

Borough Council of
**King's Lynn &
West Norfolk**



Carbon Audit 2022/2023

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1. Summary

1.1 The following report sets out the carbon footprint relating to the estate emissions of the Borough Council of King's Lynn and West Norfolk (BCKLWN). This is reported annually to set out the direction of travel against the Council's commitment to be NetZero on its estate emissions profile by no later than 2035.

1.2 This 2022/2023 carbon audit highlights that the BCKLWN has achieved an 8% reduction in emissions from 2021/2022 levels, emitting 2,607.53 tCO₂e.

This represents a 64 % reduction from the original baseline year 2009/2010.

1.3 The carbon audit has been carried out in accordance with the 'Environmental Reporting Guidelines' set by The Department of Business, Energy, and Industrial Strategy (BEIS), The Greenhouse Gas Protocol 'Corporate Accounting and Reporting Standard' and the Carbon Trust 'Carbon Foot Printing Guide'. Official BEIS greenhouse gas reporting conversion factors have been used to convert the BCKLWN's usage data into standardised figures for estimated tonnes of carbon dioxide.

2. Scope emissions

2.1 The table below sets out what is captured in each of scopes.

<u>Scope</u>	<u>Activity</u>	<u>Description</u>	<u>Data Source</u>
Scope 1	Gas Consumption	Used to heat our buildings and sites.	Data obtained from council utility bills
	Oil Consumption	Used to heat our buildings and sites	Data obtained from council utility bills
	Vehicle Fleet	The council's operational vehicle fleet.	Data obtained from council fuel invoices
Scope 2	Purchased electricity	Electricity purchased from the national grid to power the council's buildings and sites.	Data obtained from council utility bills
Scope 3	Transmission and Distribution Losses	These are indirect emissions from the transmission and distribution of our purchased electricity. It is considered best practise to include these in scope 3 emissions.	Data obtained from council utility bills

	Water Supply	The supply of water to our buildings and sites.	Data obtained from council utility bills
	Water Treatment	The water we return to the system (90% return to sewer rate).	Data obtained from council utility bills
	Business Travel	Staff and member travel in their own vehicles on business grounds.	Obtained using employee mileage claims
	Contractor Travel	Travel by contractors to carry out work commissioned by the council, e.g., waste collection.	Obtained through contractor fuel records.

2.2 The table below sets out the related emissions for each of the scopes for previous years.

BCKLWN tCO_{2e} Emissions						
Year	2009/2010	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
Scope 1	2,109.2	1,720.5	1,676.6	1,595.0	1685	1449
Scope 2	3,235.4	1,488.6	1,324.7	829.5	843.46	885.09
Scope 2 renewable tariffs	-	-	-	-671.3	-843.46	-885.09
Scope 3	2021.5	1,499.6	1,454.5	1,243.8	1146.41	1239.39
Scope 3 Transmission Losses renewable tariff	-	-	-	-	-6.95	-80.97
Total gross emissions	7,366.1	4,708.7	4,455.8	3,668.3	3674.9	3573.58
Total net emissions	7,366.1	4,708.7	4,457.2	2,997.0	2824.5	2607.5

