



Environmental Statement 2019

Sappi Stockstadt GmbH

sappi

Sustainability - just a trend?

Dear reader,

Over the past financial year, the theme of sustainability has impacted significantly on all areas of life. There is a much greater focus on the climate protection debate and new climate targets are being set. Many are calling for more effective high-profile measures to support environmental protection, often with a clear lack of willingness on their part to make changes in their own everyday lives. The situation is made even more challenging by the major economic and social changes resulting from digitalisation - as experienced by the graphic paper industry over many years with falling sales. In Germany in particular a huge change is under way resulting from the much anticipated electromobility. An electric car or a plug-in hybrid simply no longer has a starter battery and starter motor, in a few years devices similar to these will no longer exist. However, in all these complex interrelationships we know one thing for sure: we have to use fewer resources (energy, raw materials, water) and create fewer emissions.

For Sappi Stockstadt, the business environment therefore remains challenging as the market for graphic paper continues to contract. All of these developments impact on Sappi Stockstadt at a local level and influence our managerial decisions. The pulp and paper industry has always been one of the most energy intensive, however it can take credit for manufacturing its products using sustainable, renewable raw materials; products which are generally 100 % recyclable.

The drying processes for paper and pulp in particular require vast amounts of high pressure steam. The ongoing reduction of our energy demand is therefore one of our everyday core activities. As part of the continual optimisation of our production processes and plants, we make sure we use our resources with care and that we achieve maximum possible material efficiency. Thanks to the efforts of our employees, paper machine 1 currently remains the paper machine with the lowest specific electricity consumption in a global benchmark study of 31 uncoated paper machines. The situation as regards paper line 2 looks very different. The constantly changing range of grades due to production moved from other Sappi Mills and in some cases involving less energy-efficient products, has led to a decline in energy efficiency. Overall, the ambitious energy-saving targets were unfortunately not achieved, however we were once again able to achieve consumption levels below those of the previous year.

One success has been the replacement of the outdated EEG turbine with a highly efficient new turbine 9 which produces green electricity. All targets were met - with the turbine operating

at optimal levels, the parameter measuring conversion into electricity was increased by more than 12% compared to the previous year. The overall proportion of green energy in relation to steam production increased to 39%. This is a very good outcome which we are seeking to further improve.

However we were also able to achieve notable results in other environmental areas. Specific waste generation was lowered by 8.2%. The second stage of development of the noise protection wall at the pulp production saw mill enabled further reductions in noise pollution for the residents. In order to reduce the heat load in the wastewater from our pulp production, in one stream a heat exchanger was installed which saves up to 10 tons of live steam per hour.

A new biomonitoring pool for our overall wastewater was completed and will come into operation in the new financial year. This will supplement the on-line monitoring of the wastewater and therefore provide greater security.

We have set further ambitious targets for the new financial year. Planning continues, for example, for the decarbonisation of energy generation. The installation of a new lamellar droplet separator means that the dust emissions from the chemical recovery boiler can be reduced. The second stage of our wastewater temperature reduction and energy recovery project has been implemented. This time the focus is on wastewater from paper production. Further noise protection measures are also being implemented in particular in the power plant operation, and monitoring to prevent odour emissions is also being improved. These measures are of particular significance to our residents.

Yes, we do believe that sustainable management is and remains one of the key activities in the work we do to contribute to improving environmental protection. We do this for the environment today, for our children and for future generations.

Happy reading!
Yours



Christian Dietershagen
Managing Director Sappi Stockstadt GmbH



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 start-up 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 and wastewater treatment. AZ developed through various stages into Sappi Stockstadt

GmbH, a modern integrated pulp and paper mill with its own power plant and wastewater treatment plant, with high environmental protection standards and a very good health and safety level.

In 2018, the highly efficient EEG turbine was put into operation. This produces green electricity. Today, Sappi Stockstadt has a production capacity of 160,000 tons of pulp and 450,000 tons of paper and has 700 employees and 45 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, as stated in the current environmental statement of the organisation, 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).

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, 20/12/2019



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

This issue of the Environmental Statement 2019 of Sappi Stockstadt GmbH constitutes a supplementary report to the Environmental Statement 2017. It contains site-specific environmental data and trends for the year 2019. 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 2021.

