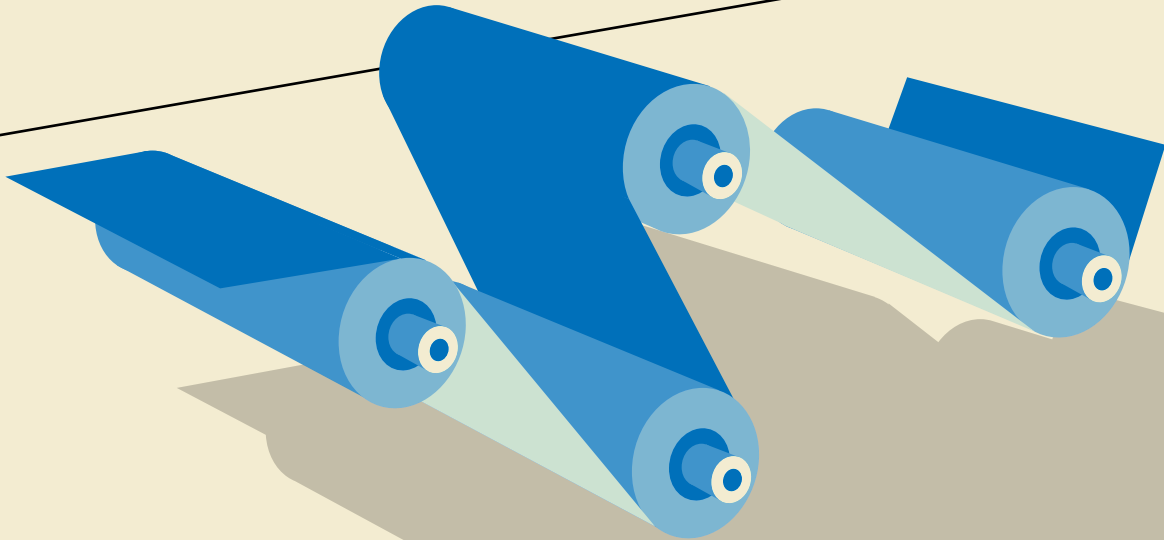


Facts about the Environment and Responsibility

score



REPORT 2014

Part of our Success

EDITORIAL

LADIES AND GENTLEMEN, VALUED CUSTOMERS AND PARTNERS, Environmental commitment is something that has long been a matter of course for Prinovis. On every level and in every part of our business, we make sure that we do more than just fulfil our legal obligations. In fact, throughout the whole company, our approach is to work as efficiently as possible when it comes to resources and the environment.

In the same way, it is commonplace for most of our clients to regularly ask for a variety of key figures relating to our environmental and resource management – and we are glad to show them our achievements in this area. This is because we see professional environmental management as an important

part of running our printing plants. We are proud of it, and it is a key part of our company's success.

In this Prinovis environmental report, you will find a selection of our key environmental figures as well as information about measures and projects that help us to keep our use of resources as low as possible. We want to provide ongoing and transparent communications about our integrated systems for quality, environment and energy management. This is the third Prinovis environmental report, following on from those released in 2010 and 2012.

On the following pages, we will start by using a textbook scenario print job to highlight the stages in our production

plants where environmental issues arise. We will follow a fictitious catalog on its journey through our printing plants, from the arrival of the print data right through to the dispatching of the goods using intelligent logistics. In the second section of the report, you will find facts and figures, as well as our carbon footprint. We are very pleased that, for the first time, the figures section will be reported in accordance with the GRI's G4 guidelines. This shows that we are constantly developing and improving our management systems.

I hope you find the report informative and interesting.

Dr. Bertram Stausberg, CEO



Preamble

STRONG PRINCIPLES



PRINOVIS IS COMMITTED TO ITS RESPONSIBILITIES TOWARD SOCIETY AND THE ENVIRONMENT, WHICH ARE PART AND PARCEL OF PRODUCING PRINTED PRODUCTS AND OFFERING COMMUNICATIONS SERVICES. IN ORDER TO FULFIL THESE RESPONSIBILITIES, THE COMPANY HAS AN ACTIVE ENVIRONMENTAL AND ENERGY POLICY. IT IS BASED ON THE FOLLOWING TEN GUIDELINES:

1. LEGAL REQUIREMENTS

Legal requirements are fulfilled as a matter of course. Prinovis takes note of all relevant laws and regulations. We inform those within the company of any amendments as soon as they occur. This allows our company managers to ensure that all the legal regulations are implemented.

