



# Norsk Hydro

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2016 Global Metals, Mining & Steel Conference

# Cautionary note in relation to certain forward-looking statements

Certain statements included within this announcement contain forward-looking information, including, without limitation, those relating to (a) forecasts, projections and estimates, (b) statements of management's plans, objectives and strategies for Hydro, such as planned expansions, investments or other projects, (c) targeted production volumes and costs, capacities or rates, start-up costs, cost reductions and profit objectives, (d) various expectations about future developments in Hydro's markets, particularly prices, supply and demand and competition, (e) results of operations, (f) margins, (g) growth rates, (h) risk management, as well as (i) statements preceded by "expected", "scheduled", "targeted", "planned", "proposed", "intended" or similar statements.

Although we believe that the expectations reflected in such forward-looking statements are reasonable, these forward-looking statements are based on a number of assumptions and forecasts that, by their nature, involve risk and uncertainty. Various factors could cause our actual results to differ materially from those projected in a forward-looking statement or affect the extent to which a particular projection is realized. Factors that could cause these differences include, but are not limited to: our continued ability to reposition and restructure our upstream and downstream aluminium business; changes in availability and cost of energy and raw materials; global supply and demand for aluminium and aluminium products; world economic growth, including rates of inflation and industrial production; changes in the relative value of currencies and the value of commodity contracts; trends in Hydro's key markets and competition; and legislative, regulatory and political factors.

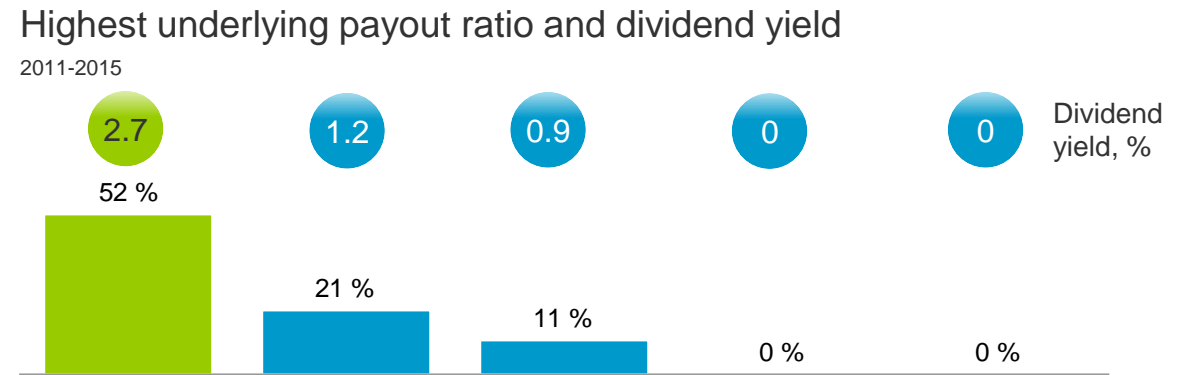
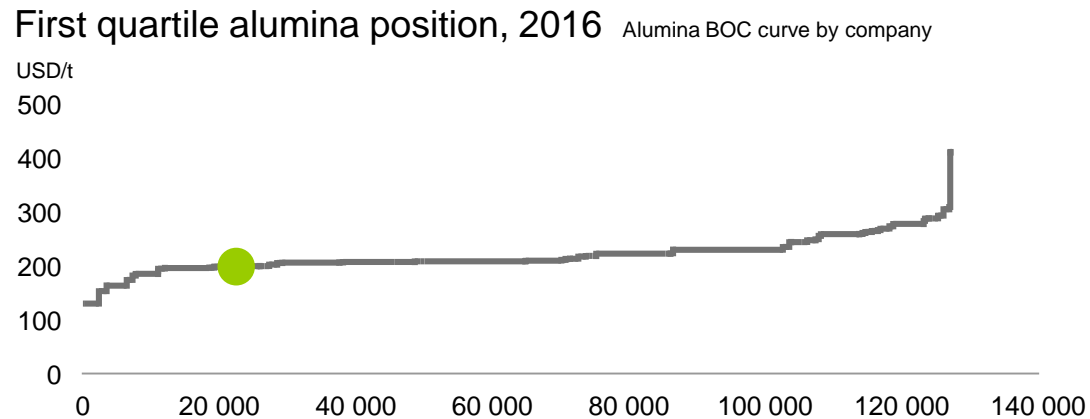
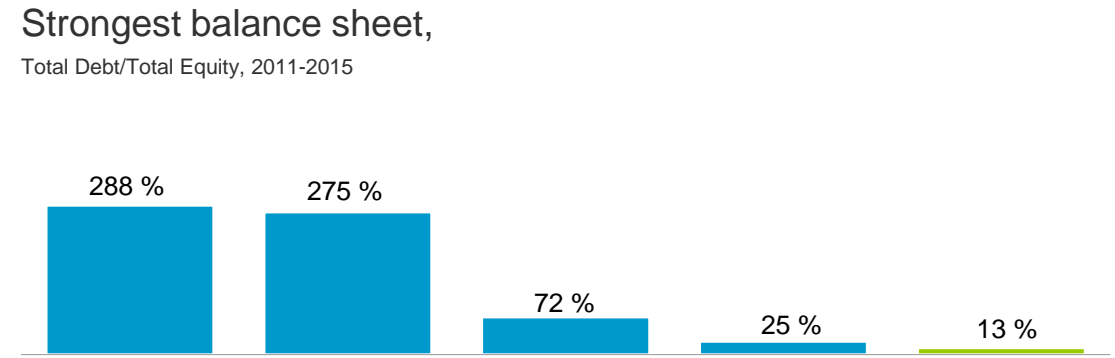
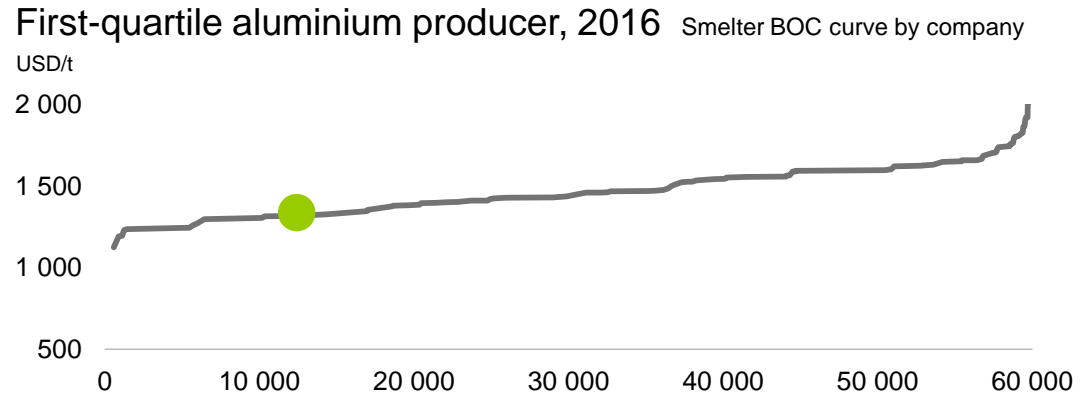
No assurance can be given that such expectations will prove to have been correct. Hydro disclaims any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

