

GRI Report 2018

Bertelsmann Corporate Responsibility Information in accordance
with the Global Reporting Initiative (GRI) Standards

Excerpt: GRI 300 Environmental Indicators

www.bertelsmann.com/responsibility

BERTELSMANN

About this Report

Since 2011, Bertelsmann's corporate responsibility (CR) reporting has followed the international guidelines of the Global Reporting Initiative (GRI), the world's leading standard for sustainability reporting by international companies and organizations, and known since 2016 as the „GRI Standards.“ This report was created in accordance with the GRI Standards "core option". Supplementary information in conformity with the sector-specific "Media Sector Disclosures" (MSD) are also included. Hyperlinks lead to further information, facts and figures about the responsible conduct of Bertelsmann and its divisions on the corporate website. The report's content was selected based on a relevance analysis of corporate responsibility topics at Bertelsmann, which was carried out with in-house and external stakeholders.

Bertelsmann's GRI reporting also fulfills its obligation, as a UN Global Compact member, to produce an annual Communication on Progress. A separate column in the table highlights the relevant reporting content for each principle. In addition, the environmental data from Bertelsmann's carbon footprint have been fully integrated into its GRI reporting as of 2018. In March 2019, Bertelsmann also published a Combined Non-Financial Statement as part of its Combined Management Report 2018 (pp. 40–44), which complies with the CSR Directive Implementation Act in Germany.

GRI 300

Environmental

GRI 300 Environmental

The efficient use of natural resources is at the heart of Bertelsmann's environmental management. The company strives to minimize environmental impacts resulting from its own production, business, and distribution processes. By conserving natural resources and using them more efficiently, Bertelsmann is making an important contribution to environmental and climate protection and thus to a future worth living in. Resource efficiency is a requirement business customers place on Bertelsmann, in particular at Arvato and the Bertelsmann Printing Group's service businesses: They expect an environmental management system that ensures compliance with statutory and other requirements.

Bertelsmann meets these growing challenges through transparency regarding its environmental impact along the value chain. Effective environmental management, i.e. measuring and reducing the resources purchased and used, can save costs and decrease the company's environmental footprint.

The Bertelsmann Environmental Policy, the Bertelsmann Energy & Climate Policy, and the Bertelsmann Paper Policy provide the framework for the Group's environmental management. Operational responsibility for energy and environmental management lies with the managements of the individual Bertelsmann companies. In addition to cross-divisional objectives for reducing greenhouse gas emissions (see GRI 305) and paper consumption (see GRI 301), many operating units set their own objectives for improving their environmental performance in local management systems. The Group-wide environmental objectives adopted by the Bertelsmann Corporate Responsibility Council (see GRI 102-20) are substantiated in the individual divisions' own objectives.

The internationally staffed Bertelsmann "be green" working group serves as a platform for cross-divisional environmental commitment. It is managed by a representative from Corporate Responsibility & Diversity Management, a central department that reports to the Chief HR Officer. Representatives from the Bertelsmann divisions – e.g. paper buyers, energy and environmental managers, logistics experts, and controllers – regularly coordinate on the latest environmental issues and best practices, and also engage in dialog with external stakeholders. In addition, the experts in the "be green" working group coordinate the Group-wide collection and reporting of environmental data.

Since 2008, Bertelsmann has compiled a Group-wide Carbon Footprint and other data on energy, paper, water, wastewater, and waste (see GRI 301, 302, 303, 304, 305, 306). The Carbon Footprint illustrates the development of relevant environmental indicators for the various divisions from the Group's perspective. The environmental performance indicators of the Bertelsmann divisions RTL Group, Penguin Random House, Gruner + Jahr, Arvato, and Bertelsmann Printing Group are shown separately in the Carbon Footprint. The activities of the divisions BMG, Bertelsmann Education Group, and Bertelsmann Investments as well as Corporate are summarized under "Other" in this report due to their comparatively low environmental impact.

