

Environmental data supplement

To the Integrated Annual Report
and Accounts 2020/21

PURPOSE OF THIS DOCUMENT

This supplement has been prepared to provide a repository of data on subject matter reported in the Environmental Review (pages 18 to 23) of the Annual Report 2020/21 which can be found online at: thecrownestate.co.uk/Annual-Report-2021 and should be read in conjunction with it for context.


The data presented appears under the headings given in the Annual Report and is accompanied by the Annual Report page number for ease of reference (where applicable).

A similar supplement exists for data relating to the Social Review which can be found online at: thecrownestate.co.uk/Social-Data.

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Assurance

KPMG LLP has provided independent limited assurance over selected data included within our integrated Annual Report at: thecrownestate.co.uk/Annual-Report-2021, using the assurance standard ISAE (UK) 3000 and, for selected greenhouse gas data, ISAE 3410. KPMG has issued an unqualified opinion over the selected data and their full assurance statement is available on our website which, together with our Reporting Criteria, should be read in conjunction with the selected data in this report. See both KPMG's opinion and our Reporting Criteria at: thecrownestate.co.uk/assurance-reporting. The data subject to KPMG's assurance has been reproduced in this report where you see the symbol .

¹ This falls under the heading of Contributing to the UK's green agenda.

² This falls under the heading of Contributing to the UK's agenda on biodiversity.

CLIMATE ACTION

Energy use (see related information in the Annual Report on pages 19-20)

Energy and carbon emissions quantification and reporting methodology

Methodology for quantification and reporting of energy and carbon data

We quantify and report our organisational greenhouse gas (GHG) emissions according to the GHG Protocol, using the operational control approach. Energy use data has been collated and converted into carbon dioxide equivalent (CO₂e) using the UK Government 2020 Conversion Factors for Company Reporting in order to calculate emissions from corresponding activity data.

This report is prepared in accordance with the GHG Protocol's Scope 2 Guidance. We therefore report both a location-based and market-based Scope 2 emissions figure (and Scope 3

as applicable). The Scope 2 market-based figure reflects emissions from electricity purchasing decisions that we make. When quantifying emissions using the market-based approach we use supplier specific emissions factor where possible. If these factors are unavailable, a residual mix emissions factor is used and, as a final alternative, a location-based grid emissions factor is used.

More information can be found in our Environmental Reporting Criteria online at: thecrownestate.co.uk/assurance-reporting

Energy use – absolute (direct-managed)¹

Source	(MWh)			Like-for-like (MWh)		
	2019/20	2020/21	Year-on-Year % Change	2019/20	2020/21	Year-on-Year % Change
Electricity	68,073	52,262	-23%	62,675	44,788	-29%
Fuel	38,293	28,408	-26%	29,911	24,830	-17%
Total	106,366	80,670	-24%	92,586	69,618	-25%
Number of Assets	158	145	-8%	108	108	

Energy Intensity (2019/20 baseline)

	(kWh/m ²)		
Total intensity²	191	136	-29%
Office/mixed use (GIA) ³	413	294	-29%
Retail shopping centres (CPA) ³	89	76	-15%
Retail Parks (exterior area) ³	5	4	-20%

Data notes:

- ¹ The absolute data reported above represents 88% of directly-managed floor areas (m²) in our London and Regional portfolios and on the Windsor Estate.
- ² The energy intensity data represents 39% of the directly-managed floor areas. Assets contributing to the figure account for 59% of the absolute energy (kWh) consumed at directly-managed properties in 2020/21.
- ³ Energy intensity is split according to sector types, in recognition of the varied asset operation, data coverage and resulting energy profiles. The office/mixed use denominator is based on whole building gross internal area (GIA). The retail shopping centre (enclosed space) denominator is based on common parts area (CPA), in line with the Better Building Partnership approach to benchmarking. The retail parks' denominator is based on exterior area associated with external lighting and services (exterior), again in line with the Better Building Partnership approach to benchmarking.

Energy savings

Energy saving measures, across 23 direct-managed assets, represent expected energy savings of 1.504 million kWh and equivalent savings of £139,682. The energy savings equate to 343 tCO₂e avoided.

