

be green.

The environmental initiative of Bertelsmann



Bertelsmann Carbon Footprint and Environmental Indicators 2014

Bertelsmann Carbon Footprint and Environmental Indicators 2014

Version 1.1

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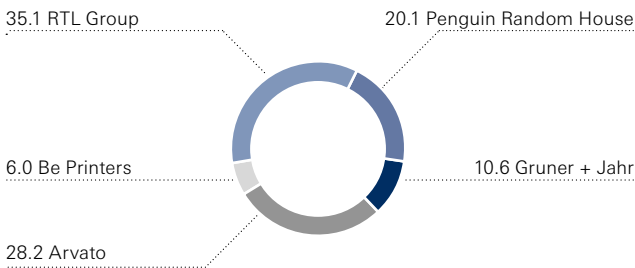
This is Bertelsmann

Bertelsmann is a media, services and education company that operates in approximately 50 countries around the world. Its subsidiaries include the broadcaster RTL Group, the trade book publisher Penguin Random House, the magazine publisher Gruner + Jahr, the service providers Arvato and Be Printers, the music rights company BMG and the e-learning provider Relias Learning. The company has more than 112,000 employees and generated revenues of €16.7 billion in financial year 2014. Bertelsmann stands for creativity and entrepreneurship. This combination promotes the creation of first-class media content and innovative service solutions that inspire customers around the world.

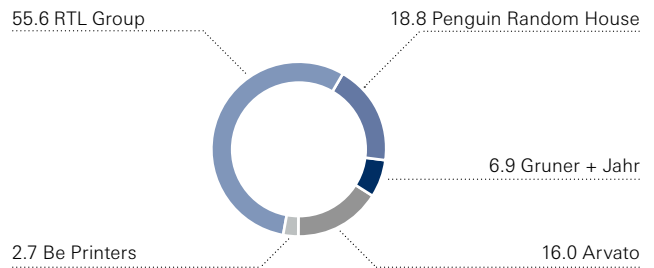
BERTELSMANN



Total Revenues by Segments in percent ¹⁾



Operating EBITDA by Segments in percent ¹⁾²⁾



¹⁾ Based on total from segments not including Corporate Investments, Corporate Center and Consolidation.

²⁾ Earnings before Interest, Tax, Depreciation, Amortization (EBITDA).

Source: Bertelsmann Financial Report 2014



Television and radio open up even the smallest room to the wider world. Anyone tuning in will soon encounter the RTL Group. Europe's leading European entertainment network operates channels in 13 countries and is among the leading producers of content.

Penguin
Random
House

Books turn people into discoverers. And nowhere are there as many books as at Penguin Random House. With over 15,000 new titles and over 800 million publications sold per year, Penguin Random House is the world's leading publishing group.



Gruner + Jahr is the home of fascinating media brands, and is represented by over 500 offerings (magazines, websites and digital media) in more than 20 countries. In Germany, these include Stern, Brigitte, Geo, Capital, Gala and Schöner Wohnen.

arvato
BERTELSMANN

Services are the key to success for many businesses. Every day, Arvato works with over 70,000 employees in more than 35 countries on customized solutions for business customers all over the world.



Printed products continue to play a significant role in many companies' communications. These include magazines, catalogs, advertising brochures or digital offerings. Be Printers covers the entire spectrum of the modern printing industry.

Corporate Investments
Corporate Center

At Group level, Bertelsmann operates the music company BMG and, increasingly, education businesses. Funds that are invested into digital companies, especially in the U.S., China, India and Brazil, as well as the book clubs, are also part of the Corporate Investment division. In this carbon footprint report the combined data for Corporate Center and Corporate Investments are disclosed under "Corporate".

2 About This Report

Bertelsmann considers environmental protection as an integral component of its corporate social responsibility. With this fourth carbon footprint report, the company is disclosing the effects of its business on the climate and the environment.

The report focuses on the main environmental effects of the business activities and explains the development of the most relevant indicators. The company's business policy is described in detail in the [Bertelsmann Financial Report](#). Reading only this Bertelsmann Carbon Footprint Report may lead to erroneous conclusions.

The reporting period is the 2014 financial year. In order to present the development of the key indicators, data from 2014 are compared to the previously collected data from 2012.

The development of the key indicators is influenced by both organizational changes and individual actions taken by the companies. Comments are therefore provided about significant organizational changes, such as the sale or purchase of companies, or changes in their classification into the corporate divisions [2]. In addition, key environmental indicators are listed for each corporate division, making it easier for readers to analyze the environmental performance.

