

Carbon Emissions Reduction at Harrow



LBEG Autumn Meeting



8 OCTOBER
2019



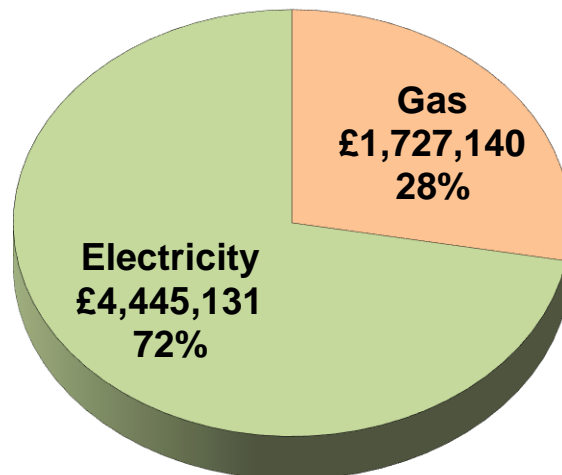
Key Priorities - Aim and Objective

- **Aim:** to improve the energy performance and reduce emissions from the Council's corporate buildings, estate and Schools.
- **Current Target:** to meet the Council's annual carbon footprint set target.
- **Objective:** to put the Council on track to zero carbon by 2030 through a collaborative work with other respective services in the Council.

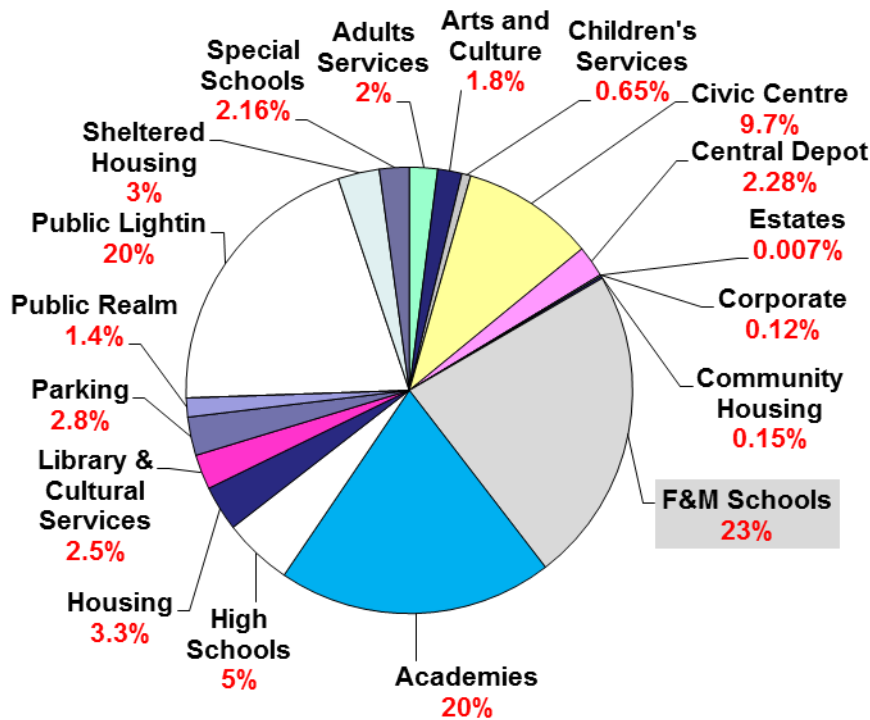
Harrow Council Summary of Cost & Consumption 2018/2019

	Gas	Electricity	Street Lighting	Total : Gas + Electricity
Total Annual Cost (£)	£1,727,140	£3,451,347	£993,784	£6,172,272
Total Annual Consumption (kWh)	48,173,366	21,062,557	5,392,944	74,628,867
Total CO₂ emissions (kg)	8,845,594	5,916,051	1,514,770	16,276,415
Total number of sites	118	453	8	579