Energy costs (direct-managed)

Fuel type	2016/17 £	2017/18 £	2018/19 £	2019/20 £	2020/21 £
Electricity	7,267,986	7,151,230	9,233,226	9,795,234	6,603,208
Gas	595,430	890,253	1,343,080	1,303,104	1,522,636
Oil	12,647	10,267	3,765	4,167	1,617
Total	7,876,063	8,051,750	10,580,071	11,102,505	8,127,461

CLIMATE ACTION

continued

Carbon dioxide emissions (see related information in the Annual Report on pages 20-21)

Carbon dioxide emissions - absolute (direct-managed portfolio-Scopes 1 and 2)¹

Emission scopes		2018/19 (tCO ₂ e)	2019/20 (tCO ₂ e)	2020/21 (tCO ₂ e)
Scope 1	Direct emissions from fleet and heating of buildings	6,678	7,457	5,546 ▲
Scope 2 (location-based)	Emissions from generated electricity usage	11,738	9,247	7,681 ▲
Gross scope 1 and 2 emissions		18,416	16,704	13,227 ▲
Year on year percentage decrease		8.9%	9.3%	21%
Scope 2 (market-based)	Emissions from generated electricity usage	1,325	1,760	4,253 ▲

Emissions intensity (2019/20)baseline		(kgCO ₂ e/m ²)	(kgCO ₂ e/m ²)
Total intensity		44	29
Office/mixed use (GIA) ²		96	63
Retail shopping centres (CPA) ²		23	18
Retail parks (exterior area) ²		1	1

Data notes:

- ¹ The absolute data reported above represents 88% of directly-managed floor areas in our London and Regional portfolios and on the Windsor Estate.
² See data notes ² and ³ under the Energy use table on page 1.

Carbon dioxide emissions (tonnes CO₂e) - indirect (Scope 3)

Emission scopes		GHG Protocol category	2018/19 (tCO ₂ e)	2019/20 (tCO ₂ e)	2020/21 (tCO ₂ e)
Scope 3	Category 3: transmission and distribution losses (modelled)		1,677	1,477	1,048
Scope 3	Category 6: business travel		178	181	52
Scope 3 (location-based)	Category 13: evidenced customer-purchased energy		8,048	8,232	4,549
Gross Scope 3 emissions			9,903	9,890	5,649 ▲
Year on year percentage decrease			10.6%	0.1%	42.9%
Scope 3 (market-based)	Category 13: evidenced customer-purchased energy		185	15	1,030

To date we have voluntarily disclosed a very small proportion of our Scope 3 emissions, where we have had the data. We recognise that our actual Scope 3 emissions dwarf our direct emissions. There are 15 Scope 3 categories listed in the GHG Protocol and as part of our the work being undertaken to set Science-Based Targets we will identify our most material emissions and increase the breadth and depth of our reporting.

Location-based emissions: emissions from electricity usage calculated in accordance with the spread of energy sources in the National Grid over the year in question (e.g. fossil fuels and renewables).

Market-based emissions: emissions from electricity usage calculated taking into account the sources of the energy purchased (e.g. validated renewable sources) and the corresponding emissions actually released into the atmosphere (i.e. as a result of the purchase of non-renewable sources).

CLIMATE ACTION

continued

Carbon dioxide emissions: breakdown of Scope 1, Scope 2 and Scope 3 carbon emissions (tCO_{2e}) - total direct and indirect GHG emissions, by scope, weight and source (tCO_{2e})

