



Investor Day 2019

Lifting profitability, driving sustainability






Oslo, September 24, 2019

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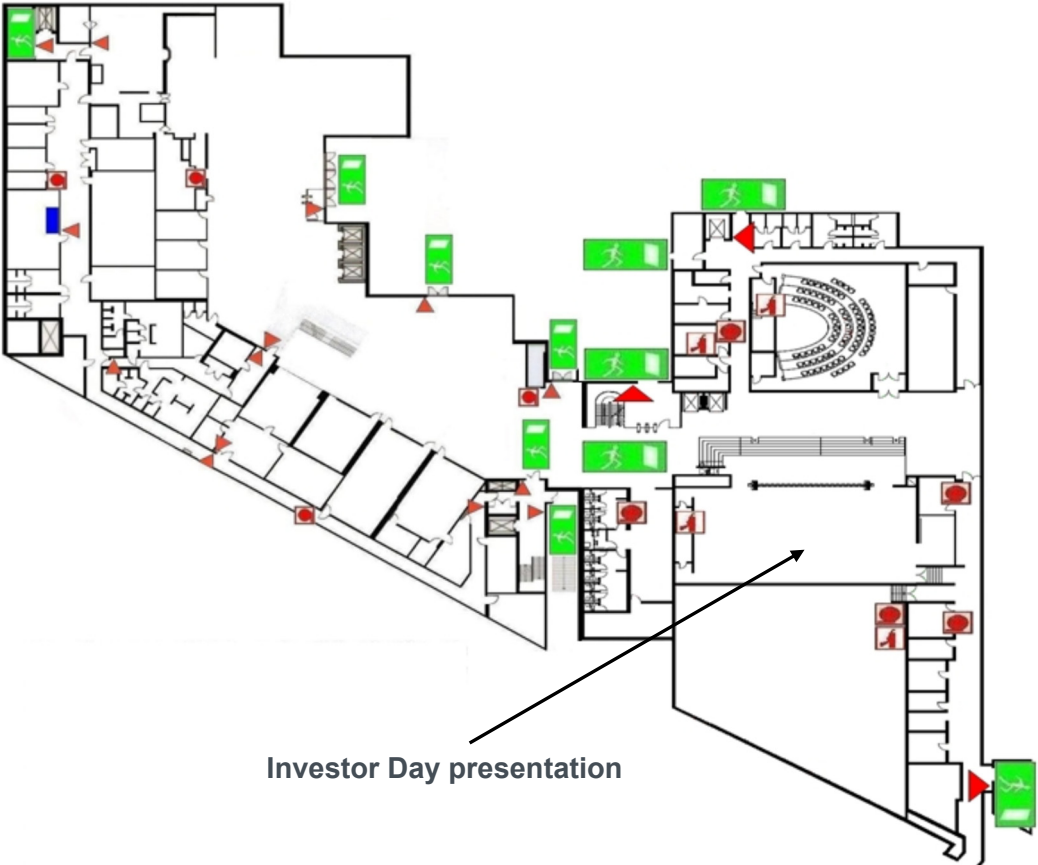
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Safety information

-  Fire Hose
-  Fire Panic Button
-  Emergency Exit

Public Services

- Fire: 110
- Police: 112
- Ambulance: 113



Cautionary note



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 | <i>Light breakfast and registration</i> |
| 08:00 – 08:05 | Welcome |
| 08:05 – 09:15 | Hydro |
| 09:15 – 09:35 | Q&A |
| 09:35 – 09:55 | <i>Break</i> |
| 09:55 – 10:40 | Financial priorities |
| 10:40 – 11:00 | Q&A |
| 11:00 – 12:00 | Lunch |





Lifting profitability, driving sustainability

Investor Day – Oslo, September 24, 2019

Hilde Merete Aasheim
President & CEO

Lifting profitability, driving sustainability

Mobilizing for change



- BNOK 6.4 improvement ambition
- Restructuring of Rolled Products
- New capital allocation framework
- 10% RoaCE target over the cycle
- Cut CO₂ emissions by 30% by 2030



