

South Norfolk Council Carbon Footprint report for 2022/23

Table of Contents

Contents

Background to this Report	3
Scopes and Inclusions	4
GHG Emissions Statement	7
Breakdown of Emissions	8
Emissions Trends.....	10
Energy Use in Buildings.....	12
South Norfolk House.....	13
Wymondham Leisure Centre	15
Diss Leisure Centre.....	16
Long Stratton Leisure Centre	17
Ketteringham Depot	18
Transport related emissions	18
Appendix	20

Background to this Report

This report calculates the greenhouse gas emissions arising from the council's own activities. This annual Greenhouse Gas Report follows HM Government Environmental Reporting Guidelines with emissions broken down into three scopes and reported in Carbon Dioxide Equivalent (CO_{2e}), calculated using the UK Government's 2022 carbon conversion factors.

South Norfolk District Council
South Norfolk House, Cygnet Court, Long Stratton, Norwich, NR15 2XE
1st April 2022 to 31st March 2023

In September 2022, South Norfolk Council purchased the Horizon Centre with Broadland Council as the new office base for both councils. From April 2022 until October 2022 staff were working in both South Norfolk House and Thorpe Lodge. In October, South Norfolk House closed and staff moved to Thorpe Lodge. The Horizon Centre opened for staff in June 2023 which is outside of this reporting period. There is energy use associated with Horizon Centre for 2022/23 and this has been split 50/50 between the councils. Energy use associated with South Norfolk House has been assigned to South Norfolk Council and for Thorpe Lodge to Broadland District Council's footprint.

Scopes and Inclusions

Scope	Fuel/Activity	Location	Data Source
Scope 1	Main Gas	Wymondham Leisure Centre	Bills/meter reads
		Diss Leisure Centre	Bills/meter reads
		Temporary Accommodation	Bills/meter reads
	Heating oil	South Norfolk House	Oil Deliveries
		Ketteringham Depot	Oil Deliveries
	Diesel in owned vehicles	Waste and street scene Fleet	Diesel used – fuel pump data
		Grounds Maintenance Ketteringham	Diesel used – fuel pump data
Scope 2	Electricity	South Norfolk House	Bills/meter reads
		Wymondham Leisure Centre	Bills/meter reads
		Diss Leisure Centre	Bills/meter reads
		Long Stratton Leisure Centre	Bills/meter reads
		Ketteringham Depot	Bills/meter reads
		Long Stratton toilets	Bills/meter reads
		Wymondham Ticket Machine	Bills/meter reads
		Diss Ticket Machine	Bills/meter reads
		Temporary Accommodation	Bills/meter reads
		Streetlights	Bills/meter reads
Scope 3	Mileage	Staff and councillor business travel	From mileage claims
	Gas	Loddon Business Centre	Bills/meter reads
	Electricity	Old Barn Annexe, Diss	Bills/meter reads
		Loddon BC	Bills/meter reads
		Diss Business Centre	Bills/meter reads
		Crafton House	Bills/meter reads
		Trumpeter House	Bills/meter reads
	Electricity Transmission and Distribution	South Norfolk House, Leisure Centres, Public Toilets, Business Centres, streetlights	Bills/ meter reads
	Waste disposal in council buildings	South Norfolk House	Waste notices and estimates of volume

			and frequency of bin emptying
		Long Stratton Leisure Centre	Waste notices and estimates of volume and frequency of bin emptying
		Diss Leisure Centre	Waste notices and estimates of volume and frequency of bin emptying
		Wymondham Leisure Centre	Waste notices and estimates of volume and frequency of bin emptying
	Water use	South Norfolk House	Bills
		Public toilets	Bills
		Ketteringham Depot	Bills
	Electricity and gas use	Framingham Earl Leisure Centre	Display Energy Certificate

Scope 1: These are Direct Emissions which arise from the activities of an organisation and include fuel combustion on site such as gas boilers and fleet vehicles.

Scope 2: These are Indirect Emissions from electricity purchased and used by the organisation.

Emissions are created during the production of the energy which is eventually used by the organisation.

Scope 3: These are all other Indirect Emissions from activities of the organisation, occurring from sources that they do not own or control. In this GHG report these cover emissions associated with business travel by employees and also those associated with the 'Transmission and Distribution' (T&D) of electricity purchased by the organisation.

Scope 3 can include a wide range of indirect emission sources such as supply and demand chains and staff commuting emissions although at present the data is not available for this.

Inclusions

Buildings that are owned and operated by the councils have been included – where the council pays the energy bills.

Framingham Earl Leisure Centre has been included. This is part of a school which is operated by Norfolk County Council, the sports hall is used by the school during school hours and by South Norfolk Council for the evenings and weekends. South Norfolk does not pay these bills, so the data has been taken from the Display Energy Certificate published online, and this has been included in Scope 3.

Example calculation method

Electricity use (kWh) x conversion factor associated with grid electricity = emissions kgCO₂e

GHG Emissions Statement

South Norfolk Council's Carbon Footprint for 2022/23 has been calculated as 2038.38tCO₂e, the breakdown is shown in Table 2.

	2022/23	tCO₂e
Scope 1	Natural Gas	241.39
	Heating Oil	76.12
	Authority owned vehicles (Ketteringham Depot)	1274.15
Scope 2	Electricity	343.98
Scope 3	Transmission and Distribution losses from Electricity consumption	30.42
	Employee & Councillor business travel	62.77
	Waste Disposal (from Council operated buildings)	6.70
	Water Use	2.85
	Total	

Intensity Measurement

In 2021 the population of South Norfolk was 141,900. This can be used to calculate an intensity measurement of kgCO₂e per resident.