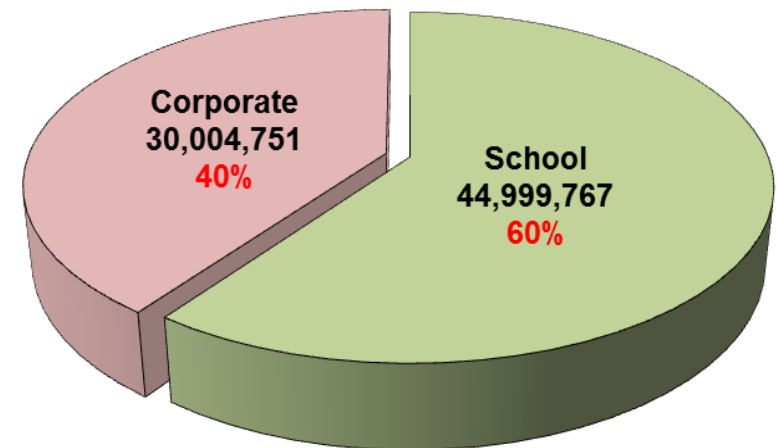
Distribution of Annual Energy Cost by Fuel type -2018 - 19 (£)



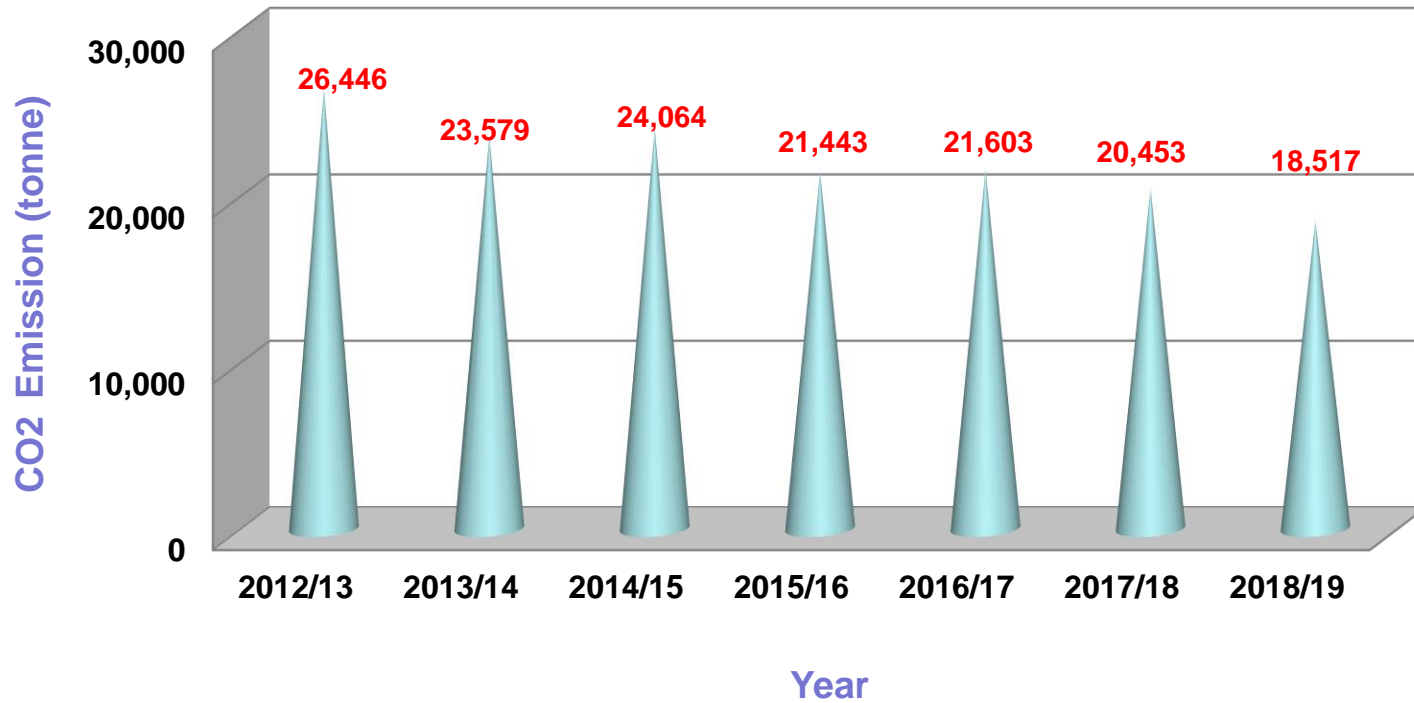
Distribution of Harrow's Annual Electricity Usage (kWh) - 2018-2019



Distribution of Annual Energy Usage between Schools and Corporate sites (kWh)



Harrow - CO2 emission (tonne) 2012 -2019



Energy conservation Projects in Harrow Sites and Schools

Key points:

- Achieving value for money
- Tailoring a service to the Council's and the service user's actual needs and priorities.
- Meeting the council's return on investment policy (normally up to 8 years, unless the investment becomes essential and justifiable).
- Setting up an effective maintenance plan needs to be set up after completion of the medium and high cost projects.