3. Emissions breakdown

BCKLWN Carbon Audit: 2022/2023				
Emissions Sources	Consumption		Emissions Data	
Scope 1	Activity Data	Unit	t CO₂e	kg CO₂e
Gas Consumption	6136616.00	<i>kWh</i>	1128.95	1128953.25
LPG Consumption	1.00	<i>tonnes</i>	2.94	2939.29
Oil Consumption	0.00	<i>litres</i>	0.00	0.00
Council Vehicle Fleet	-	-		
Petrol Vehicle	15842.16	<i>litres</i>	34.25	34248.37
Diesel Vehicle	110627.68	<i>litres</i>	282.97	282967.91
Red Diesel	0.00	<i>litres</i>	0.00	0.00
Total Scope 1	-	-	1449.11	1449108.81
Scope 2	Activity Data	Unit	t CO₂e	kg CO₂e
Electricity Consumption	4576930.00	<i>kWh</i>	885.09	885086.72
Total Scope 2	-	-	885.09	885086.72
Scope 3	Activity Data	Unit	t CO₂e	kg CO₂e
Transmission & Distribution Losses	4576930.00	<i>kWh</i>	80.97	80965.89
T&D: EV & Plug-in Hybrid	1777.40	<i>miles</i>	0.13	131.23
Water Supply	80919.00	<i>m³</i>	12.06	12056.93
Water Treatment	56440.00	<i>m³</i>	15.35	15351.68
Business Travel	-	-		
Small Petrol Car	39545.95	<i>miles</i>	9.32	9324.94
Medium Petrol Car	33180.70	<i>miles</i>	9.86	9862.63
Large Petrol Car	2865.30	<i>miles</i>	1.27	1274.49
Small Diesel Car	51897.98	<i>miles</i>	11.68	11684.31
Medium Diesel Car	37848.10	<i>miles</i>	10.23	10233.75
Large Diesel Car	14847.30	<i>miles</i>	5.01	5006.81
Bus	1044.00	<i>passenger km</i>	0.11	112.52
Taxi	30.80	<i>passenger km</i>	0.01	6.41
Rail	6484.00	<i>passenger km</i>	0.23	230.12
Ferry	0.00	<i>passenger km</i>	0.00	0.00
Plane	0.00	<i>passenger km</i>	0.00	0.00
Contractor Travel	-	-		
Refuse Collection Vehicles	400393.76	<i>litres</i>	1083.28	1083277.33
Total Scope 3	-	-	1239.39	1239387.80
BCKLWN Gross Emissions Total	-	-	3573.58	3573583.34
Carbon Offsets / Renewable Tariffs	Activity Data	Unit	t CO₂e	kg CO₂e
Renewable Electricity Tariff	4576930.00	<i>kWh</i>	-885.09	-885086.72
Transmission & Distribution Losses	4576930.00	<i>kWh</i>	-80.97	-80965.89
Total	-	-	-966.06	-966052.61
BCKLWN Net Emissions Total	-	-	2607.53	2607530.73

4. **Changes to emissions**

4.1. **The trend**

There has been an 8% reduction in the council's emissions compared to the 2021/2022 audit. Overall CO₂e emissions decreased from 2,824.5 tCO₂e in 2021/2022 to 2,607.5 tCO₂e this is a reduction of 217 tCO₂e.

4.2 **Scope 1**

Scope 1 emissions account for 44% of the organisation's total emission profile and totalled 1,449.11 tCO₂e, compared to 1,685.04 tCO₂e in 2021/2022. This is a decrease of 235.93 tonnes, which equates to a 31% decrease.

Variances explained:

4.2.1 **Gas consumption**

Gas usage across the council's estate contributed to 1128.95 tCO₂e to the 2022-2023 emissions profile. This is a decrease of 138.16 tCO₂e of gas usage in comparison to 2021-2022.

4.2.2 It is worth noting that these decreases help to highlight the positive impacts that the council's refit programme have already had on gas usage figures. In the reporting period we saw significant reductions at Kings Court, South Lynn Community Centre, Hunstanton Leisure Centre, Fairstead Community Centre and the Corn Exchange.

4.2.4 **Council Fleet Fuel consumption**

The council has seen no change in its petrol consumption related emissions in the period. This can be attributed to new hybrid vehicles coming online in the fleet. These hybrid vehicles use petrol rather than diesel.

4.2.5 Please note that this section does not refer to the council's outsourced waste contract as their emissions are counted in the scope 3 emissions profile.

4.3 **Scope 2**

The council's Scope 2 emissions profile is now reported at zero. This is due to the council's electric contract with EDF being confirmed as being provided from certified zero carbon sources. This therefore means a further reduction of 41.63 tCO₂e compared to 2021/2022. It is worth noting that if the council did not receive its electric from this tariff it would have a further 885 tCO₂e on its scope 2 emissions profile and additional emissions relating to transmission and distribution through the power grid (see section 4.4 for further details).

4.4 **Scope 3**

Scope 3 emissions totalled at 1239.39 tCO₂e compared to 1139.46 tCO₂e in 2021/2022. This is an increase of 99.93 tCO₂e which equates to an 8.7% increase in Scope 3 emissions compared to the previous year. The main increase in scope 3 emissions relates to an increase in water usage and staff business travel.