Lifting profitability

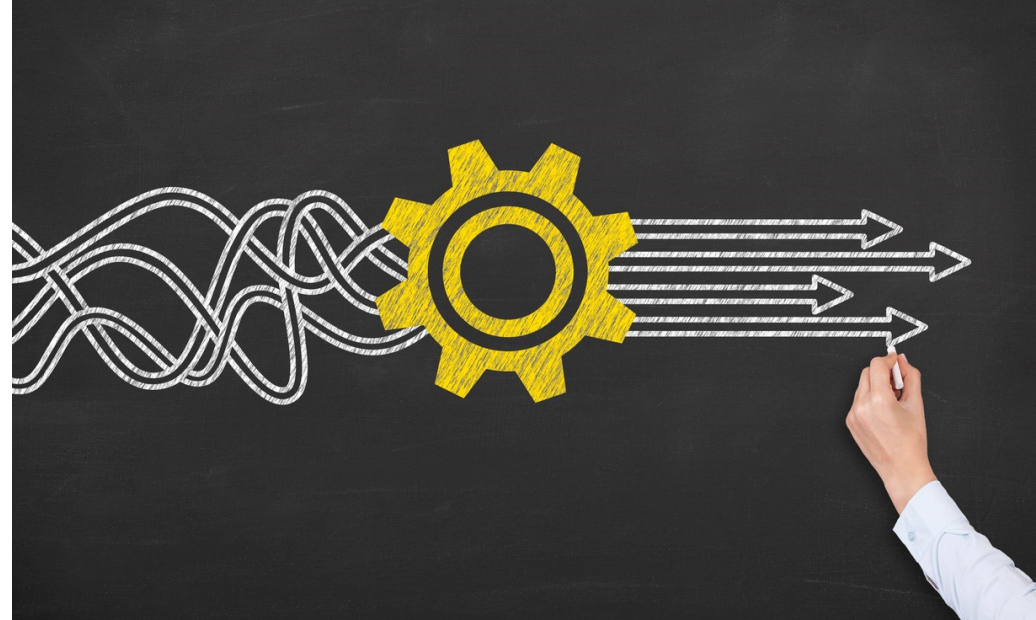
Current markets affected by volatility and low visibility



Immediate measures

Launched May 8 to improve performance and cash generation

- Safe, compliant and efficient operations – always top priority
- Return Alunorte, Paragominas and Albras to full production and operational excellence
- Rolled Products restructuring and strategic review
- New improvement efforts across all business areas and staff functions
- Ensure stricter capital discipline and capital allocation
- Evaluate the way we work to simplify and optimize



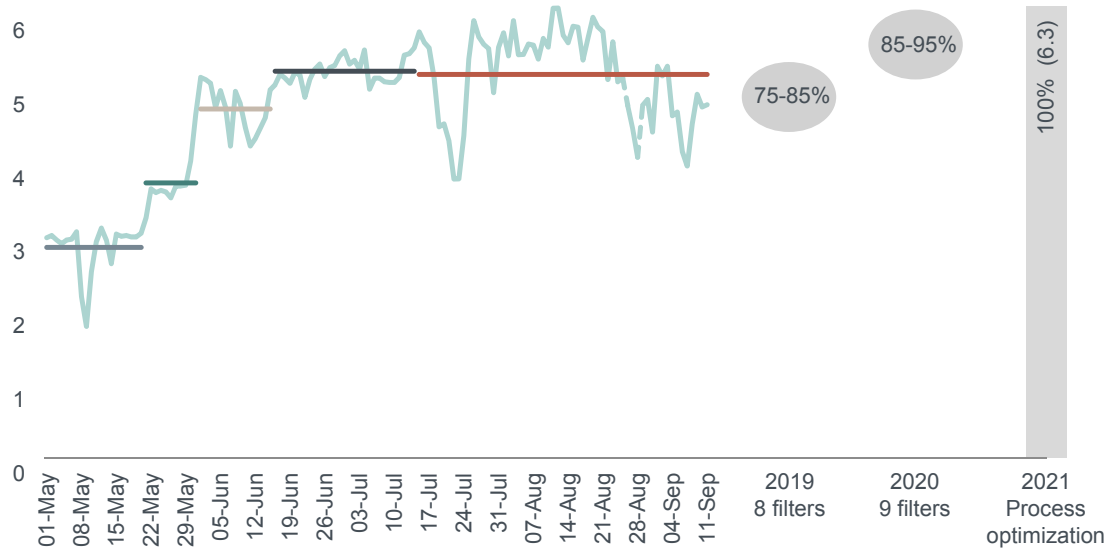
Progress towards lifting final embargo in Brazil...