Greenhouse gas emissions are accounted for by adhering closely to both the "Corporate Accounting and Reporting Standard" and the "Corporate Value Chain (Scope 3) Standard" of the Greenhouse Gas Protocol. Reporting of further environmental indicators is based on the Global Reporting Initiative (GRI) criteria. Gaps in the data were closed by using consistent and transparent estimating procedures [3]. Emission factors from recognized data sources were used to calculate greenhouse gas emissions. The selection and proper use of data sources, emission factors and calculation methods were supported by an independent research institute.

Complementing the Bertelsmann carbon footprint report, some of the corporate divisions published their own environmental and sustainability reports with additional information. These reports are published on the companies' websites and are updated regularly.



3 Overview of the Bertelsmann 2014 Carbon Footprint

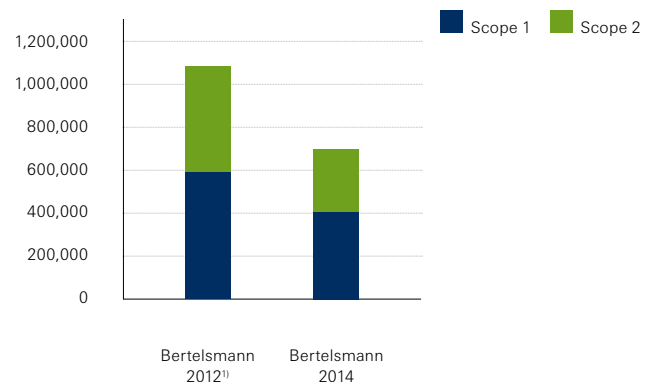
The extent of individual Bertelsmann companies' environmental impacts varies greatly due to the diverse business activities of the group. These include printing, book and magazine publishing, television channels and production, call centers, distribution and computing centers as well as e-learning platforms and universities.

In 2012, the Bertelsmann Executive Board established the goal of pursuing four strategic directions in order to strengthen the Group's growth and make it more digital and more international. In this context, there are opportunities for growth and changes that will have sustained impact on the company's carbon footprint. CO₂-intensive printing businesses, for example, have a lower financial importance today compared to the other media and services businesses. The declining business of our CO₂ intensive operations, the trend of digitization, and the efforts to develop the education business have a direct impact on the development of Bertelsmann's Carbon Footprint.

The carbon footprint describes the amount of greenhouse gas emissions from the production, procurement and transformation of electricity, cooling and heating energy, and fuel. In addition to carbon dioxide (CO₂), other greenhouse gases such as methane (CH₄) were taken into account and given a weighting according to their effects on the atmosphere. The carbon footprint is therefore reported in CO₂ equivalents (CO_{2eq}). The key indicator for the company is the "Bertelsmann Carbon Footprint," which includes direct greenhouse gas emissions [5] as well as indirect emissions from the purchase of energy [6].

In 2014, the company's total CO₂ emissions amounted to 700,200 tons of CO_{2eq}. Of these, 62 percent are attributable to electricity consumption, 36 percent to heating, and only 2 percent are caused by the burning of fuels in company-owned cars. The significant decrease in emissions from 2012 to 2014 by 36 percent is mainly due to the sale of energy-intensive printing businesses.

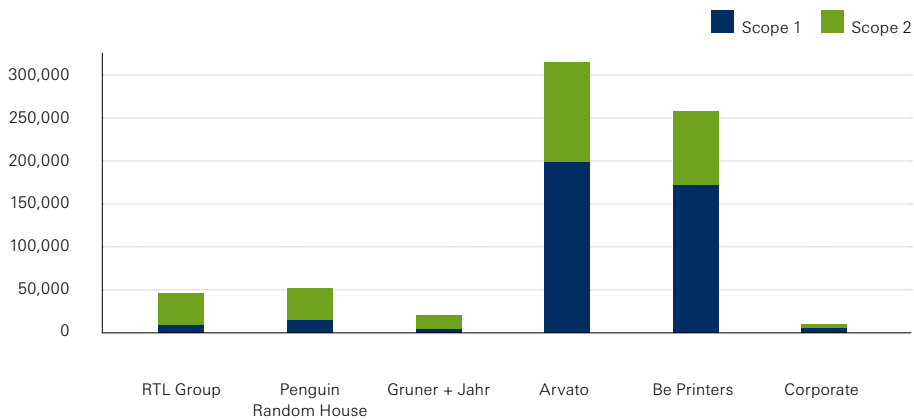
Scope 1 and Scope 2 Emissions (t)



¹ For better comparison, data from 2012 have been revised according to the new data collection methodology.

