Hydro

Capital Markets Day

London, November 29, 2018

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Safety information at The Andaz

- There are no scheduled fire alarm tests today, so if the fire alarms go off please listen to the announcements and follow the instructions
- The Fire Assembly point is by Alderman's Walk
- The Event Management Team will be on hand to assist
- The nearest fire exits to this location are:
  - Out of the entrance doors at the side, and turn to your left or right, the fire exits are indicated by the Green Running Man sign
- In the event of a medical emergency please inform the Event Management Team, who are trained first aiders, or where required, can contact the relevant services

Cautionary note in relation to certain forward-looking statements

Certain statements included in this announcement contain forward-looking information, including, without limitation, information relating to (a) forecasts, projections and estimates, (b) statements of Hydro management concerning plans, objectives and strategies, such as planned expansions, investments, divestments, curtailments 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, and (i) qualified statements such as "expected", "scheduled", "targeted", "planned", "proposed", "intended" or similar.

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 businesses; 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.

Agenda

07:30 – 08:00	**Light breakfast and registration**	11:10 – 11:25	Q&A
08:00 – 08:05	Welcome	**11:25 – 11:45**	**Break**
08:05 – 08:50	Hydro	11:45 – 12:00	Extruded Solutions
08:50 – 09:20	Finance	12:00 – 12:15	Rolled Products
09:20 – 09:35	Q&A	12:15 –12:30	Primary Metal
09:35 – 09:55	**Break**	12:30 – 12:45	Energy
09:55 – 10:35	Market outlook	12:45 – 13:00	Q&A
10:35 – 10:55	Bauxite & Alumina	**13:00 – 14:00**	**Lunch**
10:55 – 10:10	Corporate Social Responsibility		

Hydro

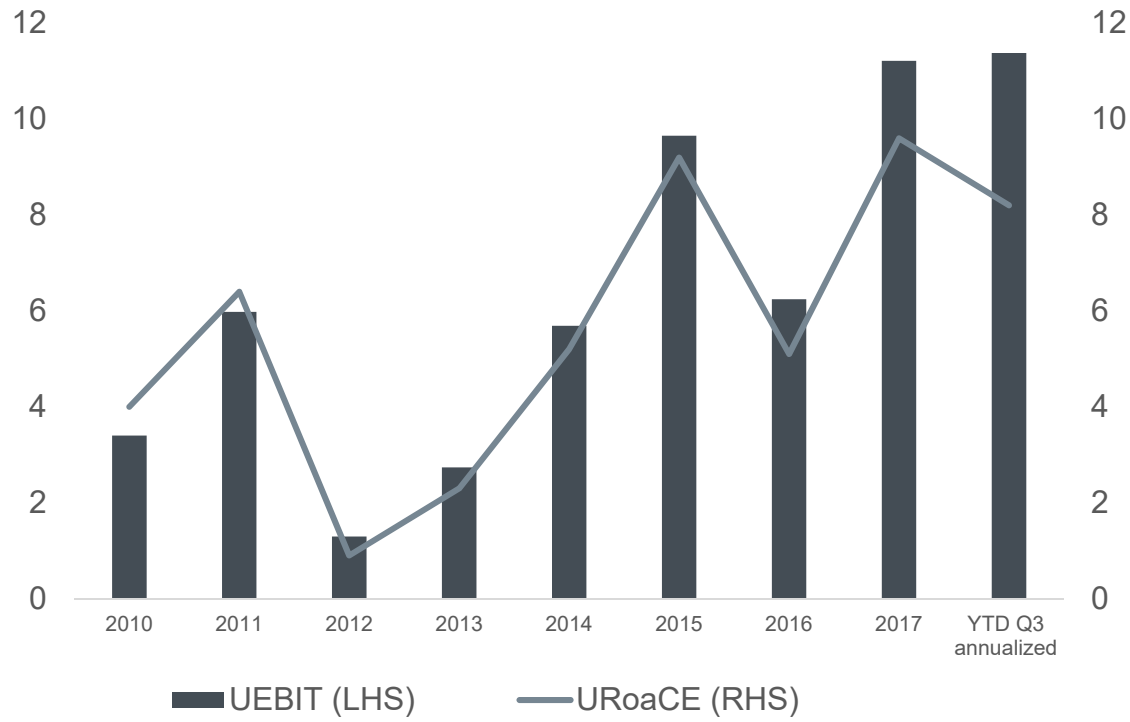
Navigating challenging times, maintaining long-term focus

Svein Richard Brandtzæg, President & CEO

Key priorities from last Capital Markets Day

- Maintaining financial strength and flexibility, providing attractive returns over the cycle
- Strengthening competitiveness and resolving operational challenges
- Differentiating through the integrated model, integrating Extruded Solutions
- Extending leadership in innovation and sustainability
- Improving safety performance

Historical underlying EBIT and underlying RoaCE

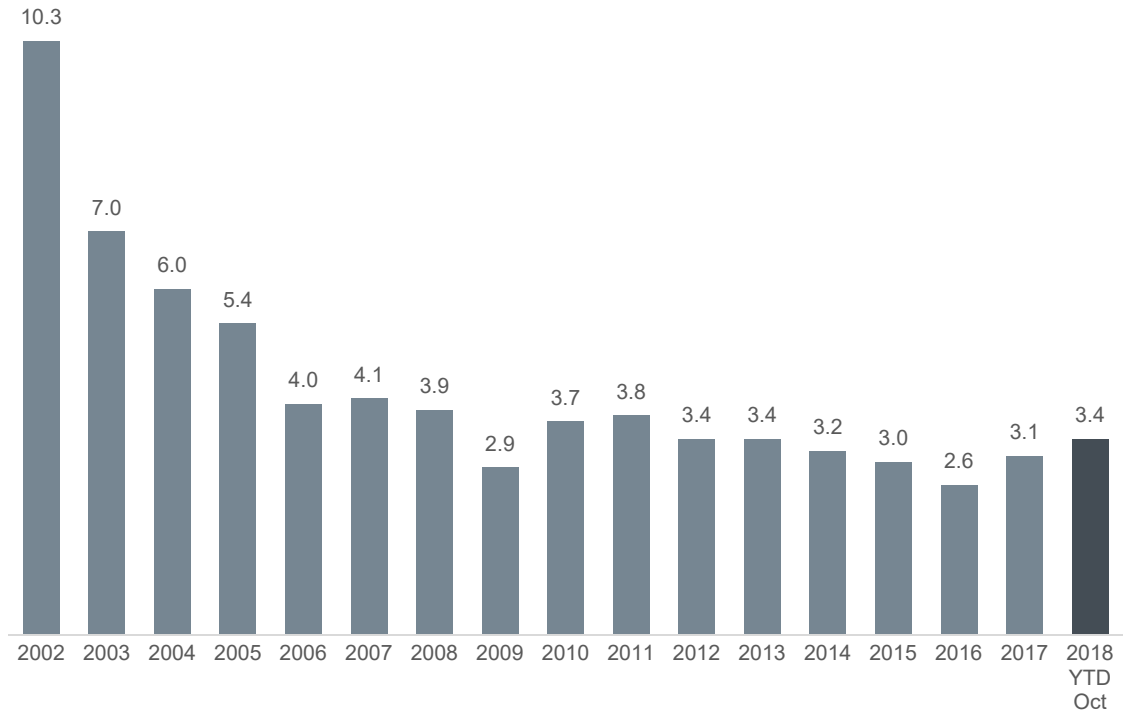


Underlying EBIT adjusted for tax expense / capital employed (current assets, PP&E, other non-current assets, current liabilities, non-current liabilities)

Safety – our top priority

Fatality in November - safety trend requires action

TRI Rate[1)]



1) Total recordable incidents (TRI) rate defined as cases per 1 million hours worked, for own employees

Sustainability and innovation is fully integrated into our business

People, Planet, Prosperity

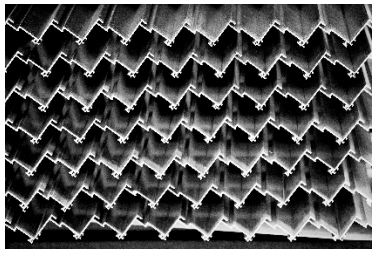
Making a positive difference

Improving our footprint

Driving innovation

Main developments during 2018

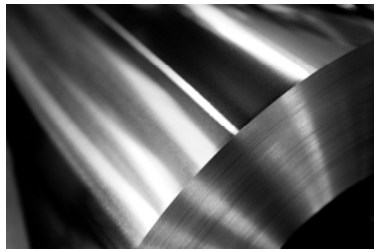
Extruded Solutions



Acquiring 2 plants in Brazil, investing in new press in US

Record results through 2018

Rolled Products



Restructuring foil business

Automotive line 3 picking up speed

Primary Metal

Karmøy Technology Pilot in full production, delivering as planned

Build-decision on Husnes restart and upgrade

Energy

~2.2 TWh renewable power sourcing

Developing solution to secure RSK value

Bauxite & Alumina

Embargoes on Alunorte, 50% production Alunorte, Albras, Paragominas

Signing of technical and social agreements

Our mid-term goals strongly affected by Alunorte situation

	Ambitions	Target	Timeframe	Progress[1]	Status
Better	• Improve safety performance, strive for injury free environment	TRI<2	2020	3.4[2]	🔴
	• Realize ongoing improvement efforts *Better*	BNOK 3.0	2019	(0.5) BNOK	🔴
	• Secure new competitive sourcing contracts in Norway post 2020	4-6 TWh	2020	4.8 TWh[3]	🟢
	• Lift bauxite production at Paragominas	11 mill mt/yr	2018	6.6 mill mt/yr[4]	🔴
	• Lift alumina production at Alunorte	7.0 mill t/yr	2021	3.9 mill mt/yr[4]	🔴
	• Shift alumina sales to PAX-based pricing	➢ 85% PAX[5]	2020	75-80% PAX[6]	🟢
	• Extend technology lead with Karmøy technology pilot	Start production	2H 2017	January 29, 2018	🔴
	• Extend technology lead with Karmøy technology pilot	Full ramp-up	Q2 2018	June 27, 2018	🟢
Bigger	• Realize technology-driven smelter capacity creep	200,000 mt/yr	2025	43,000 mt	🟡
	• Increase nominal automotive Body-in-White capacity	200,000 mt/yr	2017	Ramping-up, qualifications ongoing	🔴
	• Complete ramp-up of UBC recycling line	>40 000 mt/yr	2017	Delayed to Q4 2019	🔴
Greener	• Become carbon-neutral from a life-cycle perspective	Zero	2020	On track	🟢
	• Increase recycling of post-consumer scrap	>250,000 mt/yr	2020	168,000 mt	🔴
	• 1:1 rehabilitation target	1:1	2020	On track[7]	🟢

1) Based on 2018 estimate unless stated otherwise
2) YTD Oct-2018, own employees
3) ~2.2 Twh power sourcing since CMD 2017
4) YTD Q3 2018 annualized
5) Based on sourcing volume of ~ 2-2.5 million tonnes per annum
6) Based on sourcing volume of ~ 3.5 million tonnes for 2018
7) 1:1 rehabilitation of areas available for rehabilitation within two hydrological seasons after release. Revised definition of target takes into account the nature of the mining cycle, and the time lag necessary to ensure quality rehabilitation to restore biodiversity

Status towards the target
- 🟢 Ambition on track and on target
- 🟡 Ambition behind plan, but on target
- 🔴 Ambition will not meet the target within the timiframe

01

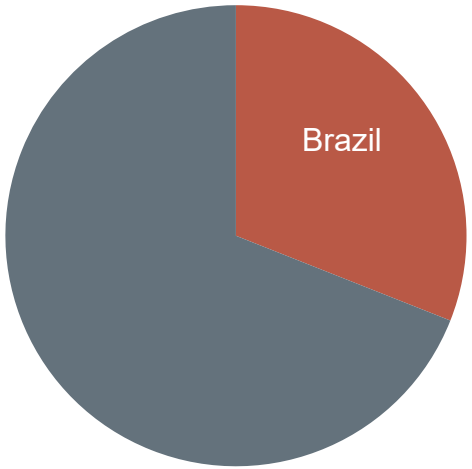
Roadmap to full production in Brazil

Hydro in Brazil

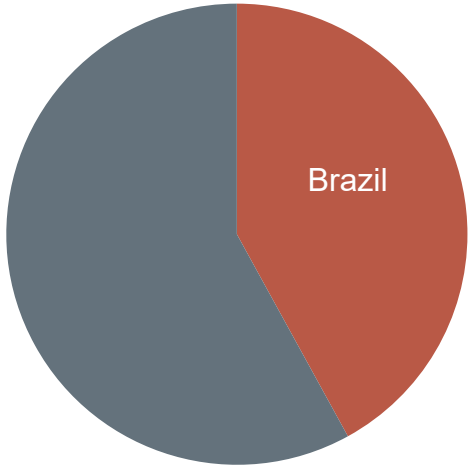
More than 40 years experience

Significant exposure to Brazil

Capital Employed in Brazil
Sept 30, 2018



UEBITDA in Brazil
2017



1974
Enters Brazil with ownership in MRN bauxite mine

2000
Acquires 34% stake in Alunorte alumina refinery

2011
Acquires Vale's aluminium assets

2017
Strengthens position as integrated aluminium company with strong extrusion presence through Sapa

2018
February rainfall event leads to partial curtailment

Capital employeed graph excludes BNOK (7.4) in capital employed in Other and Eliminations
Underlying EBITDA graph excludes BNOK (1.1) in underlying EBITDA in Other and Eliminations
Contribution from Brazilian assets in Primary Metal and Extruded Solutions are included in "Brazil" in both graphs

Hydro in Brazil

More than 40 years experience

Significant exposure to Brazil

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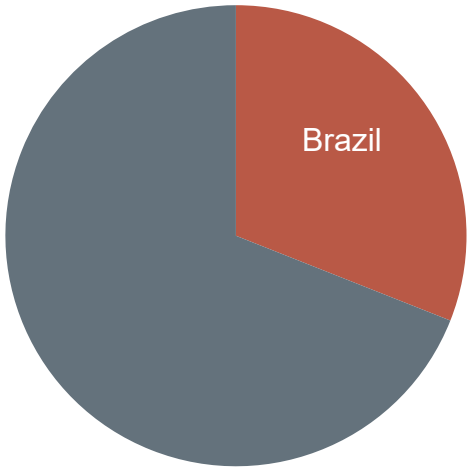
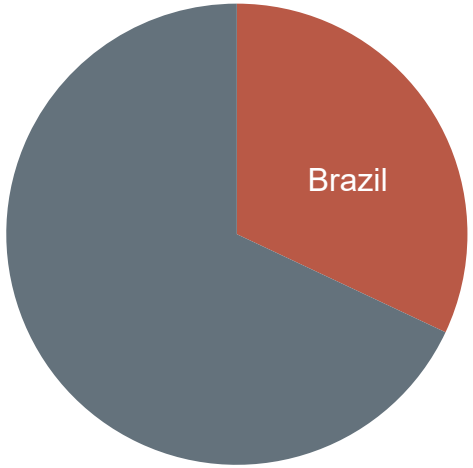
Sept 30, 2018



UEBITDA in Brazil
YTD 2018



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Capital employeed graph excludes BNOK (7.4) in capital employed in Other and Eliminations
Underlying EBITDA graph excludes BNOK (0.1) in underlying EBITDA in Other and Eliminations
Contribution from Brazilian assets in Primary Metal and Extruded Solutions are included in "Brazil" in both graphs

Alunorte site

Hydro

World's largest alumina refinery outside China

- Nameplate capacity of 6.3 mtpy, with more than 2 000 employees
- Connected to Paragominas bauxite mine via 244 km slurry pipeline
- Old DRS1 bauxite residue area to be replaced by new DRS2 area, based on press filter technology
- Wastewater treatment system treats process and rain water before discharging into Pará river

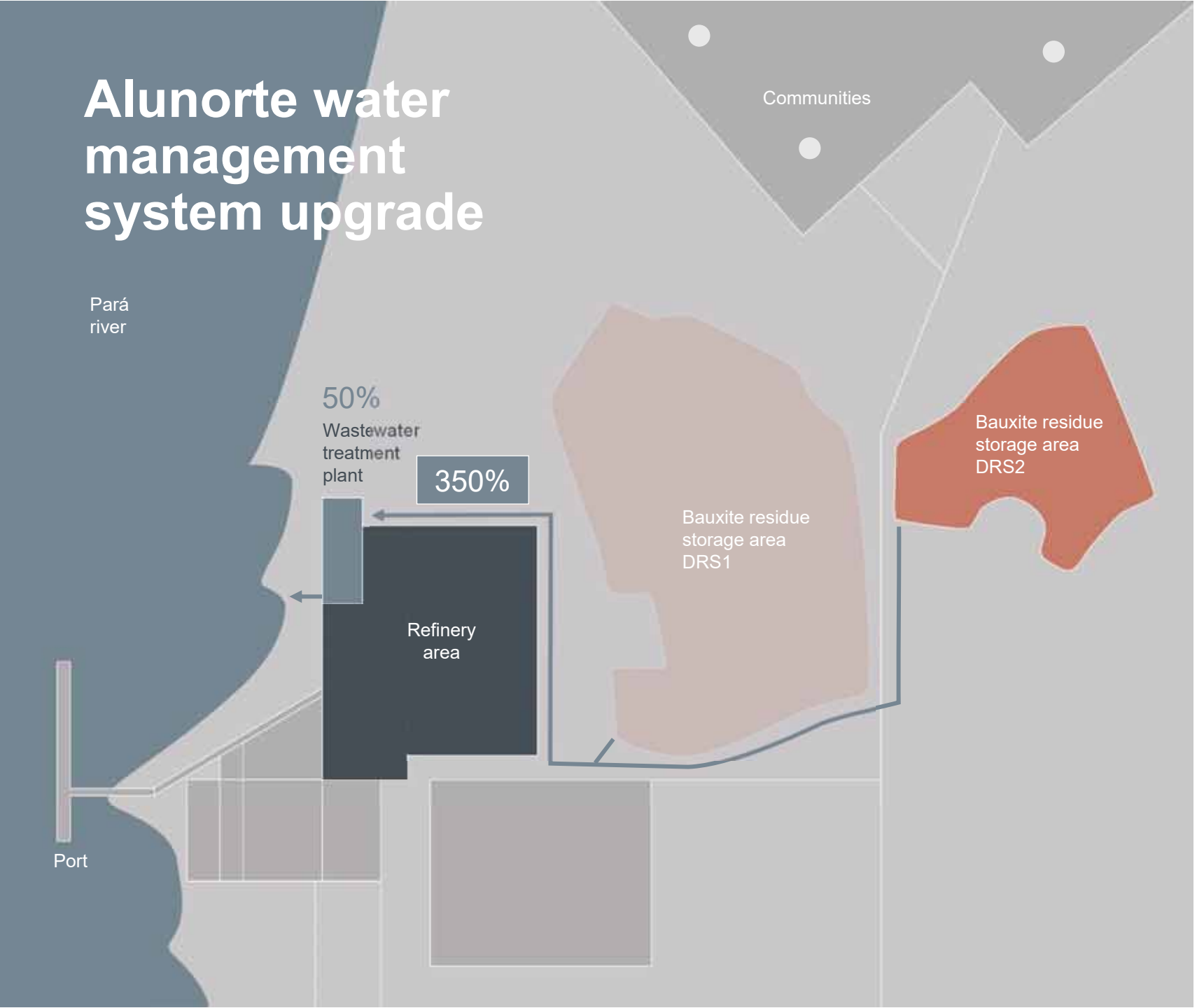
Rainfall event of February 2018

Hydro

Rainfall event on February 16-17

- No spills from bauxite residue areas DRS 1 and DRS2
  - Confirmed by IBAMA and SEMAS
- Unlicensed discharges of rain water from:
  1. Canal Velho
  2. Disused pipes
  3. Coal storage roof
- Internal and external environmental assessments find no evidence of any significant or lasting damage

Alunorte water management system upgrade



Water management system being future-proofed

- Water basin capacity increased 350 % to safeguard against future climate changes
- Water treatment plant capacity increased 50 %
- Permanent closure of DRS1 will significantly ease pressure on water treatment system

Current status

Production embargo

- By federal court, on Ministerio Publico’s request
- By state environmental agency Semas

DRS2* embargo

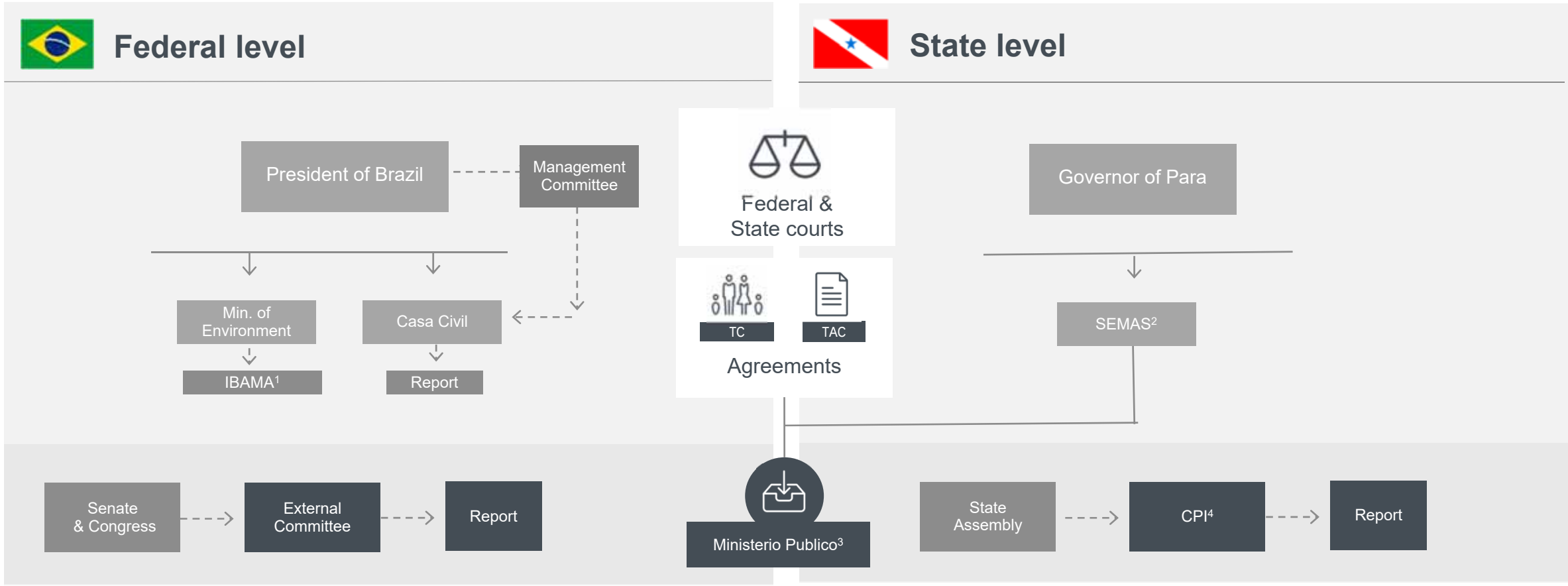
- By federal court, on Ministerio Publico’s request
- Lifted by federal environmental agency Ibama in early October
- Petition filed in court for lifting of DRS2 embargo

Press filter embargo

- Lifted by federal environmental agency Ibama in early October

* DRS2 - new bauxite residue disposal area

TAC and TC agreements important in creating common platform towards normal operations



1) IBAMA: Federal environmental Agency
2) SEMAS: State Secretary of Environment & Sustainability
3) Minsterio Publico at federal and state level
4) CPI: Parliamentarian Committee of Inquiry

Way forward for Alunorte

Process addresses technical, environmental and social aspects

Operations and environment

Today
Alunorte, Paragominas, Albras production at 50%

End-Q4 2018
Increasing water basin capacity by 350%

Q2 2019
Increasing waste water treatment capacity by 50%

Q2/Q3 2019
Adding additional press filter

Social

Shorter term

Local community dialogue

Water distribution, health services, emergency preparedness

Food coupons to communities surrounding Alunorte

Longer term

Investing in projects supporting sustainable urban development in defined communities (TC)

Social and environmental investments under the Sustainable Barcarena Initiative

Process to restore normal production at Alunorte

- Timing for resuming 100% production remains uncertain
- Operational, environmental and social investments in progress, totalling BRL ~1.1 billion
- Continued dialogue with authorities on creating common platform to resume normal operations
- Alunorte capable of running safe operations – improvement initiatives to strengthen robustness

02

Financial framework, competitive positions

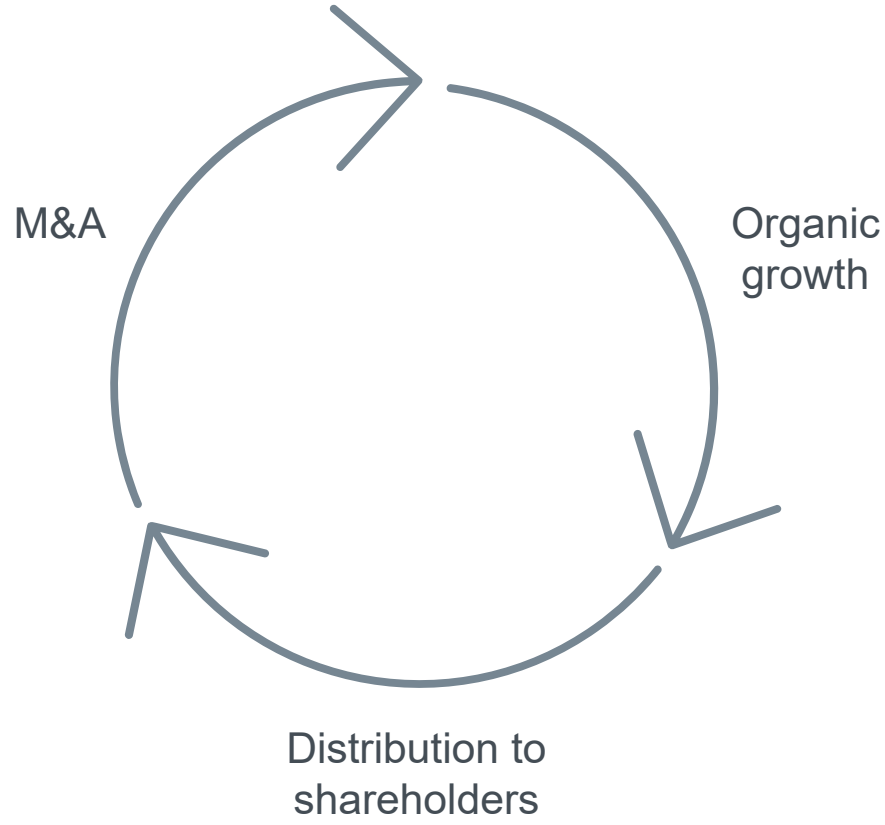
Driving long-term shareholder value

Balancing capital allocation and financial strength

Solid balance sheet and liquidity

Capital expenditures

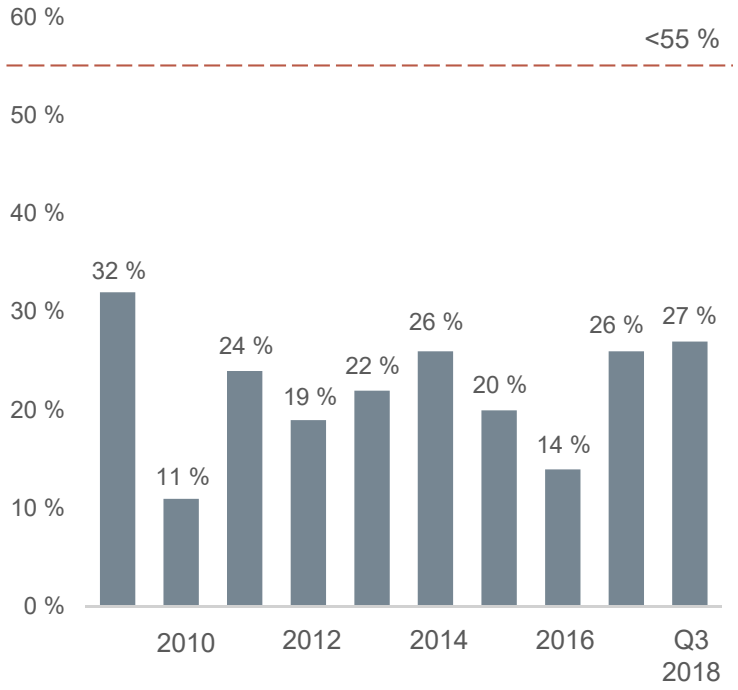
Predictable and competitive dividend



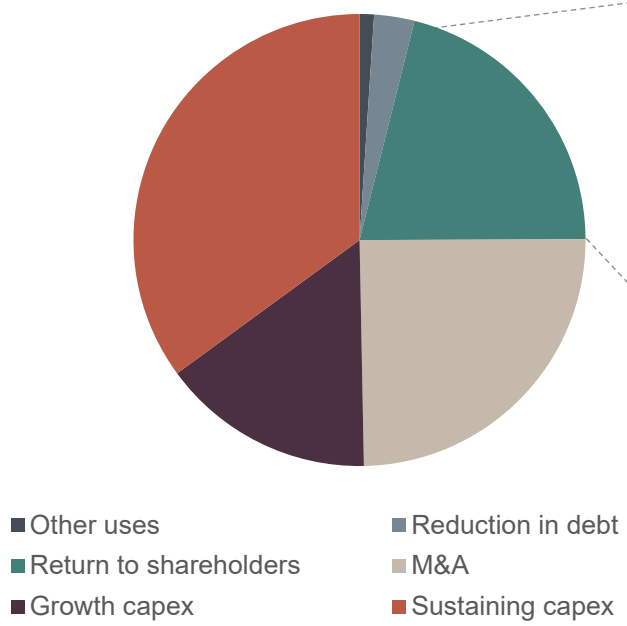
* Allocation based on best risk-adjusted returns

Solid balance sheet, balanced capital allocation, competitive pay-out ratio

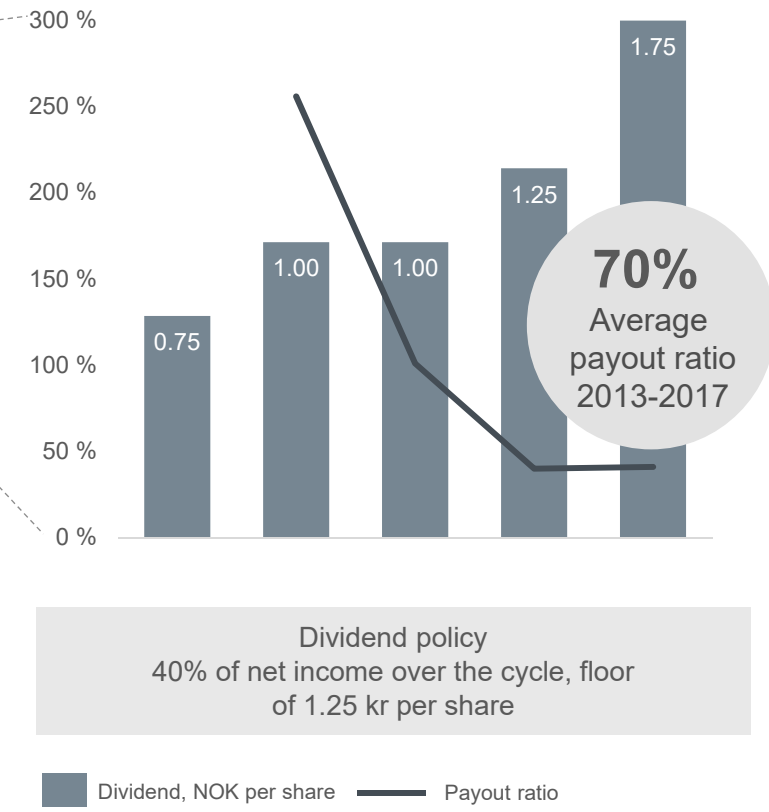
Adjusted net debt / Equity



Uses of cash 2015-Q3 2018

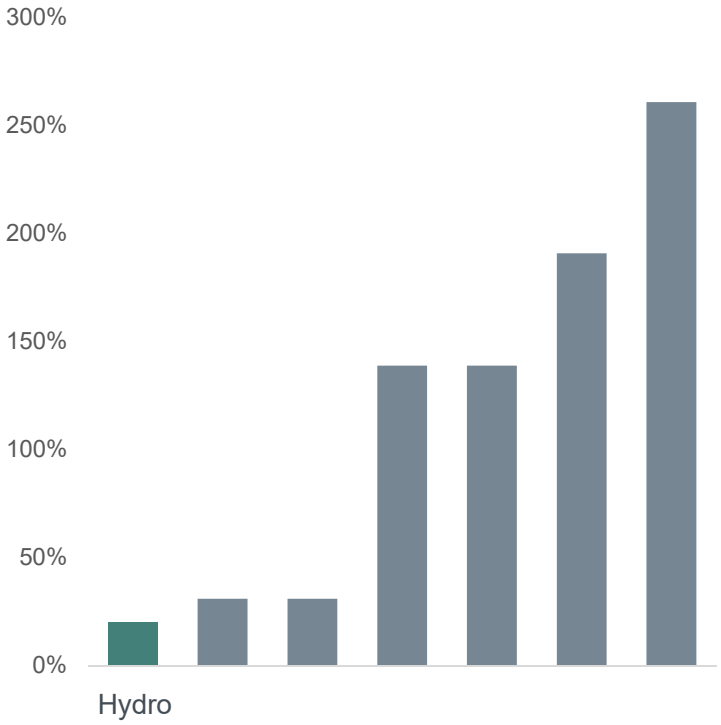


Dividend per share and payout ratio

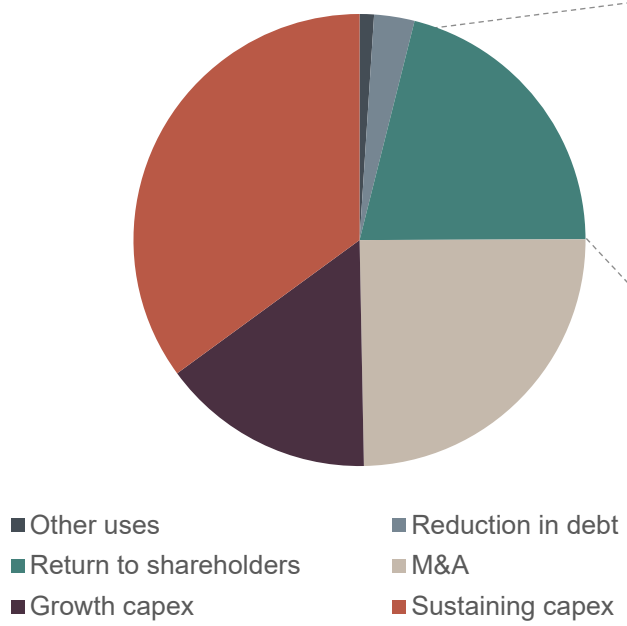


Solid balance sheet, balanced capital allocation, competitive pay-out ratio

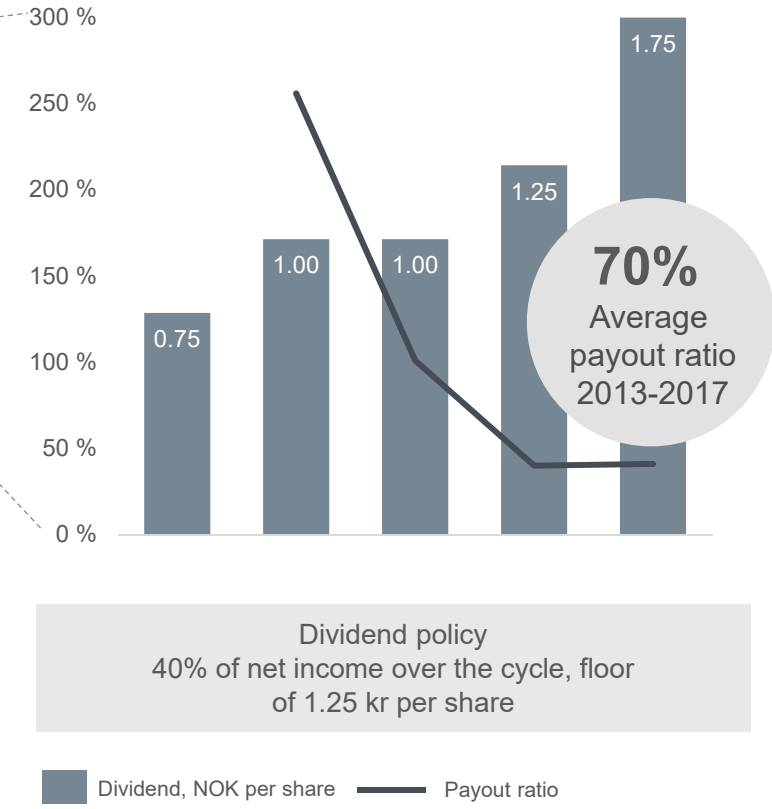
Debt/equity compared to peers*



Uses of cash 2015-Q3 2018



Dividend per share and payout ratio



Source: Debt/equity - Nasdaq
*Peers include Alcoa, Arconic, Rusal, Chalco, Century, Hindalco
Total debt/Total Equity end-2017 = (Long Term Debt + Short Term Debt & Current Portion of Long Term Debt) /Equity attributable to shareholders

Strong positions across the value chain

Upstream

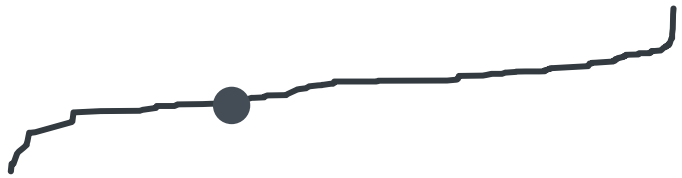
Competitive cash cost position upstream

Alumina BOC curve by company[1] (2018)

USD/mt

Smelter BOC curve by company[2] (2018)

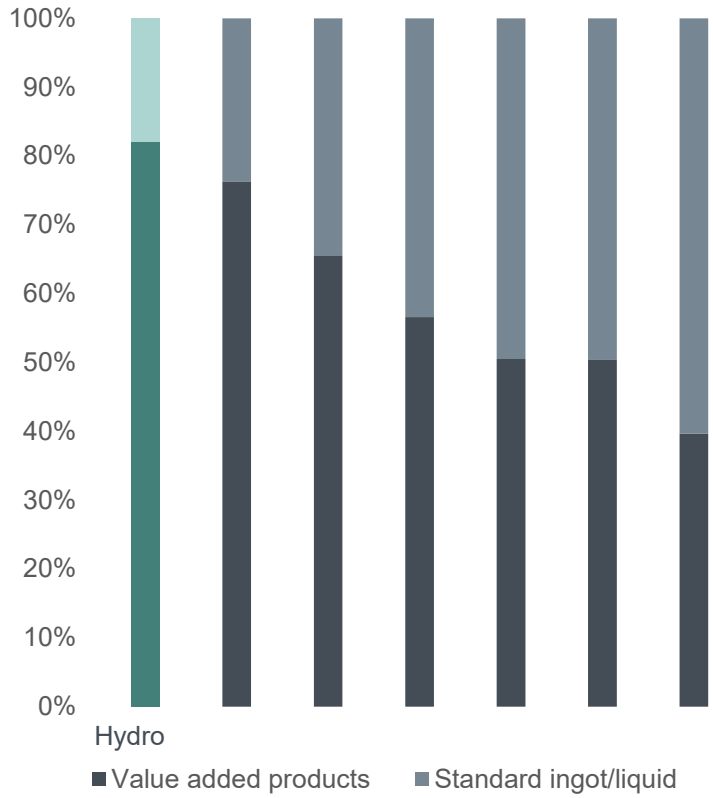
USD/mt



Source: Republished under license from CRU International Ltd
1) Alumina cost curve: caustic soda USD 600, USD/BRL 3.75
2) Aluminium cost curve: LME USD 1 945, alumina USD 412, NOK/USD 8.5
Assumed 100% production at Alunorte and Albras

Midstream

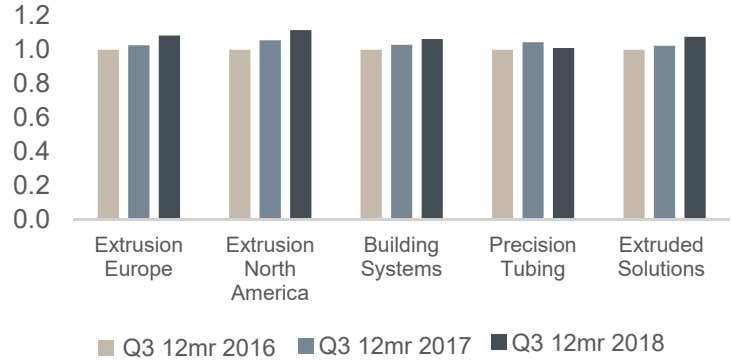
Strong position in value added products[1]



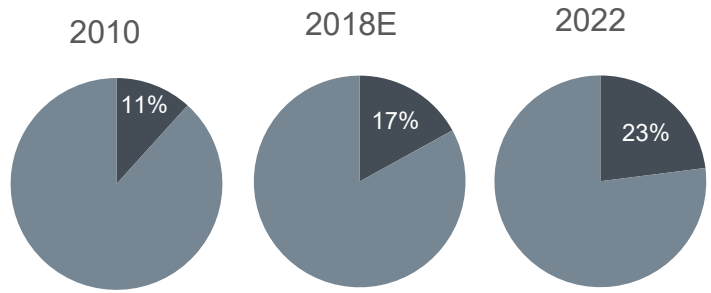
Source: Republished under license from CRU International Ltd
Actual figures for Hydro sales 2017
1) % of total shares being value added products; extrusion ingot, wire rod, sheet ingot and primary foundry alloy

Downstream

Improving NAV[1,2] in Extruded Solutions



Increasing automotive share in Rolled Products[3]



1) Net Added Value: calculated as operating revenues less cost of material, including freight costs out
2) NOK indexed, translated to NOK based on Q3 2018 12 m rolling currency rates
3) In percentage of total sales

Better improvement program hit by Alunorte situation

Will not meet 2019-target of BNOK 3*

Bauxite & Alumina

- 50% production at Alunorte and Paragominas with strong negative impact on improvement program
- 2016-17 improvements more than offset by negative 2018 effects
- 2019 target of BNOK 1.3
- E2018 accumulated delivery of negative 1.0 BNOK

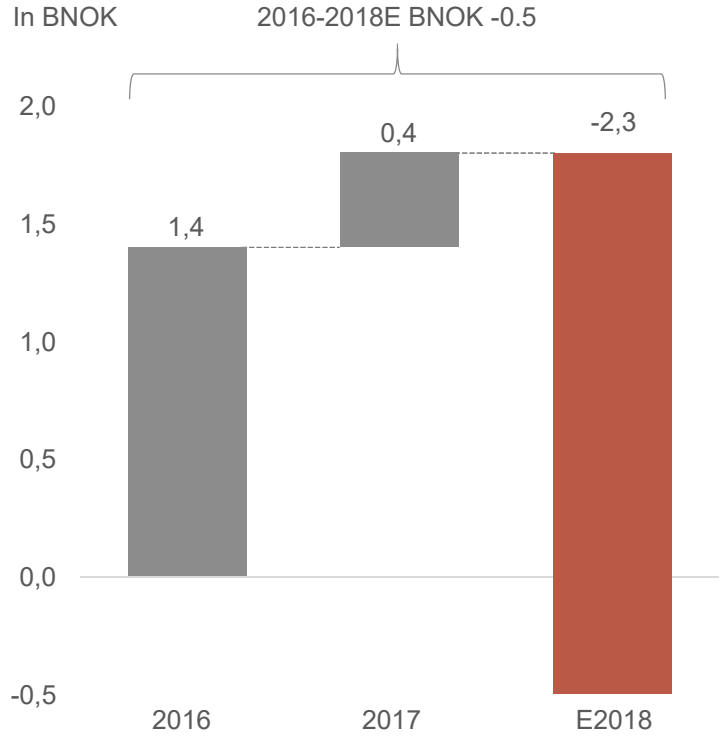
Rolled Products

- Benefit from AL3, UBC and cost performance
- Operational and ramp-up issues reducing improvement speed
- 2019 target of BNOK 0.7
- E2018 accumulated delivery of 0.4 BNOK

