

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



Carbon Audit 2021/2022

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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 2021/2022 carbon audit highlights that the BCKLWN has achieved a 5.8% reduction in emissions from 2020/2021 levels, emitting 2,824.5 tCO₂e. This represents a 61% 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.

BCKLWN tCO₂e Emissions					
Year	2009/2010	2018/2019	2019/2020	2020/2021	2021/2022
Scope 1	2,109.2	1,720.5	1,676.6	1,595.0	1685
Scope 2	3,235.4	1,488.6	1,324.7	829.5	843.46
Scope 2 renewable tariffs	-	-	-	-671.3	-843.46
Scope 3	2021.5	1,499.6	1,454.5	1,243.8	1146.41
Scope 3 Transmission Losses renewable tariff	-	-	-	-	-6.95
Total gross emissions	7,366.1	4,708.7	4,455.8	3,668.3	3674.9
Total net emissions	7,366.1	4,708.7	4,457.2	2,997.0	2824.5

3. Emissions breakdown

Emissions Sources	Consumption		Emissions Data	
	Activity Data	Unit	t CO ₂ e	kg CO ₂ e
Scope 1				
Gas Consumption	6918072.00	kWh	1267.11	1267114.07
LPG Consumption	1.00	tonnes	2.94	2939.29
Oil Consumption	0.00	litres	0.00	0.00
Council Vehicle Fleet	-	-		
Petrol Vehicle	3318.40	litres	7.28	7278.98
Diesel Vehicle	127905.06	litres	346.05	346050.98
Red Diesel	22351.20	litres	61.66	61657.35
Total Scope 1	-	-	1685.04	1685040.66
Scope 2	Activity Data	Unit	t CO₂e	kg CO₂e
Electricity Consumption	3972380.01	kWh	843.46	843455.45
Total Scope 2	-	-	843.46	843455.45
Scope 3	Activity Data	Unit	t CO₂e	kg CO₂e
Transmission & Distribution Losses	369626.00	kWh	6.95	6945.27
Water Supply	67591.00	m ³	10.07	10071.06
Water Treatment	50939.00	m ³	13.86	13855.41
Business Travel	-	-		
Small Petrol Car	26940.20	miles	6.48	6479.66
Medium Petrol Car	18304.40	miles	5.53	5533.60
Large Petrol Car	346.10	miles	0.16	155.45
Small Diesel Car	41916.57	miles	9.28	9281.59
Medium Diesel Car	26601.60	miles	7.06	7062.46
Large Diesel Car	9932.70	miles	3.31	3312.36
Bus	0.00	passenger km	0.00	0.00
Taxi	0.00	passenger km	0.00	0.00
Rail	10521.86	passenger km	0.37	373.42
Ferry	0.00	passenger km	0.00	0.00
Plane	0.00	passenger km	0.00	0.00
Contractor Travel	-	-		
Refuse Collection Vehicles	400416.40	litres	1083.34	1083338.58
Total Scope 3	-	-	1146.41	1146408.85
BCKLWN Gross Emissions Total	-	-	3674.90	3674904.96
Carbon Offsets / Renewable Tariffs	Activity Data	Unit	t CO₂e	kg CO₂e
Renewable Electricity Tariff	-3972380.01	kWh	-843.46	-843455.45
Transmission & Distribution Losses	-369626.00	kWh	-6.95	-6945.27
Total	-	-	-850.40	-850400.72
BCKLWN Net Emissions Total	-	-	2824.50	2824504.24

4. Changes to emissions

4.1. The trend

There has been a 5.8% reduction in the council's emissions compared to last year's audit. Overall CO₂e emissions decreased from 2997.09 tCO₂e in 2020/2021 to 2,824.5 tCO₂e in 2021/2022 this is a reduction of 175.2 tCO₂e.

Scope 2 (electricity consumption) was the source of the largest emissions reduction (100% reduction), whilst scope 2 saw a reduction of 8.6% and scope 1 saw a 6% increase.

4.2 **Scope 1**

Scope 1 emissions account for 60% of the organisation's total emission profile and totalled 1,685.04 tCO₂e, compared to 1,595 tCO₂e in 2020/2021. This is an increase of 90.04 tonnes, which equates to a 6% increase but is a 18% reduction in comparison to the baseline year (2009/10).

Variances explained:

4.2.1 **Gas consumption**

Gas usage across the council's estate contributed to 1267.11 tCO₂e to the 2021-22 emissions profile. This is an increase of 46.7 tCO₂e or 280,819 kWh of gas usage in comparison to 2020-21.

4.2.2 This increase can be attributed to the increased usage of the Council's leisure facilities as part of the recovery from the COVID-19 pandemic. The main bulk of this increase can be attributed to the St James swimming pool (87 tCO₂e) and Hunstanton Oasis Leisure Centre (85 tCO₂e). It is worth noting that as part of the Council Refit programme improvements are being made to these sites with the installation of heat pumps and insulation so from 2023-24 it is expected that these emissions will significantly reduce.

4.2.3 It is worth noting that these increases have masked 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 King's Court (16 tCO₂e), and Hardwick Factory (14 tCO₂e) due to the installation of heat pumps. Amended working practices at the Mintlyn Crematorium have also led to a significant reduction in gas usage of 110 tCO₂e.

4.2.4 **Council Fleet Fuel consumption**

The council has seen a slight increase in its petrol consumption related emissions in the period. This has equated to an approximate 1 tCO₂e increase, this shift can be attributed to new hybrid vehicles coming online in the fleet. These hybrid vehicles use petrol rather than diesel.

