TECHNICAL APPENDIX 14.3.3

Estimated Solar Yield and Carbon Benefit Calculations

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Kilgallioch Proposed Solar Site – Estimated yield for assumed 20MWp system.

We have utilised the EU Database PV GIS, utilising the 4 different datasets provided by the platform.

System Assumptions

- 20MWp
- Modules and Inverters – not specified
- System Losses – 14%
- Module inclination – 30°

Dataset	Yearly in place irradiation kWh/m2	Annual PV Production kWh	Output kWh/kWP	Calculated PR %	Yearly Variability	Carbon Benefit (TCO2e per annum)
PVGIS-CMSAF	1139	18,647,840	932	82	4.9%	5171
PVGIS - SARAH	1111	18,168,255	908	82	4.2%	5038
PVGIS – ERA5	1235	20,453,406	1022	82.8	2.7%	5671
PVGIS - COSMO	1092	17,942,326	897	82.1	4.8%	4975
Average	**1144.25**	**18,802,956.75**	**939.75**	**82.23**	**4.15%**	**5213.75**

Notes on table

1) Yearly in-plane irradiation – often referred to as Horizontal irradiation – kW/m^2 received multiplied by the number of hours – kWh/m^2
2) Annual PV Production – this is available exportable electricity converted by the solar system, after losses, allowing for inclination.
3) Output kWh/KWp. This is the output for every KW installed on the system. This is direct relationship to the performance ratio and the available irradiance.
4) Yearly variability – standard deviation of the yearly values calculated over the time period covered by the chosen solar radiation database.
5) Carbon Benefit – this is based on the current grid emission factors (2019) for electrical generation in the UK as published by BEIS. (0.2556kgCO2e + 0.02170kgCO2e [t&D])

Disclaimer: This is not a bankable yield assessment and has not be carried out using a detailed site design. Design layout, topography, shading, module and inverter choice will impact PR and overall yield.

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