Primary Metal

- 50% production at Albras impacting improvement program negatively
- 50% production Alunorte with negative impact due to alumina qualities – challenges on operational parameters
- 2019 target of BNOK 1.0
- E2018 accumulated delivery of 0.1 BNOK

BNOK 3.0 *Better* improvement program progress



Better improvement program 2019 targets compared to 2015
* Real 2015 figure

03 Market outlook

Geopolitical events impacting our industry

Aluminium demand remains solid

Geopolitical events impacting trade flows, EU struggling with continued Brexit uncertainty

China moderating primary supply growth, global climate concerns continue to rise

Underlying demand remains solid

2-3% **Global** primary demand in 2019

1-3% **World ex. China** primary demand in 2019

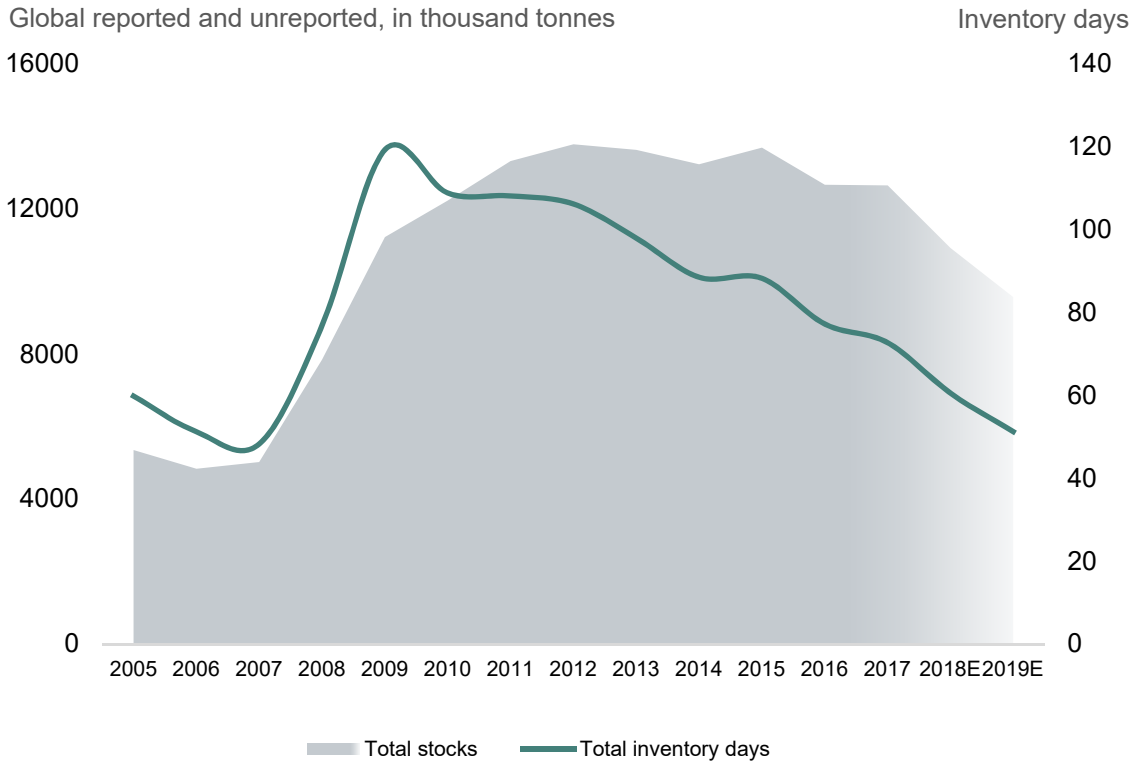
2-4% **China** primary demand in 2019

* Intercontinental panel on climate change

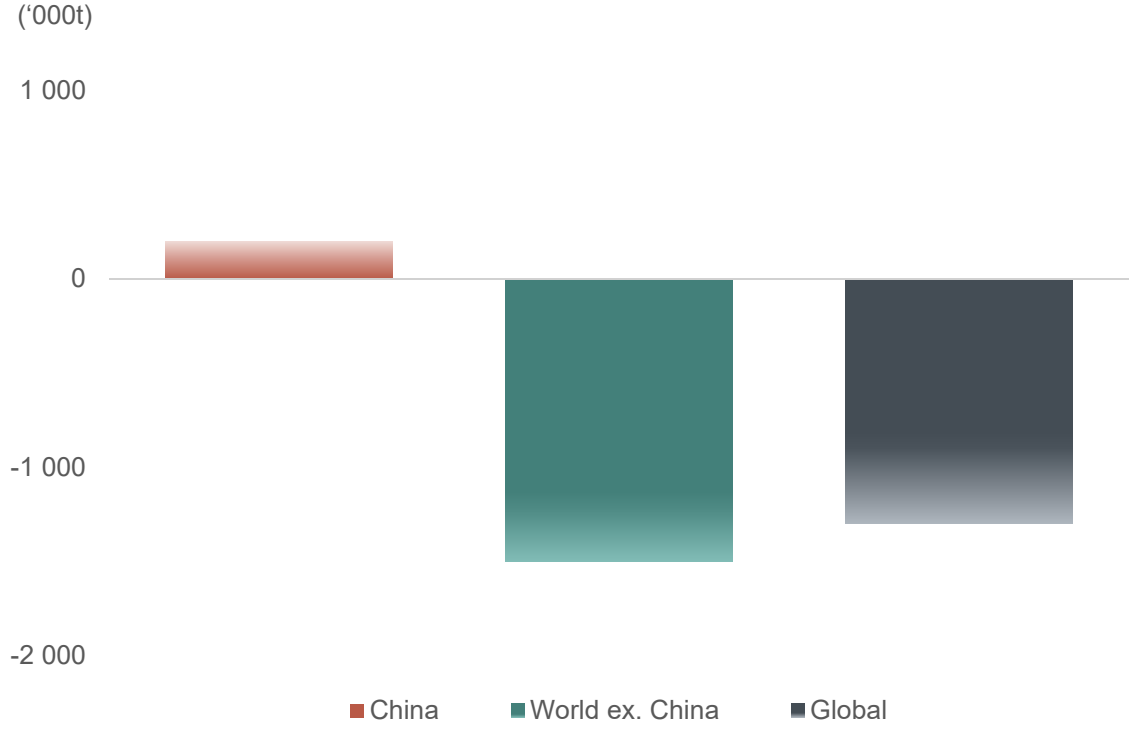
Global aluminium market expected in deficit in 2019

Inventories gradually trending towards historical levels

Inventory levels trending downwards



Estimated primary market balance 2019



Source: Source: Republished under license from CRU International Ltd, Hydro analysis

Aluminium's reach is growing over the next decade in response to key long-term trends

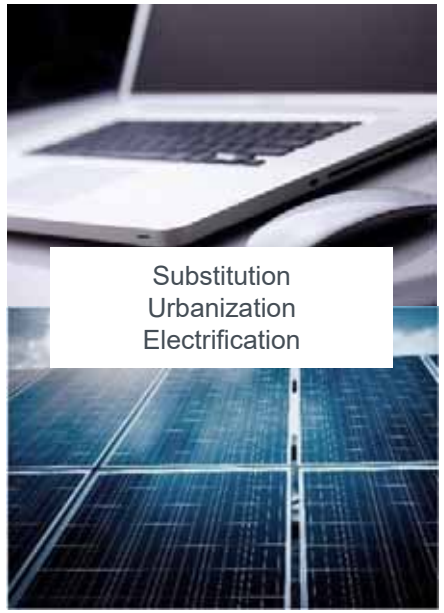
Substitution continues to be a key driver for aluminium

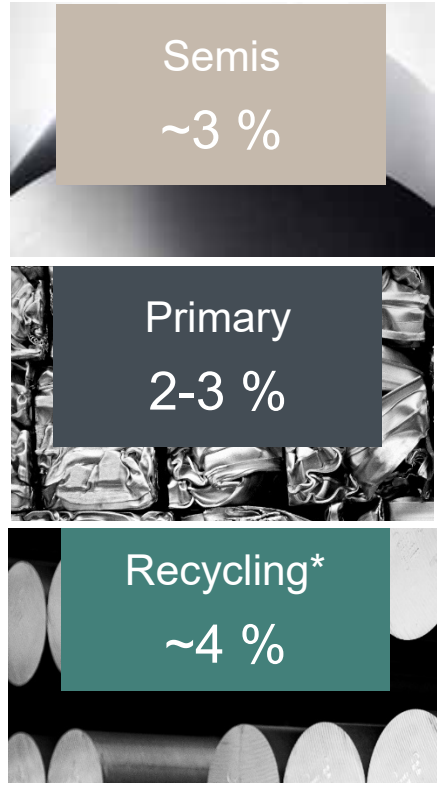
Transport
3-4%

Packaging
2-3%

Building & construction
2-3%

Electrical
2-3%





Global semis demand for segment, CAGR 2018-2028
Source: CRU, Hydro Analysis
* Post-consumer and fabrication scrap

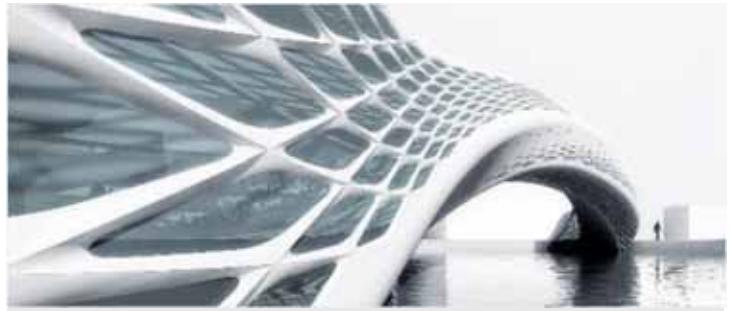
04 Strategic direction

Better, Bigger, Greener

Hydro’s aspiration for higher value creation

Better

Raise performance and improve customer offering



Bigger

Expand the use of aluminium and strengthen Hydro’s platform for growth

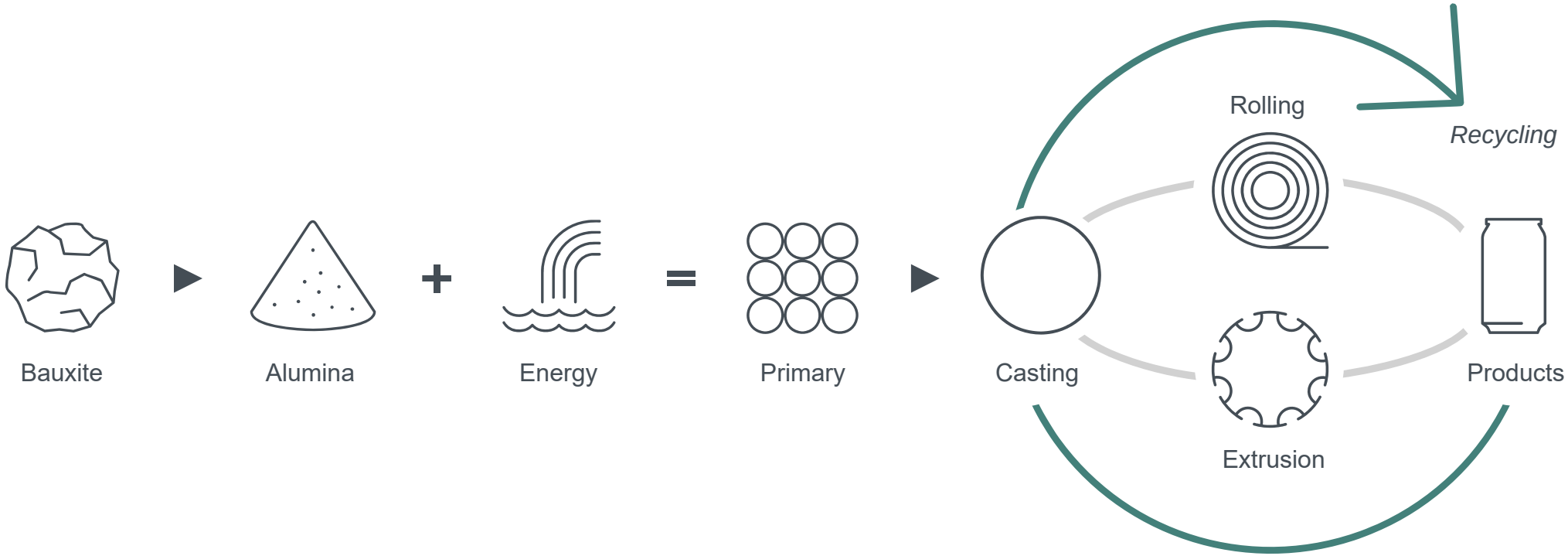
Greener

Lead the transition towards sustainable solutions

A complete value chain for higher value creation

Focus on cost efficiency and process technology
Centralized business model

Focus on margin management and product innovation
Decentralized business model



Raw materials, processing and energy

Primary production, marketing and recycling

Products and solutions

Summary of strategic focus areas going forward

On-going initiatives and strategic ambitions

Bauxite & Alumina

- B&A operations back on track
- Closer collaboration with key stakeholders
- Fuel switch project

Energy

- RSK solution
- New business
- Competitive sourcing

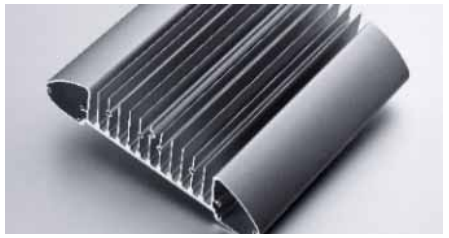
Primary Metal

- Pilot spin-offs
- Husnes restart
- Albras back on track
- Recycling

Rolled Products

- Further growth in automotive
- Recycling
- High-grading product portfolio

Extruded Solutions



- Selective growth
- Value over volume

Innovation, technology, digitization

Sustainability

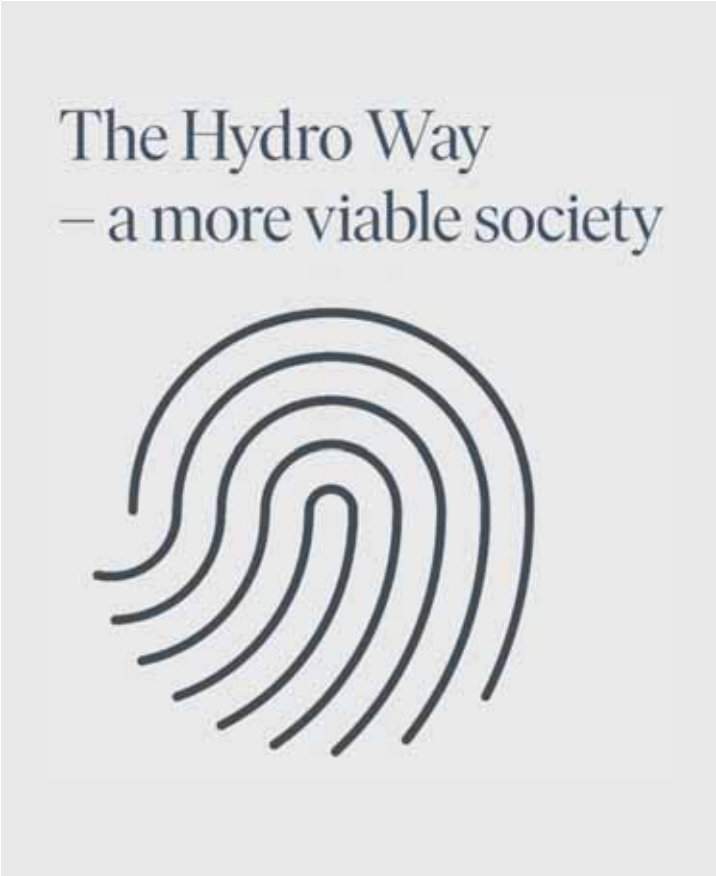
Commercial differentiation

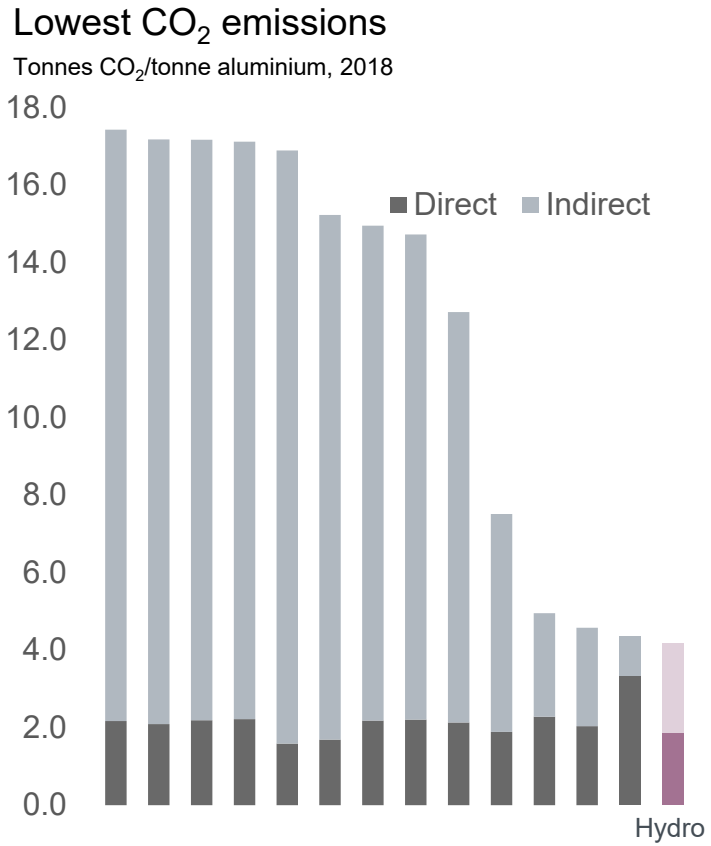
Continuous improvements

05

Innovation and sustainability

Sustainability and innovation – key competitive advantages





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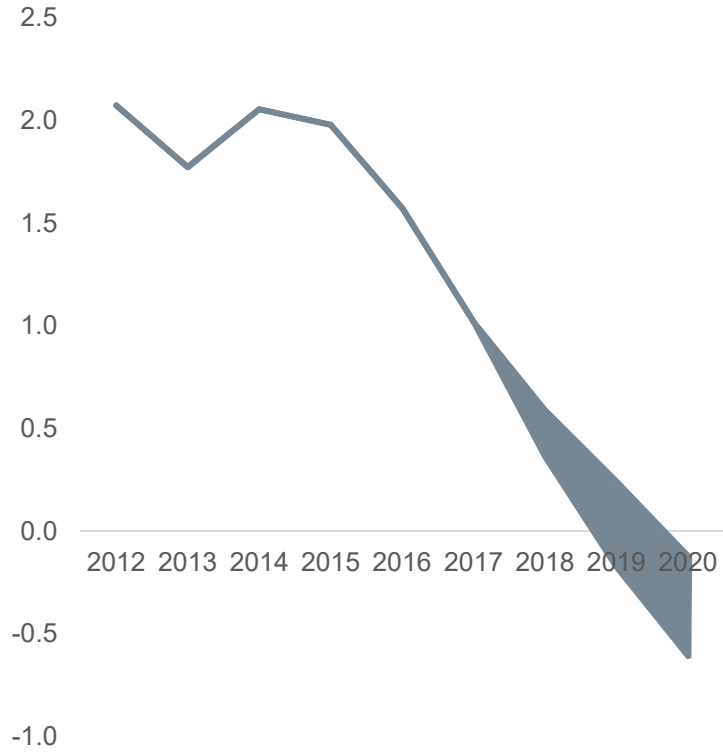
Part of the solution – turning words into action

Industrial strategy, business development and climate ambitions hand in hand

Hydro's climate strategy: Carbon-neutral from a life-cycle perspective by 2020[1]



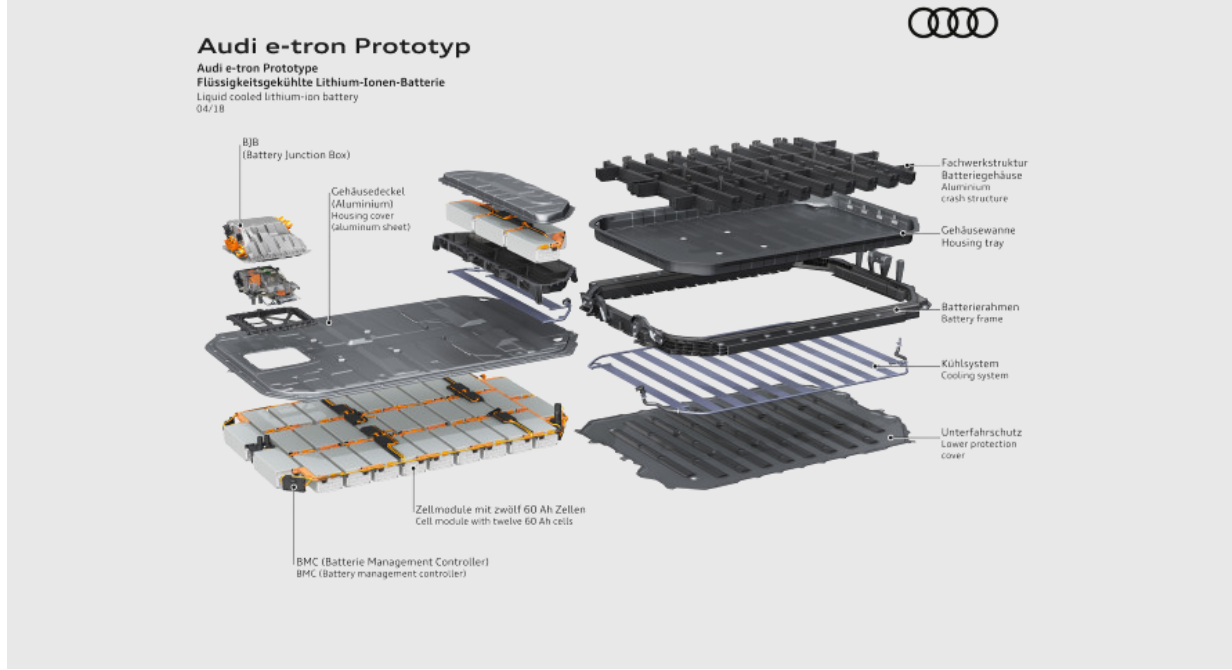
1) In million tonnes Co2

Responsible, low-carbon products for a greener future

Aluminium Stewardship Initiative

Electrification is ramping up, accelerating innovation

- Aluminium is the fastest growing automotive material due to fuel economy focus and stricter emissions standards
- E-mobility is speeding up the aluminium-in-automotive trend as the preferred lightweighting material
- Electric vehicles (EV) could represent more than 30% of global car market by 2030, up from just 4% in 2017
  - Average aluminium content in cars expected to rise from around 180 kg/car to more than 250 kg/car over next 10 years
  - Aluminium content in EV typically around 25% higher than in conventional cars
  - Aluminium content often corresponds to the size of the EV model, from around 170 kg in Nissan Leaf to 650 kg in Tesla X



New innovative combinations for more efficient solutions

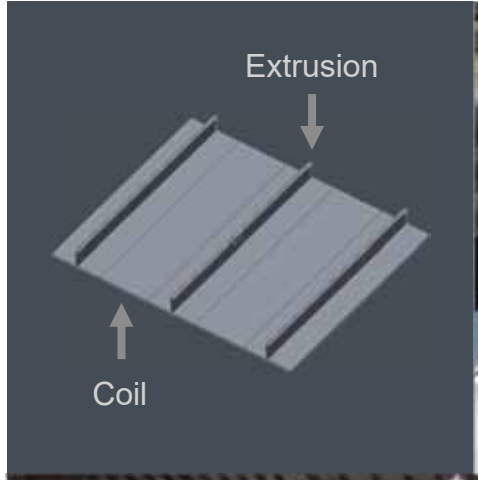
- As a fully-integrated company, Hydro is now able to collaborate on innovations across the value chain
- Combining extruded profiles and rolled aluminium, creating smarter, better and more cost-efficient solutions for a wide range of applications

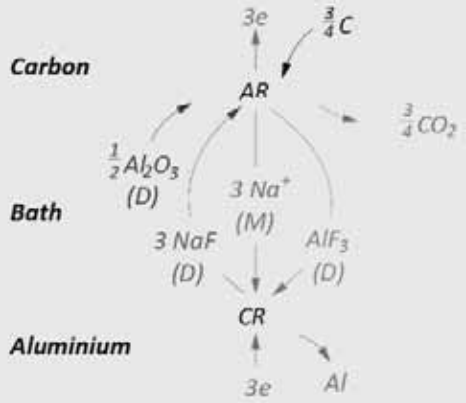
Marine, e.g. ship hulls

Offshore, e.g. helipads and living quarters

Construction, e.g. bridges and I-beams

Large structural components, e.g. train carriages





Towards digital production

Digital twins

Optimizing by combining physical models, sensors and advanced analytics of process data

Process data →

Domain competence →

- Examples include **electrolysis** process and the complete value chain for **extrusion**

Building the future

Aluminium systems can improve a wide range of a building's performance indicators

- Energy performance
- Renewable energy production

- Acoustic performance
- Thermal comfort
- Daylight optimization
- Innovation and design

- Raw materials sourcing and recycling

Hydro key focus areas

Engineering the future, lightweighting our planet

- Resolving Alunorte situation
- Maintaining financial strength and flexibility
- Providing attractive returns over the cycle
- Strengthening competitiveness through continuous improvement, innovation and sustainability

Hydro

Financial update - maintaining financial strength and flexibility

Eivind Kallevik, EVP & CFO

01

Prudent financial framework

Prudent financial framework

Managing industry cyclicality, driving long-term shareholder value

Lifting cash flow potential

Improving efficiency, strengthening margins

Improvement efforts
- 4.5 BNOK 2009-2015
- 3.0 BNOK target 2016-2019[1)]
- 1.8 BNOK 2016-2017
- (0.5) BNOK 2016-E2018[2)]

Optimizing Net operating capital

Financial strength and flexibility

Investment grade credit rating

Financial ratio targets over the cycle
- FFO/aND [3)] > 40%
- aND/E [4)] < 55%

Strong liquidity

Disciplined capital allocation

Long-term sustaining capex below depreciation
- ~6.5-7.0 BNOK average 2018-2021E

Total capex incl. growth
- 2018E ~8.1 BNOK

Selective value-add growth

Attractive organic growth prospects and M&A optionality

Predictable dividend policy

Sector competitive TSR

1.75 NOK/share dividend for 2017

Dividend policy
- 40% payout ratio of Net income over the cycle
- Dividend 1.25 NOK/share to be considered as floor

Special dividends and share buybacks in the toolbox

Effective risk management

Volatility mitigated by strong balance sheet and relative positioning

Hedging policy
- Operational LME and currency hedging
- Limited financial hedging

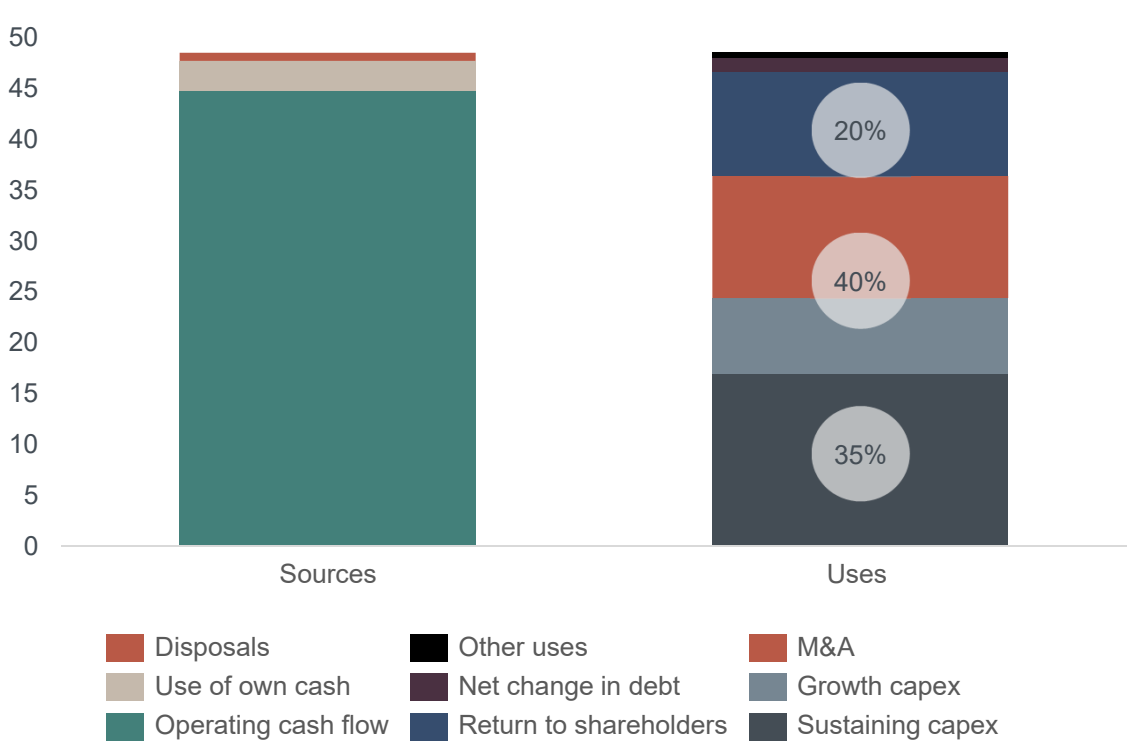
Diversified business

1) Real 2015 terms
2) The Better improvement ambition in 2018 is estimated 2.8 BNOK behind the 2018 cumulative target of 2.3 BNOK due to the Alunorte situation. In addition to (2.6) BNOK in the curtailment effect, 0.2 BNOK were not delivered out of 0.5 BNOK 2018 target.
3) Funds from operations / adjusted net debt
4) Adjusted net debt / Equity

Balanced capital allocation, solid free cash flow generation

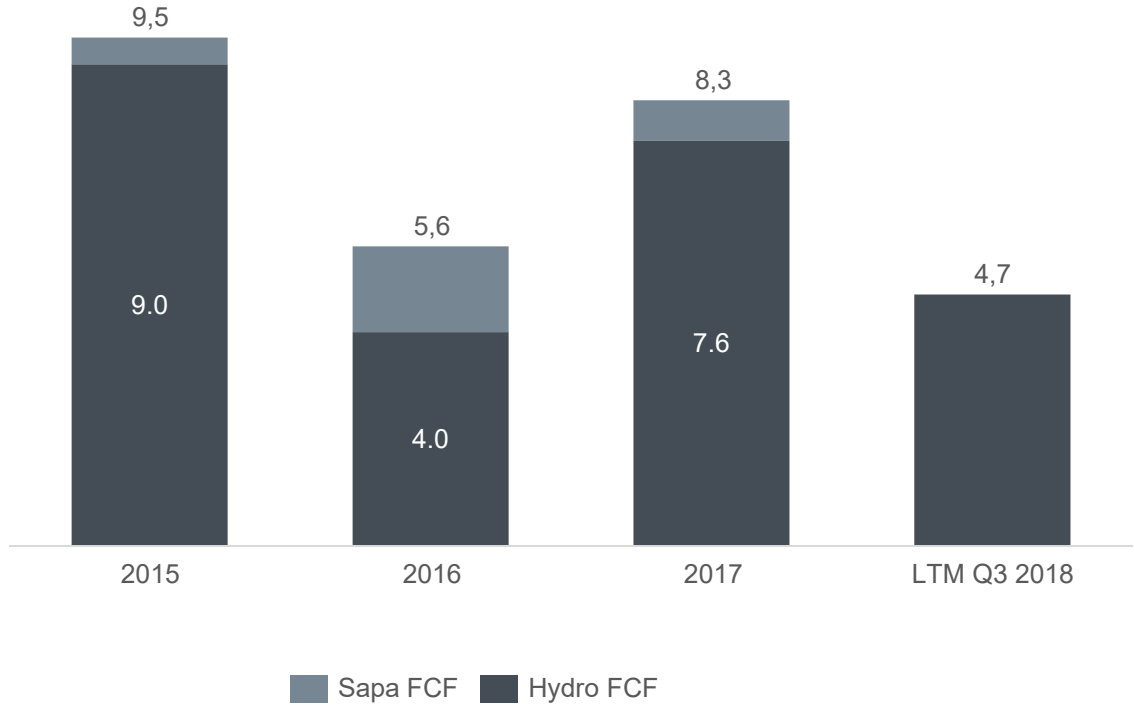
Uses and sources of cash [1)]

Cash flows, 2015-Q3 2018, BNOK



Free cash flow generation [2)]

2015 – LTM Q3 2018, BNOK



Based on Hydro and Sapa cash flow statements

1) Extruded Solutions reflected as 50% equity accounted investment until Q3 2017 and fully consolidated from Q4 2017.

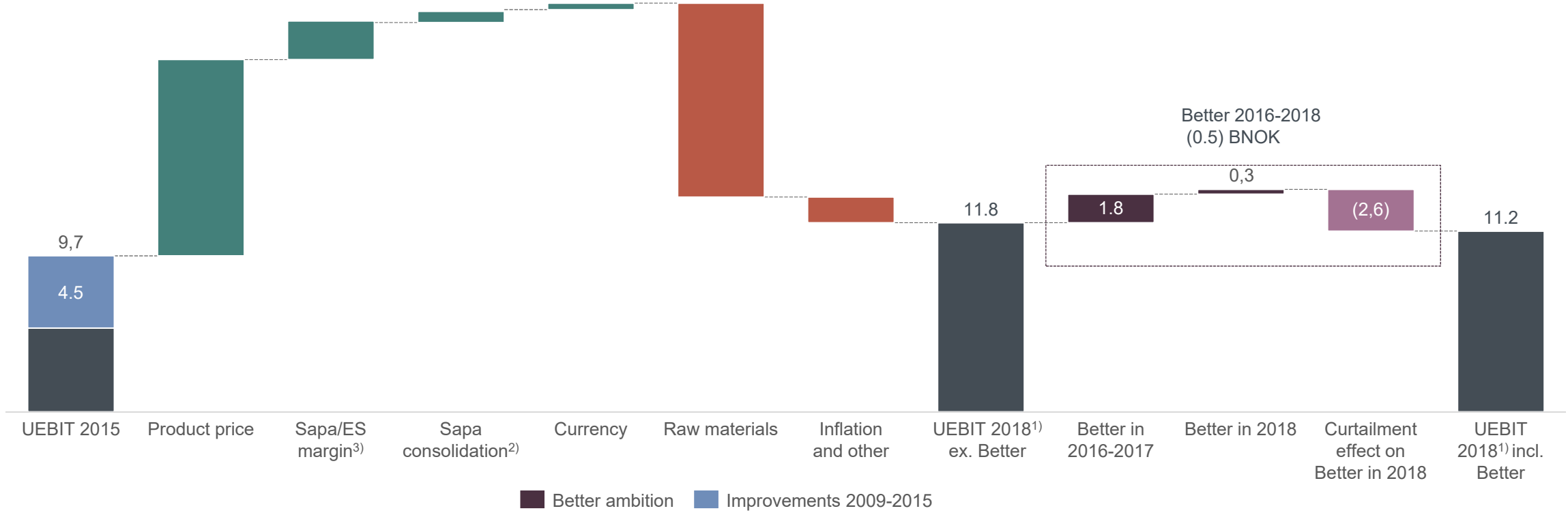
2) Free cash flow = operating cash flow – investing cash flow (excluding short-term investments). 2017 excludes Sapa acquisition capex of 11 BNOK. LTM Q3 2018 Hydro including Extruded Solutions.

Earnings and improvement ambitions affected by the Alunorte situation

Hydro

Underlying EBIT development

NOK billion



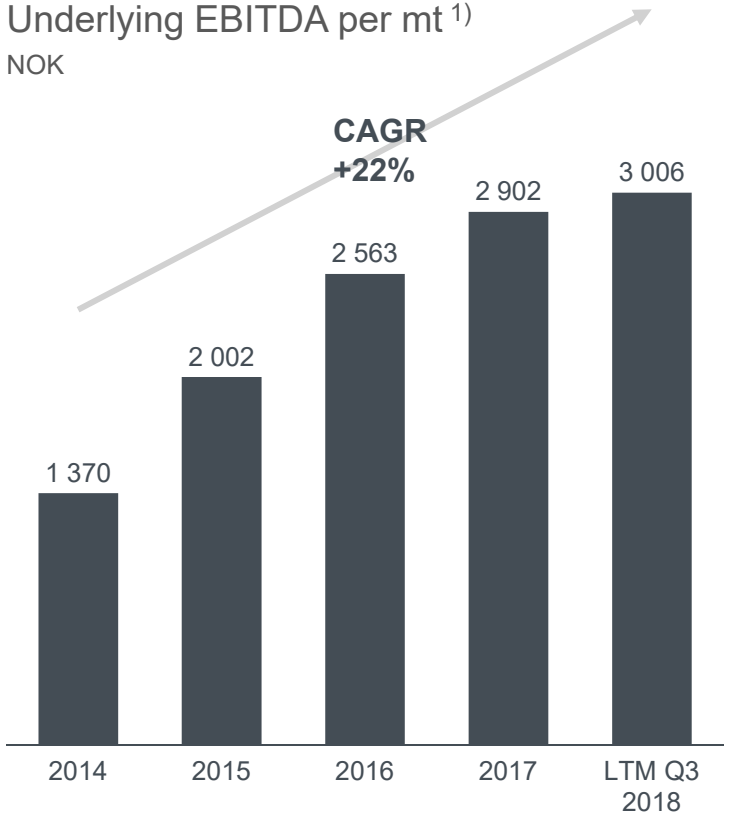
1) YTD Q3-2018 annualized except for Albras excess power sales, which are YTD Q318
2) Sapa consolidation effect - difference between 50% of underlying Net income as equity accounted investment and fully consolidated Underlying EBIT, incl. excess value depreciation
3) Includes Extruded Solutions net margin improvement in 2018, and Sapa UEBIT improvement from 2015 mainly driven by higher margins. Incl. delivered synergies of 0.1 BNOK.

Extruded Solutions continue to deliver with further improvement potential and growth opportunities

Integration and synergies on track

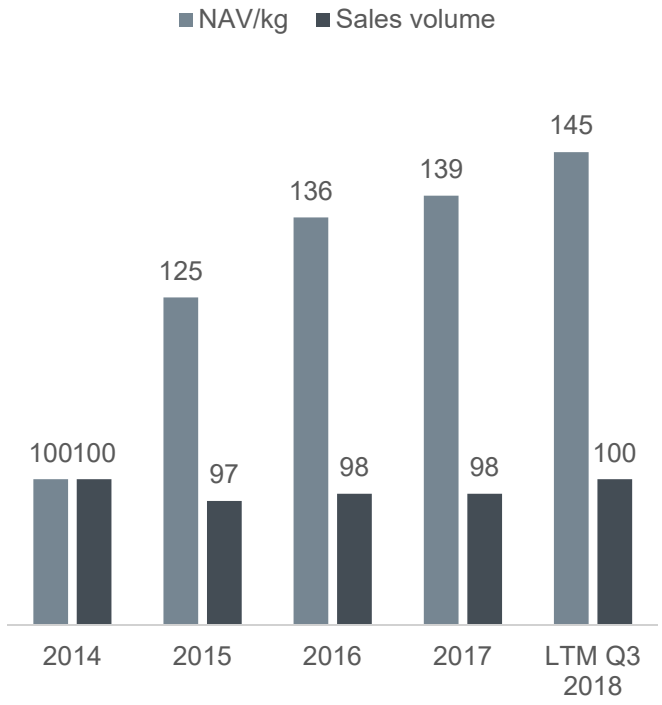
Sapa (100%) and Extruded Solutions Underlying EBITDA per mt [1)]

NOK



Net added value [2)] per kg

NOK and kmt, indexed to 2014



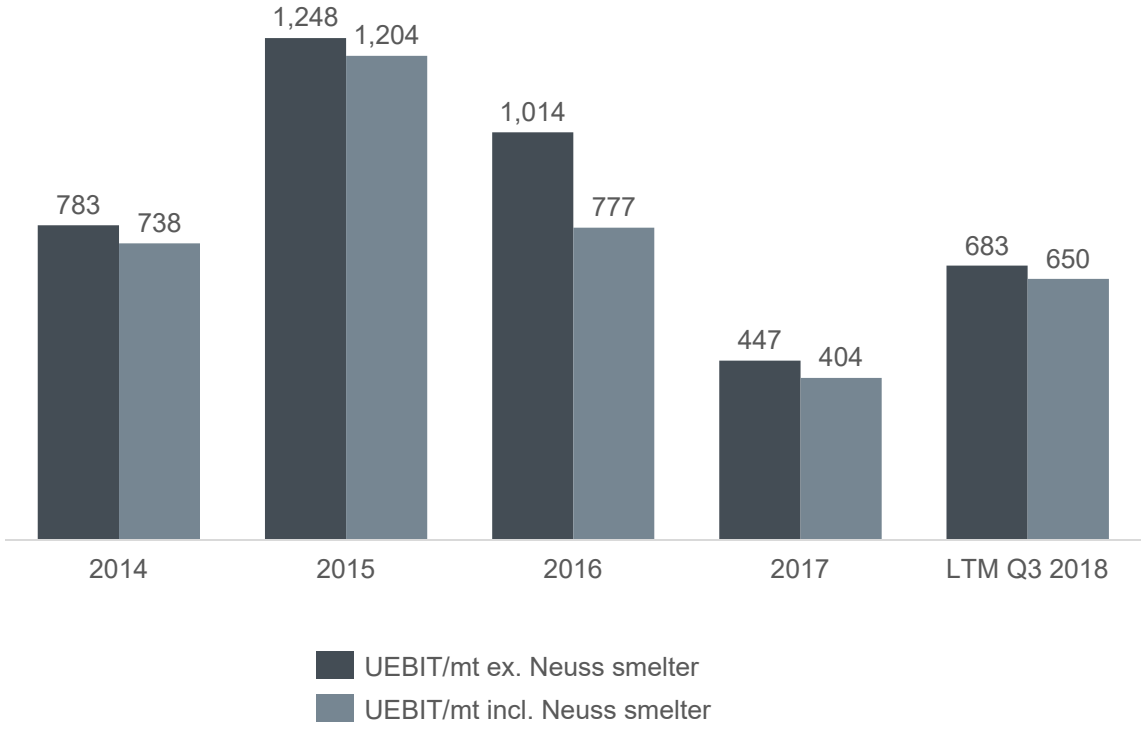
- Ambition to deliver min 10% average annual UEBIT growth over the next 3 years [3)]
  - Increasing share of value-added solutions
  - Simplification and collaboration
  - Selective and profitable growth
- Execution of integration plans on track
  - 100 MNOK in synergies realized by Q3-18
  - Total identified synergies of 200 MNOK related to remelters performance, scrap sourcing, corporate costs and other
  - Integration costs according to plan
  - Intensified technical and commercial cooperation between the business areas to develop innovative solutions for customers

1) 2017 Underlying EBITDA based on pro-forma figures for Extruded Solutions. LTM Q3 2018 with fully consolidated Extruded Solutions
2) Net added value calculated as operating revenues less cost of material, including freight costs out
3) Including some smaller bolt-on acquisitions with capex for the coming years in line with 2018

Focus on resolving operational issues, strengthening performance and portfolio high-grading in Rolled Products

Rolled Products Underlying EBIT per mt

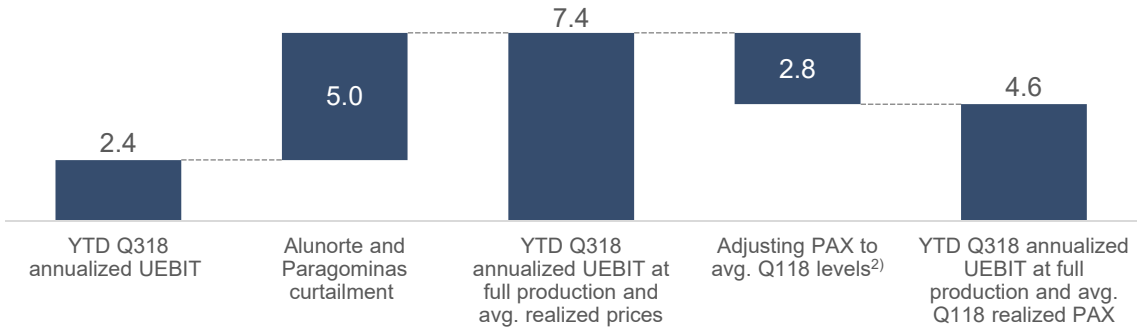
NOK



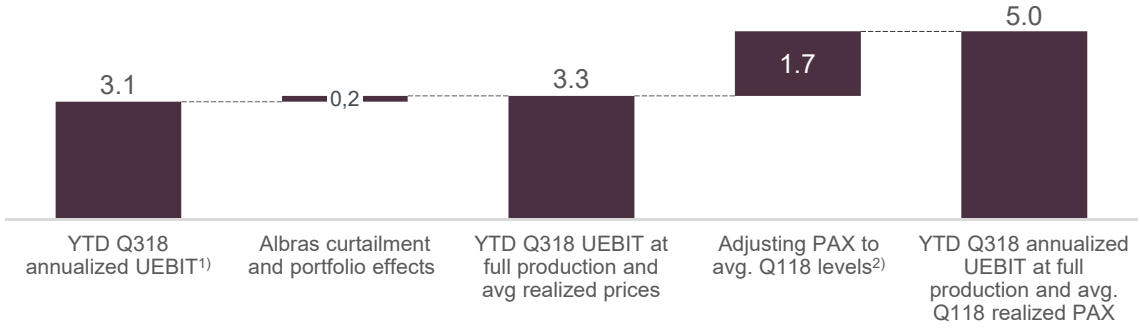
- Operational performance improving, issues not fully resolved in 2018
  - Alunorf hot mill and Hamburg – stabilized production performance
  - Alunorf cold mill area – outstanding operational issues leading to reduced output and stability
  - Used beverage can (UBC) recycling facility – improved performance following modifications made in Q4-17, further modifications planned for 1H-2019. Now targeting full ramp-up to 40 000 mt by end-2019
  - Automotive Line 3 (AL3) – main technical issues resolved, qualification process ongoing, expected to reach the original plan during 2019
- Improved results from the Neuss smelter:
  - A more competitive power contract from 2018 with positive effect of MNOK 350-400/year, higher aluminium prices, but increased raw material costs
- Further improvement potential:
  - Product mix improvement, selected product restructuring and further high-grading through ramp-up of UBC and AL3

Significant curtailment effects in Bauxite&Alumina and Primary Metal

Curtailment effects on UEBIT in Bauxite & Alumina, BNOK*



Curtailment effects on UEBIT in Primary Metal, BNOK*



1) YTDQ318 annualized except for Albras excess power sales, which are YTDQ318
2) Adjustment based on Hydro price sensitivities for realized PAX alumina index from YTDQ318 average of 460 USD/t to Q118 average of 390 USD/t. Sensitivities are based on estimated 2018 PAX exposure before the curtailment.