# Norsk Hydro

Well positioned in  
challenging markets



# Leading performance compared to aluminium peers



Source: ThomsonOne, CRU, company filings  
 Total debt/Total Equity= (Long Term Debt + Short Term Debt & Current Portion of Long Term Debt) /Equity attributable to shareholders  
 Dividend yield = Dividend Per Share / Market Price at Year End  
 Underlying dividend payout ratio = Dividend Per Share / Underlying Consolidated Earnings Per share

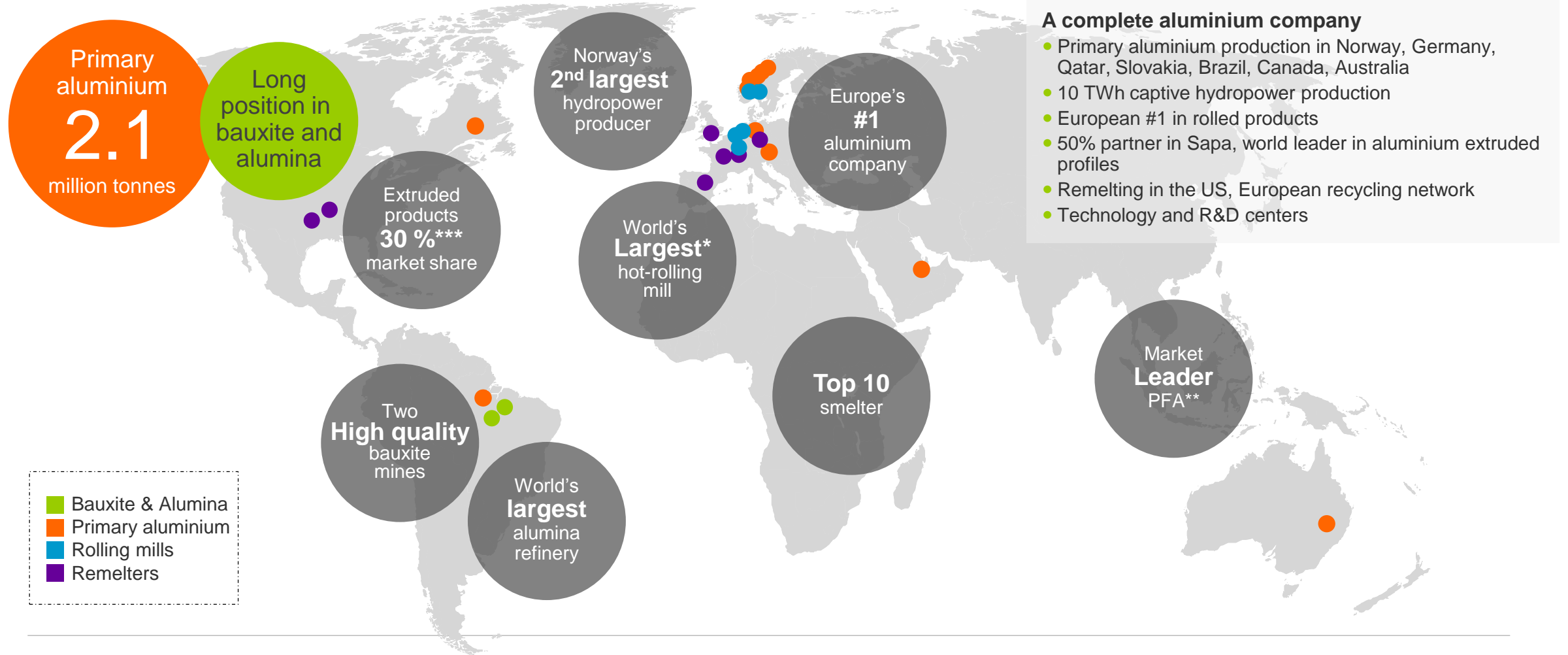
■ Peers ■ Hydro

Aluminium peers included: Alcoa, Century, Chalco, Rusal



# A resource-rich, global aluminium company

Robust positions along the entire value chain



\* Outside China  
\*\* Primary Foundry Alloys  
\*\*\* Sapa JV

# Building competitiveness through HSE, CSR and compliance



Safety performance  
(TRI) at industry benchmark

**3.6/2.0\***

*Own employees/ Contractors*



Carbon-neutral from a  
life-cycle perspective

**On track**



High focus on compliant  
behavior and practices

- HSE, CSR and compliance always first on the Hydro priority list and part of the company's license to operate
- Strong correlation between financial and non-financial performance
- Clear lines of responsibility throughout the organization and in all business areas on HSE and CSR
- Leading practice on compliance culture

\* TRI rate YTD end-Mar-16 – total recordable incidents per million hours worked

# Uncertain markets


Solid demand growth



# Strong long-term growth drivers across all segments

Recycling taking a bigger share

Strong demand drivers in key aluminium segments

	<b>Transport</b>	Growth in automotive vehicle production Aluminium content in cars increasing Growth in other transport modes, e.g. railway	5 – 6 %
	<b>Construction</b>	Urbanization Housing market recovery in mature regions Energy neutral buildings	3 – 4 %
	<b>Electrical</b>	Urbanization Copper substitution	5 – 6 %
	<b>Machinery &amp; equipment</b>	Improving industrial sentiment in mature regions Manufacturing activity and industrial growth in emerging countries	4 – 5 %
	<b>Packaging</b>	Urbanization Environmentally-friendly solutions	3 – 4 %

Semis demand CAGR 2015 – 2025





# Environmental regulations accelerate substitution across segments

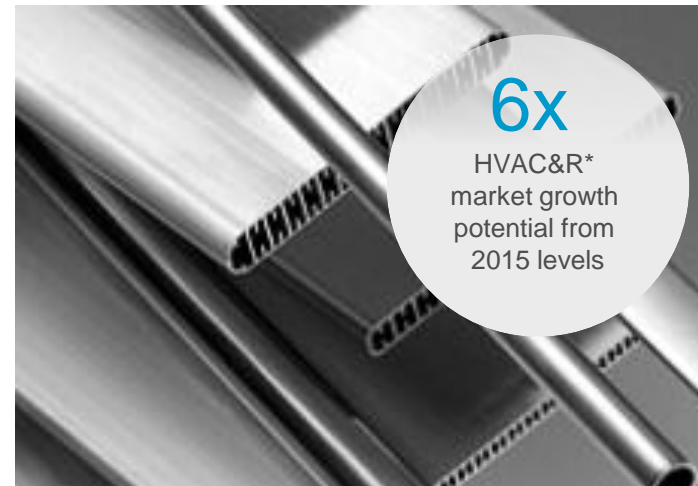
## Steel substitution in automotive



Lighter vehicles in aluminium make a big impact on the climate challenge:

