

St Albans City & District

Community-wide Emissions Summary 2021

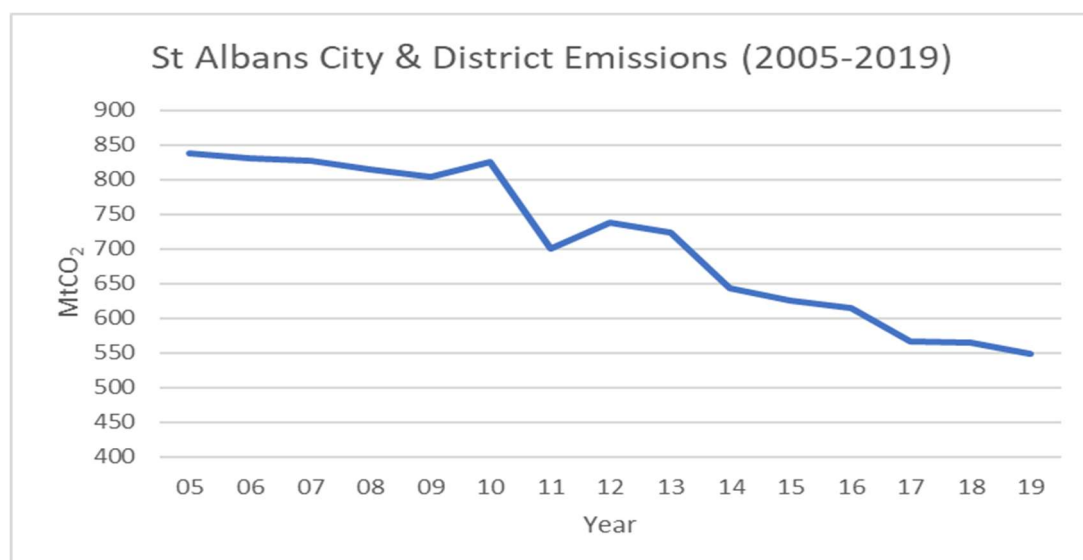
SECTION 1: BEIS DISTRICT WIDE EMISSIONS

The government department for Business, Energy and Industrial Strategy (BEIS) release annual carbon emissions (CO₂) data broken down by local authority areas. The latest report¹ was released on 24th June 2021. A summary of the data is provided in Appendix 1.

Due to the complexity of the data, the most recent information is always 18 months old. This means that the 2021 report shows data for emissions in St Albans District up to 2019.

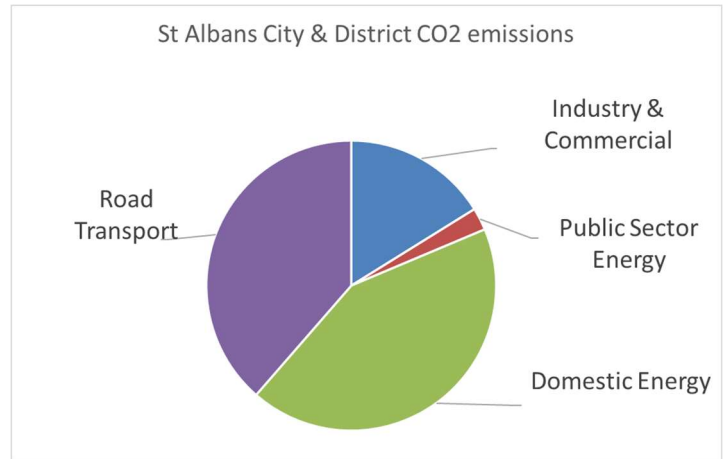
St Albans District total CO₂ emissions for 2019: 548,000 tonnes of CO₂

- St Albans' CO₂ emissions for 2019 are down by **3%** compared to 2018 data.
 - St Albans' CO₂ emissions are down by **34%** compared to 2005 (earliest data available). This drop in emissions is mostly due to decarbonisation of the National Grid.
 - Per capita emissions have declined from 6.1 tCO₂ in 2008/09 to 3.7 tCO₂ in 2019



¹ <https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas>.