To professionalize its environmental reporting, Bertelsmann introduced the "green.screen" IT platform for Group-wide environmental reporting and energy data management. "green.screen" was first used to fully record, aggregate, and analyze the environmental data of the fully consolidated companies for the 2018 reporting year. 337 companies at 502 locations across all divisions were included in this latest data collection. All production and logistics sites as well as the company's own computer centers and most of its own and rented office sites were included in the data collection process. The environmental data for the remaining 5 percent of employees (calculated in full-time equivalents) at office locations was calculated based on average consumption values. In some cases, the figures shown for the 2017 financial year differ slightly from the figures reported in previous publications. These changes are mainly due to the conversion to a more precise allocation of consumption data to Group-owned vs. non-Group companies at the sites. If changes are attributable to other causes, this is indicated separately.

GRI	Disclosure	UNGC
301	Materials	

103	Management approach (including GRI 103-1, 103-2, 103-3)	VII-VIII
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Paper, which continues to be the most important resource for the traditional print media business, is a particular priority at Bertelsmann. Even in an increasingly digitized media landscape, printed books, magazines, brochures, and flyers will continue to have their place. Therefore, resource conservation, waste avoidance, and climate protection play a major role for Bertelsmann across the entire paper value chain. Bertelsmann is committed to responsible paper sourcing, to protect forests which are valuable for climate protection and biodiversity. In their function as print service providers and buyers, the companies in Bertelsmann's service divisions offer their customers a comprehensive range of sustainably certified and climate-neutral print products.

To complement its environmental policy, Bertelsmann has issued a Paper Policy: As part of its Group-wide environmental objectives, Bertelsmann aims to keep the proportion of recycled paper and paper from certified, sustainable forestry in the paper it purchases itself at over 90 percent and continue increasing it. Recycled paper as well as papers of certified origin that meet FSC®, PEFC™, SFI® requirements or comparable standards are regarded as sustainably sourced paper. In this way, the company advocates for certified sustainable forestry. For example, no wood from primary or protected forests may be used in producing the paper. In addition, Bertelsmann ensures that, in addition to certified wood fiber, the paper used has as high a proportion of recycled material as possible. Above and beyond the Group-wide environmental objective, Penguin Random House aims to switch its paper sourcing to 100 percent sustainable paper by 2025.

For information on the general management approach for environment matters: see GRI 300.

301-1	Materials used by weight or volume	VII-VIII
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Paper consumption

in tons

	2018	2017
Total paper consumption	1,834,010	1,824,990
Of which self-purchased paper 1)	1,145,740	1,120,900

1) Previous-year figure was adjusted due to a corrected presentation of intra-Group deliveries.

Paper consumption by corporate division

in tons

	2018	2017
RTL Group	190	210
Penguin Random House	263,260	224,260
Gruner + Jahr	106,840	116,160
Arvato 1)	16,920	16,280
Bertelsmann Printing Group	1,594,980	1,600,060
Other	70	50
Total paper before consolidation	1,982,260	1,957,020
Consolidated	-148,250	-132,030
Total paper after consolidation	1,594,980	1,600,060

1) Previous-year figure was adjusted due to corrections to volumes of packaging paper at individual sites.

Paper consumption accounts for the largest share of Bertelsmann's total raw material consumption. This figure has been adjusted for intra-Group supplies within the Group, which are reported separately under "Consolidation" for the first time. In 2018, the Bertelsmann Printing Group bought by far the largest quantity of paper. The publishing businesses of Penguin Random House and Gruner + Jahr also required large quantities of paper. Penguin Random House recorded a significant increase in paper purchasing of 17 percent in 2018, mainly due to the market success of Michelle Obama's book "Becoming." By contrast, quantities at Gruner + Jahr fell by 8 percent due to the ongoing realignment of the business.

301-2 Recycled raw materials used

VIII

Paper consumption and share of recycled and certified paper by corporate division in tons

	Total paper consumption	of which recycled	of which certified	of which other
RTL Group	190	70	100	20
Penguin Random House	263,260	2,120	251,350	9,790
Gruner + Jahr	106,840	27,330	73,430	6,080
Arvato	16,920	6,320	1,970	8,630
Bertelsmann Printing Group	1,594,980	251,160	831,040	512,780
Other	70	40	20	10
Consolidated	-148,250	-40	-138,240	-9,970
Total	1,834,010	287,000	1,019,670	527,340

In the 2018 financial year, 71 percent of the total quantity was either recycled paper (0.29 metric tons) or certified "virgin" (fresh-fiber) paper (1.02 metric tons). Papers that meet the requirements of FSC®, PEFC®, SFI® or similar standards are shown under certified quantities. The paper purchased for Bertelsmann's own products such as books and magazines comes almost entirely from certified forestry or recycled fibers.

