



Environmental Statement 2018

Sappi Stockstadt GmbH

sappi

Come with us on our journey into the future



Dear reader,

In this EMAS environmental statement we are pleased to be able to provide you with comprehensive information about our mill development, the environmental targets we have achieved and our environmental performance. The past year has been an eventful one involving a large number of successful projects both large and small, but it was also a period in which we had to face many challenges. It was a year that saw the further development and production of new paper grades. Scheduled downtime taken in autumn 2017, a planned change to our power plant, and unforeseen technical issues each led to further downtime and a decrease in both plant and energy efficiency.

From an environmental perspective, highlights of the 2018 financial year included the successful testing of new burner nozzle types in the recovery boiler, which reduced nitric oxide emissions, as well as the replacement of the so-called air separator of the coal boiler. The new dynamic air separator has delivered increased and improved coal milling, which impacts positively on coal combustion, utilisation, as well as on the volume and quality of the ash accumulated.

The continuation of our noise reduction program is important for our residents. In addition to a range of many smaller-scale noise protection measures, one obvious, visible measure was the installation of a noise protection wall at the pulp production log cutting plant. Our future plans related to noise reduction, on the other hand, will focus primarily on the power plant. The success

of the measures will be evaluated at the start of the new calendar year and we continue to remain in close contact with our residents, the market town community of Stockstadt and the monitoring authorities.

Once again, we have a great deal planned for the future. This is demonstrated by investments which, in some cases, are already being implemented. A new steam turbine is being built for more efficient power generation - this will replace obsolete turbines. Washing units have been installed to improve pulp washing and to reduce wastewater loads, and a six-figure investment is being made in noise protection measures.

Today, in addition to pulp, several interesting products are being made from wood and from the by-products released and created during the pulping process. In our ongoing search to exploit further growth potential, Sappi is also investing in additional innovative products in this area.

So, as you can see, there is much to do for our highly-motivated Stockstadt team and we are already looking forward to reporting back to you about our development in the future.

Happy reading!

Yours

A handwritten signature in blue ink that reads "Christian Dietershagen". The script is cursive and fluid.

Christian Dietershagen
Managing Director Sappi Stockstadt GmbH

Environmental Balance Sheet 2018

INPUT

Raw materials and supplies

Total wood purchases	264,674	t bdt
Wood yield (t wood/t pulp)	2.15	
Ratio of round wood	211,014	t bdt
Ratio of wood chips	53,660	t bdt
PEFC™ certified wood	64.0	%
FSC® certified wood	23.5	%
Total certified	87.5	%

Total pulp	242,995	t bdt
Own pulp (integration)	107,705	t bdt
Third-party pulp	135,290	t bdt
Pulp yield (t pulp/t paper)	0.57	

Chemicals	197,622	t bdt
Pigments and fillers	144,289	t bdt
Binders	16,153	t bdt
Other chemicals	37,180	t bdt

Fuels		
Petrol	2,264	l
Diesel	224,878	l
Auto gas	1,452	kg

Packaging materials	2,130	t
(not including pallets and sleeves)		

Freshwater		
Total freshwater	15,154,344	m³
Specific freshwater	27.7	m³/t
of which Main water	51,942	m³
of which cooling water	5,930,459	m³

Energy		
Total fuels	1,699	GWh
Specific fuels	3.10	MWh/t
Natural gas, energy generation	264	GWh
Natural gas, process	45	GWh
Total natural gas	309	GWh
Heavy fuel oil (2.8%)	72	GWh
Coal	766	GWh
Total fossil fuels	1,148	GWh
Black liquor	525	GWh
Residues	14	GWh
Biogas	11	GWh
Total biogenic fuels	550.401	GWh
Spec. biogenic fuels	1.00	MWh/t
Ratio of renewable energies	32.4	%
Factory Mill electricity consumption	339	GWh
Specific electricity consumption	0.62	MWh/t
Internal generation	262	GWh
External generation	146	GWh
of which physical purchase	78	GWh
of which EEG standby power	69	GWh
Total electricity consumption	339	GWh
Process	267	GWh
Internal consumption, power plant	72	GWh
Total energy consumption	2,038	GWh
Total steam consumption	1,902,807	t
Total compressed air	110,811 (1,000 Nm³)	
Land use	375,000	m³