Successful ramp-up at Alunorte

Ramp-up process

Alunorte production in ramp-up period, daily production annualized in million mt



One of two embargos on DRS2 lifted

- DRS2 embargo under civil lawsuit lifted on September 20
- Alunorte still subject to embargo on DRS2 imposed by same court in parallel criminal lawsuit – expecting positive decision shortly
- DRS2 only long-term sustainable solution for Alunorte

Successful ramp-up at Alunorte

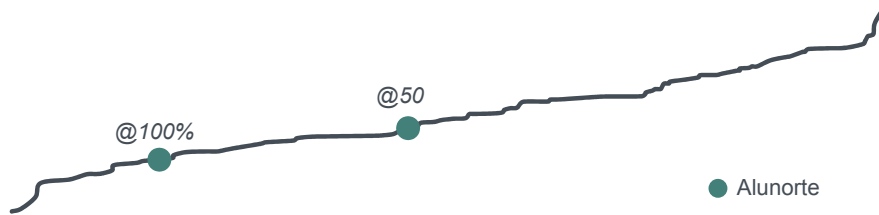
- Currently producing at 75%-85% mtpy
- Commissioning of 9th press filter during November, expected to reach full utilization end-2019, adding 10% capacity
- Further process optimization to reduce downtime and cycle time of press filters and increase productivity

...costs are improving...

Q417 cost levels achievable at normalized market prices and full production

Bauxite & Alumina

Alumina Business Operating Cost curve* (2019)



- Competitively positioned on the global cost curve - relative cost position for Bauxite & Alumina improving on increased output from Paragominas and Alunorte
- Implied alumina costs coming down in 2019 vs 2018
 - Reduction in raw material input costs
 - Reduced alumina sourcing volumes
 - Reduced alumina sourcing costs
 - Increased Alunorte and Paragominas production

Primary Metal

Smelter Business Operating Cost curve* (2019)



- Competitive relative position on the global cost curve
- Cost levels in Primary Metal coming down in 2019 vs 2018
 - Reduction in raw material input costs
 - Improved efficiency due to consistent Alunorte alumina quality
 - Albras back to full production

...and strengthening long-term framework

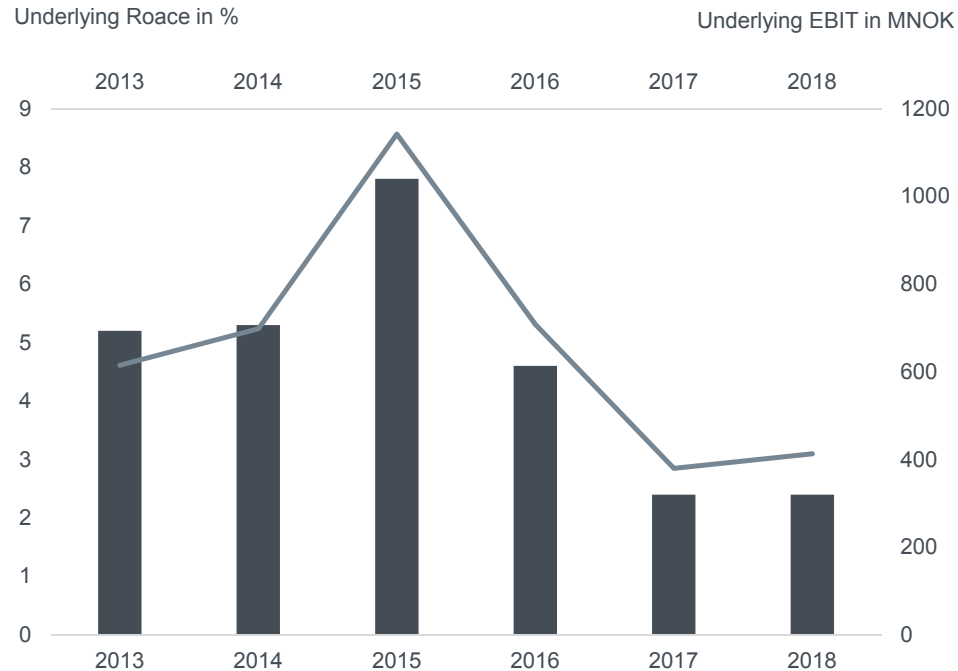
- Continued safe ramp-up
- Building trust in local communities through community meetings and dialogue
- Fully committed to deliver on obligations under technical and social agreement (TAC and TC) – deliveries progressing according to plan