The remaining 29 percent (0.53 metric tons) of purchased paper does not meet the above reporting criteria and is therefore reported as "Other." More than 80 percent of the quantities reported under "Other" are papers supplied by customers outside the Group, which are then used by Bertelsmann printing plants for the production of books, magazines, catalogs, and brochures, e.g. ("provisions").

Share of sustainably sourced paper

in percent

	2018	2017
Of which recycled fibers	22	22
Of which certified fresh fibers	70	69
Total	92	91

At Bertelsmann, the proportion of paper that comes from recycled sources or certified forestry serves as an indicator of responsible procurement and the protection of natural resources. This key indicator takes into account paper quantities purchased for own account for customers in the Group as well as external customers. In 2018, the proportion of sustainably sourced papers rose slightly year-on-year, to 92 percent (previous year: 91 per

cent). Bertelsmann thus once again reaffirmed a very high proportion of sustainably sourced paper, above its own target of 90 percent.

Bertelsmann's international profile is also reflected in its paper procurement. The vast majority of paper is sourced close to the market or regionally. More than 95 percent of the papers come from manufacturers in the EU (80 percent), the U.S. (9 percent) and Canada (6 percent). Only 5 percent come from other countries, among them China (3 percent) and Norway (2 percent). This regional breakdown includes 98 percent of the reported volumes procured by the Group itself.

302 Energy

103 Management approach (including GRI 103-1, 103-2, 103-3)

VII-IX

Energy and Emissions as an environmental factor is a focus of cross-divisional cooperation on environmental and climate protection. Although increasing digitalization is making Bertelsmann less dependent on finite natural resources, it is also increasing energy consumption for data management. The sharing of knowledge and experience within the Bertelsmann “be green” network covers topics such as increasing the use of renewables, and teaming up on energy efficiency projects. The increasing transparency of energy consumption thanks to the “green.screen” IT platform supports exchange between sites while also enabling site-by-site energy data management, which in turn facilitates energy and cost savings.

The Bertelsmann Energy and Climate Policy, to which the Executive Board agreed in March 2019, describes the framework for energy-efficient and climate-friendly business practices. Bertelsmann’s purchasing behavior in energy sourcing can directly influence the demand for climate-friendly options and thus contribute to the sustainable transformation of the energy markets. Therefore, the purchased energy should come from renewable sources wherever this is economically feasible. The electricity purchased by Bertelsmann companies should always have lower greenhouse gas emissions than the respective national electricity mix. In addition, a decentralized on-site generation of our own electricity and heat using renewable energies and, on a transitional basis, highly efficient natural gas-powered cogeneration plants, will help to transform the local energy markets. Bertelsmann does not use lignite or anthracite in producing its own energy, and expects its energy suppliers to gradually phase out fossil fuels.

Information on general management approach to the environment: see GRI 300.

302-1 Energy consumption within the organization

VII-VIII

Energy consumption in GWh

	2018	2017
Electricity	819	851
Heat	739	749
Fuel 1)	74	73
Total	1,632	1,673

1) Previous-year figure has been adjusted.

Total energy consumption fell by 3 percent year-on-year. Electricity consumption fell by 4 percent and heat consumption fell slightly by 1 percent. Energy consumption from fuels rose slightly by 1 percent in the same period.

Energy consumption by corporate division in GWh

	2018	2017
RTL Group	146	151
Penguin Random House	101	111
Gruner + Jahr	56	60
Arvato	345	340
Bertelsmann Printing Group	945	974
Other	40	37
Bertelsmann (total)	1,632	1,673

Penguin Random House recorded a significant drop in energy consumption (-9 percent). While heating consumption rose slightly due to cold temperatures in the U.S., electricity consumption declined significantly, partly due to the closure of a warehouse in the U.K., and lower electricity consumption at the Latin American sites. Gruner + Jahr (-8 percent) was also able to reduce its electricity consumption at Baumwoll in Hamburg, among other sites. RTL Group recorded a decline in energy consumption (-4% percent), mainly due to the sale of Girondins de Bordeaux, and synergy effects from the merger of Radio France and M6. Energy savings at RTL City in Luxembourg, UFA in Germany, and RTL Belgium also contributed to the reductions. The Bertelsmann Printing Group reduced its energy consumption by 3 percent in 2018 compared to the previous year. The decline in electricity and heat consumption is largely attributable to production declines in Prinovis Germany's printing business. Also, optimizations in the printing process at Mohn Media and at Prinovis led to efficiency increases and energy savings.

