

Emas Report 2008

Nokia plant

**nokian
TYRES**

**AN
ES**

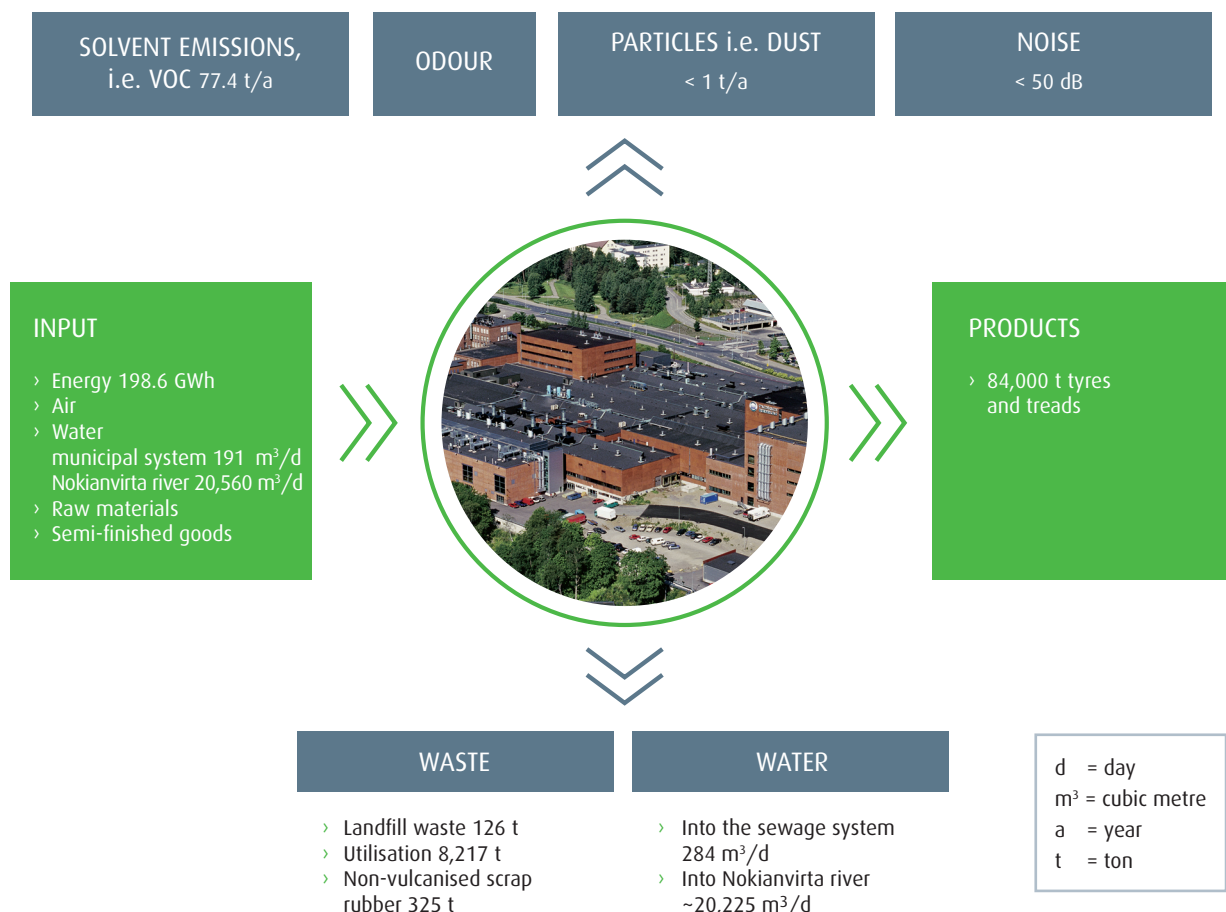
As an authorised auditor, DNV Certification Oy Ab, FI-V-002 has, on 15 April, 2009, stated that Nokian Tyres plc's environmental system and the 2008 update of the EMAS report comply with the EU's EMAS regulation (EY 761/2001). This English version is based on the Finnish text.