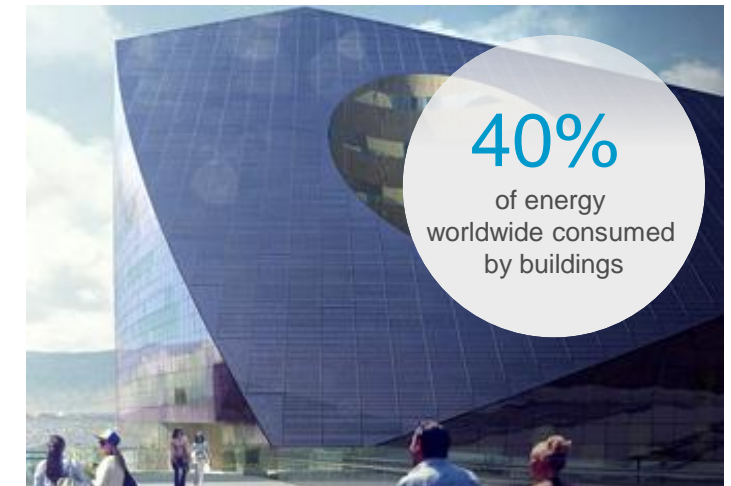
- US CAFE regulations
- EU CO2 emission reduction targets

## Copper substitution in HVAC&R, cabling and transmission lines



Aluminium weight and price advantages vs copper on a volume conductivity equivalent basis

## Key enabler for energy-efficient buildings



Flexibility and formability of aluminium enable energy-efficient building solutions:

- US Building energy use laws
- EU 2012 Energy efficiency directive

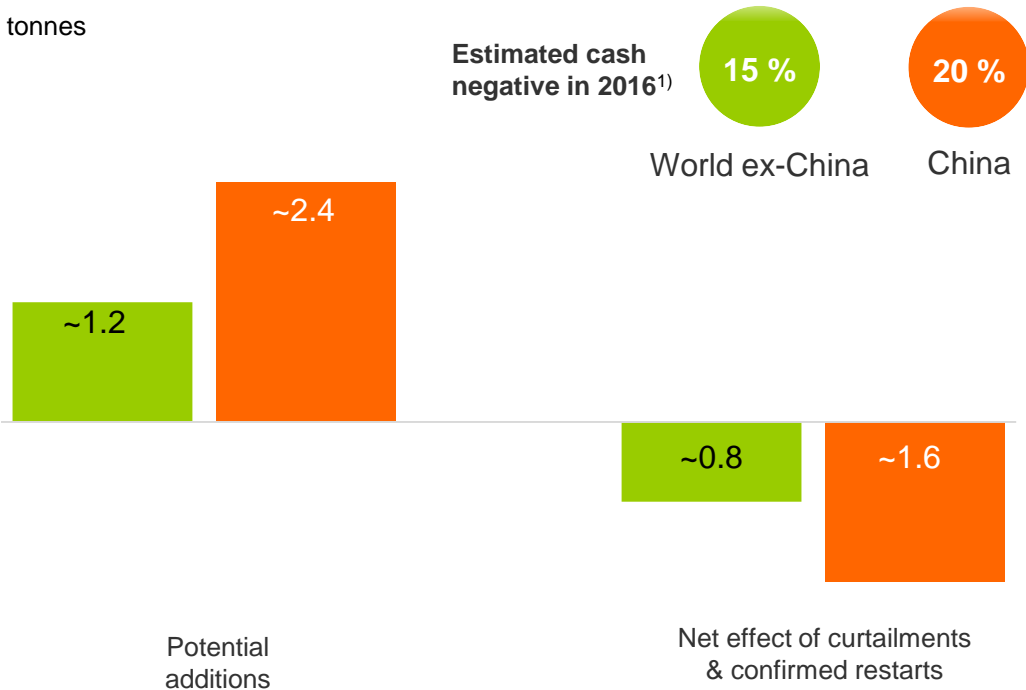
\* Heat, ventilation, air conditioning & refrigeration (HVAC&R)  
Source: Ducker Europe, CRU; Hydro analysis, Sapa analysis