Meanwhile, Arvato recorded a slight increase in energy consumption (1 percent), in particular due to the expansion of its logistics activities in Germany. The energy consumption of the other divisions rose, among other things due to the first-time inclusion of HotChalk in the Education division, and of other smaller sites in Germany.

Fossil fuels and propellants used in GWh

	2018	2017
Natural gas	1,149	1,185
Diesel	55	54
Heating oil	15	13
Petrol/gasoline	11	11
Other	11	11

Natural gas is used in highly efficient combined heat and power (CHP) plants for the production of electricity and heat, as well as in heating systems for the company's own heat generation. Only a small part of the heat generation is carried out with heating oil. Diesel represents the largest share of fuels. Most of it is used by company vehicles and trucks, as well as forklift trucks. Also, many sites are equipped with emergency power generators that use diesel during regular test runs. In accordance with the Bertelsmann Energy and Climate Policy, no coal is used for generating energy within the Group.

Renewable energy in GWh

	2018	2017
Electricity from renewable sources with certificate of origin	67	57
Total electricity consumption	819	851

302-2 Energy consumption outside the organization

VII-VIII

Business travel in millions of km

	2018	2017
Air	239	245
Rail	37	36
Rental car	20	22
Business travel total	296	303

The distances covered for business travel across the Group declined slightly in the reporting year. At around 81 percent, air travel accounted most of the distance traveled. Compared to the previous year, a 2-percent decline in business travel by air was recorded. While rental car mileage also fell by 10 percent, there was a 5-percent increase in the more environmentally friendly choice of rail journeys.

Business travel by corporate division

in millions of kilometers

	2018	2017
RTL Group	89	82
Penguin Random House	55	60
Gruner + Jahr	27	32
Arvato	86	91
Bertelsmann Printing Group	7	6
Other	32	32
Bertelsmann (total)	296	303

As in the previous year, RTL Group recorded a significant increase and, for the first time, accounted for 30 percent of Bertelsmann's total business travel. Despite lower mileage at RTL Hungary, Mediengruppe RTL, and RTL Belgium, the distance traveled rose by 10 percent due to increased data transparency at UFA Germany. At Arvato, business travel fell by 5 percent and accounted for 29 percent of Group-wide business travel. Arvato Supply Chain Solutions recorded significantly fewer air miles traveled due to completed expansion activities in the U.S. At Penguin Random House, business travel fell by 8 percent, partly due to efforts to reduce air travel by Verlagsgruppe Random House in Germany. The 16 percent decline at Gruner + Jahr is also attributable to reduction measures. The Bertelsmann Printing Group recorded an increase from 6 million to 7 million kilometers, mainly due to higher international travel activities at Sonopress.

302-3 Energy intensity**VIII**

The energy intensity, the ratio of the sum of the reported energy-consumption values in megawatt-hours to the total revenues reported in the consolidated financial statements (in millions of euros), remained 5 percent below the previous year's figure at 92.3 (previous year: 97.4)

302-4 Reduction of energy consumption**VIII-IX**

See GRI 302-1.

303 Water**103 Management approach (including GRI 103-1, 103-2, 103-3)****VII-VIII**

Information on the general management approach for environmental matters: see GRI 300.
Information on the management approach for water: see GRI 306.

303-1 Water withdrawal by source**VII-VIII****Water withdrawal by source**

in millions of m³

	2018	2017
from public utilities	1.47	1.62
from groundwater	3.02	3.03
from rainwater storage tanks	0,01	0,01
Total	4.5	4.66

In the 2018 financial year, water withdrawal fell by 3 percent, due particularly to the 9-percent decline in water withdrawal from public utilities.

