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# Sustainability Databook 2018



# Introduction

Welcome to the DS Smith Sustainability databook 2018.

This document has been prepared for stakeholders who require a greater level of statistical detail about the environmental performance of DS Smith over the calendar year January to December 2017. All data contained within this document has been externally assured.

A full description of trends, correlating factors and reasons for variation can be found in the DS Smith Sustainability Review 2018, available online at:

[dssmith.com/company/sustainability/sustainabilityreport/](https://dssmith.com/company/sustainability/sustainabilityreport/)

## Contents

- 03 Assurance Statement
- 04 Group greenhouse gas emissions 2017
- 05 Divisional breakdown of greenhouse gas emissions 2017
- 06 Group greenhouse gas emissions by scope and type
- 07 Operational data 2017
- 08 Paper mill data 2017
- 10 Waste by country 2017
- 11 Paper mill certifications

# Assurance statement

## Introduction and objectives of work

Bureau Veritas UK Limited (Bureau Veritas) has been commissioned by DS Smith Plc (DS Smith) to provide independent verification of the environmental performance indicators presented on pages 29 of its Annual Report & Accounts 2018 ('the Report') for calendar year 2017. This Assurance Statement applies to the related information included within the scope of work described below.

## Selected information

The scope of our work was limited to assurance over the following information included within the Report for the period 01 January 2017 - 31 December 2017 (the 'Selected Information'):

- energy consumption;
- greenhouse gas (GHG) emissions;
- raw material usage;
- water consumption;
- waste;
- discharge to air and water; and
- production.

The reporting boundaries cover DS Smith's global operations as defined in the Report.

## Reporting criteria

The Selected Information has been prepared in accordance with internal definitions set for DS Smith's Environmental Indicators. These definitions are aligned with the Global Reporting Initiative (GRI) and the Greenhouse Gas Protocol (GHGP) where applicable.

## Limitations and Exclusions

Excluded from the scope of our work is any verification of information relating to:

- activities outside the defined reporting period;
- any statements of a descriptive or interpretative nature relating to the environmental performance as presented in the Annual Report or website of DS Smith;
- statements of commitment to, or intention to, undertake action in the future; and
- statements of opinion, belief and / or aspiration.

This limited assurance engagement relies on a risk based selected sample of environmental data and the associated limitations that this entails. The reliability of the reported data is dependent on the accuracy of metering and other production measurement arrangements employed at site level, not addressed as part of this assurance. This independent statement should not be relied upon to detect all errors, omissions or misstatements that may exist.

## Responsibilities

This preparation and presentation of the Selected Information in the Report are the sole responsibility of the management of DS Smith. Bureau Veritas was not involved in the drafting of the Report or of the Reporting Criteria. Our responsibilities were to:

- obtain limited assurance about whether the Selected Information has been prepared in accordance with the Reporting Criteria;
- form an independent conclusion based on the assurance procedures performed and evidence obtained; and
- reporting our conclusions to the Directors of DS Smith.

## Assessment Standard

Bureau Veritas assurance protocol has been used to conduct this engagement, which is based on best practice assurance standards including AA1000AS, ISAE3000, and ISO14064-3. For the Greenhouse Gas (GHG) emissions data, verification was undertaken in accordance with the main requirements of ISO 14064:2006 Part 3 - Specification with Guidance for the Validation and Verification of Greenhouse Gas Assertions.

## Summary of work performed

As part of our independent verification, our work included:

1. Conducting interviews with relevant personnel of DS Smith;
2. Reviewing the data collection and consolidation processes used to compile Selected Information, including assessing assumptions made, and the data scope and reporting boundaries;
3. Carrying out nine site visits, selected using a risk based approach to the following business units:
  - DS Smith Paper at Kaysersberg Paper Mill (France), Wizenhausen (Germany);
  - DS Smith Packaging at Livingston (UK), Tallinn (Estonia), Burscough (UK), Cartagal (Spain), Arnstadt (Germany); and
  - DS Smith Plastics at Kaysersberg Rigid Packaging (France) and Livingston Foam Products (UK).
4. Conducting remote data verification for a selection of data points for a further 12 sites;
5. Agreeing a sample of the Selected Information to the corresponding source documentation;
6. Checking the data aggregation calculations performed at Head Office; and
7. Assessing the disclosure and presentation of the Selected Information to ensure consistency with assured information.