THE UPDATE OF EMAS REPORT 2008

The environmental issues in the Nokia plant of Nokian Tyres remained almost unchanged during the year 2008. The amount of vulcanized products produced by the factory reduced 2,051 ton (2.5%) from the year 2007. At the end of the year 2008 Nokia plant's production was adjusted corresponding to the changed market situation. The majority of the personnel were laid off for two weeks and the production was stopped. At the start of 2009 the production was transferred to 5-days working week.

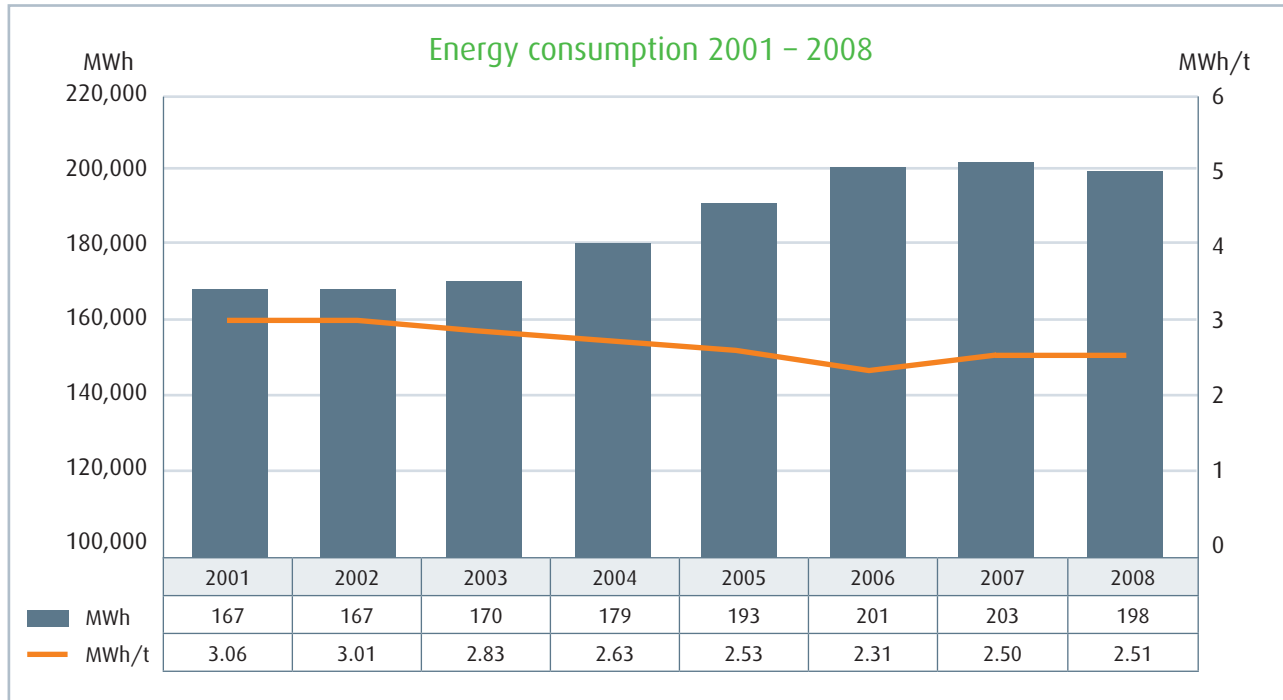
Environmental impacts of production 2008



On the picture above is presented the summary of the factory's operation and environmental impacts.