Direct and indirect greenhouse gas emissions

Scope 1 and Scope 2 Emissions 2014 (t)



Arvato with 314,600 tons CO_{2eq} and Be Printers with 257,800 tons CO_{2eq} account for most of Bertelsmann’s greenhouse gas emissions. In particular, the consumption of electricity, natural gas and heat by printing machinery and other production facilities, as well as the operation of distribution centers is reflected in the emissions of these corporate divisions.

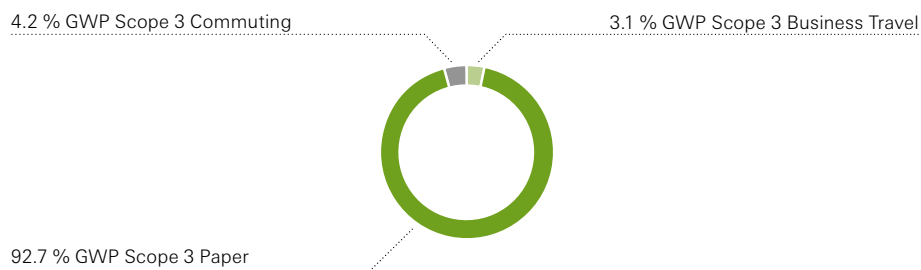
Compared to Arvato und Be Printers, the energy consumption of the other corporate divisions is significantly lower. At the RTL Group, Penguin Random House, Gruner + Jahr and Corporate, greenhouse gas emissions amount to a total of 127,700 tons of CO_{2eq} and are therefore 18 percent of the total Carbon Footprint of Bertelsmann. The greenhouse gas emissions of these corporate divisions are primarily driven by the consumption of electricity and heat at the numerous administrative and publishing sites. At the RTL Group, the consumption of electricity is additionally determined by TV productions and broadcasting facilities.

The emission intensity decreased from 0.07 kilogram CO_{2eq} per euro of sales in 2012 to 0.05 kilogram CO_{2eq} per euro of sales in 2014.

Selected indirect greenhouse gas emissions from upstream and downstream value chain also contribute to the Bertelsmann carbon footprint [7]. In addition to business travel, emissions also resulting from the manufacture of paper by Bertelsmann and from employees commuting by car not already included in scope 1 emissions are reported for the first time in 2014.

Additional indirect greenhouse gas emissions in upstream value creation

Scope 3 Emissions 2014 in percent (%)



For the Bertelsmann Group, paper is the most important raw material, and its manufacture involves high levels of CO₂ emissions. The total volume of paper purchased by Bertelsmann companies in 2014 accounts for 1.44 million tons CO_{2eq} that were emitted in paper manufacture [10]. The Bertelsmann companies, in accordance with the [Bertelsmann paper policy](#), seek to use paper efficiently and responsibly. For example, recycled fiber is favorable to virgin fiber in terms of the carbon footprint, resource and energy consumption as well as wastewater contamination. Therefore, Bertelsmann companies use recycled paper whenever technically possible and economically feasible.

Business trips and daily employee commutes amount to 48,800 tons and 65,300 tons of CO_{2eq}, respectively. The current data collection process includes more complete business travel data than the previous carbon footprint

report. This led to an increase by 17 percent in business travel activities recorded in 2014 and by 19 percent in associated CO₂ emissions. The business travel emissions are partly offset by investments in certified climate-protection projects. For example, emissions from the company vehicles of Arvato, the Random House Deutschland publishing group, Gruner + Jahr and the Corporate and Corporate Investments divisions in Germany were entirely offset by climate-protection projects. Furthermore, the carbon dioxide emissions from Gruner + Jahr employee air travel where neutralized through the ongoing climate-protection project "Geo schützt den Regenwald" ("Geo protects the rainforest").

>> [Bertelsmann paper policy](#)



4 Development of the Key Environmental Indicators

The environmental indicators that are most relevant from the Group's perspective are listed below, and how they were derived for the 2012-2014 period is explained. In addition to electrical and heating energy, these include figures for paper, water and waste. Other key environmental indicators are described in Chapter 6.

4.1 Energy: Electricity and Heat

Bertelsmann's energy demand for electricity and heat decreased by 32 percent in 2014 compared to 2012. The reduction in electricity consumption (-34 percent) was more pronounced than the decrease in heating consumption (-29 percent).

The reasons for these decreases include the sale of printing businesses in Italy and Spain (Be Printers) as well as Brown Printing USA (Gruner + Jahr). Adjusted for sold businesses, the energy demand fell by 6 percent.