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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 and organisational measures • Planning for flash steam condensate container extraction system • Compliance with noise emission of max. 60 dB[A], daytime operations • Implementation of noise protection measures for the generating 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"> • Number of complaints = 16 Focus of the complaints is still the odour • Planning for the biofilter is being carried out for capacity reasons. • Currently 62 dB(A) • Various measures have been implemented or are in planning: e.g. replacement of start-up silencer, relocation of pulp production heat exchanger into the building, turbine building silencer, 3-bar decoupling.
Utilities / 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 proportion of bioenergy in energy generation to 39 % in boiler 6 	<ul style="list-style-type: none"> • Planning under way • Proportion of bioenergy = 39 %
Utilities / 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 black liquor boiler with respect to compliance with dust emissions and SO₂ emissions for the acid operation 	<ul style="list-style-type: none"> • Preparation of a review. Installation of a new lamellar droplet separator
Mill / risk and emergency management	Improvement of emergency management	<ul style="list-style-type: none"> • Implementation of two emergency drills 	<ul style="list-style-type: none"> • Completed
Pulp production / risk and emergency management	Minimizing risk of incident in SO ₂ storage facility	<ul style="list-style-type: none"> • Installation and commissioning of an incident exhaust system on the SO₂ storage facility 	<ul style="list-style-type: none"> • Completed
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 	<ul style="list-style-type: none"> • Completed
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 	<ul style="list-style-type: none"> • The target was achieved at -8.2 %
Pulp production / sustainable forest management	Procurement of FSC®- and PEFC™ 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"> • Proportion of certified wood = 84.8 %
Pulp production / wastewater	Reduction of overall wastewater temperature < 38° C	<ul style="list-style-type: none"> • Installation of a heat exchanger for the wastewater HC press in pulp production 	<ul style="list-style-type: none"> • Completed
Mill / wastewater	Biomonitoring of overall wastewater	<ul style="list-style-type: none"> • Planning and implementation of a carp pond for biomonitoring 	<ul style="list-style-type: none"> • Completed
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 filter in pulp production • Monitoring of wastewater loads • Regular discussions of current values in the wastewater work group 	<ul style="list-style-type: none"> • Completed



Environmental targets 2020

Targets

Area / Process	Targets	Measures	Dead-lines
Mill / air pollution control	External complaints < 5	<ul style="list-style-type: none"> • Analysis of complaints and development of technical and organisational measures • Creation of an odour emission source cadastre and development of organisational and technical measures for noise reduction • Compliance with noise emission of max. 60 dB[A], daytime operations • Implementation of noise protection measures for the generating plant • Noise protection projects in all departments (reduction of night values by 2 dB[A]) • Annual reporting, internal/external 	09/2020
Utilities / air pollution control	Reduction of CO ₂ emissions	<ul style="list-style-type: none"> • Planning for the future operation of boiler 9 without coal and heating oil S. Increase proportion of bioenergy in energy generation to 39 % on boiler 6 	09/2020
Utilities / 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 black liquor boiler with respect to compliance with dust emissions and SO₂ emissions for the acid operation (Installation of new droplet separator and other measures) 	09/2020
Mill / risk and emergency management	Improvement of emergency management	<ul style="list-style-type: none"> • Implementation of three emergency drills 	09/2020
Mill / waste management	Reduction of specific waste volumes for external disposal (not including wood by-products) by 1 % compared to financial year 2019	<ul style="list-style-type: none"> • Testing and implementation of reduction measures in all departments • Testing of alternative utilisation and disposal methods 	09/2020
Pulp production / sustainable forest management	Procurement of FSC®- and PEFC™ certified wood > 75%	<ul style="list-style-type: none"> • Wood procurement contracts with certified suppliers, and monthly balance sheets 	09/2020
Pulp production / wastewater	Reduction of overall wastewater temperature < 35° C	<ul style="list-style-type: none"> • Planning and installation of a heat exchanger for the wastewater in paper production 	09/2020
Mill / wastewater	Reduction of phosphorus concentration in wastewater	<ul style="list-style-type: none"> • Planning of a new wastewater load project to reduce the concentration of phosphorus in wastewater (Project: SAPHIR) 	09/2020
Mill / wastewater	Compliance with the COD limits (concentration and freight) < 365 mg/l	<ul style="list-style-type: none"> • Monitoring of wastewater loads • Regular discussions of current values in the wastewater work group 	09/2020
Mill / energy efficiency	Reduction of specific energy consumption by 1 % compared to financial year 2019 according to priorities (electricity, gas, steam) taking into account new energy-related base lines	<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 	09/2020
Mill supply / energy efficiency	Proportion of bioenergy for steam generation ≥ 39 %	<ul style="list-style-type: none"> • Optimal use of bioenergy in boilers 6 and 9 	09/2020
Mill / environmental product label	Introduction of regional label "Wood from here" for uncoated paper	<ul style="list-style-type: none"> • Set up project organisation, kick-off implementation of a new process • Certification 	09/2020