Water withdrawal by corporate division

in millions of m³

	2018	2017
RTL Group	2,34	2,25
Penguin Random House	0,14	0,16
Gruner + Jahr	0,15	0,21
Arvato	0,55	0,56
Bertelsmann Printing Group	1,12	1,17
Other	0,20	0,31
Bertelsmann (total)	4,5	4,66

Water usage varied greatly from division to division. RTL Group accounted for about half of the Group's total water withdrawal (52 percent), while the Bertelsmann Printing Group's share of water withdrawal was 25 percent. The remaining 23 percent was accounted for by Arvato (12 percent), Penguin Random House and Gruner + Jahr (3 percent each), as well as the "other" divisions (collectively around 5 percent).

RTL Group's water withdrawal rose by 4 percent. This is mainly due to the energy-saving cooling of buildings from wells operated by Mediengruppe RTL Deutschland in Cologne, which was used more intensively due to higher temperatures in 2018. The Bertelsmann Printing Group's water withdrawal decreased by 4 percent. This is attributable to decreases in production outputs in the printing business at Prinovis Germany and to repaired leaks at the U.S. printing plant in Dallas. Gruner + Jahr reduced its withdrawal by 31 percent, which is related to an improvement in well technology at DDV Druck. Penguin Random House recorded a 13-percent reduction in water withdrawal. The other Bertelsmann divisions reduced their water withdrawal by 34 percent, which is attributable to a general reduction in water use, especially at Alliant University.

305 Emissions

103 Management approach (including GRI 103-1, 103-2, 103-3)

VII-IX

Bertelsmann is striving to achieve a Group portfolio that has higher rates of growth and is more digital, international, and diversified. Progressive digitalization, the expansion of our growth platforms, and investments in the core business also have a lasting effect on the Group's Carbon Footprint.

Bertelsmann supports the international community's goal of limiting global warming to below two degrees Celsius. In the 2016 financial year, the Group used the Science-Based Targets method to determine which company-specific contribution would be required to achieve the <2°C objective. Based on these analyses, Bertelsmann aims to reduce its greenhouse gas emissions by 20 percent by the year 2025, adjusted for any changes in the portfolio. As an intermediate step, emissions are to be reduced by 10 percent by 2020.

The Climate Protection objective relates to the use of fuels for our own electricity and heat production (Scope 1) as well as to purchased electricity and heat (Scope 2). The individual Bertelsmann divisions already support the achievement of Group-wide environmental objectives by setting numerous objectives of their own. For instance, RTL Group aims to cut its greenhouse gas emissions by 20 percent by 2025 compared with 2016 and, in addition to Scope 1 and 2 emissions, also includes emissions from business travel (Scope 3) in this objective.

The Bertelsmann Energy & Climate Policy describes the framework and specific climate protection measures in these transformation processes. The Group-wide use of the "green.screen" IT platform serves to record the local energy consumption and greenhouse gas emissions of individual Group companies, and regularly track the achievement of the climate-protection objectives.

Greenhouse gas emissions are accounted for in accordance with the "Corporate Accounting and Reporting Standard" and "Scope 2 Guidance," and following the "Corporate Value Chain (Scope 3) Standard" of the Greenhouse Gas Protocol (GHG Protocol). Greenhouse gas emissions are reported in accordance with the GHG Protocol and in CO₂ equivalents (CO₂e). According to the GHG Protocol, emissions are reported in three different scopes. Scope 1 refers to Bertelsmann's direct emissions, e.g. from its own (on-site) power generation and the operation of printing machines. Scope 2 covers indirect emissions from the generation of purchased electricity and district heating, or heat provided by the landlord. In accordance with the GHG Protocol Scope 2 Guidance, Bertelsmann reports both market-based and location-based emissions in the overview of key indicators.

As part of measuring the achievement of the objective, an adjustment is made to take account of portfolio changes. Effects from the sale and acquisition of Group companies are retroactively neutralized each year, and the basic data adjusted accordingly. The environmental indicators also include other indirect greenhouse gas emissions (Scope 3) that are not part of the objective.

305-1 Direct (Scope 1) GHG emissions

VII-VIII

Greenhouse gas emissions
in tons of CO₂e

	2018	2017
Scope 1 total	256,500	262,300
Electricity	70,900	74,100
Heat	163,400	166,300
Transport	22,200	21,900
Scope 2 total 1)	210,000	237,400
Electricity	175,100	201,800
Heat	34,900	35,600
Scope 3 total	1,430,400	1,412,000
Business travel	67,800	69,500
Staff commutes	72,100	72,900
Paper	1,217,800	1,193,700
Energy-related activities	72,700	75,900
Total	1,896,900	1,911,700

1) Scope 2 emissions were calculated using the market-based method as indicated in the Scope 2 Guidance of the GHG Protocol. According to the site-based method, Scope 2 emissions amounted to 252,000 metric tons of CO₂e (previous year: 276,700 metric tons).