# Aluminium market expected to be largely balanced in 2016

Higher risk of capacity restarts in China

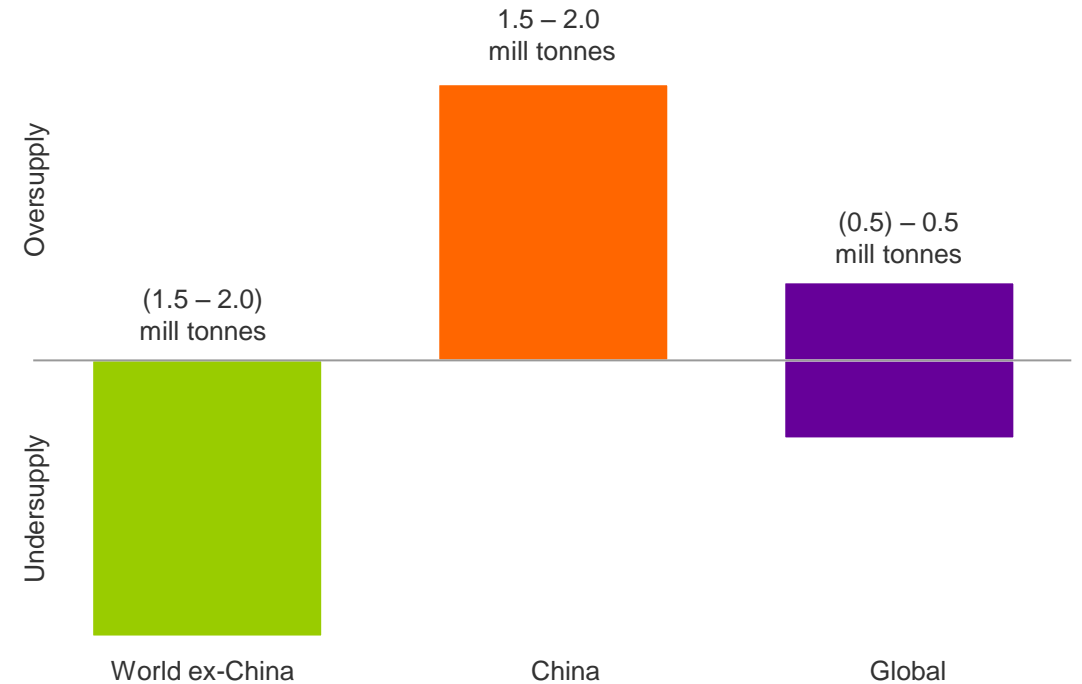
## Supply development 2016

Mill tonnes



## Market balance 2016

Mill tonnes



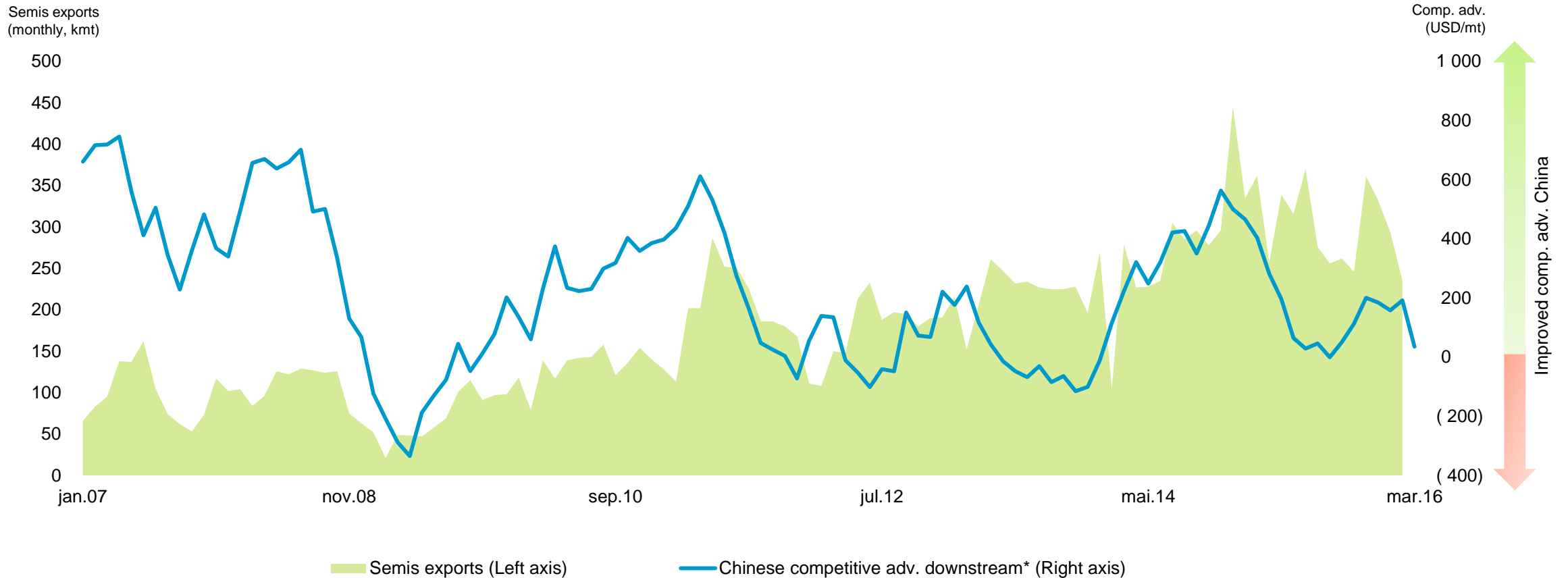
Source: CRU, Hydro Analysis

1) Based on CRU BoC curve 2016 and CRU price assumptions of LME 3m at 1505 USD/t and SHFE at 10.950 RMB/t



# Shrinking arbitrage amid rising SHFE prices

Preliminary exports figures indicate increased exports in March



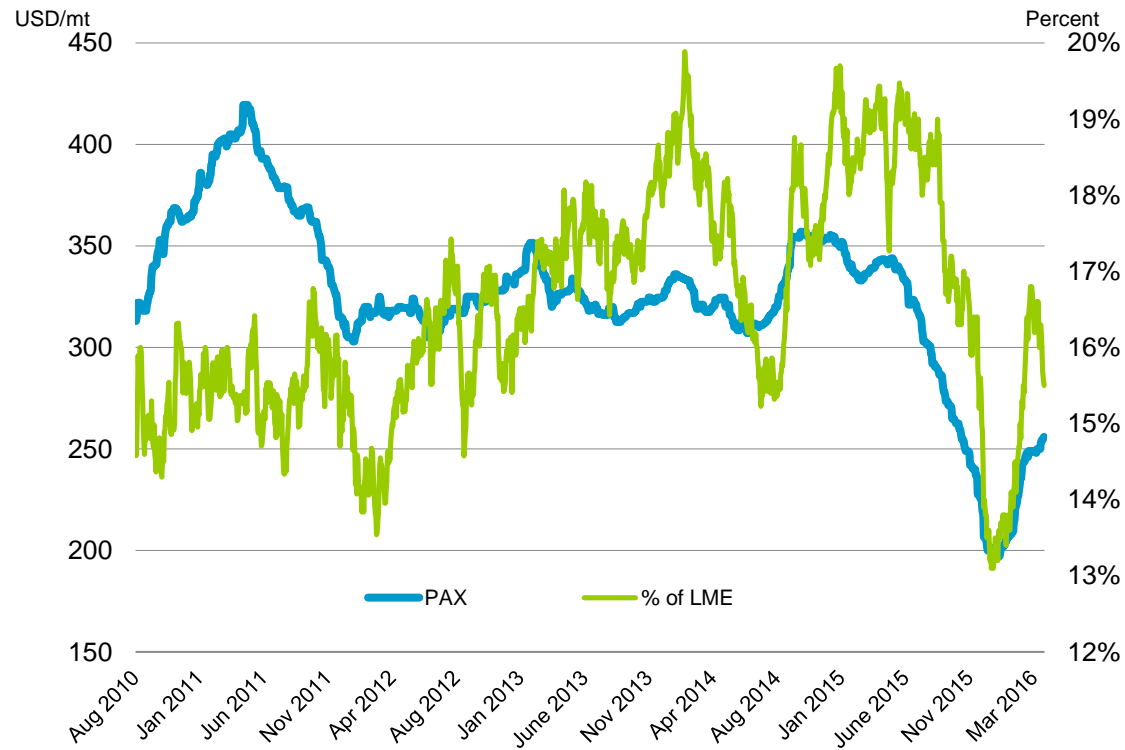
Source: CRU/Ecowin  
 Est. metal cost China versus Europe:  
 LME cash + European duty-paid standard ingot premium  
 China: SHFE cash + avg. local premium + freight – export rebates (~13 %)  
 (12)



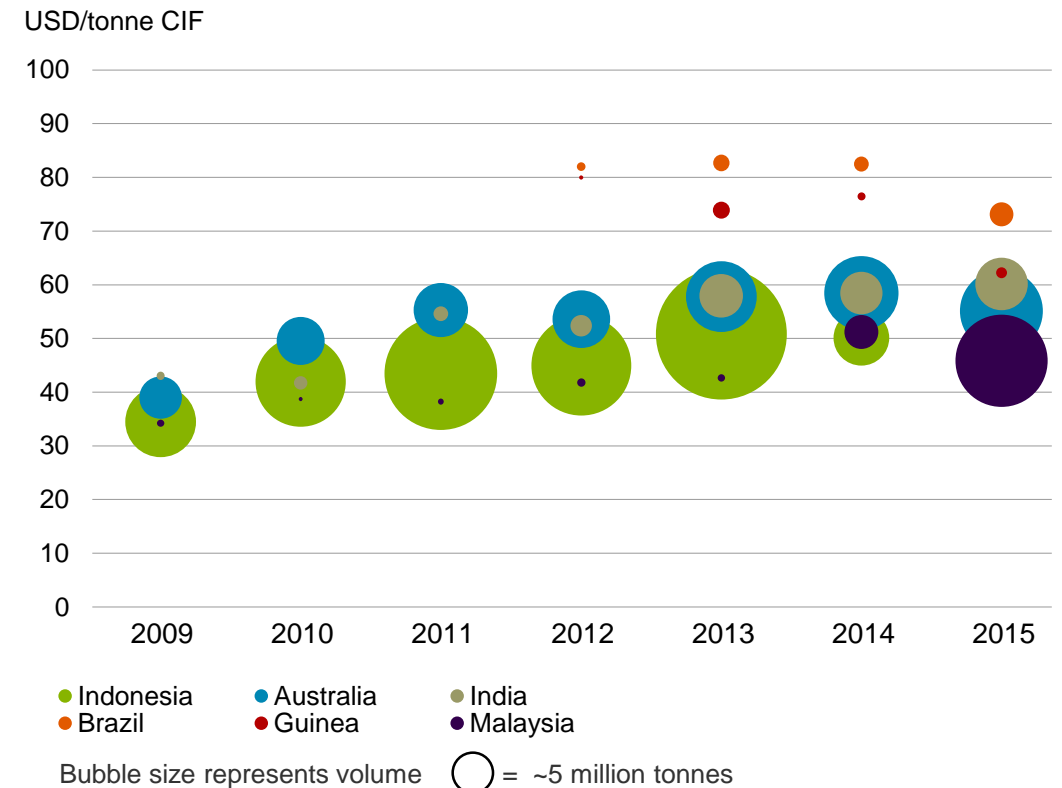
# Alumina prices rebound on tightening market balance