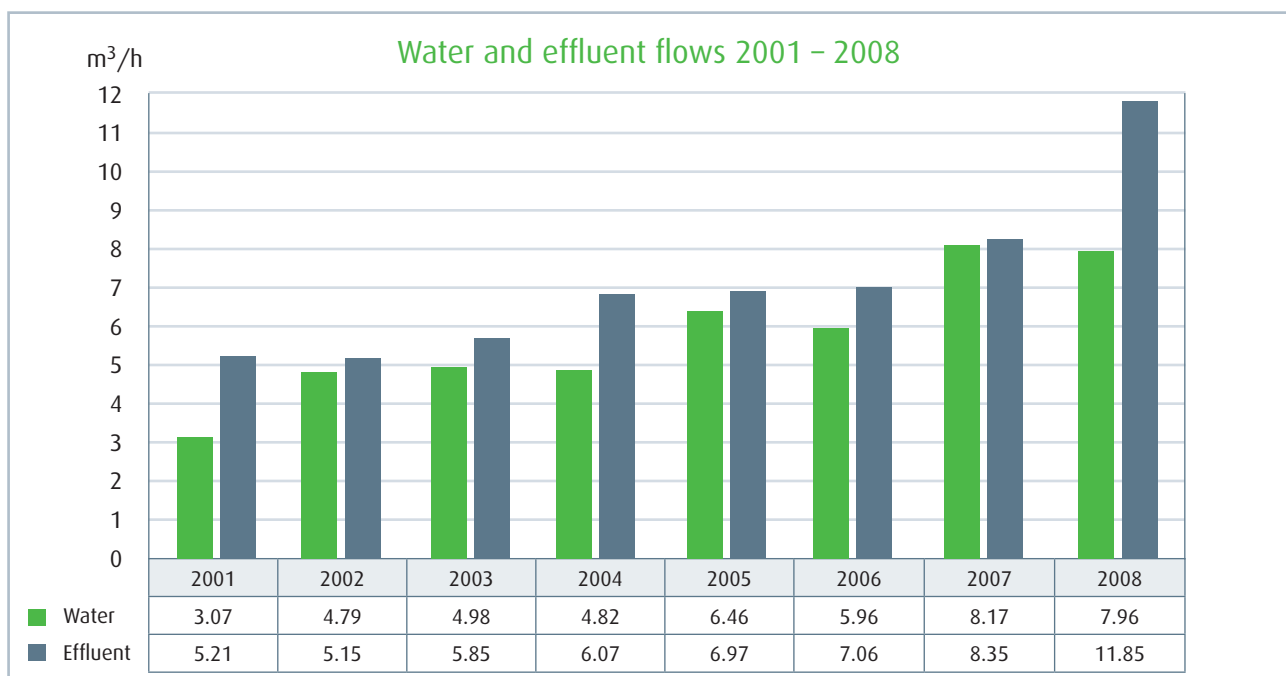
ENERGY CONSUMPTION

The total energy consumption at the Nokian plant were 198,552 MWh in 2008. Nokian Tyres uses energy as a steam, industrial water and electricity. Approximately 45% of the energy consumption is electricity, 32% steam and 23% industrial water. The used electricity is totally water electricity i.e. ecological electricity produced by water power.