Curtailment effects on UEBIT in Bauxite&Alumina

- Aunorte and Paragominas 50% curtailment – lost volume and margin
- Higher alumina sourcing costs compensated by significantly higher realized alumina sales prices
- Additional non-operational costs related to the curtailment of around 100 MNOK

Curtailment effects on UEBIT in Primary Metal

- Albras 50% curtailment – lost volume and margin
- Worsened operational parameters for Norwegian smelter system reflecting alternative alumina qualities
- Significantly higher alumina cost due to higher external alumina volumes at higher market prices

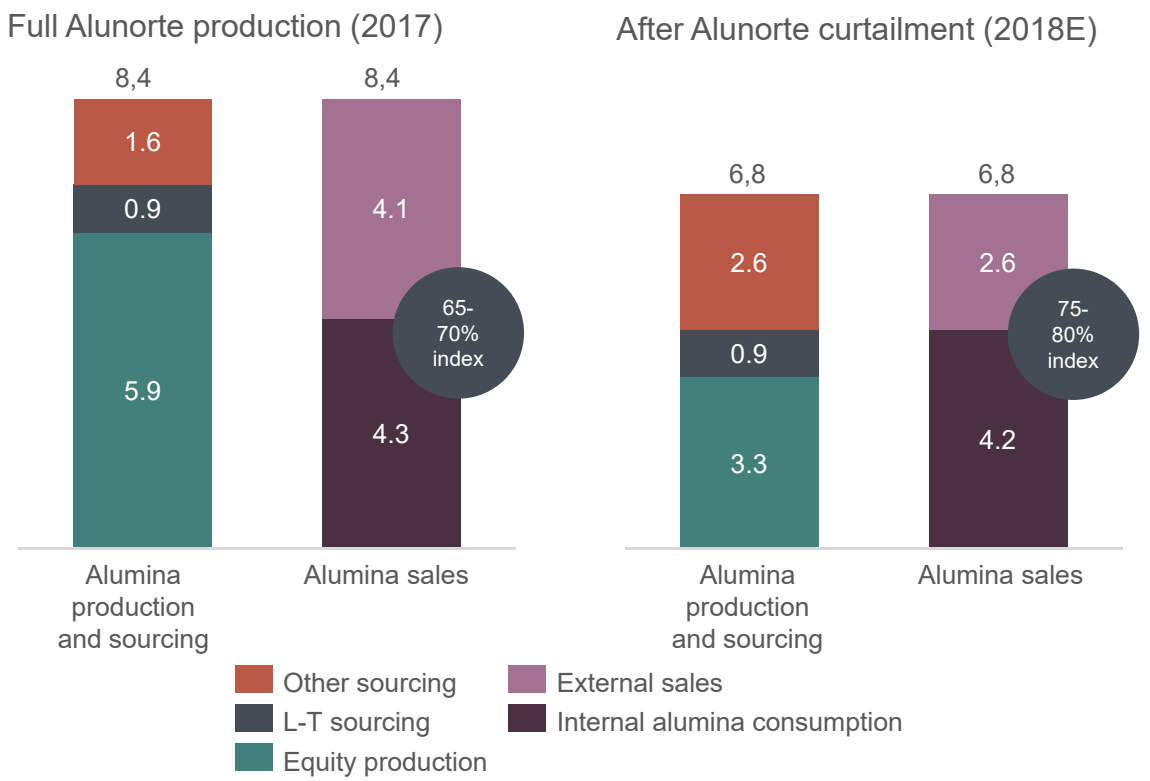
*Simplified calculations based on key assumptions:

- Effects calculated based on 2018 variables costs margins
- Fixed costs assumed constant compared to 2017 levels
- Average Q118 realized PAX of 390 USD/t used as a proxy for «normalized» alumina price level without the curtailment. No change to LME price

Hydro alumina portfolio before and after Alunorte curtailment

Alumina sourcing and sales overview [1)]

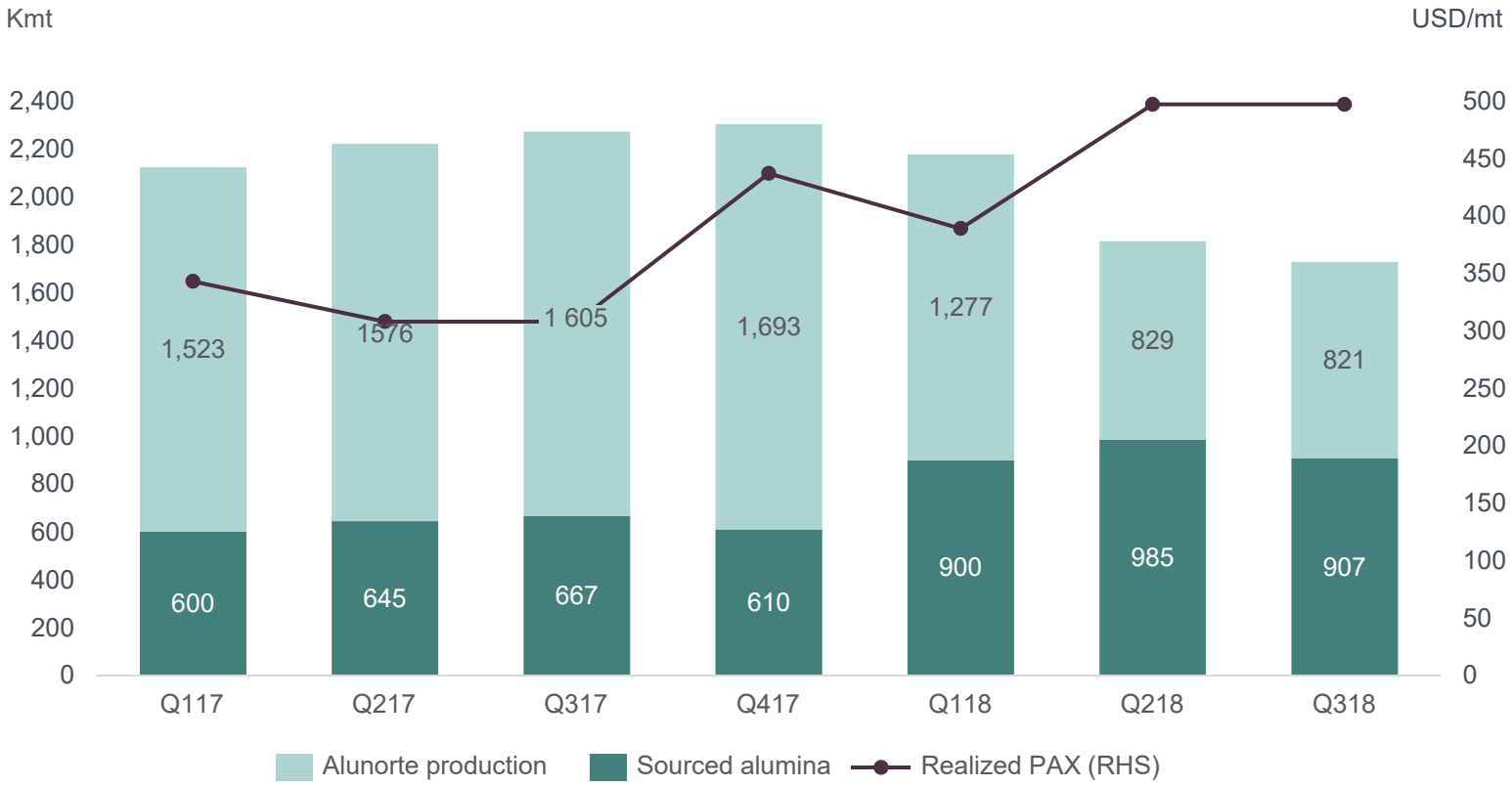
Million tonnes



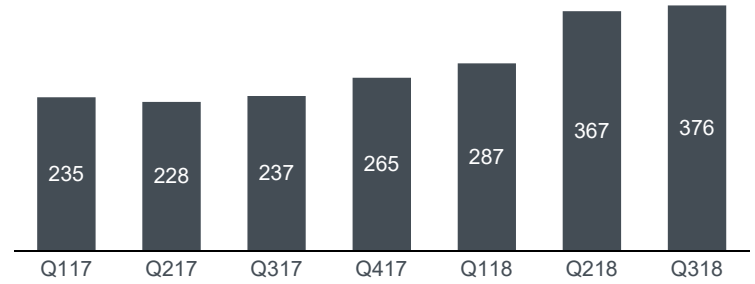
1) Alunorte was curtailed in March, Albras in April 2018. Alunorte equity production (92% share). Internal alumina consumption calculated on consolidated basis – including 100% Albras and Slovalco, and with 50% Qatalum share.

Additional alumina sourcing lifts upstream implied costs

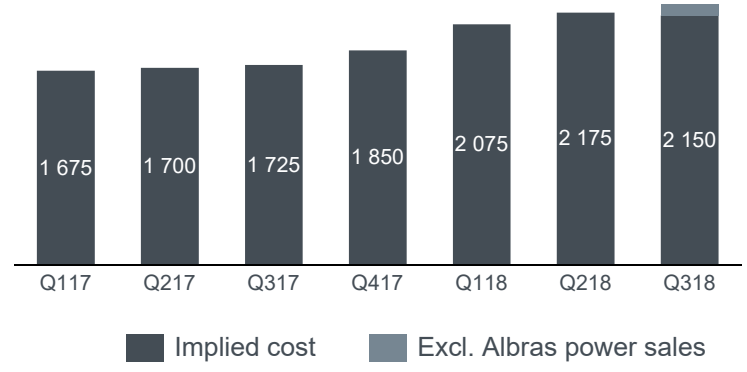
Total alumina sales based on source



Implied alumina cost [1], USD/t



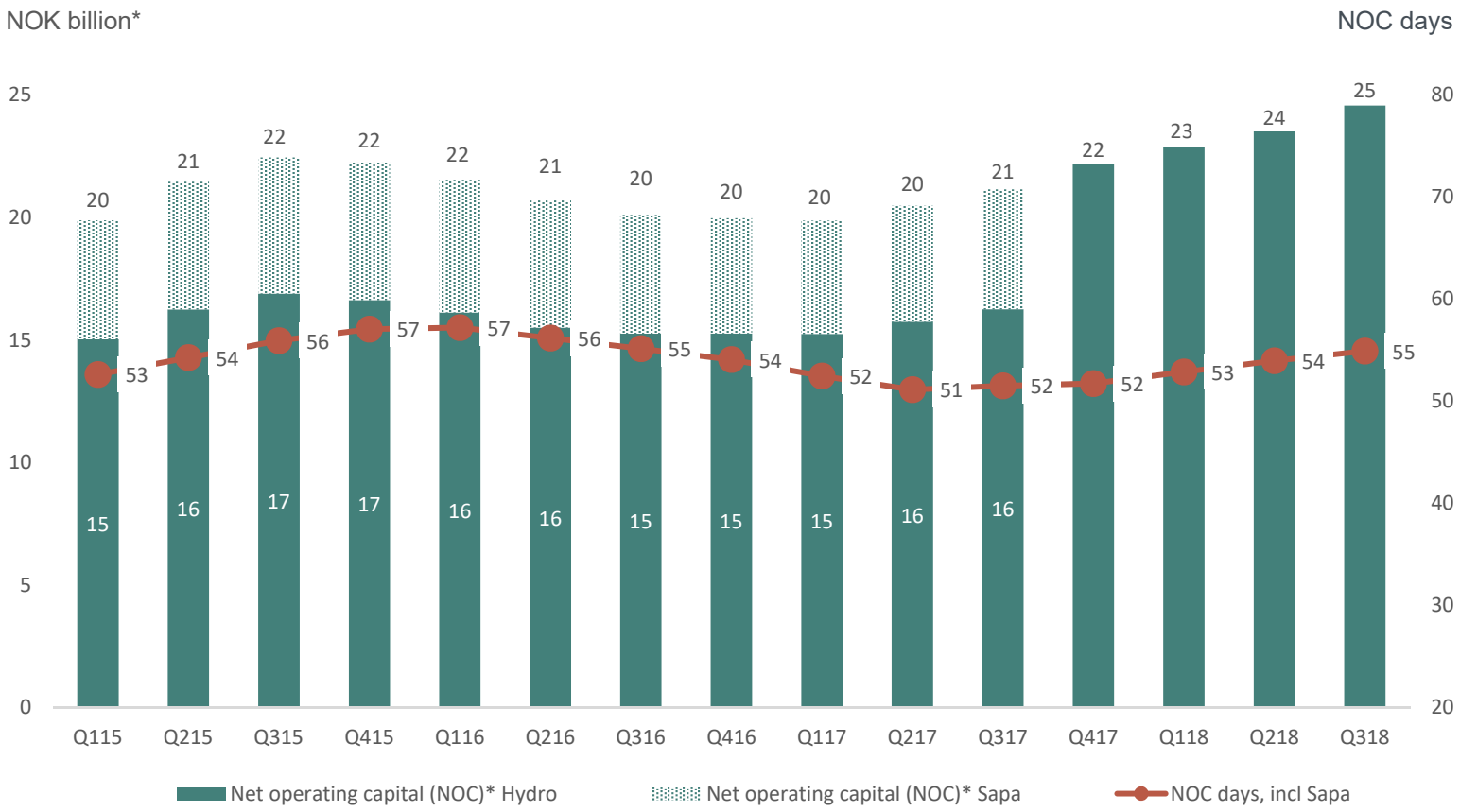
Implied all-in primary cost [2], USD/t



1) Realized alumina price minus Underlying EBITDA for B&A, per mt alumina sold
2) Realized all-in aluminium price less Underlying EBITDA margin, including Qatalum, per mt aluminium sold. Rounded to nearest USD 25

NOC build-up reflects higher prices and market uncertainty

Increased raw material inventories



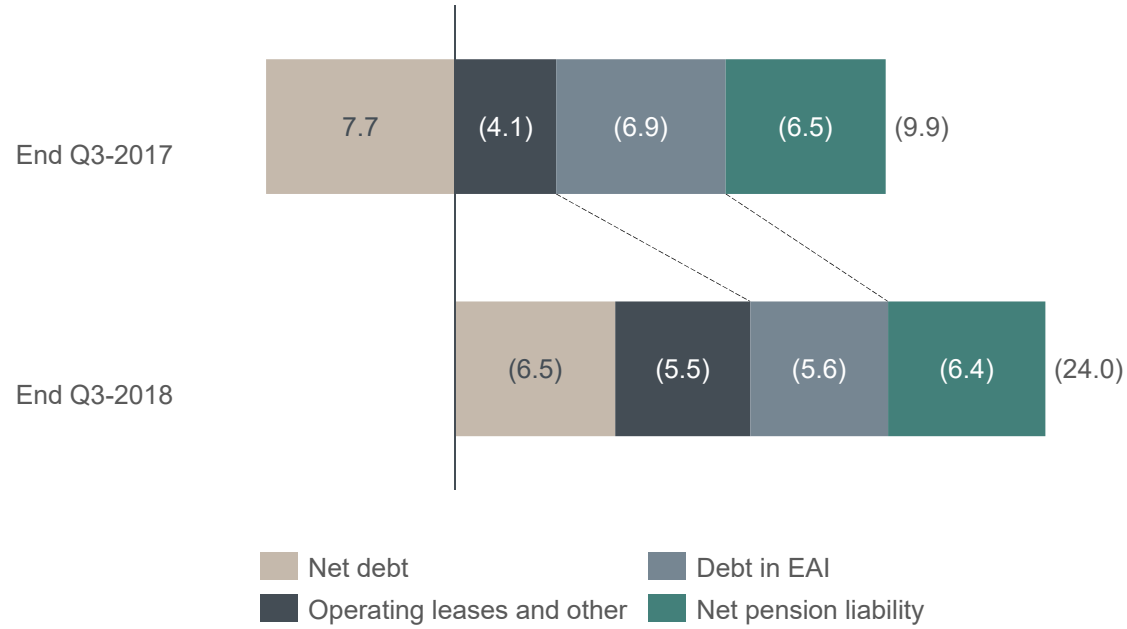
- Net operating capital generally follows LME
- Extruded Solutions average working capital around 5-6 BNOK
- Lift in net operating capital and NOC days throughout 2018 due to market uncertainty and price increases

* Last twelve months moving average
Hydro with fully consolidated Extruded Solutions from Q4 2017.

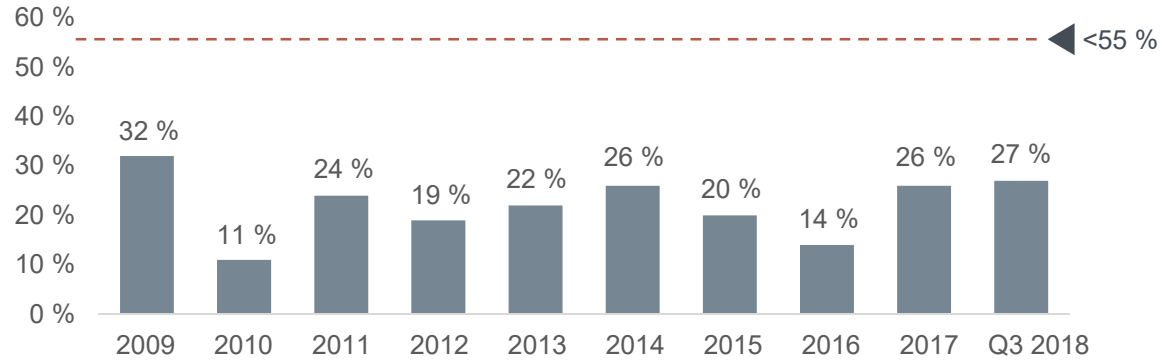
Maintaining a solid balance sheet and investment-grade credit rating

Adjusted net debt

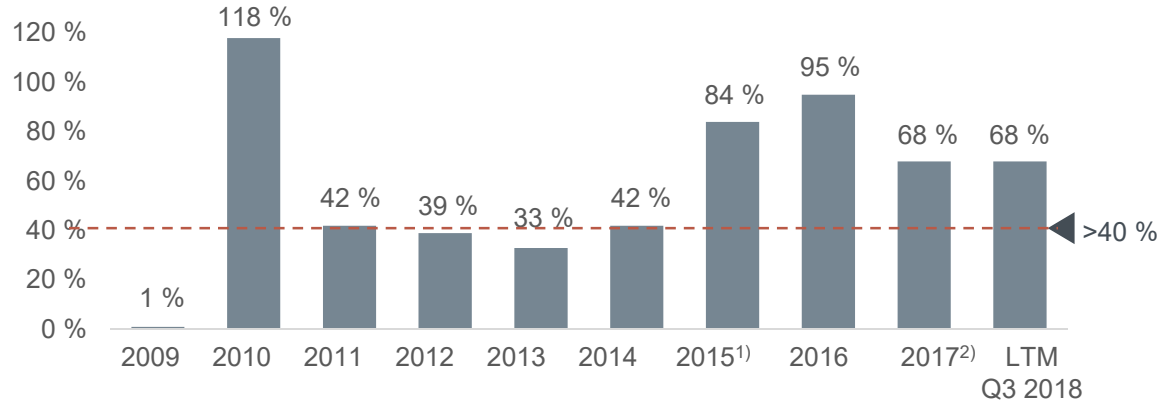
NOK billion



Adjusted net debt / Equity



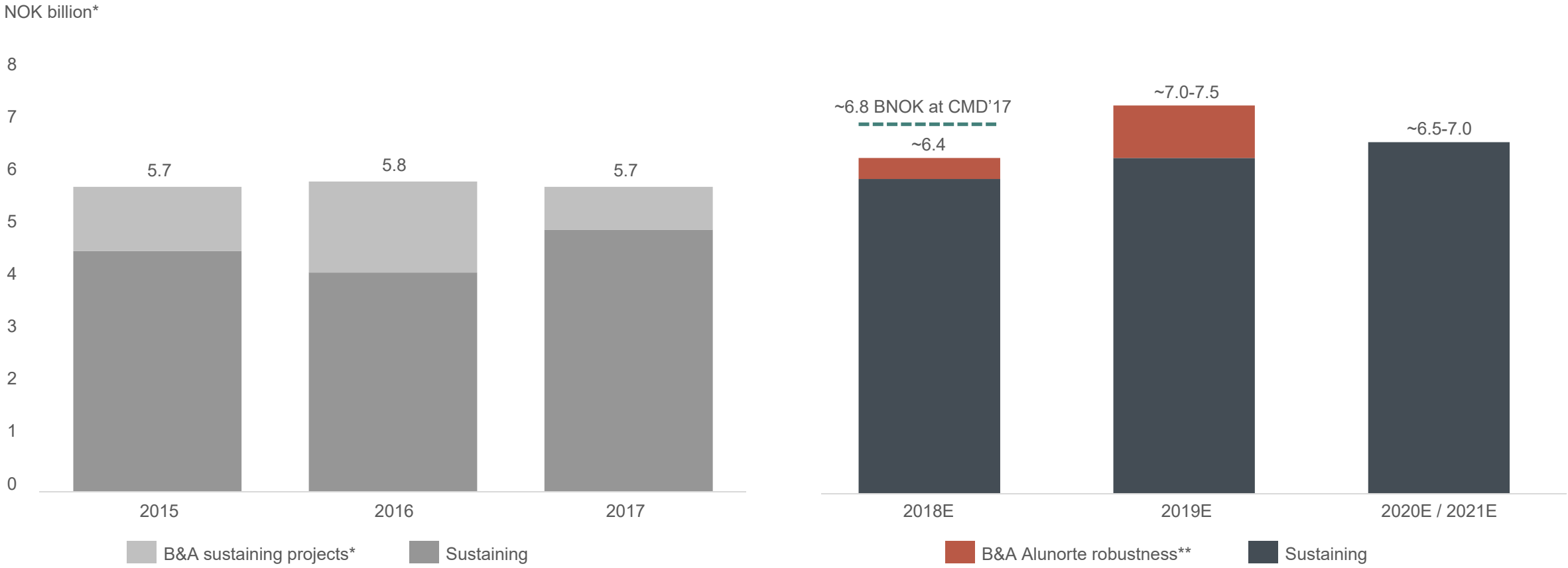
Funds from operations / Adjusted net debt



1) 2015 FFO/aND ratio has been restated due to change of definition
2) Extruded Solutions reflected as 50% equity accounted investment Q1-Q3 2017 and fully consolidated from Q4 2017

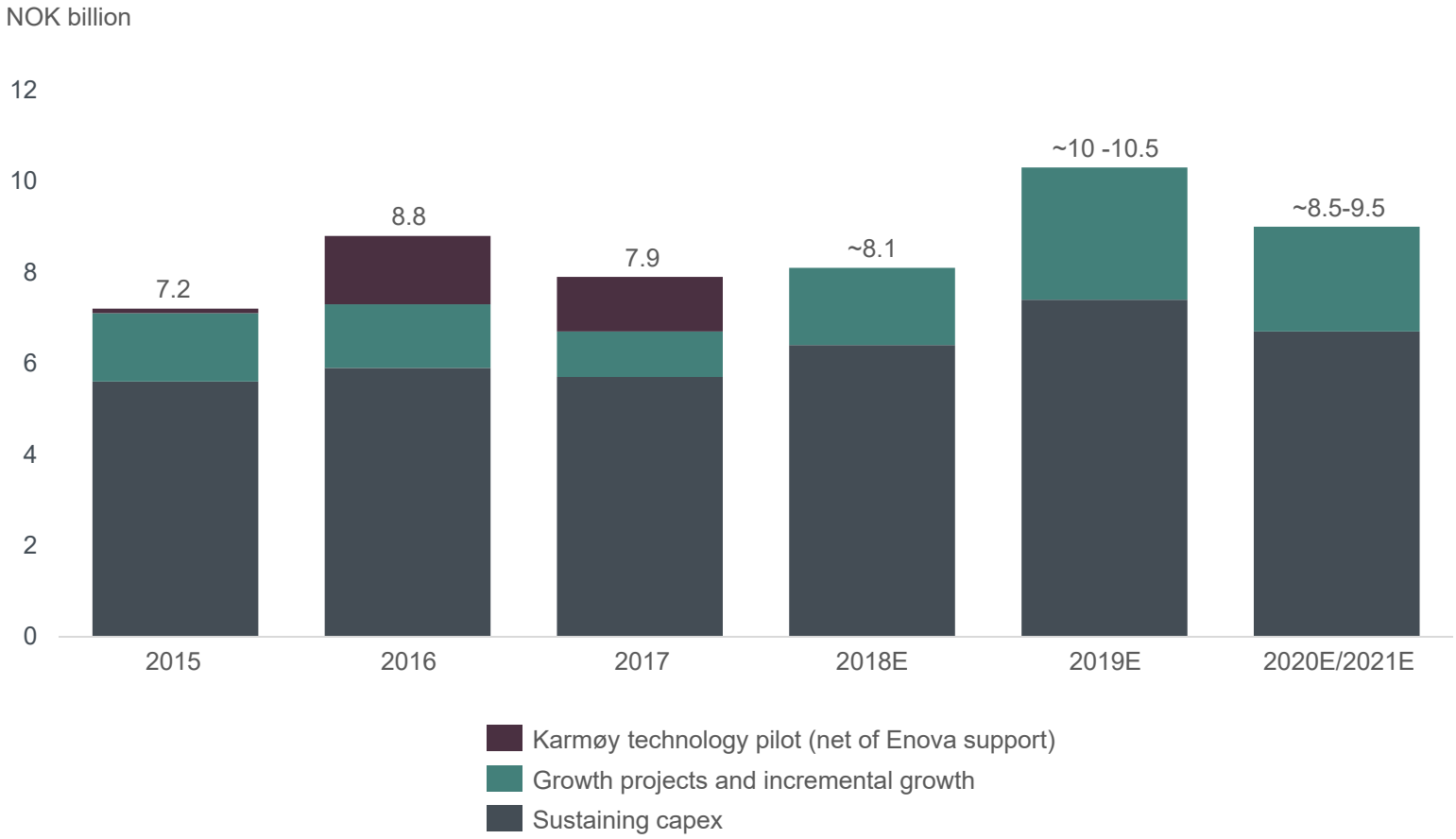
Average sustaining capex ~6.5-7.0 BNOK 2018-2021E

Majority of sustaining capex allocated upstream, including investments in Alunorte robustness



*Red mud disposal area at Alunorte, tailing plateau investments at Paragominas
** Investments in water treatment and management system as well as in enhanced operational robustness at Alunorte
Sustaining capex including Extruded Solutions

Growth capex focused on incremental growth and productivity improvements



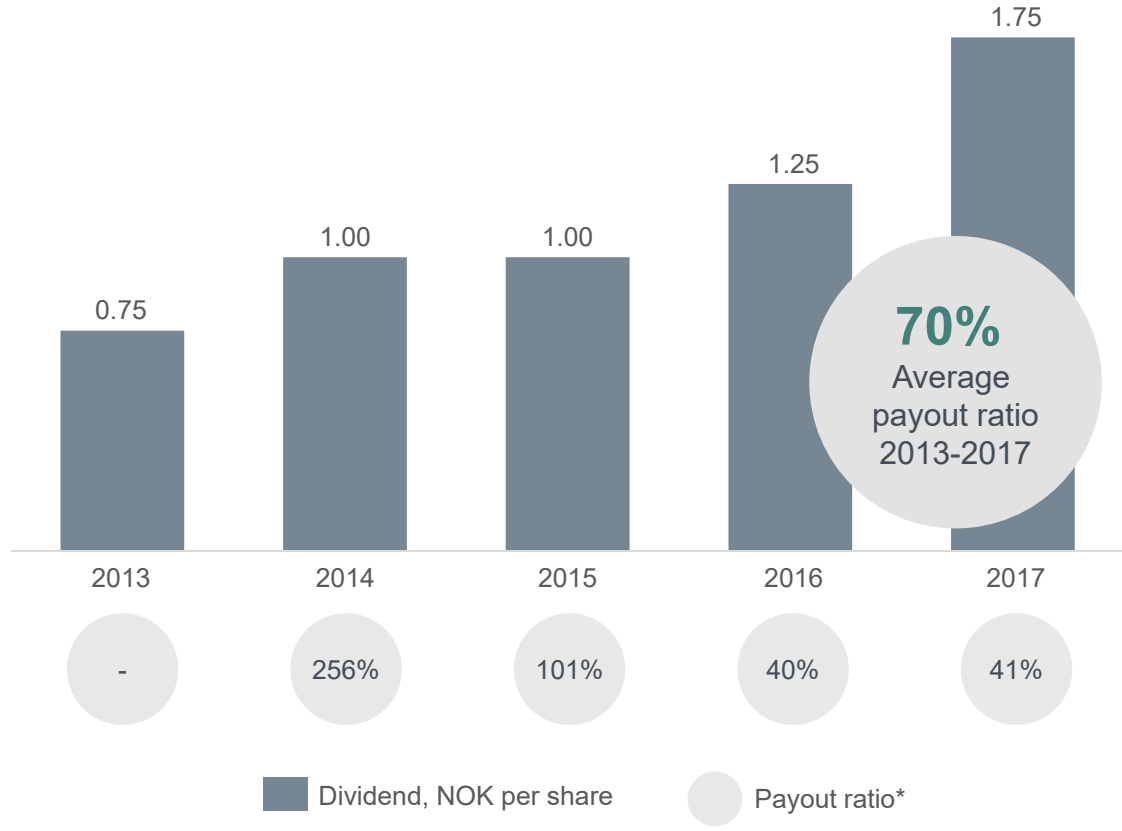
- Sustaining projects for 2018-2021:
  - Pipeline replacement in B&A
  - PM rectifiers and asset integrity Albras
  - Smelter relining
  - Alunorte robustness
- Ongoing growth projects:
  - Husnes upgrade and restart
  - Capacity creep and Industry 4.0 in PM
  - Selected customer-driven growth in ES
  - Productivity improvements across the portfolio
- Capex related to specific growth projects will be announced when decision is made

Capex including Extruded Solutions

Aiming for competitive returns to shareholders

- Aiming for competitive shareholder returns compared to alternative investments in peers
- Dividend policy:
  - Ordinary dividend: 40% of net income over the cycle
  - Floor of NOK 1.25 per share, committed to a predictable dividend level
  - Paid NOK 1.75 per share in 2017
- Five-year average ordinary payout ratio 2013-2017 of 70%
- Share buybacks and extraordinary dividends as supplement in periods with strong financials and earnings outlook

Dividend per share and payout ratio



*Payout ratio – dividend paid divided by reported EPS from continuing operations

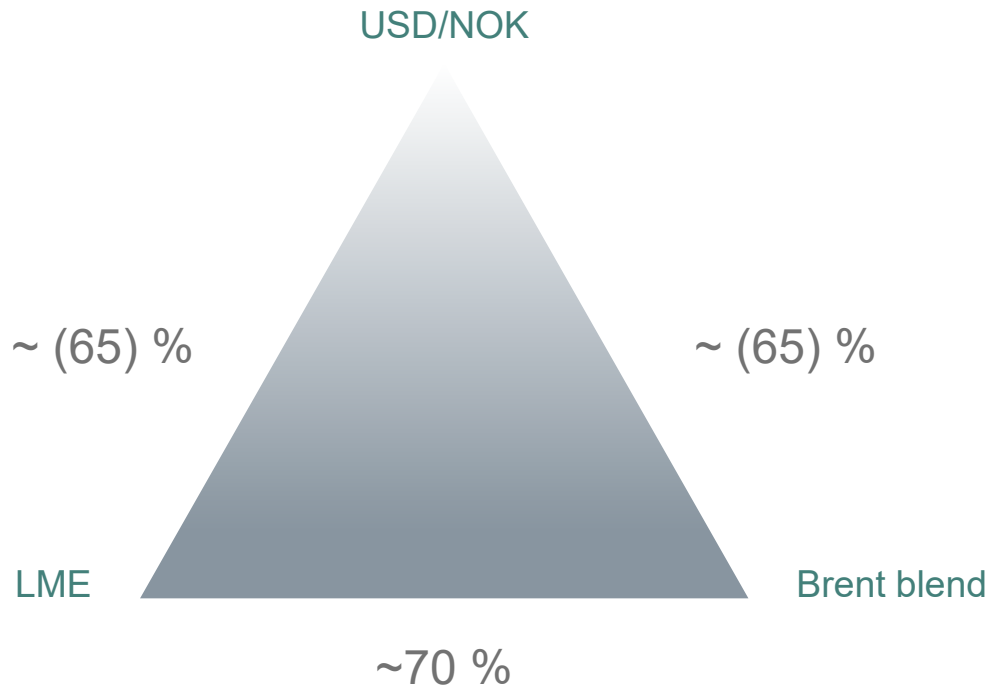
Limited financial hedging, flexible business model

Historical correlations between commodities and currencies indicate a natural earnings hedge

- Hedging strategy
  - Fluctuating with the market: revenues primarily exposed to LME, PAX and USD
  - Volatility mitigated by strong balance sheet
  - Strengthening relative position to ensure competitiveness
- Diversified business
  - Upstream cyclicality balanced with more stable earnings downstream
  - Exposed to different markets and cycles
- Bauxite & Alumina
  - Currency exposure, mainly USD and BRL
  - Exposed to LME and Platts alumina index prices
- Primary Metal
  - Operational LME hedging - one-month forward sales
  - Currency exposure, mainly USD, NOK and BRL
- Metal Markets, Rolled Products, Extruded Solutions
  - Operational LME and currency hedging to secure margin
- Flexibility to hedge LME or currency in certain cases
- Long-term debt in currencies reflecting underlying exposures and cash generation, also considering attractiveness in main financial markets

Cross-correlations between currencies and commodities

Monthly correlations 1994 - 2017



Source: Thomson Reuters, Hydro analysis

02 Sensitivities and scenarios

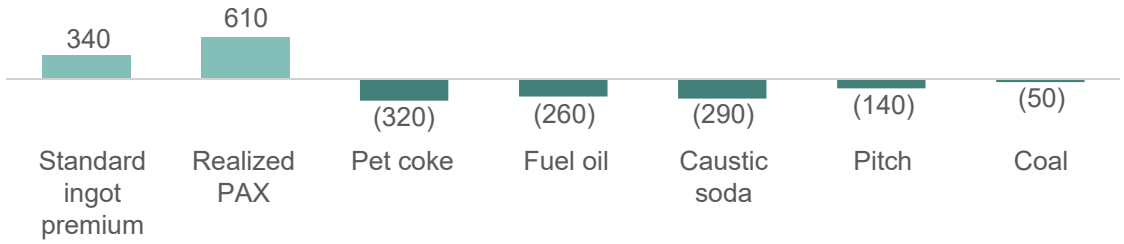
Significant exposure to commodity and currency fluctuations

Sensitivities affected by the Alunorte and Albras curtailments

Sensitivities with full production

Aluminium price sensitivity +10%, NOK million

Other commodity prices, sensitivity +10%, NOK million



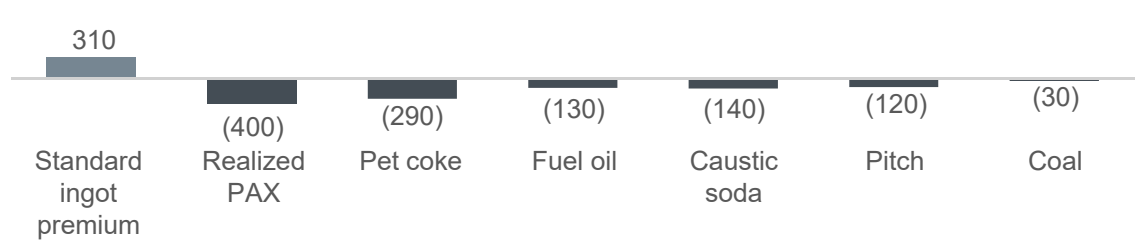
Currency sensitivities +10%

NOK million	USD	BRL	EUR
UEBIT	3 970	(1 060)	(250)

Sensitivities with 50% production

Aluminium price sensitivity +10%, NOK million

Other commodity prices, sensitivity +10%, NOK million



Currency sensitivities +10%

NOK million	USD	BRL	EUR
UEBIT	2 870	(1 060)	(250)

Annual sensitivities based on YTD Q3 18 realized prices as a starting point LME USD 2 200 per mt, standard ingot premium (Europe duty paid) 175 USD/t, realized PAX 460 USD/t, fuel oil USD 495 per mt, petroleum coke USD 435 per mt, caustic soda USD 610 per mt, coal USD 85 per mt, USD/NOK 8.0, BRL/NOK 2.2, EUR/NOK 9.6. LME and PAX sensitivities reflect financial exposures to movement in the respective prices, net of LME/PAX indexed costs. The net exposures might deviate from the net physical position. B&A and PM sensitivities reflect internal pricing of alumina assuming planned 2018 PAX exposure before the curtailment. The 50% sensitivities are simplified estimates based on full year 50% curtailment of Alunorte and Albras, ignoring any effects from the Force Majeure clauses.
BRL sensitivity calculated on a long-term basis with fuel oil assumed in USD. In the short-term, fuel oil is BRL-denominated. Fixed costs in B&A and PM assumed constant between the production scenarios.
1) U NI sensitivity calculated as U EBIT sensitivity after 30% tax

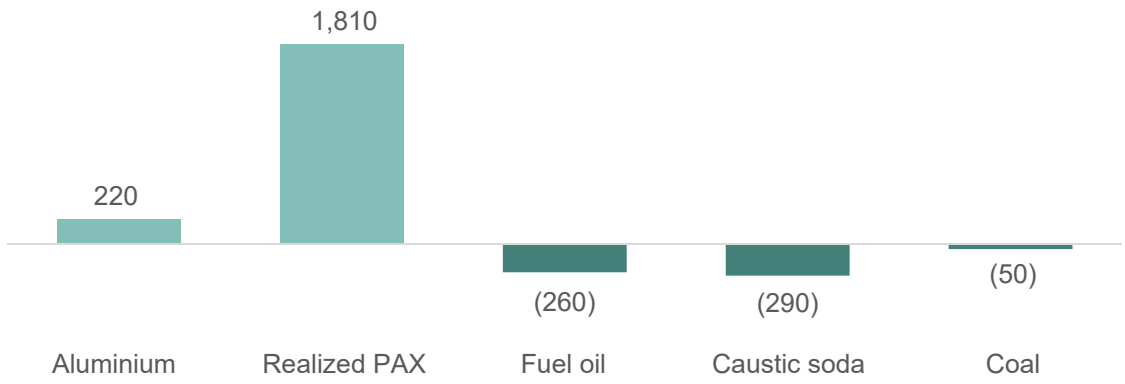
Bauxite & Alumina sensitivities

Sensitivities affected by the Alunorte curtailment

Sensitivities with full production

Annual sensitivities on underlying EBIT if +10% in price

NOK million



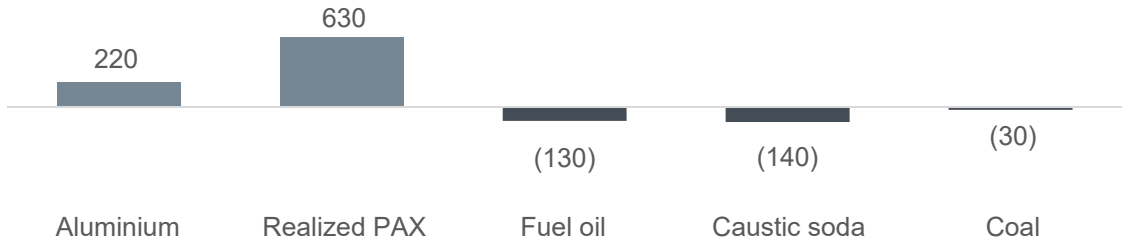
Currency sensitivities +10%

NOK million	USD	BRL	EUR
UEBIT	1 510	(720)	-

Sensitivities with 50% production

Annual sensitivities on underlying EBIT if +10% in price

NOK million



Currency sensitivities +10%

NOK million	USD	BRL	EUR
UEBIT	640	(720)	-

Annual sensitivities based on YTD Q3 18 realized prices as a starting point LME USD 2 200 per mt, standard ingot premium (Europe duty paid) 175 USD/t, realized PAX 460 USD/t, fuel oil USD 495 per mt, petroleum coke USD 435 per mt, caustic soda USD 610 per mt, coal USD 85 per mt, USD/NOK 8.0, BRL/NOK 2.2, EUR/NOK 9.6. LME and PAX sensitivities reflect financial exposures to movement in the respective prices, net of LME/PAX indexed costs. The net exposures might deviate from the net physical position. B&A and PM sensitivities reflect internal pricing of alumina assuming planned 2018 PAX exposure before the curtailment. The 50% sensitivities are simplified estimates based on full year 50% curtailment of Alunorte and Albras, ignoring any effects from Force Majeure clauses.
BRL sensitivity calculated on a long-term basis with fuel oil assumed in USD. In the short-term, fuel oil is BRL-denominated. Fixed costs in B&A and PM assumed constant between the production scenarios.

