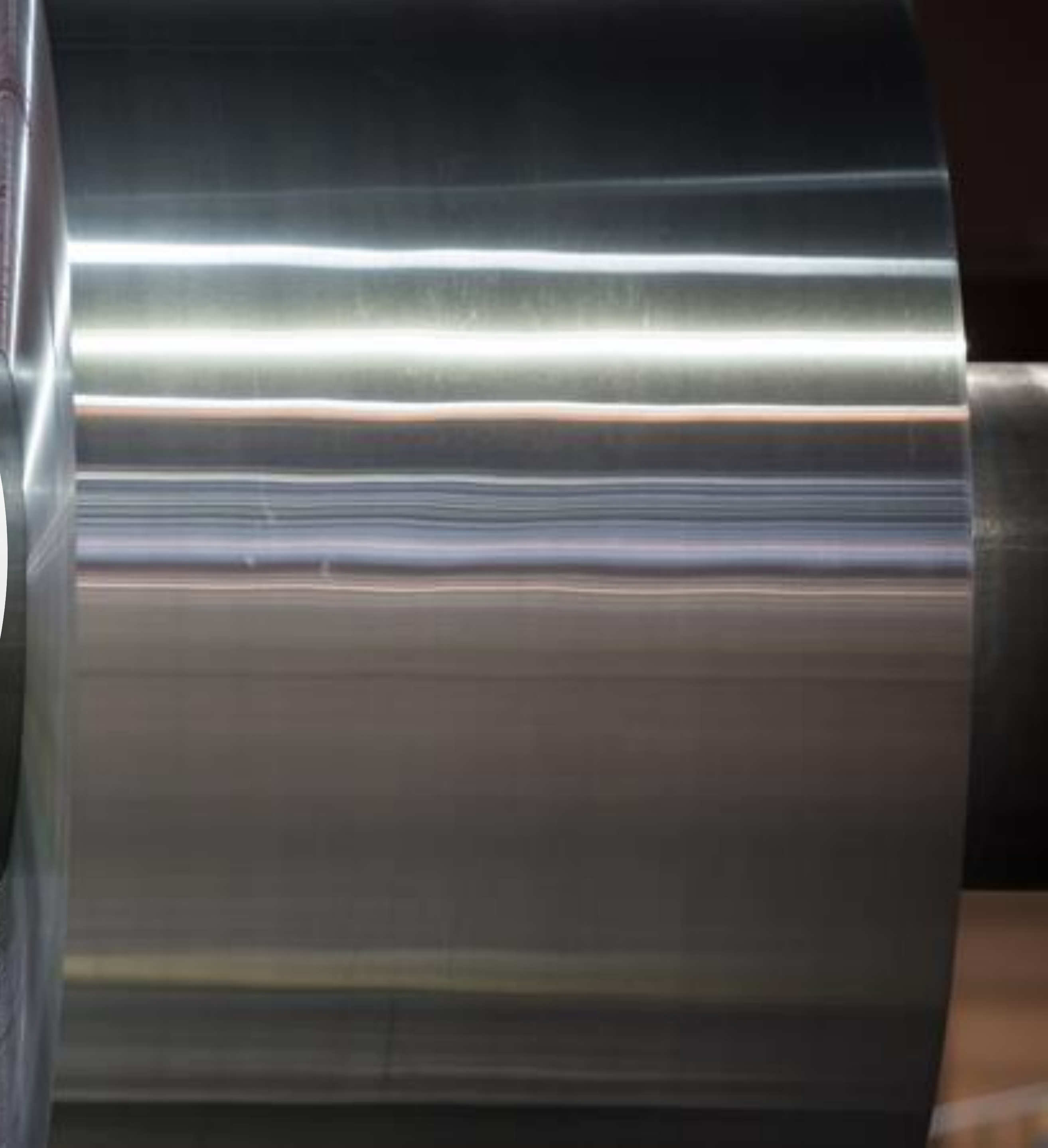
Rolled Products: Close to the Customer

Kjetil Ebbesberg
Executive Vice President and
Head of Rolled Products

1. Business overview
2. Rolling in the value chain
3. Market
4. Financials and strategy



Mastering safety, means to master processes

We continuously improve HSE

- Focus on high risk incidents, awareness and employee involvement
- Special attention to contractor management and involvement
- Key tools: near-miss reporting, training, WOC*, LOTO** and auditing

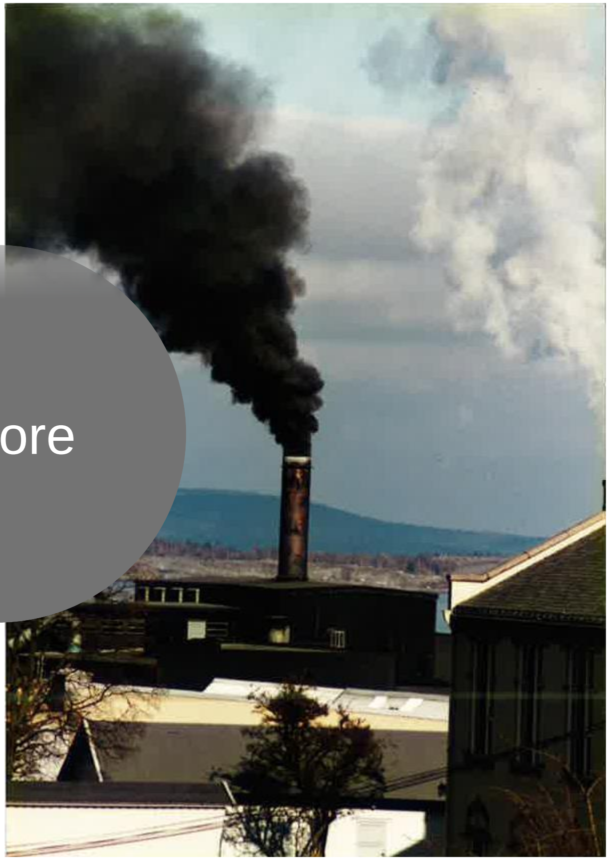
*WOC = walk, observe, communicate.
**LOTO = Lockout, a system to make sure all energy has been disconnected from machines during maintenance or inspections

Health, Safety, Security and Environment

Hydro Aluminium Rolled Products Holmestrand

Better Bigger Greener

Before



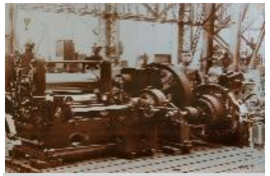
«ALways Better»

Today

HYDRO

A century of innovation and development

Courage, Respect, Cooperation, Determination – and *Foresight*



We start rolling
Establishment of Holmestrand plant

Grevenbroich foil mill opens

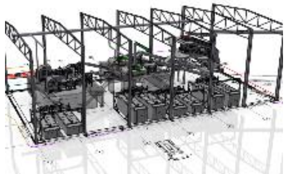
Alnor, Karmøy
Commissioning of Hydro's first co-owned rolling mill. Aluminium smelter in Norway

Litho centre installed at Grevenbroich
Centre 2: 1992
Centre 3: 2005

Recycling initiated at Holmestrand
End of life products

Recycling initiated at Rheinwerk
End of life products

Recycling initiated at Alunorf
End of life products



Strengthening of recycling position through UBC recycling line
Improving metal cost position

Decision to increase automotive capacity from 50kt to 200kt
Major step in strongly growing Body in White Market

1917 – 1923 – 1965 – 1968 – 1973 – 1985 – 1986 – 1990 – 2002 – 2007 – 2008 – 2009 – 2012 – 2014

Alunorf founded
Today world´s only site with 2 hot mills. Centerpiece of our production cluster

Foil Series 1 Grevenbroich revolutionizes foil rolling
World´s first fully integrated, highly automated line.
Series 2 sets a next standard in 1986

Merger with ÅSV

Acquired German giant VAW
Hydro becomes largest aluminium company in Europe, forms leading group for rolled products

Automotive Line 2 opens
Production of premium body sheet applications

Rheinwerk integrated into Rolled Products
Utilizing synergies of Aluminium cluster