Installation of efficient condensing boilers



Electronic TRVs controls

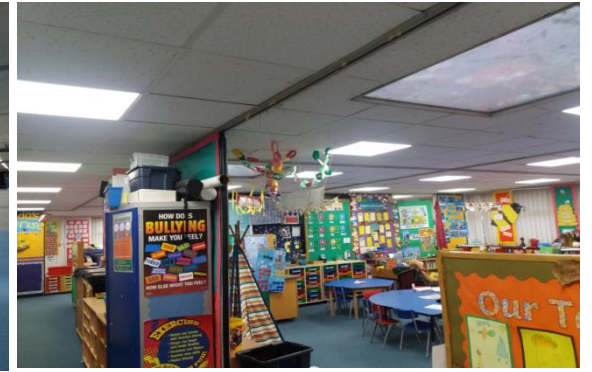
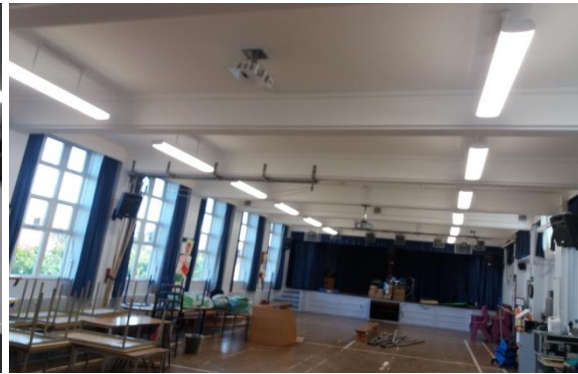


Hot water Pipe Lagging



Heating control system

Lighting retrofit/upgrade in Harrow Schools – new LEDs 2018/19



Local generation - Installation of solar systems in Harrow Schools



New Community Solar Projects in Harrow Schools



Kenmore Park Primary School

Completion date: 15 Aug 2019

Capacity: 30 KWP

Number of Modules: 111

Generation per year: 26,778 KWh (Approx.)

CO2 emissions avoided per year: 14,484 Kg

Note: the photo shows one of two roofs covered by solar panels



Glebe Primary School

Completion date: 1 August 2019

Capacity: 30 KWp

Number of Modules: 111

Generation per year: 26,778 KWh (Approx.)

CO2 emissions Avoided per year : 14,484 Kg

Note: the photo shows one of three roofs covered by solar panels

New Community Solar Projects in Harrow Schools

Harrow - Park High School 50 KWP Solar PV

Solar Panels on the Roof 1

Solar Panels on the Roof 2

Solar Panels on the Roof 3



Shaftesbury High School - Installation date: 23 August 2019 - **Capacity:** 50 KWp - **Number of panels:** 185
Generation per year: 44,630 KWh (Approx.) - **CO2 emissions Avoided per year:** 24,140 Kg

Note: the picture shows one of three roofs covered by solar panels

Harrow – Shaftesbury High School 50 KWP Solar PV



Installation date: 23 August 2019 - **Capacity:** 50 KWp - **Number of panels:** 185
Generation per year: 44,630 KWh (Approx.) - **CO2 emissions Avoided per year:** 24,140 Kg
Note: the picture shows one of the three roofs covered by solar panels

Investment in the Council's Fleet of Vehicles in 2018/19

- The Council has a fleet of over 300 vehicles facilitating services such as refuse and recycling, special needs transport, street cleaning and grounds maintenance.
- Over 90% of the fleet has been renewed since January 2019. The fleet is ULEZ compliant and the 14 vans and 1 car are fully electric.
- The entire fleet will need to be replaced again within 10 years and the intention would be to move to fully electric zero emission vehicles where possible.



The Council's new Zero Emission Fleet

- “Harrow Council has secured funding of £180,000 (£230,000 including match funding) from Transport for London (TfL) through the **Go Ultra Low City Scheme** (GULCS) to implement one of nine Neighbourhoods of the Future (NoF) schemes in London.

Four key work streams were identified as follows:

1. The installation of 3 on-street public serving fast Electric Vehicle Charge Points (EVCPs) and 2 off-street slow EVCPs for the Electric Vehicle (EV) fleet trial
2. The implementation of a 12-month EV fleet trial at Greenhill Way Car Park for local businesses in Harrow to use.
3. Free training in the maintenance of EVs for local mechanics in Harrow.
4. The implementation of an Ultra Low Emission Zone (ULEZ)/ ULEV only street in Harrow Town centre. The work is currently in progress and is expected to be delivered by March 2020.”

