Appendix 2

Organisational Carbon Emissions Summary Report May 2022

Warwick District Council and Stratford-on-Avon Council

1. Aims and Purpose

This report has been developed to outline the Warwick and Stratford-on-Avon District Councils carbon emissions data and is structured in line with Defra's 'Guidance on how to measure and report your greenhouse gas emissions' document.

2. Types of Emissions - Scopes

There are three types of emissions, referred to as Scopes 1, 2 and 3 - these categorise emissions into three different types as follows.

Scope 1 - Direct emissions. These emissions relate to activities that are owned or controlled by the organisation and involve the release of emissions straight into the atmosphere. Examples include combustion emissions from gas boilers in council buildings and emissions from council owned vehicles.

Scope 2 - Energy indirect emissions. These emissions are associated with the consumption of purchased electricity, heat, steam and cooling. These emissions arise as a consequence of the organisation's activities but are not owned or controlled by them as they are released at power stations where the electricity is generated.

Scope 3 - Other indirect emissions. These are emissions that are a consequence of the organisation's actions that occur at sources that are not directly owned or controlled. Examples for the council include outsourced activities, business travel by staff using their own vehicles at work and also outsourced activities.

3. Reporting Period

The reporting period is for the financial years 2018-19, 2019-20 and 2020-21. The carbon footprint baseline year is currently 2018/19. Updates for 2021-22 will be collated during the summer of 2022.

4. Measuring and Reporting Approach

A number of gases contribute to climate change and six main greenhouse gases (GHGs) are covered in the Kyoto Protocol: carbon dioxide (CO2), methane (CH4), hydrofluorocarbons (HFCs), nitrous oxide (N2O), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6) 19. Different activities emit different gases; for example, burning fossil fuels releases carbon dioxide, methane and nitrous oxide into the atmosphere. It is standard practice to report GHGs in tonnes of CO2 equivalents (CO2e). In order to achieve this, conversion factors are used that are located on the GOV website and are produced by Defra on an annual basis.

Conversion factors help organisations convert their activities into equivalent carbon emissions. The conversion factors change annually taking into account a number of influences including fuel mix, consumption from UK power generation along with imports and exports in relation to gas and electricity. It is best practice to use the conversion factors from the calendar year in which the

greatest portion of your data falls, therefore for 2020-21 reporting year, the 2021 conversion factors have been used.

The emissions are calculated as follows: Activity Data x Emission Factor = Carbon dioxide equivalent (CO2e)

5. Organisational Boundary

All areas of the council's operations have been considered.

6. Operational Scopes

The Scope 1 emissions include the gas emissions from the council's buildings, council owned vehicles and all business lease vehicles such vans and pool cars. Fugitive emissions relating to air conditioning and refrigeration units have been excluded because it has been considered too complex to calculate at the current time.

The Scope 2 emissions are those associated with the mains electricity consumption from the council's buildings.

The Scope 3 emissions include the gas and electricity consumption from outsourced activities, the business mileage from private and leaseholder vehicle use. Rail, bus and air travel where appropriate would usually be included but were not available at the time of reporting. Buildings that are managed by outsourced contracts are also included where the contractor is responsible for bill payments. Data on refuse and recycling trucks, road sweepers, grounds maintenance mowers and vans used by for the Neighbourhood Services contract are also included. Emissions from commuter travel have been excluded due to this not being available at the time the Self Serve system with Coventry City Council was in place but it will be explored as to whether the data from iTrent could be obtained going forwards. The emissions arising from water use from supply and distribution also fall into Scope 3 along with biomass pellets used for heating some buildings.