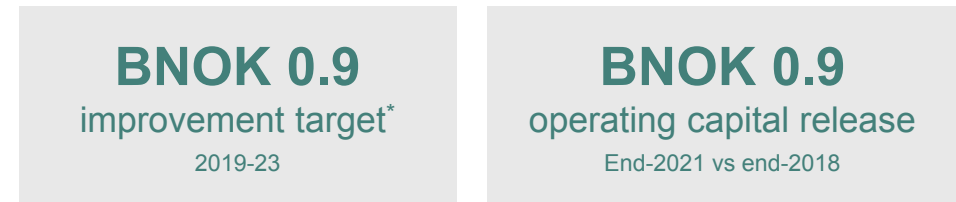
Significant improvement potential identified in Rolled Products

Improvements to be realized while continuing strategic review

Unsatisfactory returns in Rolled Products



Restructuring of Rolled Products



- Improvement and restructuring focusing on:
 - Organisational efficiency
 - Operational efficiency
 - Commercial excellence
- Total restructuring costs BNOK ~1.6
 - Provision of BNOK 1-1.2 to be booked in Q3 2019
- Improvements to be realized while continuing strategic review

* Improvement to Underlying EBIT

Rolled Products - strong European production base and global sales force

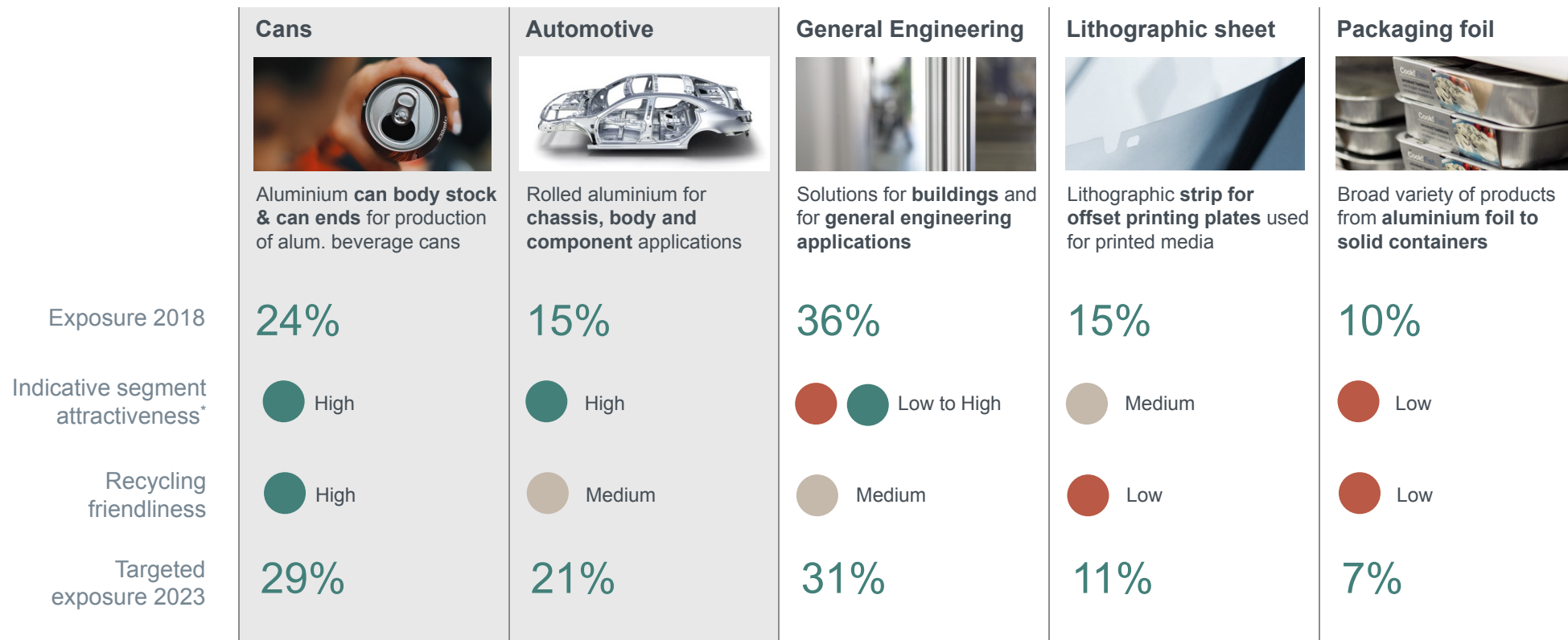
- ~1 million tonnes of flat rolled products per year
- Unique integrated aluminium cluster
 - Neuss
 - Alunorf
 - Grevenbroich
- Casthouse network and integrated recycling capacity
- Strong customer satisfaction on quality
- However, unsatisfactory returns over latest years – performance turn-around required