- St Albans' 2019 emissions are mostly made up of emissions from domestic energy and road transport:
 - 234,000 tonnes - domestic energy
 - 212,000 tonnes - road transport
 - 89,000 tonnes - industry and commercial sector
 - 14,000 tonnes – public sector energy

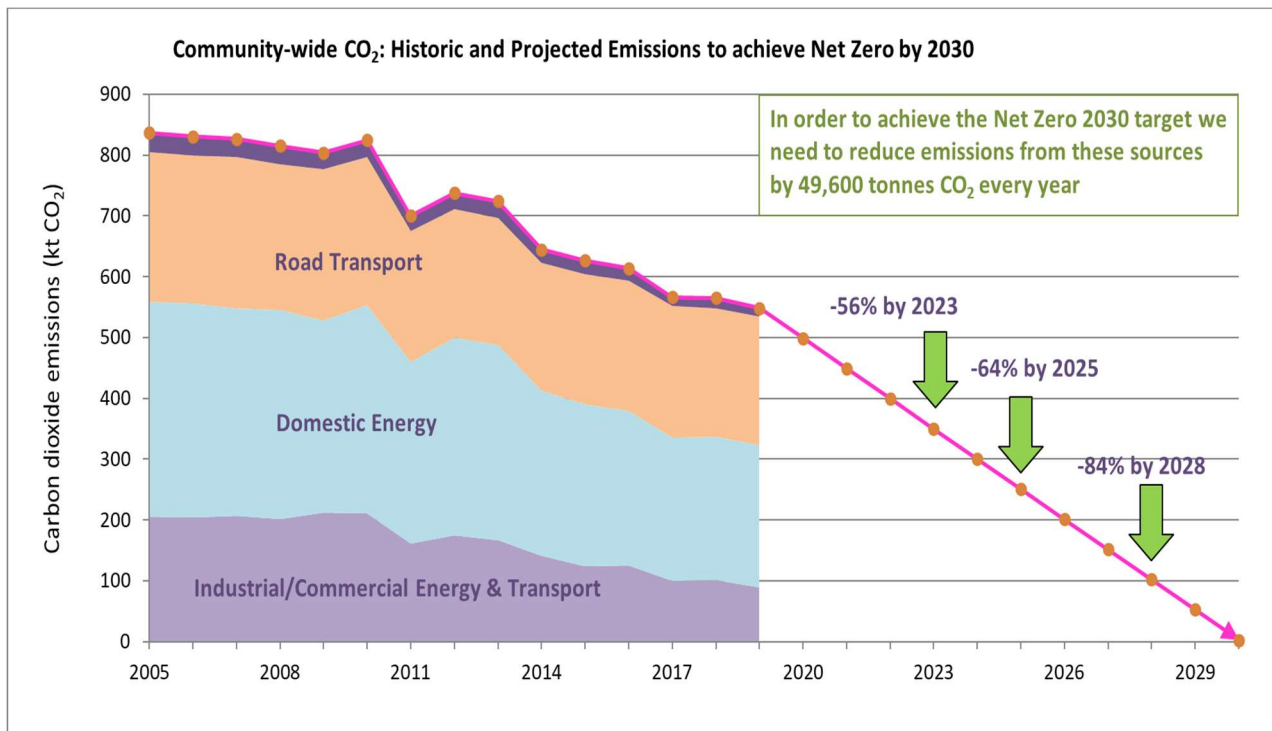


- NB: The BEIS data only includes CO₂ and no other greenhouse gases. It also does not include emissions sources such as motorways, air travel and consumption. As such, additional emissions data from varying sources can report this as being higher. BEIS data is thought to account for around 80% of all greenhouse gas emissions.

Are we on track to meet our community-wide emissions targets?