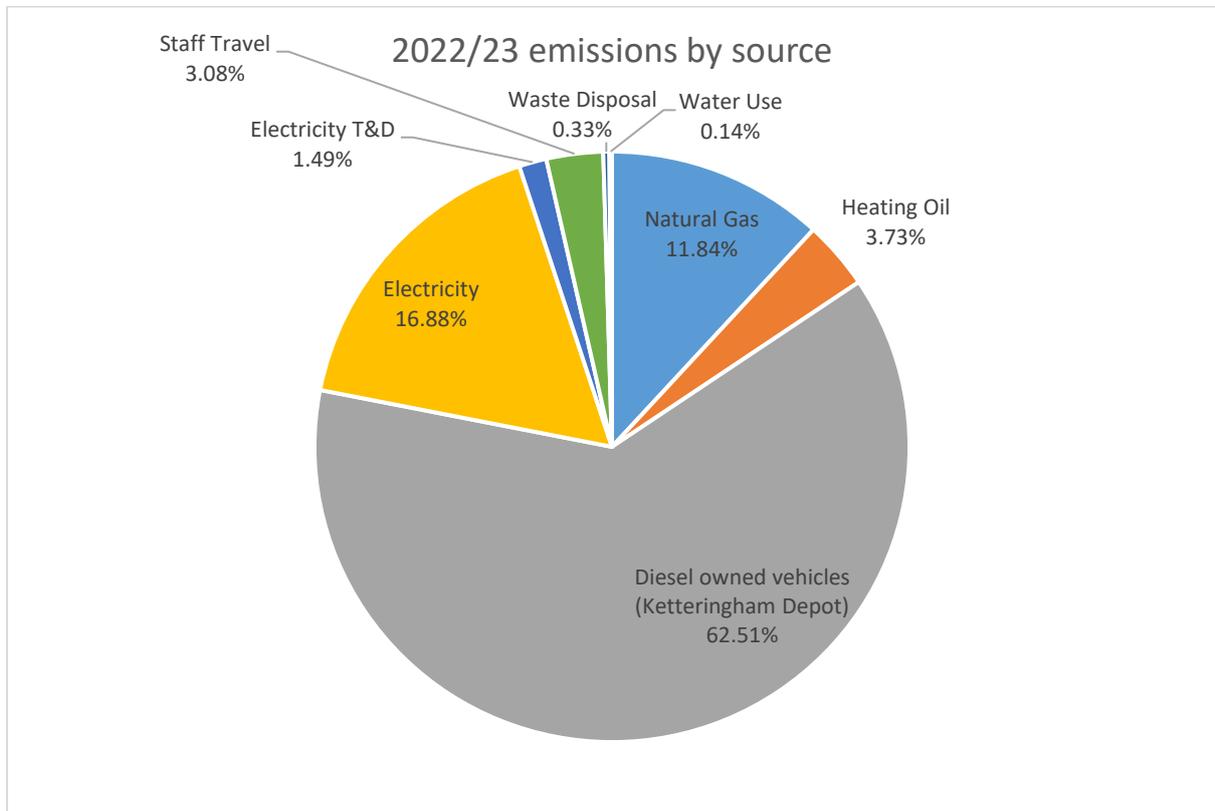
This then allows for comparison with other councils. It should be noted though that not all councils offer the same services or report on the same activities.

Table 3 shows a comparison with other councils in Norfolk.

Council	GHG emissions (tCO₂e)	Population	Intensity ration (kgCO₂e per resident)
Broadland	325.30	131,700	2.47
South Norfolk	2,038.38 (2022/23)	141,900	14.36
Norwich	3,078 (2020/21)	144,000	21.375
Breckland	4,119 (2022/23)	141,500	29.12
Kings Lynn and West Norfolk	2,997.0 (2020/21)	154,300	19.42