Variances explained:

4.4.1 **Business Travel**

The council has seen an increase of 15.55 tCO₂e related to business travel in cars and an increase of bus and taxi usage but a decrease of rail travel compared to 2021/2022. This can be attributed to the easing of COVID-19 restrictions and a return to more face-to-face business meetings.

However, there has been an increase in the use of both fully electric vehicles and hybrid electric vehicles being used for business related travel due to these now being owned by members of staff and these then being used for business travel.

4.4.2 **Waste contract**

The council's outsourced waste contract has not seen an emissions reduction compared to the previous year. This can be attributed to route optimisation work staying at the same level.

4.4.3 **Water supply & treatment**

The amount of water used by or sent to be treated from council assets has increased by 18,829m³ compared to 2021/2022. This 15% increase is due to increased usage of office facilities and leisure centres. The total water supply & treatment for 2022/2023 totalled 137,359.00m³ whereas in 2021/2022 it totalled 118,530.00m³.

4.4.4 **Electric Transmission/Distribution Losses**

Similar to everyone who receives their electricity supply through the national grid infrastructure, the council is subject to transmission/distribution losses of the electricity moving through the grid from where it is generated to the building where it is used. This therefore means more electricity needs to be generated than is actually consumed by the end user. These transmission losses generate emissions as captured under scope 3. As already highlighted due to the council purchasing zero carbon electricity it is reporting all its electricity consumption related emissions as zero. This can also be applied to the transmission/distribution losses so for the purpose of this audit they are reported as zero.

5. **Electricity generation**

The BCKLWN has PV arrays installed on a number of its assets. Over 2022/2023, these systems generated 64,2110kWh of clean energy, offsetting 120tCO₂e, compared with grid average emission factors. The bulk of this energy will have been

consumed on site, reducing the councils' electricity consumption with surplus generation exported to the grid.

The improved carbon savings, of 58tCO₂e can be explained by five new arrays having been installed across four premises, as part of a package of works funded by the public sector decarbonisation scheme, combined with a hot/dry summer in 2022.

The sites that now have solar PV arrays have been installed at are the depot, the Lynnsport complex, Alive St James, Downham Market and Oasis. South Lynn and Kings Court. More sites that may be suitable for solar PV arrays are being explored.

6. Reducing our emissions

6.1 The council is following a phased approach to reducing emissions and combating climate change. Phase one focuses on corporate emissions reporting and reduction. The monitoring and reporting the council's own emissions form the basis of the council's journey by establishing a baseline for reductions to be monitored against. Phase two looks at the reduction of our district's emissions. The council is initially focusing on phase 1 work but will look to influence the reduction of district emissions simultaneous to phase 1 work, as and when opportunities arise.

6.2 The BCKWLN adopted a corporate climate change policy in October 2020, setting out climate change commitments for the future. Further to this work a climate change strategy and action plan was adopted in September 2021. This details how the council will reach net-zero by 2035, looking specifically at how each scope's emissions will be reduced. This strategy and action plan is split into the councils two work phases, focusing heavily on phase one, and reaching net-zero by 2035 for the council's corporate emissions. However, the strategy and action plan does cover district emissions and where the council is best placed to influence and lead emissions reductions on this scale. The council is still working towards the 2050 net-zero target for the district.

6.3 Recently the council has been successful in obtaining a £3.8 million grant through the public sector decarbonisation scheme for heat decarbonisation on 11 high emitting council buildings. This forms our second refit project, having previously conducted a Re:fit project in 2018/2019 to improve energy efficiency across the building portfolio.

7. Appendix 1: Detailed emissions statement

Please see page 11 for our complete emissions statement, detailing carbon dioxide equivalent (CO₂e), carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) emissions from scopes 1, 2 and 3 for the financial year 2022/2023.