7. Carbon Emissions Data

7.1 Top Level Summary Data

Figure 1 - Warwick District Council Top Level Summary Data

Scope / Activity	2018/19 (base year) Kg CO2e	2019/20 Kg CO2e	2020/21 Kg CO2e
Scope 1			
Gas	1,251,217	1,249,158	1,200,938
LPG	36,760	32,774	35,229
Lease Vehicles	21,002	14,980	13,204
Total (Scope 1)	**1,308,978**	**1,296,912**	**1,249,370**
Scope 2			
Electricity	1,260,865	1,280,251	874,164
Total (Scope 2)	**1,260,865**	**1,280,251**	**874,164**
Scope 3			
Biomass	4,248	4,426	14,050
Water	11,767	13,980	4,202
T&D Losses	107,470	108,691	75,178
Neighbourhood Services Transport (waste, grounds	1,703,971	1,682,688	1,651,501
Neighbourhood Services Buildings (waste contract)	37,092	34,543	32,470
Business travel from greyfleet (staff own vehicles)	53,599	54,427	33,665
Leisure Centres	805,945	1,717,232	598,506
Total (Scope 3)	**2,724,091**	**3,615,988**	**2,409,572**
Total Gross Emissions (kg)	**5,293,934**	**6,193,152**	**4,533,107**
Total Gross Emissions (t)	**5,294**	**6,193**	**4,533**

From the summary data in *Figure 1* for Warwick District Council, the Scope 3 emissions account for half of all emissions and the emissions from Scope 3 transport account for approximately a third of total emissions. Some of the reductions in 2020/21 can be explained by Covid such as reduced water use and Leisure Centres being closed for some of the time.

