

Notable Visitors for Grand Opening

Together with German Chancellor Angela Merkel and Norwegian Prime Minister Erna Solberg, Hydro President and CEO Svein Richard Brandtzæg will officially open the new Automotive Line 3 (AL 3) in Grevenbroich, Germany, on the 4th of May.

About 200 top guests from politics and business will attend, when both government heads will acknowledge Hydro, commissioning this EUR 130-million investment in a large, state-of-the-art production facility.

The opening also marks the starting point for the next 100 years of Hydro's aluminium activities in Germany – 100 years ago, in 1917, the VAW trust was founded to create a substantial aluminium industry for Germany, while Norway's first rolling mill was founded in Holmestrand.

„For Grevenbroich, for Rolled Products and for the entire Hydro, it is a great honor that Chancellor Merkel and also the Prime Minister of Norway Erna Solberg have confirmed their attendance. This highlights the importance of aluminium in lightweight applications to ensure mobility with lower emissions – and it confirms the position of Hydro as the leading European aluminium company,“ says Kjetil Ebbesberg, Executive Vice President for Rolled Products in Hydro. „We are very committed to be a good host.“



Together improving automotive recycling

Hydro cooperates with Austin AI Inc. (AAI), Texas, on a technology to overcome a persistent gap in reliable, efficient separating and clean fractioning of 5xxx and 6xxx aluminium alloys from automotive production for recycling.

AAI's technology, based on laser induced breakdown spectroscopy (LIBS), brings advantages compared to other LIBS configurations and has already shown good test results in sorting these alloys for clear separation and clean recycling. In the second half year of 2017, AAI will install a pilot scale sorting facility at Hydro's research and development center in Bonn, Germany. Hydro scientists will gradually

advance its processes and features, together with AAI. The aim is to increase the effectiveness of the sorting system and ensure high quality sorting results for the required throughput. Then, the technology can be expanded for full scale industrial use.

Background: The automotive industry boosts the use of aluminium to build lighter cars that emit less CO₂. Their

press shops are stamping different sheet components mostly made of 5xxx or 6xxx aluminium alloys. This requires separation of production scrap and makes recycling complex already for production remains, as well as at the end of life phase.

[Read more.](#)



Dear Reader,

on 4 May, Hydro will officially open Automotive Line 3 in Grevenbroich, thereby starting our next 100 years as supplier of rolled products, and as the leading aluminium company in Germany.

This also brings us closer to our goal of making Hydro a preferred partner for the automotive industry, and becoming a carbon neutral company by the year 2020. Furthermore, we are collaborating with our partner AAI on advanced separation of alloys, to close the material loop for scrap from automotive production, and later for vehicles at the end of their use phase – another boost for sustainable lightweighting with aluminium.

We aim at creating even more value for you systematically, in many product applications, with new solutions. Therefore, we have re-organized and strengthened our innovation management.

A genuine pleasure: In the year 2016, Hydro had the smallest number of accidents ever. We see safe working as a precondition to serving you reliably. I hope our newsletter offers you some good inspiration and interesting aspects.

Enjoy reading!

Yours, Kjetil Ebbesberg
Executive Vice President
Rolled Products

Certified: in line with SMETA

Suppliers need to prove ethical responsibility in managing their business and processes, showing that they take care for labor rights, safety, health and environmental protection, and that their materials have a sound sourcing.

Nestlé and other food companies, our customers Tetra Pak and SIG as well, demand from their suppliers a distinct audit on ethical business. This shall go conform to the widely spread SMETA standard, which is managed by the non-profit [Sedex](#) organisation. [SMETA](#) means: Sedex Members Ethical Trade Audit.

In November 2016, Hydro was certified for the first time for being in line with SMETA. The certificate remains valid for three years and then has to be renewed. For numerous years, Hydro adheres to several quality measurements, is well listed every year in the rankings of the Dow Jones Sustainability Index and holding manifold certificates. On our website, you can find [Hydro's Certificates](#) anytime.