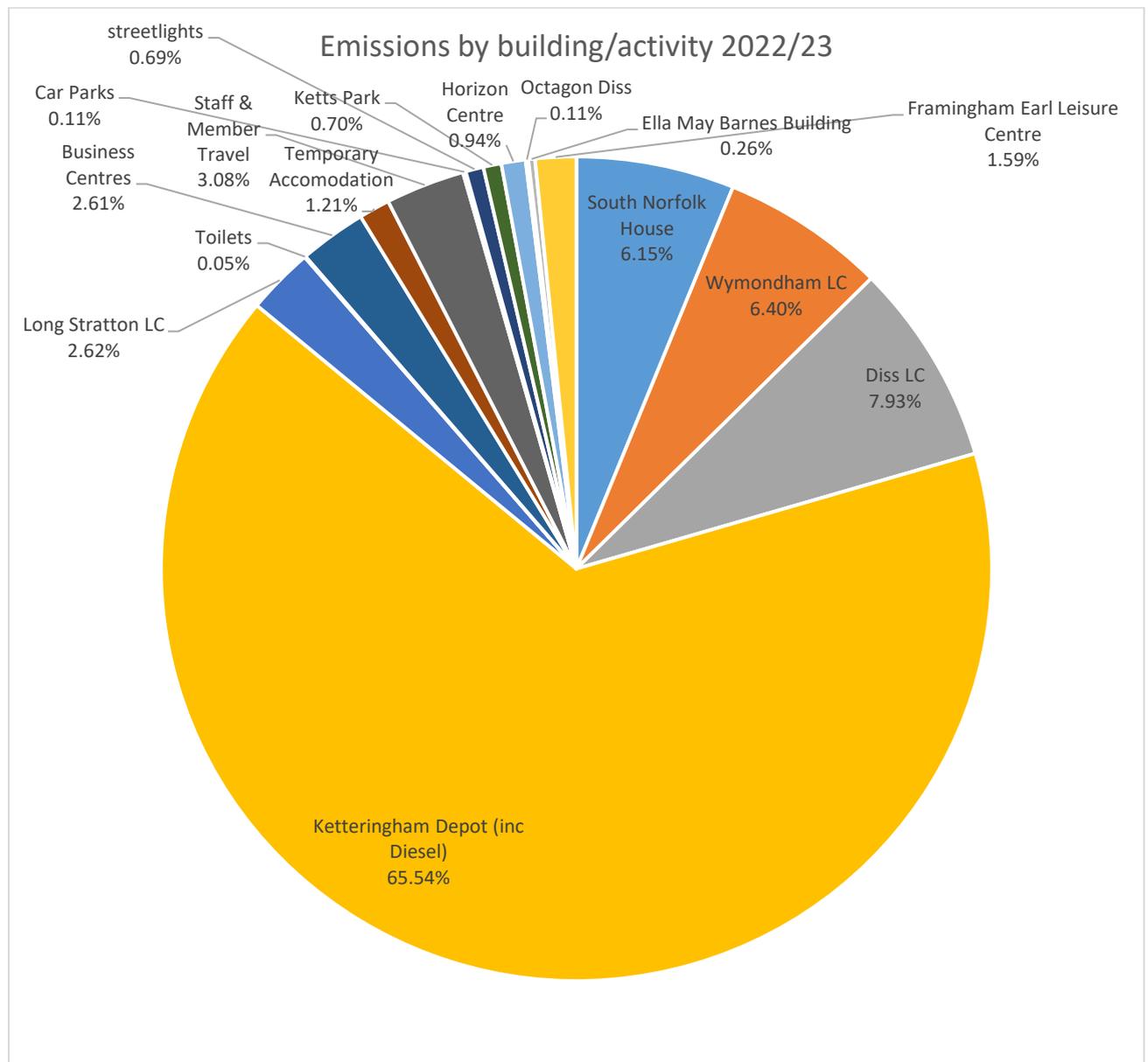
Breakdown of Emissions

Figure 1: Pie chart of emissions from source



The pie chart shows that the largest proportion of emissions is from the diesel used by the vehicles at Ketteringham Depot, followed by electricity and natural gas use in buildings.

Figure 2: Pie chart of emissions from building/activity



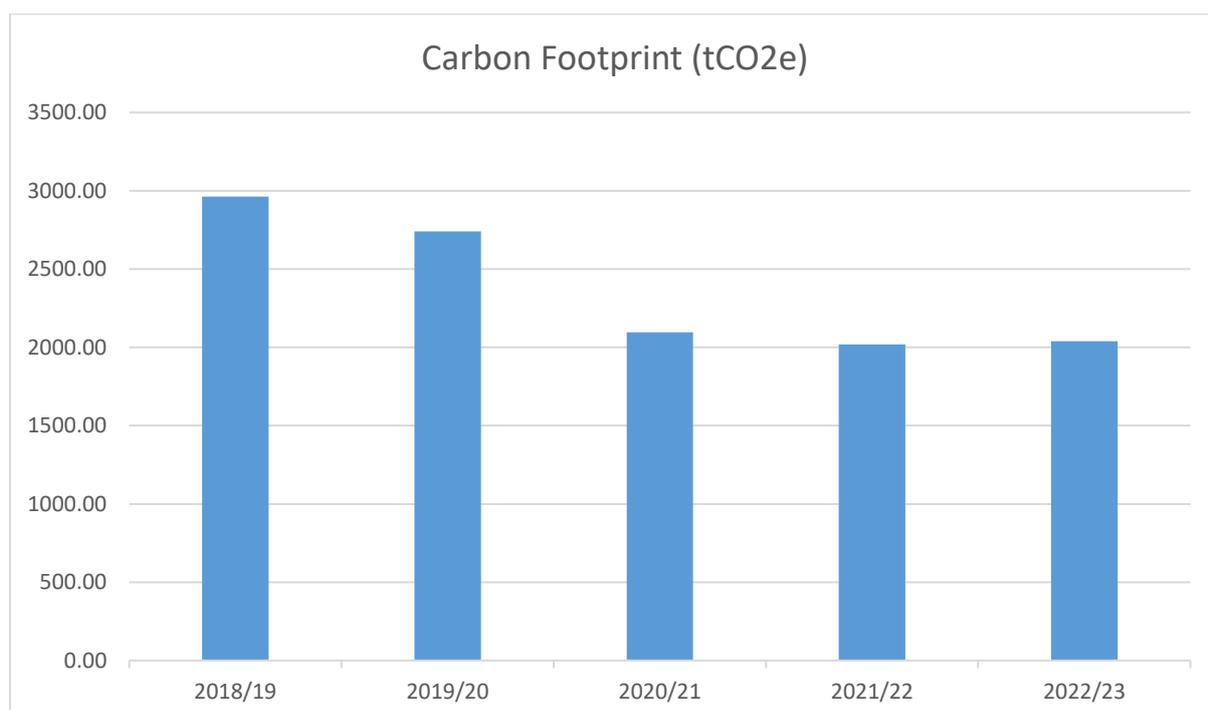
The largest contributor to the emissions is Ketteringham Depot including diesel use, followed by Diss and Wymondham leisure centres and South Norfolk House. Staff and Member business travel makes up 3.08%, Long Stratton Leisure Centre is 2.62% and business centres 2.61%, the remaining buildings are less than 2% each.

Emissions Trends

Table 4 shows the changes in emissions over time.

	2018/19	2019/20	2020/21	2021/22	2022/23
Scope 1	2299.38	2101.09	1630.64	1516.55	1565.86
Scope 2	481.31	427.07	324.53	340.60	288.19
Scope 3	183.02	212.65	141.77	161.43	184.33
Total gross emissions	2963.71	2740.81	2096.93	2018.58	2038.38
Renewable electricity generated					24,496 kWh generated saving 5.17 tCO ₂ e avoided from grid electricity
Offsets	0	0	0	0	0
Green tariff	0	0	0	0	0
Total annual net emissions	2963.71	2740.81	2096.93	2018.58	2038.38
Outside of scopes	0	0	0	0	0

Figure 3: chart to show annual carbon footprint trends.