Energy requirements developed differently in the individual corporate divisions. Clear decreases at Gruner + Jahr (-85 percent), Arvato (-27 percent), Be Printers (-29 percent) and the RTL Group (-5 percent) contrast with increased energy requirements at Penguin Random House (+48 percent) and Corporate (+67 percent).

The increase of emissions at Penguin Random House are the result of the first time inclusion of Penguin, whereas

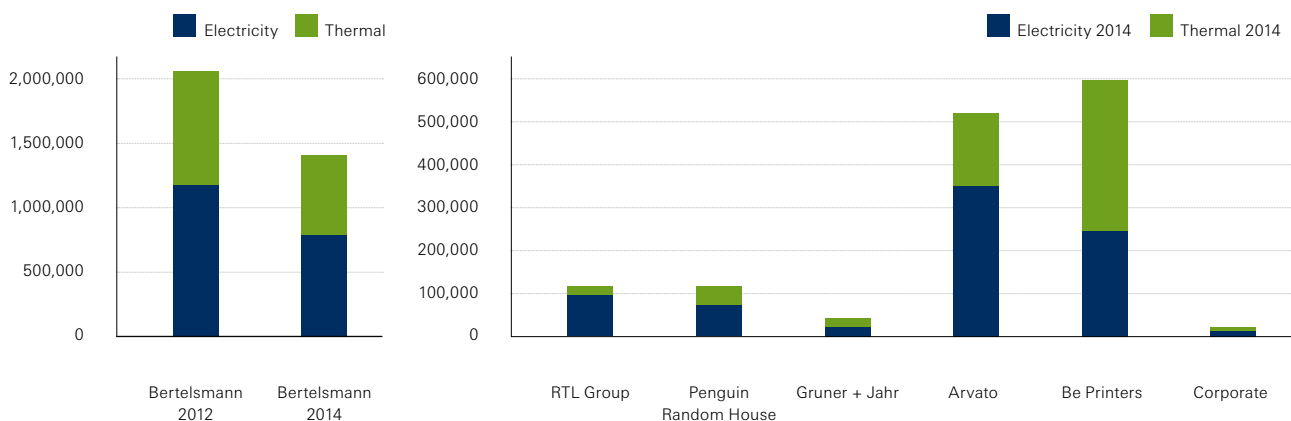
Electricity and heat in megawatt hours (MWh)

	2012 ¹⁾	2014
Bertelsmann (total)	2,082,600	1,412,800
RTL Group	122,500	116,900
Penguin Random House	78,100	115,700
Gruner + Jahr	321,800	47,600
Arvato	705,900	517,200
Be Printers	842,100	595,000
Corporate	12,200	20,400

the integration of more reporting companies explains the increase of energy data at Corporate.

In addition to organizational changes, numerous energy saving projects also contributed to a reduction in energy consumption. For example, Arvato saved more than 1.5 GWh of electricity in 2013 alone by taking steps in the management of cooling, electricity supply and infrastructure in its own data centers.

Energy demand in megawatt hours (MWh)



¹ For better comparison, data from 2012 have been revised according to the new data collection methodology.

4.2 Paper

The digital transformation of Bertelsmann businesses is also apparent in the figures for paper. During the reporting period, the amount of paper purchased decreased, particularly due to the sale of printing businesses in Italy and Spain (Be Printers) and Brown Printing in the U.S. (Gruner + Jahr). In 2014, the overall amount dropped by 34 percent compared to 2012, to 1.84 million tons [4].

The situation varies greatly in the different corporate divisions. Combining the Random House and Penguin publishing groups led to a significant increase in the amount of paper by 25 percent, amounting to 141,000 tons. At Arvato, paper consumption significantly increased by 14 percent, for reasons including the expansion of business at Mohn Media. The increased amount of paper at Corporate is driven by further companies included in the report.

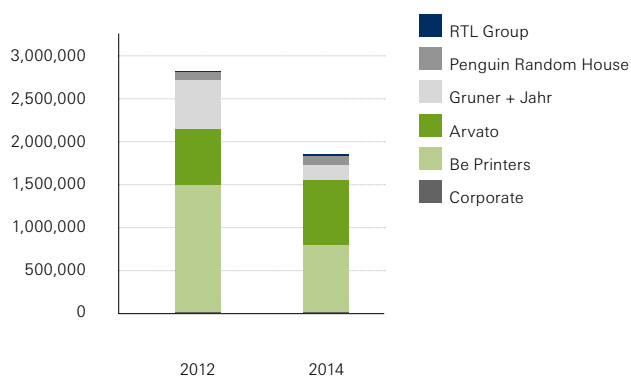
At Gruner + Jahr, on the other hand, the amount of paper purchased decreased due to declining business, as well as the effects of the sale of printing companies and foreign holdings. The total volume of paper at Gruner + Jahr decreased by 68 percent, or when adjusted for sales of businesses by 14 percent. At Be Printers, the volume of paper purchased decreased by a total of 48 percent, or by 19 percent when adjusted for the printing businesses that were sold.