- In 2019, the Council declared a climate emergency. A year later we published our [Sustainability and Climate Crisis Strategy](#) which outlined our approach to achieving net zero emissions by 2030. A series of target CO₂ emissions were created to map the journey to zero emissions in 2030. These are:
 - 56% reduction in emissions by 2023 (compared to 2008)
 - 64% reduction in emissions by 2025 (compared to 2008)
 - 84% reduction in emissions by 2028 (compared to 2008)
- To meet these targets, we calculated that the community would need to reduce emissions by 47,000 tonnes each year from 2018.
- The current data shows that District emissions have only been reduced by 17,000 tonnes between 2018 and 2019. **This is a shortfall of 30,000 tonnes.** Each year that targets aren't met, more dramatic reductions will be needed later. A larger annual reduction will now need to be achieved every year until 2030.
- **St Albans City & District will now have to reduce emissions by 49,600 tonnes each year to achieve Net Zero 2030.** To put this in perspective this is equivalent to:
 - Removing 25% of vehicles from the roads, or
 - Planting 2,480,000 trees, or
 - Turning off the electricity to 82,700 homes, or
 - Developing 22 solar farms (5 MW), or
 - Every household in the District reducing their electricity consumption by ~74%, or
 - Installing solar panels to 31,000 households.

- This image sets out our updated goals in line with the most recent data.



- Across the Council, Departments have been mobilised to deliver a comprehensive programme of action to reduce greenhouse gas emissions across the District. These include:
 - Solar Streets scheme to encourage take-up of solar panels by private homeowners and businesses
 - Incorporation of renewable and energy efficiency technologies to new developments and refurbishments
 - Investment in a Rewilding Project
 - Community Engagement project initiated to deliver education to community groups and residents.
 - Planning Policy is being developed which more appropriately reflects our sustainability and carbon mitigation needs.

And much more.
- Many of these projects were only in their infancy in 2019 so it is our hope that as they are developed further, they will lead to noticeable emissions reductions. To achieve our aims we will need to be focusing on introducing solutions such as road pricing, low emission zones, charging for business car parks, home insulation programme, incentivising heat pumps and renewable energy as well as large scale solar farms.
- We recognise that we are limited in our powers to affect local transport or the way residents use energy to power their homes. To be successful in our decarbonisation goals we need the backing of ambitious national policy frameworks. Currently, the UK Government have announced that they will be introducing policies to reduce emissions by 78% by 2035 compared to 1990 levels. Many of these policies will not be introduced until 2025 and beyond which means we are unable to affect emissions to the degree that is necessary until the later part of the decade.

SECTION 2: Tyndall Centre - St Albans District Carbon Budget

The Tyndall Centre for Climate Change Research are a leading climate organisation in the UK who use science-based targets to help local authorities calculate their area's carbon budgets so that they can cut their emissions in line with climate science and the UN Paris Agreement.

A 'carbon budget' is the cumulative amount of carbon dioxide emissions permitted over a period of time. Once CO₂ reaches the atmosphere it can take between 300-1000 years to breakdown, which is why when considering emissions reductions, it is crucial to consider how much is safe to be released.

The Tyndall Report for St Albans District presents CO₂ emissions budgets for St Albans that are derived from the commitments enshrined in the Paris Agreement, informed by the latest science on climate change and defined in terms of science-based carbon setting. The budgets also incorporate the BEIS data which outlines our historic emissions.

The carbon budgets are based on translating the "well below 2C and pursuing 1.5C" global temperature target and equity principles in the UN Paris Agreement to a national UK carbon budget. The UK budget is then split between sub-national areas using different allocation regimes.

Please bear in mind the following:

- Transport emissions are NOT included in these carbon budgets (they ARE included in the BEIS data and our net zero targets outlined in section 1)
- Aviation and shipping emissions remain within the national UK carbon budget and are not passed down to sub-national budgets.
- Land Use, Land Use Change and Forestry, and non-CO₂ emissions, are considered separately to the energy CO₂ budget in this report.
- The carbon budgets given, align to the UK aim for NetZero by 2050, rather than our local aim of meeting net zero by 2030.
- Tyndall targets are more stringent than others (e.g. UK Climate Change Committee) because they make bigger assumptions about what is a fair share of global emissions for global south countries, these take into account assumptions about aviation growth, all bigger assumptions than others.

