



Ecometrica

Statkraft Sheepwash Solar Project: Carbon Emissions

The Solar energy generation project at Sheepwash has been amended (as outlined in Table 1 below) and is anticipated to generate **50,299 MWh** per annum. According to the latest household statistic figures from BEIS¹ the average UK household consumes 3,250 kWh per annum (year 2022), using this metric the Sheepwash project can be considered to provide enough electricity for **15,477 homes**.

The latest carbon intensity information (year 2022) for UK grid average electricity generation² can be used to estimate the avoided greenhouse gas emissions that the Sheepwash project is likely to provide. The following calculation has included the direct emissions from generated electricity as well as the emissions associated with electricity lost during transmission and distribution. The calculation excludes any well-to-tank emissions upstream of the electricity generation for both the solar farm and the UK national grid. Using this methodology, the avoided emissions equate to **10,617 tonnes of CO₂e per annum** (accounting for carbon dioxide, methane and nitrous oxide emissions).

It is important to note that the planned decarbonisation of the UK electricity grid will likely lead to a decrease in the grid average emission factor and therefore an ever- lower estimate for avoided emissions for each subsequent year. For example, the projected emissions intensity of the UK grid in 2030 is 50gCO₂e/kWh which would adjust the avoided emissions figure to 2,745 tCO₂e per annum for that year.

The figures outlined above are for information only and do not provide a full comparative emissions impact assessment as prescribed by the GHG Protocol for Project Accounting.

	Proposed Development	Appeal Scheme with Amendments
Solar electricity generation	52,103 MWh per year	50,299 MWh per year
Homes equivalent	15,226	15,477
Carbon emission avoided	12,042 tCO ₂ e per year	10,617 tCO ₂ e per year

Table 1. Details of scheme

¹ <https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics>

² Department for Business, Energy and Industrial Strategy (2022). 2022 Government GHG Conversion Factors for Company Reporting