2. INTERNAL STANDARDS

Above and beyond the legal requirements, we have developed our own, more extensive internal requirements and standards. These apply to the construction and operation of our facilities, as well as to our services. These are also binding requirements for Prinovis.

3. INTERNAL TARGETS

Having clear environmental and energy targets as well as concrete measures for implementing them ensures that our policy is applied consistently. With this in mind, we work with our colleagues, suppliers and customers on an annual basis to draw up measures that will improve our environmental situation.

4. PREVENTION

We regularly conduct preventive safety measures in order to avoid the negative effects that an accident could have on the environment. We see high safety standards at our facilities as an investment in both the environment and the future.

5. OUR INVESTMENT

Prinovis employs the best available technology in order to avoid or minimize negative effects on the environment as far as economically feasible. At the same time, we promote investments and research projects relating to the development of innovative, eco-friendly technologies and production processes.

6. OUR EMPLOYEES

The active participation of all our employees is essential if we are to make an extensive contribution to protecting the environment. Prinovis asks all its employees to act with responsibility toward the community and the environment. At the same time, Prinovis provides regular training and instruction in occupational safety and environmental protection matters in order to raise awareness and promote the acquisition of qualifications in this field.

7. INTERNAL CONTROLS

Prinovis reviews its activities and products in terms of their environmental sustainability. This in-house analysis serves to optimize and expand the use of eco-friendly processes.

8. INDEPENDENT CONTROLS

The implementation and development of our guidelines is subject to regular checks, including unannounced audits. If there are reasons for complaint, we act immediately to remedy the deficiencies.

9. EXCHANGE ON MANY LEVELS

Our partnerships with authorities and specialist bodies facilitate the intensive and timely exchange of ideas with experts from a range of disciplines. We plan, construct and operate our facilities in the context of an open dialogue with others, taking into account ecological aspects and safety.

10. COMPREHENSIVE COMMUNICATIONS

Because information and communication are a part of the corporate culture at Prinovis, we publish the environmental aspects of our business in regular environmental reports. We foster an open and constructive dialogue with our colleagues, customers and business partners, and also with industry associations. The management thus makes available all of the information and resources that are required to meet the strategic and operative targets.

How a catalog comes into being



PRINOVIS IS CONTINUALLY WORKING TO IMPROVE ON ITS ACHIEVEMENTS.

This principle is demonstrated by the production process of a catalog. A customer requires a page format of 21 x 28 cm; the catalog has 96 pages plus a four-page cover and 500,000 copies are required. The CO₂ emissions that are unavoidable during production should be offset, i.e. balanced out by investing in an environmentally friendly project.

“Because it is possible to produce this catalog at any of the Prinovis facilities

in Germany, once we have received the order we discuss it with the production planning team to determine which site has the necessary free capacity,”

**A CATALOG
AS OUR EXAMPLE
PROJECT:
FORMAT: 21 X 28 CM,
PAGES: 96+4,
COPIES: 500,000**

CONTINUOUS IMPROVEMENT

explains Jörg Bothe, Chief Sales Officer at Prinovis Germany. Besides the customer's specified timeframe, the site's proximity to the customer is also considered at this stage so as to minimize the transportation distance.