Key Messages from the report

The below extract is from their summary report for St Albans. The full Tyndall Centre report for St Albans is available to read here

<https://carbonbudget.manchester.ac.uk/reports/E07000240/print/>

For St Albans City and District to make its 'fair' contribution towards the Paris Climate Change Agreement, the following recommendations should be adopted:

- 1. Stay within a maximum cumulative emissions budget of 5.5 million tonnes (MtCO₂) for the period of 2020-2100.**

At 2017 emission levels, St Albans would use this entire budget just from energy emissions, within 6 years from 2020.

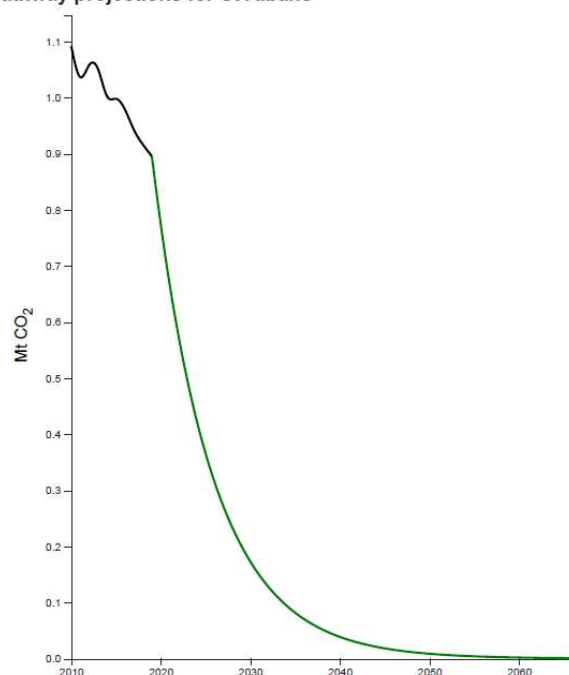
2. **An immediate and rapid programme of CO₂ mitigation must be initiated to deliver cuts in emissions averaging a minimum of -13.9% per year to deliver a Paris aligned carbon budget.** This will require that St Albans rapidly transitions away from unabated fossil fuel use. CO₂ emissions in the carbon budget related to electricity use from the National Grid in St Albans are largely dependent upon national government policy and changes to power generation across the country. It is recommended that St Albans promote the deployment of low carbon electricity generation within the region and where possible influence national policy on this issue.
3. **Reach zero or near zero carbon no later than 2040.** An indicative CO₂ reduction pathway is provided below that stays within the recommended maximum carbon budget of 5.5 MtCO₂. At 2040 5% of the budget remains. This represents very low levels of residual CO₂ emissions by this time.
4. **St Albans should increase sequestration of CO₂ through Land Use, Land Use Change and Forestry (LULUCF)** to compensate for the effects of non-CO₂ emissions not included in this report. St Albans should monitor emissions from these sources separately.
5. **St Albans should seriously consider strategies for significantly limiting emissions growth from aviation and shipping.** The recommended budgets do not downscale aviation and shipping emissions from the UK national level. If these emissions continue to increase as currently envisaged by Government, aviation and shipping will take an increasing share of the UK carbon budget, reducing the available budgets for combined and local authorities.

The recommended energy-related CO₂ budget for St Albans District is presented below in the format of the 5-year carbon budget periods in the UK Climate Change Act. To align the carbon budget with the budget periods in the Climate Change Act, Tyndall Centre have included estimated CO₂ emissions for St Albans for 2018 and 2019 based on BEIS provisional national emissions data. **The combined carbon budget for 2018 to 2100 is therefore 7.4 MtCO₂.**

Recommended Carbon Budgets for St Albans

Budget Period	Mt CO ₂
2018 – 2022	3.8
2023 – 2027	1.9
2028 – 2032	0.9
2033 – 2037	0.4
2038 – 2042	0.2
2043 – 2047	0.1
2048 -2100	0.1