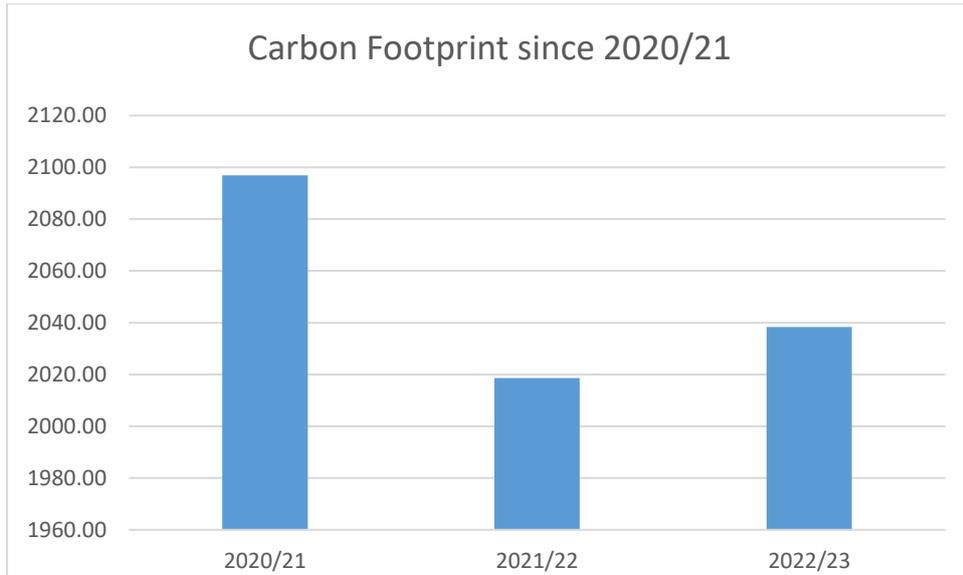
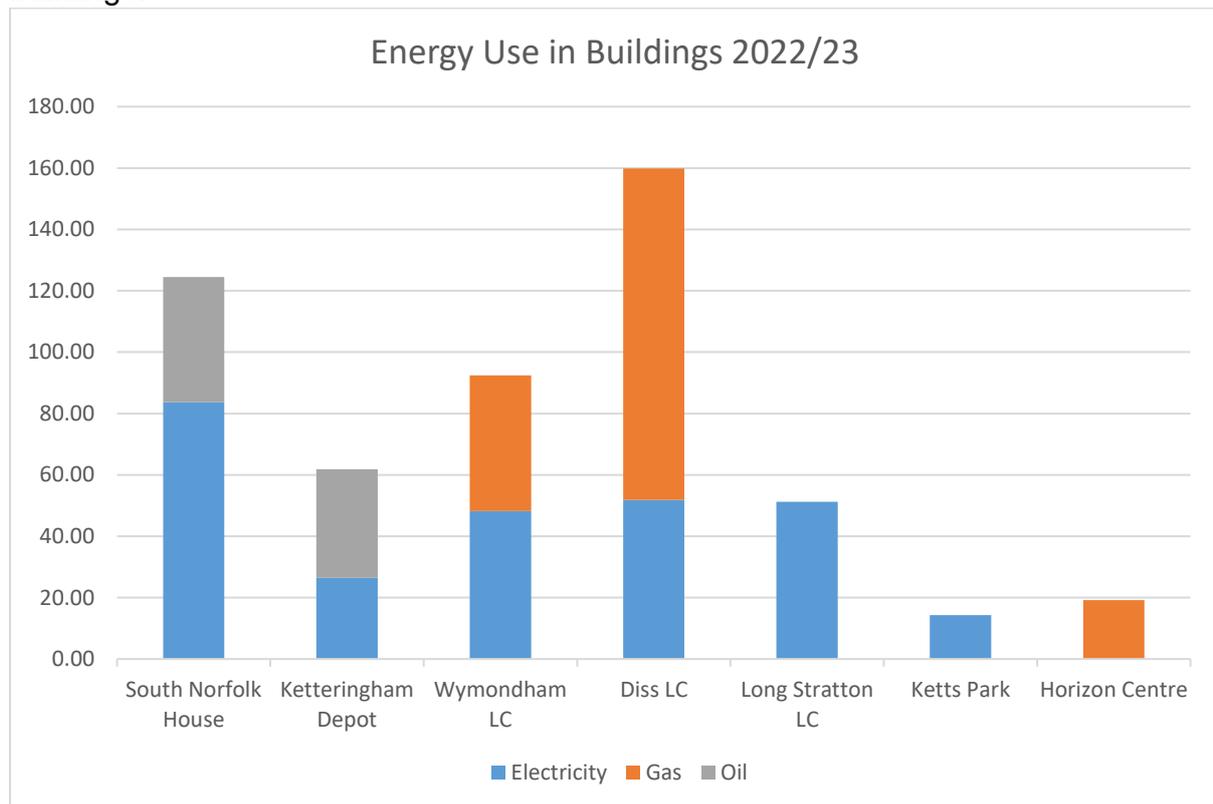


Figure 3 shows that there has been a decrease in emissions since the baseline year (2018/19). There was a steeper decline due to Covid restrictions, but this has levelled out now.

Energy Use in Buildings

The chart below shows the emissions from the key buildings. Diss Leisure Centre is the highest. South Norfolk House is lower due to the closure in October 2022, and Wymondham Leisure Centre due to incorrect readings from a faulty gas meter.

Figure 4: Stacked bar chart showing emissions from different fuels – grouped into buildings.



South Norfolk House

South Norfolk House was the main office base for staff in Long Stratton. This building closed in October 2022; staff then moved to Thorpe Lodge before moving permanently to the Horizon Centre in June 2023.

South Norfolk House was only open to desk-based staff for half of the reporting period, however the building was still in use while equipment was sorted and moved to other buildings.

Figure 5: trends in electricity use and associated emissions.

