

ENVIRONMENTAL performance in 2014



UPM Caledonian



Through the renewing of the bio and forest industries, UPM is building a sustainable future across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Paper Asia, UPM Paper Europe and North America and UPM Plywood. Our products are made of renewable raw materials and are recyclable. We serve our customers worldwide. The group employs around 20,000 people and its annual sales are approximately EUR 10 billion. UPM shares are listed on NASDAQ OMX Helsinki. UPM – The Biofore Company – www.upm.com

UPM Caledonian

UPM's Caledonian mill is situated in Irvine on the West Coast of Scotland approx. 50 kilometres southwest of Glasgow. In production since April 1989 the Caledonian mill is capable of producing 280,000 tonnes of lightweight coated paper (LWC) for printing magazines, catalogues, brochures. The mill has a Biomass Combined Heat and Power (CHP) plant, a single paper machine line, a debarking plant, a pressurised groundwood (PGW) mechanical pulp mill and a primary effluent treatment plant. Effluent is then treated further in the neighbouring Municipal Waste Water Treatment Plant operated by Scottish Water.

Environmental issues are an integral part of everyday operations. Targets are set as part of our annual planning process with our key environmental aspects and impacts identified through our regulatory and business requirements to demonstrate continuous improvement. These are followed closely through the year. Our objective is to produce attractive and competitive paper with the lowest possible overall environmental impact. Through open communication we actively provide our customers, employees, environmental authorities, as well as our local community with information on environmental issues and knowledge of the mills operations.



UPM Caledonian Environmental Performance in 2014 is a supplement to the Corporate Environmental Statement of UPM's pulp and paper mills (available at www.upm.com) and provides mill-specific environmental performance data and trends for the year 2014. The annually updated mill supplements and the UPM Corporate Environmental Statement together form the joint EMAS Statement of UPM Corporation. The next Corporate Environmental Statement and also this supplement will be published in 2016.

Production capacity	up to 280,000 tonnes of paper
Personnel	295
Products	Coated Magazine Papers: UPM Cote UPM Ultra UPM Ultra Silk
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 9001 – Quality Management System Standard ISO 14001 – Environmental Management System Standard OHSAS 18001 – Occupational Health and Safety System Standard PEFC™ Chain of Custody – Programme for the Endorsement of Forest Certification FSC® Chain of Custody – Forest Stewardship Council <i>All certificates can be found from UPM's Certificate Finder (available at www.upm.com/responsibility)</i>
Environmental labels	EU Ecolabel



The mark of responsible forestry

For FSC products, visit www.fsc.org



For PEFC products, visit www.pefc.org



FI/11/001

Environmental year 2014

This Report gives information on the Mill's environmental performance and covers the most significant environmental impacts – emissions to Air and Water; Waste and Material consumption.

UPM Caledonian operates within a Pollution Prevention and Control (PPC) Permit which is transposed from the European Industrial Emissions Directive. Our Annual Compliance assessment by SEPA was judged to be 'Good' for 2014. This rating compares performance against Environmental Limit Conditions and Environmental Management Conditions which are detailed within the PPC Permit. There were no breaches reported to SEPA (Scottish Environment Protection Agency) in 2014 against our PPC permit and only one instance of exceeding the effluent total suspended solids limit contained within the municipal effluent treatment agreement.

Energy

Energy management continues to be a key area of focus with the EMS (Energy Management System) being fully operational in 2014. This system enables each area of the site to monitor the energy use and consider where a reduction in energy use can be considered. The Energy Savings Opportunity Scheme (ESOS) comes into effect in 2015 which will require a complete energy audit of the site to be carried out and to identify opportunities for energy savings.

Project Work

A study was undertaken by a summer student during 2014 investigating the efficiency of the clarifier within the effluent treatment plant which indicated excellent efficiency and enabled re-assessment of mass balance calculations. Another project undertaken was that of optimizing the operation of the pigment recovery plant which processes the sludge from the effluent plant before combustion in the CHP boiler. This resulted in a reduction in chemical usage and modifying the operating hours of the plant.

Biofuels Sustainability

To ensure that the fuels used in the CHP plant are renewable and that the plant meets the requirements of good quality CHP the site must comply with a Fuel Measuring and Sampling agreement

(FMS) which is authorized by the government body OFGEM. A new FMS was agreed in 2014 and from 2015 the site must submit a biomass sustainability report which requires third party verification. This will ensure that all the fuels used onsite meet the Woodfuel Advice Note (Issued by DECC: Department of Energy and Climate Change).

Local Environment

UPM Caledonian is currently involved in a local conservation project along with other businesses, golf clubs and the Scottish Wildlife Trust with the aim of providing a suitable habitat for the Small Blue butterfly (*Polyommatus icarus*). In the spring of 2015 an area of the land within the site will be planted with a particular plant species to encourage the survival of these butterflies.



Handwritten signature of Gordon Mitchell in blue ink.

Gordon Mitchell, General Manager



Handwritten signature of Tom Dunn in blue ink.

