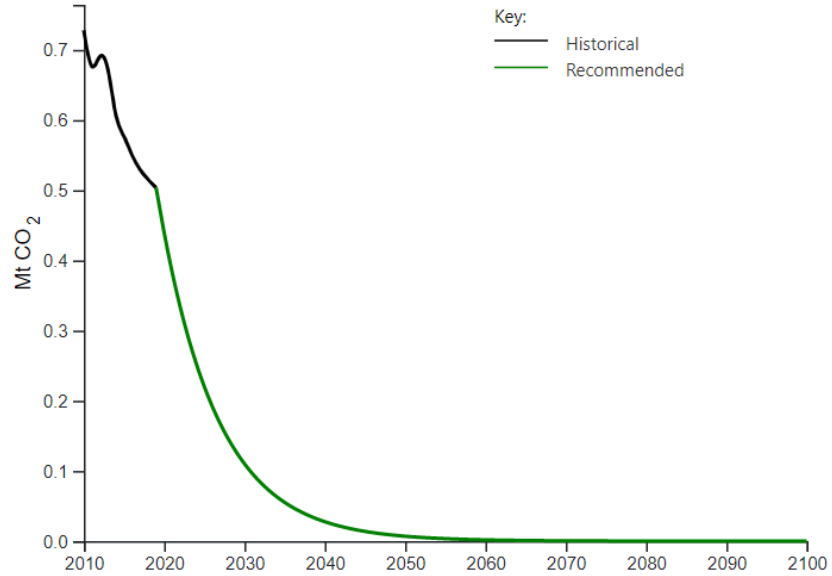


### SOUTH TYNESIDE CARBON BUDGET

5.16 The application of the Tyndall Carbon Budget Tool has been used to calculate South Tyneside carbon budget. The Tyndall Carbon Budget reports present recommended climate change commitments for UK local authority areas aligning with the commitments in the Paris Agreement. To make its ‘fair’ contribution towards the Paris Agreement, South Tyneside should adopt the following recommendations:

- Stay within a maximum cumulative carbon dioxide emissions budget of 3.4 million tonnes (MtCO<sub>2</sub>) for the period of 2020 to 2100. Note, this budget is for energy-only CO<sub>2</sub> emissions (i.e., from fossil fuel combustion within the region and a share of the emissions from national electricity generation).
- Initiate an immediate programme of CO<sub>2</sub> mitigation to deliver cuts in emissions averaging a minimum of -12.9% per year to deliver a Paris-aligned carbon budget. These annual reductions in emissions require national and local action and could be part of a wider collaboration with other local authorities.
- Reach zero or near zero carbon no later than 2042. In 2042, 95% of the recommended carbon budget is emitted and low-low level CO<sub>2</sub> emissions continue at a diminishing level to 2100.

**Fig 5.10 Energy related to CO<sub>2</sub> only emissions pathway (2010 – 2100 for South Tyneside premised on the recommended carbon budget)**



5.17 Table 5.1 presents the South Tyneside energy CO<sub>2</sub> only budget in the format of the 5-year carbon budget periods in the UK Climate Change Act. To align the 2020 to 2100 carbon budget with the budget periods in the Climate Change Act, estimated CO<sub>2</sub> emissions for South Tyneside for 2018 and 2019 have been included, based on national emissions data for 2018 assuming the same year on year reduction rate applied to 2019. The carbon budget including 2018 and 2019 is therefore 4.4 MtCO<sub>2</sub>.

<b>Table 5.1: Periodic Carbon Budgets for 2018 for South Tyneside.</b>	
<b>Carbon Budget Period</b>	<b>Recommended Carbon Budget (Mt CO<sub>2</sub>)</b>
2018 – 2022	2.2
2023 – 2027	1.1
2028 – 2032	0.6
2033 – 2037	0.3
2038 – 2042	0.1
2043 – 2047	0.1
2048 – 2100	0.1

