

Peepul Centre Green House Gas Emissions

Summary of emissions (kg CO ₂ e)				
Type of emission		2018	2019	2020
Scope 1 (direct)	Stationary combustion	131,612	131,533	105,238
	Fugitive emissions	11,766	11,766	11,766
Scope 2 (indirect)	Purchased electricity (location based)	84,921	76,680	55,954
	Purchased electricity (market based)	113,309	113,309	90,648
Total (location based)		228,299	219,979	172,958
Total (market based)		209,996	201,755	158,367

Scope 1

Scope 1 (direct) emissions are emissions that happen directly on site. Examples of this are stationary combustion of gas (in boilers) and fugitive emissions for air conditioning units (where HFCs are released during normal operation). To calculate stationary combustion emissions, the amount of gas used on site is multiplied by an "emissions factor" supplied by BEIS and updated every year. For air conditioning on site, it has been assumed that refrigerant R404A is being leaked at a rate of 3kg per year, and again BEIS have supplied emissions factors to calculate the CO₂-equivalent emissions released. Links to the BEIS reports are in the attached Excel file.

Scope 2

Scope 2 (indirect) emissions are emissions that occur as a result of purchased electricity that is used on site. The emissions are "indirect" because they do not occur on site, but instead at electricity power plants. There are 2 methodologies for reporting Scope 2 emissions and both methodologies are required to be disclosed by the Streamlined Energy and Carbon Reporting framework (SECR). The "location-based" methodology calculates emissions based on an average emissions factor for the whole UK (supplied by BEIS). The "market-based" methodology, however, calculates emissions based on the electricity supplier used. For the case of Peepul Centre, this energy supplier was YGP. The emissions factor for YGP has been calculated using the energy mix disclosed on their website.

Location based UK electricity emissions factors

	kg CO2e	kg CO2	kg CH4	kg N2O	Total electricity used (kWh)	Total CO2e emissions (kg)
2018	0.28307	0.28088	0.00066	0.00153	300,000	84,921
2019	0.2556	0.25358	0.00065	0.00137	300,000	76,680
2020	0.23314	0.23104	0.00072	0.00138	240,000	55,954

Market based UK elec emissions factors (YGP)

	kgCO2e	Total CO2e emissions (kg)
2018	0.37769793	113,309.38
2019	0.37769793	113,309.38
2020	0.37769793	90,647.50

Gas last quarter of 2018 (actual)

246522 kWh

Elec usage 2018 (estimate)

300,000 kWh

Quarter 2 & 3 of 2018 (estimate)

222393 kWh

Sources for emissions factors

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020>

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019>

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2018>

Natural gas emissions factors (gross CV per kWh)

kg CO2e	kg CO2	kg CH4	kg N2O	Total gas consumption on site (kWh)	Total CO2e emissions (kg)
0.18396	0.18362	0.00024	0.0001	715,437	131,612
0.18385	0.18351	0.00024	0.0001	715,437	131,533
0.18387	0.18352	0.00025	0.0001	572,350	105,238

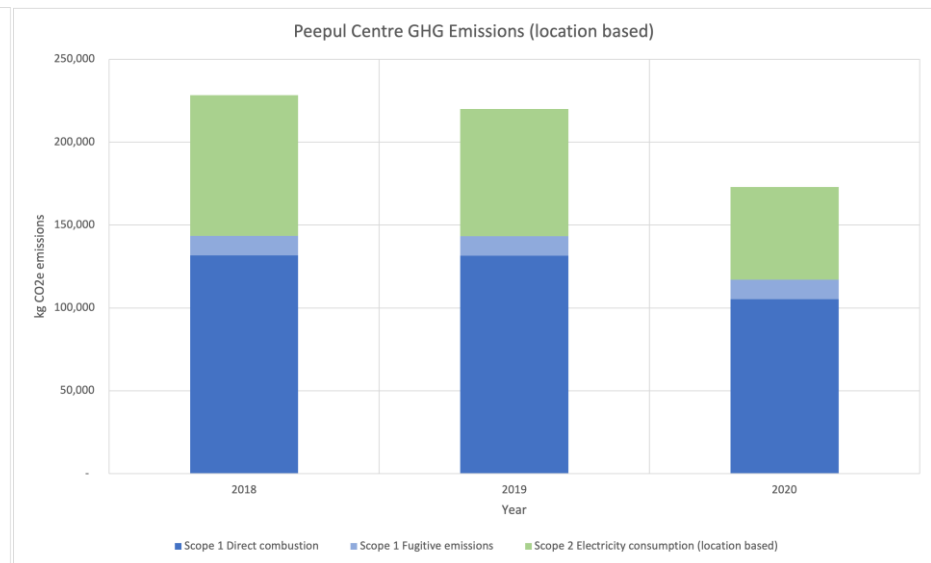
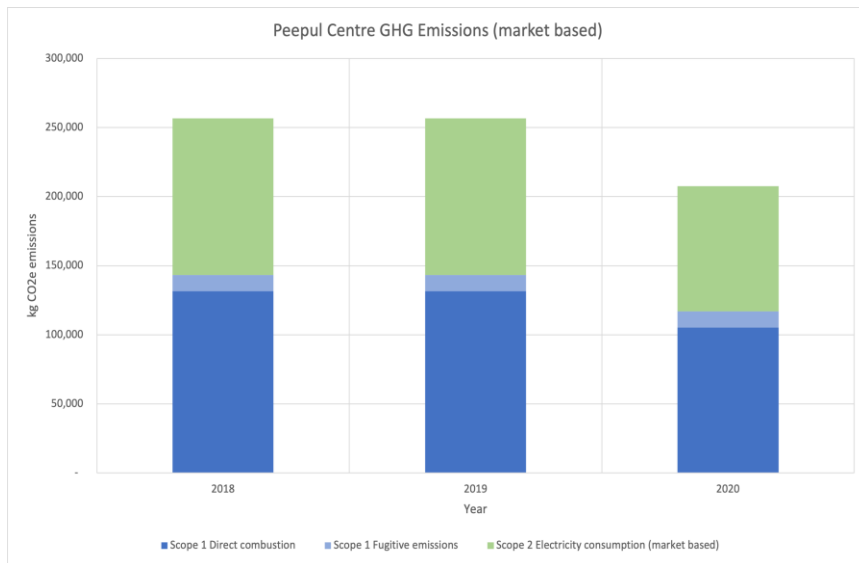
Refrigerant emissions

Emission	Unit	kg CO2e	kg topped up per year	Total CO2e emissions
R404A	kg	3922	3	11766

YGP market based elec emissions factor

0.37769793 kg CO2e

<https://www.ygp.co.uk/about/>



Recommendations for a sustainability policy

It has become common for companies to set "net-zero" targets, a deadline by which they aim to contribute zero GHG emissions. There are 3 broad ways that PC can reduce its carbon footprint:

1. Reductions in energy consumption on site
 - This might be achieved through improved insulation or smarter temperature and lighting controls in specific rooms
2. Switching energy supply to renewable suppliers
 - From 2021, YGP now supplies 100% renewable electricity as defined by Ofgem
 - Additionally switching to a 100% biogas supplier would bring the Scope 1 emissions down to nil
3. Investing in carbon offsetting projects or purchasing Renewable Energy Certificates (RECs/REGOs)
 - Purchasing REGOs is a common way UK energy suppliers guarantee their electricity is 100% renewable

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