Bauxite market may be affected by refinery curtailments

Platts alumina index (PAX)



China bauxite imports, volume and price by country



Source: Platts, Ecwin, China Customs, CRU

# Norsk Hydro

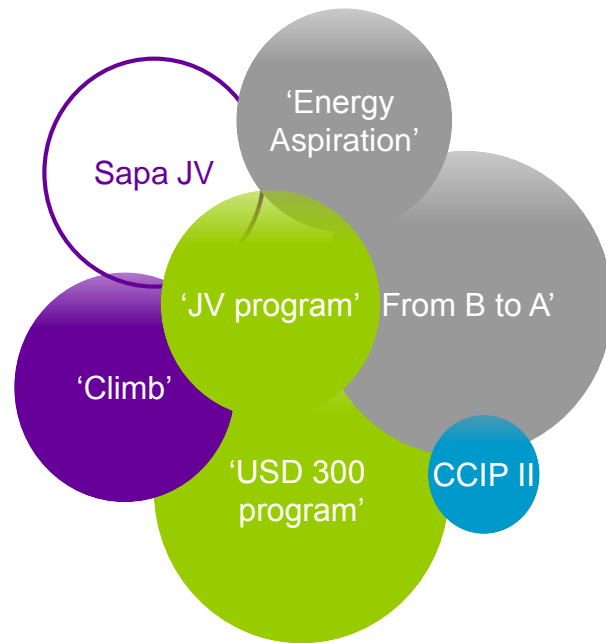
Strengthening  
relative industry position  
with ambitious targets



# Proven track-record of productivity gains continues

## Hydro's improvement drive until 2015

Total improvements 2011-2015:  
BNOK 4.5<sup>1</sup>

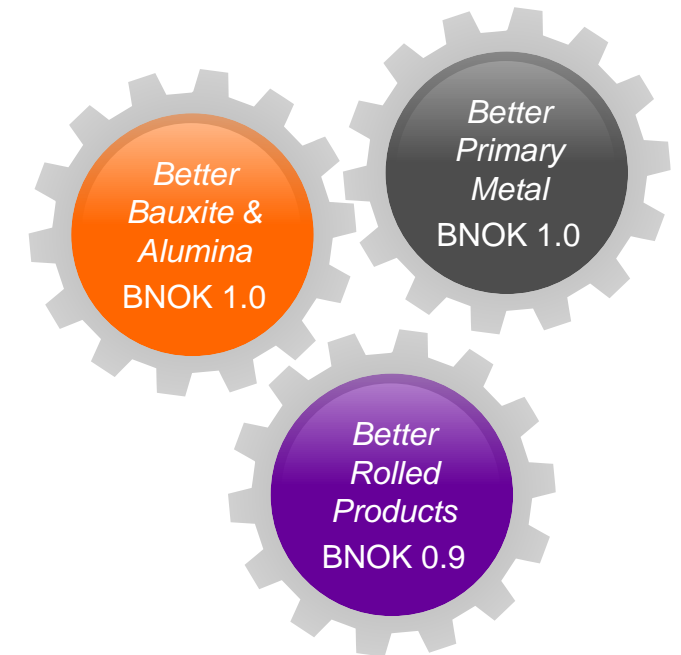


## Hydro's new improvement ambition

Total improvements of  
BNOK 2.9 from 2016-2019<sup>2</sup>



## Tailor-made ambitions across the value chain



1) Includes USD 300 from 2009

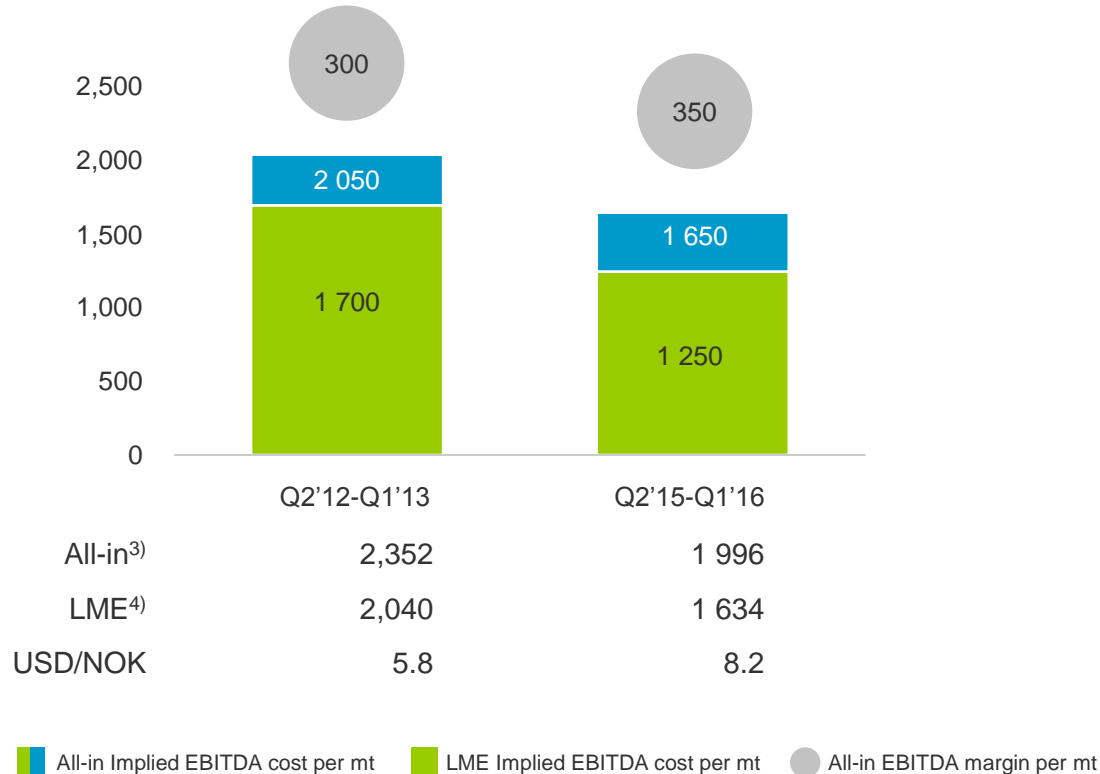
2) Includes some larger investments of 3.2 billion NOK in 2015-2019: AL3 and UBC in Rolled Products, 100+100kt capacity creep in Primary Metal, Alunorte debottlenecking in B&A.

