RenSMART (/)

CALCULATORS (/CALCULATORS) / KWH-TO-CO2 (/CALCULATORS)

UK CO2(eq) emissions due to electricity generation

0.23314 kg CO2e per kWh

In our calculations, we convert kWh to kg of carbon released based on Greenhouse gas reporting: conversion factors (https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2018) from Department for Business, Energy and Industrial Strategy. The conversion factor is 0.23314 kg CO2 saved for each kWh produced from a carbon free source. The factor is based on the carbon emissions generated by the current UK power stations per kWh generated. This factor includes other green house gasses such as methane and nitrous oxide which are converted to their carbon dioxide equivalents so the value is really kg CO2 eq. per kWh.

Carbon Emissions Calculator

Carbon dioxide (and equivalent gasses) emited by the generation of electricity from the UK grid

Enter kWh or select an activity.

kWh

3.328

kg CO_2e

0.776

0.1 dPACA (/PACA)

< 1 % PACA (/PACA)

Washing Machine Load

0.74kw for 270 minutes

Times

1

Period

Yearly

For further information, feel free to email us at information@rensmart.com

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We now are able to give a live estimate of CO2 emissions due to electricity production in the UK and the corresponding kg of CO2 per kWh. Live UK Generarion (/UKGeneration) The estimate is based on a live feed from the National Grid breakdown of current generation sources. We can also provide a forecast for the UK's generation UK Daily Generation Forecast (/UKGenerationForecast) which is also available as a user firendly clock Economy GREEN Clock (/EconomyGREENClock)

CO2(eq) emissions due to electricity generation (Other European Countries)

This data is from 2016 and supplied by The European Environment Agency (https://www.eea.europa.eu)

The CO2 emission intensity (kg CO2/kWh) is calculated as the ratio of CO2 emissions from public electricity production (as a share of CO2 emissions from public electricity and heat production related to electricity production), and gross electricity production.

Country	kg CO2 per kWh
Sweden	0.013
Lithuania	0.018
France	0.059
Austria	0.085
Latvia	0.105
Finland	0.113
Slovakia	0.132
Denmark	0.166
Belgium	0.17
Croatia	0.21
Luxembourg	0.219
Slovenia	0.254
Italy	0.256
Hungary	0.26
Spain	0.265
UnitedKingdom	0.281
EuropeanUnion(currentcomposition)	0.296
Romania	0.306
Portugal	0.325
Ireland	0.425
Germany	0.441
Bulgaria	0.47
Netherlands	0.505
Czechia	0.513
Greece	0.623
Malta	0.648

Country	kg CO2 per kWh
Cyprus	0.677
Poland	0.773
Estonia	0.819

CO2(eq) emissions due to electricity generation (by source)

This data is from The Parlimentary Office of Technology document Carbon Footprint OF Electricity Generation (https://www.parliament.uk/documents/post/postpn268.pdf).

The CO2 emission intensity (kg CO2/kWh) is derived from both the operational emissions from the generation source and the emissions generated during the generating sources construction. We use this data to calculate our live CO2 emission intensity board (/UKGeneration).

Generation Source	kg CO2 per kWh
Open Cycle Gas Turbine	0.5
Closed Cycle Gas Turbine	0.5
Oil	0.65
Coal	0.9
Nuclear	0.005
Pumped Storage	0.02
Non Pumped Storage Hydro	0.005
Wind Onshore	0.00464
Wind Offshore	0.00525
Solar	0.058