

# Sustainability Report

CPH's Perlen site has further enhanced its energy efficiency and again reduced its consumption of fossil fuels. 2016 saw a further 25 000-tonne decline in the CPH Group's total carbon dioxide emissions.

## Strategy

Sustainability – in economic, social and environmental terms – is a cornerstone of the business activities of the entire CPH Group. Without economic sustainability, the Group could not ensure its long-term business success: a success that can look back on almost 200 years of industrial tradition, and one that has always put steady long-term development before short-term profit maximization.

The added value that CPH creates for the customer derives from its competitive products, services and procedures. These in turn are based on the Group's high quality standards, which are ensured by rigorous adherence to the relevant ISO and GMP guidelines. The foundation of CPH's development and success, though, is the Group's employees, whose training, health and safety enjoy the highest of priorities.

Being active in highly eco-sensitive fields, CPH puts a strong emphasis on environmental sustainability in all its activities. Making efficient use of raw materials also has a direct impact on the profitability of the operations concerned.

Paper manufacture is by far the most resource-intensive activity within the CPH Group, with the energy expense involved representing one of the biggest cost items. At the same time, CPH's paper production makes a major contribution to conserving forestry resources through its recycling of recovered paper and its use of woodchip waste. The Group's chemistry operations produce molecular sieves, chromatography gels, deuterated solvents and fertilizers, while its packaging activities are centred on manufacturing and coating PVC films.

Avoiding and reducing emissions, waste water and solid waste have been integrated for years into the planning at all three business divisions. CPH is further committed to energy efficiency under the climate protection project of Switzerland's Business Energy Agency. And the Group is also a member of Responsible Care, a global initiative by the chemicals industry to effect constant further improvements in the environmental, health and safety fields. Perlen Papier AG is a member of ECOSwiss, the environmental protection organization of the Swiss business community; and Perlen Packaging is committed to recycling PVC through its "VINYLPlus" involvement.

Responsibility for environmental and quality issues at CPH's production sites rests with a designated and specially-trained employee at each facility who reports directly to top management. CPH also strives through its Continuous Improvement Process (CIP) to maintain a culture of constant further enhancement of its business flows and procedures.

Additional ideas and impetus for improvements derive from regular surveys among customers and employees. In 2016 the Chemistry Division conducted a customer satisfaction survey among the recipients of its molecular sieves, while the Packaging Division performed similar customer polls. More generally, all customer feedback on the quality and the pricing of the CPH Group's various products and services is carefully assessed, with the findings and conclusions channelled into the products' further development and into customer service activities.

## Brand policy

The CPH Group pursues a policy of maintaining individual brands within its three business divisions, which are each active in their own distinctive markets. Under their "Zeochem", "Perlen Papier" and "Perlen Packaging" names, each division is well established and well known in its market as a reliable and autonomous partner. CPH Chemie + Papier Holding AG, the Group's holding company, does not conduct any business operations of its own, but provides an umbrella identity for stakeholders, particularly investors and the general public.

## Personnel

The feedback of its employees on their satisfaction with their job, work and working environment is vitally important to the CPH Group. A groupwide employee survey is conducted every three years covering issues such as the workplace, professional development, leadership, communications, innovation, customers, strategy and involvement. The most recent such survey in late autumn 2016 generated a response rate of 75%. The results were due to be evaluated in the first quarter of 2017, and actions will then be resolved on the basis thereof.

Annual group staff turnover rose from the 4.5% of 2015 to 9.7%. The increase is attributable to the new operating locations in China: the Chinese tend to change jobs fast and frequently. A total of 985 personnel (including 30 apprentices) were employed by the CPH Group at the end of 2016, compared with 858 at the end of the previous year. The increase is due to the Group's expansion in Asia, which saw ALSIO assimilated into the Chemistry Division and the new Chinese film coating plant opened for the Packaging Division.

