

# ENVIRONMENTAL REPORT 2011



# ENVIRONMENTAL MANAGEMENT SYSTEM



Asko Appliances' environmental management system is certified to the ISO 14001 environmental management standard. The system supports the company's efforts towards continuous improvement in environmental impact, and in developing products that are easy on the environment. The environmental management system also encompasses the licence and self-audit programme issued for the operation in line with the current Environmental Code.

## Auditing and inspections

DNV performed two external audits during the year. There are also ongoing internal audits in various environmental areas. Vara Municipality (the environment and planning department) conducts biannual inspections and follows up environmental licences, and the Swedish Rescue Services conduct regular inspections on accident safety and fire/explosion safety.



## High productivity and environmental awareness

During the year, the plant outside Vara, Sweden, produced some 237,000 dishwashers, washing machines and tumble dryers. Asko Appliances is working intensively to ensure that our appliances are resource and energy efficient, and we are the only manufacturer to offer dishwashers and washing machines bearing the Swan mark – the Nordic Environmental Label.



## Nordic Swan-labelled washing machines and dishwashers

A Nordic Swan-labelled machine is characterised by low energy consumption, low noise and low water consumption. The ecolabel also encompasses environmentally hazardous substances that may be present in different components – an important aspect when it comes to recycling materials from old machines. Plastic components must not, for instance, contain any flame proofing agents that may cause cancer or affect reproduction.

Water is in short supply in many areas of the world, and low water consumption is therefore an important factor when choosing a domestic appliance. Asko Appliances is a world leader in water-efficient dishwashers and washing machines, and low water consumption is also important in reducing energy consumption. Our washing machines use a technology that senses the amount of laundry and adapts the water level and cycle time accordingly. Low energy consumption and high spin efficiency in the washing machine in turn save energy in the tumble dryer.

Metal and plastic parts in all machines are labelled with material type and an item number, and are thereby ready for recycling. More than 90% of our machines can be recycled (for materials or energy recovery).

## A BRIEF ENVIRONMENTAL HISTORY

### Production and site management

Painting: As early as 1990 we stopped wet lacquering metal parts in favour of powder painting, thereby reducing solvent emissions from 50 tonnes a year to virtually zero. We have also long since discontinued electropolishing and trichloroethylene degreasing. We are striving to achieve closed systems in order to minimise resource consumption and reduce emissions into the water and ground. The degreasing plant is one such example of a closed system. The painting pre-treatment stage was discontinued in 2001, which led to a reduction in chemical consumption of 10 tonnes, a reduction in hazardous waste to landfill of 50% and 59% less discharge into River Jungån. Moreover, we are continuously developing ventilation systems with computer control, recycling and other measures. For several years now ASKO has been exclusively using green electricity from hydro and wind power:



## IMPLEMENTED AND ONGOING IMPROVEMENTS

### Production and site management

#### Implemented improvements

- Adapted so that the drying equipment for the compressed-air system operates during working hours rather than round the clock. Leads to lower electricity consumption.
- Installed a control system for 7 ventilation units, which means ventilation is controlled based on current needs. Leads to lower electricity and oil consumption, and lower noise levels.
- Control system altered so that heating is now primarily via our smaller boiler. Leads to lower energy consumption and more optimal boiler operation.
- Introduced new temperature standard – reduces oil consumption.
- Introduced new lighting control in several halls. Leads to lower electricity consumption.
- Improved existing door control system – reduces oil consumption.
- Reduction of water consumption by around 30% on the previous year. This improvement is largely due to a transfer to municipal water.
- A new environmental licence with new terms has been approved by the County Administrative Board. The environmental licence will come into force in 2012.

#### Ongoing investigations/projects

The factory is constantly striving to reduce its environmental impact. Investigations are under way in a number of areas, for instance introducing a closed system for outgoing process water, energy mapping, and installing waste-energy recovery on compressors.