WATER AND EFFLUENT FLOWS

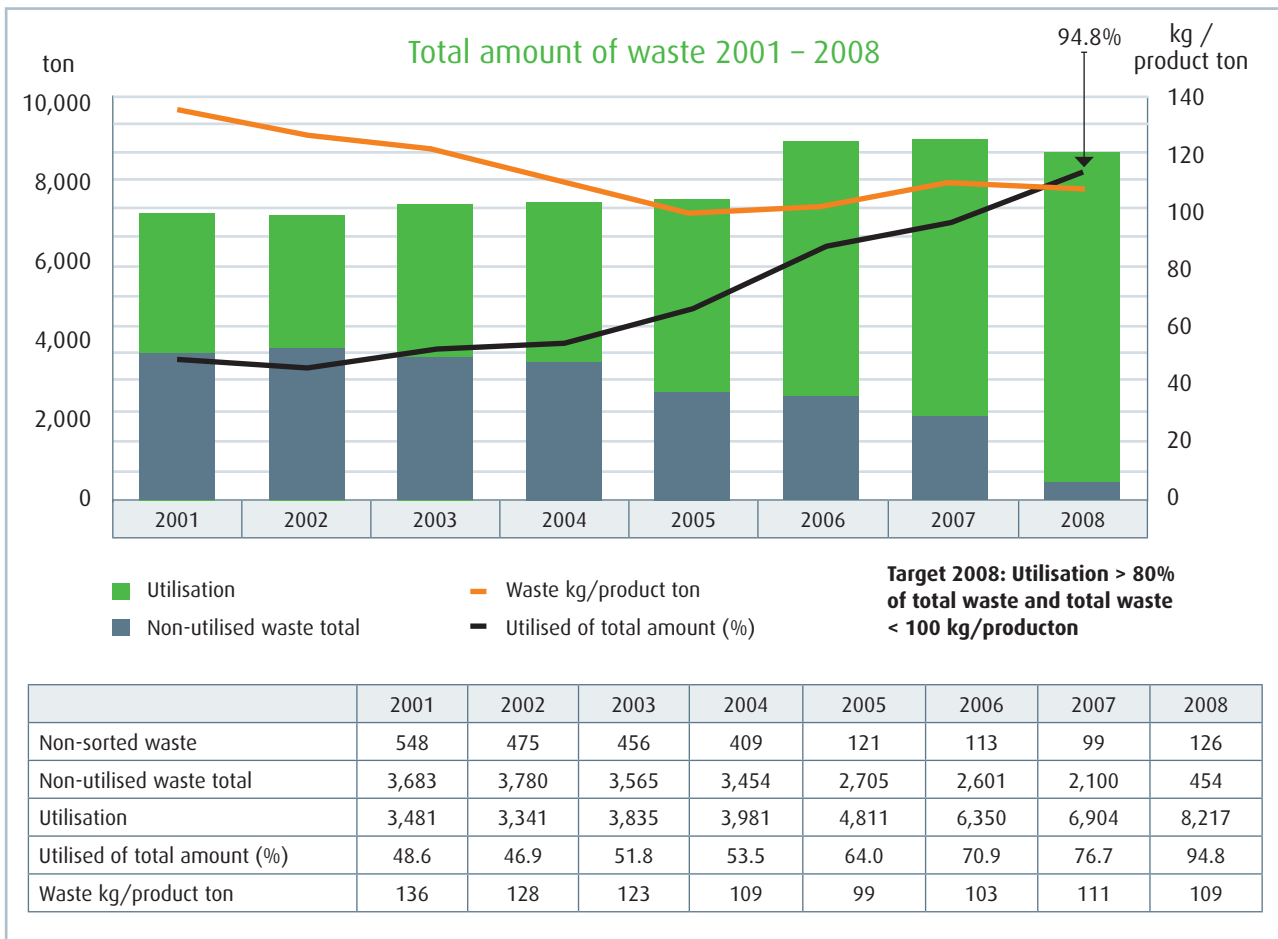
The factory uses water for cooling, washing and household consumption. The cooling water is taken from Nokianvirta river through the factory's own water plant and the water is returned from closed cycle back to the river. The amount of cooling water taken from the river was 6,867,013 m³ i.e. 856.7 m³/h in 2008. When the river water is used for washing, the effluent flows are directed to the municipal sewage plant. During year 2008 exits for clean condensate waters were vainly lead to municipal sewage and thus effluent flows increased. Those false operatings have been fixed at the start of the year 2009.