3) Real 2015 terms

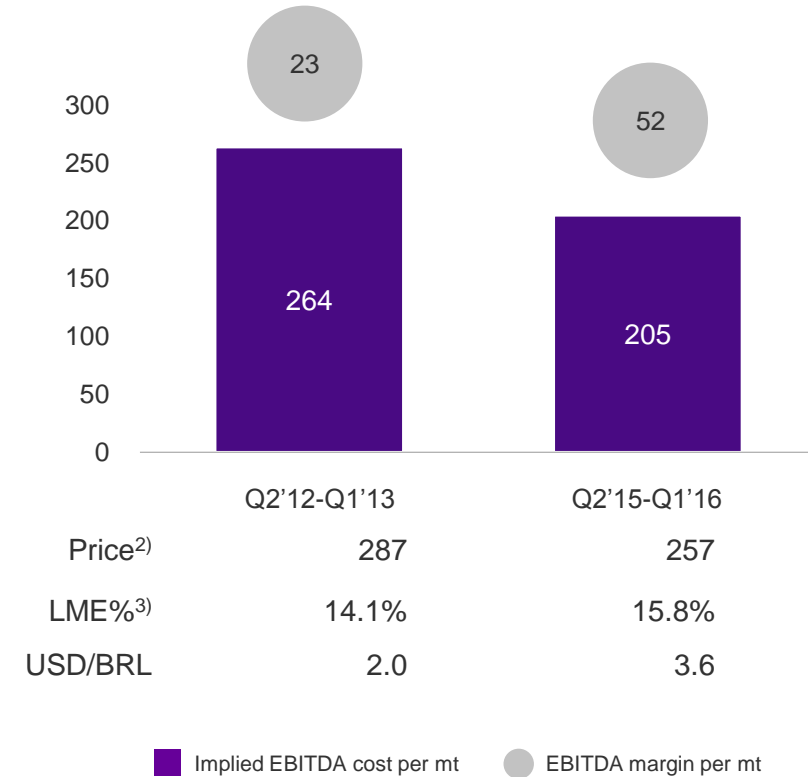
# Structurally improved cost position

Productivity gains supported by currency

All-in implied primary cost and margin, USD/mt <sup>1)</sup>



Implied alumina cost and margin, USD/mt <sup>1)</sup>



1) Realized all-in aluminium price minus underlying EBITDA margin, including Qatalum, per mt aluminium sold  
 2) Realized LME aluminium price minus underlying EBITDA margin, including Qatalum, per mt primary aluminium produced  
 3) Realized LME plus realized premiums, including Qatalum  
 4) Realized LME, including Qatalum

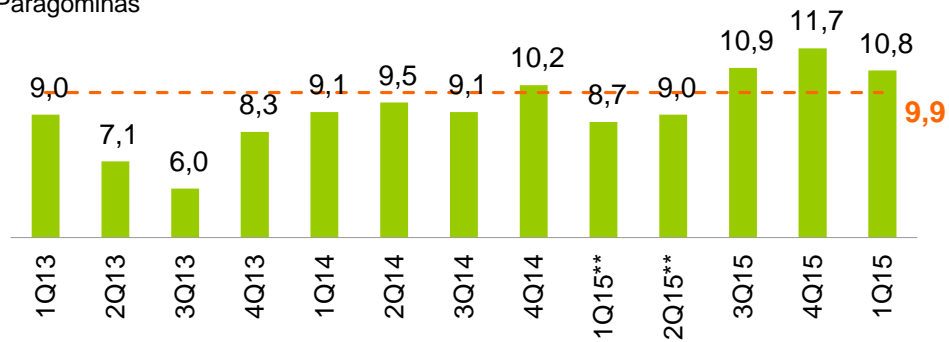
1) Realized alumina price minus underlying EBITDA for B&A, per mt alumina sales  
 2) Realized alumina price  
 3) Realized alumina price as % of three month LME price with one month lag



# Significant operational and commercial improvements in Bauxite & Alumina

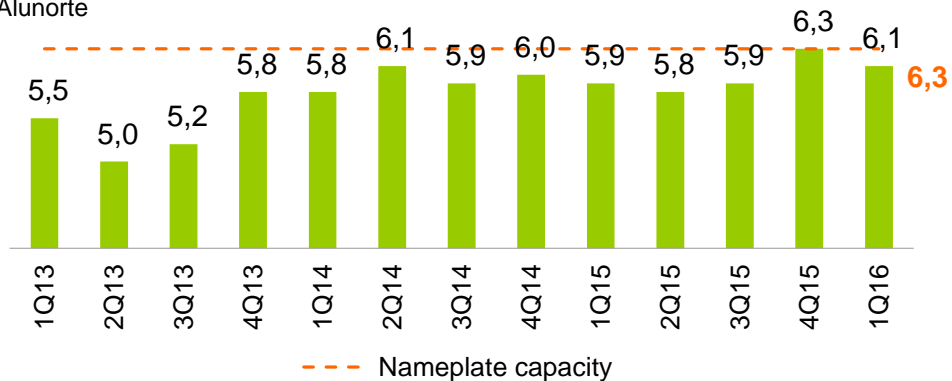
Annualized bauxite production, million mt