OUTPUT

Products		
Total pulp	123,086	t
of which market pulp	3,319	t
PEFC™ certified wood	64.0	%
FSC® certified wood	23.5	%
Total paper	424,689	t
Uncoated paper	218,883	t
Coated paper	205,807	t
PEFC™ certified wood	43.1	%
FSC® certified wood	36.4	%
Total production	547,775	t

Energy		
Electricity fed to EEG	69	GWh
Electricity fed to third parties	0.57	GWh
Black liquor sales	5,998	t

Wastewater		
Total wastewater	13,921,564	m³
COD	3,756	t
BOD ₅	256.9	t
Total nitrogen	83.1	t
Total phosphorus	12.9	t
Solids	308.0	t
AOX	0.83	t

Emissions into atmosphere		
SO ₂	274.6	t
NO _x	457.5	t
Particulate	36.8	t
CO ₂ fossil	339,586	t
CO ₂ biogenic	169,178	t

Residues		
Total residues	76,319	t
Total utilised	76,150	t
Total thermal utilization	35,045	t
of which therm. utilisation int.	3,663	t
of which therm. utilisation ext.	31,412	t
Recycling	12,053	t
Total disposal	97.4	t
of which disposal to landfill	28.7	t
Hazardous waste	133.9	t
Hazardous waste spec.	0.24	kg/t
Utilisation ratio	99.7	%
Disposal ratio	0.1	%
Hazardous waste ratio	0.2	%

We are paper: Sappi Stockstadt

The history of our company began in November 1898 when the pulp mill was founded as a subsidiary of Aschaffenburg Zellstoffwerke (AZ). Paper production started in 1963 with the entry into service of the first paper machine. The second paper machine was installed in 1970, and a coater was added in the early 1990s.

Further investments followed, including in paper facilities converting and wastewater treatment. AZ became Sappi Stockstadt GmbH, a modern integrated pulp and paper mill with its own

generating power plant and wastewater treatment plant, with high environmental protection standards and a very good health and safety level.

In 2013, the mill celebrated 115 years of pulp production and 50 years of paper production. Today, Sappi Stockstadt GmbH has a production capacity of 160,000 tons of pulp and 450,000 tons of paper and has 730 employees and 40 apprentices.

Certification

The undersigned, Bernhard Zechel, EMAS Environmental Surveyor, registration number D-V-0214, accredited or licensed for Group 17.1: Manufacture of wood and pulp, paper, card and cardboard; confirms that he has surveyed whether the site of the organisation

Sappi Stockstadt GmbH with registration number D-103-00012

complies with all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of Europe dated 25 November 2009 concerning the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) as stated in the organisation's current environmental statement.

On signing it is confirmed that

- the survey and validation have been carried out in full compliance with the requirements of Regulation (EC) No. 1221/2009,

- the results of the survey and validation confirm that there is no evidence of non-compliance with applicable environmental regulations,
- the data and information of the current Environmental Statement for the site provide a reliable, credible and truthful representation of all activities of the site within the scope specified in the Environmental Statement.

This Statement is not equivalent to an EMAS registration. EMAS registration can only be performed by a responsible body in accordance with Regulation (EC) No. 1221/2009. This Statement may not be used as an independent basis for public information.

Munich, 20 November 2018



Bernhard Zechel, Grad. Engineer, Environmental Surveyor, D-V-0214

This issue of the Environmental Statement 2018 of Sappi Stockstadt GmbH constitutes a supplementary report to the Environmental Statement 2017. It contains site-specific environmental data and trends for the year 2018. The annually updated supplement and the Environmental Statement 2017 jointly form the EMAS Environmental Statement. The next consolidated Environmental Statement will be published at the beginning of 2020.

This brochure was printed on Magno Natural® 150 g/m² from Sappi Stockstadt.