THE AMOUNT OF WASTE

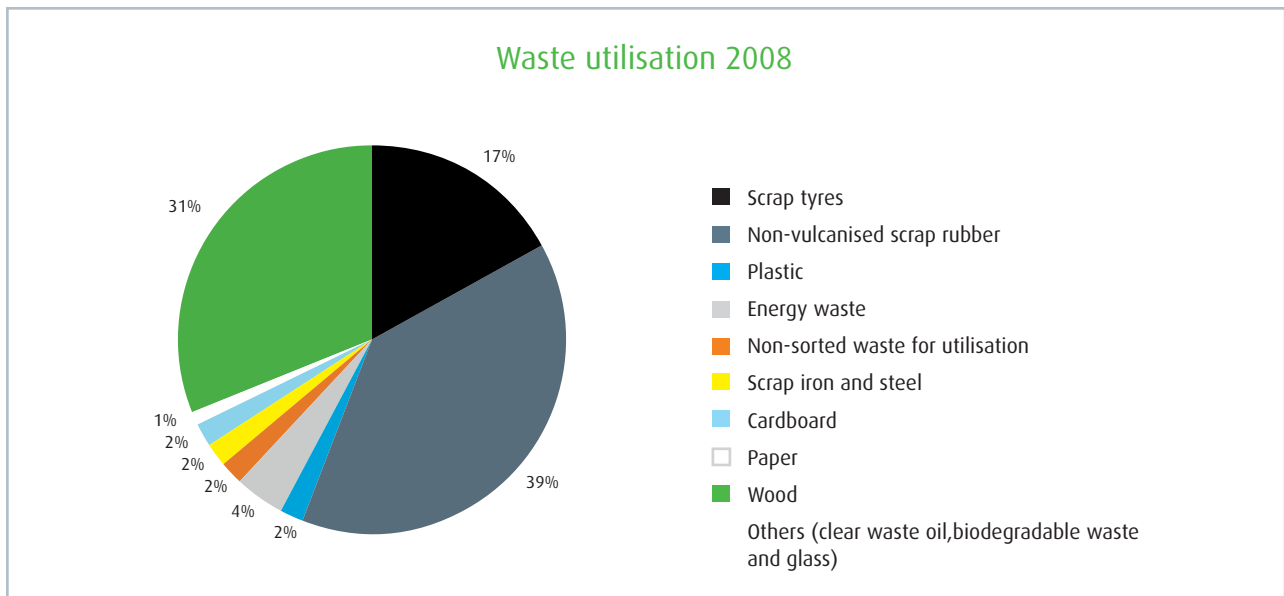
The amount of waste proportion to production decreased from the last year. In 2008 all vulcanised rubber waste was delivered to utilisation for the first time for the whole year. In 2008 94.8% of waste was delivered to utilisation. The chart doesn't include the non-vulcanised waste recycled in internal production of buffing powder which is re-used in a process as a rubber mixings raw material.

The Finnish Legislation which requires certain waste batches (i.e. hazardous waste and liquid waste) to be delivered to special handling will limit the increase of the recycling rate in the future.



