Emas Report 2007

Nokia plant

As an authorised auditor, DNV Certification Oy Ab, FI-V-0002 has, on 7 May, 2008, stated that Nokian Tyres Plc's environmental system and the 2007 update of the EMAS report comply with the EU's EMAS regulation (EY 761/2001). This English version is based on the Finnish text.

ENVIRONMENTAL IMPACTS OF PRODUCTION

Not only rubber

In addition to the rubber compounds, we use steel and textiles as the reinforcing materials when manufacturing tyres. Small amounts of various chemicals, such as carbon black and sulphur, are used when manufacturing rubber compounds. We purchase our raw materials from globally well-known and reliable suppliers. In 2005, Nokian Tyres was the first tyre manufacturer to completely eliminate high-aromatic, or HA, oils from its production processes. Furthermore, we do not use any carcinogenic chemicals or chemicals classified as toxic (T) in our production processes.

Oils are used in rubber compounds as the plasticisers, i.e., the oils have an impact on the grip of a tyre, among other things. There may be up to twenty per cent of oils in a rubber compound. In addition to low-aromatic mineral oils, Nokian Tyres uses only vegetable-based oils in its products. Thus, no oils classified as hazardous are used.

Green tyres

The birch-leaf symbol and the text "Naturally Nokian Tyres" indicate that our products are environmentally friendly; for example, made using purified oils only and no toxic chemicals at all.

The birch-leaf symbol is used on tyre and tread labels, as well as various marketing materials, such as brochures and posters.

Environmental impacts of production 2007

SOLVENT EMISSIONS, I.E. VOC
56 t/a

ODOUR

PARTICLES I.E. DUST
< 1 t/a

NOISE
< 50 dB

INPUT

- Energy ~203 GWh
- Air
- Water
  municipal system 196 m^3/d
  Nokianvirta river 24,300 m^3/d
- Raw materials
- Semi-finished goods

PRODUCTS

- 83,000 t tyres and treads

WASTE

- Landfill waste 99 t
- Utilisation 6,900 t
- Non-vulcanised scrap rubber 1,700 t
- Hazardous waste 297 t

WATER

- Into the sewage system 200 m^3/d
- Into Nokianvirta river ~24,000 m^3/d

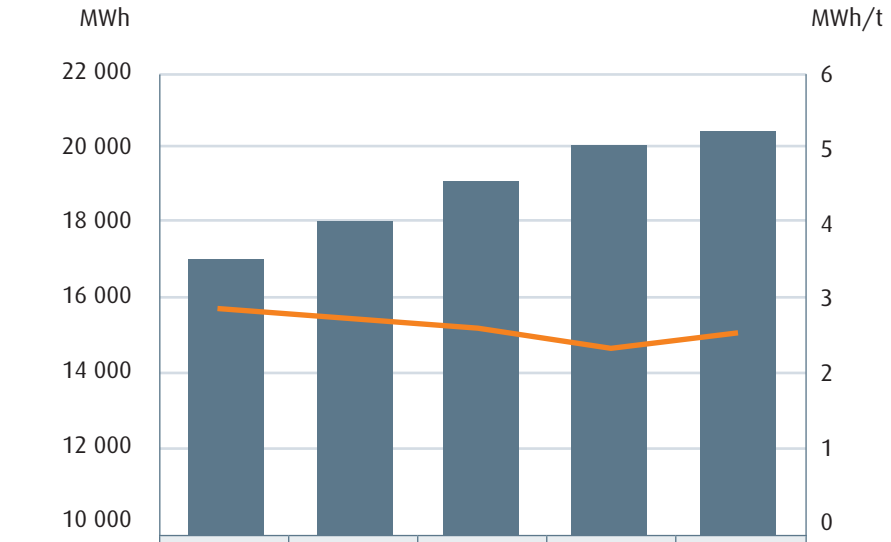
d = day
m^3 = cubic metre
a = year
t = ton

ENERGY CONSUMPTION

The total energy consumption at the Nokia plant amounted to 203,440 MWh in 2007. The use of steam increased 7.5% on the previous year. Despite the continuous growth of production, we have achieved better efficiency in energy consumption: the amount of energy consumed per one kilo of produced tyres has decreased. The plant's annual energy consumption corresponds to the electricity consumption of approximately 50,860 people in households.

Electricity accounts for 45% of the energy consumed by Nokian Tyres, steam for 32% and industrial water for 23%. All of the electricity is generated using hydropower. An extensive energy analysis, i.e. a survey of targets where energy consumption could be further reduced, was initiated in 2007.