## Conclusion

On the basis of our methodology and the activities described above, nothing has come to our attention to suggest that:

- the reported data do not provide a fair representation of environmental performance across the DS Smith group for the defined period;
- there are significant omissions which could affect stakeholders' ability to make informed judgements on DS Smith's environmental performance; and
- the GHG assertions stated by DS Smith in its 2017 CDP Investor Response:
  - are not reliable and free from material error, misstatement or bias;
  - are not a fair representation of the GHG data and information.

## Statement of Independence, Integrity and Competence

Bureau Veritas is an independent professional services company that specialises in quality, environmental, health, safety and social accountability with over 185 years history. Its assurance team has extensive experience in conducting verification over environmental, social, ethical and health and safety information, systems and processes. Bureau Veritas operates a certified Quality Management System which complies with the requirements of ISO 9001:2008, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. Bureau Veritas has implemented and applies a Code of Ethics, which meets the requirements of the International Federation of Inspections Agencies (IFIA), across the business to ensure that its employees maintain integrity, objectivity, professional competence and due care, confidentiality, professional behaviour and high ethical standards in their day-to-day business activities. The assurance team for this work does not have any involvement in any other Bureau Veritas projects with DS Smith.

## Environmental performance indicators

A high-level summary of DS Smith's environmental performance can be found below, and Divisional and country data can be found on the following pages.

### Group greenhouse gas emissions 2017

KPI	Unit of measure	2015 (published)	2016 (published)	2016 (adjusted)	2017	% variance
Scope 1	Kt CO <sub>2</sub> e	1,678	1,570	1,576	1,660	5.3
Scope 2	Kt CO <sub>2</sub> e	355	333	348	352	1.2
Emissions from energy exports	Kt CO <sub>2</sub> e	348	299	299	317	5.8
Total CO <sub>2</sub> e (net energy export)	Kt CO <sub>2</sub> e	1,686	1,604	1,624	1,695	4.4
Energy exported	GWh	962	852	854	892	4.5
Total production	Kt nsp	8,059	8,209	8,302	8,234	-0.8
Waste to landfill	Kt	87	98	97	118	21.0
Total water effluent	Mm <sup>3</sup>	19	20	19	20	5.3
CO <sub>2</sub> e per tonne of production	kg CO <sub>2</sub> e/tonne nsp	209.0	195.4	195.7	205.9	5.2
Water effluent per tonne of production	m <sup>3</sup> /tonne nsp	2.4	2.4	2.3	2.5	7.0
Waste to landfill per tonne of production	kg/tonne nsp	10.7	11.9	11.7	14.3	22.0