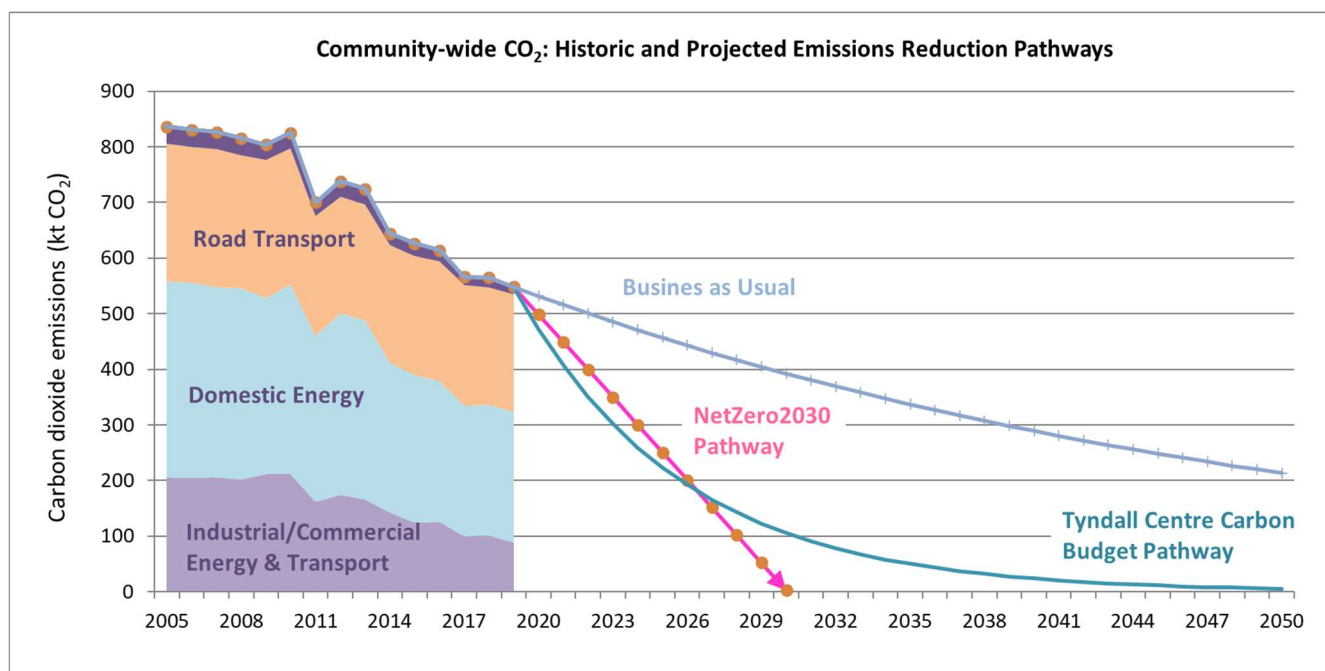
Pathway projections for St Albans



The carbon reduction pathway recommended by the Tyndall Centre is broadly similar to the NetZero2030 pathway identified in Section 1. The Tyndall Centre pathway differs by requiring more rapid reductions in the earlier years to allow for residual CO₂ emissions between 2030-2050. Our own Net Zero pathway allows for a consistent emissions reduction which should get easier in time as national legislation is introduced and technological advances are made.

	Total CO ₂ Emissions	
	SADC Net Zero Pathway (49,600 tonnes reduction per year)	Tyndall Centre Pathway (13.9% reduction per year)
2020	499	472
2023	350	301
2025	251	223
2028	102	143
2030	3	106

Both pathways are charted on the below graph.