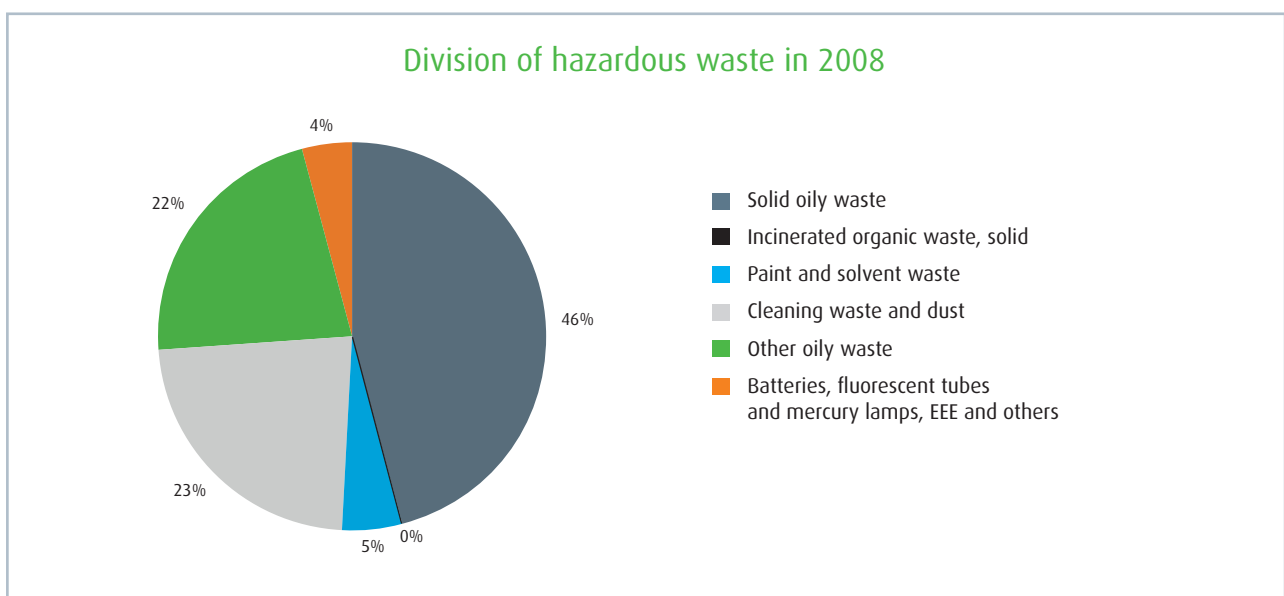
Waste delivered for utilisation

As the graph shows, quite various wastes are delivered for further utilisation. The existing national collection and utilisation channels for different kinds of waste make the utilisation process easier. In most cases, waste is utilised as material. Apart from energy waste, only some scrap wood is utilised as energy. Nokian Tyres handles packaging utilisation jointly with the Environmental Register of Packaging PYR Ltd, a community of packaging-industry producers.



Hazardous waste in 2008

The total amount of hazardous waste, i.e. waste which requires special handling, was 325 tonnes in 2008, i.e. 4.1 kg/product ton (the amount of waste in 2007 was 297 tonnes i.e. 3.7 kg/product ton). All hazardous waste is taken to authorised hazardous waste processing plants.