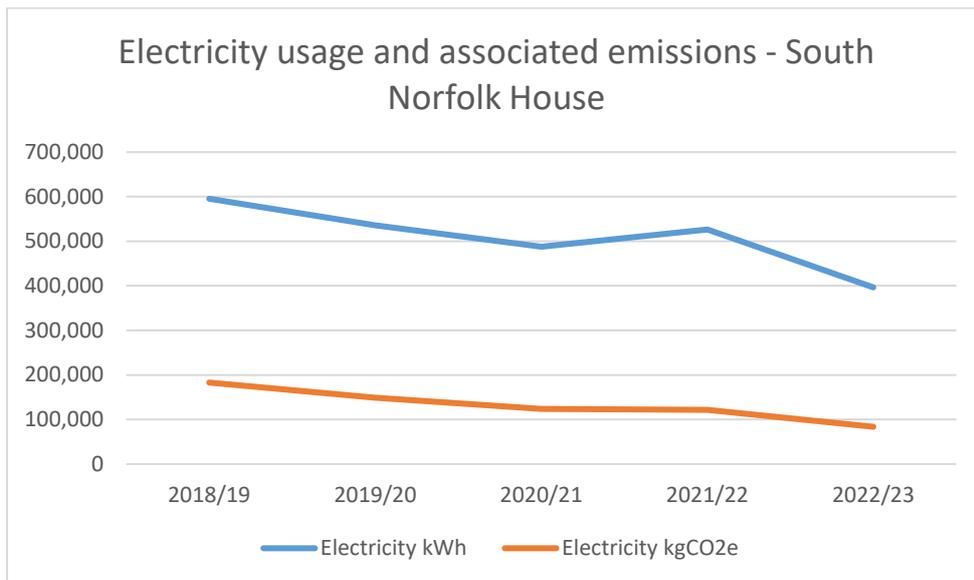
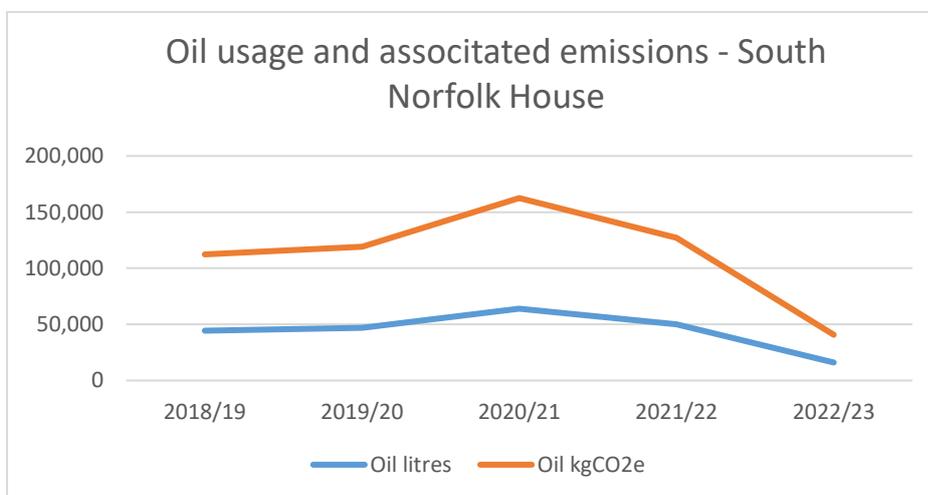


Figure 5 shows that electricity use and emissions have fallen since the baseline year at South Norfolk House. There has been a steeper decline since the previous year due to the closure in October 2022.

Figure 6: trends in oil use and associated emissions.

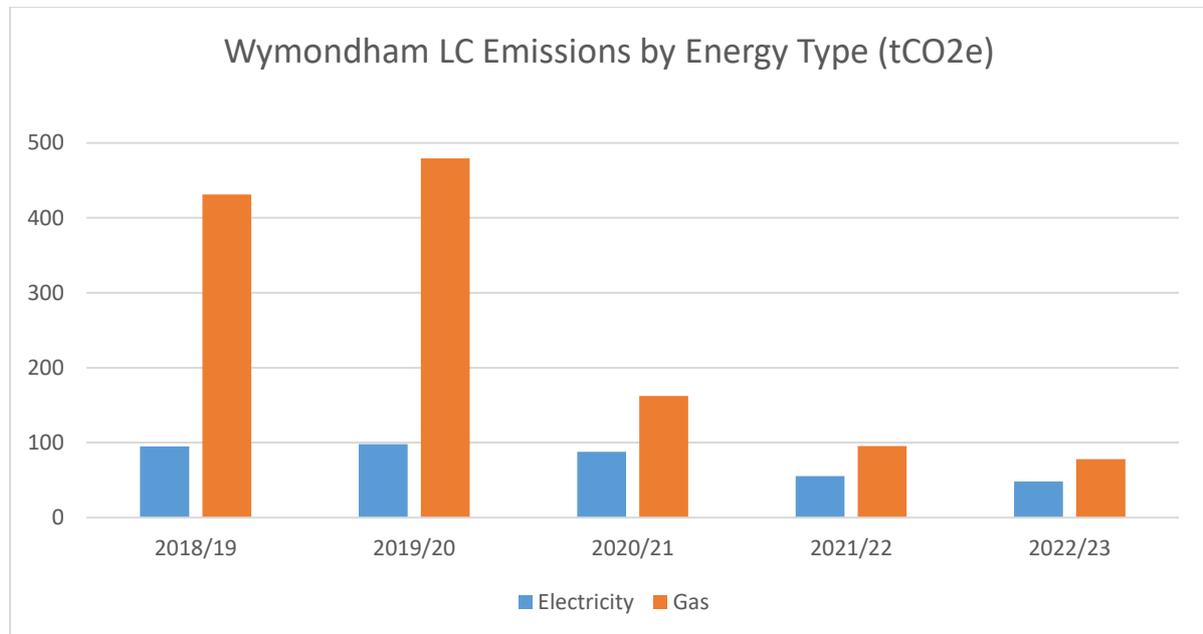


Emissions have gone down due to the office being closed from October 2022 onwards. This means that oil wasn't used over the winter which explains the large drop in emissions.

Wymondham Leisure Centre

Wymondham Leisure Centre has a pool, fitness studio, spa and sports courts. This is the largest leisure centre and was refurbished recently. There is a CHP system onsite.