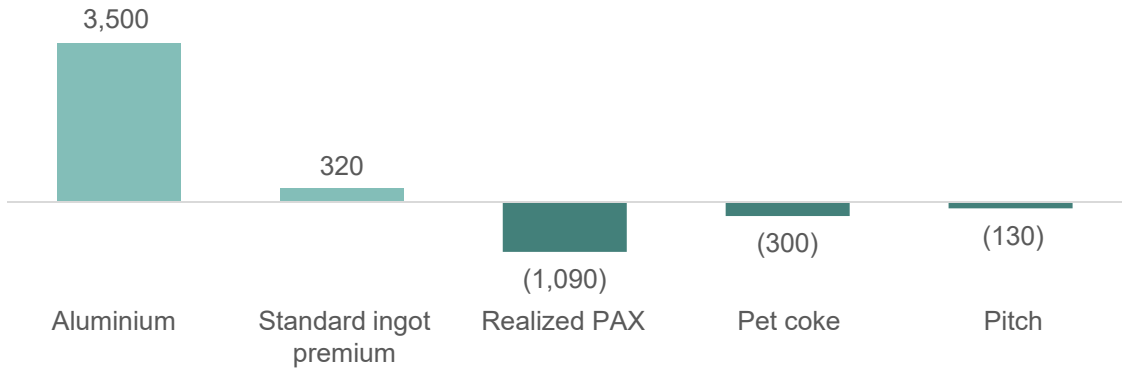
Primary Metal sensitivities

Sensitivities affected by the Albras curtailment

Sensitivities with full production

Annual sensitivities on underlying EBIT if +10% in price

NOK million



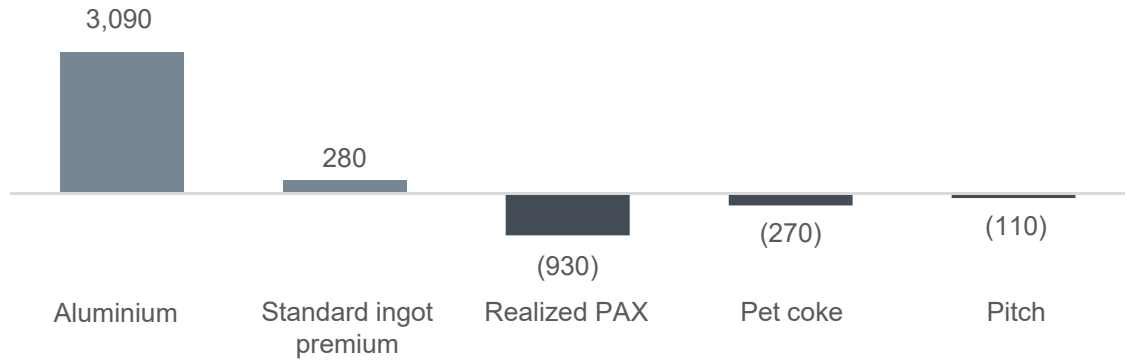
Currency sensitivities +10%

NOK million	USD	BRL	EUR
UEBIT	2 000	(340)	(260)

Sensitivities with 50% production

Annual sensitivities on underlying EBIT if +10% in price

NOK million



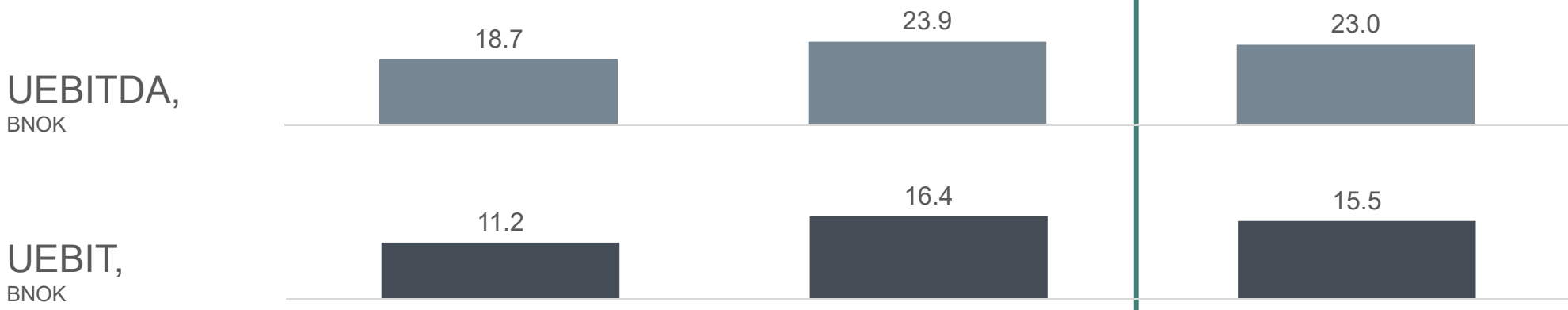
Currency sensitivities +10%

NOK million	USD	BRL	EUR
UEBIT	1 800	(340)	(260)

Annual sensitivities based on YTD Q3 18 realized prices as a starting point LME USD 2 200 per mt, standard ingot premium (Europe duty paid) 175 USD/t, Realized PAX 460 USD/t, fuel oil USD 495 per mt, petroleum coke USD 435 per mt, caustic soda USD 610 per mt, coal USD 85 per mt, USD/NOK 8.0, BRL/NOK 2.2, EUR/NOK 9.6. LME and PAX sensitivities reflect financial exposures to movement in the respective prices, net of LME/PAX indexed costs. The net exposures might deviate from the net physical position. B&A and PM sensitivities reflect internal pricing of alumina assuming planned 2018 PAX exposure before the curtailment. The 50% sensitivities are simplified estimates based on full year 50% curtailment of Alunorte and Albras, ignoring any effects from Force Majeure clauses. Fixed costs in B&A and PM assumed constant between the production scenarios.

Basis for long-term scenarios

Estimated UEBITDA YTD Q3 annualized at full production and average Q1 PAX alumina index 4.3 BNOK higher than the actual



	YTD Q3 18 annualized [1]	YTD Q3 18 annualized at full production and avg realized prices [4]	YTD Q3 18 annualized at full production and avg Q118 realized PAX [5]
Production capacity Alunorte, Paragominas, Albras	Jan –Feb 100%; Mar-Dec 50% [2]	100%	100%
Realized LME, USD/t	2 200	2 200	2 200
Realized premium, USD/t	340	340	340
Realized PAX, USD/t	460	460	390
USD/NOK	8,0	8,0	8,0
BRL/NOK	2,2	2,2	2,2
Better program, BNOK	(0,5)	2.3 [3]	2.3 [3]

1) YTD Q3 18 annualized except for Albras excess power sales, which are YTD Q3 18 actual.
2) Alunorte was curtailed in March, Albras in April 2018
3) Better program at full production assuming 2.3 BNOK realized in Better program by 2018 (1.8 BNOK delivered by end-2017 and 0.5 BNOK delivered in 2018 target).
4,5) Based on simplified curtailment effect calculations in Primary Metal and Bauxite&Alumina (see p.52)
5) Adjustment based on Hydro price sensitivities for realized PAX alumina index from YTDQ318 average of 460 USD/t to Q118 average of 390 USD/t. Sensitivities based on estimated 2018 PAX exposure before the curtailment. Including alumina costs adjustment for the Neuss smelter in Rolled Products

UEBITDA potential at full production

Scenarios are not forecasts, but represent earnings potential based on sensitivities

Indicative UEBITDA-range in 3 scenarios

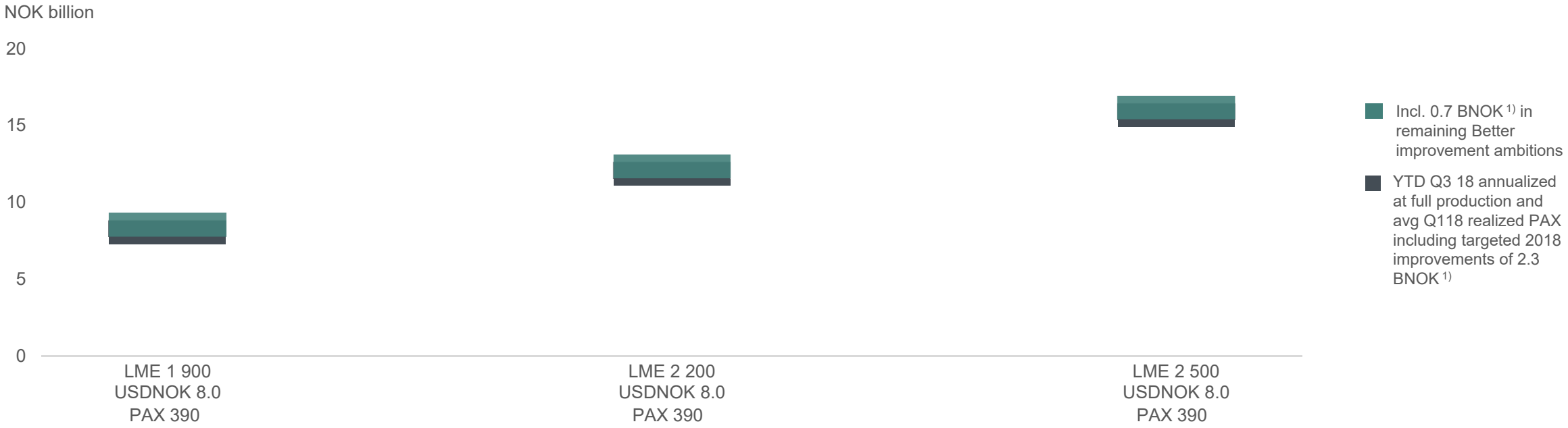
Additional factors influencing earnings (not included in the scenarios):
Production volumes, alumina sales pricing on PAX, energy prices, downstream margin developments, raw material cost development, premiums, inflation, currency, depreciation, other

YTD Q318 annualized underlying EBITDA at full production and average Q118 realized PAX index as a basis (see p. 65). USD/NOK 8.0, BRL/NOK 2.2, realized premium above LME 340 USD/mt, PAX 390 USD/mt assumed for all scenarios. Other assumptions unchanged.
Improvements used for scenarios exclude Extruded Solutions.
1) Assuming 2.3 BNOK realized in Better program by 2018 (1.8 BNOK delivered by end-2017 and 0.5 BNOK delivered in 2018 target). Future improvement efforts in real 2015 terms, before depreciation.

FCF potential at full production and average 2018-2021E sustaining capex

Scenarios are not forecasts, but represent earnings potential based on sensitivities

Indicative Free cash flow (FCF) range in 3 scenarios



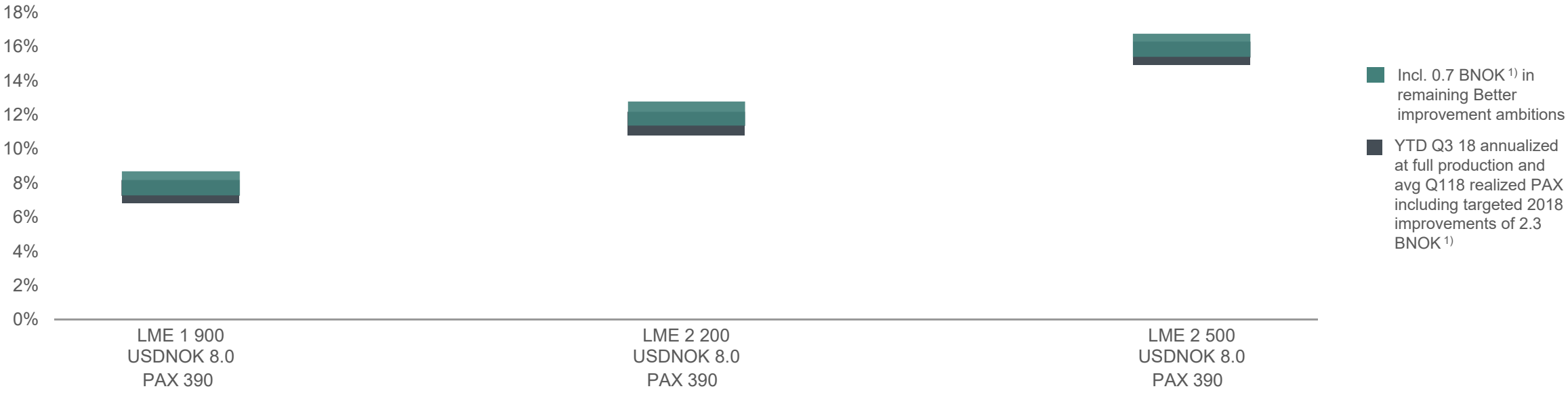
Additional factors influencing earnings (not included in the scenarios):
Production volumes, alumina sales pricing on PAX, energy prices, downstream margin developments, raw material cost development, premiums, inflation, currency, taxes, investments, interest expense, depreciation, other

YTD Q318 annualized underlying EBITDA at full production and average Q118 realized PAX index as a basis (see p. 65). USD/NOK 8.0, BRL/NOK 2.2, realized premium above LME 340 USD/mt, PAX 390 USD/mt assumed for all scenarios. Average 2018-2021E sustaining capex of 6,5-7 BNOK. Other assumptions unchanged.
Improvements used for scenarios exclude Extruded Solutions.
1) Assuming 2.3 BNOK realized in Better program by 2018 (1.8 BNOK delivered by end-2017 and 0.5 BNOK delivered in 2018 target). Future improvement efforts in real 2015 terms, before depreciation.

URoaCE potential at full production

Scenarios are not forecasts, but represent earnings potential based on sensitivities

Indicative URoaCE range in 3 scenarios



Additional factors influencing earnings (not included in the scenarios):
Production volumes, alumina sales pricing on PAX, energy prices, downstream margin developments, raw material cost development, premiums, inflation, currency, taxes, interest expense, other

YTD Q318 annualized underlying EBITDA at full production and average Q118 realized PAX index as a basis (see p. 65). USD/NOK 8.0, BRL/NOK 2.2, realized premium above LME 340 USD/mt, PAX 390 USD/mt assumed for all scenarios. Other assumptions unchanged.
Improvements used for scenarios exclude Extruded Solutions.
1) Assuming 2.3 BNOK realized in Better program by 2018 (1.8 BNOK delivered by end-2017 and 0.5 BNOK delivered in 2018 target). Future improvement efforts in real 2015 terms, before depreciation.

03 Financial targets and aspiration

Driving long-term shareholder value

Balancing capital allocation and financial strength

Solid balance sheet and liquidity

Maintain financial flexibility
Enable access to capital markets
Navigate through the cycles
Manage business risks
Act on opportunities

Capital expenditures

Sustaining capex to ensure operational excellence

Investments to keep market share, reduce costs, strengthen margins

Predictable dividend

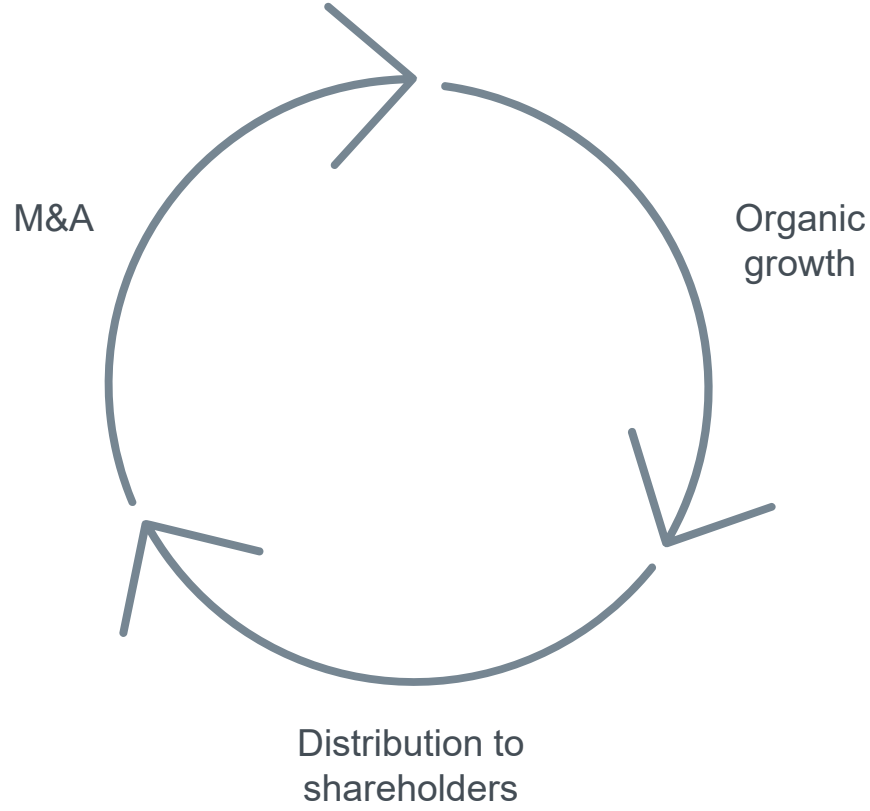
Deliver competitive cash returns to shareholders

Long-term shareholder value*

- Reinvest in profitable growth

or

- Return to shareholders



* Allocation based on best risk-adjusted returns

Hydro's aspiration underpinned by firm financial targets

Medium and long-term

	Ambition	Timeframe	CMD 2018 status
Better improvement ambition	3.0 BNOK	2016-2019	(0.5) BNOK 2018E
Dividend payout ratio	40% of net income	Over the cycle	~70%[1)] 2013-2017
FFO/adjusted net debt [2)]	> 40%	Over the cycle	68% LTM Q3-18
Adjusted net debt/Equity	< 55%	Over the cycle	27% Q3-18
URoaCE	Competitive[3)]	Over the cycle	8.9 %[4)] LTM Q3-18

Better ***Bigger*** *Greener*

1) Payout ratio 5 year average – dividend per share divided by earnings per share from continuing operations for the last 5 years
2) FFO – funds from operations
3) Measured against a relevant peer group
4) Underlying return on average capital employed after tax (URoaCE)

Maintaining financial strength and flexibility

- Balance sheet strength and liquidity
- Predictable and competitive dividend
- Continuous cost and margin improvements
- Disciplined capital allocation
- Focus on net operating capital management
- Effective risk management

Market Outlook

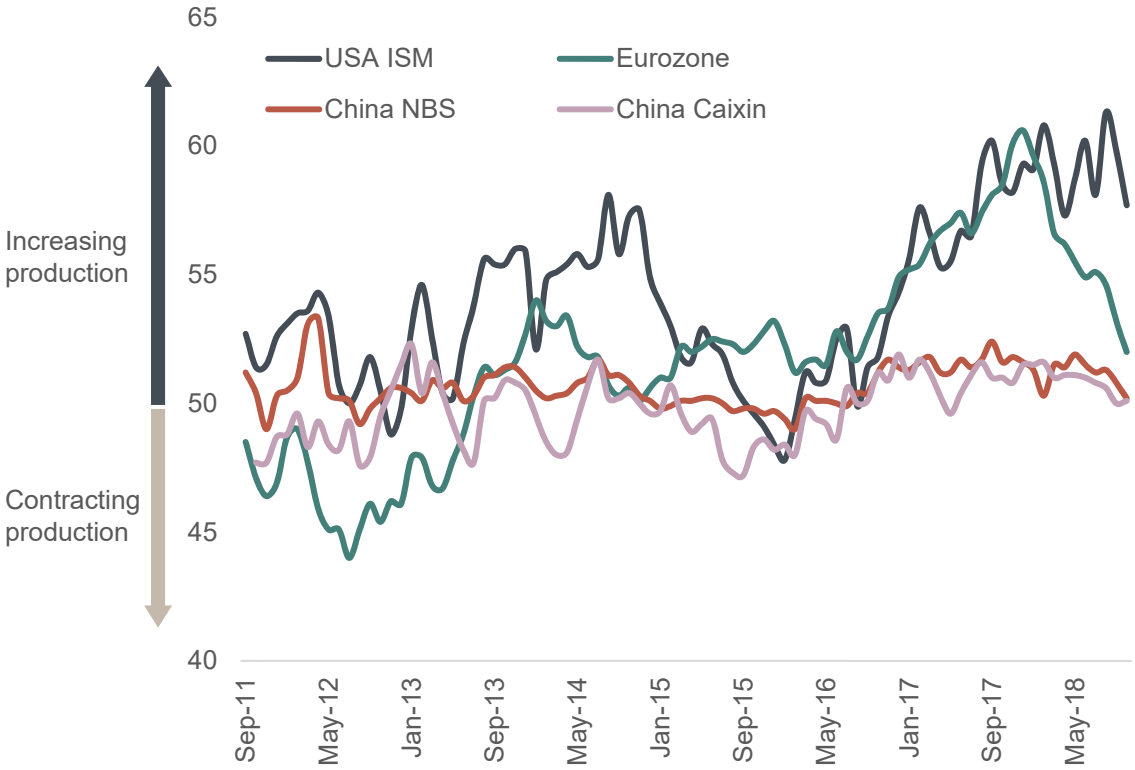
Kathrine Fog, SVP Corporate Strategy & Analyses

01 Macro and trade

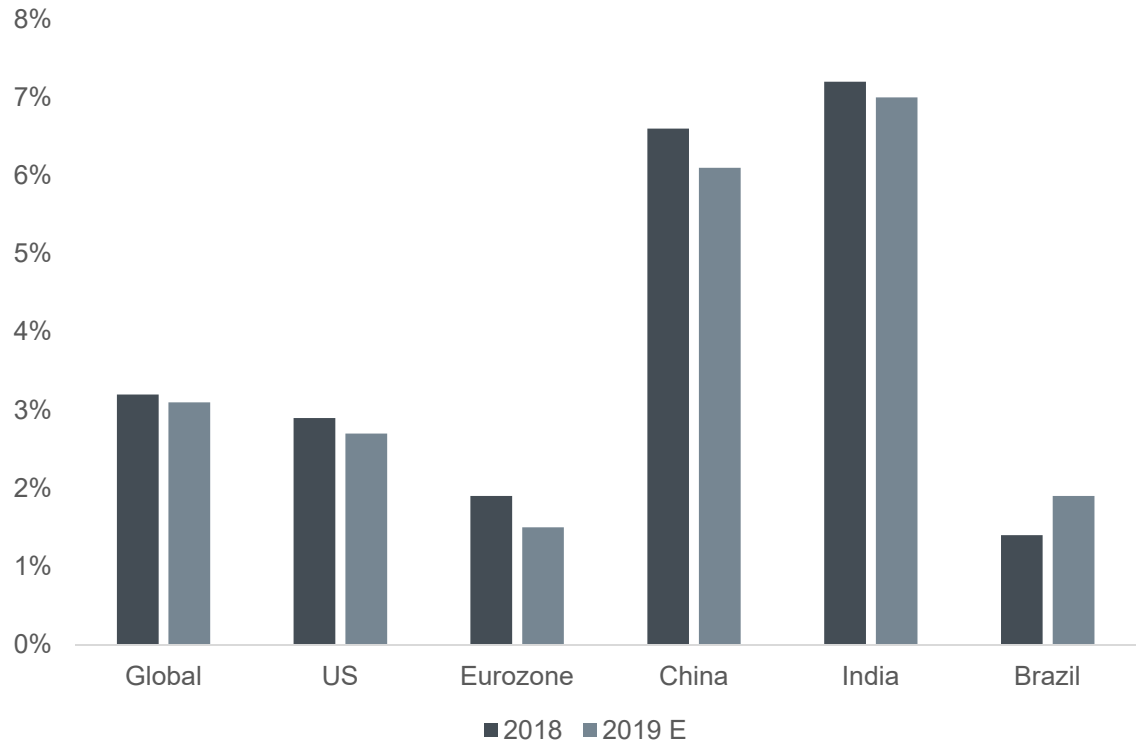
Macro sentiment still moderately positive despite trade tensions

Increasing uncertainty on GDP-effects from trade disputes

Manufacturing PMI's



Annual GDP-growth, key regions



Source: Thomson Reuters, IHS Global Insight

Trade sanctions and tariffs impacting global flows of aluminium

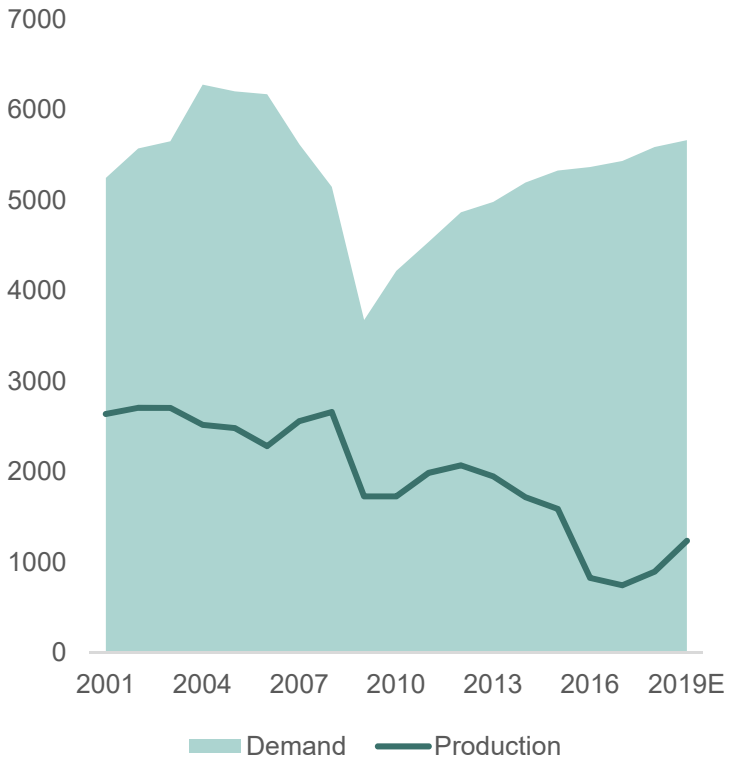
Source: Hydro analysis
*USMCA = United States Mexico Canada Agreement

Section 232 impacting US metal premiums

Premiums reflecting high underlying metal deficit

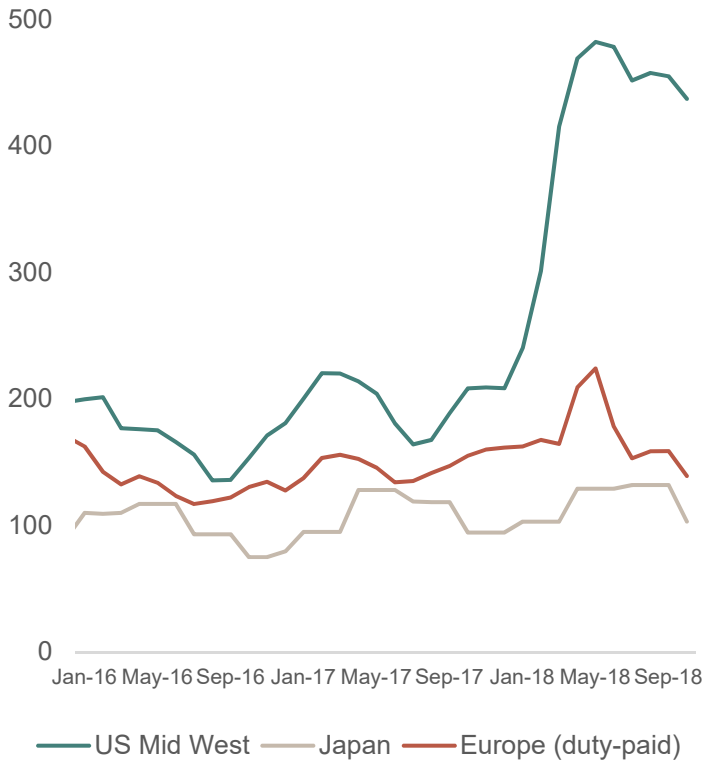
US primary demand and production

('000t)



Ingot premiums

USD/t



Section 232

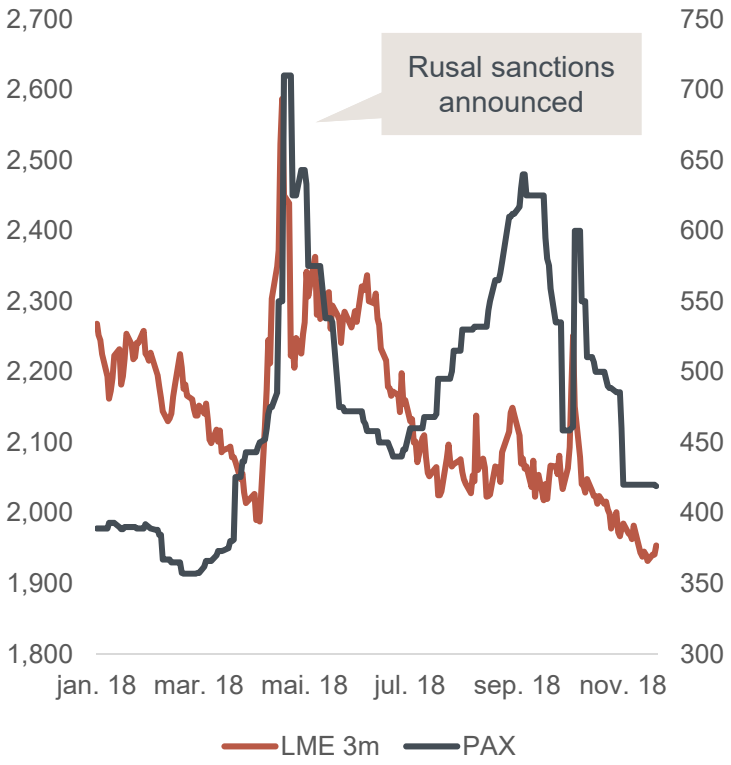
- 10% duty on aluminium imports
- The US has a large underlying metal deficit and needs to attract large metal volumes
- Some US restarts so far – however, limited overall restart potential
- Restart of Hawesville and New Madrid adding volumes in 2019

Source: Hydro analysis, Metal Bulletin, Platts, Republished under license from CRU International Ltd

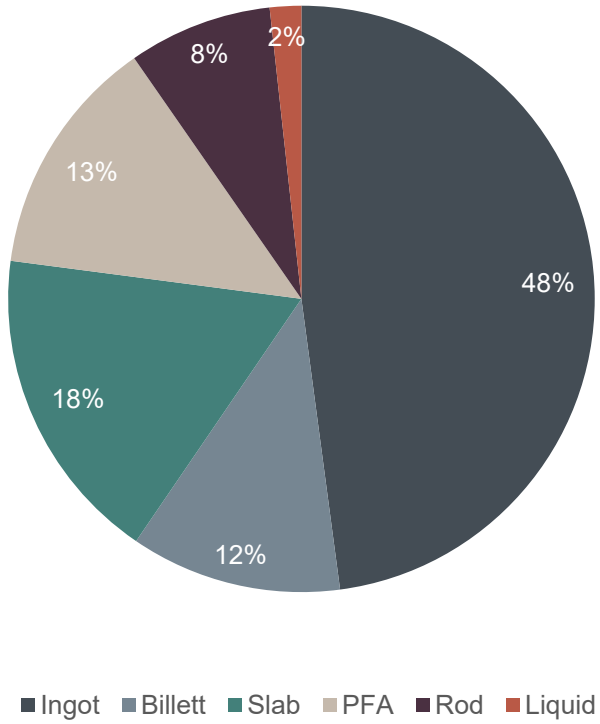
Rusal sanctions leading to price volatility

Large producer of value added products, impacting regional product premiums

LME 3m
(USD/t)



Rusal primary production per product
(total 2017: 3.8 million tonnes)



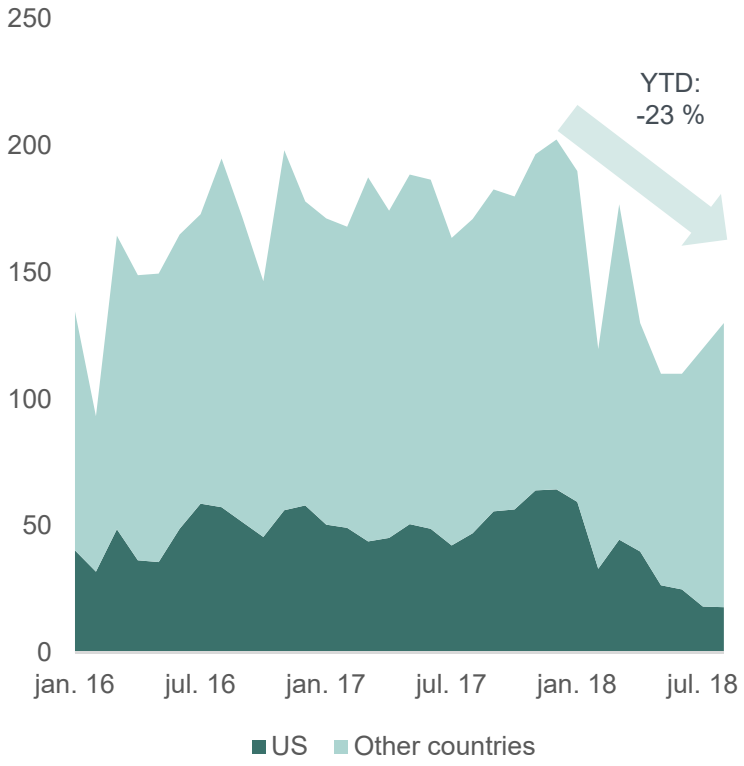
Rusal sanctions

- Deadline for imposition of UC Rusal sanctions further extended to 7 January
- Supply contract deals for 2019 are permissible provided they were similar to 2018 deals
- Uncertainty still lingers on VAP sales and overall market premiums
- Aughinish is an important supplier of alumina to European smelters

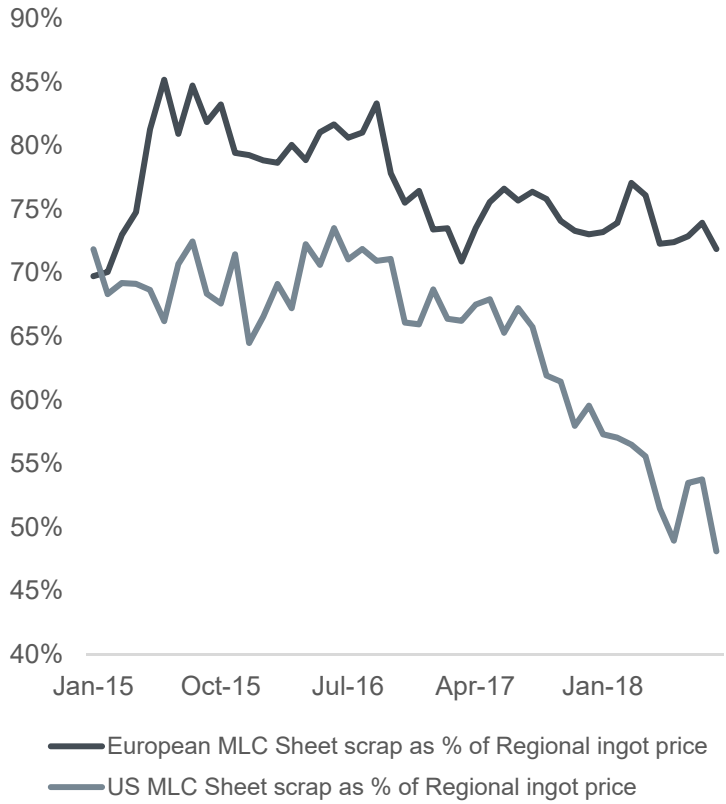
Source: Hydro analysis, Thomson Reuters, Platts, Republished under license from CRU International Ltd

Chinese limitations on scrap imports leaving more scrap in North America and Europe

Chinese scrap imports, monthly
('000 tonnes)



Scrap prices as a percentage of Regional ingot price



Chinese limit scrap imports

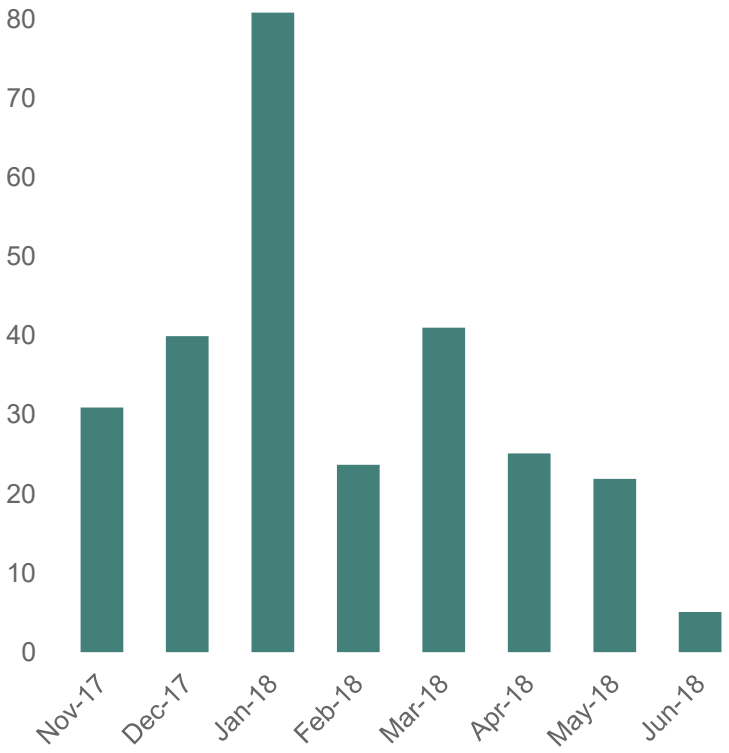
- Stricter import policy and 50% import duty on US scrap has led to a sharp fall in scrap imports
- More scrap left in the US, putting pressure on scrap prices
- US scrap exports to alternative destinations such as Malaysia and India increasing
- Scrap imports to the US not affected by 232

Source: Hydro analysis, Republished under license from CRU International Ltd

Chinese semis exports increasing in 2018, less volumes going to the US

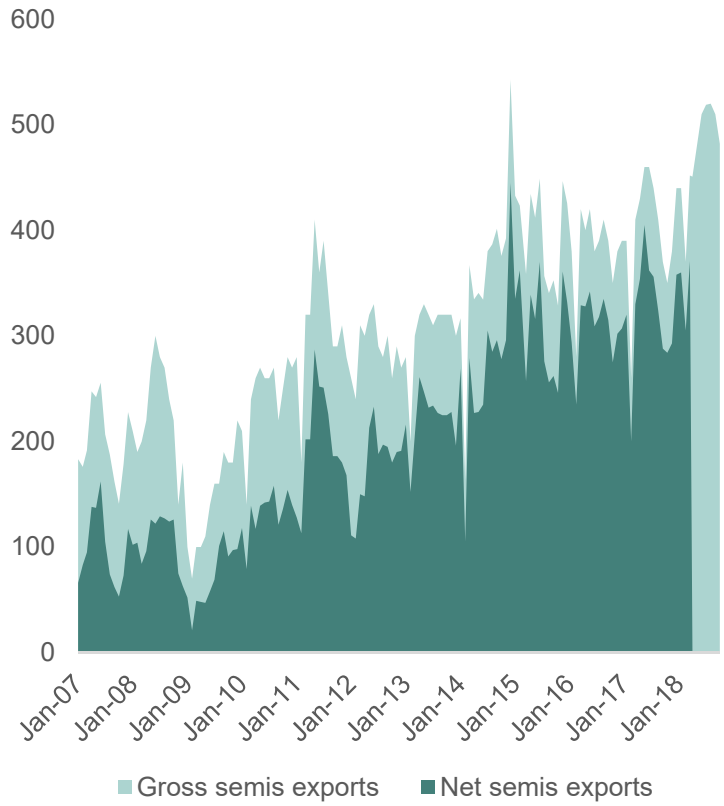
US imports of sheet and plate from China

000s tonnes



Semis exports

(monthly, kmt)



Chinese semis exports

- Increasing volumes in 2018 amid higher export arbitrage
  - YTD + 19%
- Export arbitrage supported by weak RMB
- Asia key destination
  - More than 50% of export volumes in 2017
- AD and CVD against Chinese foil and Chinese common alloy sheet have led to sharp declines in US imports from China

Source: IHS Market, 7606: sheet and plate, Thomson Reuters, Antaike

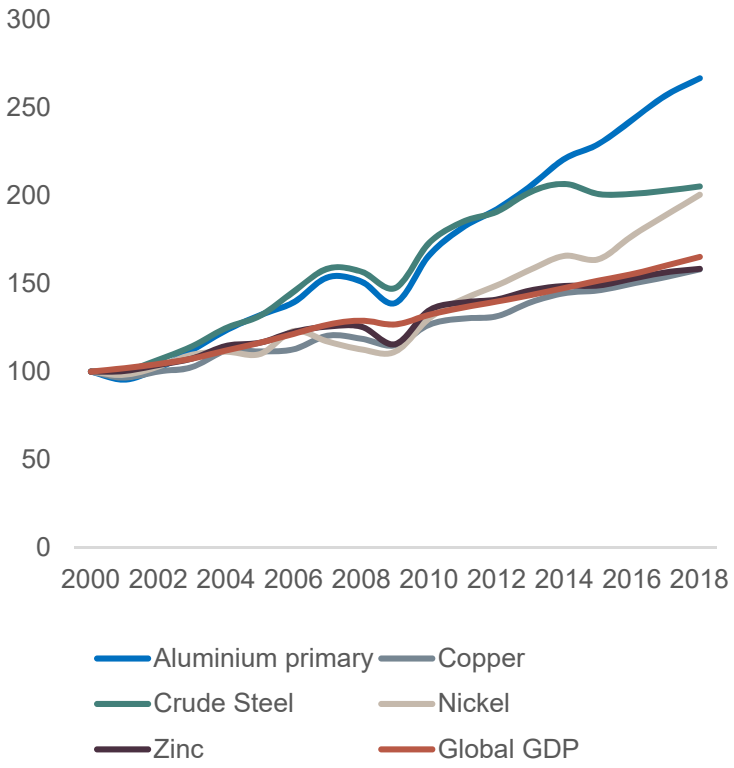
02 Downstream

Aluminium continues to be the fastest growing base metal

Gaining market share from other metals in key segments

Global metal demand

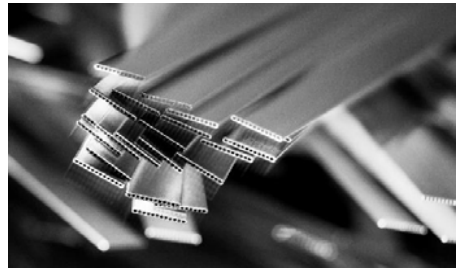
Index 2000=100



New segments and applications supporting aluminium demand

Offshore / Marine applications, e.g. fish farms

Railway, including new technologies like maglev



HVAC&R

Aluminium formwork for B&C

Automotive, strong drive towards EV

Middle and high voltage cables, wire and cable for electrical applications

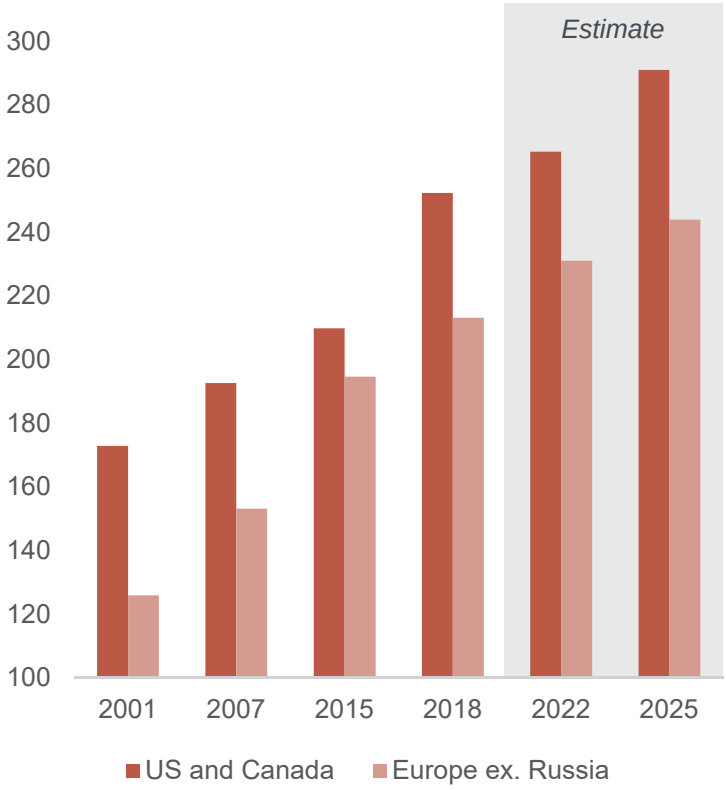
Source: Hydro analysis, Republished under license from CRU International Ltd, Zhongwang, World-aluminium.org