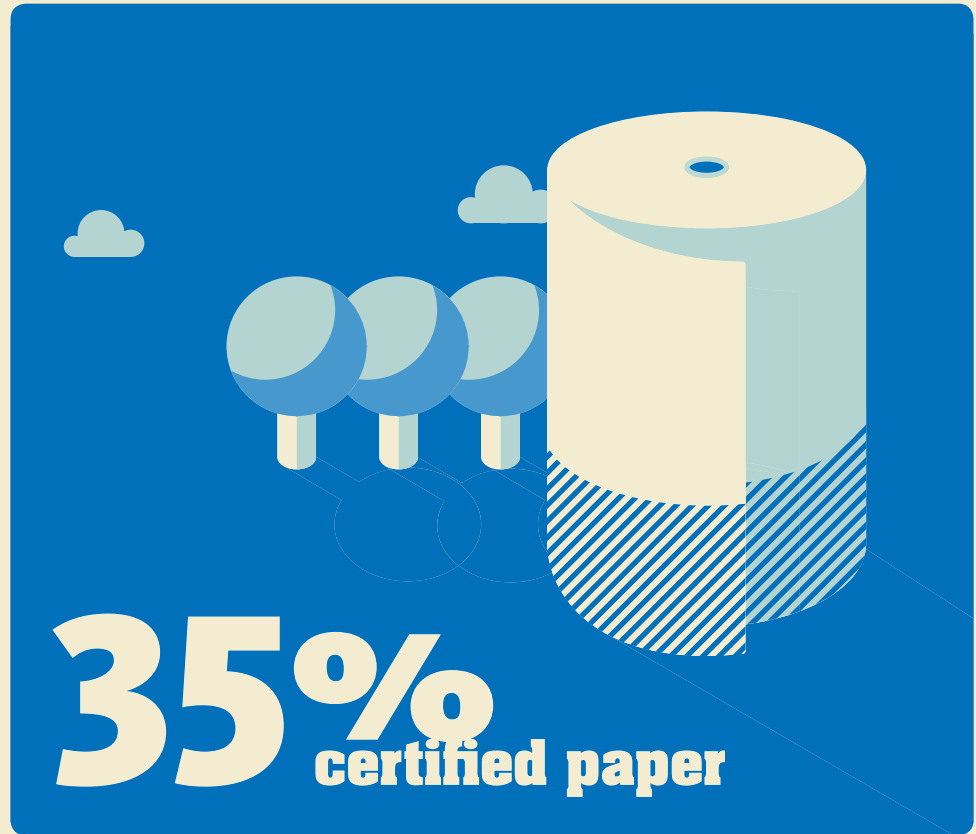
The Customer Service team takes responsibility for agreeing further details, such as the delivery location. They plan in detail so as to prepare as well as possible for the production stage.

The customer decides to use paper that is certified by PEFC (Programme for the

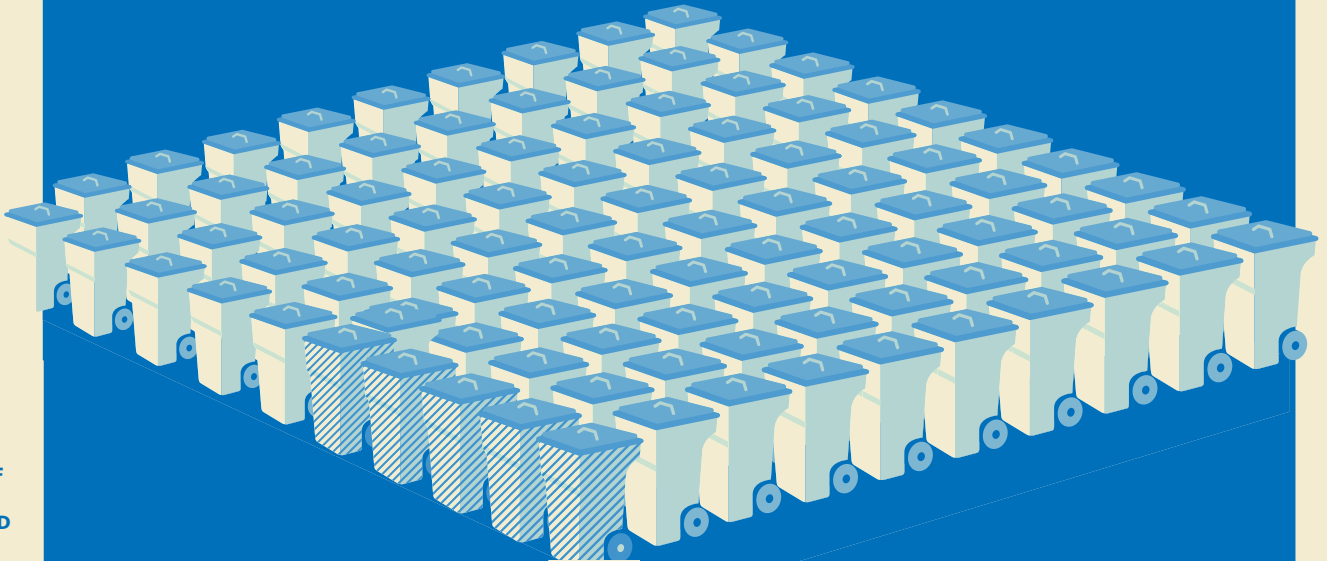
Endorsement of Forest Certification Schemes), and requests that this is sourced by Prinovis. “Prinovis already uses paper that has been certified by the FSC (Forest Stewardship Council) or PEFC for nearly 35 percent of its printing,” reports Melanie Hartl, who is responsible for quality assurance in the production process at Prinovis Nuremberg. These independent organizations guarantee that the wood comes from sustainably managed forests. Independent experts perform an annual check to ensure that Prinovis meets the standards of these organizations.