About three-quarters of the reported direct and indirect greenhouse gas emissions are attributable to indirect emissions along the value chain (Scope 3). These emissions were up by 1 percent year-on-year in 2018. The remaining 25 percent of total emissions are attributable to Scope 1 and Scope 2, which show a year-on-year decline of 2 percent and 12 percent respectively.

Scope 1 and 2 emissionsin tons of CO₂e

	2018	2017
RTL Group	35,900	39,600
Penguin Random House	28,700	37,200
Gruner + Jahr	14,500	16,500
Arvato	96,600	102,400
Bertelsmann Printing Group	278,500	291,600
Other	12,300	12,400
Bertelsmann (total)	466,500	499,700

The largest share of the Scope 1 and 2 emissions from Bertelsmann were attributable to the services divisions, Bertelsmann Printing Group (278,500 metric tons of CO₂e) and Arvato (96,600 metric tons of CO₂e). In particular, the consumption of electricity, natural gas, and heat by printing machinery and other production facilities, as well as the operation of materials-handling equipment and lighting at logistics sites are reflected in the carbon footprints of these divisions. Decreases in production outputs at the printing plants, and lower CO₂e factors at numerous energy suppliers, contributed to a reduction in emissions. In

addition, the volume of renewable electricity with certificates of origin rose by almost 10,000 MWh year-on-year (see GRI 302-1).

The largest decrease in Scope 1 and 2 emissions in absolute terms was reported by the Bertelsmann Printing Group with a savings of 4 percent. This is due in particular to decreases in production outputs and process optimizations at Prinovis, as well as a more efficient use of compressed air at Mohn Media. Penguin Random House reduced its Scope 1 and 2 emissions by 23 percent in the reporting year. Among other things, this was achieved through the increased purchase of green electricity certificates with proof of origin at Penguin Random House US.

Arvato reduced its greenhouse gas emissions by 6 percent year-on-year. This reduction is primarily due to the closure of Arvato CRM locations in Germany and Turkey and improved CO₂ factors at relevant energy suppliers.

The 9-percent decline in Scope 1 and 2 emissions at RTL Group was partly due to the switch to green electricity with certificates of origin at RTL Croatia.

305-2 Energy indirect (Scope 2) GHG emissions

VII-VIII

See GRI 305-1.

305-3 Other indirect (Scope 3) GHG emissions

VII-VIII

Scope 3 emissions

in tons of CO₂e

	2018	2017
RTL Group	35,200	33,800
Penguin Random House	305,100	266,400
Gruner + Jahr	125,200	140,000
Arvato	98,300	100,700
Bertelsmann Printing Group	853,000	859,100
Other	13,600	12,000
Bertelsmann (total)	1,430,400	1,412,000

Other indirect greenhouse gas emissions from the production of paper that Bertelsmann buys itself, emissions from energy-related activities (outside of Scope 1 and 2), emissions from business travel, and emissions from employee commuting are reported as part of Scope 3 emissions. At 60 percent, the Bertelsmann Printing Group was responsible for the largest share of Scope 3 emissions, followed by Penguin Random House (21 percent), and Gruner + Jahr (9 percent). In these three divisions, the volumes of paper used at the print and publishing businesses had a particular impact. Scope 3 emissions reported by Arvato accounted for 7 percent of the total, almost half of which is attributable to employee commutes.

305-4 GHG emissions intensity

VIII

Specific greenhouse gas emissions (Scope 1 and 2) fell from 29.1 metric tons of CO₂e per 1 million euros of Group revenue in 2017 to 26.4 metric tons of CO₂e per 1 million euros of Group revenue in 2018.

305-5 Reduction of GHG emissions**VII-VIII**

See GRI 305-1, 305-3.