Future EV work in the pipeline:

- “Harrow Council is planning to roll out residential chargepoints across the borough via street lighting columns and is in the process of selecting viable locations for residents that are without off-street parking.
- Harrow is working with Transport for London to install rapid chargepoints near Hatch End Station on Uxbridge Road and investigating the installation of rapid charge points in some council owned car parks in Pinner and North Harrow.”



Upgrading Harrow's Street lighting

- To improve the efficiency and performance of Harrow's street lighting, the Council' has approved an investment plan to upgrade and replace the borough's old and inefficient Street lights with energy efficient and Eco-Friendly LED lighting.
- The Council has invested up to £3m per annum over the last 4 years to support the upgrading of both lamps and lamp columns. Approximately 9200 street lights have already been converted to LED by 2019 with annual saving of 11 to 20% in electricity consumption.



Energy Raising Awareness (Education & Training)



- **The Council passed a motion to declare a climate emergency on 18 July 2018, with the aim to make Harrow carbon natural borough by 2030.**

Commitments & Actions

- To adopt strategic investments in modernising the existing old and inefficient energy infrastructure of Council's own buildings and street lighting, detailed in the Council's climate change strategy and action plan.
- Investment in sustainable and decentralised energy generation (Heat Network) and increase our uptake on renewable technologies.
- Decarbonize the Council's new corporate buildings and constructions in compliance with the Ministry of Housing, Communities & Local Government's Regulation 25B* I.e. New civic centre.
- Further investment in the Council's fleet by replacing them with fully electric zero emission vehicles.
- Setting a target for reduce the carbon footprint of our waste management service and increasing recycling rates.
- Continue to support our vulnerable residents and help to eradicate fuel poverty.
- Continue to work with across London and through the GLA to deliver widespread carbon reductions.

* Regulation 25B states: 'Where a building is erected, it must be a nearly zero-energy building'. For new buildings occupied by public authorities, the coming-into-force date for Regulation 25B is 1 January 2019

Harrow Council's carbon reduction trend to zero carbon by 2030

❑ **The supporting evidence demonstrates scale of the challenge, which should be very well understood by the decision makers and not underestimated!**

Harrow's average CO2 emission 2012 - 2019 (tonne)		The Council's average annual carbon footprint consists of 22,301 tonne CO2 emissions from 463 sites including 60 state Schools across the borough.
2012/13	26,446	
2013/14	23,579	
2014/15	24,064	
2015/16	21,443	
2016/17	21,603	
2017/18	20,453	
2018/19	18,517	
Average	22,301	

Option1: to meet the Zero carbon target by 2030 - An annual carbon reduction of 63% needs to be set

Years	The carbon produced from the Council's operations	Year on year carbon reduction (t)	Annual reduction of carbon (t)	Required spending or investment (£)
2019/20	22,301	8,251	14,050	£27,551,324
20/21	8,251	3,053	5,198	£10,193,99
21/22	3,053	1,130	1,923	£3,771,776
22/23	1,130	418	712	£1,395,557
23/24	418	155	263	£516,356
24/25	155	57	97	£191,052
25/26	57	21	36	£70,689
26/27	21	8	13	£26,155
27/28	8	3	5	£9,677
28/29	3	1	2	£3,581
30/31	1	0	1	£1,325

What are the barriers?

There are various barriers to adopting and developing energy saving projects particularly high cost investment projects including:

- ❑ Financial restraints, spending cuts and lack of available upfront capital to invest in high cost energy conservation projects.
- ❑ Behavioural barriers to the take up of energy efficiency measures:
 - Lack of awareness and expertise of decision makers on the saving potential of high cost investment opportunities and the risk of investment lengthy payback
- ❑ Energy conservation is not on the board agenda of the decision makers and does not necessarily get the attention it deserves.
- ❑ Those that pay for the costs do not reap the rewards
- ❑ Uncertainties over the future ownership of the Council's own buildings

Our solutions for overcoming barriers to energy efficiency investments

- **Developing innovative ideas for setting objectives and targets.**
- **Getting support from the top.**
- **Identifying available sources of external funding to meet the upfront cost of our carbon reduction investments.**
- **Benefit from working with external business partners in complex and high cost projects.**
- **Analyse stakeholders needs -**
Building good work relationships with customers/clients based on trust, transparency and mutual respect



“THANK YOU!”

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