#### Comments on the data:

- Based on data from 243 in-scope sites. There are 124 sites which require fossil fuels for their production process (Paper Mills, Corrugators, Plastics Plants) and the remaining 120 smaller sites use just electricity in their processes (Sheet Plants, Recycling and Logistics Depots and Warehouses).
- Figures from all years are based on data from sites we owned for the entirety of that year. 2017 data based on sites we have owned since the 1st January 2017. 2016 figure "2016 (representative)" restated from last year to include data from sites added to the 2017 scope to give a representative like-for-like comparison. We have shown the 2015 published figure as it is the baseline year for our target, and the published figure for 2016 to show the performance of the business from last year. The same calculations have been applied for all years.
- Total Production is the sum of Printed Reels and Paper Reels from our Paper Mills; Plastics Production (all types) from our Plastics sites; Recovered Fibre and Other Materials collected and processed through our Recycling Depot network; and Boxes and Sheets sold to third Parties from our Packaging sites and other types of Packaging production from these sites.
- DS Smith collects and reports environmental data in accordance with the guidelines of the Global Reporting Initiative and the Greenhouse Gas Protocol (GHGP), to the extent that this is practicable.
- The CO<sub>2</sub> and CO<sub>2</sub>e emissions were calculated using the UK DECC 2016 factors for all fuels and the UK national grid. Emissions from other national grids use the DECC factors (IEA) from 2015.
- Where available we use the emissions factor for bought electricity from the supplier of energy to our business (Scope 2 Market Value). If this figure is not reported, the country emission's factor from the IEA is used instead (Scope 2 Location Value).
- The CHP that supplies our Witzhausen Paper Mill with steam is fired predominantly by biogenic fuels. The emissions factor for this site has been estimated as 32.06 kg/MWh of CO<sub>2</sub>e.
- The CHP that supplies our Belisce Paper Mill and Corrugator with steam and electricity is fired by a combination of natural gas and flare gas. The emissions factor for flare gas is estimated to be 240 kg/MWh of CO<sub>2</sub>e.
- Scope 3 emissions, external to DS Smith but involved in the supply cycle for the Group's products and services, are not included
- The waste figures relate to waste generated by our operations; they do not include waste that is collected from external sources for recycling.
- Where water effluent figures are available from meters and invoices they are used here, otherwise they are calculated to be 50% of the water abstracted and bought onto site. Some of our paper mills have their own Waste Water Treatment Plants and treat water for third parties. This water flow is measured and subtracted from our total effluent figures.

### DS Smith Paper greenhouse gas emissions 2017

KPI	Unit of measure	2016 (adjusted)	2017	% variance
Scope 1	Kt CO <sub>2</sub> e	1,290	1,369	6.1
Scope 2	Kt CO <sub>2</sub> e	128	138	7.6
Emissions from energy exports	Kt CO <sub>2</sub> e	299	317	5.8
Total CO <sub>2</sub> e (net energy export)	Kt CO <sub>2</sub> e	1,119	1,190	6.4
Energy exported	GWh	846	884	4.5
Total production	Kt nsp	2,757	2,841	3.0
Waste to landfill	Kt	86	107	24.2
Total water effluent	Mm <sup>3</sup>	18	19	5.0
CO <sub>2</sub> e per tonne of production	kg CO <sub>2</sub> e/tonne nsp	405.9	419.0	3.2
Water effluent per tonne of production	m <sup>3</sup> /tonne nsp	6.5	6.6	1.8
Waste to landfill per tonne of production	kg/tonne nsp	31.3	37.7	20.6

### DS Smith Packaging greenhouse gas emissions 2017

KPI	Unit of measure	2016 (adjusted)	2017	% variance
Scope 1	Kt CO <sub>2</sub> e	253	261	3.1
Scope 2	Kt CO <sub>2</sub> e	184	181	-1.6
Total CO <sub>2</sub> e (net energy export)	Kt CO <sub>2</sub> e	437	442	1.1
Energy exported	GWh	8	7	-3.6
Total production	Kt nsp	4,448	4,337	-2.5
Waste to landfill	Kt	8	7	-8.0
Total water effluent	Mm <sup>3</sup>	1	1	7.9

CO <sub>2</sub> e per tonne of production	kg CO <sub>2</sub> e/tonne nsp	98.4	102.0	3.7
Water effluent per tonne of production	m <sup>3</sup> /tonne nsp	0.3	0.3	10.7
Waste to landfill per tonne of production	kg/tonne nsp	1.7	1.6	-5.6

### DS Smith Plastics greenhouse gas emissions 2017

KPI	Unit of measure	2016 (adjusted)	2017	% variance
Scope 1	Kt CO <sub>2</sub> e	22	20	-7.1
Scope 2	Kt CO <sub>2</sub> e	33	30	-9.1
Total CO <sub>2</sub> e (net energy export)	Kt CO <sub>2</sub> e	55	50	-8.3
Energy exported	GWh	0	0	0.0
Total production	Kt nsp	97	96	-0.9
Waste to landfill	Kt	1	1	15.6
Total water effluent	Mm <sup>3</sup>	0	0	-1.3