## CLIMATE CHANGE COMMENTS FROM THE REGULATION 18 DRAFT LOCAL PLAN CONSULTATION

- 6.1 The Council undertook a Regulation 18 consultation between August and October 2019. The approach to climate change and sustainability considered at that stage, and the responses received, are summarised below.
- 6.2 The Council received over 930 comments from 255 individuals which referenced climate change. Most of the comments received in relation to climate change were in response to the Delivering the Strategy, Planning for Homes and Planning for our Natural Environment chapters.
- 6.3 The main issues arising relating to climate change and sustainability were:
- The absence of the commitments of the South Tyneside Climate Change Emergency Declaration within the Local Plan.
  - The Plan's non-compliance with the Climate Change Act (2008) and the Plan's failure to demonstrate how policies will reduce emissions in line with the Climate Change Act. Objections state that the Local Plan has failed to demonstrate how policies will reduce emissions in line with the Climate Change Act 2008. Objections also suggest that the Local Plan is also non-compliant as it does not set carbon emission targets and suggest the Local Plan is required to undertake an emissions/ carbon audit.
  - Loss of land from the Green Belt and loss of trees and hedgerows would contradict the Plan's commitment to mitigate and adapt to the impacts of climate change and would contribute to climate change impacts.
  - Neither the local highway network or public transport network have the capacity to support the proposed development in the villages and therefore site allocations for housing are in unsustainable locations and will lead to increased traffic and congestion and negatively impact air quality and pollution levels.
  - Local Plan proposals will negatively contribute to climate change impacts and, therefore, unacceptably increase flood risk in the Borough. Policies in the Plan don't adequately address flood risk, especially in areas already vulnerable to flooding.
  - Comments were received objecting to the failure of several of the Plan's strategic policies to mention or address climate change.
  - Some support was received for the Local Plan Vision and Objectives which address the Council's commitment to tackle climate change, however there were concerns that the policies in the Plan don't reflect the Vision and Objectives.
  - The Sustainability Appraisal doesn't adequately address or assess climate change impacts.



## THE COUNCIL'S APPROACH TO TACKLING CLIMATE CHANGE – DRAFT SOUTH TYNESIDE LOCAL PLAN 2021 - 2039

- 7.1 Following the Regulation 18 Consultation on the draft Local Plan (2019), South Tyneside Council delayed progress on the Local Plan and undertook a review of the Plan and Spatial Options. The review of the Local Plan has allowed the Council to revisit our plan policies and seek to address the climate change agenda where possible.
- 7.2 The Local Plan objectives and policies have also been considered within the context of the Climate Change Emergency declaration (2019) and the Councils 'Sustainable South Tyneside 2020-2025' climate change action plan. The Council has also acknowledged the government's commitment to achieve net zero carbon emissions nationally by 2050 and South Tyneside Councils aim to achieve net zero for council operations by 2030.
- 7.3 No specific emission targets have been set out in the draft Local Plan as there is no statutory obligation to include carbon reduction targets within Local Plan. Section 19 of the Planning and Compulsory Purchase Act 2004 states that 'Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change'. It is considered that steps undertaken in the preparation of the Local Plan and its policies are in accordance with the above requirement.

### ADDRESSING CLIMATE CHANGE – CARBON ANALYSIS AND SUSTAINABILITY APPRAISAL

- 7.4 Understanding the potential effects of the Local Plan and its proposed allocations has been key to ensuring that sustainability is fundamental to the Local Plan and to the spatial strategy. The Council has sought to ensure that development has been located in the most sustainable locations, whilst considering other environmental constraints and the housing need of the Borough.
- 7.5 The 'Sustainability Appraisal (2022)' and 'South Tyneside Council Local Plan Carbon Analysis' (2021) have been key documents in establishing and shaping the sustainability of the Local Plan.

#### South Tyneside Council Local Plan Carbon Analysis (2021)

- 7.6 The Local Plan Carbon Analysis sets out the results of the assessment of potential carbon emissions associated with the spatial options and reasonable alternative site allocation options considered in the preparation of the Local Plan. The methodology used within the document considered a range of factors to determine the carbon performance of Local Plan options, this included:
- Accessibility to local services (i.e. GP surgeries, local centres, open spaces);
  - Accessibility to public transport routes and cycle infrastructure;

- Journeys to work;
- Building performance;
- Sequestration.

7.7 The report provided key findings for the five housing and three employment land spatial options considered as part of the Local Plan preparation and documented within the Sustainability Appraisal Report (2021) which accompanies the draft Local Plan. The findings identified a range of factors which could contribute to the spatial options performing well or poorly in terms of carbon emissions. The findings of this report have informed the assessment of the spatial options through the sustainability appraisal.