Paper in tons (t)

	2012 ¹⁾	2014
Bertelsmann (total)	2,806,261	1,839,010
RTL Group	240	180
Penguin Random House	112,800	141,000
Gruner + Jahr	570,500	181,100
Arvato	660,400	750,000
Be Printers	1,462,300	763,200
Corporate	21	3,530

For the first time in 2014, the volume of paper from sustainably-certified sources was documented. In 2012 and before, only the volume of recycled paper was reported. About 55 percent of all paper purchased by Bertelsmann companies is manufactured either from recycled fiber or from certified virgin fiber following the criteria of the Forest Stewardship Council (FSC), the Programme for the Endorsement of Forest Certification (PEFC) or the Sustainable Forestry Initiative (SFI) [4]. The other 45 percent of the paper purchased contains alternative sustainably certified paper that was not captured in the current data collection.

Paper in tons (t)

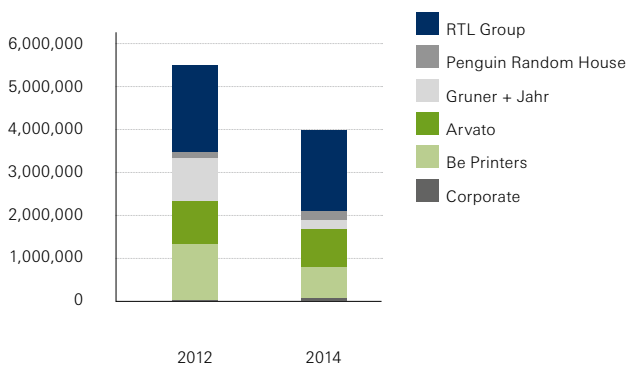


¹ For better comparison, data from 2012 have been revised according to the new data collection methodology.

4.3 Water

In 2014, water consumption dropped significantly to a total of 4.0 million cubic meters (2012: 5.3 million cubic meters). The reduction by 26 percent is mainly a result of the divestments of printing businesses.

Water usage in cubic meters (m³)



Water usage in cubic meters (m³)

	2012 ¹⁾	2014
Bertelsmann (total)	5,462,000	3,964,000
RTL Group	2,012,000	1,896,000
Penguin Random House	140,000	225,000
Gruner + Jahr	996,000	205,000
Arvato	992,000	873,000
Be Printers	1,292,000	713,000
Corporate	30,000	52,000

At RTL Group, reported water volume decreased by about 6 percent compared to 2012. The relatively high level of water consumption at RTL Group can be attributed to the amount of water from own wells for the cooling of buildings and TV broadcasting facilities.

In the printing businesses, water is mainly used for heating and cooling. Rotogravure printing requires steam production and free cooling. In the rotogravure printing operations at Be Printers, water usage decreased by 45 percent in 2014 compared to 2012. Without the effect of the businesses sold in Spain and Italy, water consumption declined by 15 percent. At Arvato, water consumption increased by 1 percent, primarily due to expansion of business.

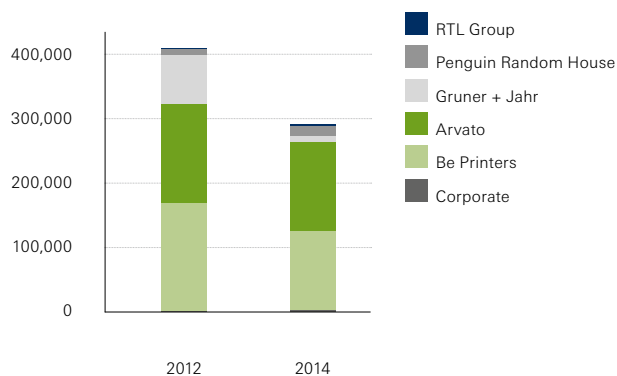
At Penguin Random House (+61 percent) and Corporate (+73 percent), the recorded amount of water increased due to the inclusion of further companies in the report. The sale of Brown Printing led to a drop in water consumption at Gruner + Jahr (-79 percent). However, water use remained constant when adjusted for the effects of the sale.

¹ For better comparison, data from 2012 have been revised according to the new data collection methodology.