BCKLWN Carbon Audit: 2022/2023										
Emissions Sources	Consumption		Emissions (tonnes)				Emissions (kilograms)			
	Activity Data	Unit	t CO ₂ e	t CO ₂	t CH ₄	t N ₂ O	kg CO ₂ e	kg CO ₂	kg CH ₄	kg N ₂ O
Scope 1										
Gas Consumption	6136616.00	kWh	1128.95	1126.81	1.53	0.61	1128953.25	1126805.43	1534.15	613.66
LPG Consumption	1.00	tonnes	2.94	2.94	0.00	0.00	2939.29	2935.18	2.28	1.83
Oil Consumption	0.00	litres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Council Vehicle Fleet	-	-								
Petrol Vehicle	15842.16	litres	34.25	34.03	0.11	0.10	34248.37	34029.75	114.06	104.56
Diesel Vehicle	110627.68	litres	282.97	278.85	0.03	4.09	282967.91	278845.92	28.76	4093.22
Red Diesel	0.00	litres	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Scope 1	-	-	1449.11	1442.62	1.68	4.81	1449108.81	1442616.28	1679.26	4813.27
Scope 2										
Electricity Consumption	4576930.00	kWh	885.09	875.15	3.66	6.27	885086.72	875154.79	3661.54	6270.39
Total Scope 2	-	-	885.09	875.15	3.66	6.27	885086.72	875154.79	3661.54	6270.39
Scope 3										
Transmission & Distribution Losses	4576930.00	kWh	80.97	80.10	0.32	0.55	80965.89	80096.28	320.39	549.23
TD: Fully electric vehicle business travel	1688.20	miles	0.13	0.13	0.00	0.00	127.93	126.55	0.51	0.88
TD: Plug-in Hybrid business travel	89.20	miles	0.00	0.00	0.00	0.00	3.30	3.26	0.01	0.02
Water Supply	80919.00	m ³	12.06	n/a	n/a	n/a	12056.93	n/a	n/a	n/a
Water Treatment	56440.00	m ³	15.35	n/a	n/a	n/a	15351.68	n/a	n/a	n/a
Business Travel	-	-								
Small Petrol Car	39545.95	miles	9.32	9.28	0.02	0.02	9324.94	9281.83	20.17	22.94
Medium Petrol Car	33180.70	miles	9.86	9.83	0.02	0.02	9862.63	9826.46	16.92	19.24
Large Petrol Car	2865.30	miles	1.27	1.27	0.00	0.00	1274.49	1271.36	1.46	1.66
Small Diesel Car	51897.98	miles	11.68	11.53	0.00	0.16	11684.31	11526.54	0.52	157.25
Medium Diesel Car	37848.10	miles	10.23	10.12	0.00	0.11	10233.75	10118.69	0.38	114.68
Large Diesel Car	14847.30	miles	5.01	4.96	0.00	0.04	5006.81	4961.67	0.15	44.99
Bus	1044.00	passenger km	0.11	0.11	0.00	0.00	112.52	111.47	0.02	1.03
Taxi	30.80	passenger km	0.01	0.01	0.00	0.00	6.41	6.36	0.00	0.06
Rail	6484.00	passenger km	0.23	0.23	0.00	0.00	230.12	227.59	0.45	2.07
Ferry	0.00	passenger km	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plane	0.00	passenger km	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Contractor Travel	-	-								
Refuse Collection Vehicles	400393.76	litres	1083.28	1068.28	0.10	14.89	1083277.33	1068278.58	104.10	14894.65
Total Scope 3	-	-	1239.39	1195.71	0.46	15.81	1239387.80	1195706.83	464.56	15807.81
BCKLWN Gross Emissions Total	-	-	3573.58	3513.48	5.81	26.89	3573583.34	3513477.89	5805.36	26891.48
Carbon Offsets / Renewable Tariffs										
Renewable Electricity Tariff	642110.00	kWh	-885.09	-875.15	-3.66	-6.27	-885086.72	-875154.79	-3661.54	-6270.39
Transmission & Distribution Losses	400393.76	kWh	-80.97	-80.10	-0.32	-0.55	-80965.89	-80096.28	-320.39	-549.23
Total	-	-	-966.06	-955.25	-3.98	-6.82	-966052.61	-955251.07	-3981.93	-6819.62
BCKLWN Net Emissions Total	-	-	2607.53	2558.22	1.82	20.07	2607530.73	2558226.82	1823.43	20071.85

8. Appendix 2: Emissions changes from base year