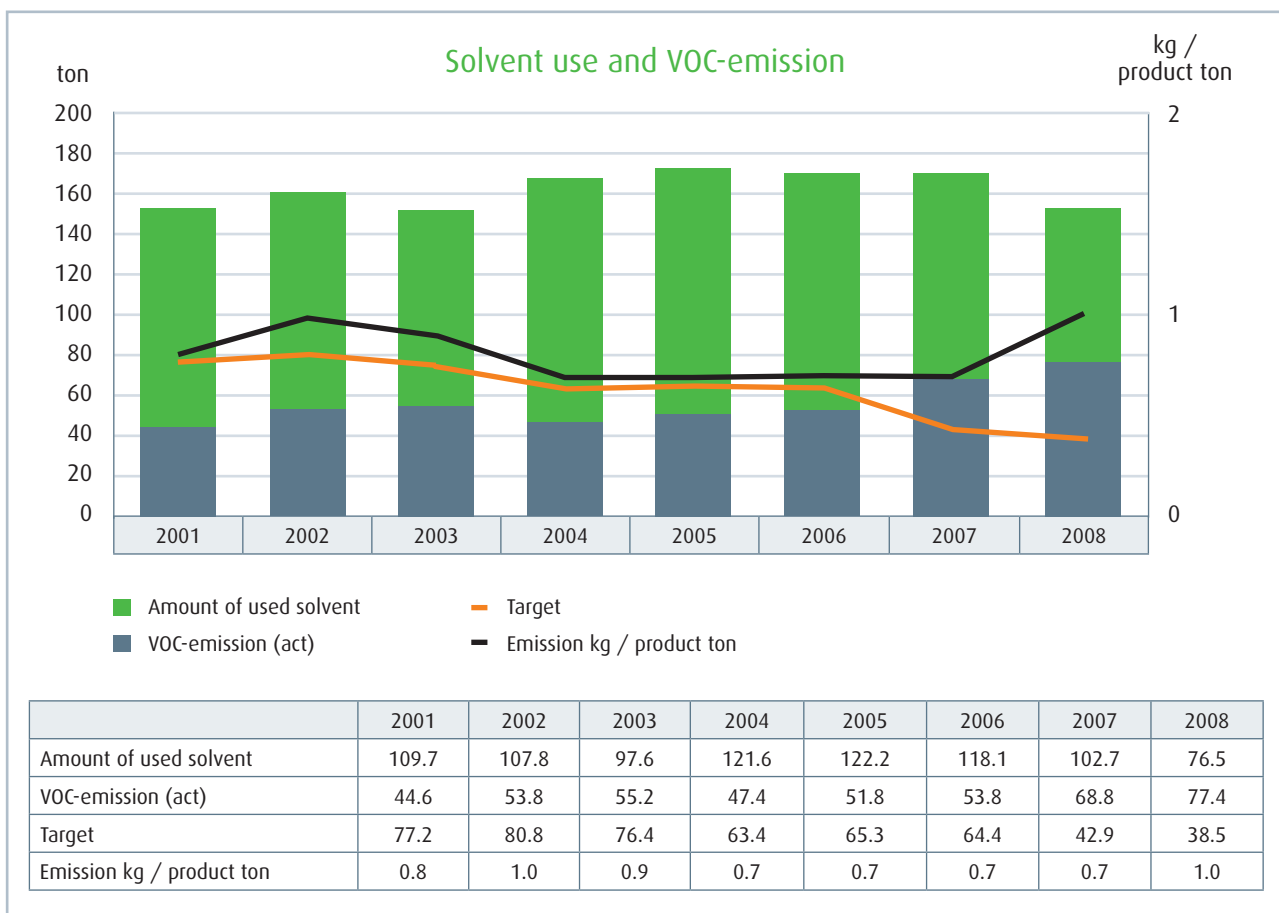


SOLVENT EMISSIONS IN PRODUCTION

In the rubber industry solvents are used as different glues to increase adherence. Volatile organic compounds increase lower atmosphere ozone and for that reason EU has set targets to decrease solvent emissions. Nokian Tyres hasn't been able to achieve the emission limit value in accordance with VOC-directive, which is at most 25% of total amount of used solvents. The VOC-emission was 50% in 2008. Production stops increased the emission in those production lines on which VOC-emissions can be gathered and purified. According to environmental permit VOC-emission could be at most 55 ton/year, which means that Nokian Tyres exceeds the emission limit given in the environmental permit.

Nokian Heavy Tyres had a project in progress in 2008 to decrease the use of solvents. Several tests were made during the project both with replaceable substances and possible changes in the production technology but still the usable method to decrease VOC-emissions weren't found. The only option seems to be leading the general ventilation (108,000 m³/h) of tyre building machine section's to purifiers if the suitable purifier could be found.

There is going to be stops in Nokian Heavy Tyres production during the year 2009 which will keep the total amount of emissions essentially lower compared to the year 2008.



REPORTED DISTURBANCE AND FEEDBACK 2008

Reported disturbance and feedback 2008	Cause
Plant break	Catalytic incineration plant was passed 19.5 hours because of the failures in logic, frequency transformer and inward relief valve.
Oil leak to the yard area	During the work with mixing machine's gearing 100 litres paraffin oil leaked to the yard area. The oil was soaked with absorbent material and cleaned up mechanically.

The incidents were immediately reported to the municipality of Nokia city, Pirkanmaa Regional Environmental Centre and the oil leak also to the Safety Technology Authority (TUKES).