Meanwhile, colleagues from the preparation team assign the catalog to the gravure printing presses at the chosen printing plant and ensure that production can proceed smoothly.

PRINOVIS IS ALREADY USING PAPER THAT HAS BEEN CERTIFIED BY FSC (FOREST STEWARDSHIP COUNCIL) OR PEFC (PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION SCHEMES) FOR MORE THAN ONE THIRD OF ITS PRINTING EACH YEAR.



THE
WEIGHT OF
WASTE
GENERATED
BY
PRINOVIS
HAS
DECREASED
BY
FIVE
PERCENT
BETWEEN
2012 AND
2014.



-5%
weight of waste

The customer delivers the image files by the agreed deadline and will soon receive a color proof of each image in order to review the coloring. Prinovis customers are already using the digital, paperless 'soft' proof process for 40 percent of periodicals (those print products that are published regularly – mostly magazines).

As well as speeding up any necessary corrections, this process also saves on transportation. Because all of Prinovis' facilities in Germany have the same calibration standards, consistent quality can be guaranteed – even if production takes place across a variety of facilities.

Once customer approval has been given, our colleagues in the Pre-Press team

SOFT PROOF:

Prinovis customers are already using the digital, paperless 'soft' proof process for 40 percent of periodicals. This speeds up corrections and saves on paper and transportation.

convert the customer data into print data. The Cylinder Production team will then create the image carriers. The image for printing is created on these using electromechanical engraving. When the printing cylinder is in the gravure printing press, it rotates inside an ink fountain and the engraved cells are filled with ink. A steel blade known as a "doctor" blade removes excess ink from the image carrier. On the other side of the cylinder, the paper is pressed onto the cylinder by the impression roller – a firm rubber tube. This transfers the ink from the cells

of the engraved cylinder onto the surface of the paper.

Provisions have been made by a team led by Prinovis Quality Manager Claudia Jahn-Wolf to ensure that the Production team can begin this process without undue pressure. Whenever printing ink is delivered, her team takes small samples and checks its quality and efficiency. If a batch fails to meet our high standards, Prinovis can very quickly find out which other facilities received this batch and inform the relevant Production in good time. This tight net of controls makes it possible to achieve consistently high quality results and offer a high capacity. The color laboratory moved from Itzehoe to Dresden in 2014, and the new location underwent state-of-the-art refurbishment.

The paper earmarked for use at the facility has already been extensively analyzed by the employees in the paper laboratory.

This means that Prinovis knows the parameters for optimal ink transfer, so there is no need for proofs. This is also one of the reasons why Prinovis has removed the correction stage from the printing cylinder production phase. As well as saving energy, ink, spoilage and the chemicals used for cylinder corrections, this also allows the Dresden facility to make better use of the space on their site. The area that was previously used for cylinder corrections is where the Management team for image carrier production is now based – right at the heart of things.

99.8%

At Prinovis, the chemical solvent toluol, which is essential for gravure printing, is collected in active carbon filters and up to 99.8 percent of it is then regained.