Key Summary Points:

- The Tyndall Centre projections require more rapid reductions in the earlier part of this decade as shown in the above graph.
- The Tyndall Centre projections do not include transport emissions, which means that additional reductions would need to be made to account for them. If we include emissions from transport, and were successful in achieving a very challenging 13.9% reduction per year, we would use a further 1.1 MTonnes of our district-wide carbon budget.
- Our ongoing targets should be to go **above and beyond** a minimum of:
 - 56% reduction in emissions by 2023
 - 64% reduction in emissions by 2025
 - 84% reduction in emissions by 2028
- Between 2020-2030, the **St Albans Net Zero pathway to achieve net zero by 2030, uses around HALF of our total 2020-2100 carbon budget** allocated by the Tyndall Centre.
- **If we continue to release emissions at the current rate (2018), we will have used our entire 80 year budget in 10 years.**
- Between 2018 and 2019 we reduced emissions by only half of the amount needed to reach NetZero by 2030.
- The data shows that the Council should seek to facilitate emissions reductions across the community in a more urgent way as current projects and policies are unlikely to lead to the scale of the reductions needed to prevent temperature increases below 1.5C. This will require allocation of financial and staff resources.

Appendix 1: St Albans City and District CO₂ emissions 2005 - 2019 (tCO₂):

kt CO ₂	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
																Trendline
Industry & Commercial Total	206	204	206	202	212	211	162	175	166	142	124	126	99	102	89	
Electricity	135.1	135.1	144.3	142.3	122.6	135.5	111.8	121.7	112.5	94.1	76.8	58.6	53.2	48.6	41.5	
Gas	53.6	53.6	46.2	45.8	44.4	64.2	38.9	42.0	43.8	37.1	35.6	34.6	34.1	41.5	35.6	
Other fuels	15.2	13.9	13.9	11.9	43.3	11.0	9.3	9.2	7.8	8.7	9.9	9.5	9.8	9.4	9.4	
Agriculture	2.1	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.0	2.1	2.1	2.1	2.1	
Public Sector Energy Total	31	31	30	30	27	28	25	27	28	22	23	20	15	17	14	
Electricity	14.9	16.1	15.9	15.7	13.5	13.4	12.6	13.8	13.1	10.7	8.8	7.3	6.2	5.7	4.8	
Gas	15.4	14.4	13.3	13.2	12.5	13.9	11.2	12.4	13.8	10.1	13.6	12.7	8.2	11.3	8.7	
Other fuels	1.1	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.2	0.2	0.2	0.2	0.2	
Domestic Energy Total	352	351	341	344	316	342	298	325	322	270	265	253	235	234	234	
Electricity	144.1	150.4	149.2	142.9	129.3	135.4	128.8	137.7	126.9	107.1	91.1	74.1	63.4	57.5	51.8	
Gas	204.5	196.9	188.3	197.0	183.0	202.6	165.7	184.2	191.8	160.1	170.7	176.0	168.7	175.2	175.6	
Other	3.7	3.7	3.5	3.7	3.6	3.9	3.4	3.4	3.5	3.2	3.3	3.2	3.2	3.2	3.2	
Road Transport Total	247	244	249	240	249	244	215	211	208	211	214	215	217	212	212	
A Roads	152.1	144.0	146.0	136.0	149.4	146.1	119.8	117.1	114.3	113.2	117.3	114.5	111.2	107.3	100.2	
Minor Roads	96.3	104.5	108.5	101.1	96.4	94.9	92.9	91.0	91.4	94.6	94.4	98.5	103.5	101.8	99.9	
Other	3.0	3.0	2.9	2.9	2.9	2.8	2.7	2.6	2.7	2.7	2.7	2.6	2.5	2.5	2.5	
Total Emissions	837	831	827	815	804	825	700	738	724	644	626	614	566	565	548	
% from baseline		-1%	-1%	-3%	-4%	-1%	-16%	-12%	-13%	-23%	-25%	-27%	-32%	-32%	-34%	
% previous year		-1%	-1%	-1%	-1%	3%	-15%	5%	-2%	-11%	-3%	-2%	-8%	0%	-3%	
Population																
('000s, mid-year estimate)	132	133.29	134.34	136.09	137.86	139.51	141.25	142.14	143.46	145.21	146.19	147.03	147.1	147.37	148.45	
Per capita emissions																
(t CO ₂)	6.1	6.23	6.15	5.99	5.83	5.91	4.96	5.19	5.05	4.44	4.28	4.17	3.85	3.83	3.69	