4.4 Waste

In 2014, the volume of waste decreased by 29 percent to 291,500 tons, mainly due to the sale of the aforementioned printing businesses. When adjusted for organizational changes, waste decreased by a total of 5 percent.

Waste in tons (t)



The most significant reductions occurred at Gruner + Jahr (-89 percent, primarily due to the divestment of Brown Printing), the RTL Group (-35 percent) and Be Printers (-27 percent). At Arvato, the volume of waste fell by a total of 8 percent. Due to the first time inclusion of Penguin, the waste figures for Penguin Random House increased significantly (+123 percent). At Corporate, the higher waste figures also result from additional reporting companies in 2014.

At the Bertelsmann level, the amount of recyclable waste was 260,000 tons, and there were 2,600 tons of hazardous waste.

Waste in tons (t)

	2012 ¹⁾	2014
Bertelsmann (total)	410,000	291,500
RTL Group	3,400	2,200
Penguin Random House	7,100	15,800
Gruner + Jahr	77,300	8,500
Arvato	154,000	142,000
Be Printers	167,700	122,000
Corporate	500	1,000

¹ For better comparison, data from 2012 have been revised according to the new data collection methodology.

5 Collection of Environmental Data at Bertelsmann

5.1 Data Collection Process

At Bertelsmann, the individual companies report their business and environmental data to designated contacts in the corporate divisions, who then forward the data to the Corporate Center. At the Bertelsmann Corporate Center, these data are used to aggregate and analyze the key indicators and calculate emission values.

The group-wide process is coordinated by the “be green” experts, a group made up of representatives of all operative corporate divisions and of the Corporate Center. The experts agree upon methodologies and procedures that ensure complete and consistent reporting.

For collection of the data, the employees involved in environmental reporting were supported by detailed guidelines for environmental data collection, as well as regular exchange of information. Controls at the division and corporate level, such as releasing reporting packages and validating the key indicators, ensure the reporting process uses data which are comprehensive and of high quality.

All companies with revenues of over 50 million euros and more than 250 employees were involved in data collection for the 2014 financial year. In addition, other companies were included in some corporate divisions in order to attain a minimum coverage rate of 80 percent [1]. For 2014, the environmental data collected represent the environmental impacts of about 82 percent of employees (in FTE equivalents) and 73 percent of the Group’s revenues. The minimum coverage rate is to be gradually increased in the years to come so that further companies will be included in the environmental footprint.



The “be green” experts at a working meeting in May 2015 in Gütersloh.

5.2 Academic Research Support

For the fourth consecutive time, Bertelsmann entrusted the IFEU Institute in Heidelberg to oversee and support the continued development of the group-wide data collection.

The IFEU Institut für Energie- und Umweltforschung (Institute for Energy and Environmental Research) Heidelberg GmbH is an independent non-profit research institute. Throughout the course of the process, the IFEU Institute gave feedback on the definitions of the key indicators and on the data collection forms. In addition, the researchers checked the validity of the environmental data collected by individual companies. On the basis of scientific methods, the IFEU Institute selected relevant and reliable data sources (IEA – International Energy Agency, GEMIS – Global Emission, Model for Integrated Systems, TREMOD – Transport Emission Model, DEFRA – Department for Environment, Food and Rural Affairs, Ecoinvent) and conversion factors for emissions from energy production, energy consumption, and transportation.

The IFEU Institute also modeled greenhouse gas emissions in line with the requirements of the Global Reporting Initiative and Greenhouse Gas Protocol international reporting standards. For this, the researchers entered the collected 2014 primary data into a software program that then calculated greenhouse gas emissions.

The IFEU provided the following recommendations to Bertelsmann for the further development of its environmental reporting:

- Bertelsmann should introduce an annual environmental report in order to achieve greater reliability of data and establish a basis for the monitoring of ecological performance.
- Data collection for the ecological footprint report should be integrated into the company's internal reporting routine.