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Environmental targets 2018

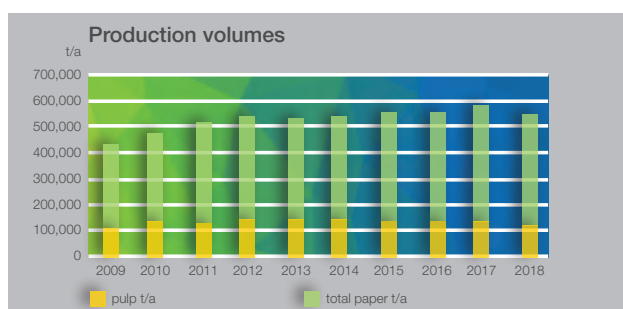
Area / process	Targets	Measures	Status
Mill / air pollution control	External complaints < 5	<ul style="list-style-type: none"> Analysis of complaints and development of technical/organisational measures Setup a noise protection wall for the log cutting plant (max. 63 dB[A]), daytime operation Planning of noise protection measures for the power plant Noise protection projects in all departments (reduction of night values by 2 dB[A]) Annual reporting, internal/external 	<ul style="list-style-type: none"> External complaints = 18 The noise reduction project is on target. The noise protection wall for the log cutting plant has been installed The low-noise operation of the air condenser has been implemented in the power plant and other measures are being planned To be continued in the 2019 financial year
Mill / air pollution control	Reduction of CO ₂ emissions	<ul style="list-style-type: none"> Plan to replace the fuel oil used in boilers 6 and 9 with natural gas - continued from the 2017 financial year Increase ratio of bioenergy in energy generation to 39 % in boiler 6 	<ul style="list-style-type: none"> Completed Ratio of bioenergy 35.9 % related to steam generation
Mill / air pollution control	Compliance with emission values	<ul style="list-style-type: none"> Plans for the operation of the recovery boiler following 30/09/2018 (Implementation in line with BREF requirements) 	<ul style="list-style-type: none"> NO_x reduction achieved, planning and negotiations with authorities to be completed in the final quarter of 2018
Mill / risk and emergency management	Improvement of emergency management	<ul style="list-style-type: none"> Implementation of refresher training for crisis team members Implementation of three emergency drills 	<ul style="list-style-type: none"> Training has been implemented Fire fighting exercises completed. Evacuation exercise scheduled for the final quarter of 2018
Mill / legal compliance	Centralised IT-supported documentation of the legal compliance process	<ul style="list-style-type: none"> Installation and commissioning of legal compliance software 	<ul style="list-style-type: none"> Software has been installed and legal register created. Commissioning in 2019 financial year
Mill / waste management	Reduction of specific waste volumes for external disposal (not including wood by-products) by 1 % compared to 2017 financial year	<ul style="list-style-type: none"> Testing and implementation of reduction measures in all departments Testing of alternative utilisation and disposal methods 	<ul style="list-style-type: none"> The specific volume has risen by 10 %. The main cause was significantly lower production compared to the 2017 financial year
Mill / freshwater use	Reduce specific water consumption by 1 % compared to financial year 2017	<ul style="list-style-type: none"> Implementation of additional savings measures in the production areas 	<ul style="list-style-type: none"> The specific consumption increased by 6.9 %
Mill / hazardous substances	Implementation of new requirements for the management of substances hazardous to water	<ul style="list-style-type: none"> Implementation of internal training Implementation of new requirements and documentation in a process description 	<ul style="list-style-type: none"> Training has been implemented and a description of the process has been prepared
Pulp production / forestry	Procurement of certified wood > 70 %	<ul style="list-style-type: none"> Wood procurement contracts with certified suppliers and monthly balance sheets 	<ul style="list-style-type: none"> 87.5 % certified wood
Pulp production / wastewater	20 % reduction of COD concentration in pulp production stream	<ul style="list-style-type: none"> Implementation of wastewater load project "Blue Water" to reduce COD concentration in pulp wastewater stream 	<ul style="list-style-type: none"> The project has been implemented
Mill / wastewater	Compliance with the new COD limits (concentration and freight) < 372 mg/l	<ul style="list-style-type: none"> Monitoring of wastewater loads Regular discussions of current values in the wastewater work group 	<ul style="list-style-type: none"> All official control levels were met. Seven daily average values were exceeded (= 2 %)
Mill / energy efficiency	Reduction of specific energy consumption by 2 % compared to financial year 2017 according to priorities of electricity, gas, steam	<ul style="list-style-type: none"> Development of energy savings plan Implementation of energy efficiency measures in production departments in the context of the energy management system Detailed analysis and monthly report on energy costs 	<ul style="list-style-type: none"> Target not achieved. The specific energy consumption increased by 3.4 %. Causes are low efficiencies in pulp production and changes to the range in the area of paper production
Mill / energy efficiency	Ratio of bioenergy for steam generation ≥ 39 %	<ul style="list-style-type: none"> Optimal use of bioenergy in boilers 6 and 9 	<ul style="list-style-type: none"> Ratio of bioenergy related to steam generation is 35.9 %
Mill / energy efficiency	Increase efficiency of power generation	<ul style="list-style-type: none"> Planning for new turbine 9 	<ul style="list-style-type: none"> Planning was completed and project launched