		2016/17	2017/18	2018/19	2019/20	2020/21
Scope 1 emissions						
Direct energy consumption	Gas and heating fuel in buildings	5,416	5,246	6,279	7,080	5,178
	Fleet (petrol and diesel)	179	172	165	168	109
	Machinery fuels	311	245	234	209	259
	Total Scope 1 emissions	5,906	5,663	6,678	7,457	5,546
Scope 2 emissions						
	Electricity generated - indirect energy consumption	12,621	14,542	11,738	9,247	7,681
	Total Scope 2 emissions	12,621	14,542	11,738	9,247	7,681
Scope 3 emissions						
Category 3: Electricity Transmission and Distribution losses (modelled)	London and Regional portfolios	1,105	2,130	1,640	1,446	983
	Windsor	33	33	37	31	65
	Rural offices and depots	4	-	-	-	-
	Total	1,142	2,163	1,677	1,477	1,048
Category 6: Business travel	Taxi	4	2	2	2	1
	Rail	25	17	13	13	5
	Air	137	137	147	149	39
	Personal car	41	32	16	17	7
	Car hire	1	-	-	-	-
	Total	208	188	178	181	52
Category 13: Evidenced customer-purchased energy		13,109	8,722	8,048	8,232	4,549
	Total	13,109	8,722	8,048	8,232	4,549
	Total Scope 3 emissions	14,459	11,073	9,903	9,890	5,649
Gross Scope 1, 2 and 3 emissions		32,986	31,278	28,319	26,594	18,876
Number of properties covered		142	127	160	158	145

Data note:

As reported on the previous page, this table does not reflect the true extent of our Scope 3 emissions.

CLIMATE ACTION

continued

Renewables (see related information in the Annual Report on page 21)

Purchased renewables

71%[▲] (2019/20: 88%) of our electricity purchased (relating to 60% of electricity meters) during the year was from renewable sources. Our target is to procure 100% of our electricity from renewable sources by 2023 and all energy from renewable sources by 2030.

On-site generation (direct-managed portfolio)

Renewables	2016/17 MWh	2017/18 MWh	2018/19 MWh	2019/20 MWh	2020/21 MWh
Solar photovoltaics (PVs)	30	500	83	589	81

Access to meters, mainly due to COVID-19, and restrictions due to ongoing maintenance was a significant problem resulting in limited meter readings.

Offshore wind generation energy

(see related information in the Annual Report on pages 21 and 37-38)

With 9.61GW[▲] of offshore capacity operational, we have achieved our target to effectively realise value from the natural resources of the seabed (England, Wales and N Ireland), including facilitation of 8-10GW of offshore wind capacity by 2020/21.

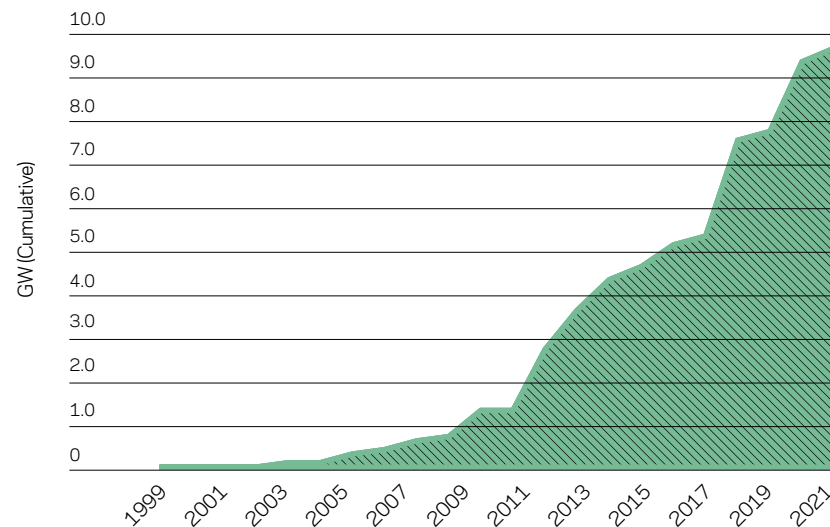
Cumulative capacity of offshore wind

	2016/17	2017/18	2018/19	2019/20	2020/21
Cumulative capacity (GW)	5.3	7.5	7.7	9.31	9.61

Data note:

Reported to two decimal places since 2019/20 in order to be more precise.

Cumulative GW of offshore renewable energy installed



Data note:

Data from 2014/15 onwards shows GW capacity from turbines installed and operating (ie grid connected). Previous years' data included those installed but not yet operating.