7.8 Carbon analysis was also undertaken for the reasonable alternative options for housing and employment site allocations considered as part of the Local Plan process. Each site was analysed and rated in relation to accessibility considerations and commuting levels. An overall rating of red (performs poorly), amber and green (performs well) was attributed to each site to determine the how the site could perform in terms of carbon emissions.

7.9 The findings of the carbon analysis for the reasonable alternative options were used to inform the sustainability appraisal assessment for each of the individual sites. Objective 1 ‘Adapt to and mitigate the impacts of climate change in South Tyneside’ of the Sustainability Appraisal Framework, address the effects of climate change. The framework for the sustainability appraisal was amended to take account of the outcome of the carbon analysis alongside flooding issues (Fig 7.1) to assist in identifying potential effects which could occur should the site be developed.

**Fig 7.1 South Tyneside Local Plan Sustainability Appraisal Framework – Criteria for determining significance of effects of potential site options - Objective 1**

Sustainability Objective	Sustainability Questions	SA Framework Criteria	
1. Adapt to and mitigate the impacts of climate change in South Tyneside	Will it help to deliver energy efficient and low carbon developments?	Does the site fall within a flood risk zone?	
		No flood risk	◆
	Will it reduce energy consumption?	Surface Water Flooding	+/-
		Flood Risk Zone 2	-
	Will it increase renewable energy production?	Flood Risk Zone 3A or 3B	--
		<u>Carbon audit findings:</u>	
	Will it help to reduce greenhouse gas emissions?	Rated ‘red’ in the carbon audit	--
		Rated ‘amber’ in the carbon audit	-
Will it mitigate flood risk, the potential for surface water flooding or sea level rise?	Rated ‘green’ in the carbon audit	+/-	

## Sustainability Appraisal (2022)

7.10 The Sustainability Appraisal assesses the economic, environmental and social effects of the Local Plans proposed aims, objectives and policies. The document includes 13 sustainability objectives and associated sustainability appraisal questions, against which the Local Plan assessed. As identified above, Objective 1 'Adapt to and mitigate the impacts of climate change in South Tyneside' is the main objective against which effects are assessed. However, climate change is a cross-cutting issue and is relevant to other sustainability objectives; these are identified below:

<b>Table 7.1 Sustainability Appraisal Objectives – Climate Change effects</b>	
<b>Sustainability Objective</b>	<b>Sustainability Questions</b>
1. Adapt to and mitigate the impacts of climate change in South Tyneside.	Will it help to deliver energy efficient and low carbon developments? Will it reduce energy consumption? Will it increase renewable energy production? Will it help to reduce greenhouse gas emissions? Will it mitigate flood risk, the potential for surface water flooding or sea level rise?
3. Safeguarding our environmental assets and mineral resources	Will it contribute to protecting and managing water resources and quality? Will it positively contribute to air quality? Will it protect areas of high landscape value? Will it positively contribute to the remediation of contaminated land or sites? Will it help to reduce the amount of waste produced and increase the rate of re-use, recycling and composting? Does it manage or protect mineral resources?
4. Protect our soils and promote efficient land use	Will it protect high quality soils? Will it promote development on Brownfield land?
5. Enhancing our Green Infrastructure	Will it ensure open space and outdoor sports provision is of high quality and meets the current and future needs of the borough? Will it increase allotment provision and reduce waiting lists? Does it safeguard or improve the quality of existing green infrastructure provision?
7. Promote sustainable transport and accessibility	Does it support highway and public transport infrastructure improvements? Will it reduce congestion and encourage the use of sustainable transport methods?

7.11 The assessment of the policy options and proposed allocations against these sustainability objectives has assisted in determining their overall sustainability and has informed the selection and justification of those included in the draft Local Plan.

7.12 The Sustainability Appraisal report 2022 identifies the potential cumulative effects of the Local Plan policies against Objective 1: Adapt to and mitigate the impacts of Climate Change. The assessment is detailed below:

*'The Local Plan makes provision for minimising emissions of greenhouse gases and adapting to the effects of climate change, particularly through Policy SP17: Climate Change, which aims to reduce energy consumption and increase renewable energy generation. In addition, Policies P5: Reducing Energy Consumption and Carbon Emissions and P6: Renewables and Low Carbon Energy Generation support development which achieves zero carbon and require all development to embody sustainable design and carbon reduction and support renewable and low carbon energy development. In addition, many of the Strategic Objectives are expected to have significant and minor positive effect on climate change as Strategic Objectives 3, 4 and 5 all focus on climate change and renewables and support meeting the Council's zero carbon ambitions through ensuring that development reduces the effects of climate change.*