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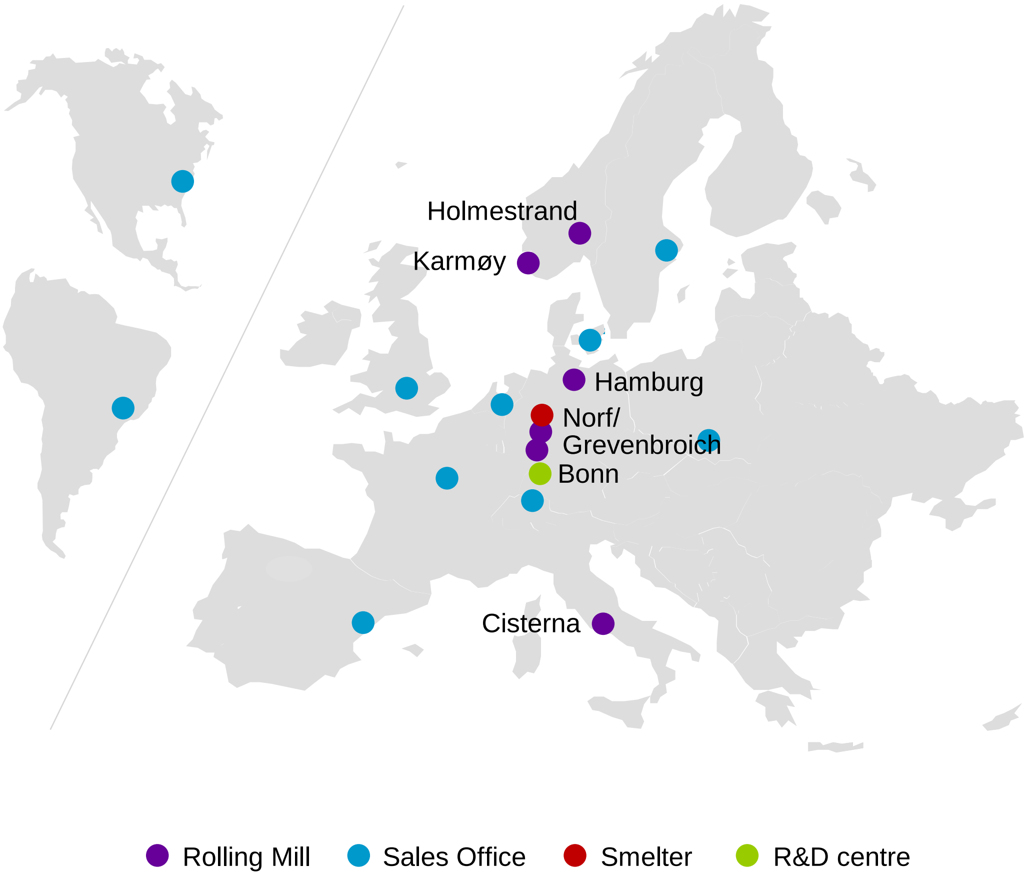
Rolled Products – No 1 producer in Europe



- European production base with global reach
- 1 million tonnes of flat rolled products per year
- World class assets
  - Casthouse network & integrated recycling capacity
  - World’s largest rolling mill with dedicated conversion mill
- Industry leading R&D facility
- Turnover ~20 billion NOK
- ~4 200 employees

Rolled Products


EVP
Rolled Products
Kjetil Ebbesberg


Finance
Berit Askheim


HR & Organization
Joachim Deppe


Research & Development
Pascal Wagner

Strategy & External Affairs
Kjetil Ebbesberg


Performance Management
Tatjana Draese


Communications & Public Affairs
Peter Heimerzheim


BU Packaging & Building
Manfred Mertens


BU Litho, Automotive & Heat Exchanger
Pascal Wagner


BU General Engineering
Wolfgang Rempe


Grevenbroich Plant
Stefan Kästner


Sourcing
Volker Backs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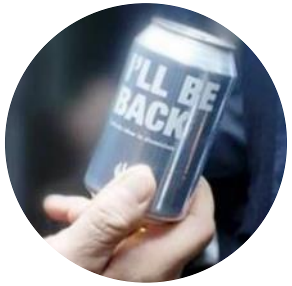
Rolled Products market positions*

Leading market positions – supported by leading R&D competence

Lithography
World market leader

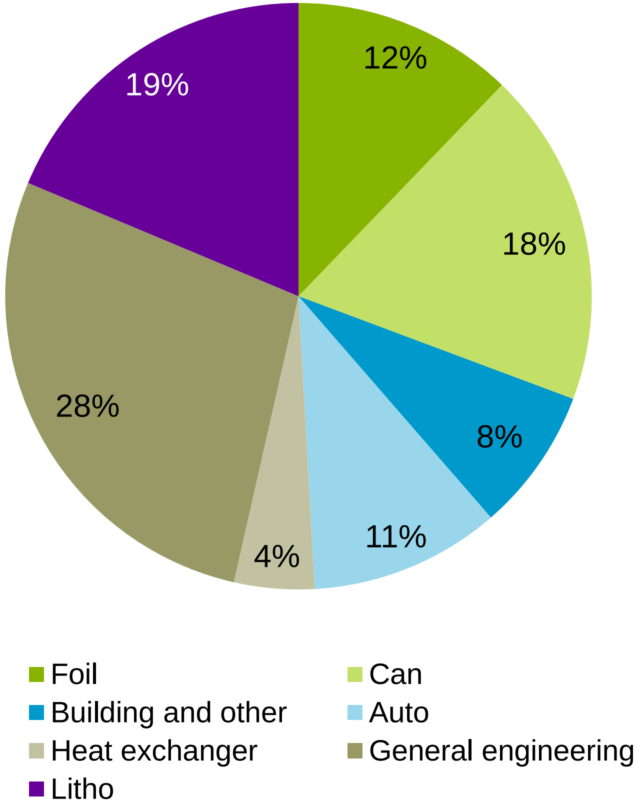
Foil
World market leader
in aseptic foil



Beverage can
Leading position
in Europe

Automotive
Leading position
in Europe

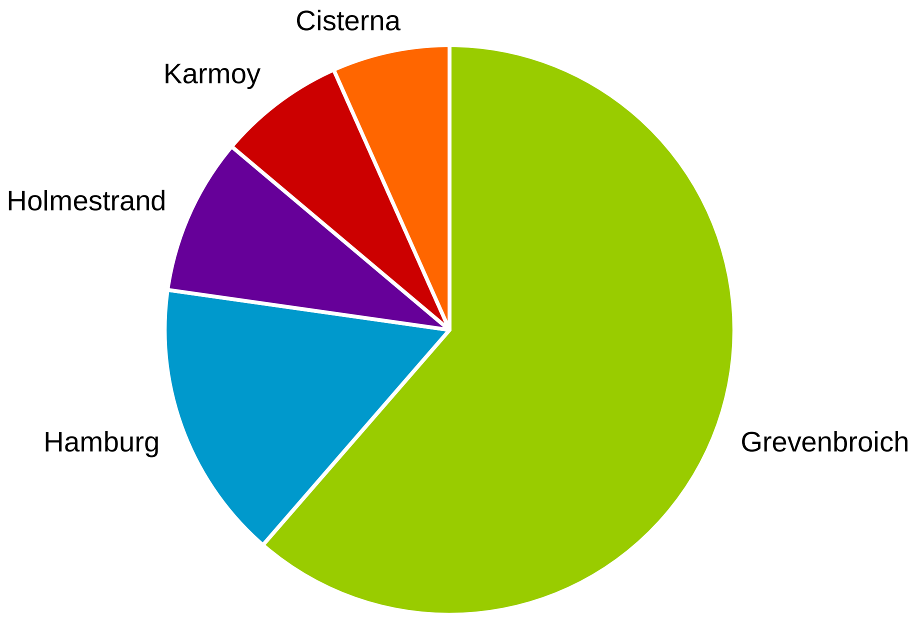
General Engineering
Leading position
in Europe



