

2021/22 Commentary Carbon Footprint



Strengths

Expanding portfolio of diverse renewable generation covering ~25% of electricity demand, with further plans to extent to 35%

Renewable Energy Guarantee of Origin backed electricity supply

Board and stakeholder backed Carbon Reduction targets (2030 and 2040) and associated roadmap with projects that deliver on these targets

Opportunities

Prioritise the use of sewage derived biogas to decarbonise heating & transport, to maximise decarbonisation impact of biogas e.g., through H₂ production

Maximise carbon sequestration & biodiversity potential of DCWW land holdings to offset remaining emissions using Oxford Offsetting Principles

Land use reform in Wales will support public funding for public goods e.g. carbon sequestration

Weaknesses

Monitoring and reporting of embedded carbon emissions associated with DCWW's full investment program. Currently only covering just 20% of the current spend

Monitoring & effective control of fugitive Green House Gas emissions of the waste water treatment plants (mainly N₂O and CH₄)

DCWW fleet fully dependant on fossil fuels and limited 3rd party infrastructure (e.g. electric charging points) available in Wales

Threats

Lack of suitable vehicles and supporting fuelling/charging infrastructure, to support fleet transition to electricity and/or low carbon fuels

Significant quality program in future AMP periods (NEP, CSO, etc.), increasing the total carbon emissions (embedded and operational) of the company

Investment to support the delivery of our Journey to Zero, not secured

ENERGY USE AND GREENHOUSE GAS EMISSIONS YEAR ON YEAR

CARBON FOOTPRINT METRICS	UNITS	2020-21	2021-22	COMMENTS
Total Gross Operational Carbon Emissions	tCO ₂ e	208,845	211,233	Location-based gross total
Scope 1 emissions	tCO ₂ e	56,768	57,998	Fossil fuel use (heating and transport) and emissions associated with treatment processes
Scope 2 emissions	tCO ₂ e	103,588	91,264	Purchased electricity (import)
Scope 3 emissions (mandatory)	tCO ₂ e	16,419	16,427	Business travel, outsourced activities and transmission and distribution losses associated with electricity use
Scope 3 emissions (voluntary)	tCO ₂ e	32,070	35,544	Estimated emissions associated with capital goods and services delivered by Welsh Water's Capital Alliance
Emissions reductions				
Exported renewables	tCO ₂ e	-9,225	-9,619	Emissions reductions associated with renewable power that is exported to the grid and netted of against purchased electricity (at average UK grid emission factor)
Renewable electricity procured	tCO ₂ e	-94,364	-81,645	Renewable Energy Guarantee of Origin backed
Total Net Operational Carbon Emissions	tCO ₂ e	106,049	110,667	Market-based net total
Water Services	tCO ₂ e	6,111	6,992	Market-based net total
Wastewater Services	tCO ₂ e	64,494	64,745	Market-based net total
Retail	tCO ₂ e	2,582	2,690	Market-based net total
Capital Alliance	tCO ₂ e	31,989	35,544	
Welsh Water Organic Energy (non reg)	tCO ₂ e	793	696	Scope 1 and 2 gross emissions
Carbon intensity				
Water Services	kgCO ₂ e/ML	4	4	Net operational carbon emissions (market based) divided by the distribution input
Wastewater Services	kgCO ₂ e/ML	93	102	Net operational carbon emissions (market based) divided by the volume of wastewater receiving treatment at sewage treatment works
Energy Consumption metrics				
Total Energy Consumption	MWh	593,440	581,828	
Water Services	MWh	252,976	252,031	
Wastewater Services	MWh	340,464	329,797	
Energy Intensity				
Water Services	kWh/ML	818	785	Total energy consumption divided by the distribution input
Wastewater Services	kWh/ML	566	594	Total energy consumption divided by the volume of wastewater receiving treatment at sewage treatment works