Figure 2 - Warwick District Council Carbon Emissions 2020/21

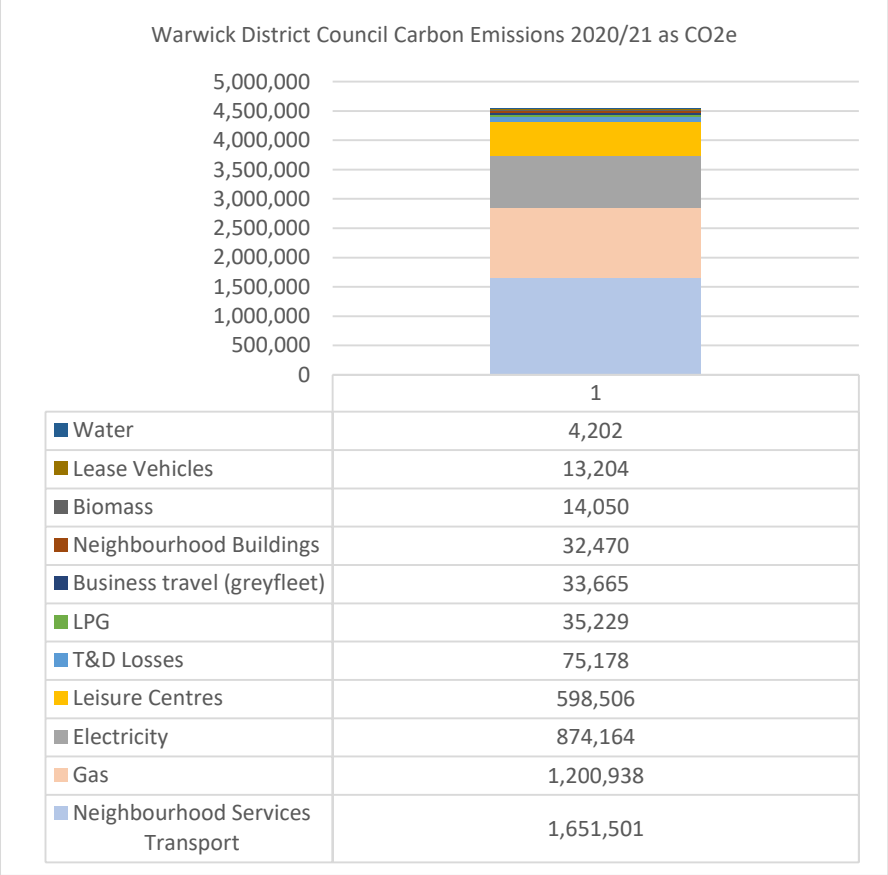


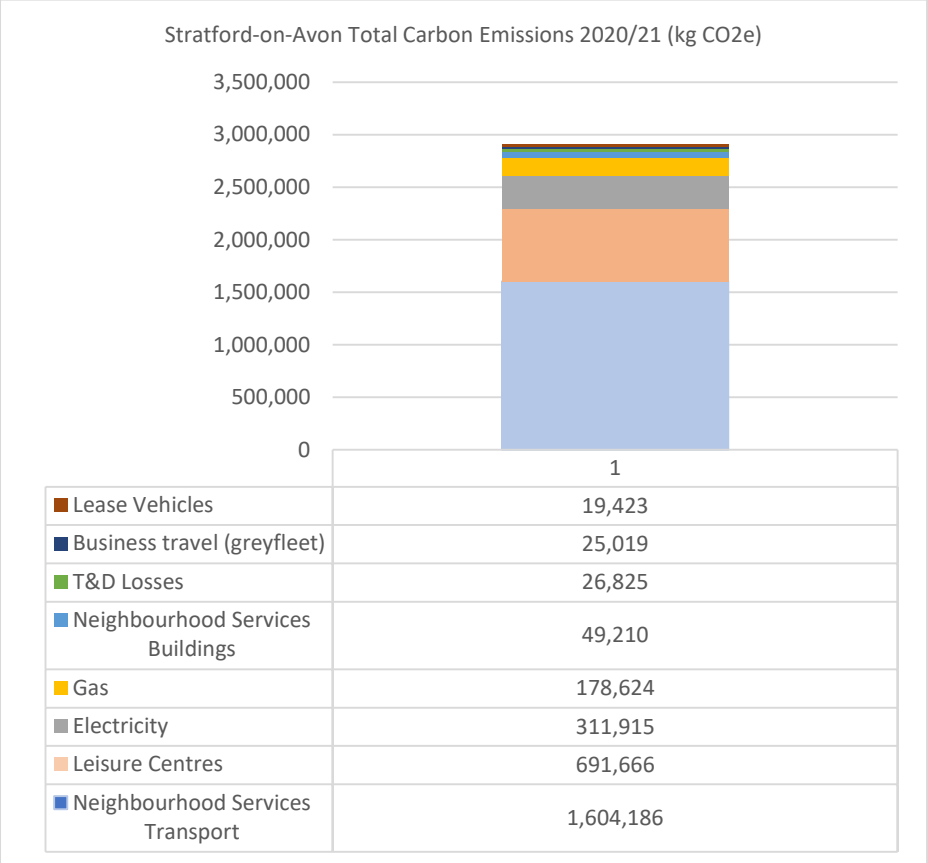
Figure 2 highlights that of the overall emissions by type, gas use is the second highest carbon emissions contributor after transport emissions from tNeighbourhood Services, followed by electricity.

Figure 3 - Stratford-on Avon Council Top Level Summary

Scope / Activity	**2018/19**	**2019/20**	**2020/21**
	(base year)		
	Kg CO2e	Kg CO2e	Kg CO2e
Scope 1			
Gas	144,908	162,023	178,624
Lease Vehicles	17,855	17,938	19,423
Total (Scope 1)	**162,762**	**179,961**	**198,047**
Scope 2			
Electricity	796,831	380,730	311,915
Total (Scope 2)	**796,831**	**380,730**	**311,915**
Scope 3			
Water	0	0	0
T&D Losses	67,918	32,323	26,825
Neighbourhood Services Transport (waste, grounds and cleansing)	1,444,055	1,901,095	1,604,186
Neighbourhood Services Buildings (waste contract)	34,184	29,957	49,210
Business travel from greyfleet (staff own vehicles)	50,191	50,191	25,019
Leisure Centres	1,291,605	1,176,812	691,666
Total (Scope 3)	**2,887,954**	**3,190,378**	**2,396,906**
Total Gross Emissions (kg)	**3,847,548**	**3,751,069**	**2,906,867**
Total Gross Emissions (t)	**3,848**	**3,751**	**2,907**

Figure 3 shows that outsourced emissions from Stratford-on-Avon account for over 80% of total emissions and that emissions from other sources such as gas and electricity are small in comparison. Some of the reductions in 2020/21 can be explained by Covid such as Leisure Centres being closed for some of the time. Water data is not monitored and water meters are planned to be fitted to help with future monitoring and reporting of water use.