Key environmental data 2009 - 2018

Each Sappi Stockstadt GmbH financial year begins in October and ends in September which means that a comparable annual period is considered.

Production:

Production volumes decreased for both pulp and paper compared to the 2017 financial year. With regards to pulp production, this was caused by an extended mill shutdown and the technical availability of the plant. Changes in the grades of paper produced and in waste volumes negatively impacted paper production.



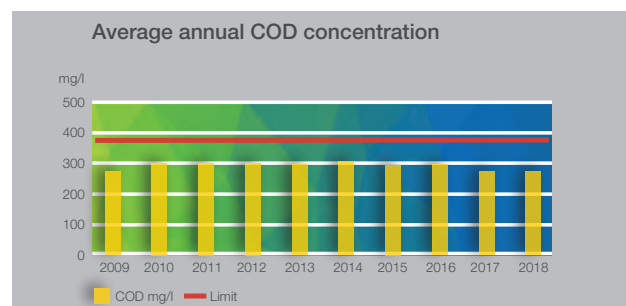
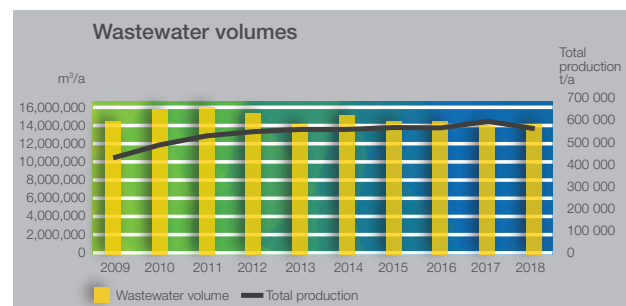
Wood procurement / sustainable forest management:

The procurement goal of 70 % certified wood for pulp generation was significantly exceeded in the 2018 financial year with an overall total of 87.5 %. It continues to remain at a high level. The ratio of PEFC™ certified wood was 64 %, while the ratio of FSC® certified wood was 23.5 %. The ratio of non-certified wood complied with the FSC standard for controlled wood sources. This was verified by means of a risk management system.



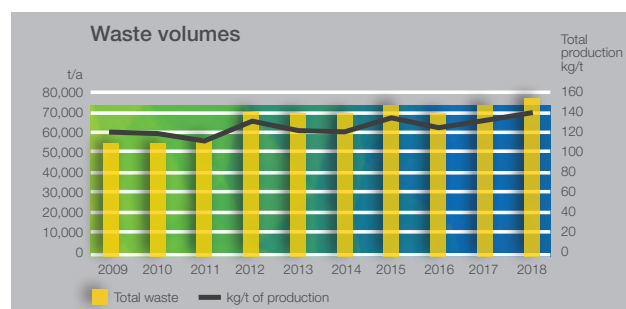
Wastewater:

Wastewater volumes remained virtually constant compared to the previous year, however there was a slight increase in specific wastewater volumes due to lower production levels. The average COD concentration in the final effluent also remained virtually constant.