● Rolling mill ● Sales Office ● Smelter ● R&D centre

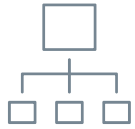


Several attractive segments within rolling industry – Hydro targets to shift portfolio towards auto and can



*Based on expected growth, competitive landscape, returns and margins

Strong improvement initiatives within organizational and operational efficiency and commercial excellence



Organisational efficiency

- Total planned reduction of personnel – 735 FTE's¹
 - Closure of parts of foil production at Grevenbroich - reduction of 343 FTE's
 - Additional organizational right-sizing – reduction of 392 FTE's
 - Overall planned reduction in personnel cost off up to MEUR 60²
- New organisational model to increase accountability and agility



Operational efficiency

- Procurement
- Liquid metal cost reduction
- Lower scrap rate
- Increased operational performance



Commercial excellence

- Product mix and portfolio optimization
- Commercial improvements

1) Full time equivalents

2) Does not include potential negative impacts related to volume loss. Parts of the manning reduction are dependent on limited capital expenditure.

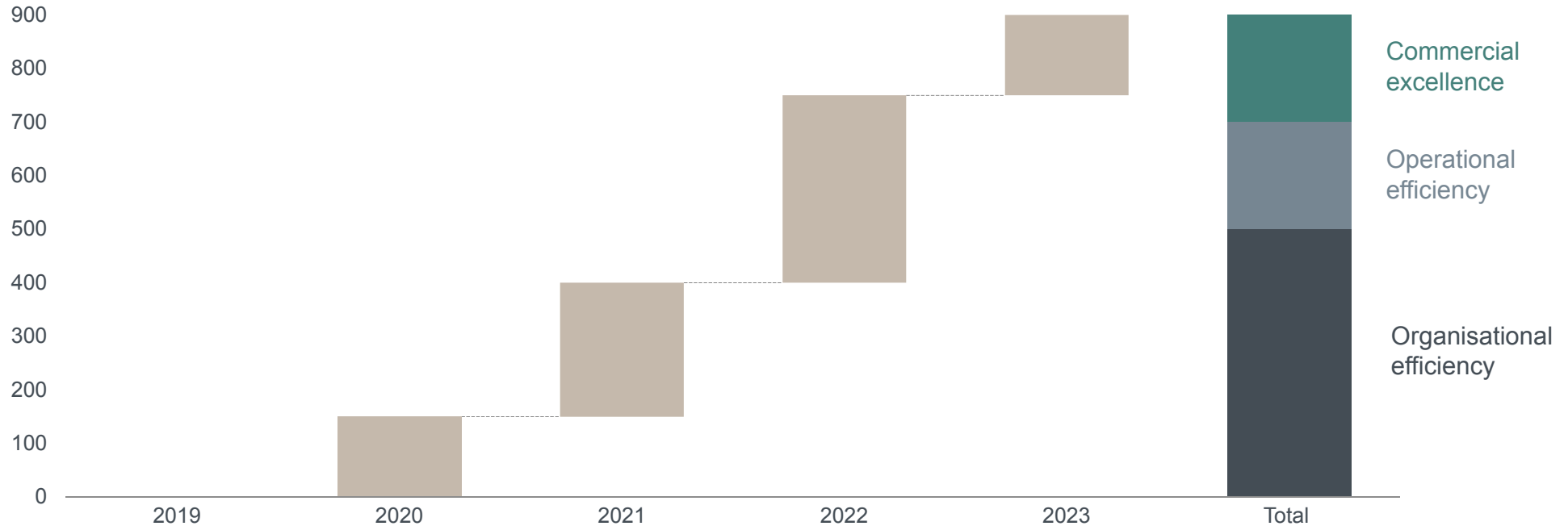
Restructuring and improvement initiatives in Rolled Products