CO <sub>2</sub> e per tonne of production	kg CO <sub>2</sub> e/tonne nsp	561.9	523.4	-7.5
Water effluent per tonne of production	m <sup>3</sup> /tonne nsp	2.2	2.2	-0.5
Waste to landfill per tonne of production	kg/tonne nsp	11.7	13.7	16.7

### DS Smith Recycling greenhouse gas emissions 2017

KPI	Unit of measure	2016 (adjusted)	2017	% variance
Scope 1	Kt CO <sub>2</sub> e	11	10	-7.2
Scope 2	Kt CO <sub>2</sub> e	2	2	-13.2
Total CO <sub>2</sub> e (net energy export)	Kt CO <sub>2</sub> e	13	12	-8.3
Energy exported	GWh	0	0	0.0
Total production	Kt nsp	999	960	-3.9
Waste to landfill	Kt	2	2	0.8
Total water effluent	Mm <sup>3</sup>	0	0	9.2

CO <sub>2</sub> e per tonne of production	kg CO <sub>2</sub> e/tonne nsp	13.1	12.5	-4.5
Water effluent per tonne of production	m <sup>3</sup> /tonne nsp	0.0	0.0	13.6
Waste to landfill per tonne of production	kg/tonne nsp	2.5	2.6	4.92

## Group greenhouse gas emissions by scope

Country	Total CO <sub>2</sub> e emissions (tonnes)	Scope 1 (tonnes)	Scope 2 location based (tonnes)	Scope 2 market based (tonnes)
Austria	7,326	5,387	1,939	1,939
Belgium	8,107	5,066	3,228	3,041
Bosnia and Herzegovina	628	351	278	278
Bulgaria	78,290	40,236	38,054	38,054
Croatia	112,407	85,937	31,503	26,470
Czech Republic	9,126	3,842	5,285	5,285
Denmark	10,087	5,050	5,042	5,037
Estonia	3,023	797	2,225	2,225
Finland	4,570	2,054	2,516	2,516
France	152,078	139,171	12,907	12,907
Germany	280,217	235,255	89,794	44,963
Greece	12,630	6,263	6,366	6,366
Hungary	9,557	5,470	4,087	4,087
Italy	417,187	395,164	22,024	22,024
Lithuania	3,185	1,900	1,285	1,285
Macedonia	2,116	1,141	974	974
Morocco	53	12	42	42
Netherlands	201,252	188,043	13,209	13,209
New Zealand	174	19	156	156
Poland	43,075	20,398	22,677	22,677
Portugal	5,097	370	5,008	4,728
Romania	2,967	1,549	1,418	1,418
Serbia	4,609	2,385	2,224	2,224
Slovakia	6,951	3,162	3,789	3,789
Slovenia	6,198	3,638	2,559	2,559
Spain	30,605	19,406	11,755	11,199
Sweden	3,852	2,316	1,537	1,537
Switzerland	2,564	2,564	138	0
Thailand	149	0	149	149
Turkey	1,951	398	1,553	1,553
United Kingdom	577,309	475,483	101,844	101,826
United States	9,651	467	9,184	9,184
Total	2,006,991	1,653,291	404,750	353,701

## Group greenhouse gas emissions by greenhouse gas type

Total CO <sub>2</sub> emissions (tonnes)	Total CH <sub>4</sub> emissions (tonnes)	Total HFCs emissions (CO <sub>2</sub> e)	C <sub>3</sub> H <sub>8</sub> emissions (CO <sub>2</sub> e)
7,240	7	0	0
8,283	7	0	0
625	0	0	0
77,946	61	0	0
117,045	118	0	0
8,972	5	0	0
7,279	5	0	0
3,021	1	0	0
4,535	8	0	0
151,394	187	0	0
323,128	436	0	0
12,425	8	0	0
9,546	7	0	0
414,607	541	0	0
3,181	3	0	0
2,099	2	0	0
53	0	0	0
200,525	264	0	0
174	0	0	0
28,015	7	0	0
5,267	6	0	0
2,950	2	0	0
4,568	3	0	0
6,935	4	0	0
5,712	4	0	0
30,114	21	0	0
1,956	8	0	0
2,650	3	0	0
149	0	0	0
1,912	0	0	0
569,882	729	0	206
9,599	1	0	0
2,021,787	2,446	0	206