6 Environmental Indicators According to GRI

Environmental Indicators According to GRI G4		Unit	2012 ¹⁾	2014	Δ
Materialien					
G4-EN1	Paper (total purchase volume)	t	2,806,000	1,839,000	-34%
G4-EN2	Paper, sustainable paper (2012: only recycled paper)	t	586,000	1,005,000	71%
	<i>Percentage of sustainable paper (%)</i>	%	21%	55%	-
Energy					
G4-EN3	Total energy consumption	MWh	2,175,000	1,467,000	-33%
	<i>Electricity</i>	MWh	1,204,000	791,000	-34%
	<i>Thermal</i>	MWh	878,000	621,000	-29%
	<i>Energy from fuels</i>	MWh	93,000	54,000	-42%
G4-EN5	Energy intensity	kWh/€	0.14	0.10	-29%
G4-EN6	Reduction of energy consumption	%	-	-33%	-
Water					
G4-EN8	Total fresh water	m ³	5,462,000	3,962,000	-27%
	<i>from company wells</i>	m ³	3,181,000	2,687,000	-16%
	<i>from public supply</i>	m ³	2,281,000	1,275,000	-44%
Greenhouse Gas (GHG) Emissions					
G4-EN15	Direct GHG emissions (scope 1)	t	595,000	406,000	-32%
G4-EN16	Indirect GHG emissions (scope 2)	t	495,000	294,000	-41%
G4-EN17	Other indirect GHG emissions (scope 3 - 2012 only business travel)	t	41,000	1,556,000	-
	<i>Business travel</i>	t	41,000	49,000	17%
	<i>Paper</i>	t	-	1,442,000	-
	<i>Employee commute</i>	t	-	65,000	-
G4-EN18	GHG emissions intensity (scope 1 and scope 2)	kg/€	0.07	0.05	-30%
G4-EN19	Reduction of GHG emissions (scope 1 and scope 2)	%	-	-36%	-
Effluents and Waste					
G4-EN22	Total water discharge	m ³	3,451,000	3,155,000	-9%
G4-EN23	Total weight of waste	t	410,000	292,000 ²⁾	-29%
	<i>of that amount, hazardous waste</i>	t	3,200	2,600	-19%
	<i>of that amount, disposable</i>	t	11,000	32,000	191%
	<i>of that amount, recyclable</i>	t	396,000	260,000	-34%

¹ For better comparison, data from 2012 have been revised according to the new data collection methodology.

² Unlike the data for 2012, hazardous waste in 2014 is already included in the amount of waste for recycling and waste for disposal.

7 Explanations

[1] Companies Involved

All material over which Bertelsmann exerts operative control are incorporated into the environmental data collection and reporting process (“control approach” in accordance with Greenhouse Gas Protocol Corporate Standard). This includes those material subsidiaries that are controlled by Bertelsmann SE & Co. KGaA within the meaning of IFRS 10. Control exists if Bertelsmann has the power over the investee as well as the exposure, or rights, to variable returns from its involvement with the investee and is able to exercise its power over the investee such that it can affect the amount of these returns. In order to draw meaningful conclusions for the entire Bertelsmann Group, the circle of companies to be included was defined

in advance (at least 80 percent of sales and employees were to be covered by the data collection).

The environmental data of the companies involved were included in the report in their entirety, i.e. 100 percent of the environmental data even for companies in which Bertelsmann owns less than 100 percent capital share. Companies that were acquired or sold during the fiscal year are exempt from the obligation to provide environmental data to Bertelsmann. Acquired companies will become subject to reporting obligation in the fiscal year following the year of acquisition.

[2] Organizational Changes

Overview of major organizational changes since 2012 with significant influence on the 2014 carbon footprint:

Additions	Removals
Merger of the Penguin and Random House book publishing businesses (Penguin Random House)	Sale of the U.S. printing business Brown Printing Company and the Entertainment Media publishing house in Germany (Gruner + Jahr)
Complete acquisition of BMG Rights Management (Corporate Investments)	Sale of the Italian printing business and calendar business as well as closure of the Prinovis Itzehoe rotogravure printing site (Be Printers)
Acquisition of Gothia Financial Group (Arvato)	Sale of the Czech-Slovakian book and publishing company Euromedia Group (Corporate Investments)

The environmental data of the following companies were no longer taken into account for 2014, because they were sold during the 2015 data collection period: Printing

business in Spain (Be Printers) and foreign holdings that were sold, including Mondadori in Italy (Gruner + Jahr).

[3] Estimating Procedures

To the extent that data are missing for the reporting companies that were included (e.g. consumption at particular sites or in particular months), the gaps in the data were closed using suitable estimates. For estimates for office

and administrative sites, the Corporate Center used factors that were derived by averaging the data of the reporting companies per employee.

[4] Paper

Starting in 2014, Bertelsmann has been reporting the amount of paper purchased. To date, only the amounts of paper and copy paper printed by Bertelsmann's own printing businesses have been reported. The goal of this change is more comprehensive reporting on responsible procurement of paper, by far the most important raw material for Bertelsmann as a whole. Because of the change in the way the data were obtained, the volume of paper listed is not comparable to the information in Bertelsmann's previous carbon footprint reports. The values for 2012 were newly recorded for trend analysis in the current system.

