

ENVIRONMENTAL PRODUCT DECLARATION

UPM PIETARSAARI pulp mill

PRODUCTS: UPM Betula, UPM Betula TCF, UPM Conifer,
UPM Conifer TCF*, UPM Conifer Thin
UPM Euca*, UPM Euca TCF*

**not in production in 2019*



Information gathered from 1.1.2018 to 31.12.2018

Date of issue: 30.03.2019



ENVIRONMENTAL MANAGEMENT & CERTIFICATION

- Certified environmental management system at the mill: ISO 14001 (1995), EMAS (1999)
- The traceability of the origin of wood is ensured by FSC® and PEFC™ Chain of Custody and EU Timber Regulation compliance
- FSC and PEFC certified pulp products on request and based on availability.
- Pulp products approved for use in EU Ecolabel and Nordic Ecolabel paper products.
- Copies of certificates are available in our [Certificate Finder](#).

ENVIRONMENTAL PARAMETERS

The figures are calculated according to the requirements of the national environmental authorities. Figures are average data of the market chemical pulp.

PRODUCT FEATURES

Product:

Bleached chemical pulp average (ECF or TCF)

Raw material:

Soft- and hardwood from responsibly managed forests.

OTHER MANAGEMENT SYSTEMS

- ISO 9001 Quality
- OHSAS 18001 Health and Safety
- ISO 22000 Food Safety (scope: food contact)
- EES+ Energy Efficiency

Water		Air	
COD	17.5 kg/ADt	SO ₂	0.24 kg/ADt
AOX	0.10 kg/ADt	TRS	0.04 kgS/ADt
N _{Tot}	0.066 kg/ADt	NO _x	1.60 kg/ADt
P _{Tot}	0.011 kg/ADt	CO ₂ (fossil)	70 kg/ADt
TSS	0.48 kg/ADt	CO ₂ (biogenic)	2 840 kg/ADt
Effluent flow	43.3 m ³ /ADt	Solid waste landfilled	5.6 BDkg/ADt

ENERGY MANAGEMENT

Steam and electricity for the pulp mill is produced in the mill's own recovery boiler, by using renewable fuels from own process. Surplus heat and electricity is sold.

Surplus heat	1129 kWh/ADt
Surplus electricity	178 kWh/ADt

UPM-Kymmene Corporation
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UPM CARBON FOOTPRINT INFORMATION

UPM PIETARSAARI pulp mill

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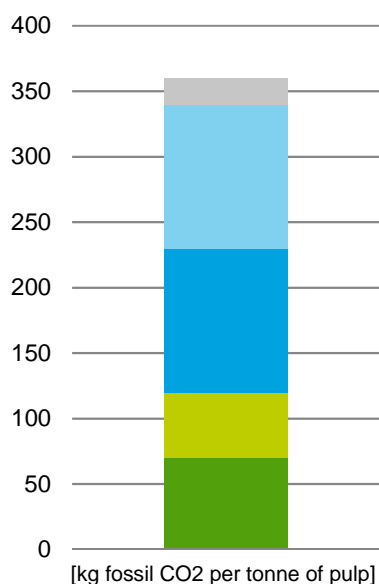
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Carbon footprint of Pietarsaari mill



- Transport of raw materials
- Purchased power
- Other raw materials
- Fibre production
- Pulp production

CARBON FOOTPRINT

- UPM calculates the Carbon Footprint of its pulp products based on the ten elements of the Carbon Footprint Framework for Paper and Board Products developed by CEPI (the Confederation of European Paper Industries). Detailed information on the CEPI Framework can be found at www.cepi.org.
- The data used in the calculation are based on annual averages for the pulp mill, including bleaching chemicals production on-site.
- GHG = greenhouse gas. UPM figures refer only to emissions of fossil CO₂.

Ten elements of the CEPI Framework (See next page for remarks and explanations)	Fossil CO ₂ (kg/ADt of pulp)	Biogenic CO ₂ (kg/ADt of pulp)
1. Carbon sequestration in the forest		-
2. Carbon stored in the product		1670
Net sequestration of biomass carbon		
3. GHG emissions from pulp production	70	
4. GHG emissions associated with producing virgin or recovered fibre	50	
5. GHG emissions associated with producing other raw materials	110	
6. GHG emissions associated with purchased electricity and steam *)	110	
7. Transport-related GHG emissions (excl. delivery to customer)	20	
Total CO₂ emissions	360	
8. GHG emissions attributable to product use (e.g. printing)	-	
9. GHG emissions attributable to end-of-life-management of products	-	
10. Avoided emissions	-	

*) Due to sales of guarantee of origin related to own electricity generation, the CO₂ factor used is the national residual mix (264 g CO₂ per kWh).

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Remarks and explanations to the ten elements of CEPI Framework

1. Carbon sequestration in the forest

- For UPM, forest certification and traceability of fibre supply using certified Chain of Custodies ensures the sustainable management of forests. This ensures that carbon stocks in forests remain stable or even improve over time. However in many cases it is difficult to isolate this effect attributable to a specific product and to specific forest area. Currently, UPM is calculating the carbon sequestration for Fray Bentos pulp only.

2. Carbon stored in the product

- Due to the capacity of forests to bind CO₂, biogenic carbon is stored in pulp produced from wood fibre. The IPCC (International Panel on Climate Change) formula is used to determine the amount of CO₂ that is stored in the pulp product. Recycling of further processed products delays this CO₂ from returning to the atmosphere.

3. GHG emissions from pulp production

- UPM includes data on fossil CO₂ emissions from combustion of fossil fuels at pulp manufacturing facilities.

4. GHG emissions associated with generating the supply of wood or recovered fibre

- This includes fossil CO₂ emissions from all forestry operation, including nursery, silviculture and harvesting, and the production of purchased chips.

5. GHG emissions associated with producing other raw materials

- Includes fossil CO₂ emissions generated during the manufacturing of non-wood-based raw materials: chemicals which are used in an amount above 10 kg per tonne of pulp.

6. GHG emissions associated with purchased electricity and steam

- Includes fossil CO₂ emissions associated with purchased electricity, steam and heat used for pulp and paper production.
- Usually pulp mills are more than self-sufficient in energy generation.
- In case the mill is selling Guarantees of Origin related to its green electricity production, this amount of electricity is multiplied with the national residual CO₂ factor for grid electricity and included in toe 6.

7. Transport-related GHG emissions

- Includes fossil CO₂ emissions associated with inbound transports of main raw materials.
- CO₂ emissions from transportation of pulp to the customer are not included since this depends on the transportation modes used and distances to specific customer locations. This part of the element can be calculated for a specific case on request.

8. GHG emissions attributable to product use (e.g. printing)

- This element is not included within UPM's scope as a pulp manufacturer.

9. GHG emissions attributable to end-of-life-management of products

- This element is not included within UPM's scope as a pulp manufacturer.

10. Avoided emissions e.g. superior energy efficiency or carbon offsetting measures)

- This element includes avoided emissions from the pulp mill surplus electricity sold to the grid, according to the country specific emission conversion factor. If the surplus electricity is used on-site for the production of other products, we have not considered this as a carbon offset.