## Operational data 2017

Measure	Paper mills	Other operations	Total operations	
<b>Production</b>				
Total production	Tonnes	2,912,755	5,322,863	8,235,617
<b>Energy</b>				
Electricity generated	MWh	1,655,670	0	1,655,670
Electricity purchased from grid	MWh (electricity)	304,412	608,316	912,728
Electricity exported	MWh	771,842	0	771,842
<b>Fuels</b>				
Fossil fuels	MWh	6,678,145	1,102,811	7,780,955
Renewable fuels	MWh	90,406	0	90,406
<b>Water</b>				
Water abstraction				
Borehole water	m <sup>3</sup>	13,420,013	600,383	14,020,396
Municipal water	m <sup>3</sup>	362,630	1,128,310	1,490,940
Surface water	m <sup>3</sup>	10,643,049	170,563	10,813,612
Total fresh water utilisation	m <sup>3</sup>	24,425,692	1,899,257	26,324,949
<b>Emissions to water</b>				
Total effluent from site	m <sup>3</sup>	19,816,558	618,819	20,435,378
<b>Emissions</b>				
Total NO <sub>x</sub> emissions	mt NO <sub>x</sub>	816	0	816
Total SO <sub>2</sub> emissions	mt SO <sub>2</sub>	7	0	7
Total dust emissions	mt Dust	7	0	7
<b>Waste</b>				
Total solid waste	Tonnes	469,045	680,182	1,149,227
Hazardous waste	Tonnes	312	35,475	35,787
Solid waste to off-site landfill	Tonnes	109,204	8,592	117,795
Solid waste to off-site landspread	Tonnes	117,069	0	117,069
Solid waste to off-site recycling	Tonnes	58,091	661,495	719,586
Solid waste to third party incineration	Tonnes	184,680	10,095	194,776

## Paper mill data 2017

Measure	Aschaffenburg, Germany	Belisce, Croatia	Chouanard, France	Contoire-Hamel, France	De Hoop, Netherlands	Kaysersberg, France	Kemsley, UK	Lucca, Italy	Pazardzhik, Bulgaria	Witzenhausen, Germany	Total mills	
<b>Production</b>												
Total production	Tonnes	415,085	208,480	34,016	71,756	360,288	149,132	824,970	404,018	85,996	359,013	2,912,755
<b>Energy</b>												
Electricity generated	MWh	333,846	45,512	0	0	187,255	57,200	358,521	657,091	0	16,244	1,655,670
Electricity purchased from grid	MWh (electricity)	971	63,997	12,525	23,482	18,271	52,403	81,105	0	46,542	5,116	304,412
Electricity exported	MWh	157,697	11,407	0	0	72,324	37,891	30,529	461,988	0	5	771,842
<b>Fuels</b>												
Fossil fuels	MWh	918,128	433,869	53,618	98,516	895,943	297,462	1,928,418	1,753,724	192,007	106,460	6,678,145
Renewable fuels	MWh	43,498	0	0	0	0	12,691	0	28,815	0	5,401	90,406
<b>Water</b>												
<b>Water abstraction</b>												
Borehole water	m <sup>3</sup>	0	0	0	0	2,052,946	0	6,920,165	1,405,178	2,731,921	309,803	13,420,013
Municipal water	m <sup>3</sup>	44,458	6,467	136,754	24,467	0	0	4,239	14,955	131,290	362,630	
Surface water	m <sup>3</sup>	2,299,060	4,061,203	130,845	651,797	0	1,716,074	0	506,975	0	1,277,095	10,643,049
Total fresh water utilisation	m <sup>3</sup>	2,343,518	4,067,670	267,599	676,264	2,052,946	1,716,074	6,920,165	1,916,392	2,746,876	1,718,188	24,425,692
<b>Emissions to water</b>												
Total effluent from site	m <sup>3</sup>	1,723,224	2,524,770	195,149	397,280	1,870,111	1,545,968	6,577,623	1,611,121	2,316,733	1,054,580	19,816,558
<b>Emissions</b>												
Total NO <sub>x</sub> emissions	mt NO <sub>x</sub>	109	12	0	14	111	28	370	142	21	9	816
Total SO <sub>2</sub> emissions	mt SO <sub>2</sub>	0	0	0	0	0	0	1	0	2	3	7
Total dust emissions	mt Dust	2	0	0	0	0	0	1	0	4	0	7
<b>Waste</b>												
Total solid waste	Tonnes	44,908	38,827	1,094	2,478	24,159	18,541	256,596	49,946	6,175	26,321	469,045
Hazardous waste	Tonnes	41	22	25	0	39	12	122	27	1	23	312
Solid waste to off-site landfill	Tonnes	0	38,575	105	2,133	0	2,349	48,657	12,167	5,218	0	109,204
Solid waste to off-site landspread	Tonnes	0	0	85	0	65	2,854	113,892	173	0	0	117,069
Solid waste to off-site recycling	Tonnes	13,764	230	146	344	1,758	8,289	12,315	15,607	957	4,680	58,091
Solid waste to third party incineration	Tonnes	31,144	22	757	0	22,336	5,049	81,732	21,999	0	21,641	184,680