Development of GHG Emissionsin tons of CO₂e

	2018	2014
Scope 1 emissions adjusted	239,700	234,900
Scope 2 emissions adjusted	201,100	302,300
Total	440,800	537,200

With reference to the emissions objective using 2014 as a base year, and adjusted for changes to the portfolio, Scope 1 emissions have increased slightly by 2 percent, while Scope 2 emissions have fallen significantly by 33 percent. In sum, this is equivalent to an 18-percent decline. The company has thus successfully embarked on the course that will ultimately lead to the long-term objective of a 20-percent reduction by the year 2025. The milestone of a 10-percent reduction in greenhouse gas emissions relative to 2014, set for 2020, was already significantly exceeded in the reporting year 2018.

All of Bertelsmann's divisions have succeeded in lowering their emissions since the base year of the Group-wide objective. In absolute terms, the Bertelsmann Printing Group has contributed the most by eliminating 60,000 metric tons of CO₂e compared with 2014. Besides decreases in production outputs, steady improvements in energy efficiency and conversion to renewable energies with certifications of origin contributed to this reduction.

Gruner + Jahr has undergone a major transformation since the base year due to the effects of digitalization. Even after adjusting for portfolio changes, the division has still contributed to achieving the objective with a significant, more than 20-percent reduction in emissions. At Penguin Random House, the synergy effects arising from the merger of Penguin and Random House in 2014 have played a key role in a steep decline in greenhouse gas emissions. The RTL Group contributed to the reduction in emissions mainly through efficiency measures and improved CO₂ factors among its energy suppliers. At Arvato, too, emissions, adjusted for changes in the portfolio, have fallen significantly since 2014. The many steps taken to increase energy efficiency and lower energy-related emissions more than compensated for the effects of the organic growth of the logistics services in particular.

Bertelsmann also uses CO₂ certificates to offset greenhouse gas emissions, e.g. for the sale of climate-neutral print products and for business travel. In this context, emissions amounting to 15,000 metric tons were offset in the reporting year. Gruner + Jahr's ongoing climate-protection project "Geo schützt den Regenwald" ("Geo protects the rainforest") also contributed to neutralizing the carbon dioxide emissions caused by Gruner + Jahr employees' air travel in 2018.

306 Wastewater and waste**103 Management approach (including GRI 103-1, 103-2, 103-3)****VIII**

Data on water consumption, wastewater and waste generation is also recorded across the Group during the annual environmental data collection. Based on this data, trends can be discerned and potential for improvement identified. Due to the varying local relevance and regulation of water and waste management, these topics are predominantly handled on a decentralized basis by the local businesses.

306-1 Wastewater discharge by quality and place of discharge**VIII****Wastewater discharge**in millions of m³

	2018	2017
To public sewers or to third parties	1.70	1.48
To surface water, receiving waters or own wastewater-treatment plants	2.19	2.27
Total wastewater discharged	3.90	3.75

Total wastewater discharge decreased by 4 percent in 2018. 61 percent of the wastewater was discharged into surface water, receiving water, or Bertelsmann's own wastewater treatment plants. This was 4 percent higher than in the previous year. The remaining 39 percent of the wastewater was discharged into the public sewer system or to third parties.

306-2 Waste by type and disposal method**VIII****Total waste**

in tons

	2018	2017
RTL Group	2,000	3,000
Penguin Random House	28,700	28,900
Gruner + Jahr	10,500	6,700
Arvato	37,800	33,900
Bertelsmann Printing Group	234,000	246,900
Other	1,400	1,200
Bertelsmann (total)	314,400	320,600

In the 2018 financial year, the reported quantities of waste declined by 2 percent across the Group. Bertelsmann Printing Group printing plants accounted for the largest share of total waste at 74 percent. About 95 percent of the waste reported by the printing plants were paper residues, which were forwarded for recycling. The increase of over 50 percent at Gruner + Jahr is mainly attributable to the expansion of Deutscher Pressevertrieb's business in Berlin.

Waste by type of disposal

in tons

	2018	2017
of which recycled	302,900	308,700
of which for disposal	11,500	11,900
of which hazardous	1,600	1,700
Total waste	314,400	320,600

The volume of recyclable waste continued to make up a 96-percent share of total waste, unchanged year-on-year. The recyclable waste was either returned to the resource cycle or

recycled in waste-to-energy systems. About three-quarters of the recyclable waste consists of paper residues from the printing plant's production departments.

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