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New set-up for innovation

Hydro's Rolled Products business is interconnecting its work on innovation more closely and is staffing up respective resources.



Reinhold Schmidt leads this area in a new set-up with four departments. Beside Strategy & Projects and the patent department, R&D, led by Klaus Vieregge will continue ground research and the support of business units and plant in developing products and processes.

The "Innovation & New Business Development" team will be led by Hartmut Janssen and combine the former Rolled Vision team with additional tasks of innovation management. The Innovation

Manager is responsible for the innovation process and supports the organisation on innovation matters. The team explores new business fields in close collaboration with the business units and plants.

Janssen, before department leader at the R&D center in Bonn, holds a PhD in Engineering from Aachen Technical University and a diploma in Marketing from University of Applied Sciences in Magdeburg. He joined Hydro's R&D in 2004.

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Annual reporting: Making the world lighter

Hydro published its annual report 2016 on 17 March.

The “Annual Report – 2016” in English gives comprehensive information on Hydro’s business, viability performance and corporate governance as well as the financial statement. Hydro accomplished its best result ever in operational safety and yielded efficiency improvements above target.



ready to set out for another 100 years. It’s an inherent strength of our Hydro Way. We have the patience to take the long-term perspective, and the eagerness to use every opportunity, every day, to make things happen, „ Brandtzæg says.

minium producer in Europe to invest in new capacity to ensure future supply to our customers.”

Brandtzæg added: “We have the lowest carbon footprint in the industry. And we deliver products of high quality with short lead time and world class commercial services. As the only aluminium company outside China, we operate in all segments of the value chain. This gives us a unique position to influence all aspects of the product we deliver to you – every step of the way. We can control and influence the footprint and the quality from Bauxite and alumina to primary alloys and end-user specifications. But only when we work with you is that we find the best solutions.”

www.hydro.com/reporting2016

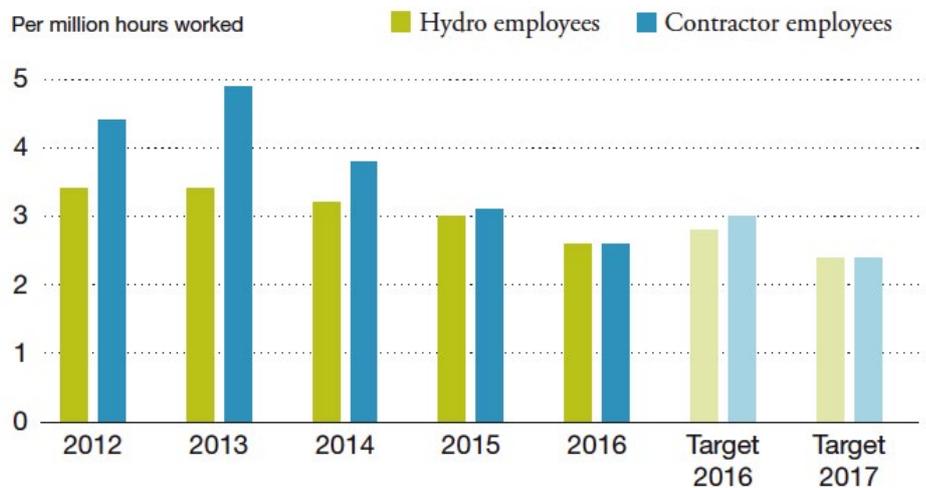
“After years of improvement efforts motivated by the need to adapt to external challenges, we are now starting to take advantage of new opportunities,” writes President and CEO Svein Richard Brandtzæg. “While other base metals seem to have reached the point of saturation in many markets, aluminium still has a significant potential for increased use.”