Greenhouse Gas emissions avoided from the generation of offshore wind renewable energy

	2019/20	2020/21
Total electricity generated (TWh)	32.7	35.3
Carbon emissions avoided (tCO ₂)	13.1 million	14.1 million

Data note:

For the calculation methodology please see Annex A.

VALUING RESOURCES

Waste (see related information in the Annual Report on page 22)

Operational waste

Operational waste is defined as waste generated as a result of our direct activities or those of our customers where the disposal of waste is under our management (covering our London, Regional and Windsor portfolios).

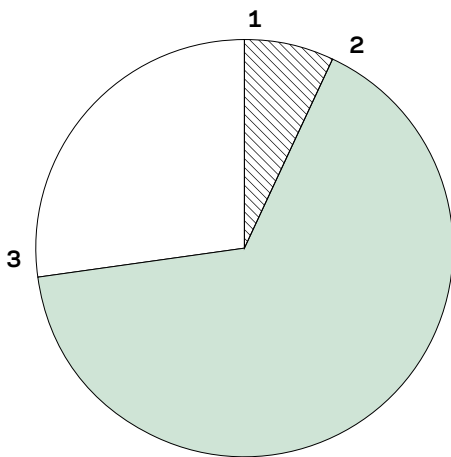
Operational waste generated (tonnes) and disposal route

	2016/17	2017/18	2018/19	2019/20	2020/21
Waste generated from buildings where we collect the waste (tonnes)	7,523	6,281	8,297	8,465	2,263
Percentage of non-hazardous waste diverted from landfill	100%	100%	100%	100%	100%
Waste Disposal Route					
Landfill (Non-hazardous or inert)		0%	0%	0%	0%
Incineration off-site (with energy recovery)		47%	46%	45%	27%
Recycled (following on-site segregation)		50%	48%	43%	66%
Anaerobic digestion		3%	6%	12%	7%
Re-use off-site		0%	0%	0%	0%
Waste Cost Avoided					
Avoided landfill costs (£) ¹	654,184	540,794	738,018	773,278	213,061

Data notes:

¹ Avoided waste costs for 2020/21 are based on landfill tax of £94.15 per tonne.

Operational waste - end disposal breakdown 2020/21



- 1 Anaerobic digestion** 7%
- 2 Recycled** (following on-site segregation) 66%
- 3 Incineration off-site** (with energy recovery) 27%

Over the past year 73% of waste generated was recycled (figure includes anaerobic digestion), against our target of 80% to be recycled by 2022/23.

VALUING RESOURCES

continued

Construction waste

Construction waste is defined as waste generated by our construction partners working on our behalf. The data in the table below does not include demolition waste. However, all development projects working to our newest version of the Development Sustainability Principles (DSPs) v3, are required to collect demolition waste data and it will be reported as new construction projects commence.

Construction waste generated (tonnes) and diverted

	2016/17	2017/18	2018/19	2019/20	2020/21
Construction waste generated	2,350	2,007	2,830	3,628	663
Number of projects	10	14	10	4	4
Diversion from Landfill					
% diverted from landfill	95%	98%	89%	94%	91%
Waste Cost					
Avoided landfill costs (£)	187,791	170,125	224,046	310,375	56,608

Data note:

Construction projects (2020/21) - Fosse Park Food Central and Fosse Park West (Leicestershire), Morley House and Remo House (London).

Waste intensity of 10.61 t/100m² was achieved in the three construction projects completing in 2020/21 (Fosse Park Food Central, Fosse Park West and Morley House). This is against a stretching target of 6.5 t/100m² by 2022/23.