Paragominas

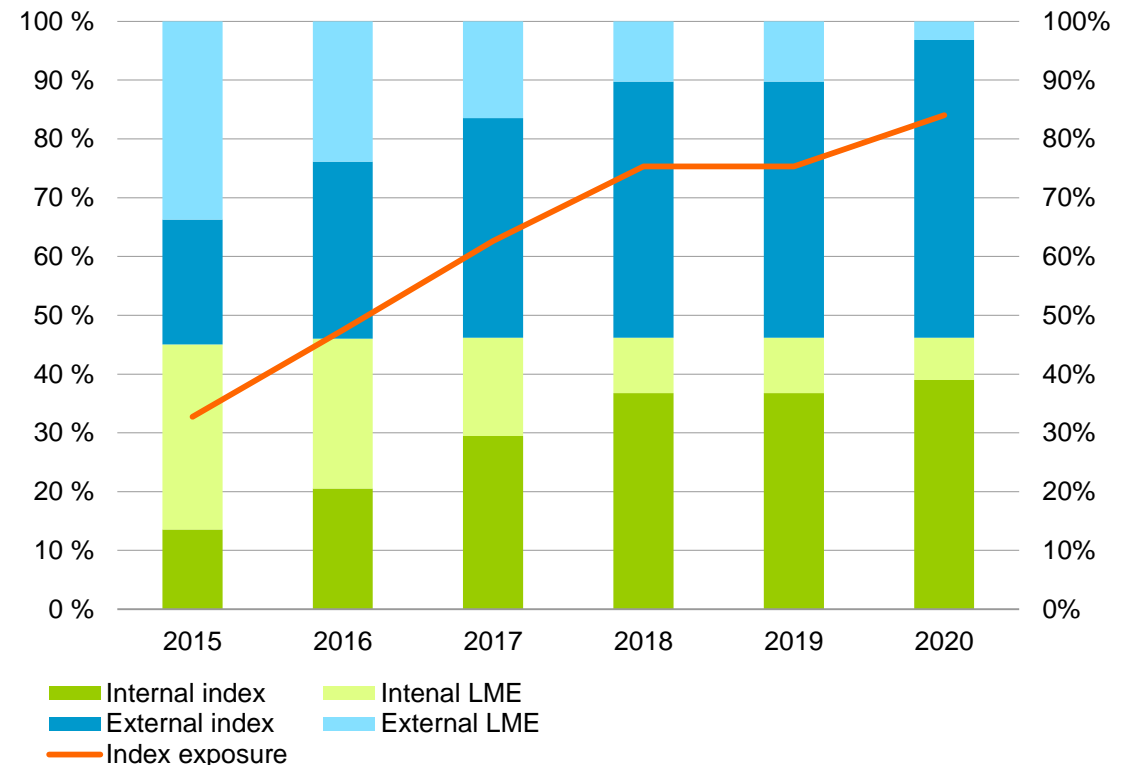


Annualized alumina production, million mt

Alunorte



Sales exposure to index and short term pricing\*



\* Rounded figures. Indicating volumes available for index pricing. Includes minority sales priced at % of LME with floor. Based on annual sourced volumes of 2.3 million tonnes (2015 based on 2.7 million tonnes)

\*\* Extended maintenance period in March / April 2015 resulted in lower bauxite production

# Extending the technology and innovation lead

Key to maintain and further improve Hydro's competitive position



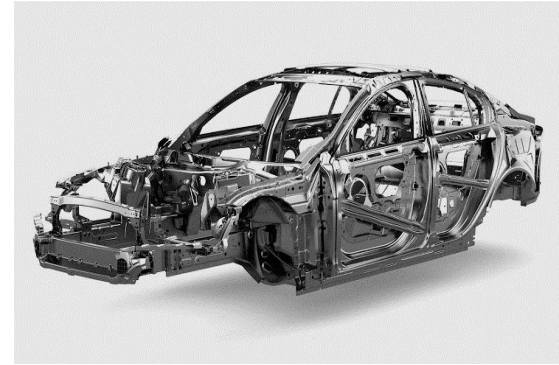
## Bauxite & Alumina

- Debottlenecking to go beyond nameplate capacity in Paragominas to 11 mill t/y and Alunorte up to 6,6 mill t/y
- Developing technology for utilization of residual bauxite
- Enhanced precipitation process control for improved quality and output



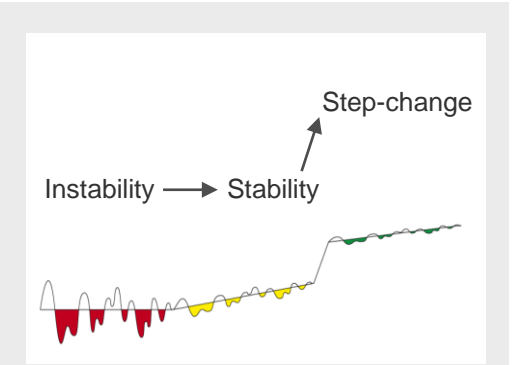
## Primary Metal

- Testing aluminium production technology with world's lowest energy consumption of 11.5-11.8 kWh/kg
- Use technology development to create spin-off effects for existing capacity
- AFM technology to capture high-tech market auto segments in automotive
- Recycling strategy supported by world-leading sorting technology\*



## Rolled Products

- Automotive line 3 to lift Body-in-White capacity to 200,000 t/yr\*\*
- State-of-the-art UBC recycling line
- Utilize leading technology competence to exceed customer expectations, e.g. step-change innovation in foil (HyFoil)
- De-bottlenecking of Alunorf hot-rolling mill



## Technology approach

- Hydro's technology strategy encompasses entire value chain from bauxite to recycling
- Gradual approach to ensure full stability at existing level ahead of step-change developments

\* Acquired WMR Recycling GmbH  
\*\* Refers to nominal capacity

# Taking productivity beyond lean operations with the Karmøy technology pilot

With spin-off effects for the entire portfolio

- Technology pilot with production of 75 000 mt
  - 48 cells HAL4e technology – 12.3 kWh/kg
  - 12 cells HAL4e Ultra - 11.5 – 11.8 kWh/kg
- Spin-off technology elements for existing portfolio
  - 100 kt contribution to 2025 creep ambition
  - ~NOK 400 million annual EBITDA effect with CRU 2016 assumptions <sup>1)</sup>
- Verifying next-generation aluminium production technology
- First metal expected in second half 2017
- Net capex NOK 2.7 billion
  - Total capex NOK 4.3 billion
  - NOK ~1.6 billion support from Enova

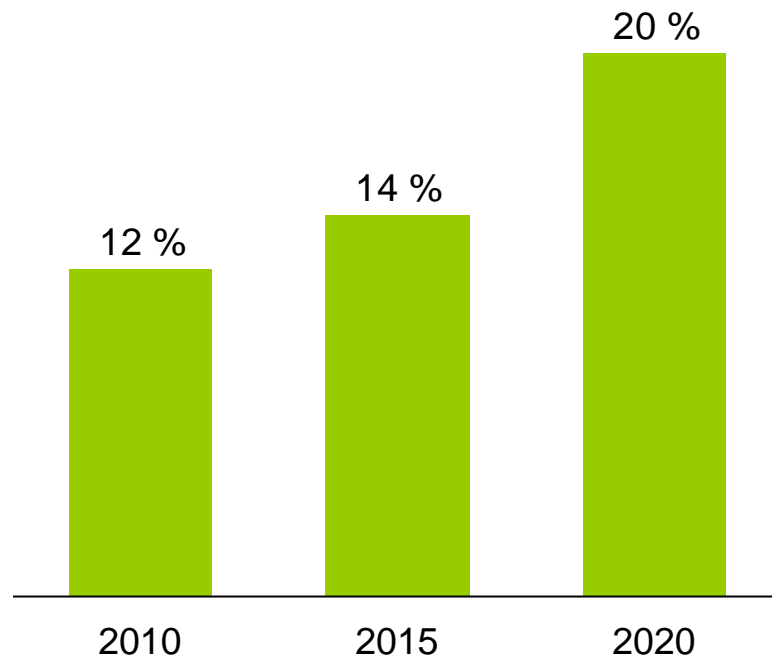


1) Using CRU 2016 assumptions, LME 1 500, Standard ingot EU DDP 130, Extrusion ingot EU 265, NOK/USD 8.53, estimated Hydro fixed costs USD 312