Energy consumption 2003–2007



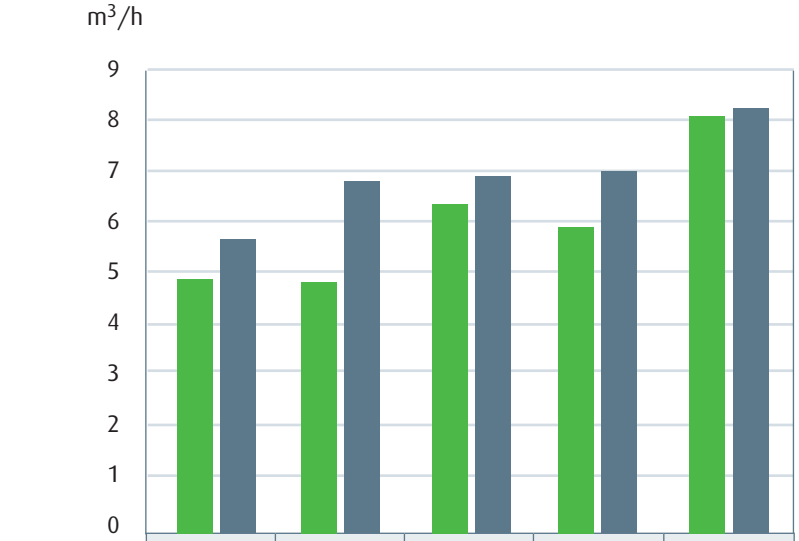
	2003	2004	2005	2006	2007
MWh	170 889	179 750	193 065	201 049	203 440
MWh/t	2,83	2,63	2,53	2,31	2,50

WATER AND EFFLUENT FLOWS

Large amounts of water are used for cooling in various tyre manufacturing processes. The Nokia plant takes its cooling water from the adjacent river Nokianvirta. Used cooling water, as well as rain water, is first run through oil separating wells and then back to the river. The cooling water is never in contact with any chemicals used in the manufacturing process, and therefore it can be returned to the river. No numeric targets can be set for cooling water consumption as it depends on the temperature of the river water. The amount of cooling water released from the plant to the river totalled 24,042 m^3 per day in 2007. The waste water of the plant (process and sanitary water) is pumped to the Nokia city sewage treatment plant. In 2007, the volume of waste water pumped to the city sewage system was 200 m^3 per day. Consumption of water taken from the Nokia city water supply network stood at 196 m^3 per day.

The waste water pumped to the city sewage system and the cooling water run to Nokianvirta are tested annually in accordance with the environmental permit (since 2007). The tests conducted in June 2007 showed that the water in the cooling water sewage was clean and no deviations from normal waste water qualities were detected in the plant's waste water. A plan concerning the recovery and treatment of fire fighting water must be prepared by the end of 2008.

Water and effluent flows 2003–2007

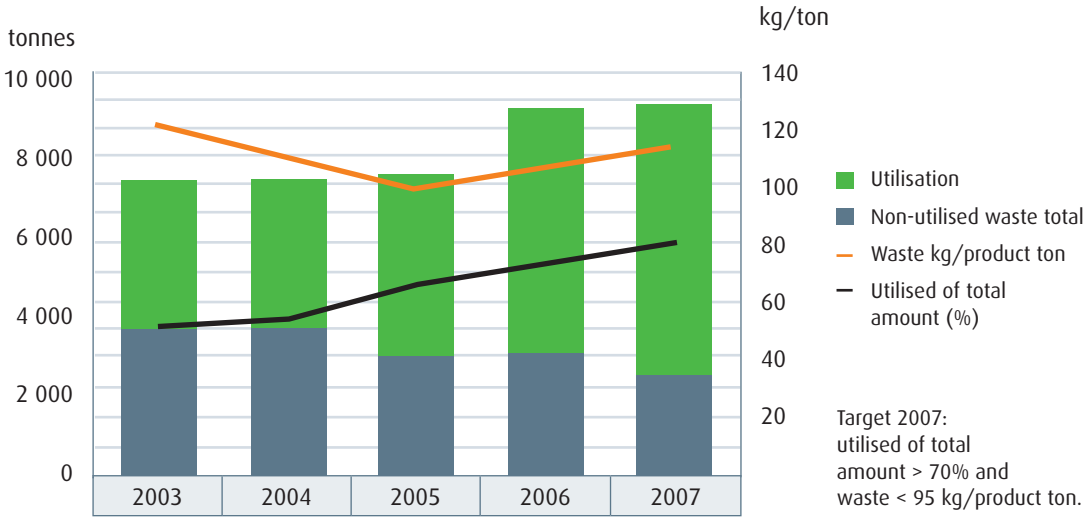


	2003	2004	2005	2006	2007
Water	4,98	4,82	6,46	5,96	8,17
Effluent	5,85	6,07	6,97	7,06	8,35

WASTE

The amount of waste in proportion to production has increased slightly despite the various waste reduction projects. A total of 9,003 tonnes of waste were generated at the plant in 2007. The amount of non-sorted landfill waste has declined year by year.