4.2.5 There has been an increase in diesel related emissions of 44.2 tCO₂e which equates to an additional 9349 litres being used during the time period in comparison to the previous year. This can be attributed to two areas: a shift away from the usage of red diesel for sweeping equipment and ride-on mowers and the filling of the council's emergency fuel bunker during the September 2021 fuel crisis.

4.2.6 Please note that neither of these increases can be attributed 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 158.2 tCO₂e compared 2020/2021. It is worth noting that if the council did not receive its electric from this tariff it would have a further 829 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 1139.46 tCO₂e compared to 1,243.8 tCO₂e in 2020/2021. This is a reduction of 104.07 tCO₂e, which equates to an 8.6% reduction in scope 3 emissions compared to the previous year and 42% since the baseline year. The main reduction in scope 3 emissions relates to transmission and distribution loss figures and the provision of the council's electric from zero carbon sources and reductions in waste contract related emissions.

Variances explained:

4.4.1 **Business Travel**

The council has seen an increase of 8 tCO₂e related to business travel in cars and a further 0.3 tCO₂e increase relating to business train travel compared to 2020/21. This can be attributed to the easing of COVID-19 restrictions and a return to more face-to-face business meetings.

4.4.2 **Waste contract**

The council's outsourced waste contract has seen an emissions reduction of 20 tCO₂e compared to the previous year. This can be attributed to route optimisation work and a reduction in the amount of dry recycling particularly cardboard being collected due to a reduction in the number of households shopping online due to the pandemic.

4.4.3 **Water supply & treatment**

The amount of water used by or sent to be treated from council assets has increased by 31,389m³ compared to 2020/21, this is due to the increased usage of office facilities and leisure centres as we have recovered from the pandemic. However, due to carbon intensity emission factors being significantly lower than the previous year this means that there is in fact a 20.34 tCO₂e reduction in the emissions related to these.

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 which is reduction of 71 tCO₂e compared to 2020/21.

5. **Electricity generation**

The BCKLWN has solar PV panels on a number of its assets, which generated 314,726.81 kWh of clean electricity in 2021/2022 this equates to 66 tCO₂e. This electricity is directly used by the council, which helps reduce electricity consumption.

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, saving approximately 400 tCO₂e.

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 2020/2021.

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	6918072.00	kWh	1267.11	1264.76	1.73	0.69	1267114.07	1264761.92	1729.52	691.81
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	3318.40	litres	7.28	7.23	0.02	0.02	7278.98	7233.18	23.89	21.90
Diesel Vehicle	127905.06	litres	346.05	341.26	0.03	4.76	346050.98	341259.65	33.26	4758.07
Red Diesel	22351.20	litres	61.66	60.89	0.06	0.71	61657.35	60888.47	62.81	706.07
Total Scope 1	-	-	1685.04	1677.08	1.85	6.18	1685040.66	1677078.41	1851.75	6179.68
Scope 2										
Electricity Consumption	3972380.01	kWh	843.46	834.84	3.18	5.44	843455.45	834835.38	3177.90	5442.16
Total Scope 2	-	-	843.46	834.84	3.18	5.44	843455.45	834835.38	3177.90	5442.16
Scope 3										
Transmission & Distribution Losses	369626.00	kWh	6.95	6.88	0.03	0.04	6945.27	6875.04	25.87	44.36
Water Supply	67591.00	m ³	10.07	n/a	n/a	n/a	10071.06	n/a	n/a	n/a
Water Treatment	50939.00	m ³	13.86	n/a	n/a	n/a	13855.41	n/a	n/a	n/a
Business Travel	-	-								
Small Petrol Car	26940.20	miles	6.48	6.45	0.01	0.02	6479.66	6450.29	13.74	15.63
Medium Petrol Car	18304.40	miles	5.53	5.51	0.01	0.01	5533.60	5513.65	9.34	10.62
Large Petrol Car	346.10	miles	0.16	0.16	0.00	0.00	155.45	155.07	0.18	0.20
Small Diesel Car	41916.57	miles	9.28	9.15	0.00	0.13	9281.59	9154.16	0.42	127.01
Medium Diesel Car	26601.60	miles	7.06	6.98	0.00	0.08	7062.46	6981.59	0.27	80.60
Large Diesel Car	9932.70	miles	3.31	3.28	0.00	0.03	3312.36	3282.16	0.10	30.10
Bus	0.00	passenger km	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Taxi	0.00	passenger km	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rail	10521.86	passenger km	0.37	0.37	0.00	0.00	373.42	369.32	0.74	3.37
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	400416.40	litres	1083.34	1068.34	0.10	14.90	1083338.58	1068338.98	104.11	14895.49
Total Scope 3	-	-	1146.41	1107.12	0.15	15.21	1146408.85	1107120.27	154.75	15207.36
BCKLWN Gross Emissions Total	-	-	3674.90	3619.03	5.18	26.83	3674904.96	3619034.06	5184.41	26829.20
Carbon Offsets / Renewable Tariffs										
Renewable Electricity Tariff	-3972380.01	kWh	-843.46	-834.84	-3.18	-5.44	-843455.45	-834835.38	-3177.90	-5442.16
	-369626.00	kWh	-6.95	-6.88	-0.03	-0.04	-6945.27	-6875.04	-25.87	-44.36
Total	-	-	-850.40	-841.71	-3.20	-5.49	-850400.72	-841710.43	-3203.78	-5486.52
BCKLWN Net Emissions Total	-	-	2824.50	2777.32	1.98	21.34	2824504.24	2777323.63	1980.63	21342.69

8. Appendix 2: Emissions changes from base year