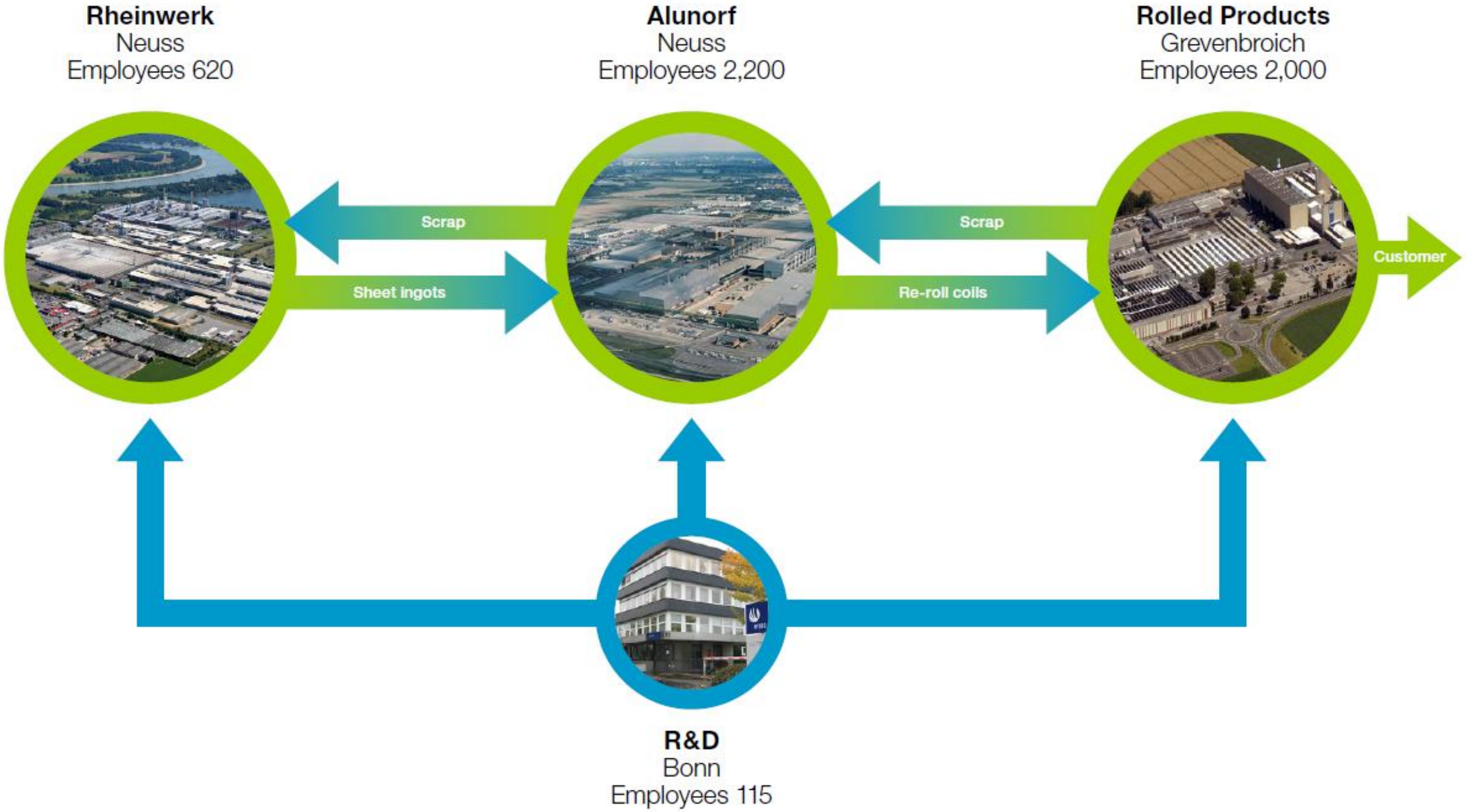
* External sales in tonnages 2014

Our mills and their share in output

Shipments from our plants



Unique «Aluminium triangle» utilizing logistical, cost and process synergies



Other continental Europe: Hamburg and Slim

Hamburg
- Founded in 1972
- 650 employees
- Own casthouse
- Production 2014: 150,000 tonnes

Slim
- Founded in 1964
- 390 employees
- Own casthouse
- New cold mill and major revamp in 2006
- Production 2014: 70,000 tonnes

Norway: Holmestrand and Karmøy

Holmestrand
- Founded in 1917
- 400 employees
- Own casthouse
- Production 2014: 80,000 tonnes

Karmøy
- Founded in 1968
- 220 employees
- Continuous strip-casting
- Production 2014: 80,000 tonnes

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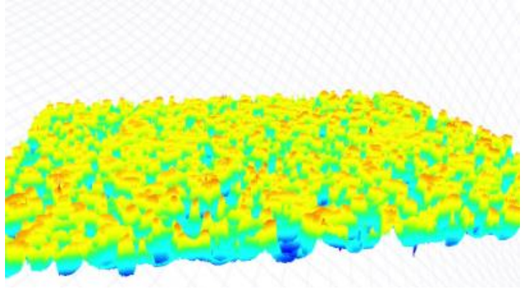
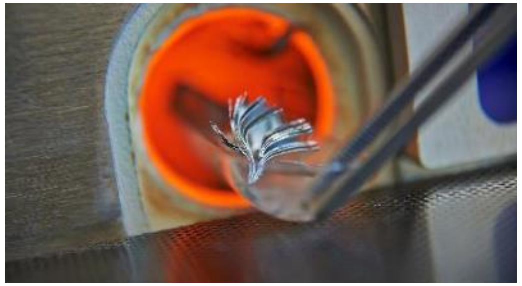
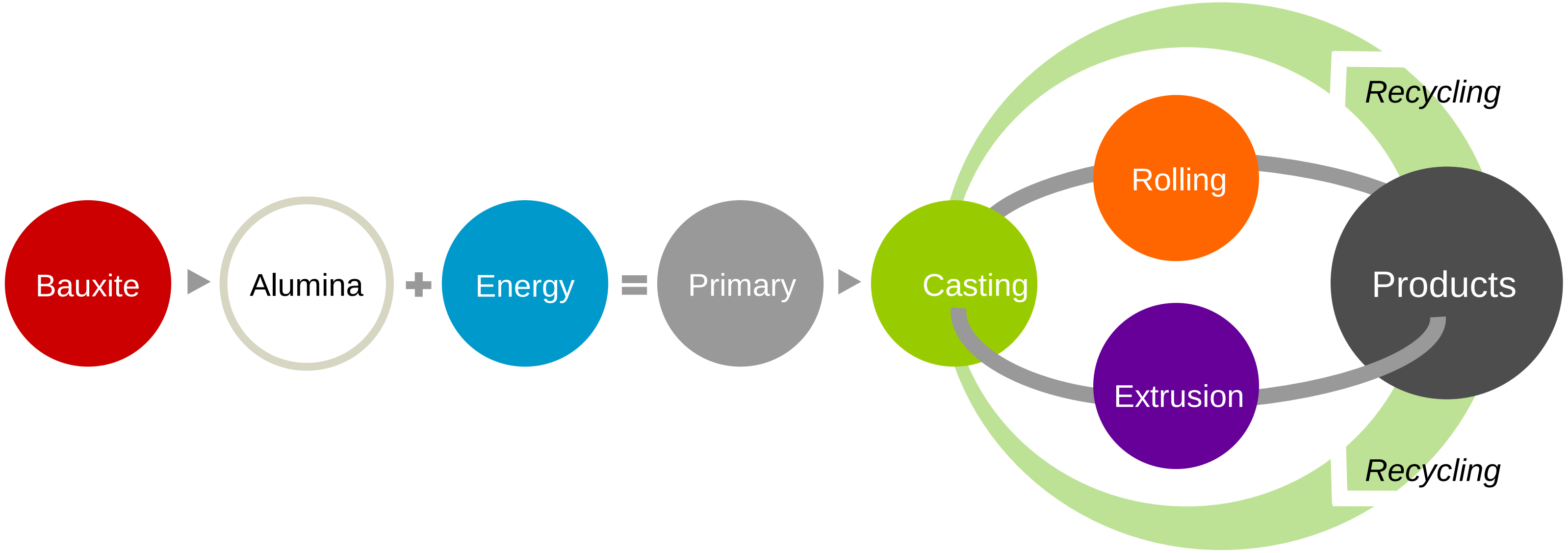
R&D Bonn

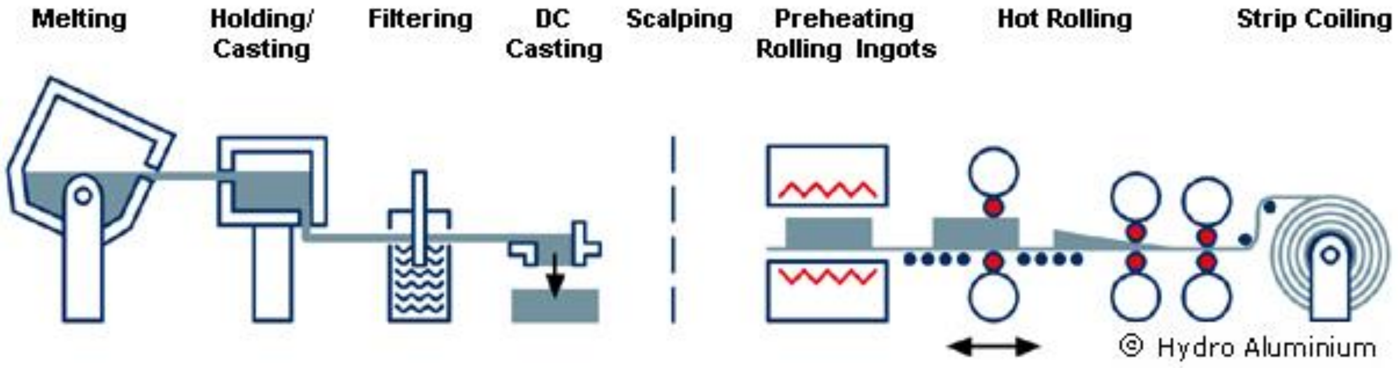
- Industry leading R&D facility; major innovation driver for Rolled Products
- Founded 1964
- Highly skilled personnel
- Well equipped laboratories, servicing Hydro units and other customers
- Production and marketing of advanced products by business center
- Simulation process know-how