Waste:

There was a slight rise in total waste volumes and specific waste data also rose slightly. This was caused by, among other factors, an increased amount of Main river water sludge. During fresh water preparation, the amount of sludge which accumulates is dependent on the suspended solids present in the river Main.



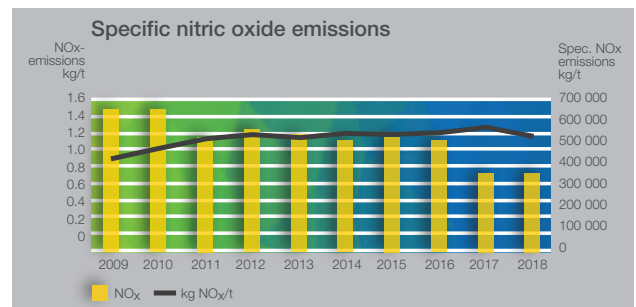
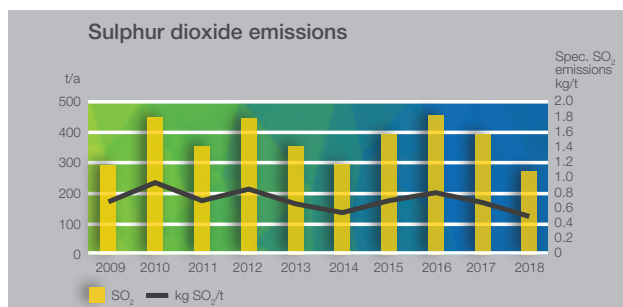
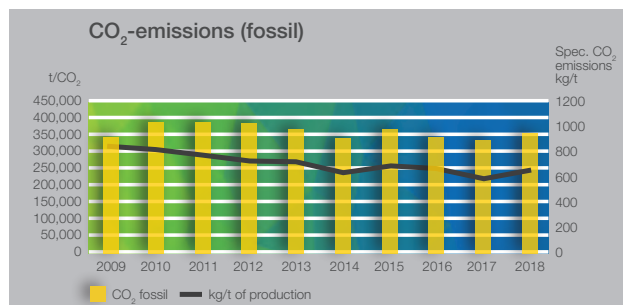
Key environmental data 2009 - 2018

Energy / emissions into atmosphere:

The reduction of fossil CO₂ emissions is an important goal for Sappi Stockstadt GmbH both environmentally and commercially. As an energy intensive company, Sappi Stockstadt GmbH is subject to carbon offsetting and is bound to purchase certificates for fossil CO₂ emissions. Key elements in achieving this goal are therefore energy saving measures and a high ratio of biomass in energy generation. In the 2018 financial year this biomass utilisation ratio decreased due to an extended mill shutdown as well as lost time caused by technical issues.

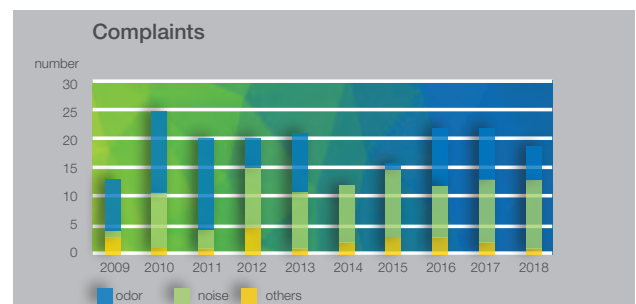
Sulphur dioxide emissions are caused mainly by the use of sulphur dioxide in the digester section of the pulp mill and by the use of spent liquor for energy generation. The use of spent liquor as a biogenic fuel for heat and recovery generation could not be increased above the previous year as a result of lost time due to technical issues.