## Salary policy

CPH pursues a fair and reasonable groupwide salary policy that is closely aligned to local customs and conditions. This policy is intended to offer salaries that pay due regard to the demands of the position, the conduct and performance of its occupant and general market levels. It also rewards above-average performance via a variable salary component that is linked to the achievement of individually-set perfor-

mance goals and to divisional results. Once again, no across-the-board salary increases were awarded in 2016. The CPH Group spent CHF 89.0 million on salaries, company pension scheme contributions and staff training over the course of the year.

The newly-renegotiated collective labour agreement (CLA) of the Swiss paper industry, to which all employees at the Perlen site are subject, entered into effect at the beginning of 2016. Employees at the Müllheim site in Germany are subject to the CLA of the Industriegewerkschaft Bergbau Chemie Energie (IGBCE). The Uetikon silicate chemistry operation has its own staff association. Elsewhere, personnel work under individual employment contracts.

### Initial and further training

The rapidly-changing economic and social environments place high demands today not only on employees but on their managers, too. In view of this, CPH has revised its management training concept. Under a new approach adopted in 2016, this is now conducted with an external partner, with executives receiving training in management, technical, leadership and self-competence skills. All in all, the CPH Group spent CHF 1.0 million on initial and further staff training for the year.

Training the Group's own personnel to assume future CPH duties remains as vital as ever. To this end, all the Group's operating sites in Switzerland and Germany serve as active basic professional training centres. The range of trades and professions here extends from plant operator and chemical technician to polymechanic and commercial officer. Thirteen apprentices completed their training in 2016.

### Continuous improvement

CPH's Continuous Improvement Process (CIP) is a vital element in the Group's constant endeavours to further develop and enhance the quality of its products, services and activities through the commitment of the personnel throughout its three divisions. Employees submitted 678 improvement and development ideas to the programme in 2016. In concert with some 144 group moderations, the proposals submitted are expected to add some CHF 1.5 million to annual earnings results.

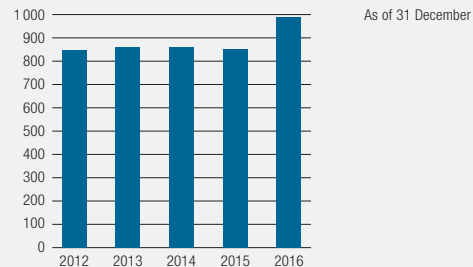
### Occupational safety

CPH conducts regular training to help prevent accidents and sensitize staff to dangers at all its operating sites. Any incidents or accidents that do occur are also systematically analyzed to help prevent their recurrence. CPH incurred 1.5 occupational accidents per 100 employees in 2016 (2015: 1.3). Fortunately, no major occupational accidents were incurred. These low accident rates for an industrial manufacturing concern are a tribute to the keen sensitivity of the Group's employees to occupational hazards and risks. Sickness-related absence rates also remained low at 2.5% (compared with 2.4% in 2015).

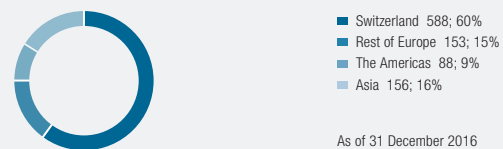
### Environmental care

The CPH Group's environmental reporting was changed in 2013 from the calendar year to one that runs from 1 November to 31 October. Figures for 2012 were restated accordingly.