When the printing presses are in operation, their exhaust fumes, which contain solvents, are extracted and filtered. The chemical solvent toluol, which is essential for gravure printing, accumulates in the activated carbon in these filters. Steam is used to desorb and expel it from the coal, and up to 99.8 percent of the toluol is regained. Since 2014, Prinovis has been using a highly efficient, gas-powered combined heat and power unit to provide the steam required for this process. This

unit generates heat and electricity, which means it can achieve a maximum efficiency value of more than 90 percent. “Because the steam that is used to recover the toluol is only needed periodically, the unit has one of the largest steam reservoirs in Europe,” explains Sven Wegeleben, Head of Industrial Engineering. “The new unit means that Prinovis is saving around 800 tons of CO₂ each year,” adds Lars Peter, Head of Energy Management at Prinovis.

“In 2014, we implemented a software-based maintenance system to enable us to operate the combined heat and power unit in Dresden and other units in the most efficient way possible, and with as few interruptions as



SINCE LATE 2014, PRINOVIS HAS BEEN USING A HIGHLY EFFICIENT GAS-POWERED COMBINED HEAT AND POWER UNIT AT ITS FACILITY IN DRESDEN, WHICH GENERATES HEAT AND ELECTRICITY AND REDUCES CO₂ EMISSIONS BY AROUND 800 TONS PER YEAR.

»In 2014, so as to operate the combined heat and power unit in Dresden and other units in the most efficient way possible and with as few interruptions as possible, we implemented a software-based maintenance system.«

**André Stülpner,
Supply Technology,
Prinovis Dresden**

possible,” reports André Stülpner, who is responsible for supply technology at the Prinovis facility in Dresden. The software constantly displays the pending inspection dates and provides all responsible employees with a clear overview of the maintenance tasks.

Meanwhile, in the finishing process, the paper that has been printed for the catalog is collected in a saddle-stitcher. The cover pages are added and the catalog is then bound and cut. Depending on the customer’s requirements, the catalogs are packaged up loose, tied together or polybagged to protect them during transportation. Prinovis is also vigilant about efficiency when it comes to logistics. The Shipping

Logistics team prepares multiple printed products to be shipped to one customer in a way that optimizes the use of loading space in the lorry used to collect the goods. “This saves unnecessary transportation distances, which in turn saves money and CO₂ emissions,” reports Hanno Eichhorn, Head of Logistics in Dresden.

Figuratively speaking, the 96-page catalog is wearing a CO₂ backpack due to the materials and energy used along its supply chain. It is possible to quantify these emissions, which have an impact on the climate. The German Association of Print and Media (bvdm) has a CO₂ calculator, which requests order-specific data about the number of copies,

A CLIMATE-PROTECTION PROJECT WITH EFFICIENT OVENS: THESE OVENS CAN HELP REDUCE DEFORESTATION IN COUNTRIES SUCH AS GHANA.



CO₂ compensation achieved by providing more efficient ovens in Ghana.

number of pages, and transportation. For this catalog, using an average transportation distance of 200 kilometers, the sum comes to around 162 tons of CO₂. The total is made up of 141 tons for materials and 21 tons for the production. Prinovis works with Hamburg-based offsetting agency ARKTIK to offset these 162 tons of greenhouse gases by investing in appropriate, certified climate-protection projects. An example of such a project would be the distribution of efficient cookers in Ghana. Cooking with these stoves requires substantially less fuel, which protects the nearby tree population and reduces CO₂ emissions.

Carbon Footprint

MEASURED PRECISELY



PRINOVIS PRINTS MAGAZINES AND CATALOGS. AS WITH ANY INDUSTRIAL PRODUCTION SITE, THE PRINTING PRESSES IT USES REQUIRE LARGE AMOUNTS OF POWER AND STEAM.

Prinovis therefore bears a great responsibility for the environment, and is measuring its carbon footprint. Throughout all of the Bertelsmann SE & Co. KGaA companies, the carbon footprint calculation – a measure that identifies the total sum of carbon dioxide emissions – serves as the control instrument for the group-wide climate protection strategy.

Prinovis belongs to the Bertelsmann SE & Co. KGaA group, which views climate change and environmental protection

as one of its key challenges. Together with its employees and in dialogue with stakeholders, the group therefore strives to reduce greenhouse gas emissions in order to minimize its environmental impact.