*Policies SP2: Strategy for Sustainable Development to meet identified needs and SP3: Spatial Strategy for Sustainable Development are expected to have positive effects as they support reducing carbon emissions and energy consumption and aim to reduce the need to travel by car and maximise opportunities to make use of sustainable transport. However, Policies SP4: Housing Allocations in the Main Urban Area, SP5: Urban and Village Sustainable Growth Areas and SP6: Fellgate Sustainable Growth Area are expected to have minor negative effects as the sites allocated in these policies are either in Flood Zone 2, rated amber in the separate carbon audit, or at risk from surface water flooding.*

*Furthermore, several Local Plan policies are expected to have minor positive effects on climate change by the provision of trees which will benefit climate change mitigation, requiring development to be sustainable in design and construction and to incorporate climate change mitigation and adaptation, and by supporting sustainable travel to reduce emissions, including Policy SP22: Green Infrastructure, P37: Protecting and Enhancing Open Spaces, P47: Design Principles and P53: Accessible and Sustainable Travel.*

*Overall, a cumulative mixed (minor positive and minor negative) effect is likely in relation to climate change. This is expected to be permanent and long-term.*

- 7.13 It is acknowledged that Local Plan policies which identify housing growth are likely to generate minor negative effects against this objective; however, wider policies are considered to contribute positively. The consideration of effects against the sustainability appraisal objectives and carbon analysis findings indicate that the wider draft Local Plan policies to support the transition to a low carbon future and to take a proactive approach to mitigating and adapting to climate change as set out in paragraphs 152 and 153 of the NPPF.

## **ADDRESSING CLIMATE CHANGE – PROPOSED LOCAL PLAN POLICIES**

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- 7.13 The draft Local Plan (2022) has been prepared to include a range of proposed policies which through their implementation at the planning application stage will enable the Council to ensure development is able to mitigate and is adaptable to climate change and is able to contribute to the reduction of carbon emissions as far as possible.

7.14 Table 7.2 provides a list of proposed draft Local Plan objectives and policies which are key to tackling climate change in South Tyneside. The list is not exhaustive; however, it demonstrates that addressing climate issues and sustainability is central to the Local Plan policies.

<b>Table 7.2 Proposed draft Local Plan Policies – Climate Change</b>		
<b>Draft Local Plan Policy</b>	<b>Summary</b>	<b>Justification for policy</b>
South Tyneside Local Plan Objectives: Climate Change and Renewables	The Local Plan has developed specific objectives to achieve our Spatial Vision and give direction to policies and proposals that will help deliver the objectives of the Council. Strategic Objectives 3-5 specifically relate to addressing Climate Change.	The inclusion of climate change within the strategic objectives of the Plan embeds the principles of carbon reduction and mitigation and adaptation within the key goals of the document.
Policy SP2: Strategy for Sustainable Development to meet identified needs (Strategic Policy)	The policy sets the spatial strategy for development in South Tyneside over the plan period and the principle of sustainable development. Criterion 2 includes a commitment to reducing carbon emissions and directing development to sustainable locations.	The criteria in the policy will help to limit carbon emissions produced by new development and reduce wider energy consumption. These aims will contribute to achieving the councils carbon reduction targets.
Policy 1: Promoting Healthy Communities	This policy seeks to promote healthy communities within South Tyneside including: <ul style="list-style-type: none"> <li>• Increasing physical activity and active travel through the provision of new, and enhancement of existing, good quality, safe and accessible open spaces, playing fields and sports facilities.</li> <li>• Ensuring development is well designed to meet challenges of climate change</li> </ul>	Figure 5.6 identifies that road transport accounts of 65% of transport emissions in the borough. Criteria within this policy will seek to reduce carbon emissions by promoting active travel. New developments should also be designed to adapt to a changing climate, including taking into account increasing temperatures, to minimise risk to human health.
Policy SP17: Climate Change (Strategic Policy)	Policy SP17 is the strategic climate change policy within the Local Plan and sets the core principles for mitigation, adaptation and reduction of carbon emissions.	The requirements set out in the policy will contribute to the reduction of emissions from new developments and encourage the recycling of materials and waste minimisation, which accounts for 2% of the Borough's emissions.