Targeting BNOK 0.9 improvements 2023 vs 2018,
more than 40% to be realised by 2021

Rolled Products improvements per year and category

In MNOK



Targeting BNOK 0.9 net operating capital reduction

Targeting BNOK 0.9 net operating capital release by end-2021 vs end-2018

- Of which BNOK 0.7 by end-2020

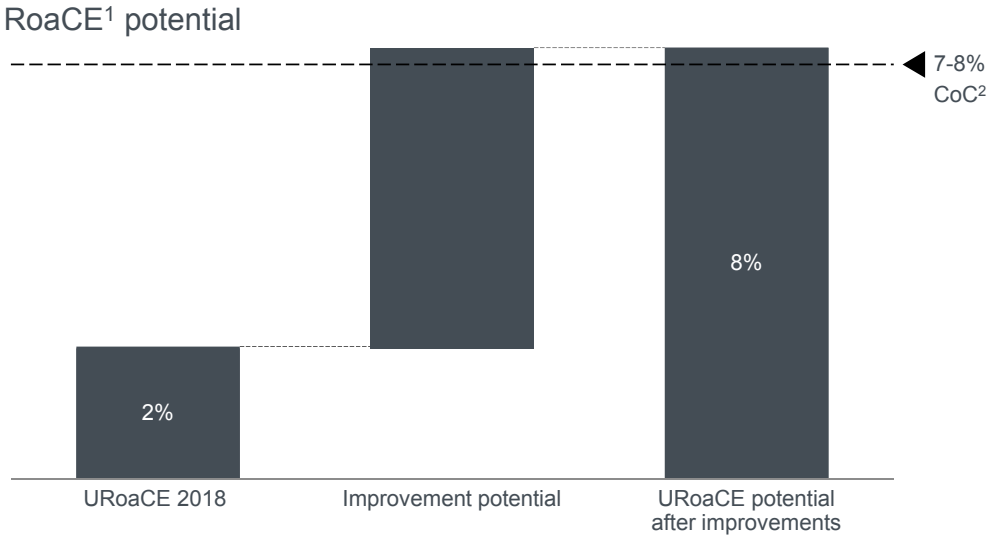
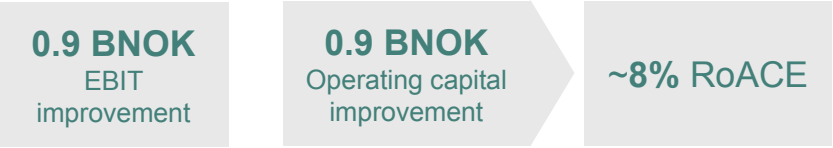
Reduction will be achieved by reducing inventory levels

- Improved planning process and optimized material flow
- Reduced raw materials supply
- Improved order forecast precision
- Reduced finished goods inventory