Figure 7: chart to show trends in energy use at Wymondham Leisure Centre



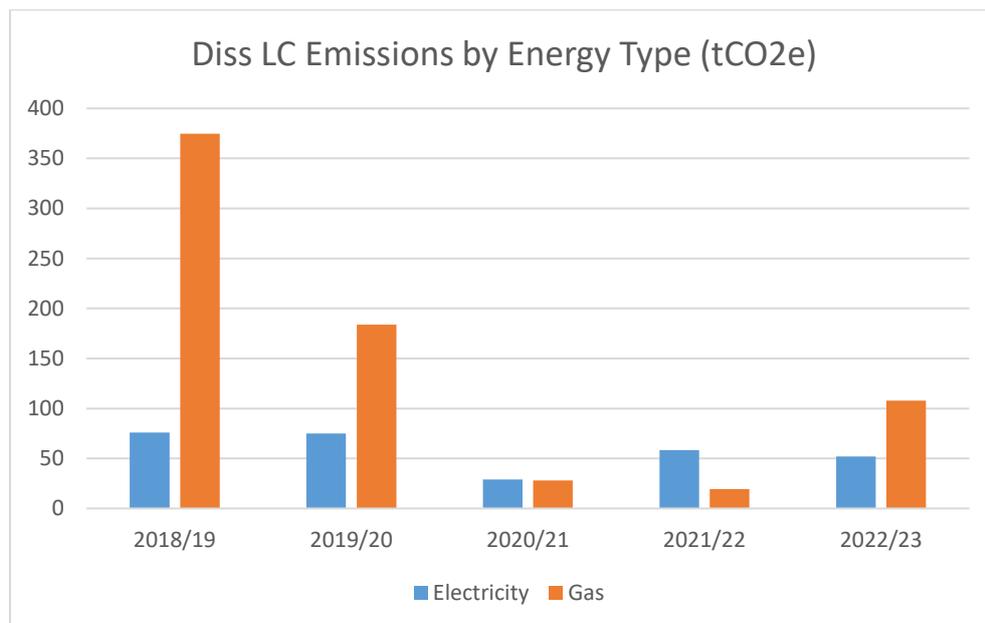
Explanations

Gas emissions have dropped because the second gas meter is still faulty and is not accurately recording the gas used. This means that the gas use is not an accurate representation of the gas used on site. The gas meter was repaired in August 2023 so the data for next year's report will be more accurate.

Diss Leisure Centre

Diss Leisure Centre has a pool, gym and sauna. This is an older leisure centre, it is part of a refurbishment scheme that will include insulation, solar PV and air source heat pumps. These measures will reduce the energy use from the centre, these are being installed in 2024 and will be shown as reductions in future footprint calculations.

Figure 8: chart to show trends in energy use at Diss Leisure Centre



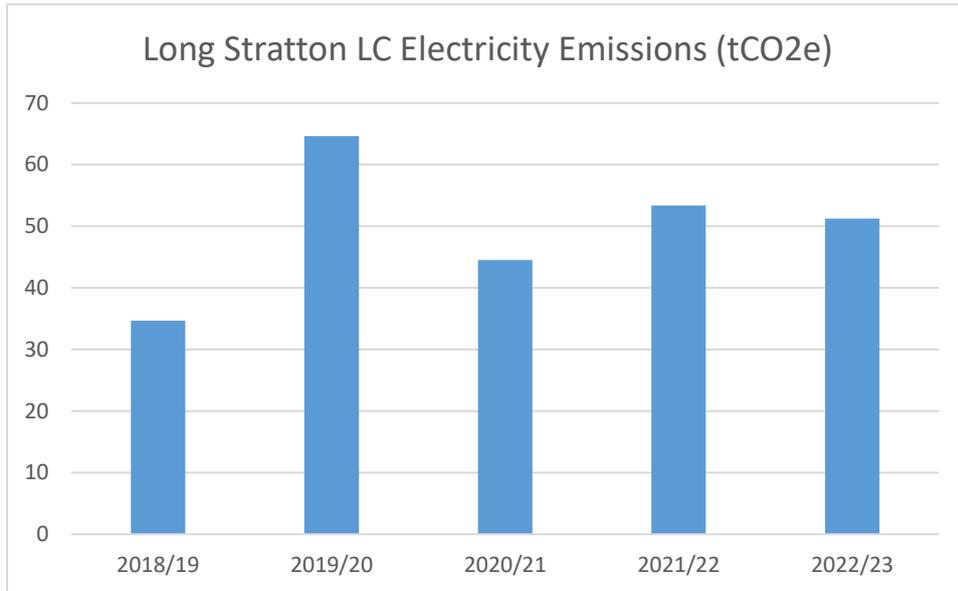
Explanations

Emissions from Diss Leisure Centre have increased since the previous year. This is due to the centre reopening fully after the Covid closures.

Long Stratton Leisure Centre

Long Stratton Leisure Centre has a gym, fitness studio, soft play area and 3G pitch. This building was refurbished recently, and the heating was changed from oil to an air source heat pump.

Figure 9: chart to show trends in electricity emissions

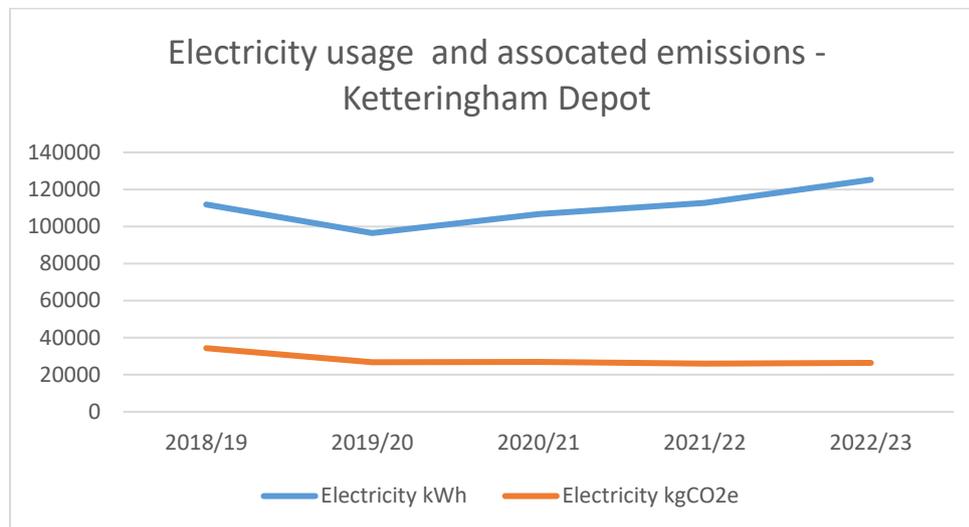


Emissions from electricity use have fallen slightly due to the decarbonisation of the grid.

Ketteringham Depot

Ketteringham Depot is the base for the waste and grounds maintenance service.

Figure 10: chart to show trends in electricity use and emissions.