“In 2017 we’re expecting demand for aluminium to grow by a healthy 3-5 percent,” states Brandtzæg. “Last year we invested in future-oriented projects that we expect to be successful seen from a strategic, financial and a climate point of view. In 2017 three important symbols of the new era will be in full operation; the Karmøy Technology Pilot in Norway, the Automotive Line 3 and the UBC recycling line in Germany, Brandtzæg continues

“Supported by determined implementation of ever new steps under the Better, Bigger, Greener aspiration – we are

Already at the Aluminium world trade fair 2016, Svein Richard Brandtzæg said to several hundred customers: “In Germany alone we have invested EUR 230 million to meet the demands of our customers and address our global climate challenges. In Norway, the groundbreaking new smelter technology has a price tag of almost EUR 400 million. In fact, Hydro is the only alu-

Total recordable injuries



Record result in Safety

Among top ten in human rights

Hydro ranks among the Top Ten in an international survey on human rights. With 78 of 100 points, Hydro ranks [seventh on the list](#) and best in the mining and metals industry. The survey was conducted over two years by Vigeo Eiris, a global provider of environmental, social and governance (ESG) research to investors and corporates, analyzing 3,189 companies across 38 sectors and located in 35 countries. “Hydro has scored high on Vigeo Eiris’ ratings of companies’ sustainability performance for many years. It is satisfying that we are recognized for the challenging, but important, work we do related to human rights in general and labor rights in particular. At the same time, we realize that there are unresolved issues, in particular in the supply chain,” says Elise Must, Head of CSR.

Anneli Nesteng first female plant manager in Rolled Products

Anneli Nesteng is the first woman ever to lead a rolled products plant in Hydro: the site in Holmestrand, Norway.



Before, Nesteng (38) has been responsible for Hydro's hydropower plants in Sogn, Norway. She holds a master's degree in industrial economics from Universität Karlsruhe (TH) in Germany, and the Norwegian University of Technology and Science (NTNU). She started her career in Hydro in 2008.

With an annual production capacity of around 90,000 tons, Holmestrand produces aluminium rolled products mainly for the packaging and building & construction industries. A large part of the plant's production is based on post-consumed aluminium scrap, including all used beverage cans deposited in Norway.

Operators gain insight on customer operations

The Holmestrand plant is expanding its offers to business partners, with production employees themselves visiting customers.

As a test, Homestrand head of sales Tom Muggerud agreed on two visits of seven or eight operators from the Holmestrand shop floor, to two fabrication lines of customers who manufacture multi-layer tubes.

Nadia Telioui, local head of Technical Customer Service, guided both excursions. An in-depth tour along the customer supply chain led from where the Holmestrand shipments arrive through each process step on to the final packaging and distribution for their customers.

The core of the plant tour was a vivid exchange about aspects like quality, workability, reduction of waste, and which information will benefit the customer when using Hydro's specific material. "The trip was very informative and gave us a better understanding of the customer's needs and also how



complicated and fascinating the customers process is," said one operator.

Tom Muggerud: "We want to bring together the competence, insight, experiences and mutual questions of relevant production people. It shall strengthen understanding about how Hydro can contribute to making customer processes and products

even better." Further visits are being considered, says Muggerud: "They will help to improve the fit of our capabilities with the individual needs of our customers."

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Free from BPA? Hydro has a solution

How dangerous is Bisphenol A (BPA)? Of late, that chemical compound is under particularly strict surveillance in the European Union. Customers now are asking for material free from BPA. As industry's first, Hydro has developed a lacquer system early on.



While BPA-free lacquers already for some years have been available for beverage can ends, lacquers used for valve caps typically still contain BPA. Valve caps are needed for aerosol cans, that are filled for instance with deodorants, hair spray, spray cream or expanding foam, to close these cans and attach their release valve to it. For this, the Grevenbroich plant processes 410 µm thick aluminium strip through stretching, degreasing and double coating. There, typical lacquer system contains PVC or epoxy resin as binding agents. BPA is a raw material applied in the production of epoxy resin – where it cannot be ruled out that smallest remains of BPA stay in the epoxy resin.