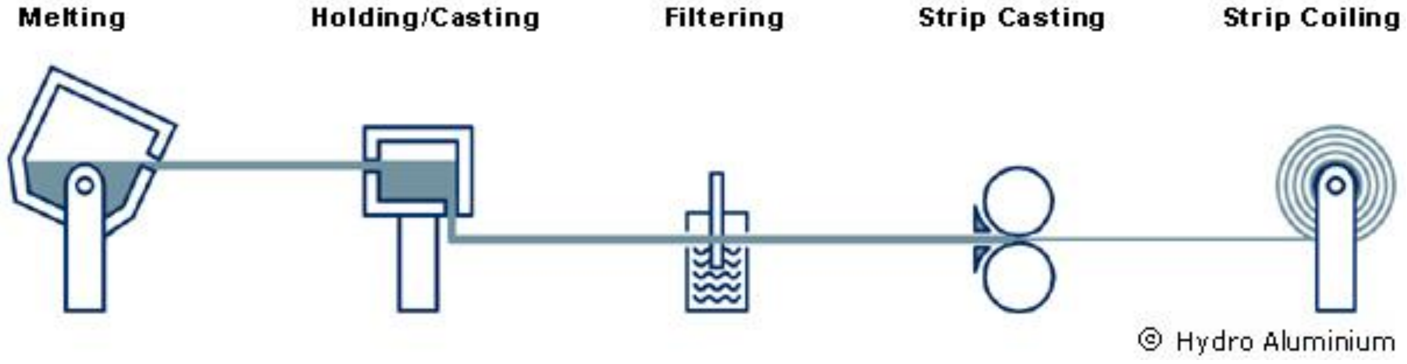

Rolled Products: The final step of the value chain



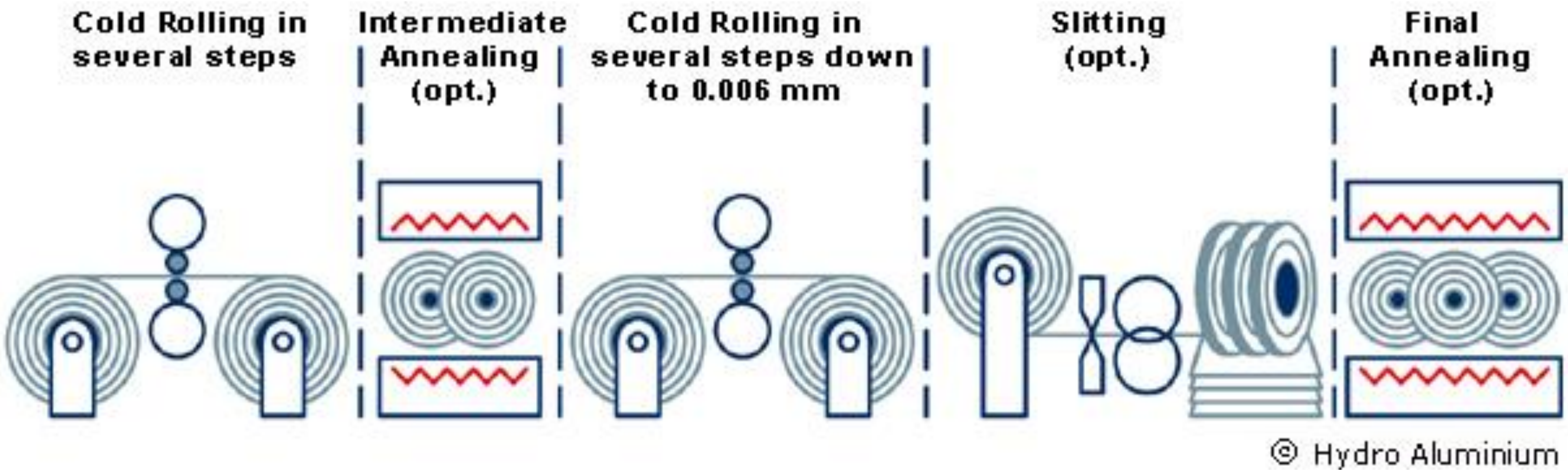
Hot rolling



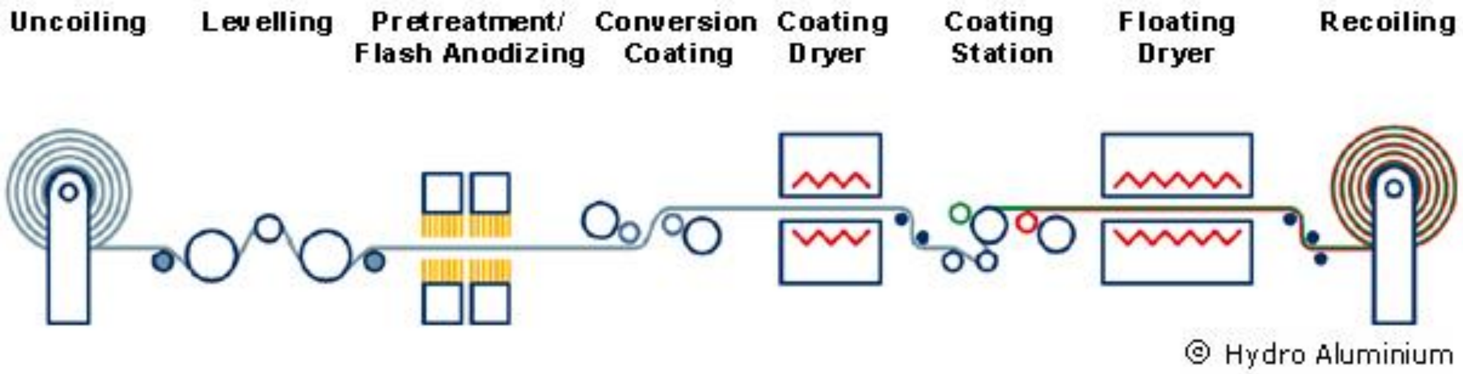
Continuous casting



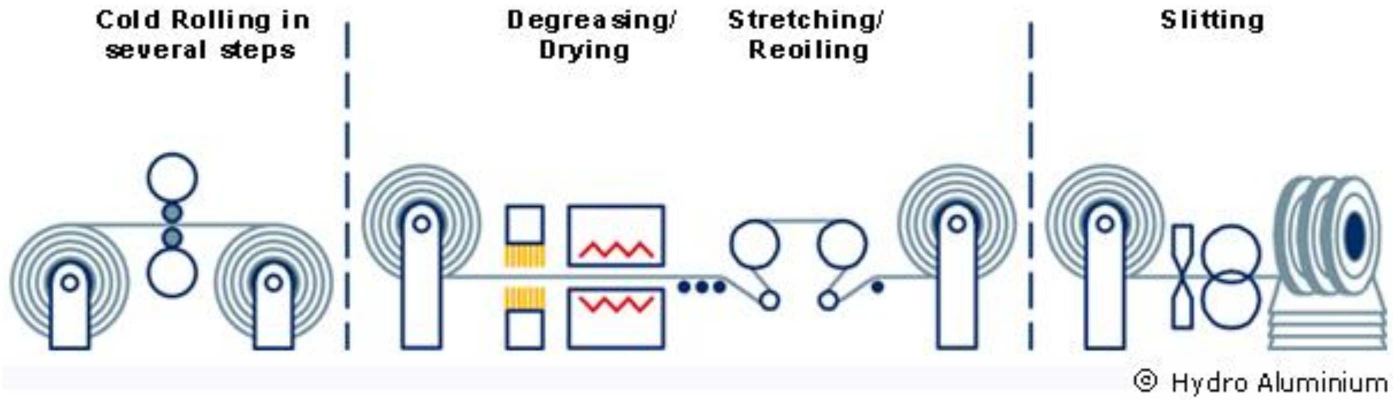
Cold rolling

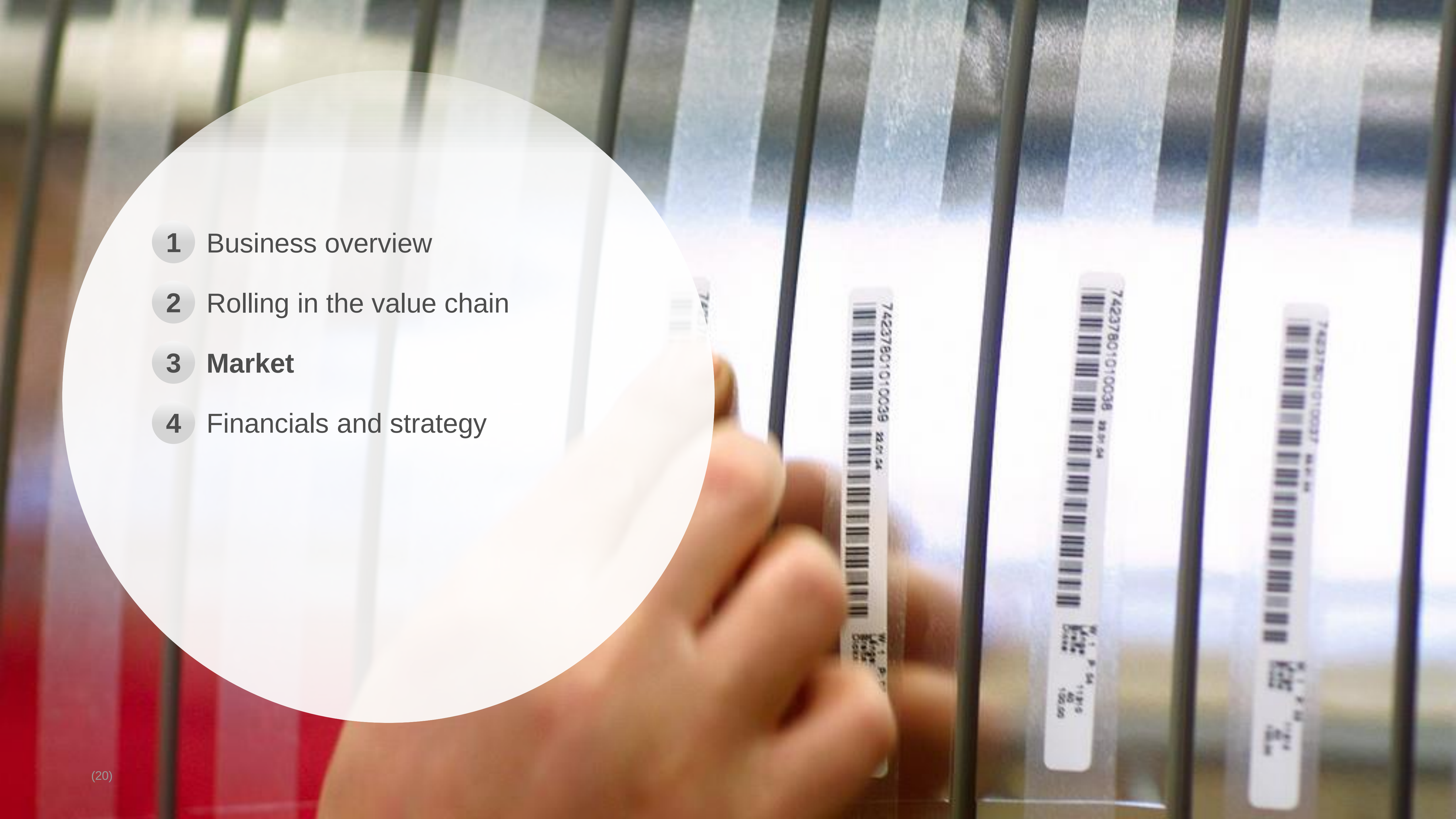


Coil coating



Lithography





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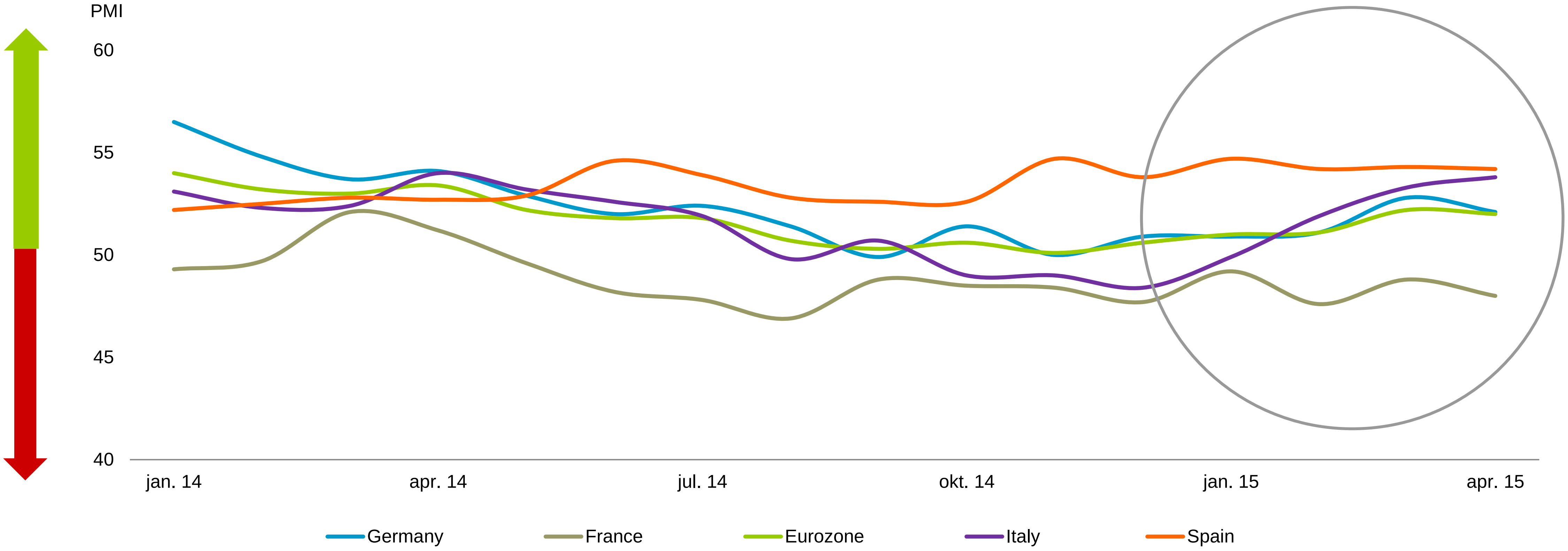