Bertelsmann reports as sustainably sourced paper all paper consisting of recycled fiber as well as paper from virgin fiber that meets the criteria of the following three certification systems: Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC) or Sustainable Forestry Initiative (SFI). Bertelsmann is well aware that these three systems have different requirements. Because of the varying geographic distribution and availability of certified paper in the required amounts, the corporate divisions use the certification systems individually according to market requirements.

[5] Direct Greenhouse Gas Emissions (Scope 1)

All greenhouse gases from sources that are owned by Bertelsmann and its fully consolidated subsidiaries, and companies over which Bertelsmann can exert control, are classified into the "Scope 1" category. "Scope 1 emissions" are, for example, electricity or heat generation in

company-owned cogeneration plants, generators and heating plants. Emissions from company vehicles (e.g. trucks, forklifts, company cars) are likewise classified into the Scope 1 category.

[6] Indirect Greenhouse Gas Emissions (Scope 2)

Greenhouse gas emissions from the generation of purchased and consumed energy (electricity or heat) make up the "Scope 2 emissions". These emissions are created when energy is produced at the supplier and are there-

fore only indirectly attributable to Bertelsmann's business activities. Examples of Scope 2 emissions include electrical, heating and cooling energy that are purchased from the power grid.

[7] Indirect Greenhouse Gas Emissions (Scope 3)

Other indirect greenhouse gas emissions that are created due to business activities outside of the companies are reported under the Scope 3 category. This carbon footprint report includes information on the following Scope 3 emissions: Manufacturing of raw materials (paper), business travel, emissions from employee commuting.

Significant emission sources have not yet been reported, including transport for the procurement of raw and other materials and for the distribution of physical products such as books, magazines or data carriers and, increasingly, energy consumption at external data centers. In addition to the significance of indirect greenhouse gas emissions, the scope of reporting is also determined by the availability and robustness of data; and by the extent of which emissions can be influenced. Bertelsmann is therefore working on further expansion of data collection and reporting for greenhouse gas emissions related to upstream and downstream value creation.

[8] Business Travel

Business travel covers distances traveled by employees with the main modes of transportation, including travel by airplane, train and rental or company cars. Cars owned by the company are not included when calculating Scope

3 emissions, since they are already taken into account in Scope 1 emissions. TREMOD factors are used to determine GWP values.

[9] Employee Commuting

The basis for the figures was the Group-wide data collection about use of available transportation modes that was carried out at the Bertelsmann companies' primary sites in 2014. This data collection took place in a decentralized fashion and with varying degrees of precision. Voluntary employee surveys were conducted in some locations, while in others extrapolation or estimation was used. Overall, the distribution of transportation mode utilization was recorded for over half of all employees (63,000).

The spectrum of transportation mode utilization was very broad and depended on the conditions at each particular location. On average, across all Bertelsmann employees included in the survey, 40 percent commuted by car, 50 percent used public transportation and 10 percent arrived at work by bike or on foot. DEFRA figures (2014) were used to calculate greenhouse gas emissions. Average round-trip commuting distance was assumed to be 40 kilometers for 220 working days (20 kilometers each way).

[10] Emissions from the Manufacture of Raw Materials (Paper)

Unlike the calculation of emissions for carbon-neutral printed matter, calculation of the Scope 3 emissions from paper manufacture given here is performed using a simplified approach. This is due to the limited availability and consistency of CO₂ data, since the manufacture and transport of paper purchased by the Bertelsmann companies is carried out by suppliers and service providers. Therefore, for this carbon footprint report, the calculation of CO₂ emissions was based on LCA data from Ecolnvent V3.1 2014 for selected types of paper.

Emissions from the manufacture of about 1.2 million tons of paper, which represents only part of the overall amount of paper used, are included in the Bertelsmann carbon footprint report. The reason for this is that Bertelsmann does not purchase all its paper for printing purposes itself; instead, some of the paper is provided by business customers. This paper, which remains the property of the customer, is not included in the Bertelsmann carbon footprint report. Transport logistics from the supplier to the factory gates and distribution from the factory gates to the customer were not taken into account in the Scope 3 reporting.

Contact

Bertelsmann SE & Co. KGaA
Corporate Responsibility & Diversity Management
Mark Fabisch
Carl-Bertelsmann-Strasse 270
33311 Gütersloh • Germany
Phone: +49 (0) 52 41-80-40 108
Fax: +49 (0) 52 41-80-94 169
responsibility@bertelsmann.com
bertelsmann.com/corporate-responsibility