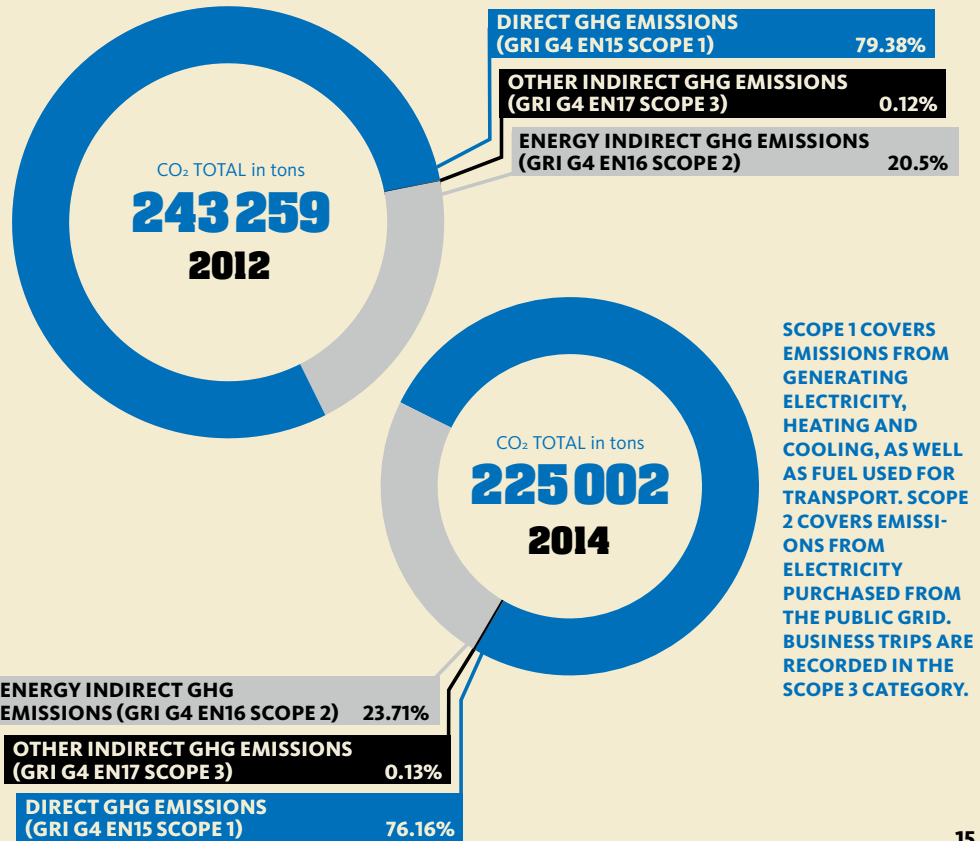
For the first time, Prinovis has compiled the figures on greenhouse gases in this report in accordance with the international reporting guidelines of the Global Reporting Initiative (GRI). The company was aided in this process by the IFEU (Institute for Energy and Environmental Research) Heidelberg, which is an independent, non-profit research institute. Throughout the course of the process, the IFEU Institute gave feedback on the definitions of the key

»We want to reduce our greenhouse gas emissions – together with our employees and in dialogue with our stakeholders.«