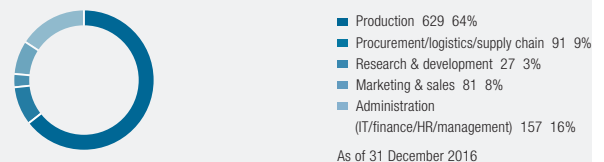
### Total workforce numbers



### Workforce numbers by region



### Workforce numbers by function

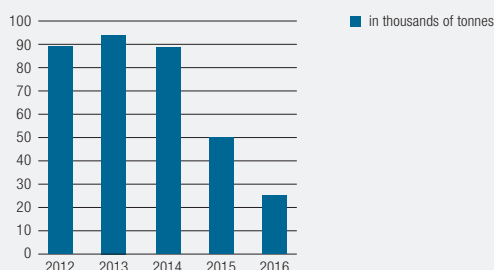


### Use of resources

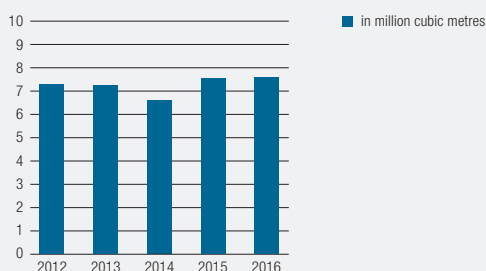
In tonnage terms, the largest proportion of resources within the CPH Group is devoted to paper production. The two prime raw materials here are recovered paper and wood. Perlen Papier recycled 464 492 bone-dry tonnes of recovered paper in its operations in 2016, an increase on the 448 040 bone-dry tonnes of the previous year. Over 50% of this recovered paper is collected in Switzerland, with the rest coming from adjacent border areas. Some 16% of the paper was delivered to Perlen by rail (compared with 17% in 2015). Perlen Papier also turned 109 000 bone-dry tonnes of round wood and woodchip into wood fibre in 2016 (2015: 117 851 bone-dry tonnes). CPH strives to minimize the transport distances involved: most of the wood used comes from within Switzerland.

Perlen Packaging's film manufacturing process begins with unplasticized PVC, which, in addition to mineral oil, is 57% composed of chlorine extracted from naturally-occurring sodium chloride. Compared

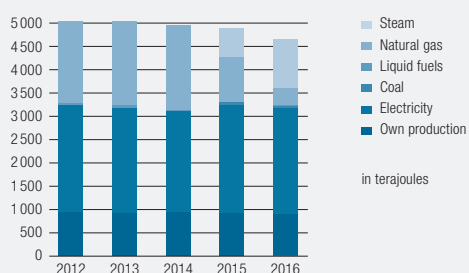
## CO<sub>2</sub> emissions



## Waste water produced



## Energy consumption



with other oil-based polymers, PVC boasts a better product carbon footprint for its overall life cycle. Perlen Packaging manufactures both PVC monofilms and coated PVdC films. Wherever possible, waste and scrap material from the various manufacturing steps are fed back into the production process as secondary raw materials. For coated film production, which uses PVdC, the raw material utilization rate remained stable at 94.7%, compared with 95.0% for the prior-year period.

The most important raw materials in the Group's silicate chemistry operations are sodium silicate, aluminium hydrate, sodium hydroxide, sulphuric acid and lithium chloride, of which 17 677 tonnes were used in 2016 (2015: 33 187 tonnes). The decline was due to the greater use of filter cakes in place of own-synthesized products. The division's

fertilizer production consumed 14 135 tonnes of nitrogen, potassium and phosphorus compounds (2015: 16 388 tonnes). Some 85% of the raw materials needed for fertilizer production in Uetikon were delivered by rail. All the silicate production materials are supplied by truck.

## Energy

All CPH's industrial processes require energy, in the form of electricity, oil, gas, waste heat or steam. Its paper manufacturing accounted for 91% of the Group's total energy consumption in 2016, largely in the form of electricity. The Group's annual electricity consumption declined slightly in 2016 from 2 493 terajoules to 2 430 terajoules. Gas consumption also declined further, from 964 terajoules to 387 terajoules, as the steam required for paper production is now procured from the nearby Renergia waste incinerator, which, in its first full year of operation, generated 1 018 terajoules of power (2015: 581 terajoules). At ALSIO around one-third of the energy required derives from coal. This should be replaced by gas in 2017. All in all, the CPH Group's annual energy consumption declined 5.4% to 4 633 terajoules.

## Emissions, waste water and solid waste

Being a major emitter of carbon dioxide (CO<sub>2</sub>), CPH sets goals on its own initiative to reduce such emissions. These are more rigorous than those required by law; and, as a result, CPH's Perlen and Uetikon facilities are exempt from any CO<sub>2</sub> levy. Annual CO<sub>2</sub> emissions from non-renewable resources further declined in 2016 from 50 761 tonnes to 25 124 tonnes. The decline is because the steam required in CPH's paper production is now procured from the Renergia incinerator instead of being produced in-house. The Group also earned CHF 2.1 million in 2016 from the sale of carbon credits. CPH's manufacturing facilities all have exhaust-air purification systems installed.