Some signs of positive developments in Europe last 6 months

Eurozone manufacturing PMI climbs from 50.1 to 52

Manufacturing PMI, major Eurozone economies

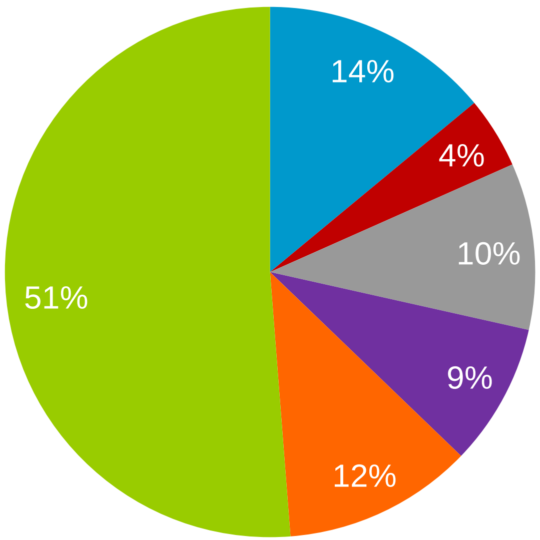


Source: Ecowin
PMI – Purchasing manager index

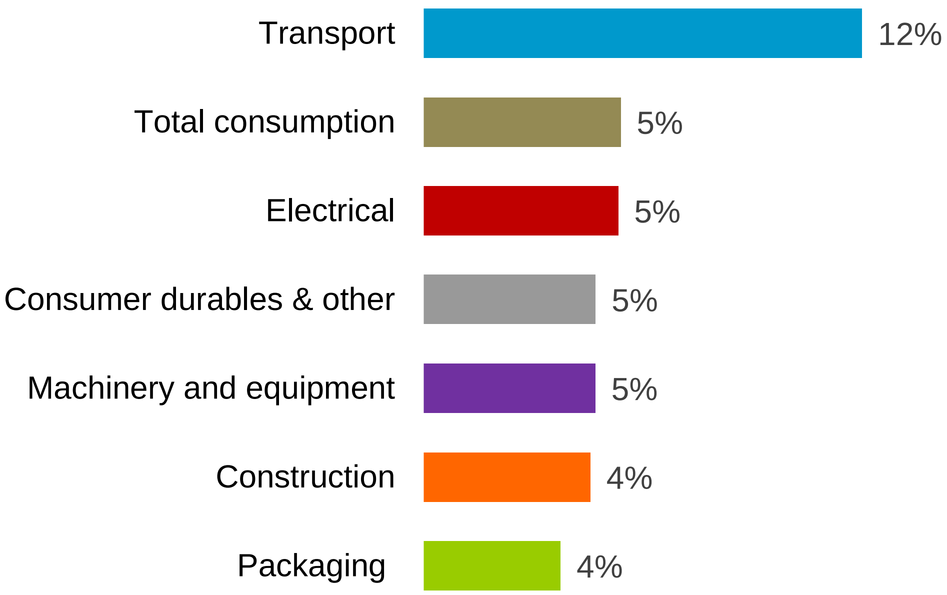
Robust long-term growth outlook for flat rolled products worldwide