#### New group organisation

ASKO has introduced a group organisation with environmental and quality responsible personnel. These are responsible for conducting and developing environmental work in each work group. We have also appointed environmental coaches to support and develop our environmental responsible persons in their roles. By using everybody's environmental expertise, we can see a tremendous drive for environmental improvements and a great commitment to environmental issues. The target for 2012 is an ambitious one: more than 100 environmental improvements should be carried out this year.

#### Research and development

Work is constantly under way to reduce the electricity, water and chemical consumption of our machines.

#### Implemented improvements

##### Washing machines:

During the year ASKO has further reduced energy consumption by around 10%. The optimisation process has also encompassed water consumption. Moreover, ASKO has increased the number of asthma and allergy-labelled and Nordic Swan-labelled washing machines.

##### Dishwashers:

ASKO has launched a new generation of dishwashers which reduce energy consumption by 3-10% compared to the previous generation (depending on the model and market). The company has also expanded its range of Swan-labelled dishwashers.

## Other areas

### Environmental assessment of ASKO's products

ASKO's products are environmentally assessed according to a standard based on environmental requirements in the construction industry. The assessment considers the environmental impact of constituent components, degree of recycling and so on. Our products have achieved high ratings in the assessment, which means the products are recommended as suitable for environmentally conscious buyers.

### Eco design

ASKO works continuously with Eco design; all its machines meet prevailing requirements in directives and regulations. The directive places demands on energy consumption, standby consumption and other areas. The company is also helping to influence future requirements, partly by taking part in the development of new environmental criteria from various organisations, such as Ecolabelling Sweden and the Swedish Asthma & Allergy Foundation. New technology is evaluated and tested to reduce environmental impact. Ongoing projects include heat pump technology for tumble dryers and district heating technology for dishwashers, washing machines and tumble dryers.



## MONITORING ENERGY CONSUMPTION

During the year, great efforts have been made to reduce energy consumption, which has led to excellent results. In 2011, we have monitored the following areas:

### Electrical energy

The electrical energy used to power production processes, lighting and other equipment. The result was 34.1 kWh per machine, which is a reduction in power consumption of about 6% on the previous year.