For years, the European Chemicals Agency (EChA) has been observing medical research investigations and the public discussion around. On the hazard potential, there are many contradicting risk assessments that do not allow for a definite risk estimate. The authority is taking concerns in the public debate more and more serious and now put BPA on the SVHC list (Substances of Very High Concern),

thereby declaring it a substance of serious concern. This is the final step before a prohibition. Consequently, producers of spray cosmetics, asthma sprays, spray cream and the likes swiftly would like to offer their goods in BPA-free packaging.

“We have seen this trend coming also for the area of valve caps, yet could not find anyone among our lacquer providers able to offer us a good system without BPA. So our team developed it by ourselves: APC15,” says Ishak Bakirel, Head of Lacquer Technology at the Grevenbroich plant.

APC15, this Aerosol Protective Coating developed in the year 2015, ascertains durable protection against very aggressive filling goods and some more benefits on top, like the option to coat the material based on a chrome free pre-treatment, which further reduces impacts on the environment.

First, APC15 had little market response. Customers hardly fell for this system free from BPA and PVC, because a change demands high qualifica-

tion efforts. Then, on 19 January 2017, few days after BPA had been set on the SVHC list, Hydro technicians Frank Odendahl and Petra Karbach-Parr joined sales staff Markus Adrians and Marco Schenkel at the Aerosol Congress in Paris. Promptly, several reputed producers of valve caps confirmed they wanted to launch the qualification of APC15 strip with Hydro.

Material samples have already been produced and delivered to a first key customer, who meanwhile has stamped the material. First findings indicate that APC15 is superior to standard systems in all aspects.

Boris Kasper, Head of Technical Customer Service in the Can Product Area, says: “In this highly specialized market, Hydro stands out with APC15 as a frontrunner, proving our innovational strength, our aspiration for sustainable products and efficient protection for the consumer.”

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Aluminium packaging: Nearly 500,000 tons less greenhouse gases

Recycling of aluminum packaging continues to develop at a very high level.

From 108,900 tons of aluminum packaging used in the German market in 2015, the number of material recycling was once again slightly increased to 94,800 tons (2014: 94,600 t), according to the latest information from GVM Gesellschaft für Verpackungsmarktforschung mbH, Mainz. This represents a recycling rate of 87 per cent.

“Coupled with greater material efficiency and perfect product protec-

tion, material recovery is an important contribution for conservation of resources and a closed-loop economy,” commented Hans-Jürgen Schmidt, Managing Director of Deutsche Aluminium Verpackung Recycling GmbH (DAVR), at GVM’s recycling audit. “The contribution to climate change prevention is considerable: regarding the actual quote, recycled packaging means annual savings in greenhouse gases of nearly 500,000 tons so-called CO₂ equivalents.”

Every year GVM determines the quantity of packaging waste generated and recycled in Germany – also on behalf of the Federal Environmental Agency in Berlin. It takes into consideration quantities of used packaging, recycled by different Dual Systems as well as material returned by other organizations and collection schemes.

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Save the date!



4 – 10 May 2017, Messe Düsseldorf

Within the Innovation Parc Packaging on the fairground open area, Hydro doubles the size of its stand FGIPP 8, under the “Save Food” motto, to show how little ultra-thin aluminium foil it takes to protect large amounts of nutrition, fresh for a long time without any need for cooling energy – and how absolute the barrier protection of aluminium is for the filled goods, when compared to the tightness of other packaging materials.

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20 – 22 June 2017, Messe Berlin

In hall 1.1, at the stand D19, Hydro explains its capabilities and performance as a supplier of aluminium strip for transformer windings. Beside HYDEC, the 1070 alloy variation with particularly high ductility for trafo applications, also electronic measurement of burr height shall find special interest. Hydro is the only company to offer these measures, that are so important for trafo manufacturers.

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