Substitution trend in automotive progressing

Positive US demand despite moderate auto sales, Europe gaining ground

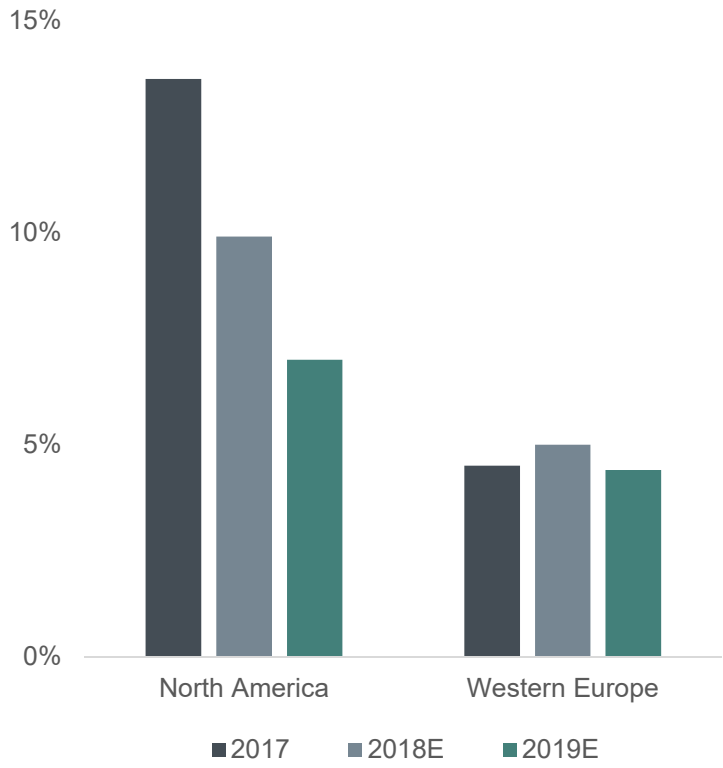
Aluminium vehicle penetration*

Demand per vehicle, kg/car



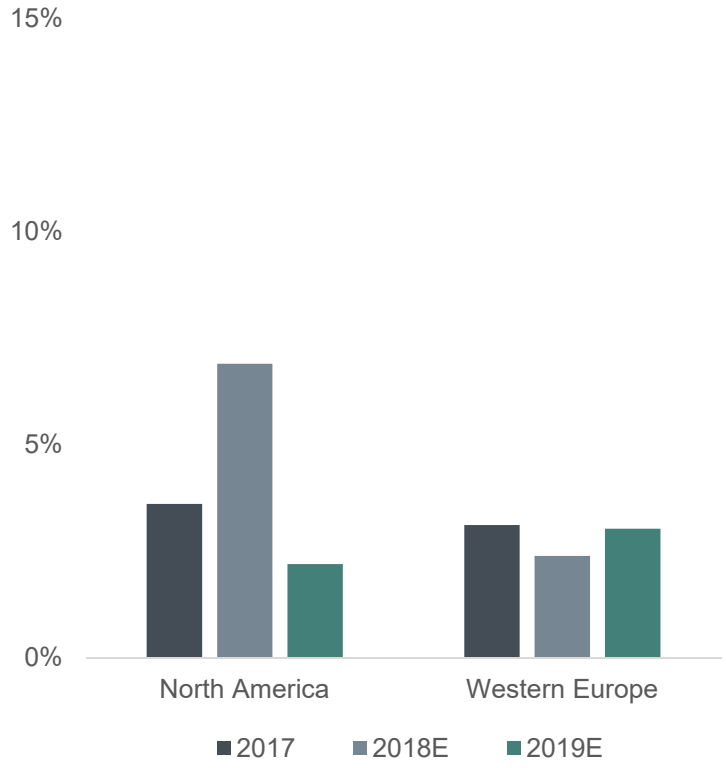
Rolled products demand in transport

(annual growth)



Extrusions demand in transport

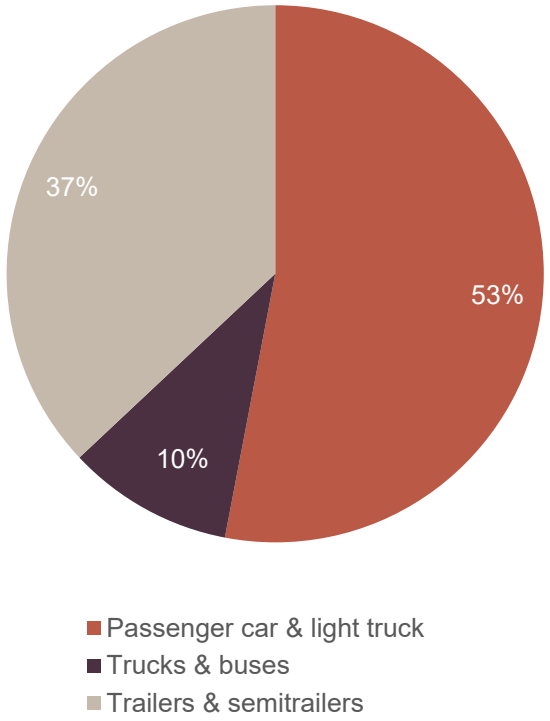
(annual growth)



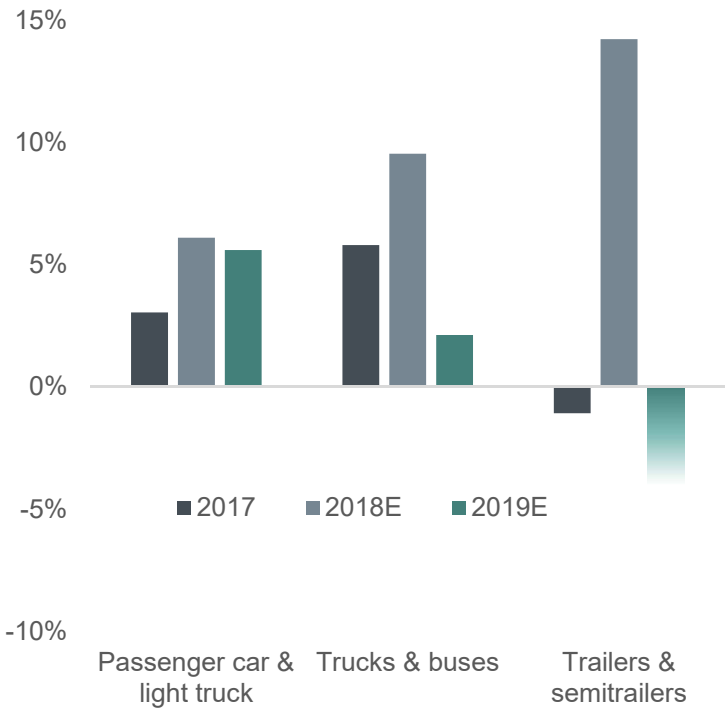
Source: Hydro analysis, Republished under license from CRU International Ltd
*Aluminium demand per vehicle (captures the consumption from the sector. The amount in a vehicle will be less due to fabrication losses)

Extrusion demand in US & Canada strongly impacted by expected moderation in truck & trailer

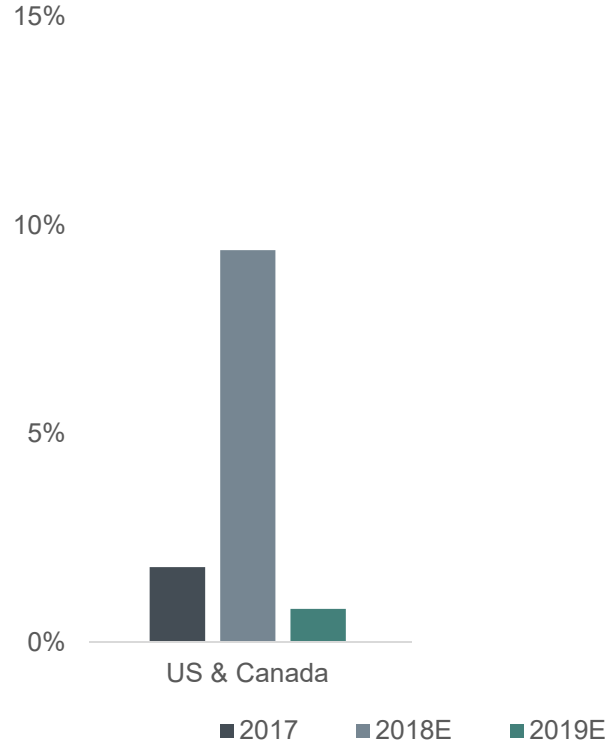
Extrusions demand in transport (cars & trucks*), segment split
(Average share 2016-2018)



Extrusions demand per transport (cars & trucks) segment
(annual growth)



Extrusions demand in transport (cars & trucks)
(annual growth)

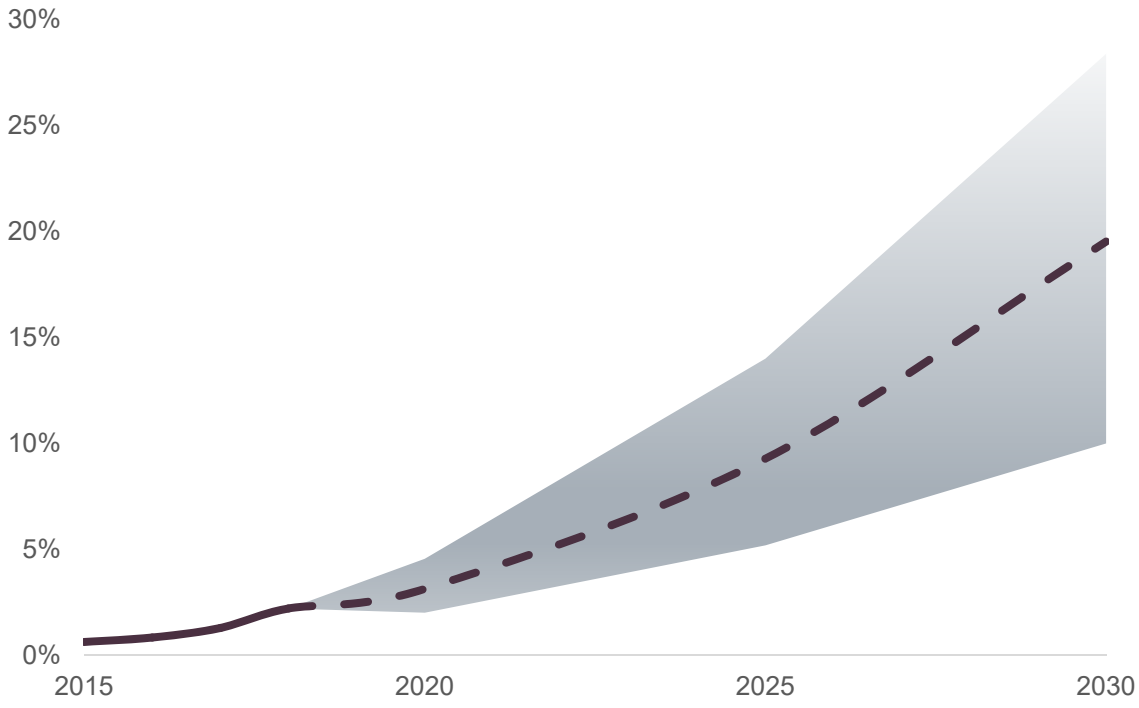


*Transport segment also include some other transport (e.g. railway), cars & trucks make up >70% of total transport demand
Source: Hydro analysis, Republished under license from CRU International Ltd

E-mobility trend favourable for aluminium demand

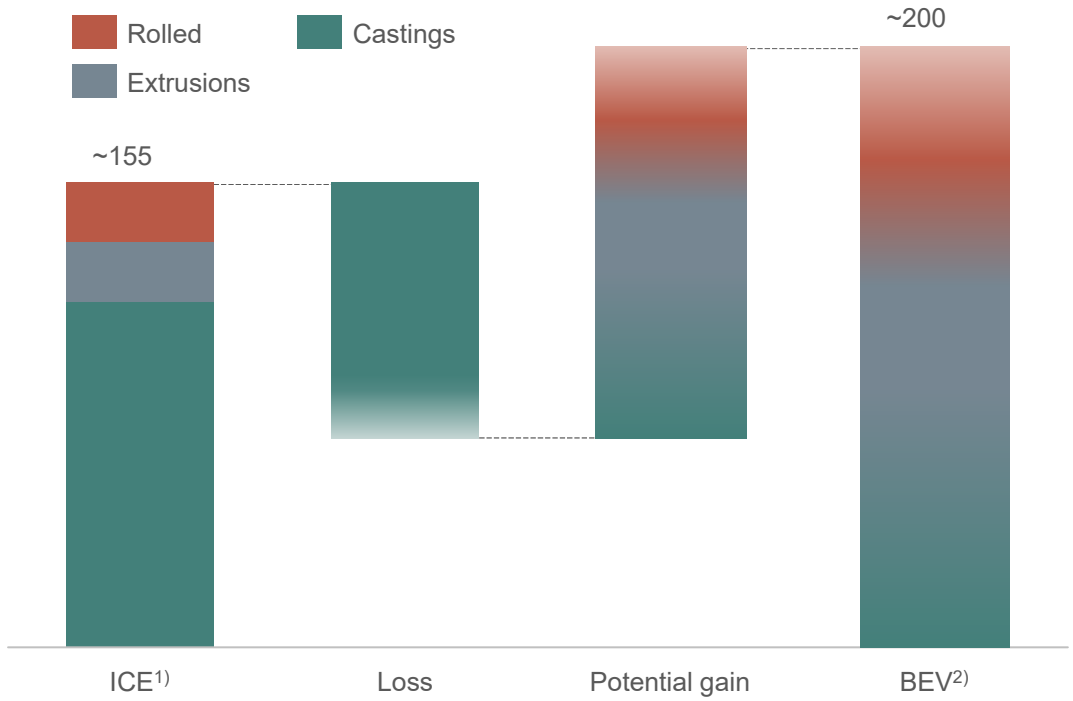
High aluminium content in BEVs, increasing share of total car sales

Electric vehicle* share of new car sales (%)



Net increase in aluminium content in electric vehicle's

Average kg aluminium per vehicle type in 2018



Source: Hydro analysis, Republished under license from CRU International Ltd
* Battery electric vehicles & plug-in-hybrid vehicles
1) ICE= Internal Combustion Engine, 2) BEV= Battery Electric Vehicle
Forecast based on 10 different sources including CRU, Wood MacKenzie, JP Morgan, IEA, Bloomberg New Energy Finance and others

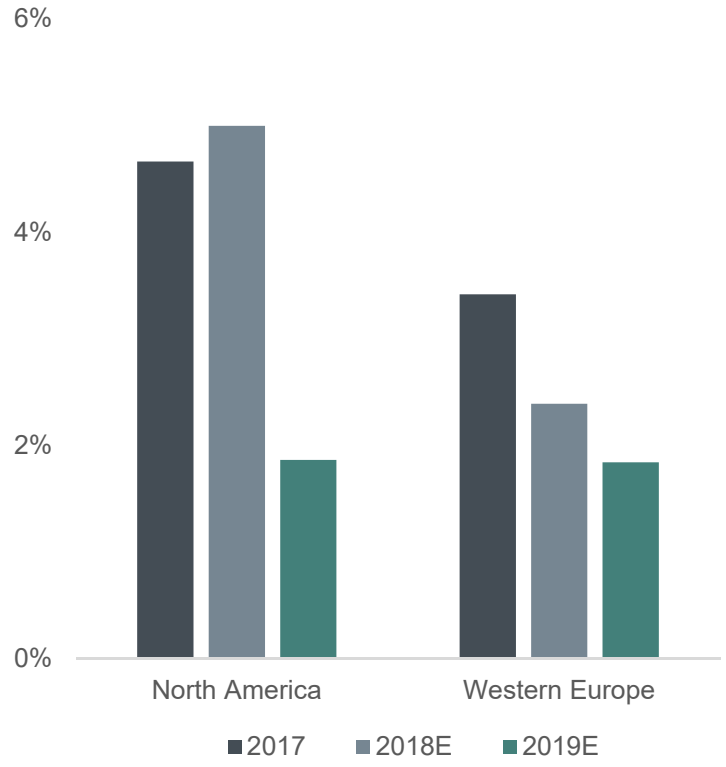
Emerging softness in key housing market indicators, moderating growth rates

Housing market indicators

Index, Jan 2000=100

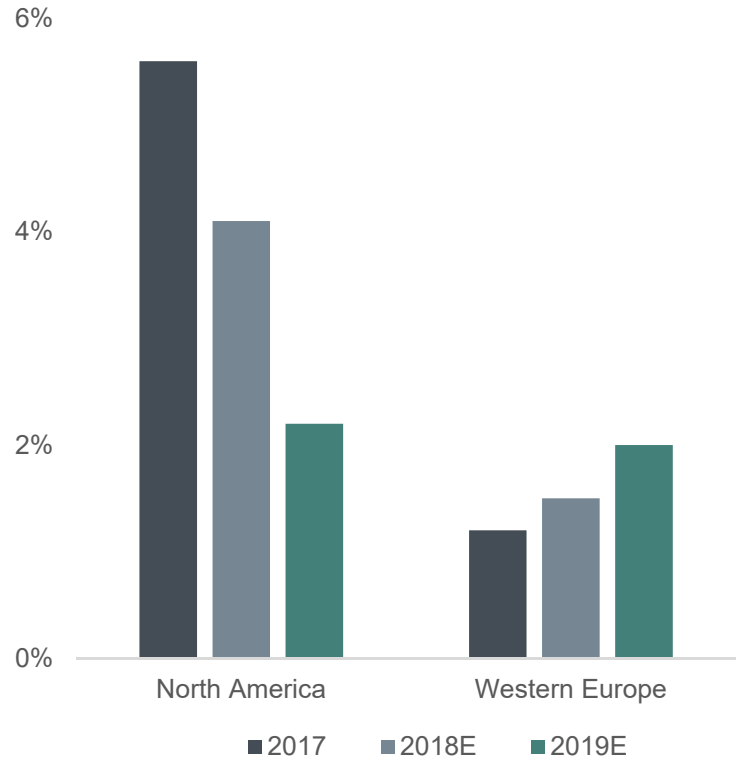
Extrusions demand in B&C

(annual growth)



Rolled products demand in B&C

(annual growth)



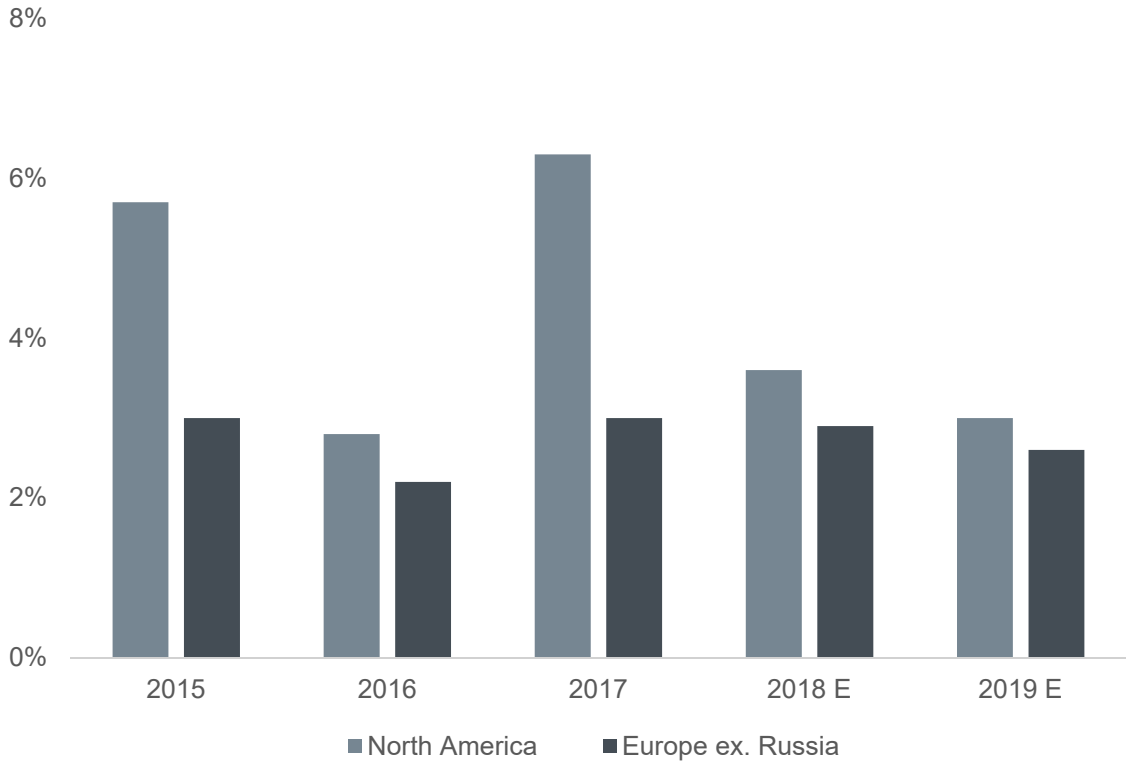
Source: Hydro analysis, Thomson Reuters, Republished under license from CRU International Ltd

Rolled products demand driven by transport segment

Transport share increasing in total rolled products demand

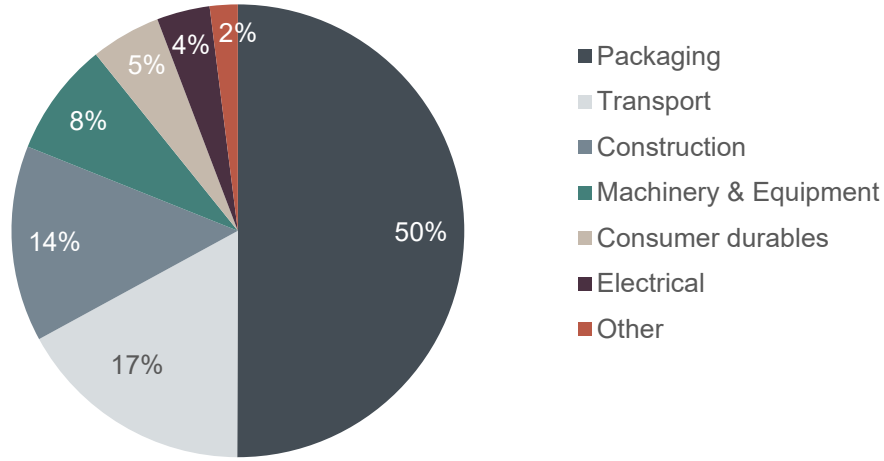
General rolled products demand, selected regions

YoY-growth



Global segment composition, rolled products

(2017)



Expected market development

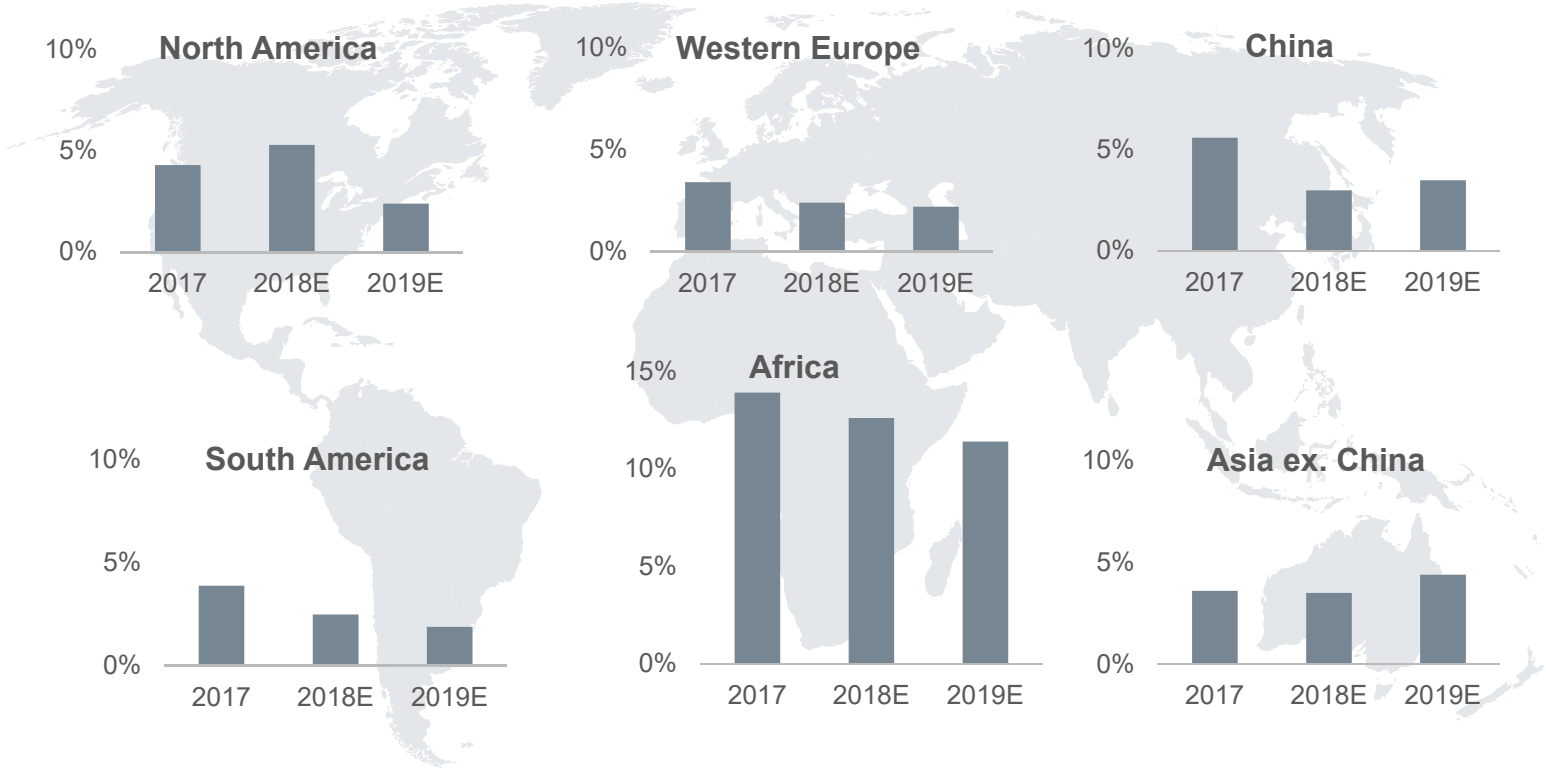
- Continued substitution trend in transport main demand driver
- Growth in packaging driven by can stock and foil in emerging markets

Source: Hydro analysis, Republished under license from CRU International Ltd

Moderating extrusion demand growth in Western Europe and North America, improving in Asia

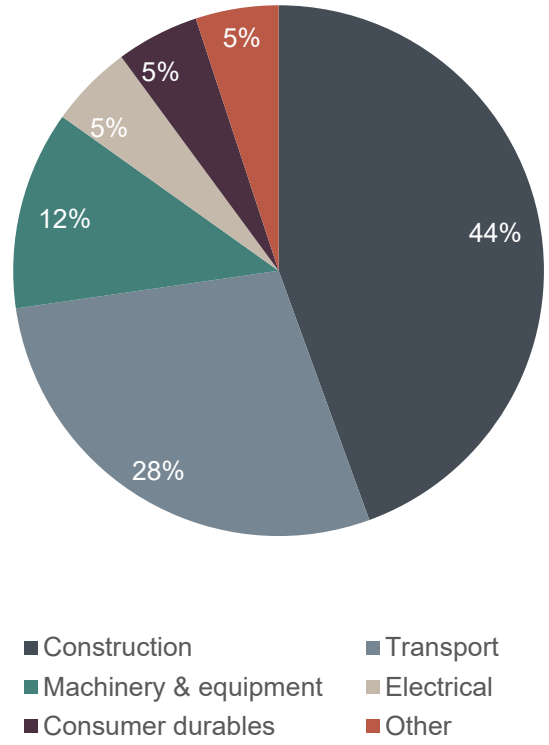
Extrusion demand, selected regions

YoY-growth



European segment composition, extrusion

(2017)

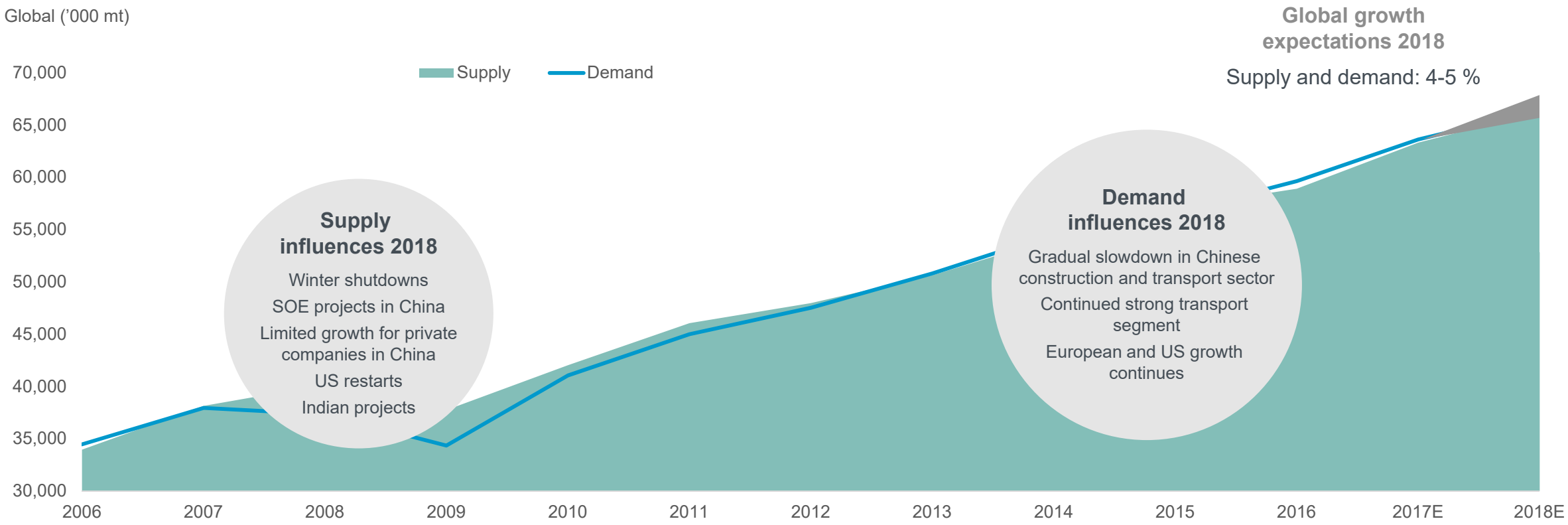


Source: Hydro analysis, Republished under license from CRU International Ltd

03 Primary metal market

Recap CMD 2017: Global primary market expected to be largely balanced in 2018

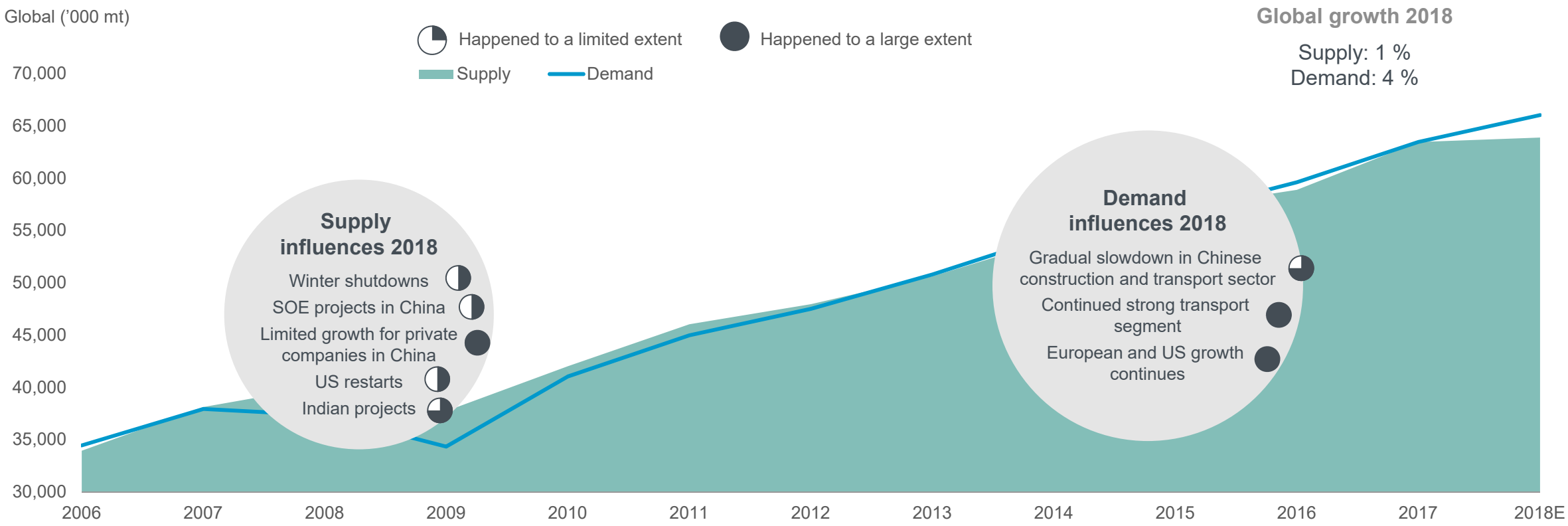
Primary supply and demand growth expected to be largely similar



Source: CRU, Hydro Analysis

Global primary market in deficit in 2018

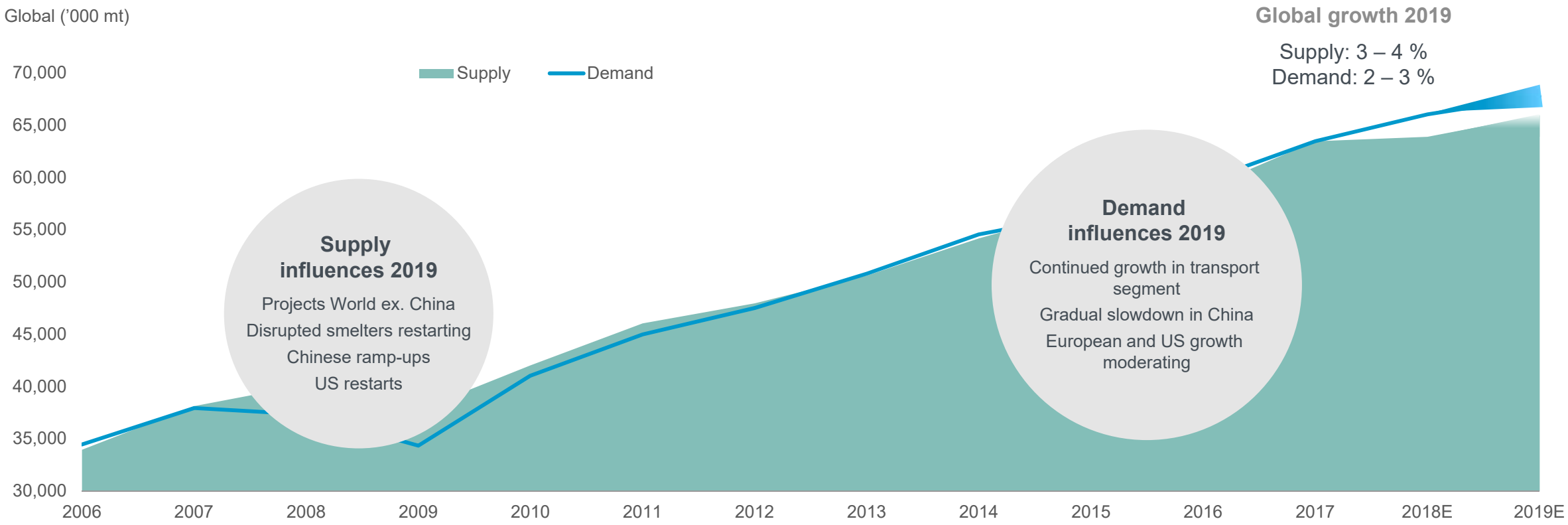
Demand progressing largely as expected, supply growth falling short of expectations



Source: CRU, Hydro Analysis

Global primary market expected to be in deficit also in 2019

Supply growth picking up, demand growth slowing



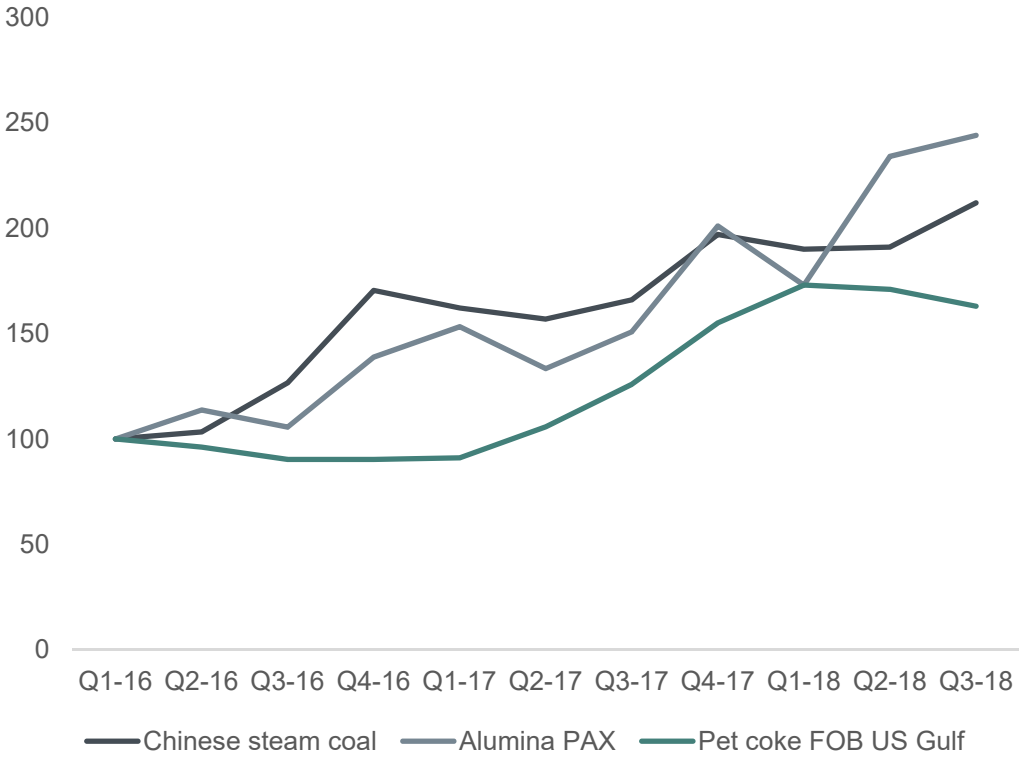
Source: CRU, Hydro Analysis

High input costs challenging smelter profitability

Higher end of the cost curve dominated by Chinese smelters

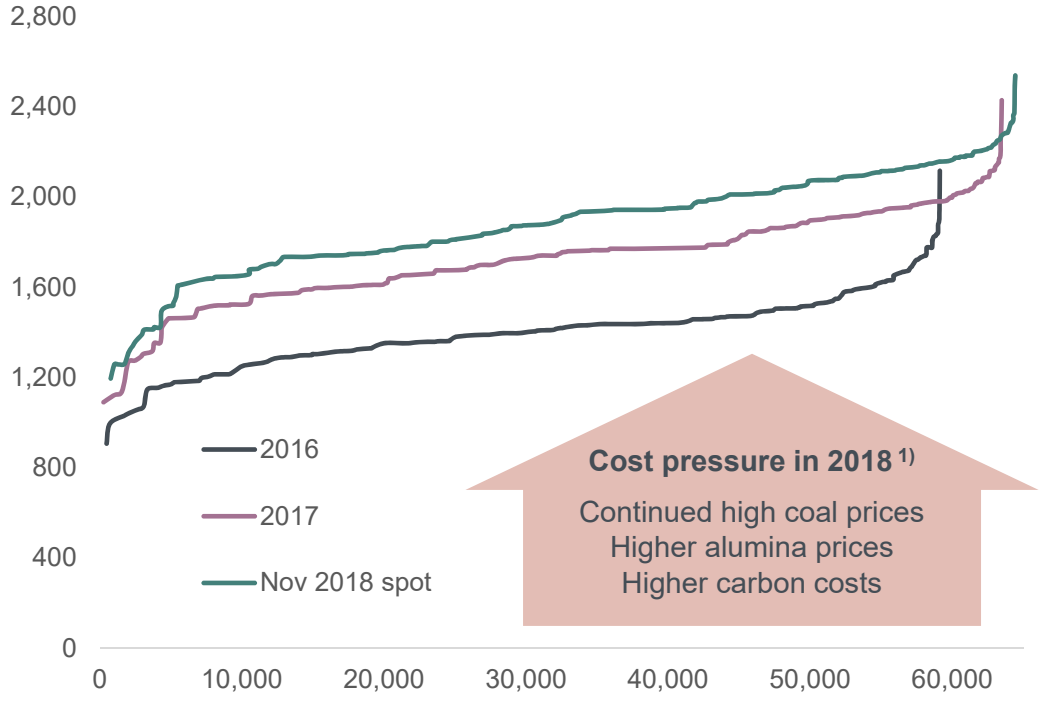
Input costs aluminium production

Index: Q1 2016 = 100



Business operating cost (BOC)

USD/t



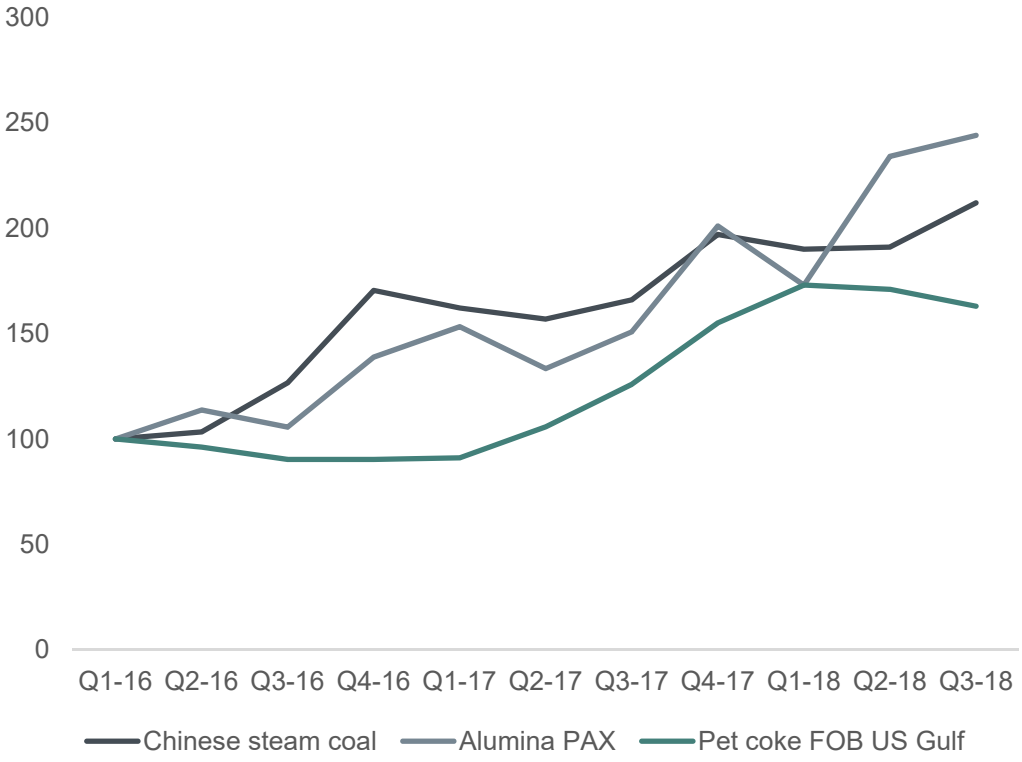
Source: Hydro analysis, IHS, Platts, Republished under license from CRU International Ltd
1) Average cost factors 2018 versus average costs 2017