Rolled Products roadmap to profitability

Improvements to be realized while continuing strategic review



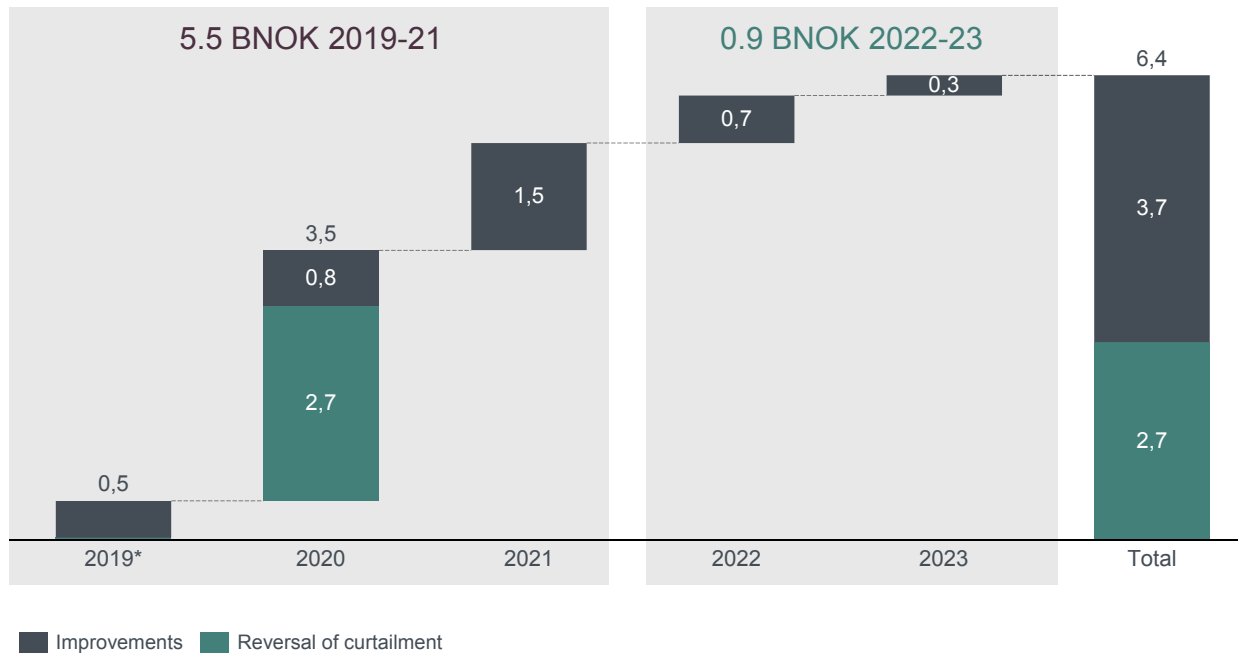
1) Excluding Neuss smelter effects and sensitivities
 2) Nominal Cost of Capital
 Assumptions behind the scenario can be found in the additional information



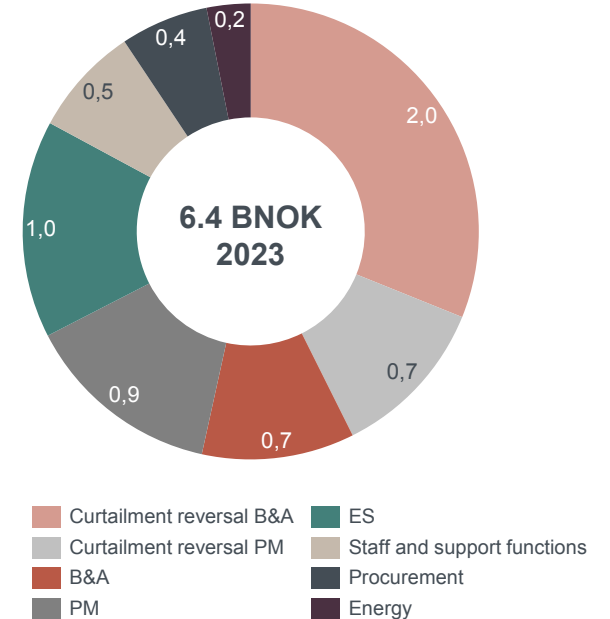
Launch of new and ambitious improvement program

Targeting 3.7 BNOK in improvements on top of 2.7 BNOK in curtailment reversal

Improvements by year, in NOK billion



By business area



* Excludes negative effects of cyber attack for Extruded Solutions .
 BNOK 6.4 improvement ambition excludes improvement target in Rolled Products of BNOK 0.9
 ~10-11 BNOK in capex required to meet the improvement targets