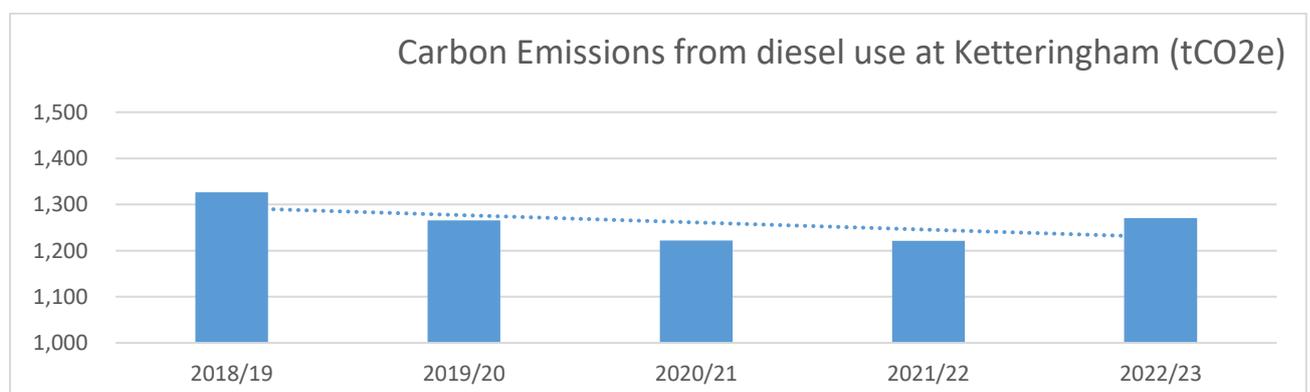
Electricity use has increased since 2021/22, emissions have been relatively stable due to the decarbonisation of the grid balancing the increase in usage.

Transport related emissions

Waste and Street scene fleet

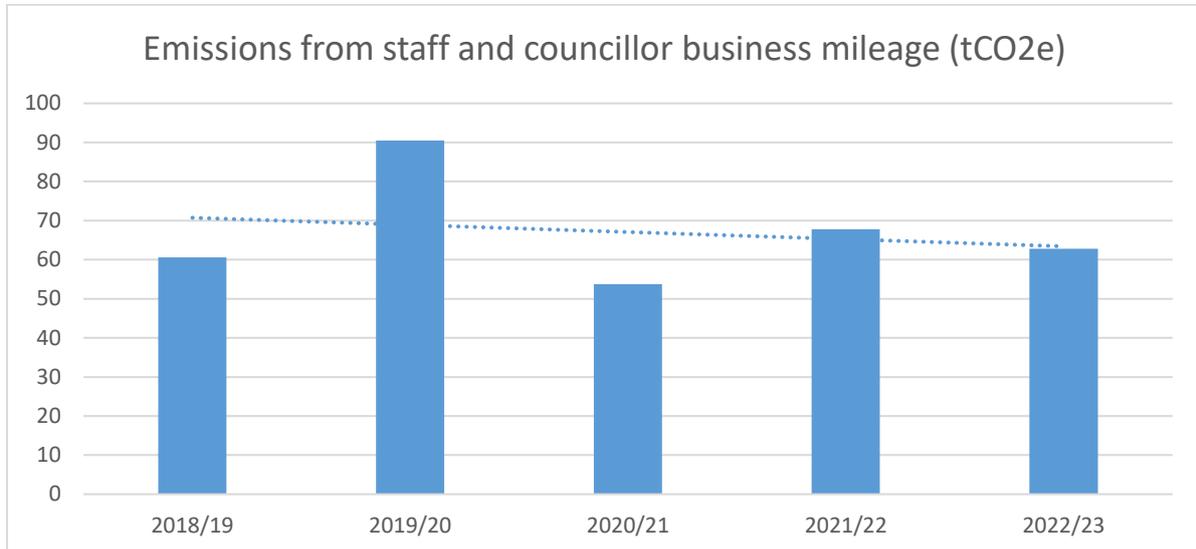
Emissions associated with the waste fleet are the largest emitter in the whole footprint. The emissions were decreasing since the baseline year due to newer more efficient vehicles being added to the fleet. There has been an increase in emissions since 2021/22.

Figure 11: chart to show emissions from diesel use at the depot



Staff travel

The emissions associated with staff and member business travel are 62.77tCO₂e or 251,682 miles. This is a slight decrease compared to last year.



Staff business mileage in their own vehicles has been calculated based on the mileage data supplied. The fuel and engine size was provided, this was then separated into the engine size categories as provided in the 2022 DESNZ conversion factors. In previous years this data was not available, so this is the most accurate calculation of emissions from staff travel.

Appendix

Scope 1		2018/19	2019/20	2020/21	2021/22	2022/23
Building/Activity	fuel	emissions	emissions	emissions	emissions	emissions
South Norfolk House	oil	112.33	119.08	162.51	127.17	40.76
Wymondham LC	gas	431.39	479.28	162.34	95.39	77.95
Diss LC	gas	374.66	183.71	28.18	19.48	107.97
Waste and street scene fleet	diesel	1326.39	1265.37	1222.22	1221.12	1270.06
grounds maintenance Ketteringham	diesel	17.59	16.33	16.33	16.34	4.09
Ketteringham Depot	oil	24.68	24.72	24.72	24.72	35.36
Temporary Accomodation	gas	12.33	12.59	14.33	12.33	10.47
Horizon Centre	gas					19.20
TOTAL		2299.38	2101.09	1630.64	1727.70	1578.43
Scope 2						
Building/Activity	fuel	emissions	emissions	emissions	emissions	emissions
South Norfolk House	electricity	168.55	136.97	113.78	111.83	76.68
Wymondham LC	electricity	87.43	90.30	80.71	51.02	44.17
Diss LC	electricity	70.03	69.21	26.69	53.63	47.57
Ketts Park	electricity				14.99	13.08
Long Stratton LC	electricity	31.94	59.57	40.96	49.01	46.96
Ketteringham Depot	electricity	31.68	24.66	24.87	23.93	24.22
Diss Mere toilets	electricity	0.83	0.78	0.74	0.00	0.00
Wymondham Market Place Toilets	electricity	0.00	0.00	0.00	0.00	
Hingham Market Place toilets	electricity	0.27	0.52	0.00	0.00	
Long Statton toilets	electricity	0.62	0.46	0.07	0.12	0.42
Church Plain Loddon toilets	electricity	0.01	0.00	0.00	0.00	
Harleston toilets	electricity	0.68	2.93	0.20	0.36	0.20
Wymondham Ticket Machine	electricity	0.04	0.70	0.62	0.59	0.53
Diss Ticket Machine	electricity	2.34	2.12	1.88	1.81	1.60
Temporary Accomodation	electricity	10.51	10.29	8.97	8.34	7.28
Temporary Accomodation	electricity	0.49	0.33	0.00	0.00	
Temporary Accomodation	electricity	3.02	2.40	5.72	2.45	2.75
Temporary Accomodation	electricity	7.25	3.72	0.64	7.72	2.93
Temporary Accomodation	electricity	0.00	0.00	0.00	0.00	
streetlights (all)	electricity	65.61	22.13	18.67	14.79	12.97
Horizon Centre	electricity					0.01
Octagon Diss	electricity					1.97
Ella May Barnes Building	electricity					4.83
TOTAL		481.31	427.07	324.53	340.60	288.19
Scope 3						
Building/Activity	fuel	emissions	emissions	emissions	emissions	emissions