Total amount of waste 2003-2007



	2003	2004	2005	2006	2007
Non-sorted waste	456	409	121	113	99
Non-utilised waste total	3 565	3 454	2 705	2 601	2 100
Utilisation	3 835	3 981	4 811	6 350	6 904
Utilised of total amount (%)	51,8	53,5	64,0	70,9	76,7
Waste kg/product ton	123	109	99	103	111

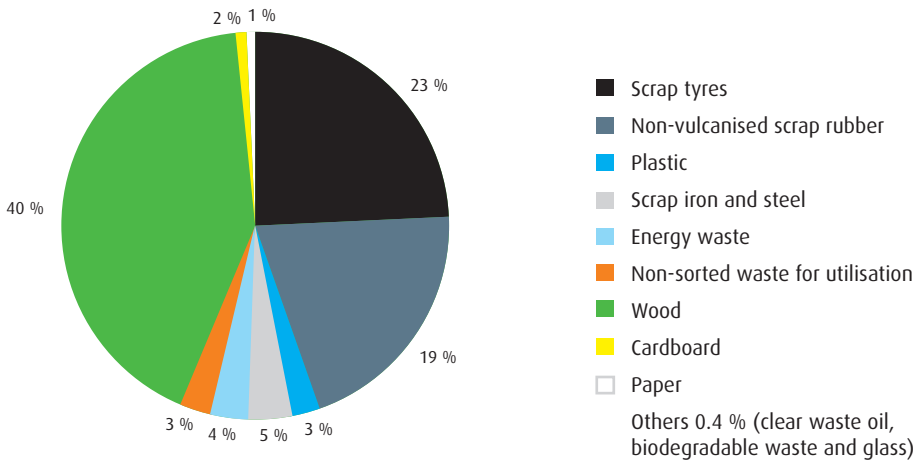
Waste delivered for further utilisation

Waste utilisation in the form of material and energy has increased. For example, a new co-operation partner has been found for the utilisation of non-vulcanised scrap rubber.

The figures featured in the graph do not include the non-vulcanised scrap rubber recycled within the plant or the buffering dust that can be reused as compound material. The amount of internally recycled material totals approximately 3,000 tonnes per year; if this were included in the graph, the utilisation rate would increase as much as 10%. In 2007, a total of 77% of the waste, i.e. 6,904 tonnes, was taken for reuse.

As the graph shows, quite various waste is delivered for further utilisation. The existing (or developed) 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.

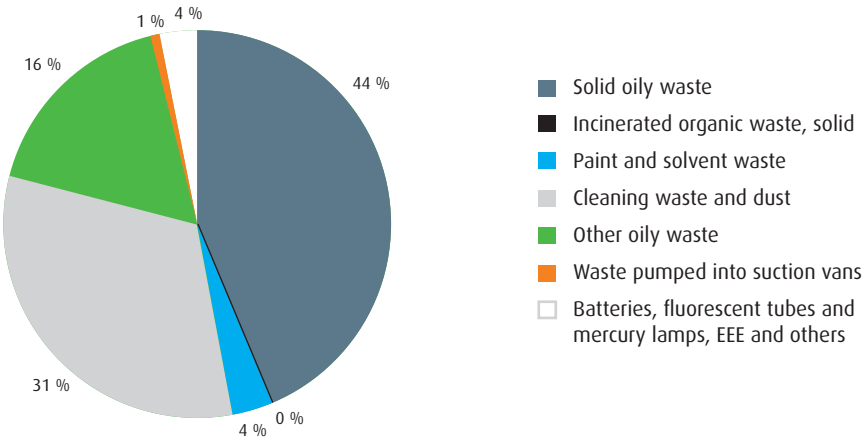
Waste utilisation 2007



Division of problem waste in 2007

The total amount of hazardous waste in 2007 was 297 tonnes, which corresponds to 3.66 kg/product ton. The target level was 3.0 kg/product ton, which was not achieved. The amount of hazardous waste has increased particularly due to oily waste and chemical waste. All problem waste is taken to authorised problem waste processing plants.