KEY ACTIONS IN 2008

Object	Area	Objective	Schedule	Implementation
Waste	Total amount	< 100 kg / product ton	12/08	109.5 kg / product ton
	Non-vulcanised rubber waste	PC1 < 2.71% PC2 < 3.28 kg/tyre total amount < 2,750 t, where > 80% to recycling	12/08	2.71% 3.51 kg/tyre 3,123 t, > 99%
	Landfill waste	< 18% of the total amount	12/08	5.2%
Air emissions	VOC-emission, project in Nokian Heavy Tyres	< 25% of purchased solvents, project in Nokian Heavy Tyres according to the plan	12/08	50% Implemented according to the plan
Hazardous waste	Decreasing the amount	< 3.3 kg / product ton	12/08	4.1 kg / product ton
REACH	Implementing the REACH-regulation	Implementing the regulation according to the project plan	12/08	Implemented according to the plan
Energy	Energy analysis in the factory	Analysis done by June	06/08	Done 6/08, information meeting 8/08
Communication	Increasing personnel environmental awareness	Actions according to the environmental plan	12/08	8 actions of 12 implemented

KEY ACTIONS IN 2009

Object	Area	Objective	Schedule
Waste	Total amount	< 100 kg / product ton waste % PC1 < 3.65% (4.12%* 2008) PC2 < 2.20% (2.21% 2008) PC4 < 0.3% /0.51% 2008)	12/09
	Non-vulcanised rubber waste - reduce ahvalli on tread lines (PC1) - reduce bead wire-apex waste (PC1)	Total amount < 2,810 t (3,123 t 2008) 325 g/tyre (454 g/tyre 2008)	12/09 6/09
		15 g/tyre (36 g/tyre 2008)	8/09
	Developing waste paper handling	Bulk transportation to compressed transportation	8/09
Air emissions	VOC-emission, negotiation with authorities, studies with external specialists	Emission to be max 25% of purchased solvents. To change total emission value to 95 ton. Project plan by Nokian Heavy Tyres	12/09
Chemical monitoring safety	Decreasing amount of support chemicals (trade names): project with purchase	< 800 accepted, active trade names on KTT4-programme (1181 accepted on the end of 2008)	12/09
Wastewater	Fire extinguishing water survey's continuation	Actions listed on survey	12/09
Communication	Increasing personnel environmental awareness	Actions according to the environmental plan	12/09

* Waste % calculation has been changed on PC1 at the beginning of 2009

Non-vulcanised rubber waste utilisation in Russian factory

Utilisation possibilities in Russia have not been found for the non-vulcanised rubber waste. The possibility to bring the non-vulcanised rubber waste to Finland was investigated during the year 2008. According to Finnish Environmental Centre there are no obstacles of bringing rubber waste for utilisation to Finland. The import of the non-vulcanised waste to Finland will be started as soon as Russian authorities give import permit for concerned waste to the Vsevolozhsk factory. Scrap tyres are collected to utilisation in Russia, although there are still some challenges in their recycling.

REACH

EU's new REACH-regulation sets new obligation to the importers, producers and users of the substances. Also the producers of the articles should know the chemical composition of their products. The producer or importer has to give a statement of product's SVHC-composition (Substances of Very High Concern) if requested. Nokian Tyres doesn't use any SVHC-substances in its own production.

During the year 2008 there was active discussions going on with the deliverers concerning the completing the obligations. The delivers were obligated to implement pre-registrations according to the REACH-regulation. The questionnaire was delivered to stud, rim and valve deliverers concerning the SVHC-composition in their products. According to investigation SVHC-substances are not used in any articles used in our products. For some parts the clarification is still in progress.

It was clarified, that contract manufacturers don't use any SVHC-substances in their products. Contract manufacturers are required to stop using carcinogenic high aromatic oils by June 2009. According to EU-directive tyre producers must stop the use of high aromatic oils by the year 2010. Nokian Tyres was the first tyre manufacturer in the world who stopped the use of high aromatic oils already in the year 2005.

Accredited 15.4.2009

Keijo Salo

Main Reviewer DNV Certification Oy Ab, FI-V-002

The published update of the EMAS report complies with the EU's EMAS Regulation