Figure 4 – Stratford-on-Avon Total Carbon Emissions 2020/21



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Lease Vehicles	19,423
Business travel (greyfleet)	25,019
T&D Losses	26,825
Neighbourhood Services Buildings	49,210
Gas	178,624
Electricity	311,915
Leisure Centres	691,666
Neighbourhood Services Transport	1,604,186

Figure 4 shows the overall breakdown of emissions by type with Neighbourhood Services transport emissions being highest, followed by Leisure Centres and electricity.

7.2 Transport Emissions Data By Vehicle Type

Figure 5 - Warwick District Council Transport Emissions

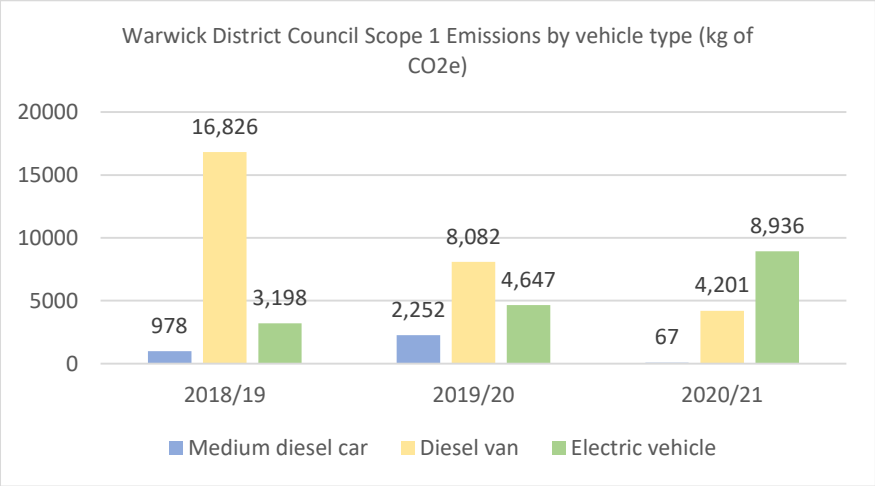
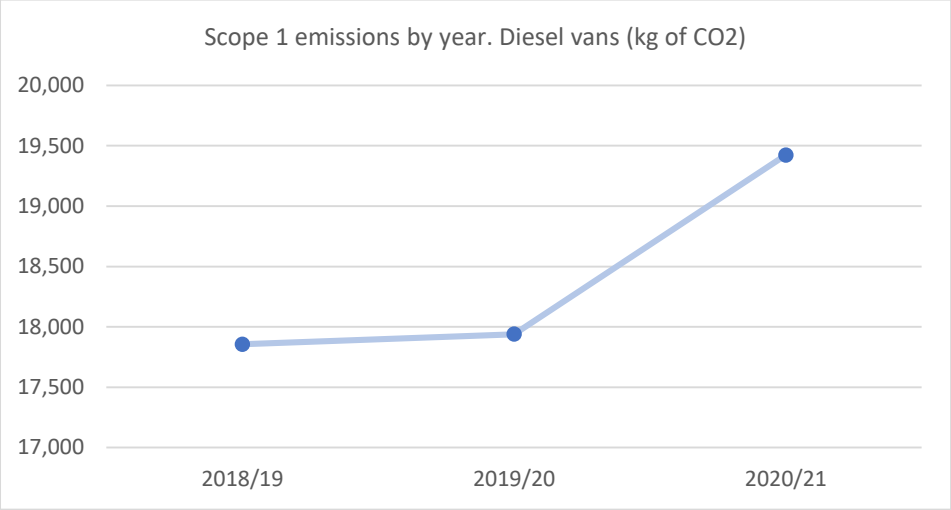


Figure 5 demonstrates how electric vehicles have significantly increased electric mileage over time. The Chairman's diesel car recently reached the end of its lease and has not been replaced. Two additional Nissan leaf vans have recently been purchased for the Housing Estates team which means that all mileage will be electric with the exception of three Environmental Health vans.