High input costs challenging smelter profitability

Higher end of the cost curve dominated by Chinese smelters

Input costs aluminium production

Index: Q1 2016 = 100



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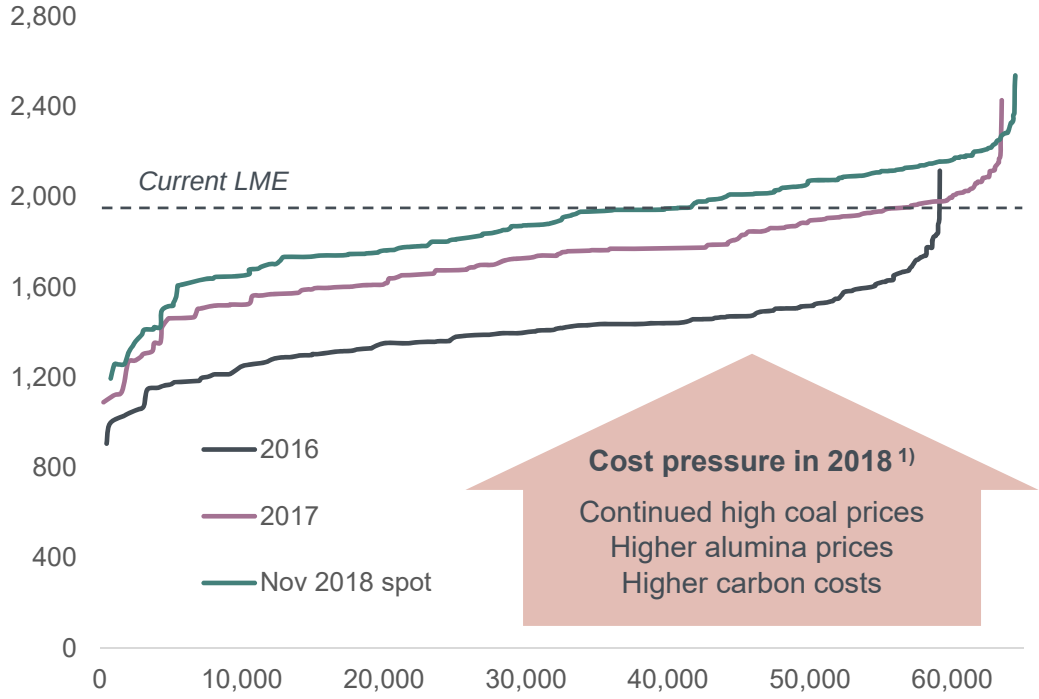


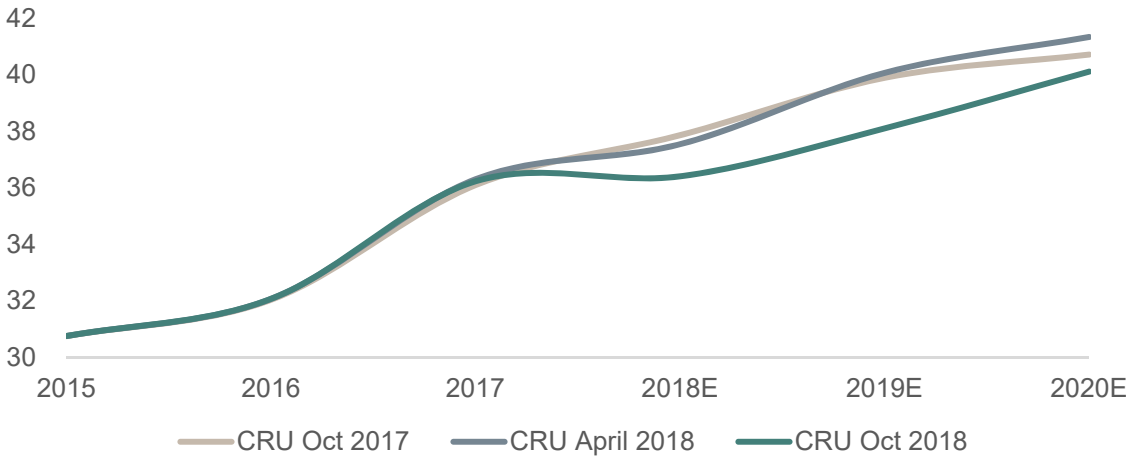
Source: Hydro analysis, IHS, Platts, Republished under license from CRU International Ltd
1) Average cost factors 2018 versus average costs 2017

Primary supply in China impacted by policy and cost, captive power market reform influencing power cost

Hydro

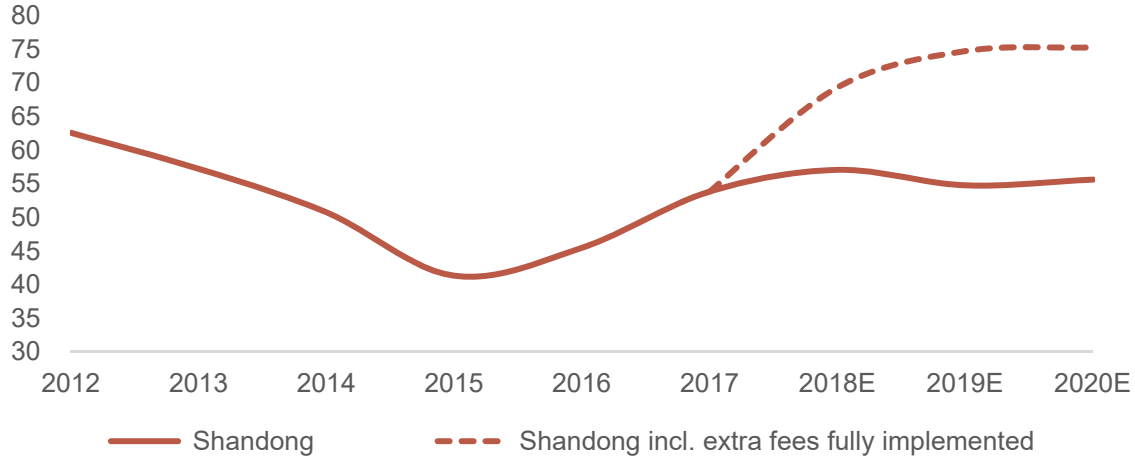
Chinese primary supply forecasts

Million tons



Shandong power price for captive power plants

Power price in real 2018 USD/MWh



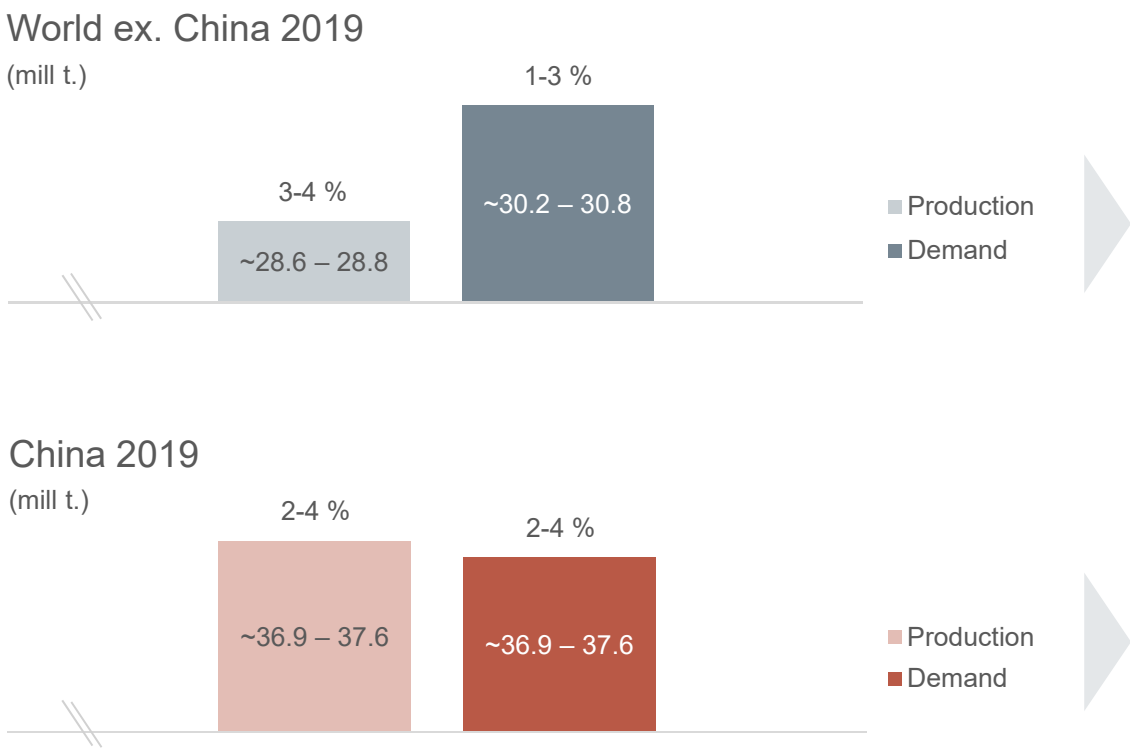
Primary supply growth moderating

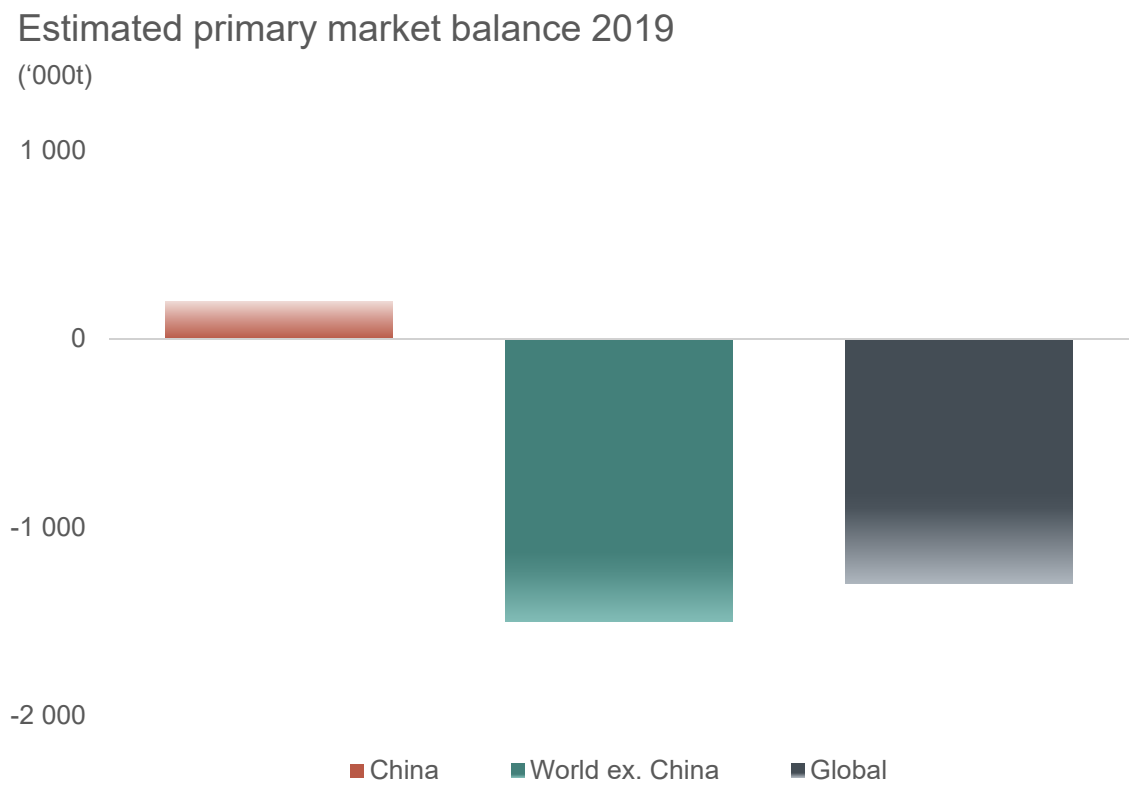
- Supply-side reform and winter shutdowns reducing primary supply growth
  - Limited impact from winter shutdown expected in 2018/19
- Ramp-up speed of new projects subdued by replacement quotas and high input cost
- SOE gaining share versus private companies

- Shandong Provincial Price Bureau have issued a notice on improving the price policy of captive power plants
- Weiqiao and Xinfa have captive coal fired power plants in Shandong, with a total production of 8 million tons
- Weiqiao have announced that they want to negotiate with the local government on these additional charges

Source: CRU, Hydro analysis

China expected to be largely balanced in 2019, global market in deficit



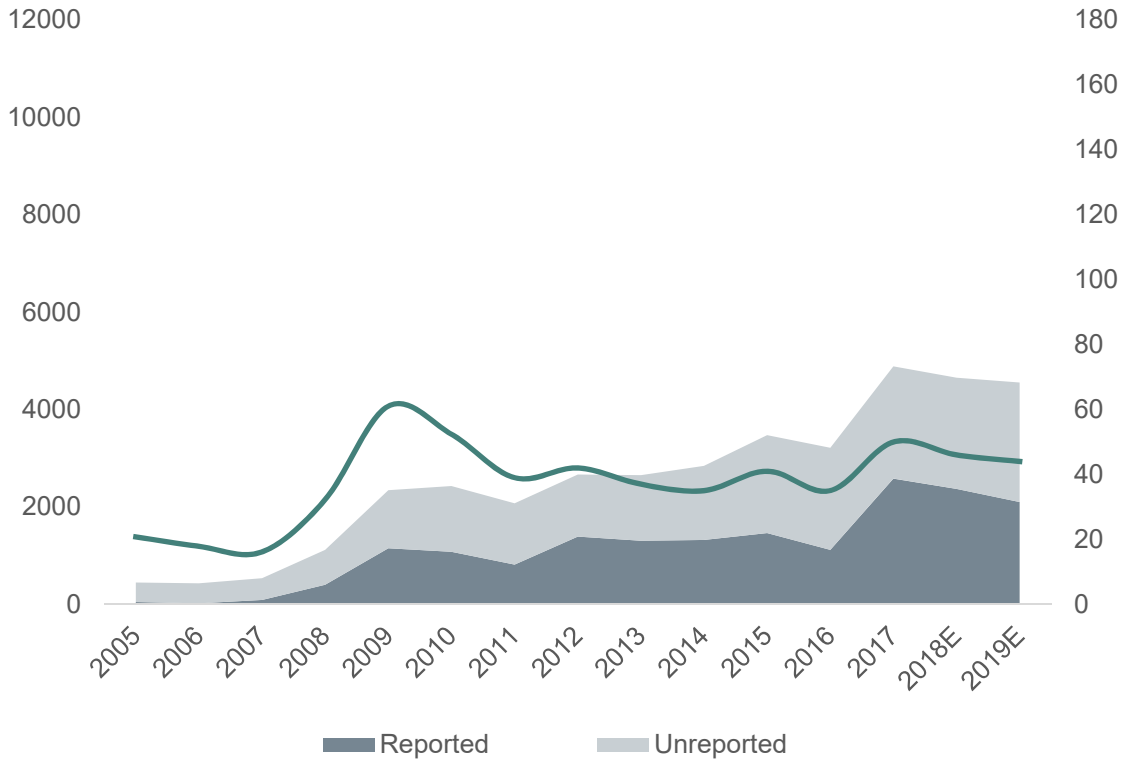


Source: CRU, Hydro analysis
%: Growth from 2018 to 2019

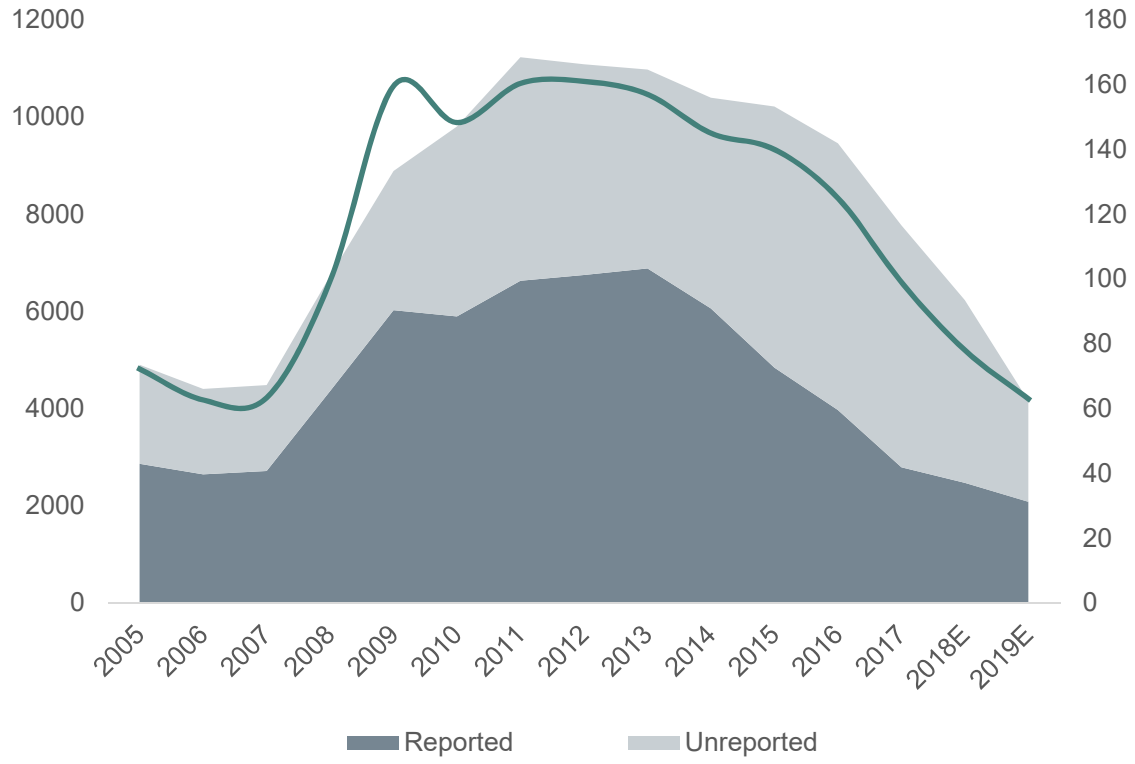
Stocks outside China continue to decrease

Inventory days approaching pre-crisis levels world outside China

China
('000t)



World ex. China
('000t)

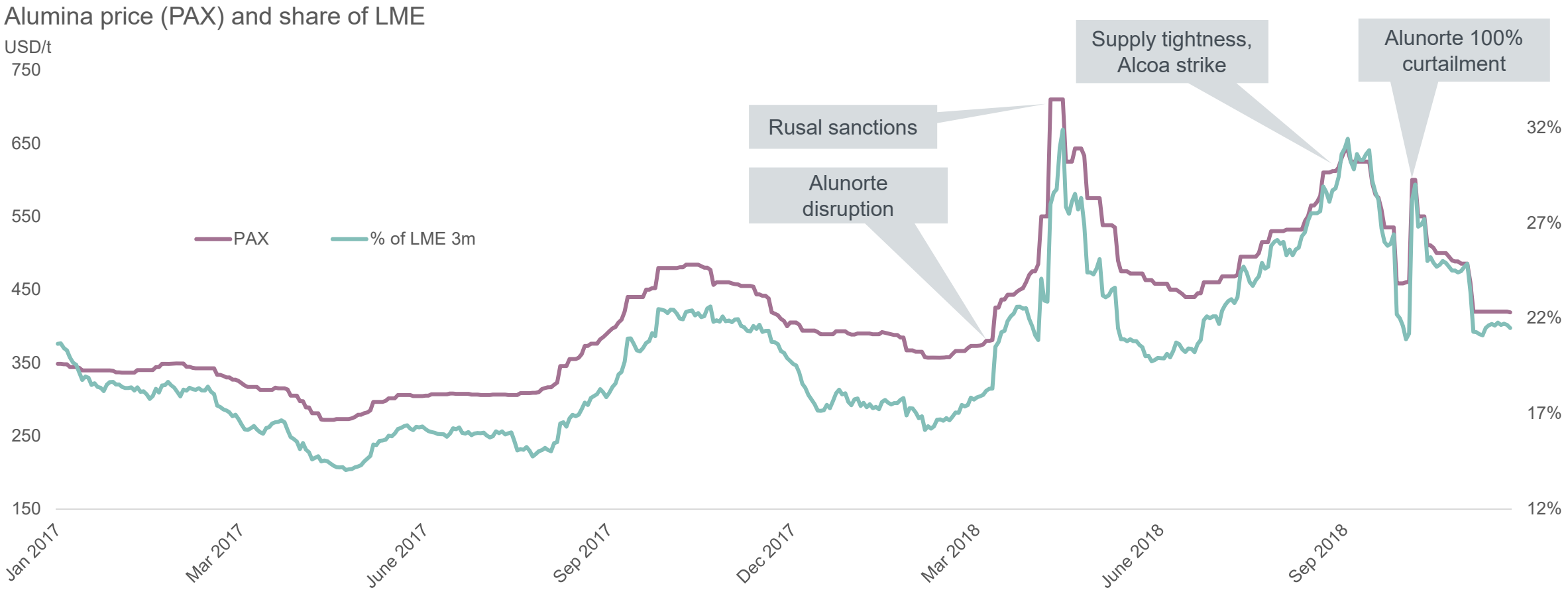


Source: CRU, Hydro analysis

04 Bauxite and alumina market

Volatile alumina market due to supply disruptions

Alunorte embargo and Rusal sanctions lead to increased volatility

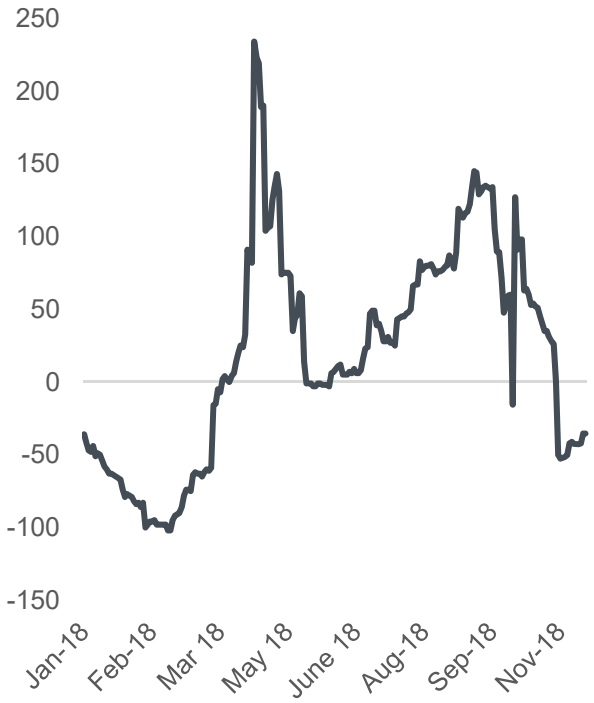


Source: Platts, Hydro analysis

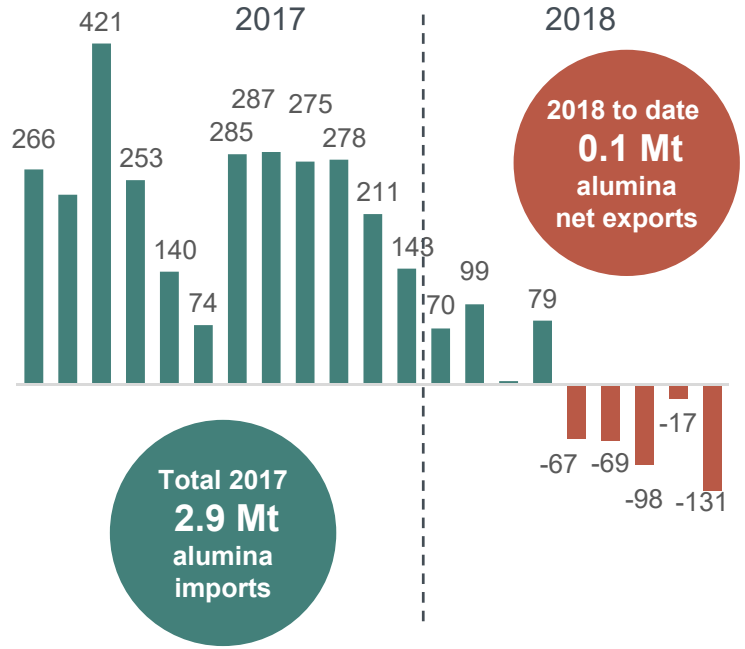
PAX increase triggers Chinese exports

Chinese alumina required to balance the global market

China alumina export arbitrage
(USD/t)



Chinese alumina trade balance by month
2017-2018 (kt)

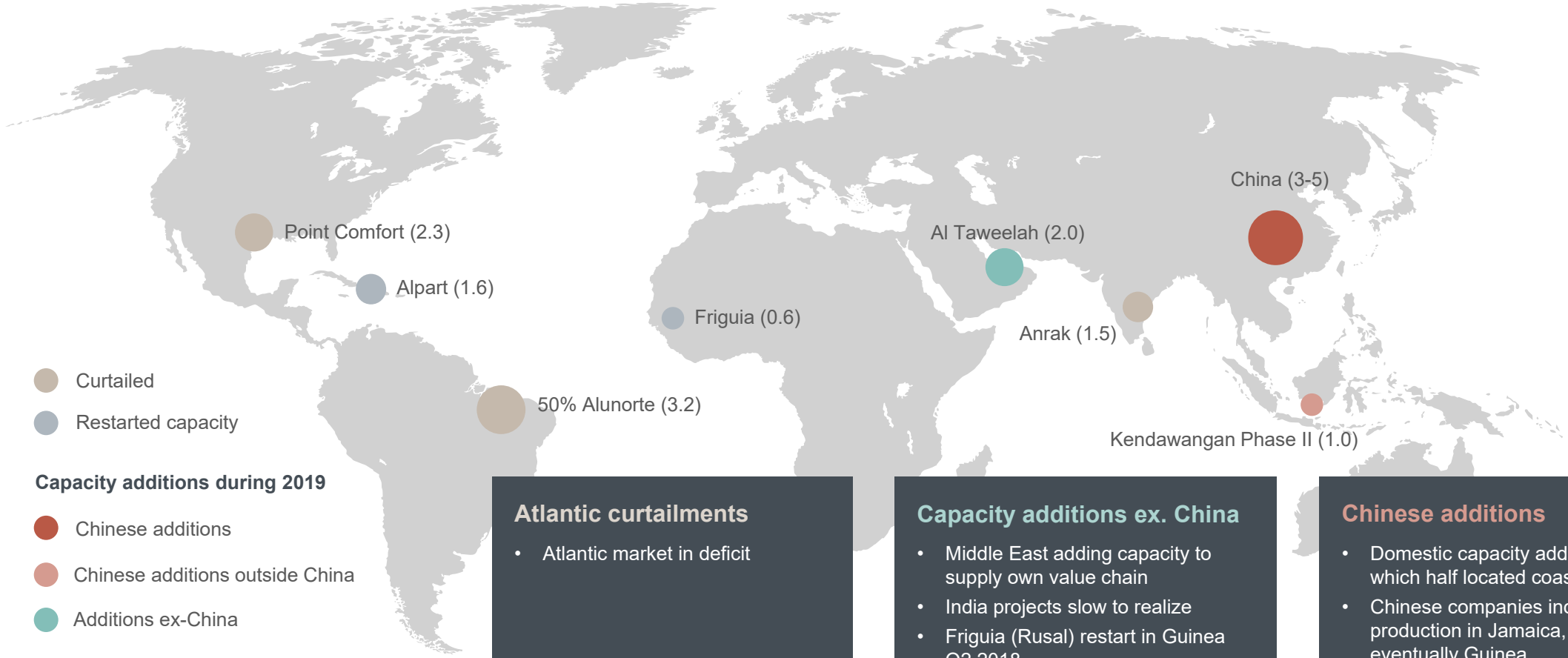


- Challenging port logistics related to de-bagging alumina
- Quality issues
- Exported alumina incurs VAT (16%), logistics costs, port fees
- Shortage of domestic bauxite causing refinery curtailments

Source: Platts, Antaike, Hydro analysis
1) Alumina export arbitrage formula: Ex.works Shanxi + Transport to port + Port Fee & Loading cost – PAX – Freight differential

Limited new capacity ex-China expected short term

Chinese additions continue to dominate



Atlantic curtailments

- Atlantic market in deficit

Capacity additions ex. China

- Middle East adding capacity to supply own value chain
- India projects slow to realize
- Friguia (Rusal) restart in Guinea Q2 2018

Chinese additions

- Domestic capacity additions, of which half located coastal
- Chinese companies increasing production in Jamaica, Indonesia, eventually Guinea

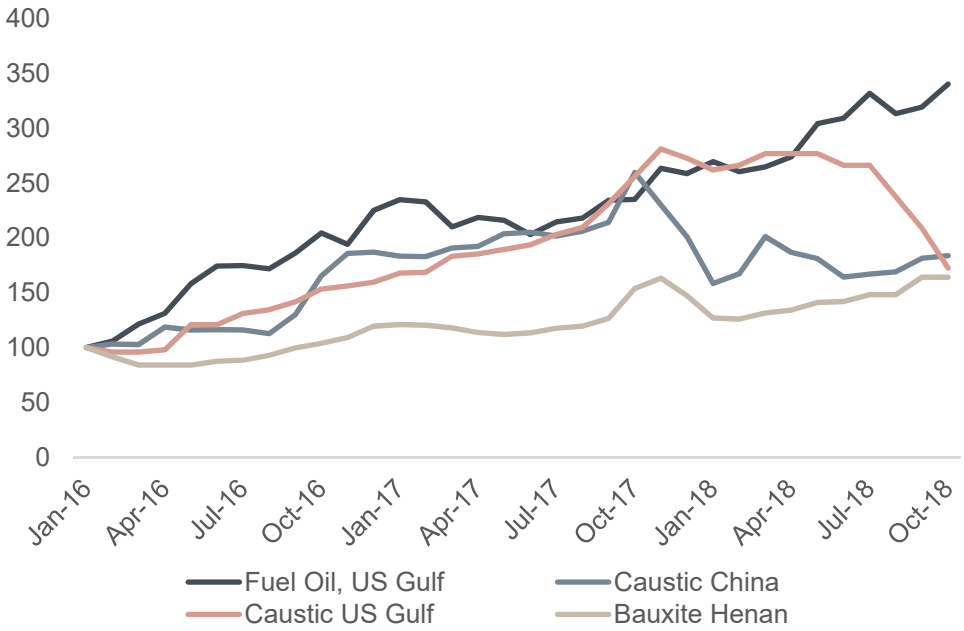
Source: Company reports, Hydro analysis, CM Group

Higher alumina costs in 2017 and 2018

Upper half of cost curve dominated by Chinese refineries

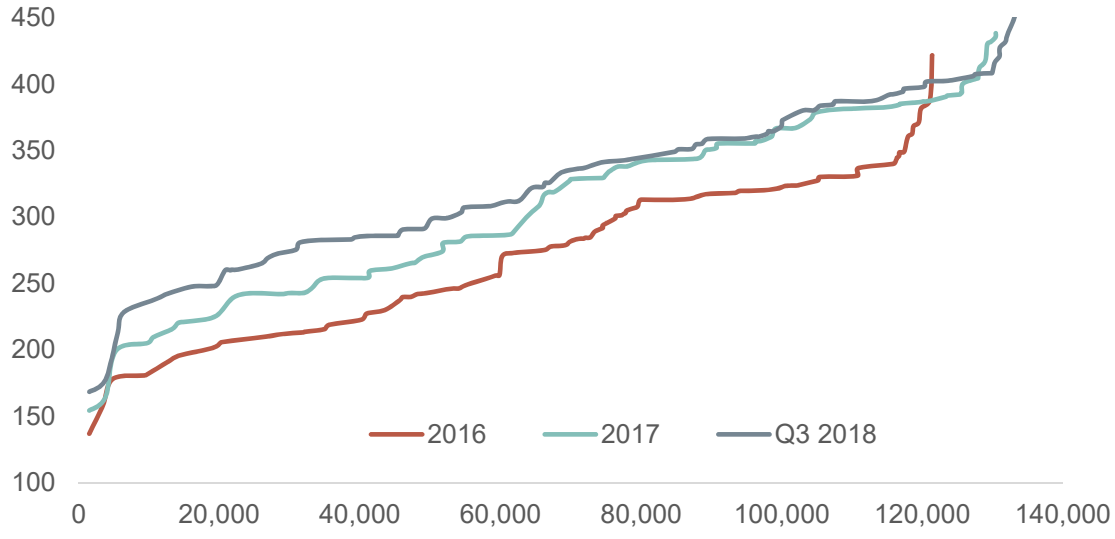
Input costs alumina production

Index: Jan 2016 = 100



Site Operating Costs

(USD/t) in 2018 real $



Cost pressure in 2017 and 2018

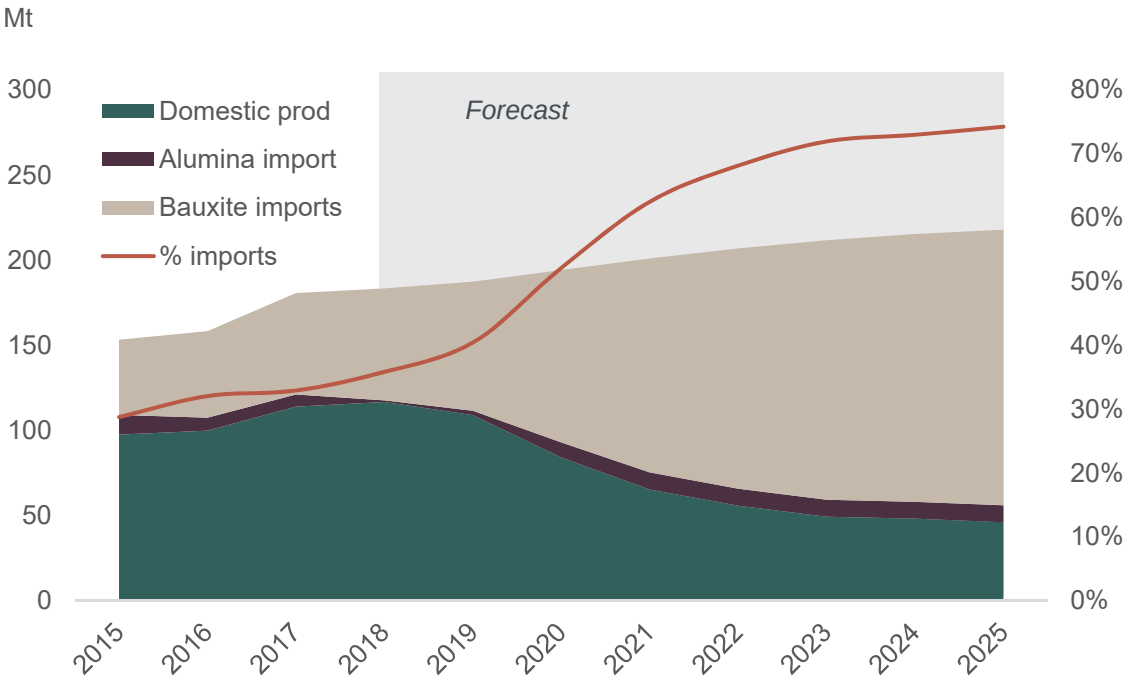
High caustic prices,
Chinese bauxite prices

Source: Bloomberg, IHS, CM, CRU

China increasingly reliant on bauxite imports

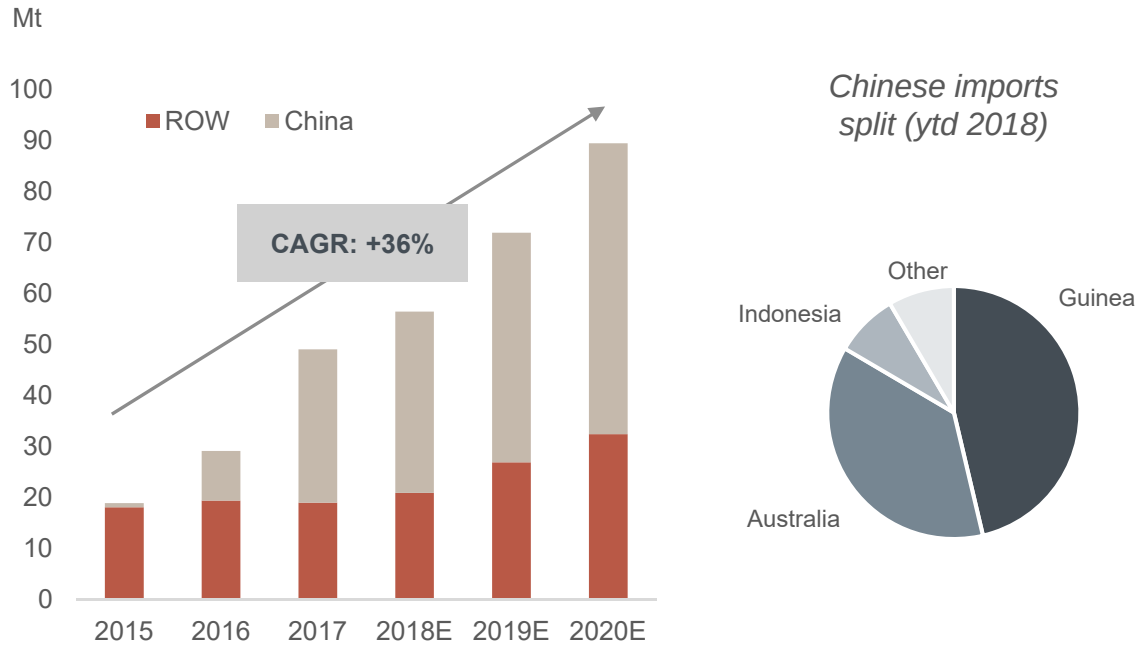
Guinea bauxite increasingly filling Chinese demand

Growing need for bauxite imports amid domestic depletion



- Increasing Chinese bauxite prices triggering more bauxite imports
  - Chinese quality deteriorating
  - Unlicensed mines closures

Guinea bauxite production increasing, but still need for other sources

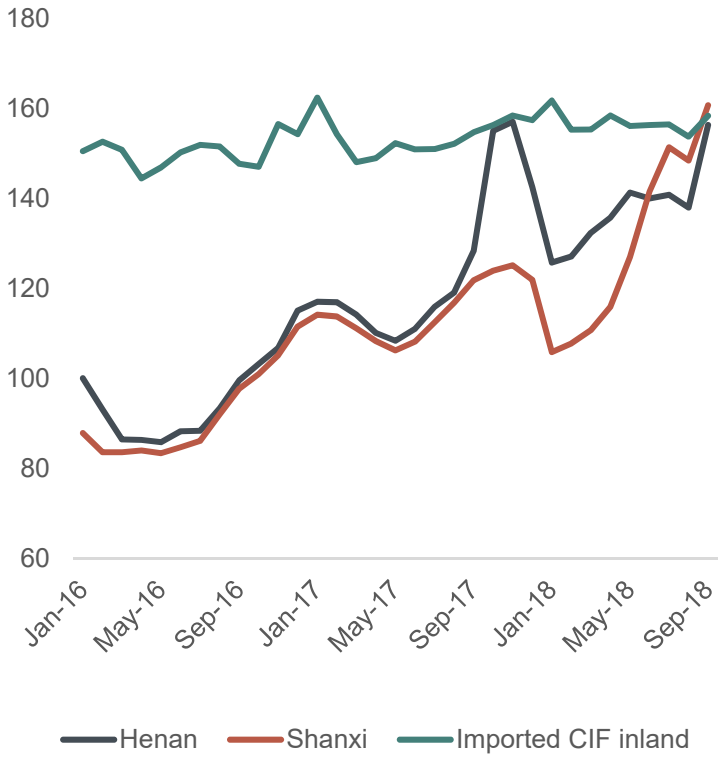


- Guinea bauxite production increasing dramatically
  - Includes non-Chinese players
  - Atlantic-sourced seaborne bauxite continues to grow, adding freight exposure

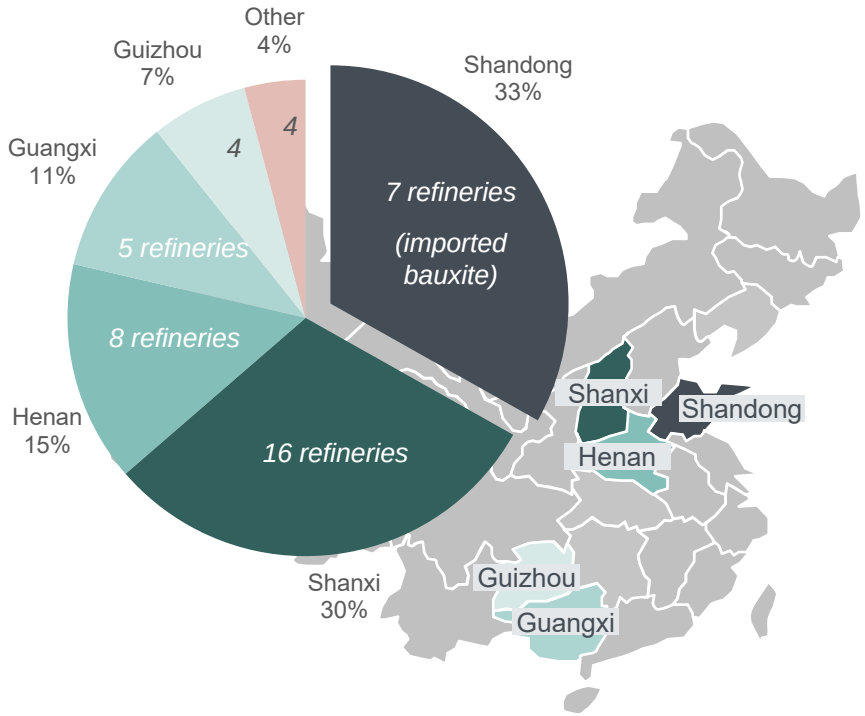
Source: CM,China customs, Hydro analysis

More imported bauxite going to inland refineries

Delivered bauxite prices [1)]



2018 refinery production forecast: total ~73 Mt



- Extremely tight domestic bauxite market leading to price escalations for poor quality (high silica)
  - Not economic for some refineries to operate on local bauxite
- YTD September; 2.6 million tonnes of bauxite imported to 9 refineries in Henan and Shanxi
  - Incurs additional inland freight of ~ $25/t
  - Refinery processing issues when switching bauxite type
  - Costs partially offset by low silica of imported (Guinea) bauxite

Source: China customs, CM, CRU, Hydro analysis
1) Prices index delivered at refinery (Henan = 100 in Jan 2016. Bauxite quality: Henan A/S 4.0 to 5.0, Shanxi A/S 4.5 to 5.0, Guangxi A/S 7.0 to 8.0, imported prices by CM Group)