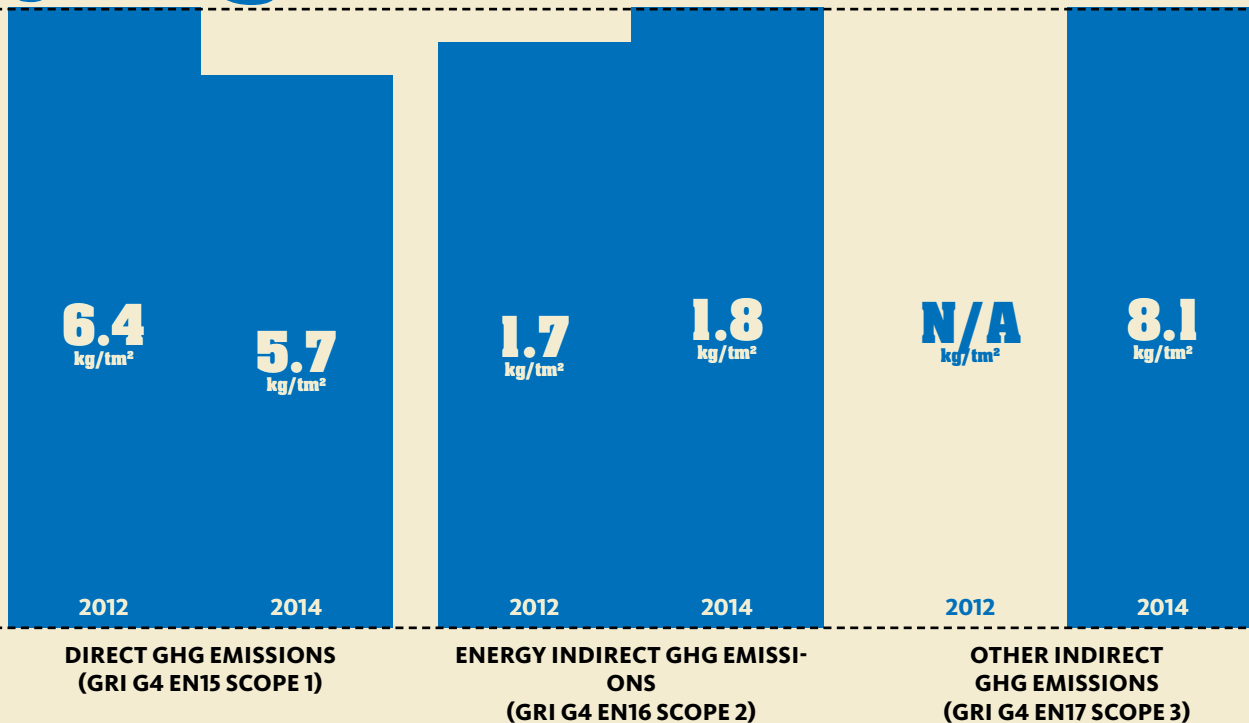
Dr. Bertram Stausberg,
CEO

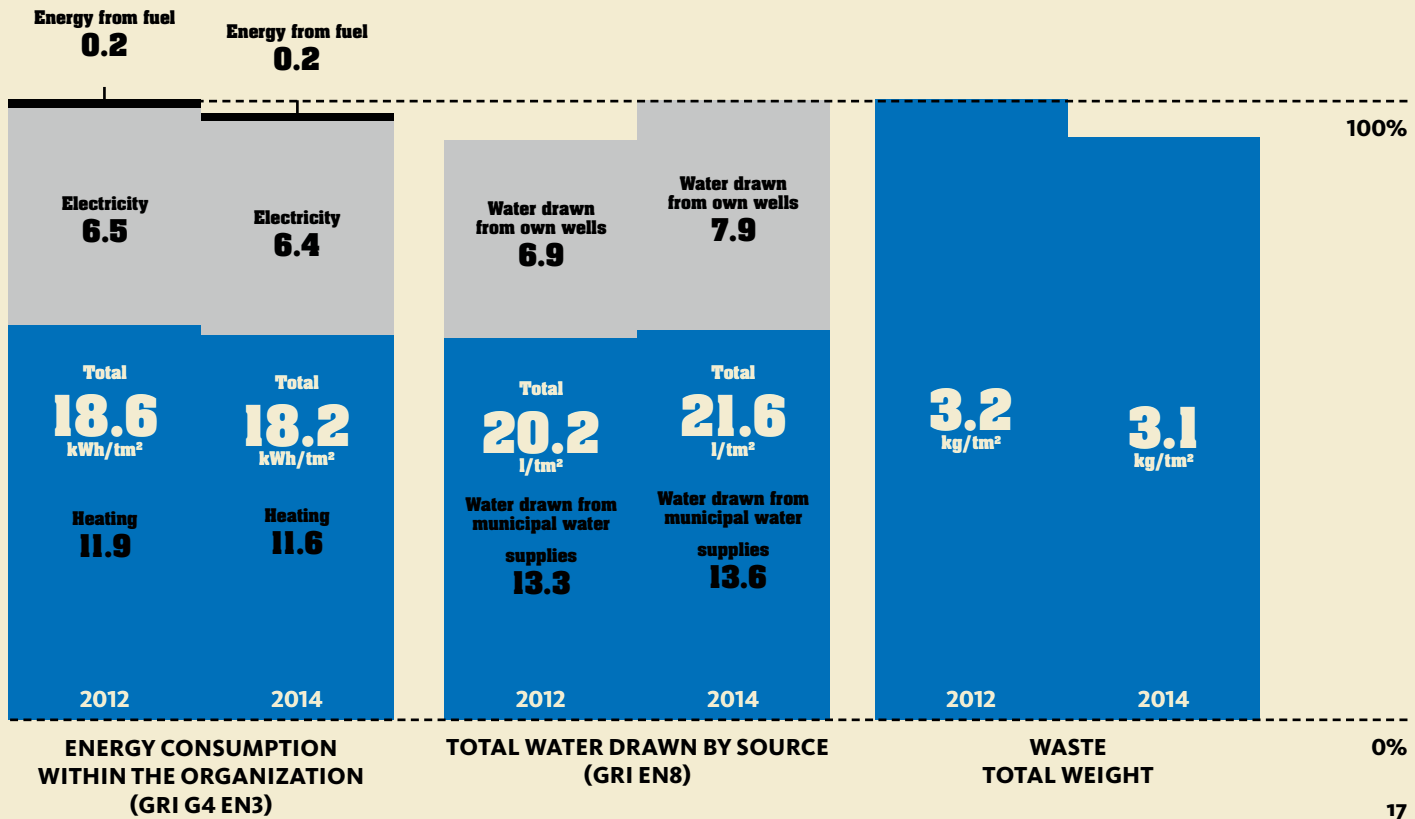
performance indicators and on the data collection forms.