Tom Dunn, HSE Manager

Air

Air emissions in 2014 was another good year with a reduction in several parameters in comparison to 2013 with no failures against the permitted ELV's (emission limit values).

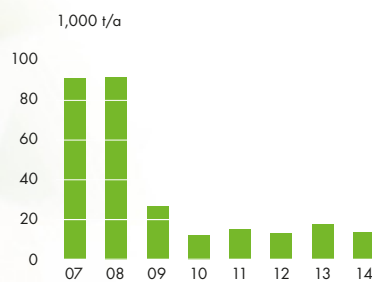
Although there were some periods of unexpected downtime in the CHP plant which resulted in the use of natural gas in the auxiliary boiler the overall fossil CO₂ emissions dropped to a lower level in 2014.

The PPC variation VN10 to combust a higher volume of recycled biofuels which came into effect in 2013 had the potential for an increase in chlorine emissions. A detailed assessment of the efficiency of

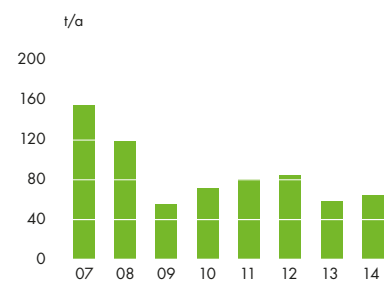
the abatement techniques used was carried out in 2014 to confirm that the emissions of chlorine and other acid gases can be controlled by these abatement techniques. The chlorine emissions from the CHP plant were lower in 2014 when compared to 2013.

There was a slight increase in the particulate emissions in 2014 from the CHP plant which was primarily due to the bag house filters approaching the end of their operational life. These filters are used to capture the particulates from the flue gases with a recommendation of replacement every 5 years. One set of filters was replaced in 2014 with the remainder due for replacement in 2015.

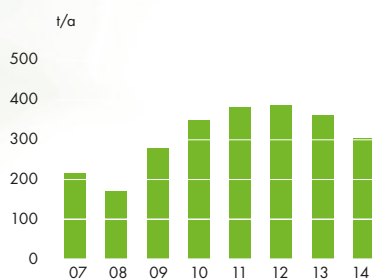
FOSSIL CARBON DIOXIDE, CO₂



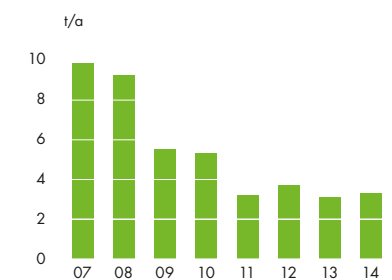
SULPHUR DIOXIDE, SO₂



NITROGEN OXIDES, NO_x



DUST



t/a refers to tonnes per annum

Water and Effluent

Both fresh water usage and effluent volumes are of key focus in the papermaking process and excellent progress was made with a reduction on both for the third year running. The reuse of clean water effluent from the CHP continued in 2014 which enabled these volume reductions.

Excellent effluent performance was achieved in 2014 with a reduction in COD (chemical oxygen demand) and very little changes to total suspended solids and BOD (biological oxygen demand) which were both at good levels. The site had one Clean Run failure against effluent solids as a result of operator error during a start up of the papermaking process.

During 2014 a consultant was employed to investigate the effluent treatment options available to UPM Caledonian in the forthcoming years, with the aim of reducing cost and the volumes of effluent requiring secondary effluent treatment.

Throughout 2014 a trial was carried out to treat the effluent with a computer controlled microbial fermentation unit which delivers a large amount of active, naturally occurring safe bacteria directly into the effluent stream. The bacteria then goes to work on the waste water, reducing; grease, fats and oil build-up and ultimately the COD load. Further work will continue in 2015.

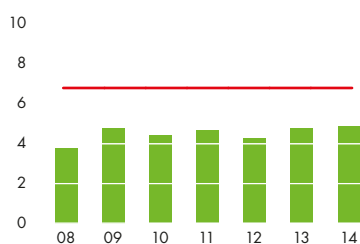
Waste

Waste (Scotland) Regulations which came into effect 1st January 2014 with the aim of recycling 75% of all wastes by 2025. In conjunction with our waste contractor a significant reduction in waste to landfill was achieved, with the majority of wastes being recovered or recycled for alternative use.

Flyash waste which is produced during combustion in the CHP boiler is classified as hazardous waste however this is used in the consolidation of liquid hazardous wastes at the waste contractor's site to minimise the environmental impact.