VALUING RESOURCES

continued

Water

Water – absolute consumption

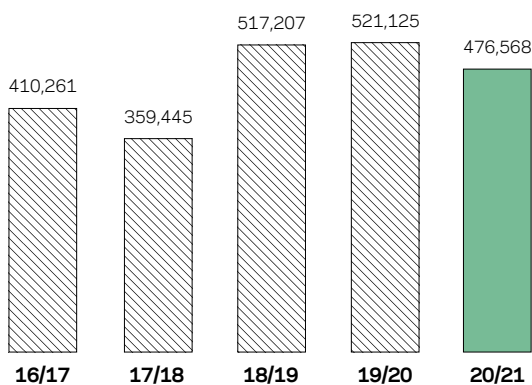
Water consumption (direct) (m ³)	2016/17	2017/18	2018/19	2019/20	2020/21
Windsor	138,753	137,481	140,843	161,477	146,056
Central London and Regional portfolios	271,508	221,964	376,364	359,648	330,512
Total water consumption	410,261	359,445	517,207	521,125	476,568
Number of Central London and Regional properties included in analysis	72	66	73	75	87
Water consumption (indirect)					
Construction projects	N/A	N/A	49,270	1,971	1,094
Number of projects included in analysis	N/A	N/A	9	4	4

Data note:

Construction projects – Fosse Park Food Central and Fosse Park West (Leicestershire), Morley House and Remo House (London).

Absolute water consumption (m³) (direct)

476,568



Water source

Water consumption (m ³) (direct use)	2016/17	2017/18	2018/19	2019/20	2020/21
Water from municipal water supplies	410,261	359,445	517,207	521,125	476,568
Water from rainwater harvesting	3,551	8,668	6,922	11,745	1,419
Total water withdrawal	413,812	368,113	524,129	532,870	477,987
Water abstraction from Windsor (m³) (indirect use)					
Indirect	20,790	29,441	60,508	36,013	120,659¹

Data note:

¹ This figure now includes a significant amount of water abstracted (and not previously metered) for use by some of our customers on the Estate.

HABITAT CREATION

Habitat creation (green space) *(see related information in the Annual Report on page 23)*

Green space

Cumulative additional 'valuable'¹ green space created.

	2017/18	2018/19	2019/20	2020/21
London (2012/13 baseline)	2,984m ²	3,359m ²	3,362m ²	3,703m²

Data note:

¹ Wild West End adopts the Preliminary Ecological Appraisal methodology for green spaces. For details see online at: <http://www.wildwestend.london/monitoring>

We have also surveyed green space across our Regional portfolio and calculated the amount of 'higher value' habitat. In 2017 the total area of green space was recorded as 17.6 hectares with just over 6 hectares of 'higher value' habitat. The evaluation of ecological value was based on professional application of the Guidelines for Ecological Impact Assessment (EclA) (CIEEM 2016). The assessment is not straight forward and involves a combination of a range of characteristics which contribute to the importance of ecological features and the defined geographical context within which the feature falls.

Windsor designated land *(see related information in the Annual Report on page 44)*

The Windsor Estate is one of the country's most unique and important environmental and ecological sites. It comprises 6,600 hectares (16,300 acres) of land, of which 80% is subject to environmental, ecological and land use designations, such as:

- Special Area of Conservation (SAC),
- Special Protected Area (SPA), and
- Sites of Special Scientific Interest (SSSI).

All of Windsor's SSSIs (2,000 hectares) have been categorised as being in 'favourable' condition by Natural England.

The Estate has 1,600 hectares of parkland, 1,200 hectares of agricultural land and 3,100 hectares of forest, including 7,000 veteran and ancient trees.

ANNEX A

Methodology for calculating carbon dioxide emissions avoided from MWh of offshore wind energy generated

Extract from Total Contribution methodology 2017 (v2 July 2020), online at:
thecrownestate.co.uk/total-contribution-methodology

Calculation steps:

1. Establish total amount of electricity generated from wind-powered turbine (MWh).
2. Establish the carbon dioxide emissions per unit of electricity generated by fossil fuel plants (tCO₂/MWh)¹.
3. Subtract 11% of the CO₂ emissions figure to account for induced efficiency penalties (tCO₂/MWh).
4. Multiply the result of step 1 by that of step 2 and subtract that of step 3 to get avoided emissions (tCO₂).

Data note:

¹ Avoided factor of 450kg CO₂/MWh used (fossil-fuel power stations emissions data from BEIS 2019).