Staff&member busines travel	mileage	60.57	90.46	53.77	67.78	62.77
Loddon BC	gas	2.37	9.48	5.61	5.38	4.16
Old Barn Annexe, Diss	electricity	2.49	3.50	0.00	3.43	1.78
Loddon BC	electricity	2.01	1.21	1.17	1.02	0.79
Diss Business Centre	electricity	6.96	4.50	2.43	3.27	15.92
Crafton House	electricity	35.56	32.77	23.70	27.15	26.49
Trumpeter House	electricity	7.87	11.90	10.40	8.07	0.00
South Norfolk House	electricity T&D	14.37	11.63	9.78	9.90	7.01
Wymondham LC	electricity T&D	7.45	7.67	6.94	4.51	4.04
Ketts Park	electricity T&D				1.33	1.20
Diss LC	electricity T&D	5.97	5.88	2.30	4.75	4.30
Long Stratton LC	electricity T&D	2.72	5.06	3.52	4.34	4.30
Ketteringham Depot	electricity T&D	2.70	2.09	2.14	2.12	2.22
Diss Mere toilets	electricity T&D	0.07	0.07	0.06	0.00	0.00
Wymondham Market Place Toilets	electricity T&D	0.00	0.00	0.00	0.00	
Hingham Market Place toilets	electricity T&D	0.02	0.04	0.00	0.00	
Long Statton toilets	electricity T&D	0.05	0.04	0.01	0.01	0.04
Church Plain Loddon toilets	electricity T&D	0.00	0.00	0.00	0.00	
Harleston toilets	electricity T&D	0.06	0.25	0.02	0.03	0.02
Wymondham Ticket Machine	electricity T&D	0.00	0.06	0.05	0.05	0.05
Diss Ticket Machine	electricity T&D	0.20	0.18	0.16	0.16	0.15
Old Barn Annexe, Diss	electricity T&D	0.21	0.30	0.00	0.30	0.16
Loddon BC	electricity T&D	0.17	0.10	0.10	0.09	0.07
Diss Business Centre	electricity T&D	0.59	0.38	0.21	0.29	1.46
Crafton House	electricity T&D	3.03	2.78	2.04	2.40	2.42
Trumpeter House	electricity T&D	0.67	1.01	0.89	0.71	0.00
The Manse	electricity T&D	0.90	0.87	0.77	0.74	0.67
Hurst Road	electricity T&D	0.04	0.03	0.00	0.00	

Temporary Accomodation	electricity T&D	0.26	0.20	0.49	0.22	0.25
Temporary Accomodation	electricity T&D	0.62	0.32	0.05	0.68	0.27
Temporary Accomodation	electricity T&D	0.00	0.00	0.00	0.00	
Streetlights (all)	electricity T&D	5.59	1.88	1.61	1.31	1.19
Octagon Diss	electricity T&D					0.18
Ella May Barnes Building	electricity T&D					0.44
South Norfolk House	water	0.51	0.51	0.20	0.20	0.06
South Norfolk House	waste general	0.92	0.92	0.91	0.91	0.91
South Norfolk House	waste recycling	1.89	1.89	1.88	1.88	0.00
Wymondham Leisure Centre	water	4.71	4.09	1.28	0.84	1.33
Wymondham Leisure Centre	waste general	2.14	2.14	2.13	2.13	2.13
Wymondham Leisure Centre	waste recycling	0.92	0.92	0.91	0.91	0.91
Long Stratton LC	water	0.43	0.69	0.27	0.14	0.22
Long Stratton LC	waste general	0.92	0.92	0.91	0.91	0.91
Long Stratton LC	waste recycling	0.92	0.92	0.91	0.91	0.91
Ketts Park	water				0.03	0.00
Diss LC	water	2.91	2.85	1.15	0.72	0.87
Diss LC	waste general	0.92	0.92	0.91	0.91	0.91
Diss LC	waste recycling	0.61	0.61	0.61	0.61	0.00
Diss Mere toilets	water	0.62	0.18	0.00	0.00	0.01
Wymondham Market Place Toilets	water	0.29	0.00	0.00	0.00	
Hingham Market Place toilets	water	0.08	0.00	0.00	0.00	
Long Statton toilets	water	0.42	0.23	1.22	0.03	0.25
Church Plain Loddon toilets	water	0.00	0.00	0.00	0.00	
Harleston toilets	water	0.05	0.00	0.00	0.00	0
Framingham Earl Leisure Centre	Electricity					10.81818
Framingham Earl Leisure Centre	gas					21.63636
Ketteringham Depot	water	0.25	0.24	0.24	0.24	0.08
Octagon Diss	water					0.00
Horizon Centre	electricity T&D					0.00
Horizon Centre	water					0.01

Horizon Centre	waste general					0.00
Horizon Centre	waste recycling					0.00
TOTAL		183.02	212.65	141.77	161.43	184.33
1,2,3	TOTAL	2963.71	2740.81	2096.93	2229.73	2050.95