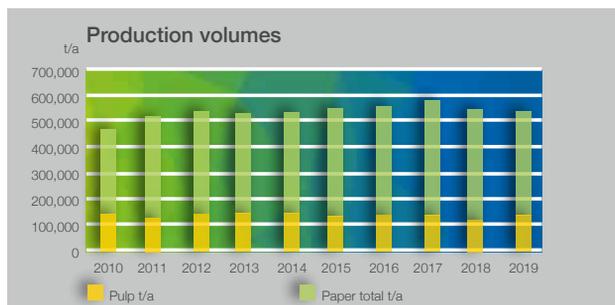


Key environmental data 2010 - 2019

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

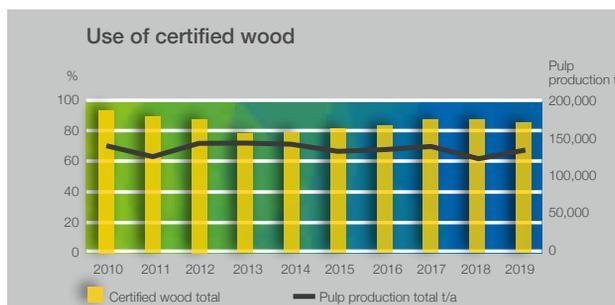
Production:

The production volumes remained virtually constant for paper and pulp production compared to the 2018 financial year.



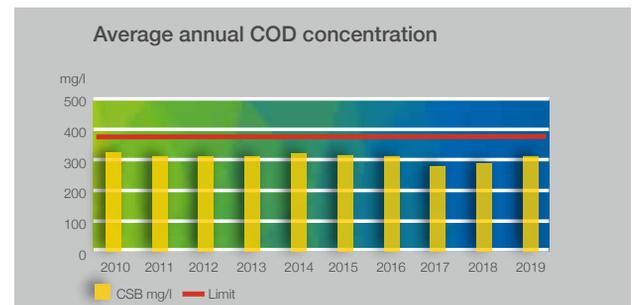
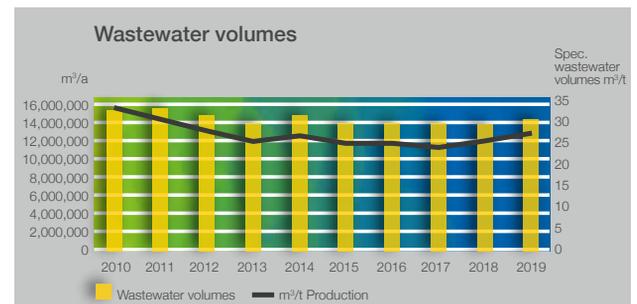
Wood procurement/sustainable forest management:

The procurement goal of 70% use of certified wood for pulp generation was significantly exceeded in the 2019 financial year with an overall total of 84.8% and remained at a high level. The proportion of PEFC™ certified wood was 64.5%, while the proportion of FSC® certified wood was 20.3%. The non-certified proportion meets the requirements of FSC Controlled Wood; this is monitored by risk management.



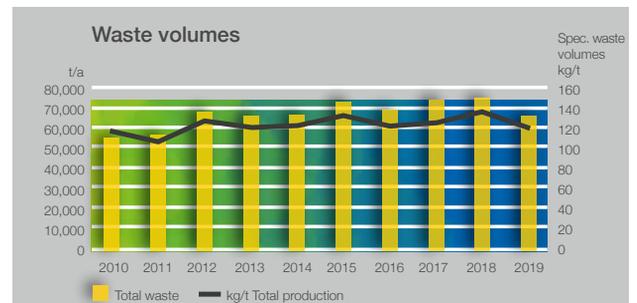
Wastewater:

Wastewater volume has increased compared to the previous year, and there was a slight increase in specific wastewater volumes due to lower production levels. The average COD concentration in overall wastewater rose slightly compared to 2018. This is due to a reduced degradation performance of the anaerobic reactor.