## Waste by country 2017

Country	Hazardous waste (tonnes)	Solid waste to off-site landfill (tonnes)	Solid waste to off-site landspread (tonnes)	Solid waste to off-site recycling (tonnes)	Solid waste to third-party incineration (tonnes)	Total solid waste (tonnes)
Austria	4	86	n/a	8,274	23	8,382
Belgium	13	253	n/a	14,028	189	14,470
Bulgaria	4	5,298	0	1,627	0	6,925
China	n/a	n/a	n/a	n/a	n/a	n/a
Croatia	47	38,800	n/a	3,479	31	42,310
Czech Republic	95	187	n/a	14,340	10	14,537
Denmark	16	9	n/a	9,395	920	10,325
Estonia	n/a	78	n/a	1,590	n/a	1,668
Finland	19	17	n/a	6,472	69	6,559
France	3,869	5,995	2,939	149,175	8,729	166,837
Germany	283	542	0	110,158	53,130	163,830
Greece	19	290	n/a	15,902	0	16,192
Hungary	341	311	n/a	21,108	110	21,529
Italy	176	14,559	173	100,527	22,091	137,350
Lithuania	41	61	n/a	5,028	25	5,114
Macedonia	611	1	n/a	1,574	0	1,574
Morocco	0	0	n/a	106	0	106
Netherlands	61	18	65	20,517	22,417	43,017
New Zealand	0	75	n/a	45	n/a	120
Poland	44	645	n/a	35,774	0	36,420
Portugal	300	102	n/a	4,165	0	4,267
Romania	0	58	n/a	5,760	34	5,852
Serbia	0	73	n/a	2,770	0	2,842
Slovakia	1	114	n/a	5,994	0	6,109
Slovenia	44	346	n/a	12,597	312	13,255
Spain	61	824	n/a	31,160	17	32,001
Sweden	53	10	n/a	17,387	321	17,718
Switzerland	0	0	n/a	6,922	52	6,974
Thailand	0	41	n/a	n/a	n/a	41
Turkey	24	19	n/a	6,320	48	6,387
United Kingdom	270	48,849	113,892	106,954	86,248	355,943
United States	0	134	n/a	438	0	572
Total	6,398	117,795	117,069	719,586	194,776	1,149,227

## Paper mill certifications

Country	Quality ISO 9001	Environmental ISO 14001	Safety OHSAS 18001)	Energy ISO 50001	Forest certification Chain-of-Custody
Aschaffenburg	✓	✓	✓	✓	✓
Belišće	✓	✓		✓	✓
Coullons	✓	✓	✓		✓
De Hoop	✓	✓	✓	✓	✓
Kaysersberg	✓	✓	✓		✓
Kemsley	✓	✓	✓	✓	✓
Lucca	✓	✓	✓	✓	✓
Trakia	✓	✓	✓	✓	✓
Witzenhausen	✓	✓	✓	✓	✓
Zărnești	✓	✓			