# Optimizing product portfolio by expanding in higher-margin segments

Pursuing attractive automotive growth opportunity

Increasing share of automotive in Rolled Products' portfolio



Hydro in car models



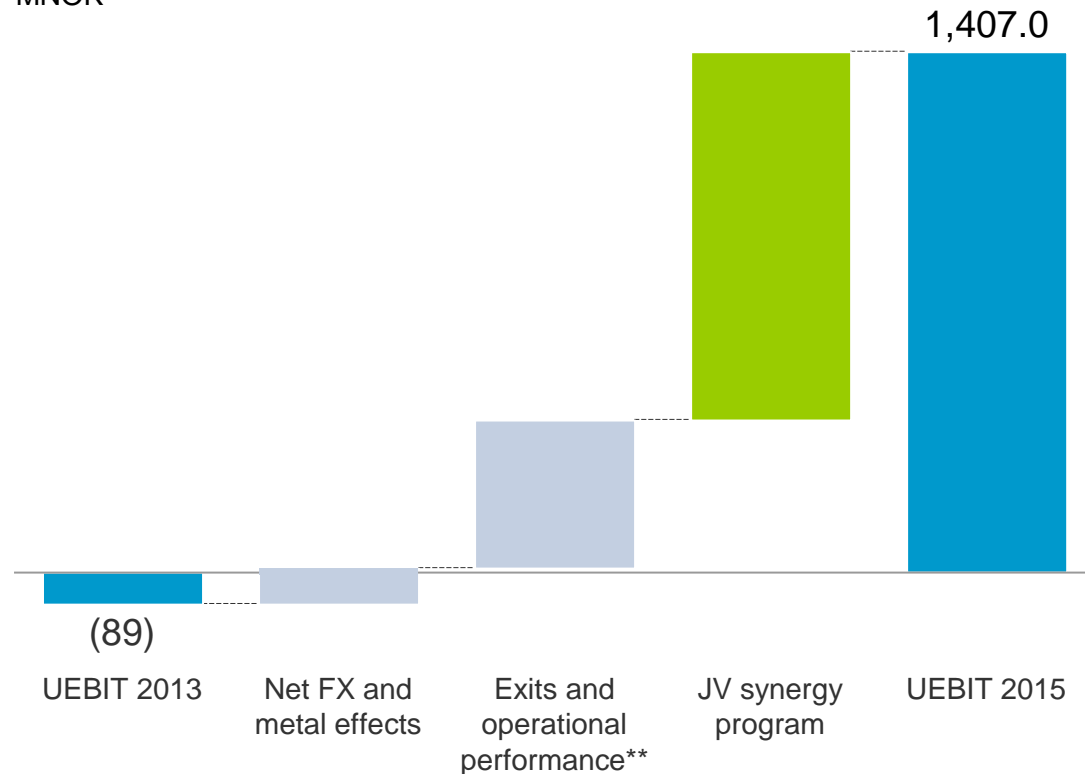
# Strong improvement trend in Sapa JV



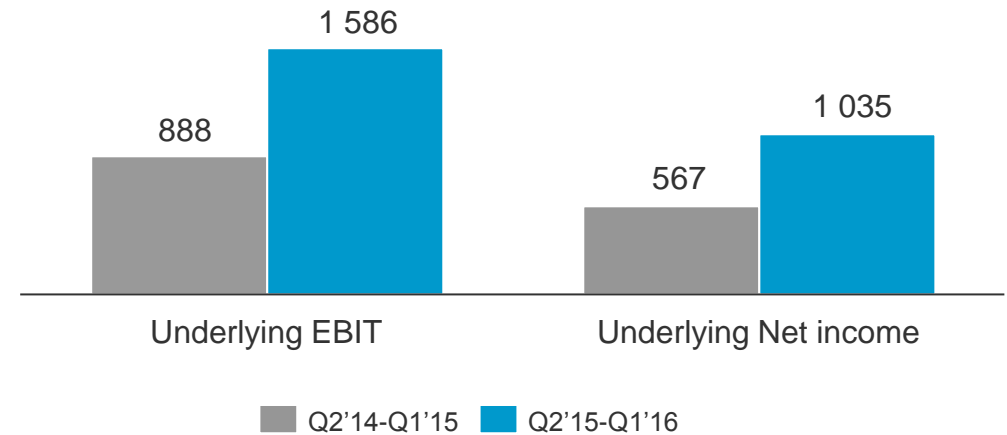
1 BNOK in restructuring gains and synergies delivered one year ahead of plan

## Sapa restructuring agenda\*

Sapa 100% basis  
MNOK



## Sapa results (100 % basis), MNOK



- Strong demand in North America, stable in Europe
- BNOK 1 in synergy gains to be delivered ahead of plan
- Positive currency effects



# Managing industry cyclicality through a prudent financial framework

## Lifting cash flow potential

### Cost improvements:

- 4,5 BNOK 2011-2015\*
- 2,9 BNOK 2016 -2019\*\*

## Financial strength and flexibility

### Investment grade credit rating:

- > BBB Stable
- Funds from operations/Net adjusted Debt > 40%
- Net adjusted Debt/Equity < 55%

## Disciplined capital allocation

- Long-term sustaining capex 3.5-4 BNOK per year. Below depreciation
- Total capex:
  - 2015 BNOK 5,8
  - 2016 BNOK 8,1

## Reliable shareholder remuneration policy

### Revised dividend policy:

- Current dividend 1 NOK/share
- 40% payout ratio over the cycle


## Effective risk management

- Strong balance sheet
- Improving relative position
- Diversified business

# Hydro aspiration supported with ambitious mid-term strategic goals

	Ambitions	Target	Timeframe
<i>Better</i>	• Improve safety performance, strive for injury free environment	TRI<2	2020
	• Deliver on <i>Better</i> improvement ambition	BNOK 2.9	2019
	• Secure new competitive sourcing contracts in Norway post 2020	4-6 TWh	2020
	• Lift Paragominas production	11 mill mt/yr	2018
	• Lift Alunorte production	6.6 mill mt/yr	2018
	• Shift alumina sales to PAX-based pricing	> 85% PAX*	2020
	• Extend technology lead with Karmøy technology pilot	Build decision	2016
<i>Bigger</i>	• Realize technology-driven smelter capacity creep	200,000 mt/yr	2025
	• Lift equity bauxite production	19 mill mt/yr**	Long-term
	• Expand BiW capacity	200,000 mt/yr***	2017
	• Ramp up UBC line to full capacity	>40 000 mt/yr	2017
<i>Greener</i>	• Become carbon-neutral from a life-cycle perspective	Zero	2020
	• Increase recycling of post-consumed scrap	>250,000 mt/yr	2020
	• Deliver of reforestation ambition	1:1	2017

\* Based on sourcing volume of ~ 2.3 million tonnes per annum  
 \*\* Provided the acquisition of the 40% stake in MRN from Vale  
 \*\*\* Refers to nominal capacity



# Hydro 2016

Well-positioned to create value  
in challenging markets

- Strengthening relative industry position through improvement ambitions and R&D lead
- Securing resources for future decades
- Re-positioning portfolio towards high-margin markets and advanced customers
- Financial strength through relative positioning and balanced capital allocation

*Better Bigger Greener*