Waste:

There was a significant reduction in the overall waste volume and also in the specific waste data compared to 2018. The accumulation of sewage sludge was reduced and less Main river water sludge was accumulated in the freshwater preparation (proportion of suspended matter in the Main river due to weather).

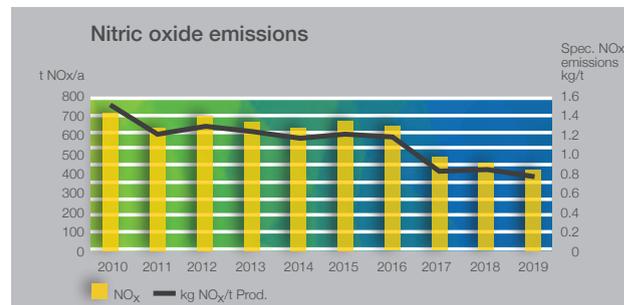
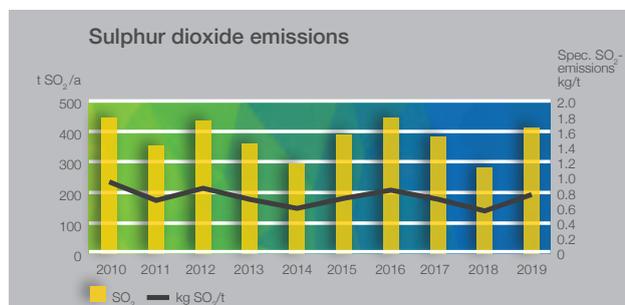
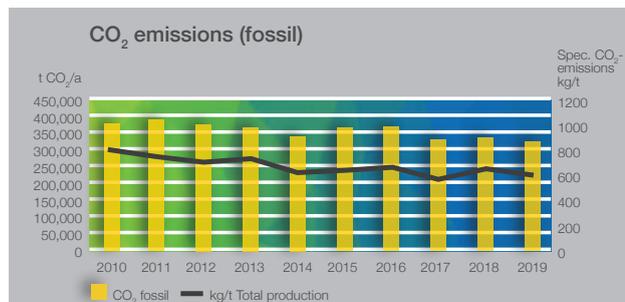


Key environmental data 2010 - 2019

The operation of a new dynamic wind separator on the coal boiler resulted, for example, in a reduced accumulation of ash. The consistent return of calcium carbonate from the waste water meant the accumulation of so-called coating colour waste could also be reduced. Other significant waste volumes are bark and fibre residues from pulp generation which are used for thermal recovery. The hazardous wastes which need to be disposed of comprise mainly waste oil, operating equipment containing oil, oil separator contents and production chemical residues.

Energy/emissions into atmosphere:

The reduction of fossil CO₂ emissions is an important goal for Sappi Stockstadt GmbH both environmentally as well as commercially. As an energy intensive company, Sappi Stockstadt GmbH is subject to carbon offsetting and must purchase certificates for fossil CO₂. Key elements in achieving this goal are therefore energy saving measures and a high proportion of biomass in energy generation. Unfortunately the energy savings targets could not be achieved over the last financial year due to the change in the use of the paper machines. In the 2019 financial year, the proportion of biomass in relation to steam production was increased. The commissioning of the new EEG turbine significantly improved the efficiency of internal power generation.

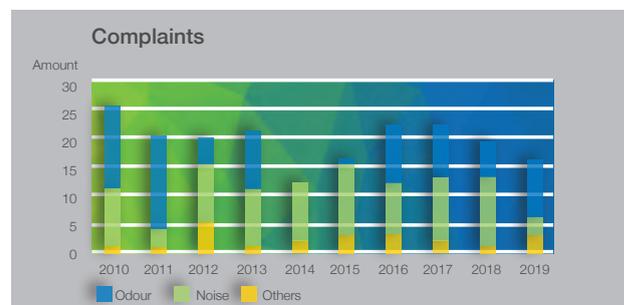


Sulphur dioxide emissions are mainly dependent on the use of sulphur dioxide in pulp production for the digester house and on the use of waste lye for energy generation. In 2019, more biogenic black liquor as well as more coal was burned for energy generation compared to 2018. Due to market availability, coal qualities with a higher sulphur content also had to be used. This resulted in higher sulphur dioxide emissions.

Over the past financial year, the positive trend in absolute and specific nitric oxide emissions continued with values being reduced once again.