05 Long-term outlook and summary

Strong growth drivers across segments providing solid demand outlook

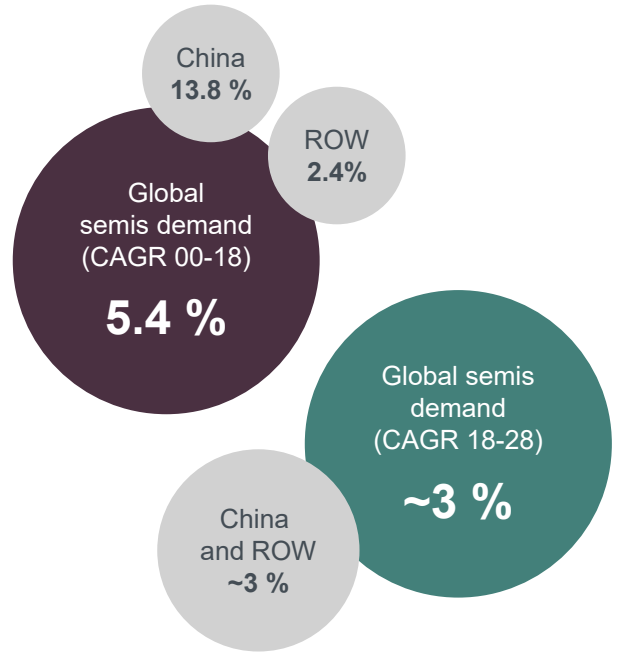
Still encouraging demand outlook from strong base – converging demand China and outside China

Strong demand drivers in key aluminium segments

Transport	Growth in automotive vehicle production Aluminium content in cars increasing Growth in other transport modes, e.g. railway
Construction	Urbanization Housing market recovery in mature regions Energy neutral buildings
Electrical	Urbanization Copper substitution
Machinery & equipment	Improving industrial sentiment in mature regions Manufacturing activity and industrial growth in emerging countries
Packaging & foil	Urbanization Environmentally-friendly solutions

Global semis demand per segment, CAGR

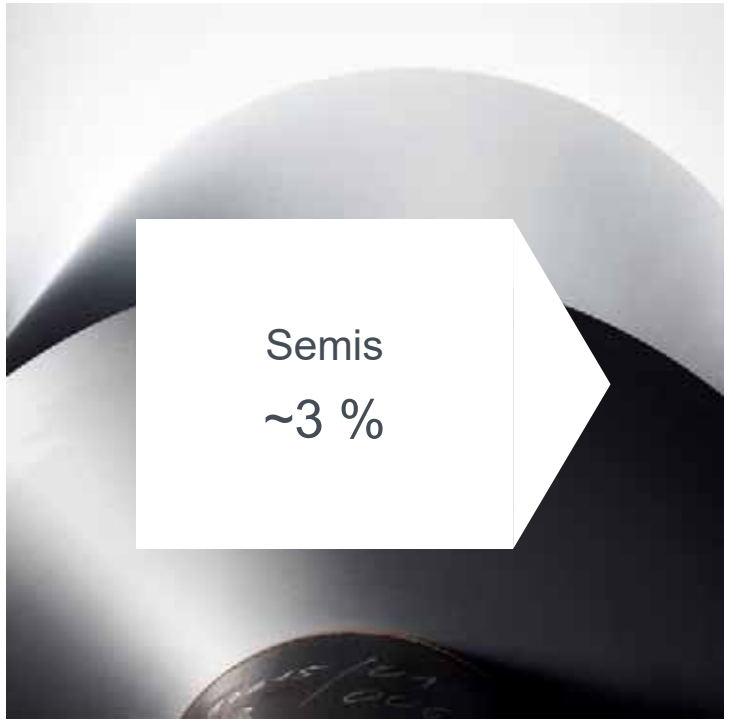
2000-18	*2018-28*
5.1 %	**3 – 4 %**
6.2 %	**2 – 3 %**
5.6 %	**2 – 3 %**
6.4 %	**3 – 4 %**
4.1 %	**2 – 3 %**

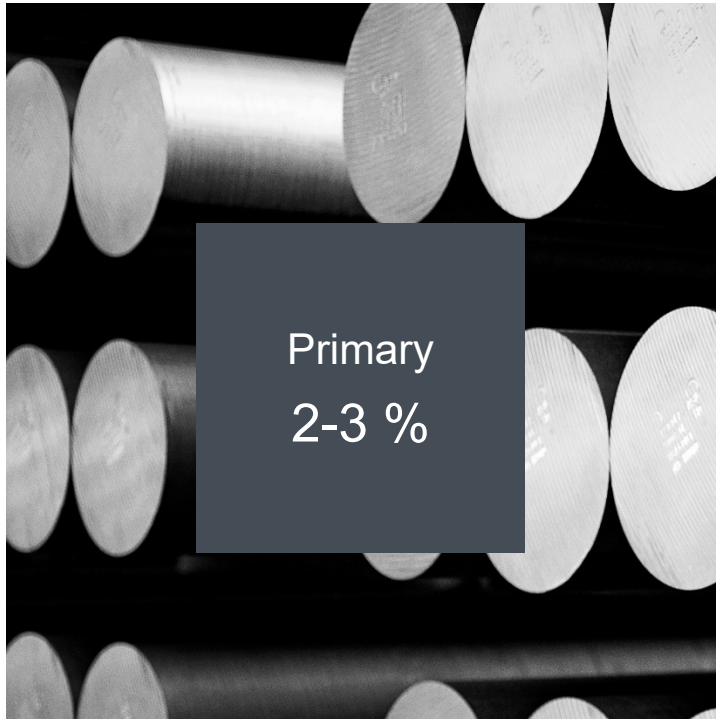


Source: CRU, Hydro Analysis

Growth in global semis demand creates opportunities for both primary and recycled material

Solid growth for semis, primary and recycling 2018-2028





Source: CRU, Hydro Analysis
1) Post-consumer and fabrication scrap

Better
Bigger
Greener

Summary

- Solid long-term demand outlook, trade disputes and geopolitical tensions adding uncertainty
- Global primary market in deficit in both 2018 and 2019
- Chinese metal exports facing headwinds in key consumer regions
- China increasingly dependent on imported bauxite, Guinea as key supplier
- Recycling growth accelerating with increased generation of post-consumer scrap

Hydro

Bauxite & Alumina – path to full operations

John Thuestad, EVP Bauxite & Alumina

Strong assets and organization

Capable of quickly adapting to changes

- Highly qualified and engaged organization in Brazil
- High-quality assets
  - Cost position
  - Product quality
  - Operational flexibility
- February events drives even faster improvements in:
  - Refinery operations aiming to becoming the industry benchmark
  - Involving communities in emergency preparedness plans
  - Community and stakeholders relations

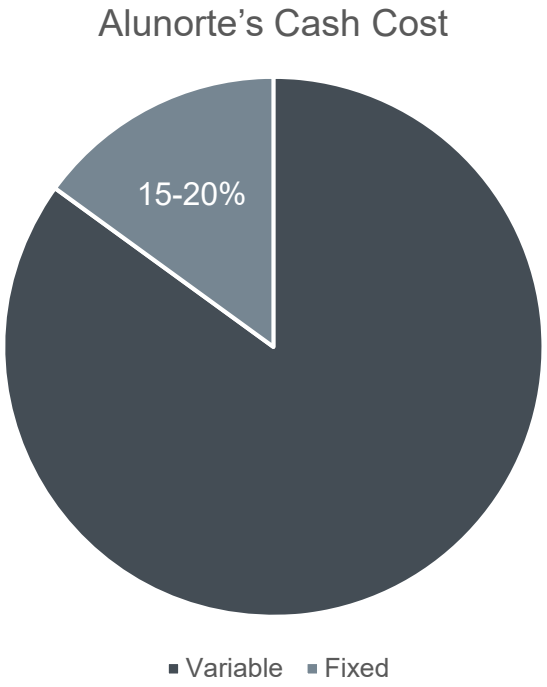
Better
Bigger
Greener

Care. Courage. Collaboration.

Alunorte’s operating mode under curtailment

Currently rotating all 7 lines – operating mode continuously evaluated

Alunorte’s competitive cash cost is mostly variable and therefore not materially affected by the production level



	1 7 lines rotating	2 3 lines cold shutdown
Energy Efficiency		
Fixed Costs		
Ramp-up speed		

Better Worse

Bauxite supply to Alunorte

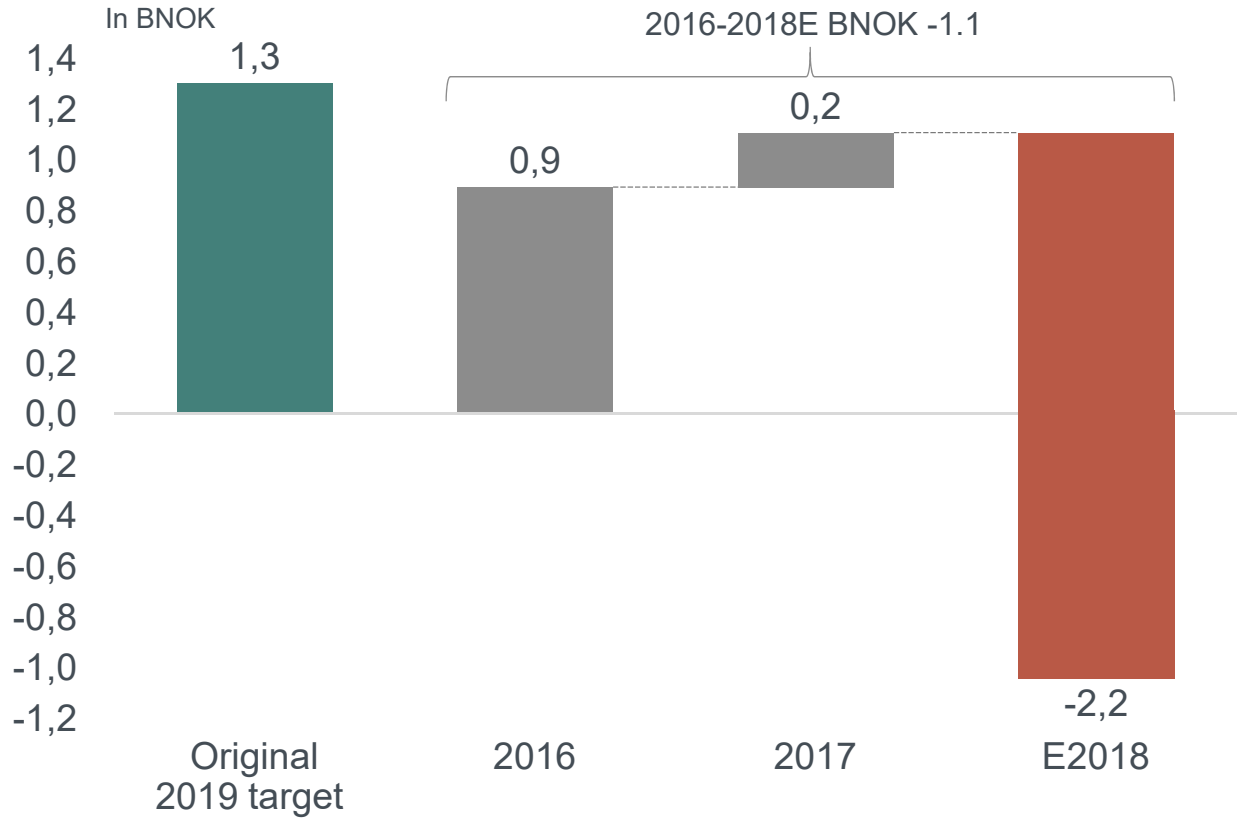
Maintaining the bauxite mix

- Alunorte has declared Force Majeure to its bauxite suppliers MRN and Paragominas
- Alunorte continues to be supplied with bauxite from both MRN and Paragominas, in same proportion as before production reduction
- Paragominas costs are 60-70% fixed
  - Managed to reduce absolute cost level by ~15%, partially offsetting effects from lower production level
  - Reduced production leads to postponement of capital expenditures

Significant negative curtailment effects on *Better* improvement program

- 50% production at Alunorte and Paragominas with strong negative impact on improvement program
- 2016-17 improvements more than offset by negative 2018 effects
- Curtailment effect of negative BNOK 2.2 in 2018
- Some positive effects from commercial and procurement, as well as non-volume related contributions at Alunorte and Paragominas

Bauxite & Alumina *Better* program progress



All figures are calculated on a baseline 2015 and excluding base price, inflation and currency effects on sales or purchase

Enhancing Alunorte robustness, preparing for more extreme weather

- Improved water treatment and holding capacity
- Short-term improvements of the water management systems and treatment capacity, maintenance systems, as well as emergency preparedness plans and training

	Amount	Purpose	Time frame
Water treatment plant	235 MBRL	Increase water treatment capacity by 50% Increase water reservoir capacity by 350% Strengthen infrastructure related to the water management system, enhance robustness and flexibility of the system	Q2 2019 End-2018 Q2 2019
Infrastructure related to water management system	250 MBRL		
Enhanced operational robustness at the plant	190 MBRL	Modifications to improve equipment robustness at the plant for heavy rainfall, enhance environmental performance	2018-2020

Status of main commitments under technical agreement (TAC)

All activities on track

Q4 2018

- ✓ Insurance bond
- ✓ Payment of fines
- ✓ Flood contention windrows efficiency
- ✓ Audit of internal drainage system
- ✓ Mud characterization (drum filters)
- Food cards – Census report
- Food cards – Distribution
- Providing SEMAS with access to existing camera monitoring

Q1 2019

- Updated Risk Management Plan
- Mud characterization (press filters)
- Updated dam break study
- Water balance study
- Real time effluent monitoring
- Providing SEMAS with real time access to water levels in basins and channels

Q2 2019

- New camera monitoring system in DRS area and access to SEMAS
- Automatic stream flow reduction on effluent treatment system
- Report on rain water segregation
- Drainage system project and concept
- Subfluvial emission study
- R&D project on alternative use of bauxite residue (first report)

✓ Completed ○ On-going / on-track

Path towards normal operations, building a common platform

Timing for embargoes being lifted remains uncertain

TAC/TC signed on September 5

Technical TAC agreement

- Audits, studies and monitoring of environmental situation, and improvements of the water treatment system, estimated at BRL 70 million
- BRL 65 million for food cards to families living in close vicinity
- Settlement of fines, totaling BRL 33 million

Social TC agreement

- Investment of BRL 150 million in projects supporting sustainable urban development in defined communities

Lifting of Press Filter / DRS 2 embargos

Press Filter

- Embargo lifted by IBAMA on Oct 5

DRS2

- SEMAS issued technical note confirming validity of existing licence
- Embargo lifted by IBAMA on Oct 25
- Petition filed in court for lifting of DRS2 embargo

Lifting of production embargo

- Key stakeholders
  - SEMAS, Ministerio Público, Court
- Need to assure / document safety of operations
  - Independent opinions
  - Development of TAC commitments

Press filter is best available technology – Hydro in the forefront

DRS2 with press filter technology only long-term sustainable solution for Alunorte

- Improves geotechnical safety of deposit
- Cuts CO2-emissions from transportation
- Reduces environmental footprint by storing 4-5x more residues in same area compared to conventional drum filters

Press Filters commissioning process

- 8 press filters in place, 9th press filter to further increase robustness, to become operational Q2/Q3 2019
- Embargo halted commissioning, learning and optimization of press filters - may lead to delay in Alunorte ramp-up
- Alunorte operating only with press filters since October 15

Fuel switch project

- Liquid natural gas to replace heavy fuel oil for calciners and potentially for boilers

Environment and CSR – our social license to operate

Environment

- Third-party environmental study on quality of air, water, springs, soil and forest
- Toxicological study to evaluate health conditions of people in the communities nearby Alunorte (Red Cross)
- Update of emergency procedures, including review of communication practices towards local communities as well as traning

Strengthen community engagement

- Short-term actions
  - Support during flooding event of February
  - Enhanced Community dialogue and volunteer program
- Longer-term actions
  - Terms of commitment signed with Government of Pará
  - Sustainable Barcarena Initiative for the longer term

Key priorities 2019

- Resume normal operations
- Continued focus on safety
- Deliver on all improvements and commitments
- Further contribute to sustainable development in Barcarena
- Maintain competitive cost position

Hydro

Corporate Social Responsibility in Hydro

Anne-Lene Midseim, EVP CSR & General Counsel


ESCOLA MUNICIPAL DE ENSINO FU


ESCOLAR

Targeting the fundamental drivers of long-term development

Making a positive difference by strengthening local communities and our business partners

Strategic drivers

Contribute to quality education in our communities[1)]

Promote decent work throughout the value and supply chain

Foster economic growth in our communities[1)]

Strengthen local communities and institutions through capacity building

Strategic goal 2030

Hydro will contribute to **quality education** and **capacity building** for **500 000 people** in our communities and for business partners from 2018 until **end of 2030**

1) Communities directly or indirectly affected by our operations

Building trust and support in Pará – several elements

Balancing short term actions and long term change

Sustainable Barcarena Initiative

An independent process for sustainable development

- A long term process; Hydro's commitment 10 years
- Separate legal entity with own organization and staff, financed by, but independent of Hydro
- Bringing all stakeholders together to:
  - Discuss, prioritize and decide on critical issues in Barcarena
  - Reduce conflict level
  - Strengthen the ability of local communities to drive social change and development in Barcarena
- Hydro committed to invest 100 MBRL in projects developed by the initiative
- Innovative approach, long term and complex implementation

Extruded Solutions – value over volume

Egil Hogna, EVP Extruded Solutions

Organized in four business units to maximize synergies across units

22,400 highly competent people across the world, total turnover of BNOK 63

Extrusion Europe

- Market leader focusing on value-added products
- 22% market share
- 40 locations, 9,800 people

Revenue (2018)	EBIT (2018)
BNOK 23.9	**BNOK 0.7**

Extrusion North America

- Uniquely positioned as the only coast-to-coast supplier
- 24% market share
- 23 locations, 6,300 people

Revenue (2018)	EBIT (2018)
BNOK 24.0	**BNOK 1.2**

Precision Tubing

- Technology leader in selected market niches
- 35% market share globally
- 17 locations, 3,400 people

Revenue (2018)	EBIT (2018)
BNOK 7.0	**BNOK 0.3**

Building Systems

- Leading European player with multi-brand portfolio
- 18% market share in Europe
- Presence in 29 countries, 2,900 people

Revenue (2018)	EBIT (2018)
BNOK 7.9	**BNOK 0.4**

12 months rolling Q3 2018

Extruded Solutions is growing and moving ahead with sustainability certifications

Acquisition of accessories for windows company

Important competence add-on with accessories for windows and doors, located in Germany

ASI certified in the Netherlands

Extruded Solutions got the first certificate in November and several plants to follow in 2019

CMD 2017

CMD 2018

Acquisition of two plants in Brazil

Two extrusion plants and a cast house acquired from Arconic in Brazil

Decision to invest in new press in the US

45 MUSD invested in high performance press in Cressona, to mainly serve the automotive market in the US

Hydro acquired two Brazilian extrusion plants from Arconic, integration well on track, but EBIT still negative

Regional distribution

Assets overview

	1) Tubarão	2) Utinga	3) Itu
Employees	**~310**	**~320**	**~380**
Installed Capacity	**~35 000 tonnes/year general extrusion** (4 presses)	**~23 000 tonnes/year general extrusion** (3 presses)	**~22/8 000 tonnes/year general extrusion/ precision tubing** (4 presses)
Market segments	Primarily **Building & construction**	Primarily **Industrials and automotive**	**Industrials**
Additional Capabilities	• Central die shop • Anodizing facility	• Cast house • Fabrication shop	• Cast house • Fabrication shop

Notter, inhouse competence center to develop proprietary accessories and hardware

Short facts:

- Acquired in May, 2018
- Located in Mainhardt, Germany
- Turnover MEUR 2.1
- Customers: 85% Europe, 15% North America and Asia
- 30 employees

Key products:

- Tilt/turn hardware with visible and concealed hinges
- Handles (die casting is outsourced)
- Sliding and folding hardware
- Friction stays and parallel scissors

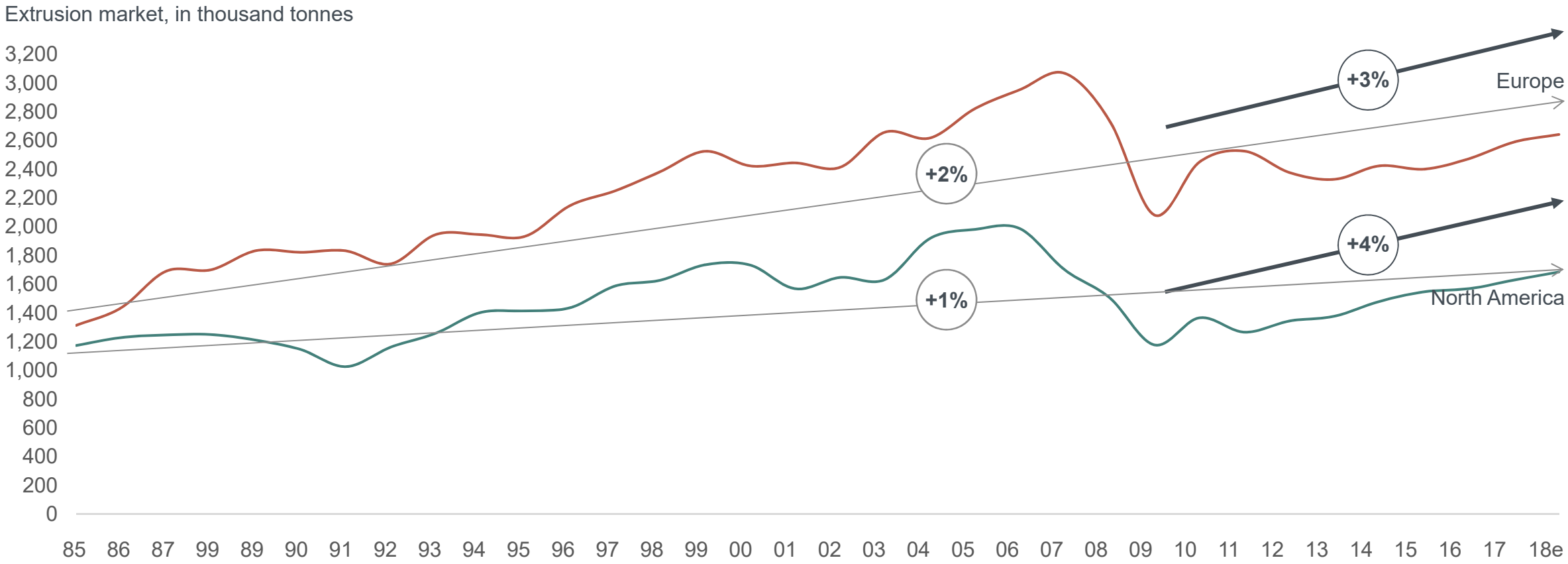
Notter will eventually provide single hardware platform for all windows and doors in Building Systems

Leveraging the uniqueness of being a fully integrated aluminium company

- 75R enables offering customers certified product to help them meet their own ambitious climate strategies
- Hydro only fully integrated aluminium producer that can offer products based on minimum 75% recycled post-consumer scrap
- Building Systems promoting the 75R alloy in several different solutions
- First order signed with Kuwait Gulf Oil Company using the Technal MX Curtain Wall
- Extruded Solutions has purchased all volumes of 75R from Primary Metal until end of 2019

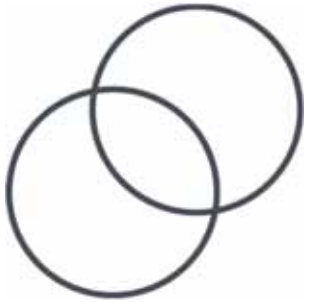
New headquarters of KGOC in Kuwait – with Technal MX curtain wall

Moderate aluminium extrusion market growth, but 3-4% annual growth from 2009 levels



Source: EA, AA, CRU, internal estimates

We continue our value-over-volume strategy



Simplify and collaborate

Simplification drive to increase focus, reduce complexity and cost

Deliver value-added to our customers

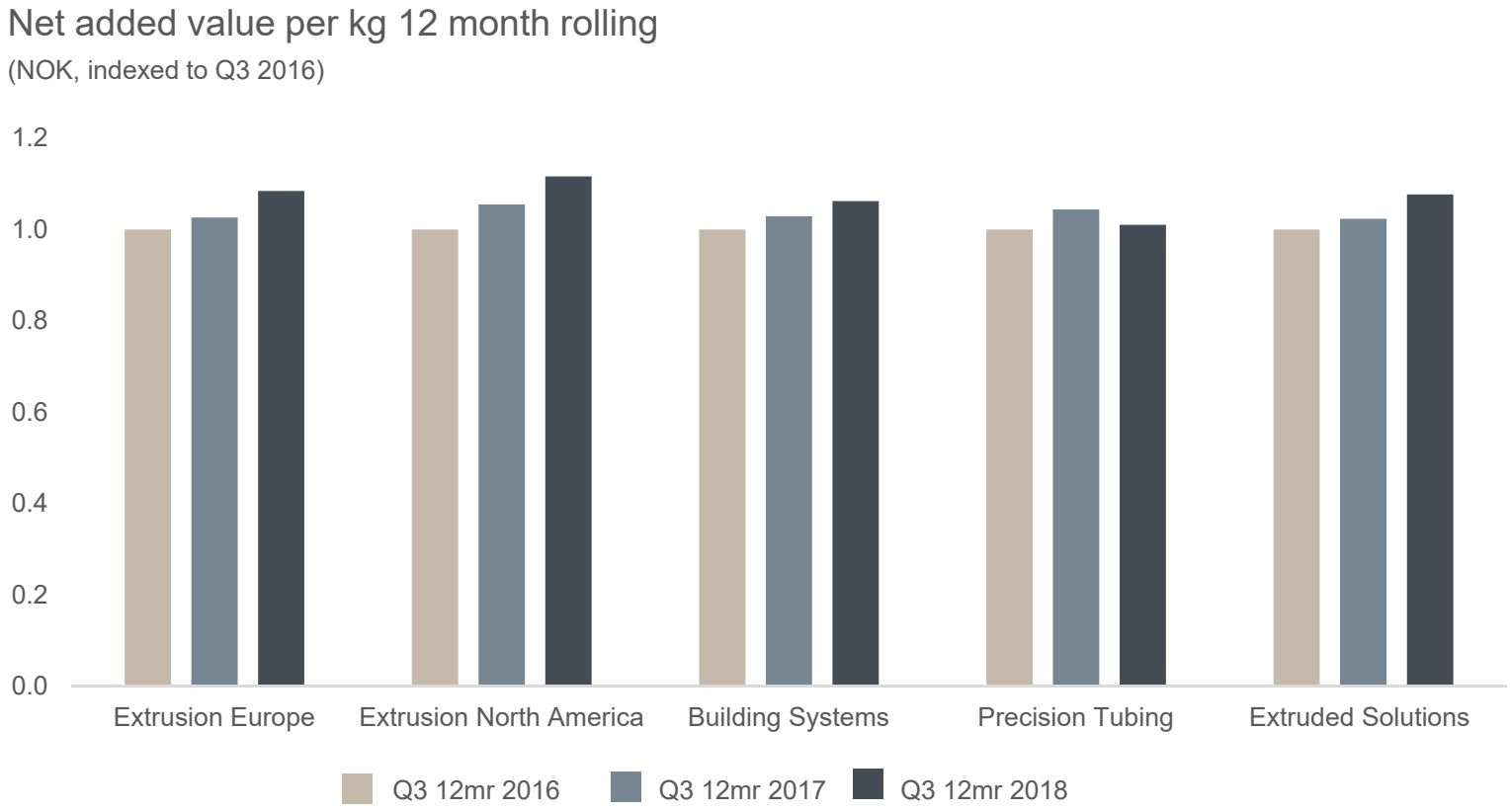
Higher share of value-added solutions to customers through commercial excellence and innovation

Grow to lift margins and profitability

Lifting margins and creating more customer value through selective growth

Continued improvements in net added value, driven by our value over volume strategy

- Growth will take place through material substitution and delivering on our strategy
- Average extrusion content per car in Europe increased with ~35% over last five years - further potential [1)]
- Our NAV will continue to increase as we shift our portfolio
- Continued cost control and spending in selected areas to build solid platform for future growth



1) Soource: EA and Ducker

Simplification, value-added to customers and profitable growth translates into value creation

- Extruded Solutions aims to deliver minimum 10% average annual underlying EBIT growth over the next three years
- Ambition includes smaller bolt-on acquisitions [1)],larger acquisitions would come in addition
- Return on capital should be well above cost of capital

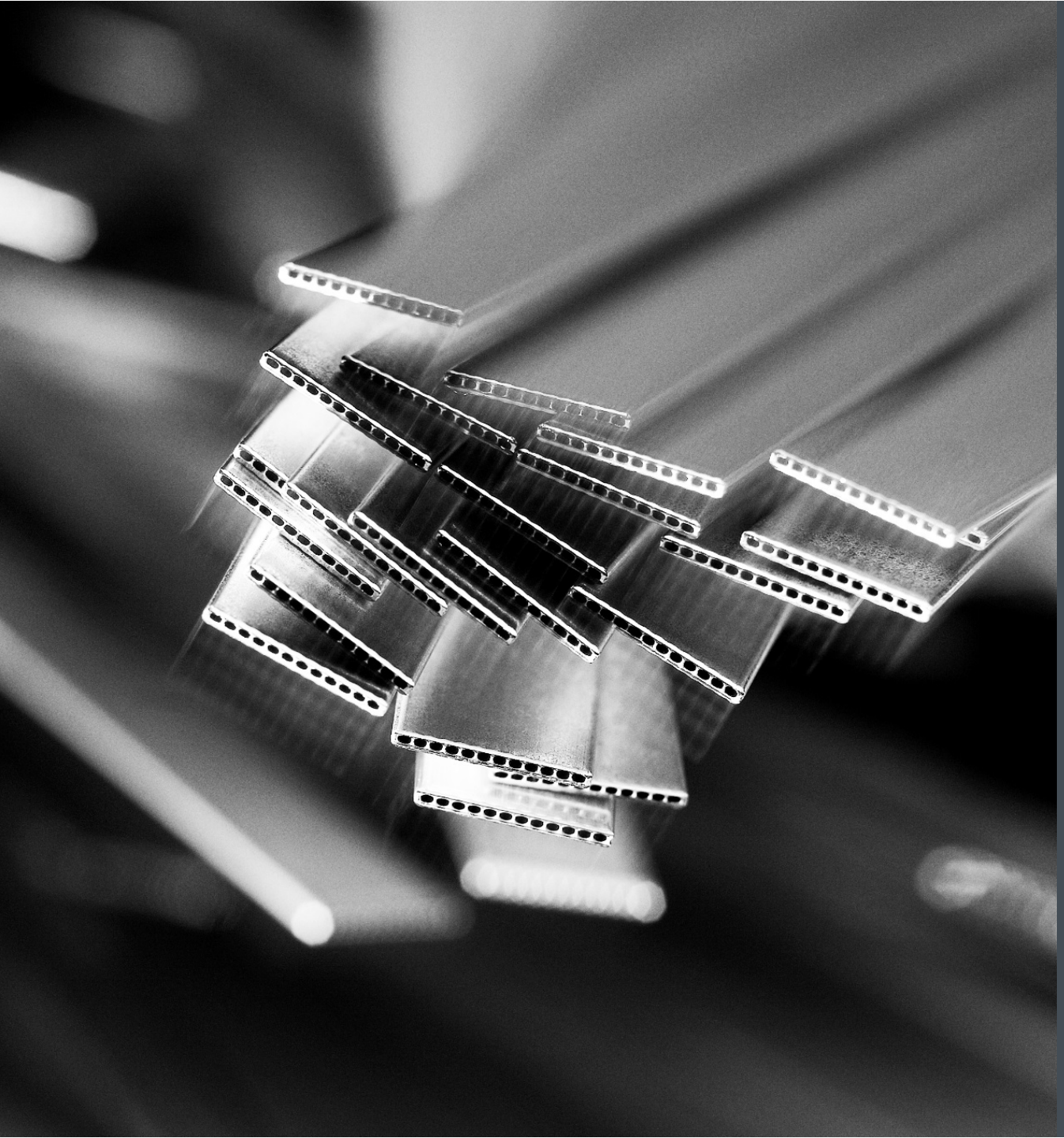
1) Capex frames for the coming years in line with 2018

Development of extruded tubing parts

- Thin-walled tubing requires world-class material and world-class processes
- Hydro produces precision parts for the automotive heat exchanger industry
- Metal cleanliness is critical for product quality and process stability
- Cooperation and development between Primary Metal and Precision Tubing has given superior product quality and competitive advantage

Extruded Solutions and Rolled Products meet the automotive market demands together

- Hydro is working globally on several battery solution projects
- The battery frame for electrical vehicles is extrusion intensive and can easily reach up to 100 kg, especially for premium vehicles and SUVs
- In a first joint project, Extruded Solutions is cooperating with Rolled Products on common technical solution, where flat rolled parts and extruded solutions are used
- Alignment regarding all new e-mobility projects in order to identify the best Hydro offering



Extruded Solutions key focus areas

- Safety – considerable reduction in high-risk incidents and accidents
- >10% annual EBIT growth on product mix change, simplification and cooperation
- Selective growth through bolt-on acquisitions

Rolled Products - building on our strengths, driving a lightweight future

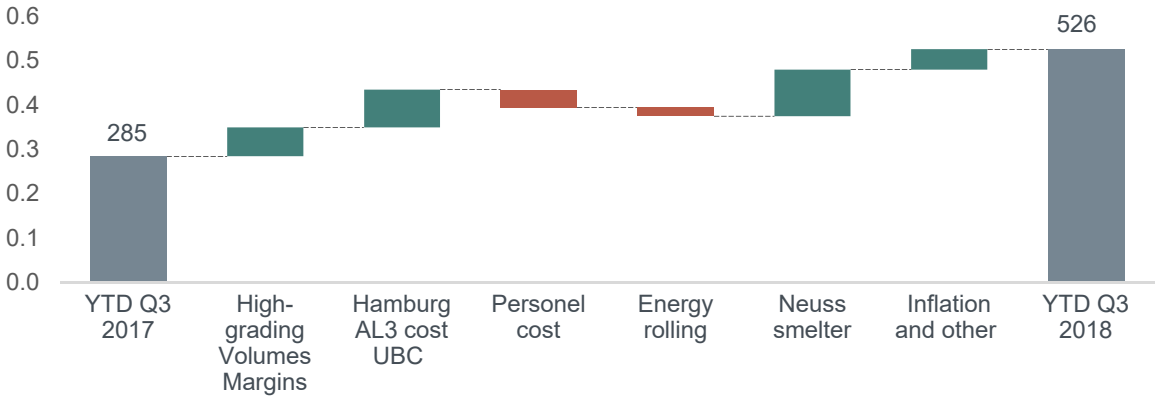
Kjetil Ebbesberg, EVP Rolled Products

Step forward in 2018

Better Rolled Products one year in delay

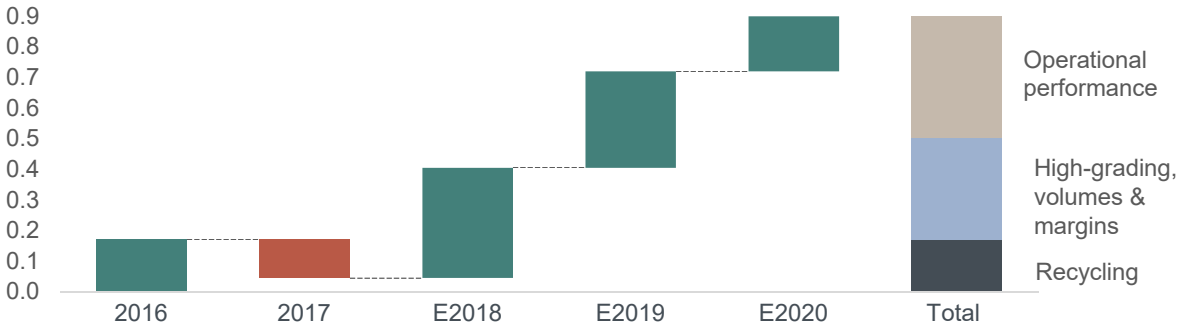
Underlying EBIT improvement YTD Q3 2018 vs YTD Q3 2017

In BNOK



Rolled Products *Better* program progress

In BNOK



Development YTD Q3 2018 vs YTD Q3 2017

- High-grading benefits driven by automotive
- Increased shipments despite impact from Alunorf performance issues in Q3 2018
- Improved Automotive line 3 and UBC production performance
- Higher personnel and energy costs
- Neuss results up on higher aluminium prices and new power contract, more than offsetting increased raw material costs

Better RP Improvements driven by

- Automotive growth
- Increased recycling
- Operational performance
- Supply chain management
- Product high-grading
- Margin and portfolio mix
- Open and engaged culture

Better Rolled Products 0.9 BNOK by 2020

Strong positions in rolled products market segments

Portfolio high-grading and strong focus on quality and service as key elements for success

					
Ambition	**Automotive** Gain No.2 position in European BiW[1)]	**Foil** Strengthen global No. 1 in high-end plain foil	**Beverage can** Grow into No.2 position in Europe	**Lithography** Strengthen global No.1 position	**Special products** Strengthen No.1 positions in Europe
Main customers	BMW, Mercedes-Benz, Audi, PSA Peugeot Citroën, Jaguar, Land Rover	Tetra Pak, Constantia Flexibles, amcor	Crown, Ball, CP Can-Pack S.A., ArdaghGroup	Fujifilm, Kodak, Agfa	ThyssenKrupp Materials, ABB, Siemens
Focus/ Status	**Growing more than the market**	**Focusing product portfolio**	**Shift to attractive european market**	**Competitors stepping out**	**>10% growth in strategic products**

1) Body-in-White

Automotive growth on track, UBC with delays but ramping up

Positive development of automotive deliveries

- Automotive line 3 with significant volume ramp-up in H2-18 and on track to meet original plan during 2019
- Overall customer deliveries on plan, supported by automotive line 1 and 2
- Quality level received well by market, confirmed by increased customer qualifications

Used beverage can recycling line ramping up, but with delays

- Improved performance through 2018
- Further modification needed to resolve outstanding operational issues, planned for first half 2019
- Target stable output at 40 000 mt run-rate end 2019

We are closing the loop with sustainable solutions

- Circular economy is key for modern viable societies
- Recycling of post-consumer and customer process scrap is growing
- Developing scrap sorting technology e.g. for automotive recycling

+30.000 tonnes[1)]

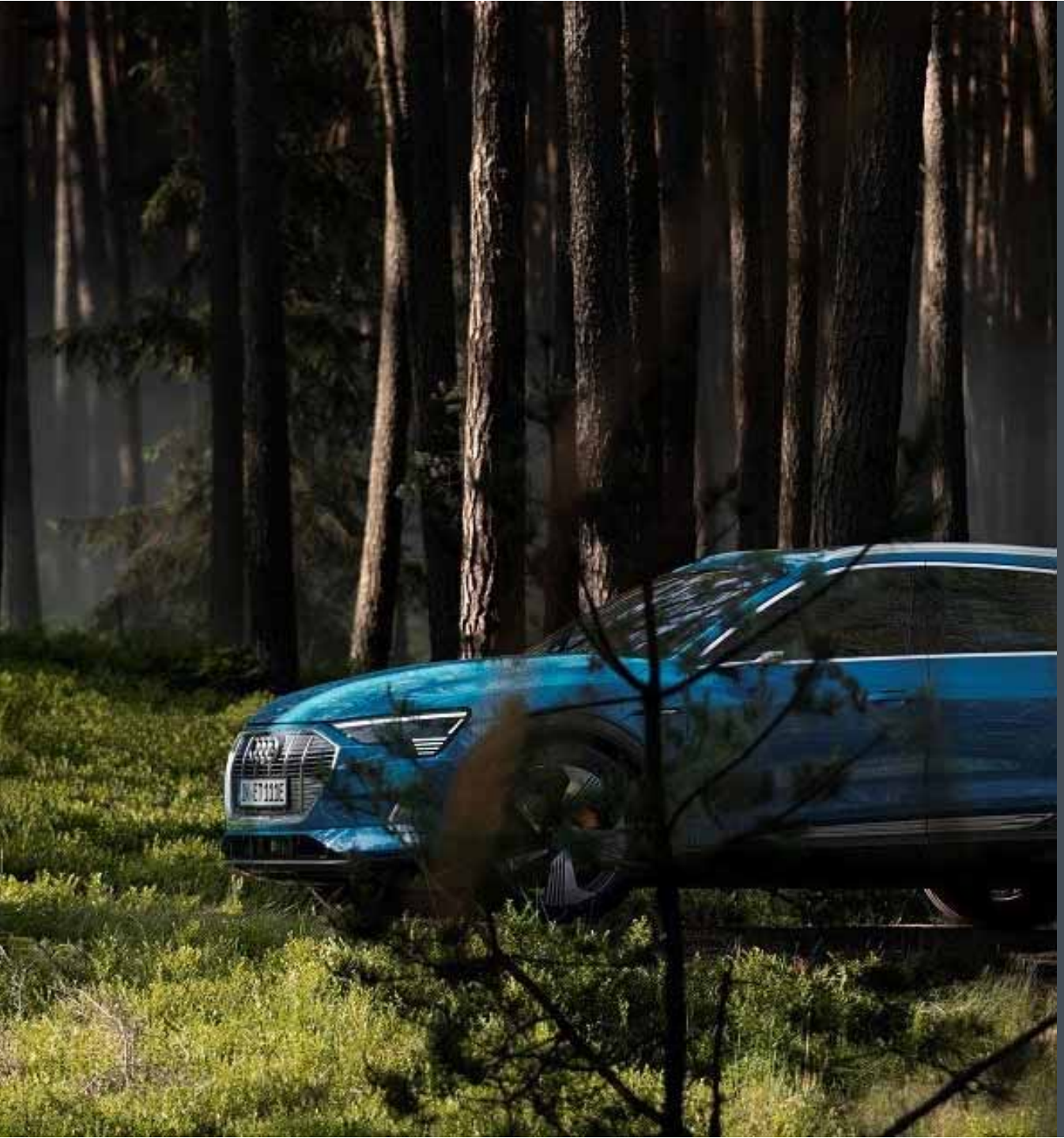
Recycling of post-consumer and external scrap

1) From 2018 to 2019

Engineering the future, enabling progress

Aluminium solutions for growth in e-mobility

- New solutions needed to meet future urbanization and mobility challenges
- Hydro developed new electrical vehicle concept that is aluminium intensive
  - Collaboration between Primary Metal, Rolled Products and Extruded Solutions
- Innovative use of aluminium plays an extensive role for the development of electric vehicles and battery solutions