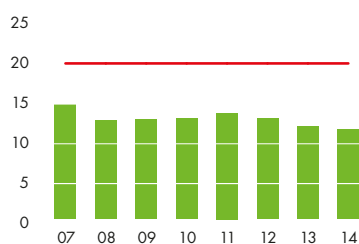
BIOLOGICAL OXYGEN DEMAND, BOD₅

average tonnes/day



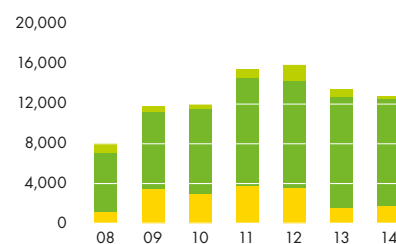
CHEMICAL OXYGEN DEMAND, COD

average tonnes/day



SOLID WASTE

BDt/a

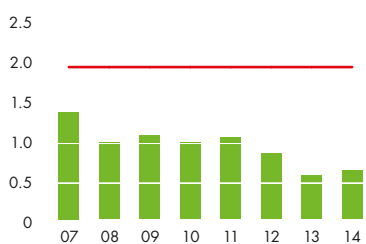


■ Landfill
 ■ Ash
 ■ Recovered/Recycled

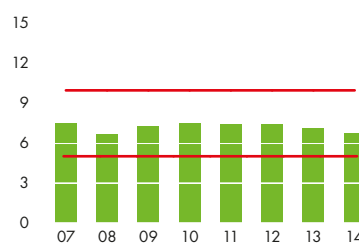
All waste volumes based on dry tonnes

TOTAL SUSPENDED SOLIDS, TSS

average tonnes/day



EFFLUENT PH



— Limit value

— Upper and lower limit



Environmental parameters 2014

The figures related to production as well as raw material and energy consumption are published as aggregated figures on group level in the UPM Corporate Environmental Statement.

Production capacity	Paper LWC	280,000 t
Raw materials (BDT)	Mechanical Pulp Chemical Pulp Minerals (pigments & fillers) Binders (starch & latex)	See UPM Corporate Environmental Statement for more information
Energy	Biogenic Fuels Fossil Fuels Electricity	See UPM Corporate Environmental Statement for more information
Emissions to air	Sulphur Dioxide, SO _x Nitrogen Dioxide, NO _x Carbon Dioxide (fossil) Carbon Dioxide (biogenic) Particulates	64 t 302 t 13,513 t 277,919 t 3 t
Water intake	Fresh Water	3,321,495 m ³
Discharges to water	Chemical Oxygen Demand (COD) Total Suspended Solids Biological Oxygen Demand (BOD ₅) Effluent Volume	4,173 t 225 t 1,773 t 2,779,157 m ³
Waste*	Landfill Materials Recycled Materials Recovered Materials (includes Ash) Hazardous Waste	18 t 238.3 t 12,262.2 t 11.2 t
Size of mill area		33.1 ha

* Dry weight



The CHP plant which was commissioned in 2009 has had a major impact on fossil fuel emissions. The plant produces all of the mills heat requirements and a significant proportion of the mills electricity requirements.

Performance against targets in 2014

TARGET	ACHIEVEMENT	COMMENTS
Clean Run Deviations – Zero category 4 or 5 deviations – Less than 5 Category 3 deviations	Yes Yes	– No deviations within the category of 4 or 5 reported – Further improvement in 2014 with only one category 3 deviations reported for an effluent solids breach
No breaches of PPC conditions	Yes	Very good year with all required parameters within consent levels
All site waste segregated in accordance with Waste (Scotland) Regulations	Yes	Introduction of office segregation of waste ensures compliance
Area by area energy monitoring for electrical use	Yes	Reporting of all electrical use now measured in every area.

Environmental targets 2015

- Zero deviations against existing legislative requirements, including PPC permit and Scottish Water consent levels
- Compliance with new legislation: Energy Savings Opportunity Scheme
- Review of sites emergency planning and preparedness
- Pulp and Paper BAT Ref document actions identified and completed.



VERIFIER'S DECLARATION ON VERIFICATION AND VALIDATION ACTIVITIES

BSI, with EMAS verifier registration number UK-V-0002 accredited or licensed for the scope NACE 17 & NACE 16 declares to have verified whether the site(s) or the whole organisation as indicated in the environmental statement of the organisation UPM Caledonian with registration number FI-000058 meet all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).

By signing this declaration, I declare that:

- the verification and validation has been carried out in full compliance with the requirements of this Regulation (EC) No 1221/2009,
- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,
- the data and information of the environmental statement of the site reflect a reliable, credible and correct image of all the sites activities, within the scope mentioned in the environmental statement.

This document is not equivalent to EMAS registration. EMAS registration can only be granted by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

Done at UPM Caledonian on 20/3/2015

Richard Edmond
BSI Environmental Specialist Client Manager
Strategic Delivery UK
EMAS Verifier Registration No. UK-V-002.

MORE WITH BIOFORE



UPM leads the integration of bio and forest industries into a sustainable future characterised by innovation, responsibility and resource efficiency. www.upm.com



www.upm.com

UPM Caledonian

UPM (UK) Ltd,
Meadowhead Road,
Irvine, Ayrshire
KA11 5AT Scotland, UK
Tel. +44 (0) 1294 312020
Fax +44 (0) 1294 314400

For further information, please contact:

Tom Dunn
HSE Manager
Tel. +44 (0) 1292 314220
tom.dunn@upm.com