Complaints from neighbours:

There was a slight reduction in the number of complaints from neighbours compared to previous years. The focus of the residents' complaints continues to be the odour. The internal monitoring of sources of odours has been intensified and the technical measures for minimising odours were implemented in the autumn shut-down. The noise protection wall at the pulp production saw mill was extended and further noise protection measures were implemented. The ongoing noise protection program will be continued in the 2020 financial year.



Environmental Balance Sheet 2019

INPUT

Raw materials and supplies

Total wood purchases	290,762	t atro
Wood yield (t wood/t pulp)	2.19	
Proportion of round wood	201,637	t atro
Proportion of wood chip	89,124	t atro
PEFC™ certified wood	64.5	%
FSC® certified wood	20.3	%
Total certified	84.8	%

Total pulp

Total pulp	237,370	t atro
Own pulp (integration)	117,340	t atro
Third-party pulp	120,029	t atro
Pulp yield (t pulp/t paper)	0.58	

Chemicals

Chemicals	186,105	t atro
Pigments and fillers	136,080	t atro
Binders	15,035	t atro
Other chemicals	34,990	t atro

Fuels

Petrol	2,819	l
Diesel	192,689	l
Auto gas *1	12,540	kg

Packaging materials

(not including pallets and sleeves)

Freshwater

Total freshwater	16,267,954	m³
Specific freshwater	29.9	m³/t
of which mains water	59,764	m³
of which cooling water	7,016,065	m³

Energy

Total fuels	1,689	GWh
Specific fuels	3.11	MWh/t
Natural gas, energy generation	256	GWh
Natural gas, process	36	GWh
Total natural gas	292	GWh
Heavy fuel oil (2.8%)	94	GWh
Coal	728	GWh
Total fossil fuels	1,114	GWh
Black liquor	553	GWh
Residues	15	GWh
Biogas	7	GWh
Total biogenic fuels	574.467	GWh
Spec. biogenic fuels	1.06	MWh/t
Proportion of renewable energies	34	%
Factory electricity consumption	336	GWh
Spec. biogenic fuels	1.06	MWh/t
Internal generation	258	GWh
External generation	142	GWh
of which physical purchase	78	GWh
of which EEG standby power	64	GWh
Total electricity consumption	336	GWh
Process	264	GWh
Internal consumption, power plant	72	GWh

Total energy consumption 2,025 GWh

Total steam consumption 1,893,011 t

Total compressed air 86,795 (1,000 Nm³)

OUTPUT

Products

Total pulp	132,791	t
of which market pulp	2,105	t
PEFC™ certified wood	64.5	%
FSC® certified wood	20.3	%
Total paper	410,941	t
Uncoated paper	220,586	t
Coated paper	190,355	t
PEFC™ certified wood	45.5	%
FSC® certified wood	35.8	%
Total production	543,733	t

Energy

Electricity fed to EEG	64	GWh
Electricity fed to third parties	1.48	GWh
Black liquor sales	15,298	t

Wastewater

Total wastewater	14,990,196	m³
COD	4,385	t
BOD ₅	362.9	t
Total nitrogen	83.5	t
Total phosphorus	15.4	t
Solids	354.8	t
AOX	0.94	t

Emissions into atmosphere *2

SO ₂	408.6	t
NO _x	427.0	t
Dust	39.7	t
CO ₂ fossil	322,596	t
CO ₂ biogenic	175,221	t

Residues

Total residues	67,060	t
of which bark	21,284	t
fibrous material	6,045	t
fly ash	10,700	t
sewage sludge	8,103	t
Main river water sludge	4,641	t
FGD gypsum	5,068	t
Total utilised	66,880	t
Total thermal utilization	31,612	t
of which therm. utilisation int.	4,049	t
of which therm. utilisation ext.	27,563	t
Recycling	6,786	t
Total disposal	128.7	t
of which disposal to dump	20.2	t
Hazardous waste	183.3	t
Hazardous waste spec.	0.34	kg/t
Utilisation ratio	99.7	%
Disposal ratio	0.2	%
Special waste ratio	0.3	%

Overall land use 375,000 m²

Land built over 295,000 m²

Land near nature 80,000 m²

*1 In the 2018 environmental data, numbers of gas bottles were stated instead of weight.

*2 Other greenhouse gasses such as CH₄, N₂O, hydrofluorocarbons, perfluorocarbons and sulphur hexafluorides were not used or are not emitted in relevant volumes.