Emergency concepts have been devised to cope with any production malfunction. These centre largely on the scenario of fire. Apart from this, the handling of acids and sodium hydroxide at the Uetikon plant poses the greatest environmental threat. The CPH Group again completed the year free of any incident subject to reporting requirements.

The waste water produced by the Group's Uetikon, Perlen and Louisville plants is processed in their own treatment facilities. Paper manufacturing also produces solid waste, largely in the form of sludge and residual waste. Some 42% of this was disposed of in Perlen Papier's own waste incinerator in 2016 (compared to 37.5% the previous year); the rest was incinerated in brickworks and cement factories.

## Quality

Maintaining consistently high groupwide process and product quality is a key element in CPH's success. To this end the Group has its facilities regularly audited by both customers and independent authorities. The Packaging Division aligns its film manufacturing to the pharmaceuticals sector's Good Manufacturing Practice (GMP) standards. Perlen Packaging is one of the few companies in its field to be certificated to the sector's highest quality criteria for all its products from monofilms to barrier films and throughout the manufacturing process.

## Paper business earns good grades in first Environmental Impact Statement

The Paper Division's Perlen manufacturing operation was subjected to its first-ever environmental impact assessment at the end of 2015. The study was conducted by environmental consultants treeze, in accordance with the Carbon Disclosure Project structure. The period covered by the assessment and its reference date do not coincide with those of the CPH Group's Sustainability Report, which is compiled as of the end of each October. In view of this, the main findings of this first Environmental Impact Statement are provided separately here.

The greenhouse gas emissions generated per tonne of paper produced at the Perlen facility declined from over 200 kilos of CO<sub>2</sub> equivalents in 2011 to 114 kilos in 2015. This almost 50% reduction was achieved thanks to specific actions such as replacing fossil fuels with waste heat from the new Renergia incinerator facility. As a result, the Perlen paper operation performed significantly better than the benchmark set by the EU Emissions Trading System in direct emissions terms – a benchmark that is based on the best 10% of EU27 facilities.

Perlen Papier used just under 1 200 kilowatt hours of electricity and 1 000 kilowatt hours of heat to produce a tonne of paper in 2015. These energy levels are below those of comparable European paper manufacturers, confirming the high energy efficiency that has been achieved at Perlen over the past few years.

The Environmental Impact Statement also permits the first-ever eco-footprint to be determined for the Perlen paper operation. This CO<sub>2</sub> footprint is based on all the greenhouse gas emissions generated by paper production. In addition to the direct emissions through production at the Perlen site, these also include indirect emissions generated when providing the energy used and through the associated upstream and downstream processes.

For 2015 the overall CO<sub>2</sub> footprint for one tonne of paper was almost five times the volume of CO<sub>2</sub> attributable to actual production. When extrapolated to apply to the entire Paper Division, this gives an environmental footprint for the CPH Group's paper production of 288 000 tonnes of CO<sub>2</sub> equivalents.

PRODUCTION SITE QUALITY CERTIFICATIONS	Chemistry			Paper	Packaging			
	Uetikon	Louisville	Lianyungang	Perlen	Perlen	Müllheim	Whippany	Suzhou
ISO 9001	•	•	•	•	•	•	•	•
ISO 14001 (environmental)			•	•				
ISO 14644-1 (cleanrooms)					•	•		
ISO 15378 (GMP pharmaceuticals packaging standards)					•	•		•
ISO 50001 (energy)						•		
OHSAS 18001 (occupational safety)			•	•				
DMF 10686 (FDA, USA)					•			
DMF 9072 (FDA, USA)						•		
Eurofins (hygiene and food monitoring)					•	•		
EU Ecolabel				•				
FSC COC				•				
PEFC COC				•				
Blue Angel				•				
ECOSwiss CO <sub>2</sub>				•				
ENAW CO <sub>2</sub>	•							