Division of problem waste in 2007



EMISSIONS INTO THE AIR AND NOISE

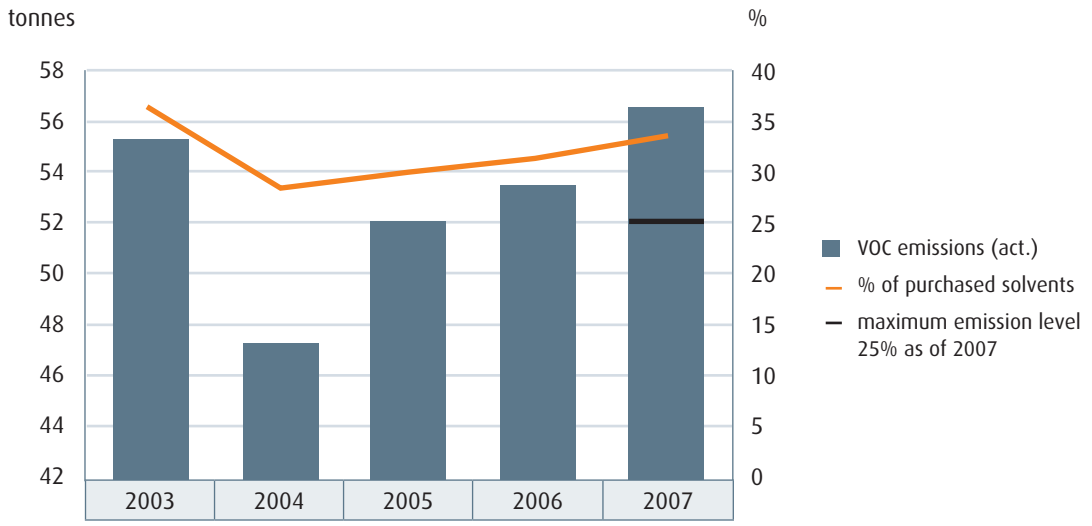
Solvent emissions, i.e. volatile organic compounds (VOC) constitute the most significant emissions into the air from the operations of Nokian Tyres. Further emissions into the air include dust and odour, which are generated in rubber compound mixing and tyre curing.

Solvents are normally used in the rubber industry as adhesives. The EU has set European tyre manufacturers objectives for reducing solvent emissions.

In accordance with this so-called VOC directive and the environmental permit, Nokian Tyres has so far been able to reduce the solvent emissions to the atmosphere by means of an incinerator and by replacing solvents with other agents. According to the VOC directive, emissions may total no more than 25% of the purchased solvents, which corresponds to 37.3 tonnes. In addition, the environmental permit sets a maximum emissions limit of 55 tonnes. The target values became effective in 2007.

In 2007, Nokian Tyres' solvent emissions totalled 56.4 tonnes, i.e. 33% of the purchased solvents. The company does not meet the permit requirements. The company takes this matter seriously and is searching for solutions to reach the target level set by the EU. Authorities have been informed of this and there is ongoing discussion on the topic.

Solvents discharged from production 2003-2007



	2003	2004	2005	2006	2007
tonnes	55,2	47,38	51,80	53,77	56,39
% of purchased solvents	36	28	30	31	33

Noise

The noise emanating from the plant to the surrounding areas is measured on a regular basis in accordance with the environmental permit. The next survey will be conducted in 2009. The environmental permit granted to Nokian Tyres states that the daytime noise level may not exceed 55 decibels; the night-time limit is 50 dB. According to the noise survey conducted in 2004, the plant complies with the terms set forth in the environmental permit. As stipulated in the environmental survey, a new noise survey will be conducted by July 2009.

REPORTED DISTURBANCE AND FEEDBACK 2007

Reported disturbance and feedback 2007	Cause
Detergent leak into river Nokianvirta	The cause was not found despite thorough searching. The incident was immediately reported to the municipality of Nokia and Pirkanmaa Regional Environment Centre.

KEY ACTIONS IN 2008

Object	Area	Objective	Schedule
Waste	Total amount of waste	< 100 kg/product ton (actual figure for 2007 was 110.6 kg/product ton)	12/08
	Non-vulcanised scrap rubber	PC1 < 2.71 % (2007: 2.96%) PC2 < 3,28 kg/tyre (2007: 3.18 kg/tyre) Total < 2,750 t, of which >80% to recycling (2007: 3,041 t, 44%)	12/08
	Reduction of landfill waste	<18% of total waste (2007: 23.4%)	12/08
Emissions into the air	VOC emissions, project at Nokian Heavy Tyres	Emissions max. 25% of the purchased solvents (2007: 33%); According to NHT's project plan	12/08
Hazardous waste	Hazardous waste reduction; project at the mixing department	< 3.3 kg/product ton (2007: 3.66 kg/product ton)	12/08
REACH	REACH (Registration, Evaluation, Authorization of Chemicals) regulation implementation	Implementation of the chemical regulation in accordance with a separate project plan	12/08
Energy	Energy analysis at the plant	Analyse completed by June 2008	06/08
Corporate communica-tion	Increasing environmental awareness among staff (various measures)	Implementation in accordance with the environmental programme	12/08