Transport is main driver for growth, in 23 million tonnes market

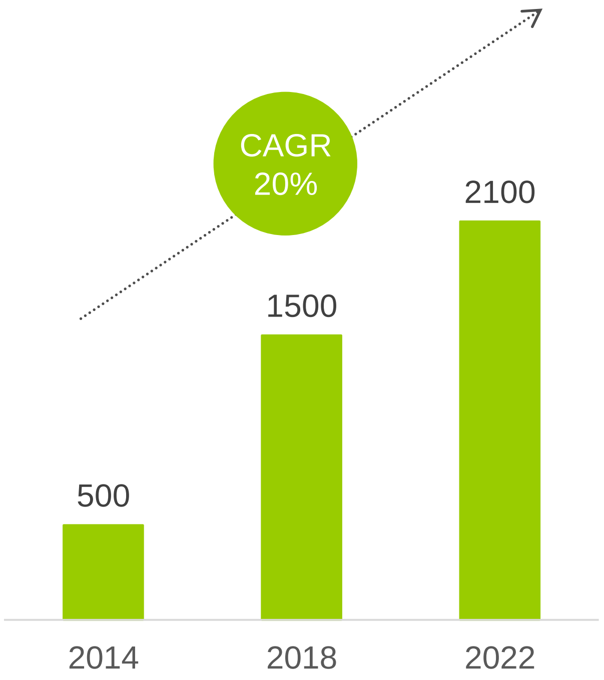
Global FRP consumption by end-use 2014



CAGR 2014-2019



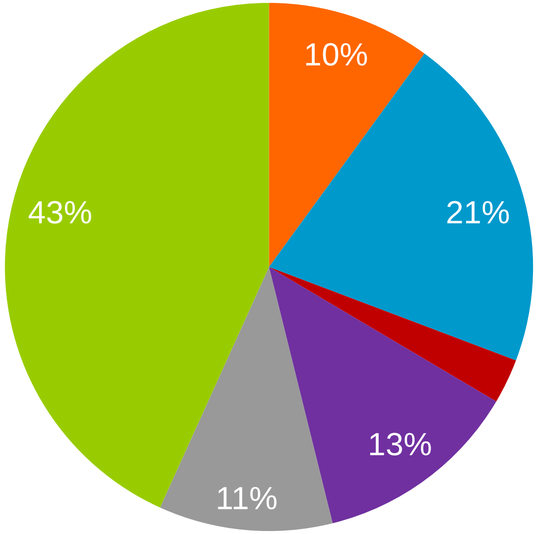
Global Body-in-White demand in kT



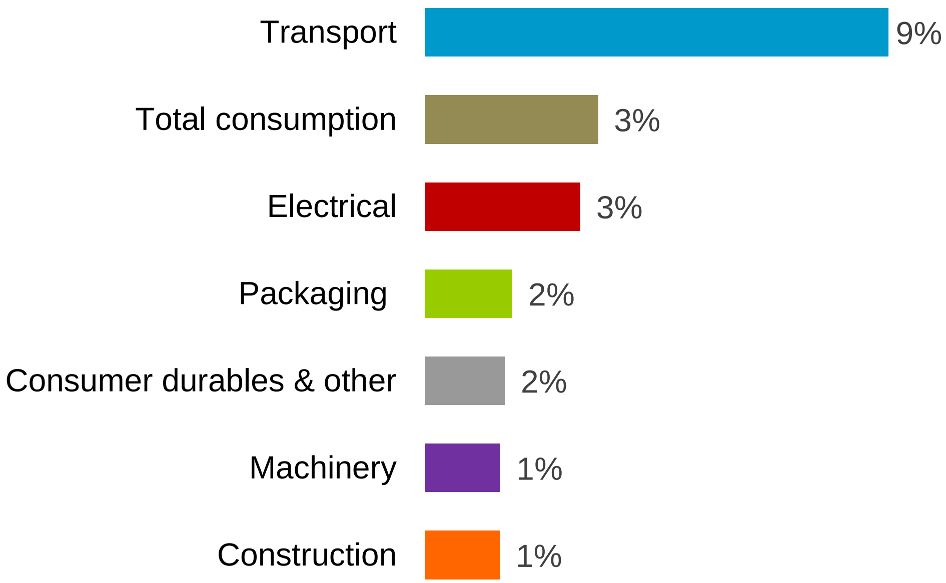
Source: CRU FRP quarterly February 2015, Rolled Products analysis
FRP - Flat rolled products
CAGR – Compound annual growth rate

Transport is also main contributor in Europe

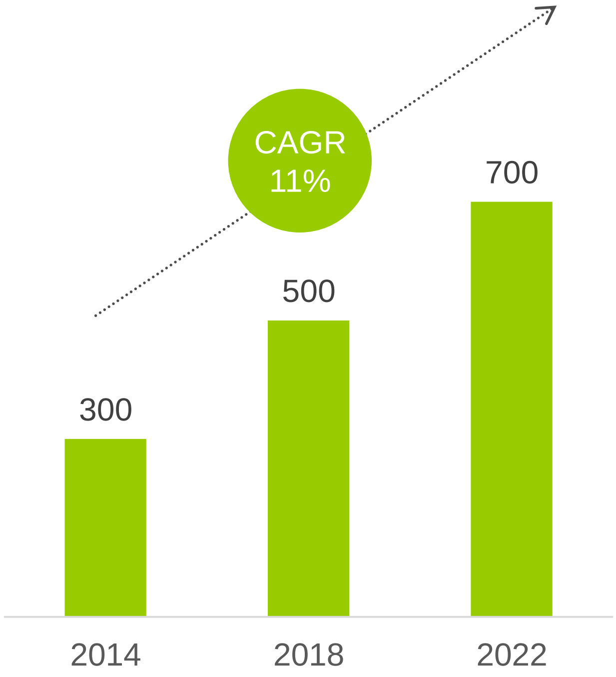
European FRP consumption by end-use 2014



CAGR 2014-2019



European body-in-White demand in kT

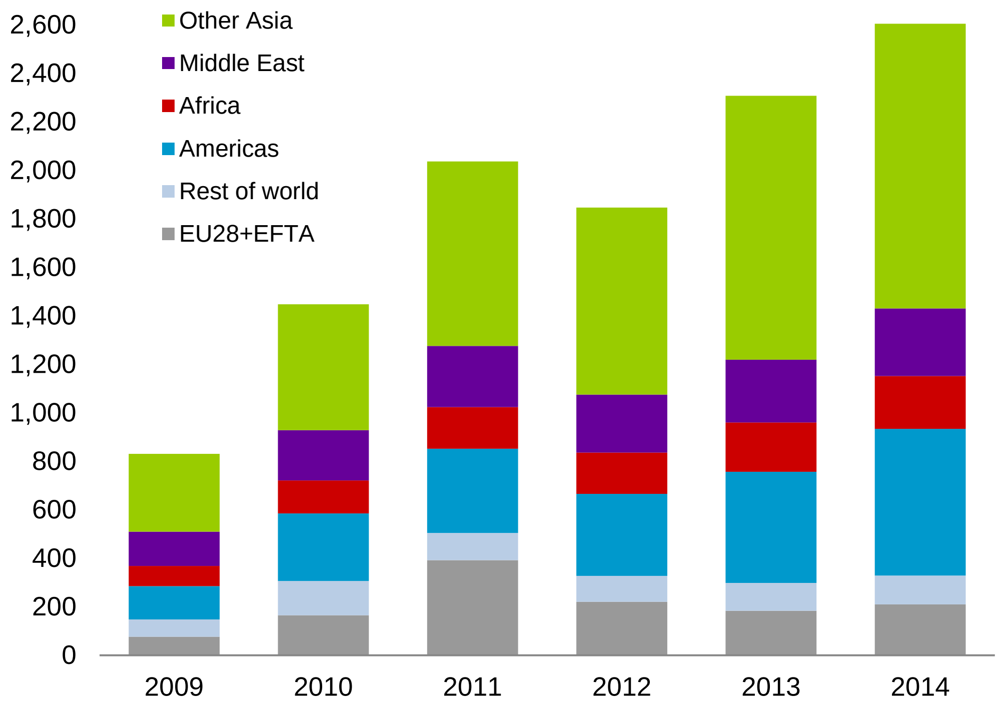


Source: CRU FRP quarterly February 2015, Rolled Products analysis
FRP - Flat rolled products
CAGR – Compound annual growth rate