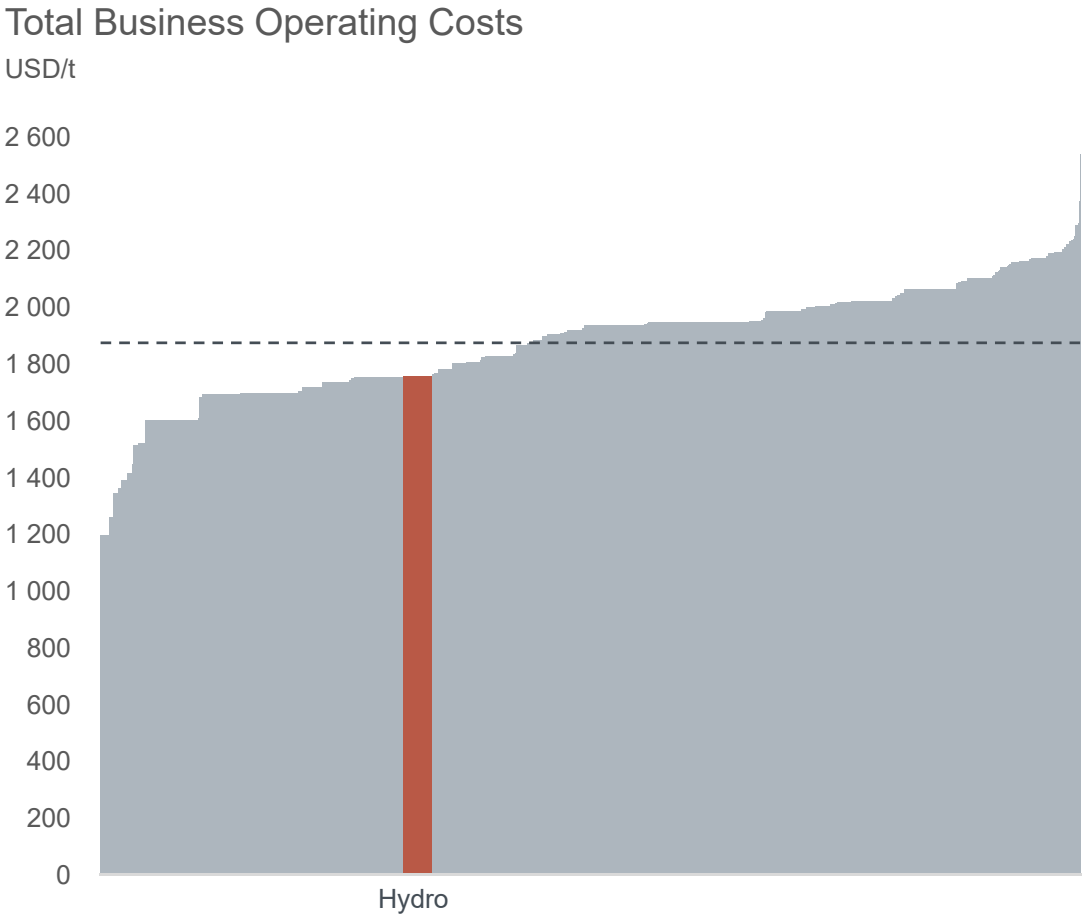
Rolled Products key focus areas

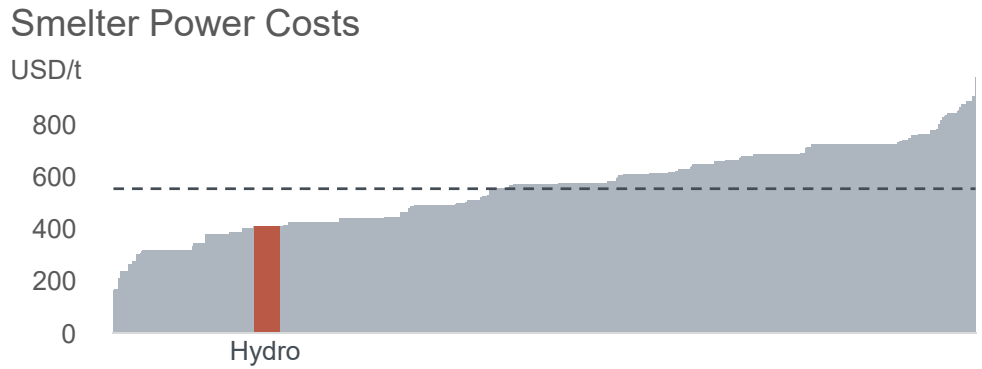
- Safety performance
- Production and operational reliability
- Commercial excellence
- Specific focus areas
  - Foil product portfolio
  - Alunorf performance
  - Automotive Line 3
  - Used beverage can recycling line

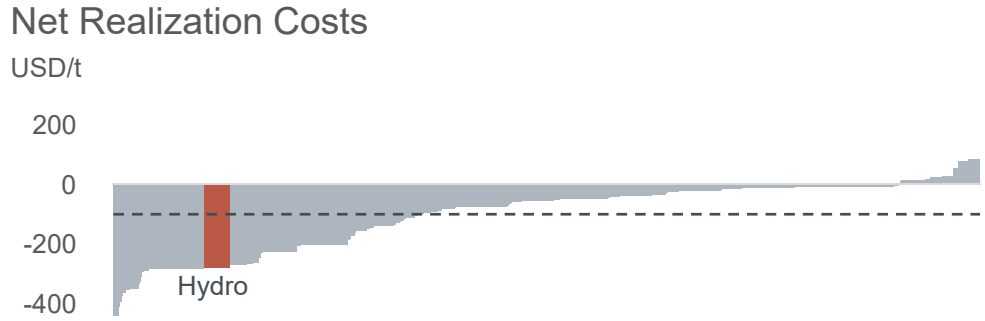
Primary Metal – staying focused through challenging times

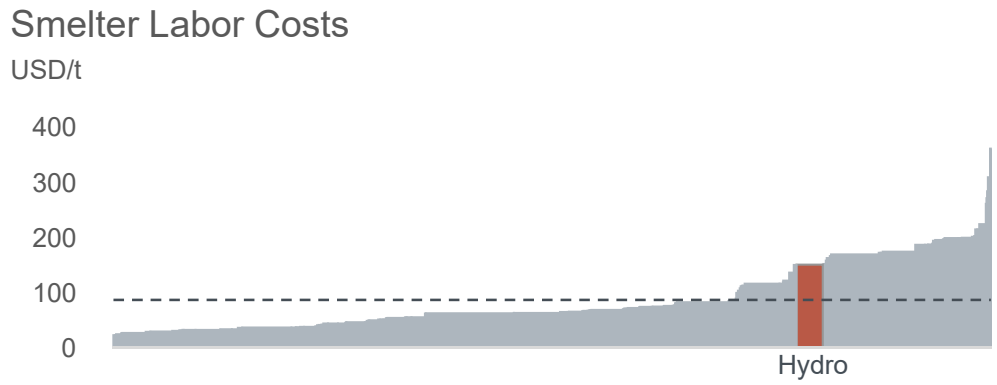
Hilde Merete Aasheim, EVP Primary Metal

Working on influenceable parameters to improve robustness and profitability









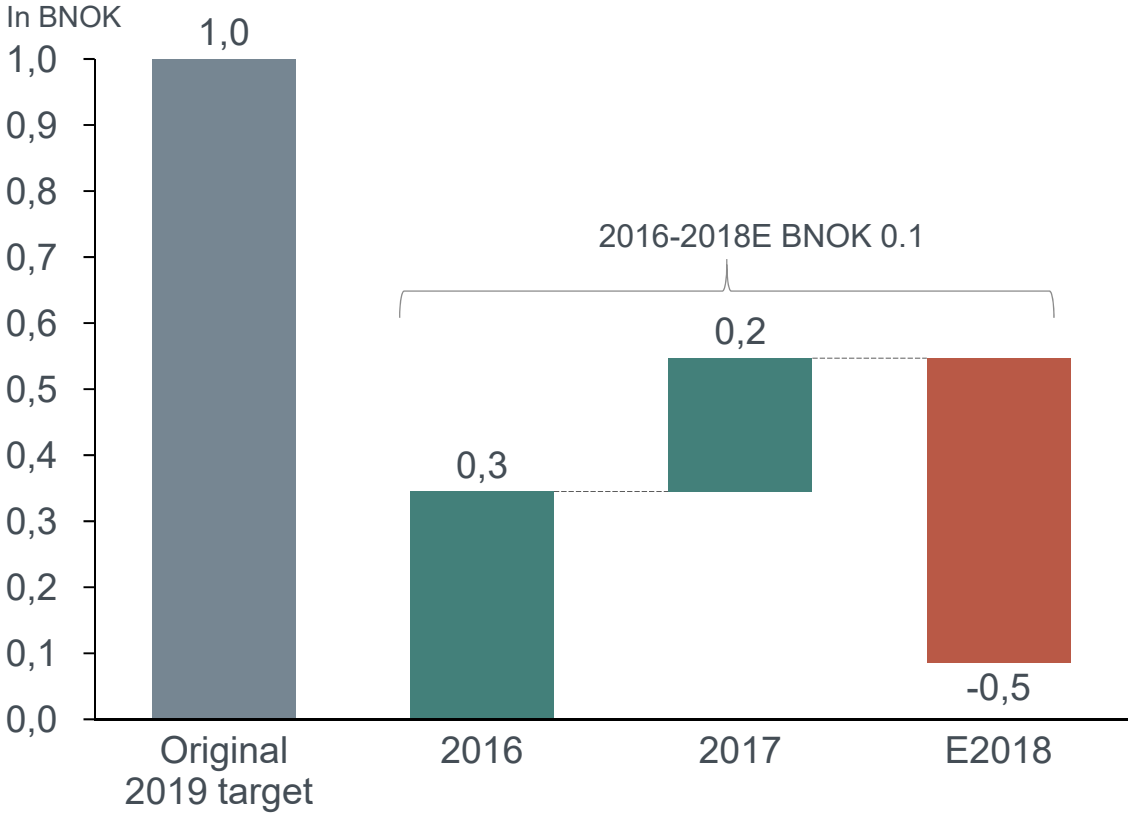
------ Average

Source: CRU

Improvement program in 2018 impacted by Alunorte situation

Primary Metal keeps focus on continuous improvements

Primary Metal *Better* program progress



2018 Improvement program influenced by:

- 50% curtailment of Albras
- Operational instability due to different alumina sources

2019 improvement speed will be significantly impacted by timing of Alunorte restart, due to:

- Uncertain duration of Albras curtailment
- Different alumina sources impacting operational parameters

Improvements focus will continue:

- Operational excellence inclusive spin-offs from the Karmøy technology pilot
- Industry 4.0 as enabler
- Continue to high grade the product portfolio

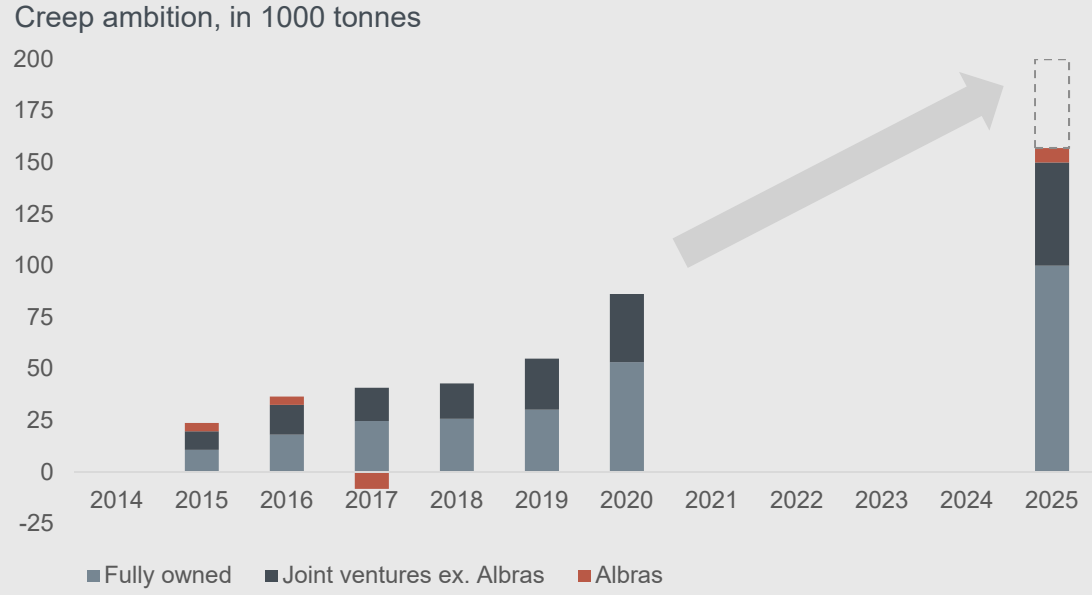
1) FY2018E as of Q3-2018

On track with verifying world's most climate and energy efficient electrolysis technology

- Karmøy technology pilot
  - 48 HAL4e cells, 12.3 kWh/kg
  - 12 HAL4e Ultra cells, < 11.8 kWh/kg
- All 60 cells in normal operation
- Fine tuning of process parameters, pot tending equipment, and operational practice
- Best 1/3 of cells already performing at 94.7% CE and 12.4 kWh/kg Al
- Performance tests scheduled for 2020

Spin-off implementation from Karmøy technology pilot started

- Spin off elements are an integral part of improvement programs at all plants
- Business cases carefully considered for each improvement step
  - Volume vs. energy consumption improvements part of the business case evaluations
- Energy consumption and current efficiency improvement potentials are strengthened
  - Spin offs from Karmøy Technology Pilot control platform
  - Digital twin for process control in the electrolysis being rolled out, starting in Sunndal



Volumetric increases dependent on positive business cases

Husnes restart with spin-off effects

From 3rd to 2nd quartile on CRU cost curve

- Attractive business case with robust rate of return and solid annual cash contribution
- Technology spin-offs from the Karmøy technology pilot
  - Potline B capacity increased by 13 000 tonne/year compared to pre-curtailment levels, and further potential identified
- Cost position solidified by long-term competitive renewable energy contracts
- Value-add production contributing to further high-grading of product portfolio

Unlocking new improvements through Industry 4.0 initiatives

40 ongoing projects

Robotics & Automation projects

Trusted Data Layer Casthouse

Soft Sensor incl. Trusted Data Layer

Mobile Maintenance Worker

Trusted Data Layer Carbon + Analytics workbench improvements

Bring Your Own Device

Digital Foundation including Cyber Security

Organization Foundation including Primary Metal Digital Academy

Significant value creation through value added products

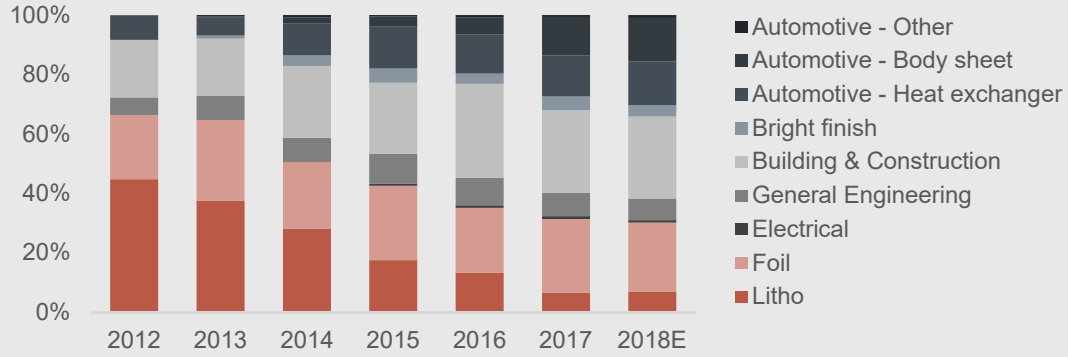
Strategy to sustain and develop portfolio

European Premium above ingot development*

Indexed. 2003=100

Sheet Ingot Adjustable Flexible Mould investment enabled enhanced product portfolio and shift to automotive sector products

In % of total sheet ingot sales



Implementing next generation casting technology (LPC*) at Karmøy to target new market segments

Precision Tubing – 1xxx/3xxx alloys

- New casting and filter technology enabling support to Extruded Solutions for thinner walled Multi Port Extrusions to meet customer expectations

High gloss applications

- New filter technology enabling “inclusion free” billets for high gloss applications

High strength alloys for automotive

- New casting technology capable of producing special 6082 and other high strength alloys

Source: MB, Hydro
* includes fully-owned primary plants + Slovalco
** Low pressure casting

Recycling delivers robust returns

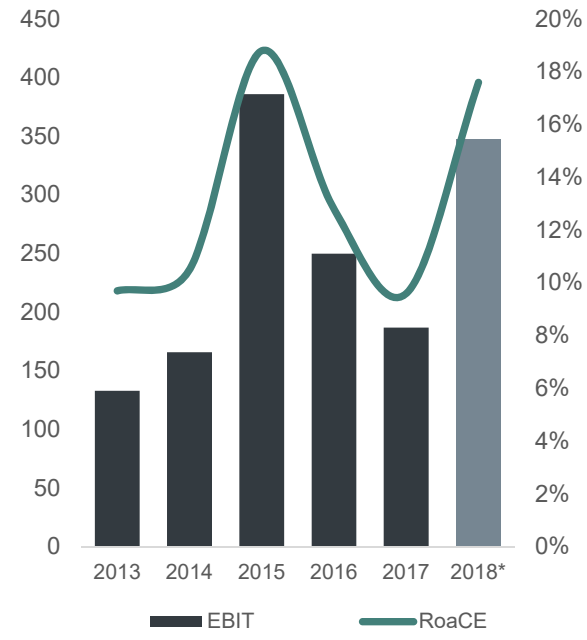
Focus on post-consumer and difficult scrap

World-leading technology increases scrap sources

Scrap costs reduction (% pts of LME)*

Average recycling RoaCE last five years at 12%

UEBIT (MNOK) URoaCE (%)



Source: Hydro
* YTD Q3 2018 annualized

Market-driven expansion in recycling

Developing and investing in capacity and solutions

Azuqueca expansion

- Specifically set up to handle post-consumer scrap
- Total capacity increases by 10,000 tonnes to 90,000 tonnes from 2020
- Capacity to produce 75R increases to 25,000 tonnes
- Builds on Clervaux upgrade

Lucé remelter upgrade

- Total capacity increases by 5,000 tonnes to 61,000 tonnes from 2019
- Enables handling of post-consumer scrap
- Builds on Clervaux upgrade

Remelter at Slovalco

- Helps maintain position as preferred partner for conversion services in Central Europe
- Coming capacity will be 54,000 tonnes process scrap

Hydro 75R

- Lowest industry carbon footprint, competing with PVC and wood
- Contract with Extruded Solutions on full production until 2020 from Clervaux plant in Luxembourg

Primary Metal key focus areas

- Safe and stable operations
- Prepare Albras and Husnes restart
- Sustain and improve competitive position

Hydro

Energy – competitive sourcing and new business opportunities

Arvid Moss, EVP Energy & Corporate Business Development

Energy developments since last CMD

~2.2 TWh renewable power sourcing[1] ➡ Statkraft (hydro power)

Blakliden (wind power)

Tonstad (wind power)

Overtüringen (wind power)

CMD 2017

CMD 2018

Suldal power station upgrade

Røldal-Suldal dam upgrades

Investment in wind power development company Njordr

Build-decision made for new battery systems factory - Corvus

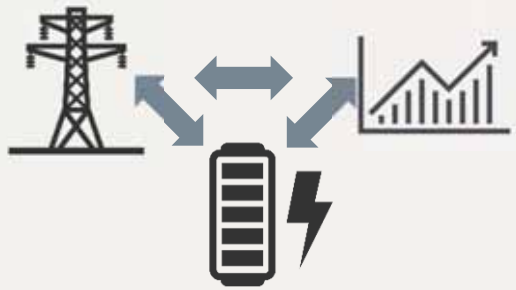
1) 2.2 Twh from 2021-30. Contracts expire between 2038 and 2050, somewhat lower off-take volume after 2030

The European power sector is changing

Hydro well-positioned to capitalize on structural changes

Power generation
Less flexible production

Grid, market and storage
Storage can solve some of the issues



Consumption
Demand flexibility becomes important

Data aggregation, ownership and control
New business opportunities will arise

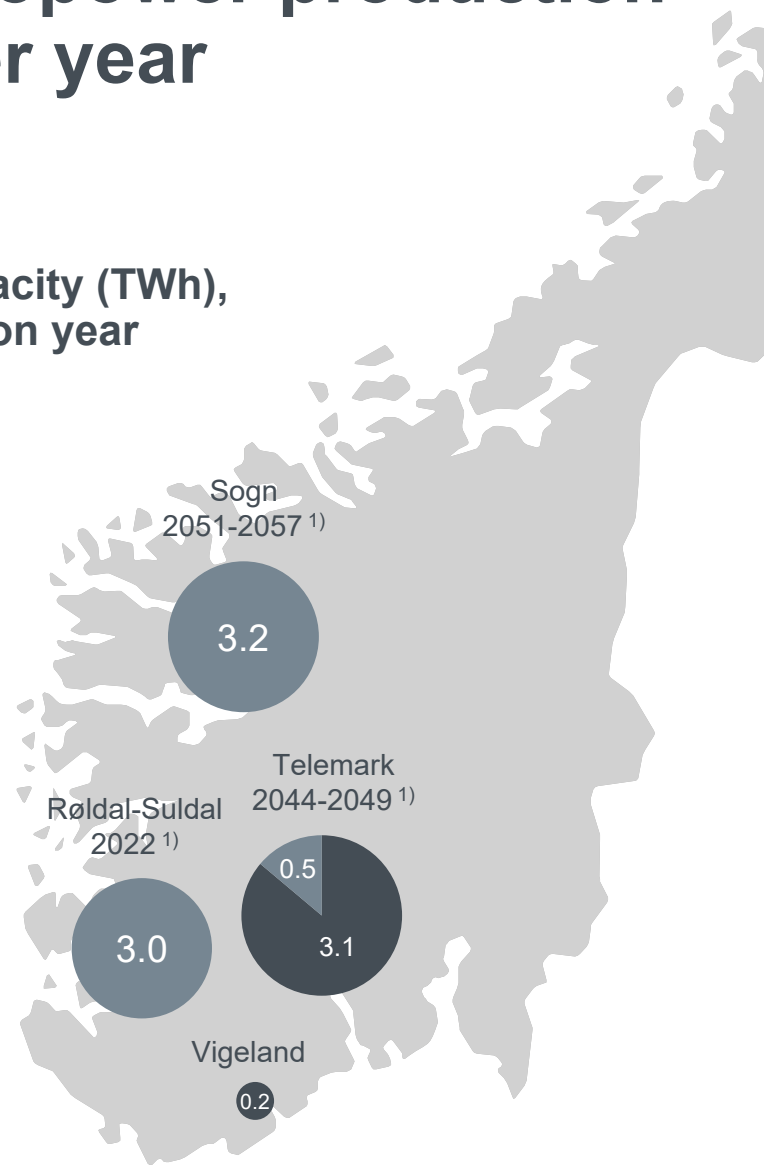
01 Power generation

Captive hydropower production of 10 TWh per year

Power production capacity (TWh), per region and reversion year

Normal annual production

10 TWh



- No reversion
- Subject to reversion
- Bubble size = production in TWh

1) Reversion year

Strategic perspective on new power generation

Hydropower	Wind power	Solar power
		

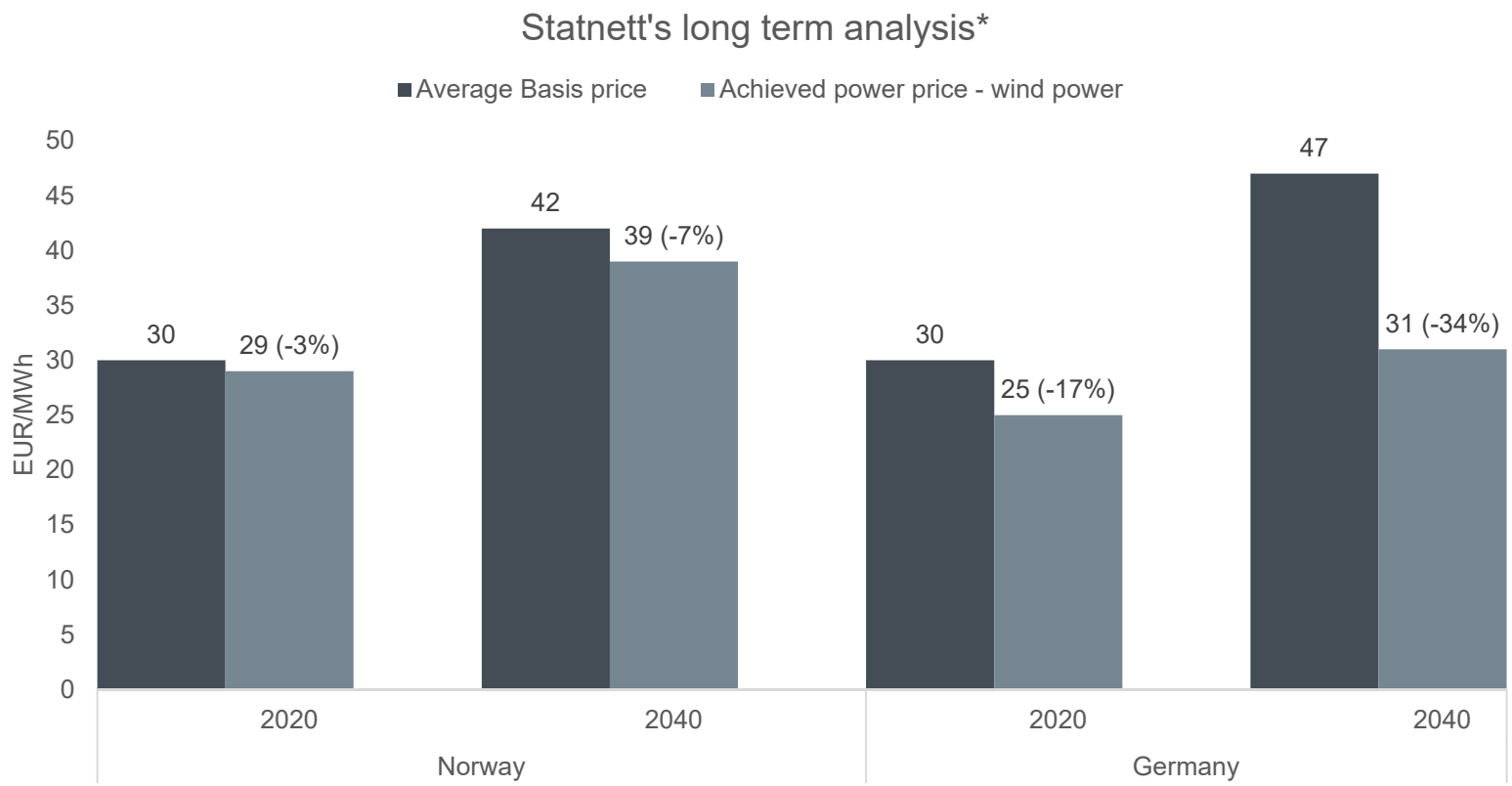
Important attributes for Hydro:
Low carbon footprint – Sustainabillity – Long term – Solid counterparts – Low cost

Value of Nordic wind power higher than in Germany

Wind power analysis indicating increasing differentials

Key characteristics of Nordic wind power

- High capacity factor
  - Excellent wind conditions
- Low degree of cannibalization
  - Flexible hydropower balancing fluctuations
- Normally higher production during winter period
  - Correlates with higher consumption for heating



* Based on Statnett's *Langsiktig markedsanalyse, Norden og Europa 2016–2040*, published October 2016. All figures are denoted in 2016-value.
In their 2016 publication Statnett assumes around 7 TWh p.a. (~5%) and 16 TWh p.a. (~11%) wind power in Norway for 2020 and 2040, respectively.
For Germany, Statnett assumes around 80 TWh p.a. (~15%) and above 200 TWh p.a. (~35%) for 2020 and 2040, respectively.

Well-positioned for competitive PPA[1] terms

~8.5 TWh power secured since 2014, 50% wind

Market attributes, Norway & Sweden:

	Good wind quality
+	Low «cannibalization» of price at high wind production
+	Large wind farms, good ground conditions (lower CAPEX)
+	Long term PPAs for «green power» enables lower financing cost
=	Low cost PPA and acceptable returns to developer/owner

Attributes of Hydro:

	Large power consumer and producer
+	Market and risk understanding, able to handle wind as produced
+	Solid financial balance, attractive partner
+	Long term
=	An attractive counterpart for wind farm developers

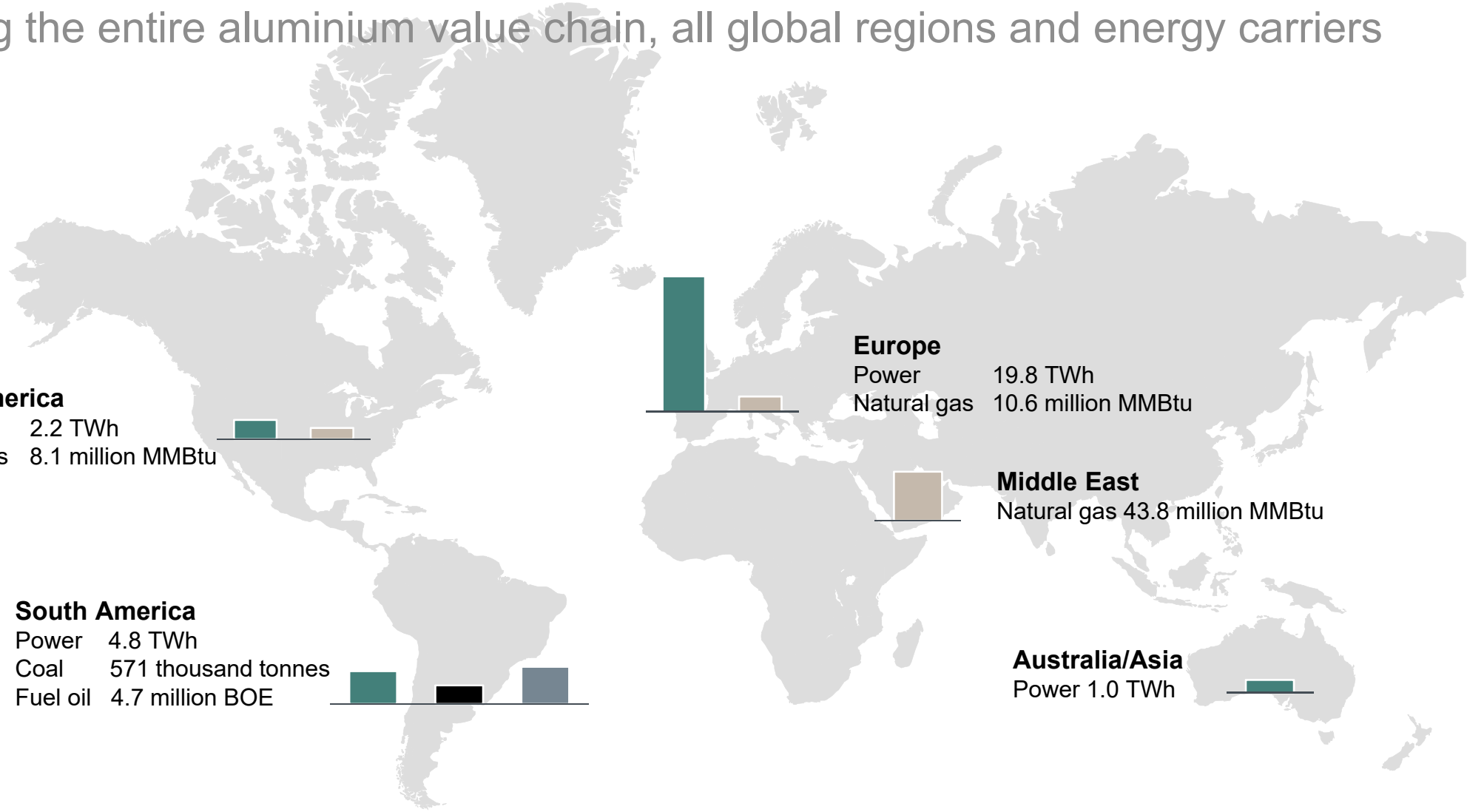
1) Power purchase agreement

02

Energy Consumption

Hydro's global primary energy demand

Spanning the entire aluminium value chain, all global regions and energy carriers



North America
Power 2.2 TWh
Natural gas 8.1 million MMBtu

Europe
Power 19.8 TWh
Natural gas 10.6 million MMBtu

Middle East
Natural gas 43.8 million MMBtu

South America
Power 4.8 TWh
Coal 571 thousand tonnes
Fuel oil 4.7 million BOE

Australia/Asia
Power 1.0 TWh

Values are listed in its conventional trading unit. TWh=10~12 Joule electrical energy, MMBtu= Million British thermal units, ton=metric ton thermal coal, BOE= Barrel of Oil Equivalent.
Bar charts are represented in the equivalent primary energy size for each category. Primary energy follows IEA's definition.
Based on equity-adjusted 2017 values for Norsk Hydro's bauxite mines, alumina refineries, smelters, remelters, rolling mills and 2018 estimate for extrusion plants.

Energy is a key differentiator in the aluminium industry

Center of energy excellence in Hydro

	Bauxite	Alumina	Primary	Rolling	Extrusion
Energy cost*	~25%	~35%	~35%	~10%	~8%
		~50%			
Energy business area's contribution to Hydro	• Power sourcing	• Power sourcing • Fuel switch project (LNG) • Energy mix long term, renewables, storage	• Power sourcing and production • Gas sourcing	• Power sourcing • Gas sourcing	• Power sourcing • Gas sourcing

Market understanding. Framework advocacy. «Greener» support & energy efficiency support. Security of supply

*Share of Business Operating Cash Cost

03

Grid, market and storage

Energy markets have trended upwards

Coal API2 forward 2019

USD/t

CO2 EUA forward 2019

EUR/t

Nordic power forward 2019

EUR/MWh

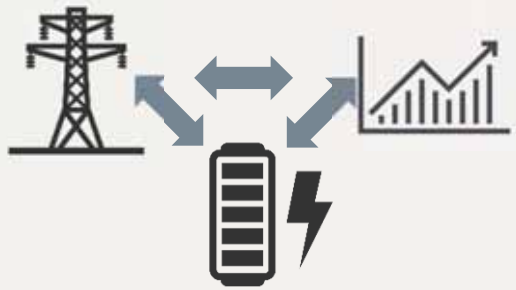
Source: Montel, 2018

The European power sector is changing

Hydro well-positioned to capitalize on structural changes

Power generation
Less flexible production

Grid, market and storage
Storage can solve some of the issues

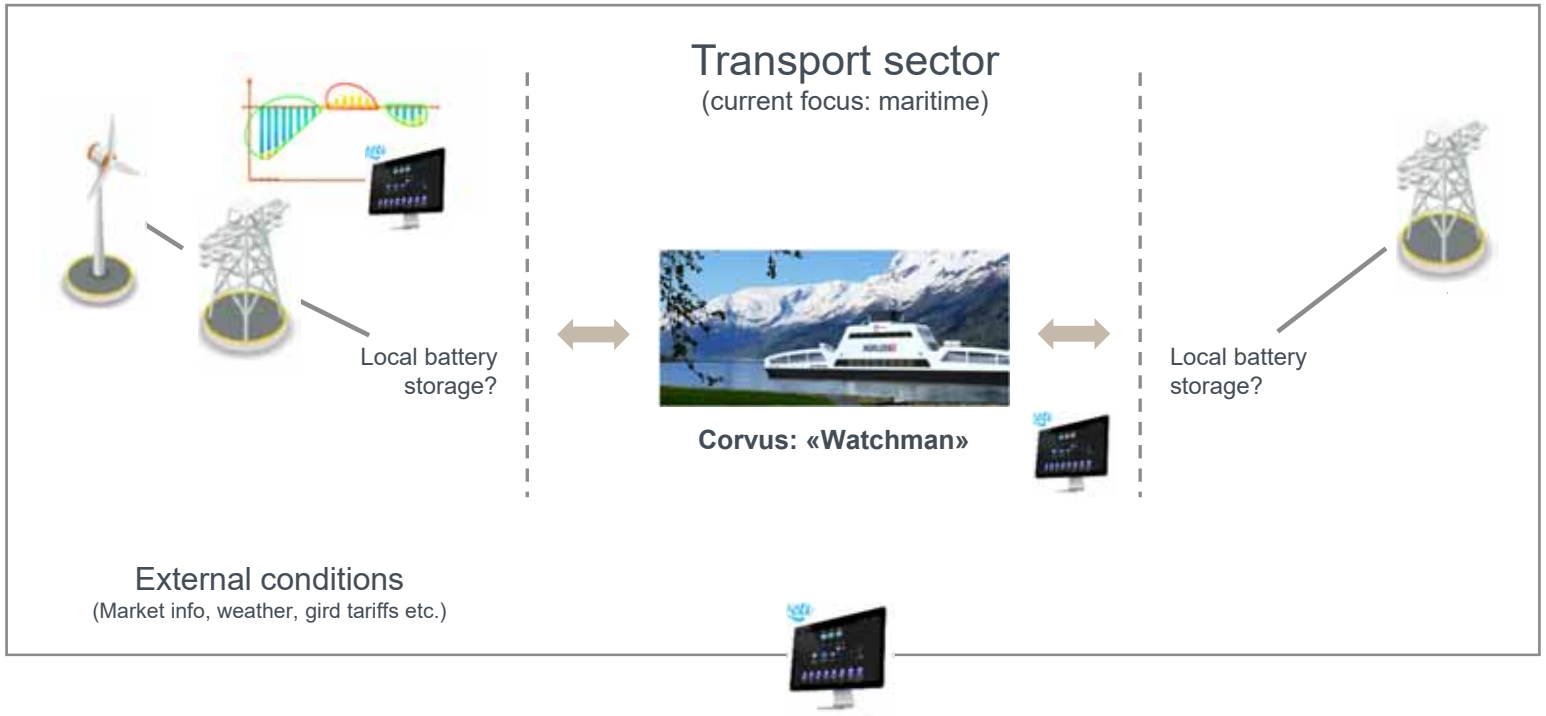


Consumption
Demand flexibility becomes important

Data aggregation, ownership and control
New business opportunities will arise

The Corvus investment in a wider context

Data ownership and management even more important when sector coupling



Possibility to deliver energy solutions in the future?

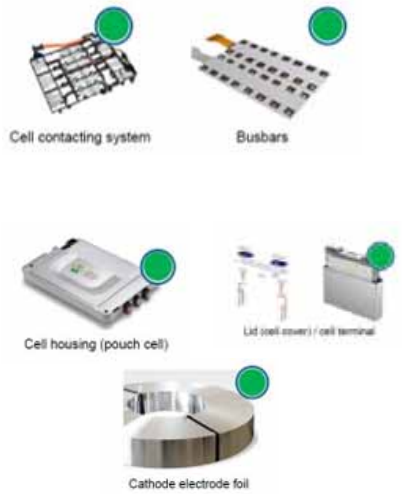
Why invest?

- Attractive market and future returns
- Hydro competence and industrial ownership should add value
- Obtain key learnings by understanding a rapidly changing energy market from within
- Beneficial to existing or future business

The value chain perspective

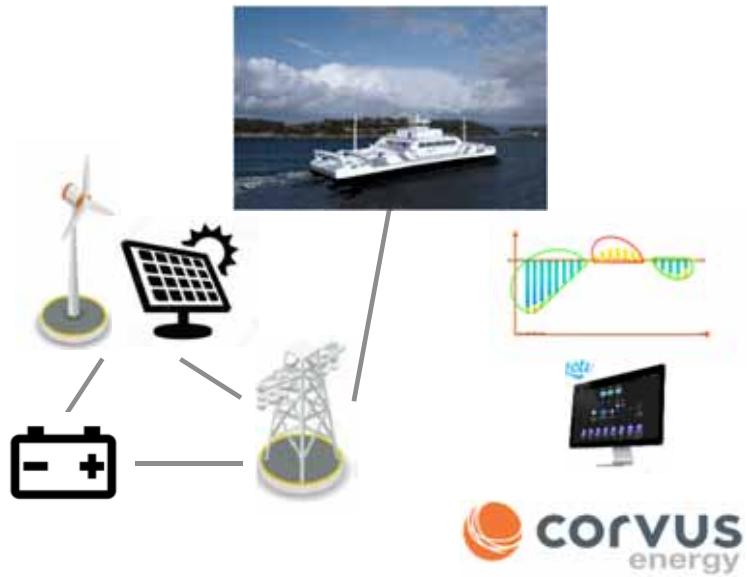
Hydro

Aluminum components



System supplier

Applications



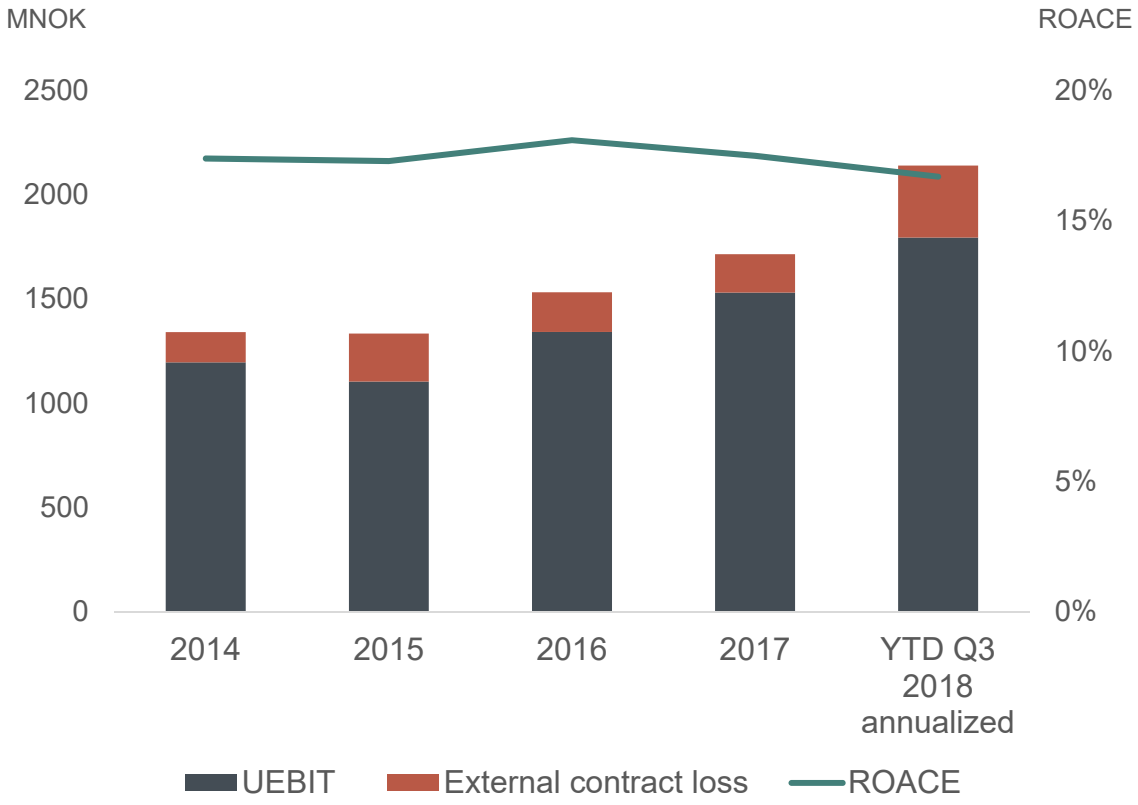
Recycling

04 Financials and way forward

Historical EBIT Developement

Strong development mainly due to higher prices

Energy - Historical underlying EBIT and ROACE



- Positive EBIT development on high prices
  - ROACE affected by increased effective tax rate
- Expiry of legacy supply contract entered in 2008 will have positive effect of NOK 400-500 million from 2021
  - No negative effect in other BAs
- New 8 TWh internal contract for power sales to Primary Metal in Norway effective from 2021-30
  - Priced in accordance with average external contract prices
  - Positive EBIT effect to Energy approximately NOK 300 million
  - Net power sourcing cost, internal and external, to Primary Metal largely unchanged

- ROACE tax 55% for 2014 & 2015, 60% for 2016, 65% for 2017 and 70% estimated for 2018

Energy key focus areas

- Safe and stable operations
- Commercial excellence
- Energy center of excellence
- Develop solution to secure continued RSK production
- Develop New Business portfolio

Hydro

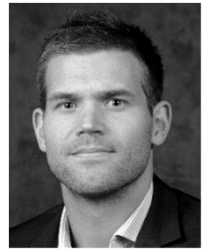
We are aluminium

Next event

Fourth quarter results
February 7, 2019

For more information see
www.hydro.com/ir

Investor Relations in Hydro



Stian Hasle

Head of Investor Relations

t: +47 97736022
e: stian.hasle@hydro.com

Olena Lepikhina

Investor Relations Officer

t: +47 96853035
e: olena.lepikhina@hydro.com

Aud Helen Halvorsen

Investor Relations Assistant

t: +47 95182741
e: aud.helen.halvorsen@hydro.com