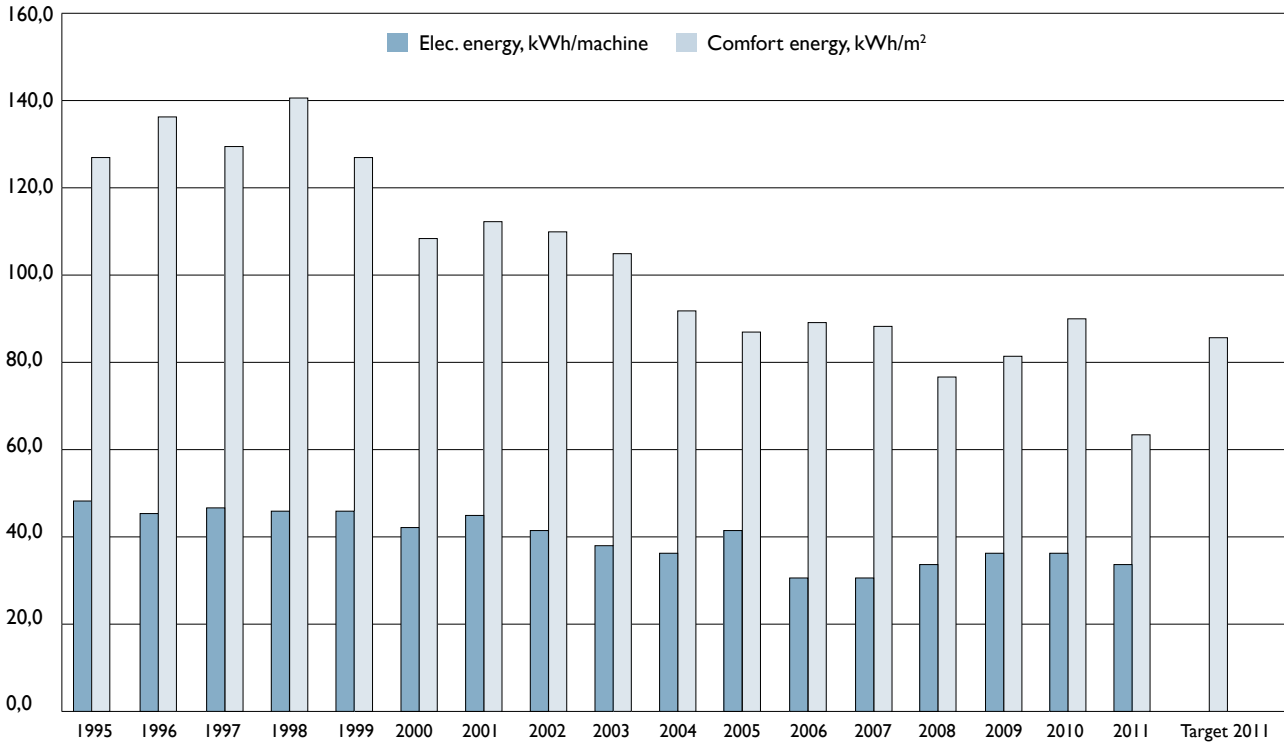
### Comfort energy

Comfort energy is the energy consumption in oil boilers, and is primarily used for heating. The result was 63.1 kWh/m<sup>2</sup>, far below the set target of 86.1 kWh/m<sup>2</sup>. Measures in production and site management have led to a reduction in oil consumption of about 30% on the previous year.

See Monitoring Energy Consumption on the back page. ➔



MONITORING ENERGY CONSUMPTION



ASKO INHOUSE

Licence and self-audit programme

Parameter		Results 2011
Dust in outgoing air powder painting	Max 10 mg/Nm <sup>3</sup> dry gas	Readings fell below 1 mg/Nm <sup>3</sup> dry gas*
Sulphur dioxide emissions	< emissions from oil with sulphur content of 0.5%	Low-sulphur oil (<0.05%) is used
Nitrogen oxide emissions	<150 mg NO <sub>x</sub> /MJ fuel, guide value	Boiler 1: 52 mg NO <sub>x</sub> /MJ Boiler 2: 47 mg NO <sub>x</sub> /MJ
Dust particle emissions	< Bacharach 3, guide value	Continuous monitoring shows an approved result Boiler 1: Bacharach 0-1 Boiler 2: Bacharach 0-1
Noise (Measured at boundary with neighbouring plots in 2010)	< 55 dB (A) weekdays, daytime < 45 dB (A) night-time < 50 dB (A) other times	On measuring - 10 47 dB(A) On measuring - 10 45 dB(A) On measuring - 10 45 dB(A)
Emissions into River Jungån	Total phosphorus <12 kg/yr, limit	<0.091 kg/yr
	Copper <6 kg/yr, limit	<0.021 kg/yr
	Nickel <12 kg/yr, limit	<0.076 kg/yr
	Zinc <6 kg/yr, limit	0.046 kg/yr
	Suspended substances <15 mg/l, guide value	<5.0 mg/l
	Wastewater pH of 7.5-10, guide value	pH of 8.4-9.2 Mean: pH 8.72
	Volume of discharged wastewater <8 m <sup>3</sup> /h	0.5 m <sup>3</sup> /h

\* Measured in 2007

Asko Appliances AB has a high level of environmental awareness, as evidenced for example by staying within the licence values with a good margin.

*Asko Appliances AB is a proactive domestic appliance company, and part of the Gorenje Group. The company is based in Vara Municipality, western central Sweden. We are a turnkey enterprise, offering everything from development to after sales. The company produces high-end quality products in the competitive domestic appliance sector. Approximately 80% of our production output is exported to some 30 countries. Annual net sales total SEK 979 million and the company has approximately 510 employees.*

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