Based on the primary data collected, and taking into account the requirements of the GRI and Greenhouse Gas Protocol international reporting standards, the IFEU Institute also modeled greenhouse gas emissions. To do this, the researchers entered the primary data into a software program that then calculated greenhouse gas emissions.



Key Figures





Life Cycle Assessment

THE ECOBALANCE
not only gives an impression of what is happening in the company. It also shows opportunities for improvement.



FOR THE YEARS 2012 AND 2014, THE PRINOVIS LIFE CYCLE ASSESSMENT COLLECTED ALL THE RELEVANT DATA FROM THE PRODUCTION PROCESS –

from the waste and the total amount of printed paper through to the VOCs (volatile organic compounds), such as the solvent toluol. In order to allow the best possible comparison between the data from 2012 and 2014, the data for the facility at Itzehoe, which closed in April 2014, have been omitted here. This

is why the figures shown here for 2012 differ from those presented in the “Score 2012” report.

In this report, the life cycle assessment has been compiled in accordance with the GRI’s G4 guidelines for the first time. The Global Reporting Initiative guidelines are recognized internationally, and their standardized indicators make it easier to compare report data from company to company. Support for this process was provided by the IFEU

(Institute for Energy and Environmental Research) Heidelberg. The researchers at the institute conducted plausibility checks on the environmental data provided by Prinovis. In accordance with established scientific methods, the IFEU Institute selected relevant and reliable data sources (IEA, GEMIS, TREMOD, DEFRA, EcoInvent) and conversion factors for emissions from energy production and consumption, as well as for mobility and transportation energy.

WORKING MORE EFFICIENTLY

GRI G4: ENVIRONMENT		UNIT	2012	2014	Δ
	Paper	t	822,524	823,397	0%

ASPECT: ENERGY					
G4-EN3	Total energy	GWh	559	547	-2%
-	Electricity	GWh	196	192	-2%
-	Thermal	GWh	358	347	-3%
-	Energy from fuels	GWh	5	7	+38%
G4-EN6	Reduction of energy	%	-	-2.12%	-

ASPECT: WATER					
G4-EN8	Total fresh water	m ³	606,341	646,128	+7%

ASPECT: GREENHOUSE GAS (GHG) EMISSIONS					
G4-EN15	Direct GHG emissions (Scope 1)	t	193,087	171,363	-11%
G4-EN16	Energy indirect GHG emissions (Scope 2)	t	49,800	53,341	-7%
G4-EN17	Other indirect GHG emissions (Scope 3)	t	-	242,139	
G4-EN19	Reduction of GHG emissions (Scope 1 & Scope 2)	%		-7%	-

ASPECT: EFFLUENTS AND WASTE					
G4-EN23	Total weight of waste	t	96,402	91,741	-5%



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