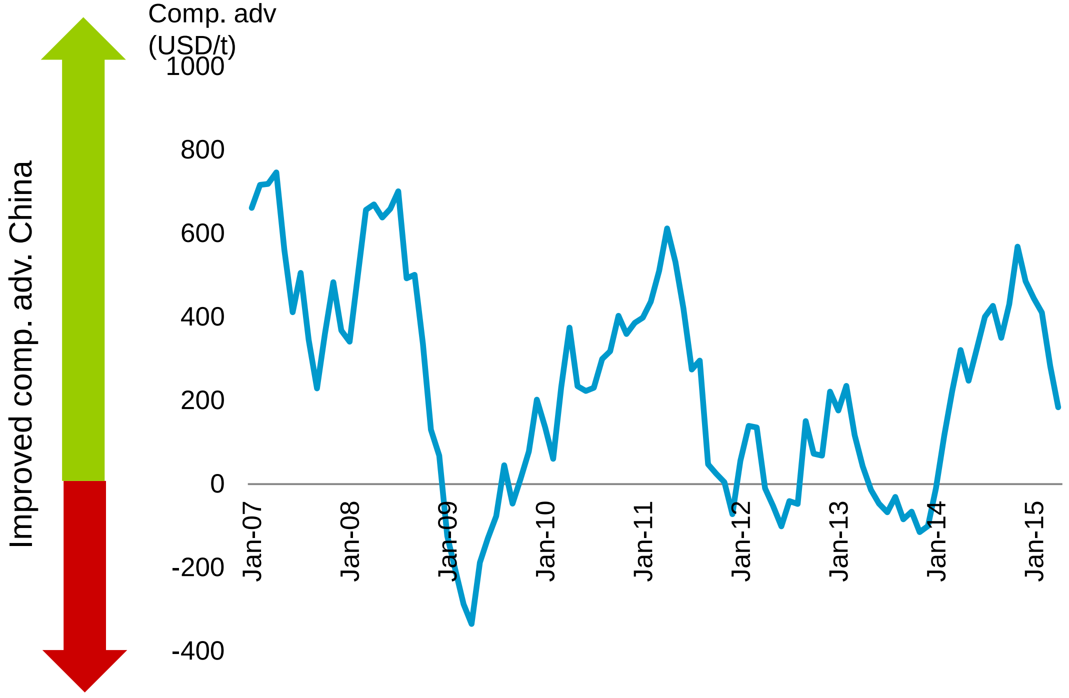
Structural growth in Chinese exports

Majority of growth bound for Asia and Americas

Chinese strip and foil exports in tons



Chinese competitive advantage downstream*



Source: Global Trade Atlas, Hydro analysis

Source: CRU/Ecowin

*Est. metal cost China versus Europe

: LME cash + European duty-paid standard ingot premium

China: SHFE cash + avg. local premium + freight – export rebates (~13 %)

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1 Business overview

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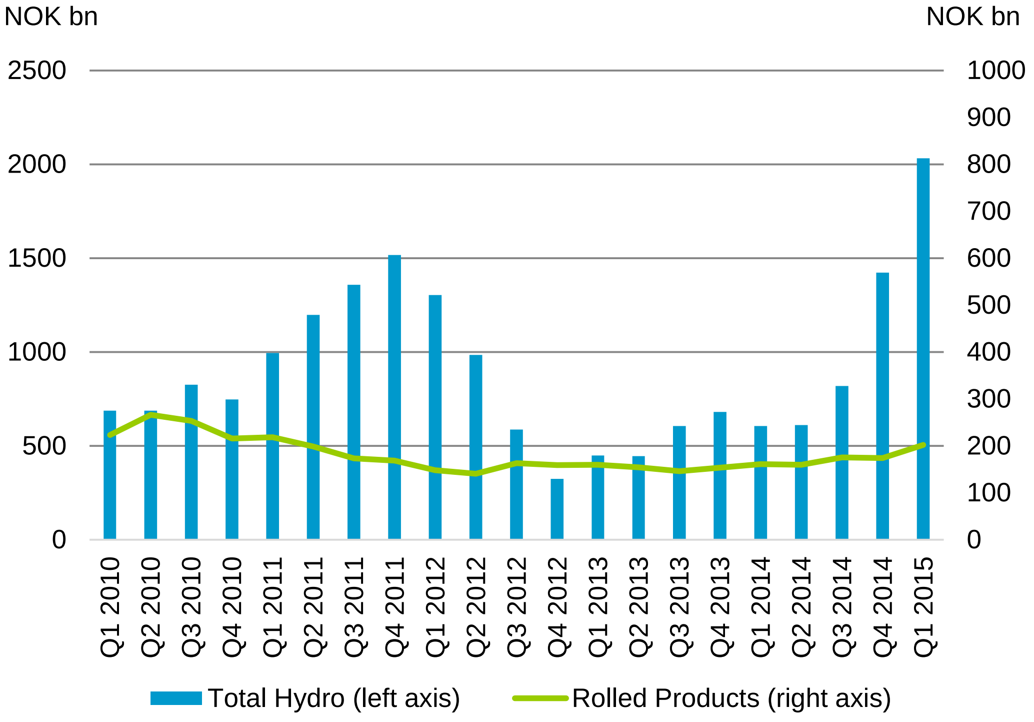
Rolled Products is a margin business

Resulting in more stable earnings than rest of Hydro as a whole

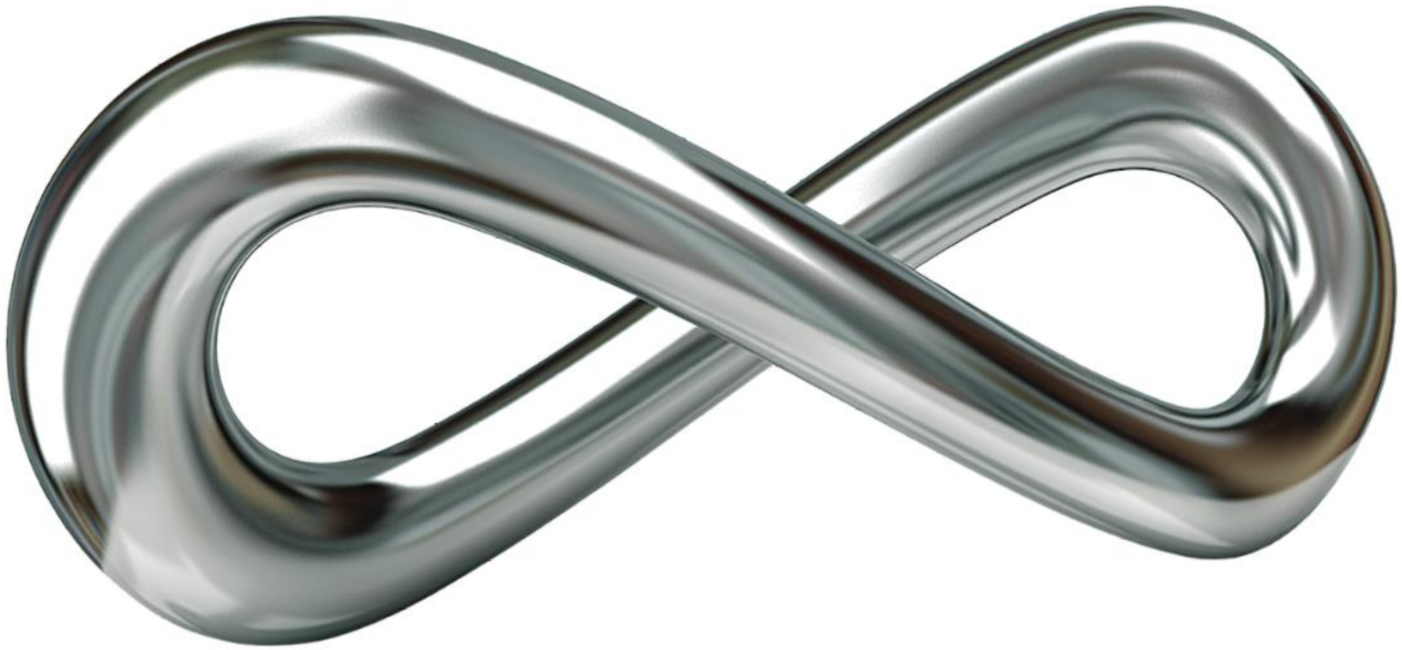
Underlying EBIT Rolled Products and Hydro 4-quarters rolling*



- Margin business based on conversion price
  - LME and premium element (to a large extent) passed on to customers
- Range from spot contracts to multi-year contracts
- High share of fixed costs - volume sensitive

* Rheinwerk part of Rolled Products from Q1-2012.