Figure 6 - Stratford-on-Avon Council Transport Emissions



Stratford on Avon vehicles are all diesel so there are opportunities to move to electric. Due to underreporting for 2018/19 and estimating, the data shows an increase where it was really a data correction.

7.3 Buildings Carbon Emissions Data

Figure 7 - Warwick District Council Buildings

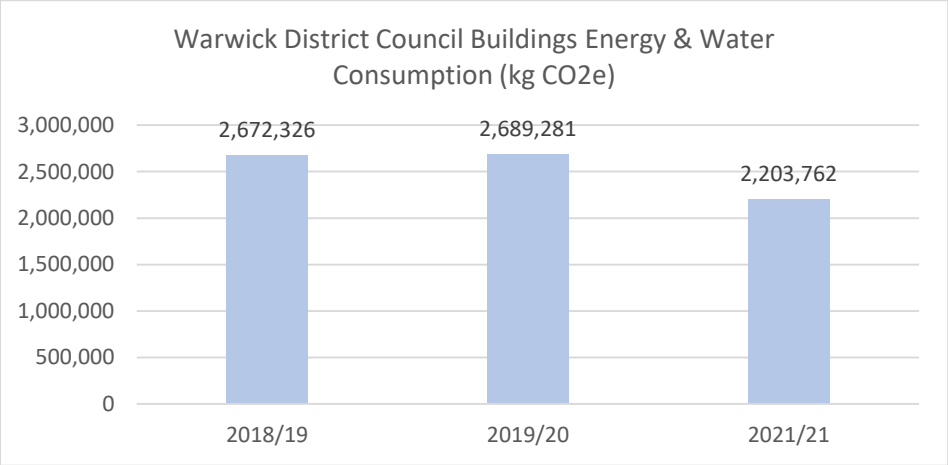


Figure 7 is challenging to draw any conclusions for and the reduction in 2020/21 is likely due to the pandemic. The air handling units had to run at a higher capacity during the pandemic and therefore less electric saving was made than might have been expected.

Figure 8 - Stratford-on-Avon Buildings

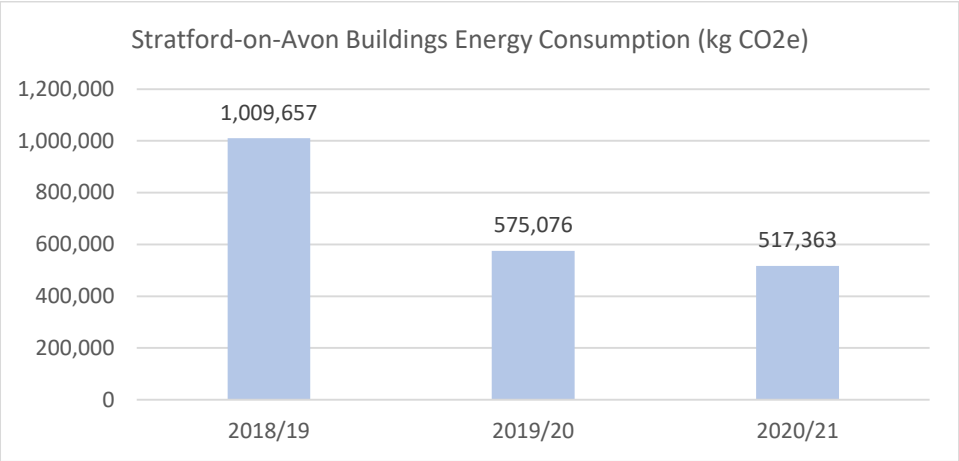


Figure 8 is challenging to draw any conclusions for and the reduction in 2020/21 is likely to be due to the pandemic. The air handling units had to run at a higher capacity during the pandemic and therefore less electric saving was made than might have been expected.

8. Summary

The three year carbon emissions data is useful in understanding Warwick and Stratford-on-Avon Council's carbon emission sources and the focus of the carbon reduction work. Whilst there are some conclusions to be drawn from the data, much of it remains unclear due to the pandemic, data inaccuracies.