Both the absolute and specific nitric oxide emissions were permanently reduced in 2012. An important step in this respect was the optimisation of the boiler 9 SNCR plant, which began in 2015 and which continues intensively today. Further reductions in nitric oxide values were achieved in the 2018 financial year following a trial with new nozzles for spent liquor combustion in boiler 6.



Complaints from neighbours:

There was a slight reduction in the number of complaints from neighbours compared to previous years. The focus of the complaints continued to be noise issues. Many of the complaints were caused by the release of steam pressure via the safety valves in the power plant. The resulting banging noises were due to power supply fluctuations and turbine failures. The noise protection program will be continued in the 2019 financial year. A further priority will be the issue of reducing odour emissions.



Environmental targets 2019

Targets

Area / process	Targets	Measures	Status
Mill / air pollution control	External complaints < 5	<ul style="list-style-type: none"> • Analysis of complaints and development of technical/ organisational measures • Planning of flash steam condensate container exhaust unit extraction system • Compliance with noise emission of max. 60 dB[A], daytime operations • Implementation of noise protection measures for the generating power plant • Noise protection projects in all departments (reduction of night values by 2 dB[A]) • Annual reporting, internal/external 	09/2019
Mill supply / air pollution control	Reduction of CO ₂ emissions	<ul style="list-style-type: none"> • Plan to replace the fuel oil used in boilers 6 and 9 with natural gas, continued from the 2018 financial year • Increased ratio of bioenergy in energy generation to 39 % in boiler 6 	09/2019
Mill supply / air pollution control	Compliance with the new emission targets	<ul style="list-style-type: none"> • Planning and implementation of measures for the operation of the recovery boiler to comply with particulate emissions and SO₂ emissions for the acid operation 	09/2019
Mill / risk and emergency management	Improvement of emergency management	<ul style="list-style-type: none"> • Implementation of two emergency drills 	09/2019
Pulp production / risk and emergency management	Minimizing risk of incidents in SO ₂ storage facility	<ul style="list-style-type: none"> • Installation and commissioning of an incident exhaust system in the SO₂ storage facility 	09/2019
Mill / legal compliance	Centralised IT-supported documentation of the legal compliance process	<ul style="list-style-type: none"> • Installation and commissioning of legal compliance software, continued from the 2018 financial year 	09/2019
Mill / waste management	Reduction of specific waste volumes for external disposal (not including wood by-products) by 1 % compared to financial year 2018	<ul style="list-style-type: none"> • Testing and implementation of reduction measures in all departments • Testing of alternative utilisation and disposal methods 	09/2019
Pulp production / sustainable forest management	Procurement of certified wood > 70 %	<ul style="list-style-type: none"> • Wood procurement contracts with certified suppliers and monthly balance sheets 	09/2019
Pulp production / wastewater	Reduction of overall wastewater temperature < 38° C	<ul style="list-style-type: none"> • Installation of a heat exchanger for the wastewater of the high consistency press in pulp production 	09/2019
Mill supply / wastewater	Biomonitoring of overall wastewater	<ul style="list-style-type: none"> • Planning and implementation of a carp pond for biomonitoring 	09/2019
Mill / Wastewater	Compliance with the COD limits (concentration and freight) < 365 mg/l	<ul style="list-style-type: none"> • Commissioning and optimisation of the new washing filters in pulp production • Monitoring of wastewater loads • Regular discussions of current values in the wastewater work group 	09/2019
Mill / energy efficiency	Reduction of specific energy consumption by 2 % compared to 2018 financial year according to the priorities of electricity, gas, steam	<ul style="list-style-type: none"> • Updating of energy saving plan • Implementation of energy efficiency measures in production departments in the context of the energy management system • Detailed analysis and monthly report on energy costs 	09/2019
Mill supply / energy efficiency	Ratio of bioenergy for steam generation ≥ 39 %	<ul style="list-style-type: none"> • Optimal use of bioenergy in boilers 6 and 9 	09/2019
Mill supply / energy efficiency	Increase efficiency of power generation	<ul style="list-style-type: none"> • Commissioning of new turbine 9 and maximum in-house power generation, increase green power compared to 2018 financial year 	09/2019