Rolled Products aims to lift margins through clear aspiration



Better Bigger Greener

Better

Close to customer: creating value through innovation

Forming optimized AA5182 variant in automotive applications

- High formability and high corrosion resistance due to optimized specification
  - Strategic supplier to major European OEM’s
  - Based on leading R&D competence

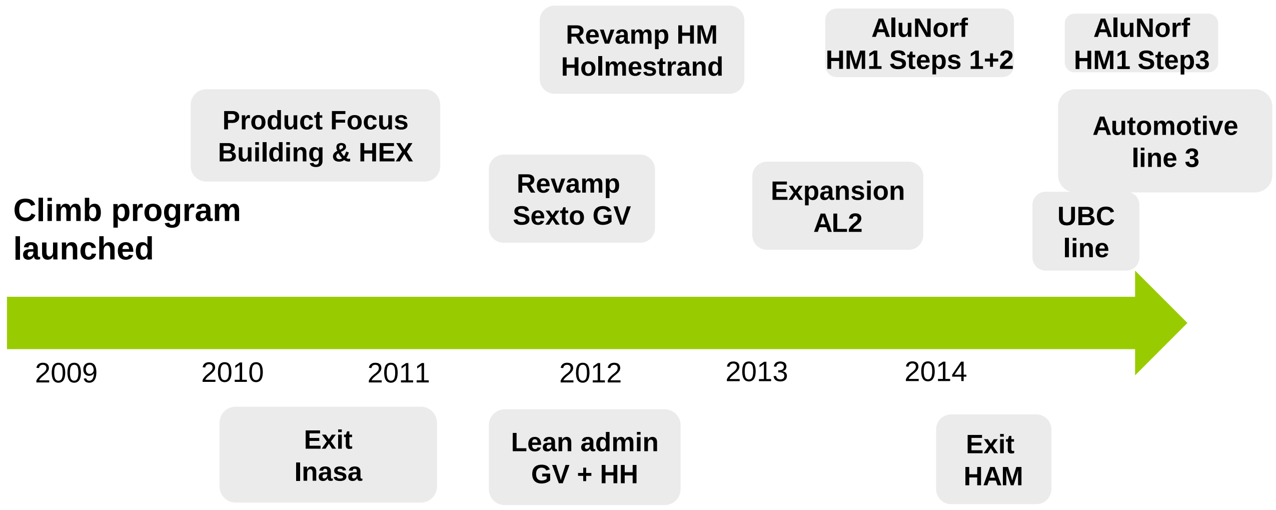
Introducing 5μm* high-performance aluminium foil

- Full protection at record-thin gauges
- Maintains absolute barrier protection against food spoilage
  - Material savings of up to 16 percent
  - Improved material properties
  - Improved run ability on customers’ equipment

* Micrometre

Climb: Continuous Improvements in Rolled Products

- Fixed cost reductions and lean operations
- Further operational improvements
- Investments and maintenance
- Procurement
- Organization and manning
- High grading product portfolio
- Recycling & metal cost position



Target	Time period
600 MNOK	2012-2014
200 MNOK	2014-2016

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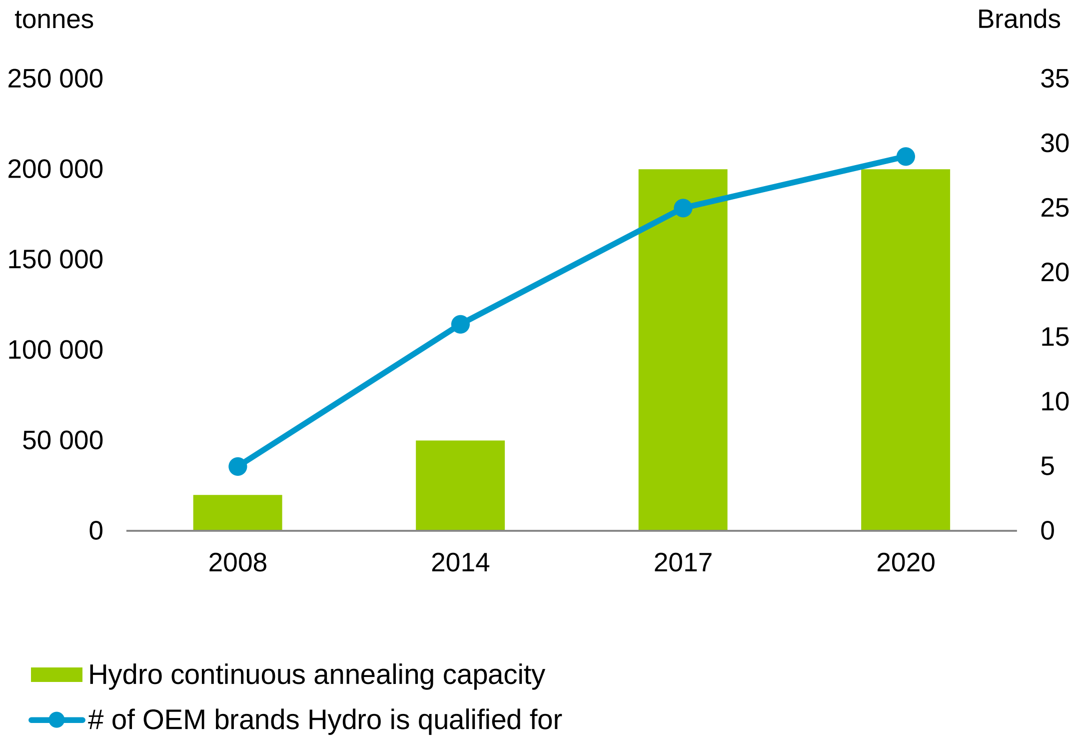
Bigger

Pursuing attractive growth opportunities

Major step in automotive Body-in-White (BiW) market

- Installation of automotive line 3 lifting capacity to 200 thousand tonnes per year
- Step change in BiW production process
- Production start second half 2016

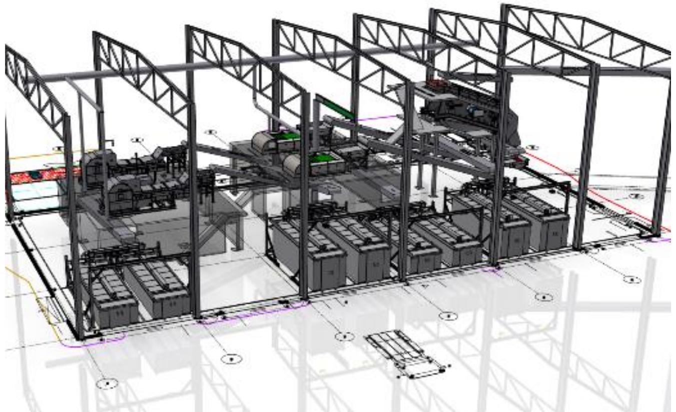
Hydro BiW development



Hot mill expansion and strengthening of recycling position

Expanding AluNorf hot mill capacity

- Capacity increase by ~60 000 tonnes
- Debottlenecking core asset
- Start of production 2016



Establishing strong recycling position

- Installation of UBC* recycling line
- Fulfilling customer needs and strengthening beverage can market position
- Improving metal cost position
- Start of production end 2015

* UBC: Used beverage can

Greener

Fulfilling customer and environmental needs

Greener

Products

- 5µm high-performance aluminium foil saves up to 16% in material
- Light-weighting in automotive by replacing steel saves up to 20kg of CO_2 per kg of aluminium used

Process

- Continuous improvement and step changes
- Award-winning efficiency in annealing of aluminium coils

Recycling

- Closing the loop
- Significant CO_2 savings from recycling post-consumed scrap at new UBC recycling line

ENERGY AWARDS

dena
Deutsche Energie-Agentur

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Rolled products brings Hydro closer to climate neutrality in 2020

Protection matters

Weight matters

Durability matters

Quality matters

Recycling matters




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INFINITE
ALUMINIUM