<p>Policy 5: Reducing energy consumption and carbon emissions</p>	<p>Policy 5 seeks to deliver development proposals which embody sustainable design and carbon reduction. The policy supports sustainable and efficient construction practices, design and waste and energy minimisation. Carbon reduction aims are set out in criterion 5:</p> <p>5) New buildings should achieve a reduction in carbon emissions measured against the relevant Target Emission Rate (TER) set out in the Building Regulations 2013 (as amended) (Part L). This should be achieved through the provision of appropriate renewable and low carbon energy technologies on site and/or in the locality of the development and improvements to the energy performance of the building. Where it can clearly be shown that this is not possible, offsite offsetting measures in line with the energy hierarchy should be delivered</p>	<p>60% of the Borough's emissions are emitted from stationary energy (buildings), of which 61% is emitted from residential buildings. This policy seeks to minimise energy demand of new and refurbished buildings and contribute to reducing emissions from stationary energy.</p>
<p>Policy 6: Renewables and Low Carbon Energy Generation</p>	<p>Policy 6 seeks to encourage the use of renewable and low carbon energy sources within South Tyneside. The policy supports the use of onshore wind energy where appropriate and the development of new or connection to existing district heating schemes.</p>	<p>Emissions within the Residential Sub-Group show that the highest emission area relates to domestic space heating and domestic water, which account for 62% of total residential emissions (Fig 5.5). Increasing the use of energy generated by renewable sources, would contribute to a reduction of carbon emissions from this sector.</p>
<p>Policy 7: Flood Risk and Water Management</p>	<p>This policy seeks to ensure development is designed to mitigate and adapt to Climate Change and focuses development away from flood risk areas.</p>	<p>Increased rainfall and storm events could exacerbate flooding in areas of risk. Criteria in this policy will seek to mitigate climate change impacts.</p>
<p>Policy 12: Coastal Change</p>	<p>This policy seeks to adapt to the risks of climate change by managing development proposals in areas of coastal erosion.</p>	<p>Increased erosion rates from storm events could impact upon the Borough. Criteria in this policy will seek to mitigate climate change impacts.</p>

Policy SP21: Natural Environment	This policy provides the strategic aims for the natural environment including supporting its role in absorbing carbon emissions and mitigating the effects of Climate Change.	Protecting and enhancing the natural environment and our green infrastructure networks will provide opportunities for nature-based mitigation. The retention and planting of trees in the borough will contribute towards carbon absorption and cooling areas.
Policy SP22: Green Infrastructure	This policy recognises the role of green infrastructure in adapting to and mitigating the effects of Climate Change.	
Policy 47: General Design Principles	This policy embodies sustainability in design principles for development within the Borough. This includes requiring developments to:  7) be sustainable in design and construction, incorporating best practice in resource management and climate change mitigation and adaptation.	This policy will seek to reduce carbon emissions from new development and contribute to the reduction of stationary energy emissions.
Policy 53: Accessible and Sustainable Travel	This policy seeks to deliver an accessible and sustainable travel network which supports public transport and improves infrastructure for pedestrians and cyclists.	The principles of this policy will seek to reduce road transport emissions by supporting active travel and public travel options and supporting infrastructure for ultra-low emission vehicles.
Policy SP26: New Development	This policy seeks to encourage sustainable travel opportunities in new developments including: <ul style="list-style-type: none"> <li>• Giving first priority to pedestrian and cycle movements and delivering safe pedestrian and cycling infrastructure</li> <li>• Providing sufficient infrastructure to support the needs of ultra-low emission vehicle users including charging points</li> <li>• Ensuring developments are designed to meet the needs of public transport users.</li> </ul>	

## NEXT STEPS

- 8.1 This Topic Paper has been prepared to support the emerging policy approach set out in the draft Local Plan. The paper sets out the how climate change has been a central theme in the preparation of Local Plan, through the considerations of the Sustainability Appraisal, Carbon Audit and formulation of the spatial strategy, visions and policies.
- 8.2 The policies within the Plan respond to the requirements of national policy, the findings of the evidence base and the responses from the Regulation 18 Local Plan public consultation (2019). Local Plan policies also reflect the ambitions and commitments of South Tyneside Council to address the climate change impacts and to help achieve targets.
- 8.3 It is anticipated that the Local Plan policies will play a significant role in helping the Borough meet its climate change commitments.