Revised operating model with leaner staff functions and strong business areas

A number of initiatives to streamline and strengthen support functions

Fit-4-Future



FIT4FUTURE

0.5 BNOK improvement

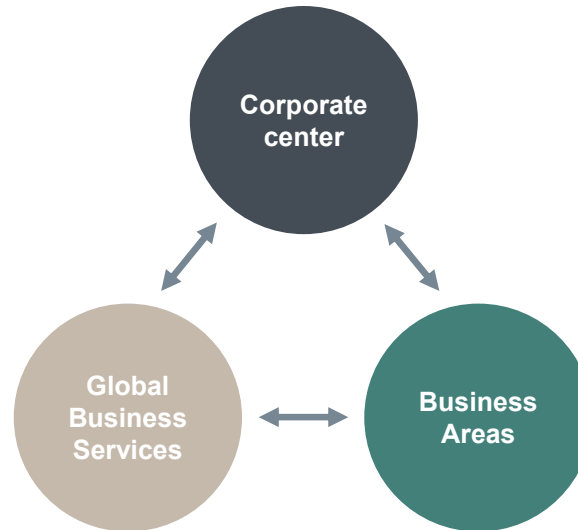
2023 vs 2018

250 FTE reductions

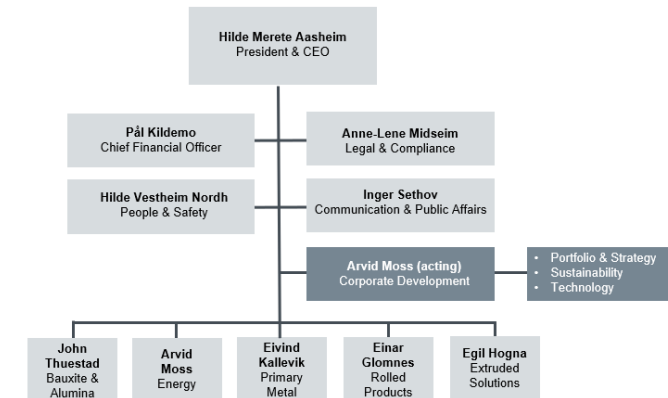
2023 vs 2018

Enable step-change improvements to lift staff value creation and lower costs

Revised operating model



New Corporate Development function established



Strengthening ability to drive profitability and sustainability agenda

Total measures with significant cash flow contribution

Large share being delivered in 2019-2021

Improvement ambition Incl reversal of curtailments



6.4 BNOK
2023 vs 2018

Rolled Products restructuring

- Cost and efficiency initiatives, targeting improvements of BNOK 0.9
 - BNOK 0.4 by 2021
- Restructuring cost BNOK 1.6¹
- BNOK 0.9 net operating capital to be released by end-2021
- Improvements to be realized while continuing strategic review

0.9 BNOK
2023 vs 2018

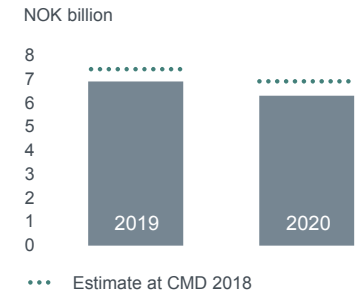
Net Operating Capital release

- Target to reach 52 NOC days by end-2020 vs 64 NOC days end-2018, corresponding to ~4 BNOK release
- Majority of release expected by end-2019
- Key initiatives to reduce NOC
 - Reducing inventory levels across all business areas – normalization after 2018 market uncertainty
 - Focus on performance improvements

~4 BNOK
End-2020 vs end-2018

Short-term sustaining capex reduction

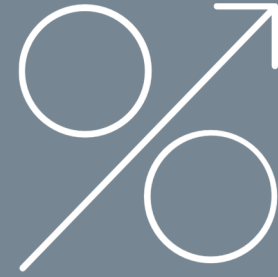
- Combination of reduction and postponement – while evaluating measures to reduce sustaining capex to larger extent



~1 BNOK
2019-20²

1) Of which BNOK 1-1.2 will taken in provision in Q3 2019

2) Communicated estimated sustaining capex targets of BNOK 7-7.5 and BNOK 6.5-7 in 2019 and 2020 respectively at CMD 2018, leading a reduction of BNOK ~1 in the updated estimates for 2019 and 2020



Profitability

RoaCE > 10%

Over the cycle

All business areas

RoaCE > Cost of Capital

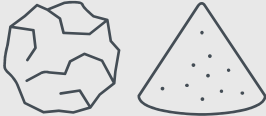




Over the cycle

Different strategic modes for the business areas

A robust and profitable industry leader, built on innovation and sustainability

Safe, compliant and efficient operations
– The Hydro Way



Business area	 Bauxite & Alumina	 Primary / Metal Markets	 Energy	 Rolled Products	 Extruded Solutions
Strategic mode	Sustain and improve*		Selective growth	Strategic review	Selective growth

Differentiated capital allocation

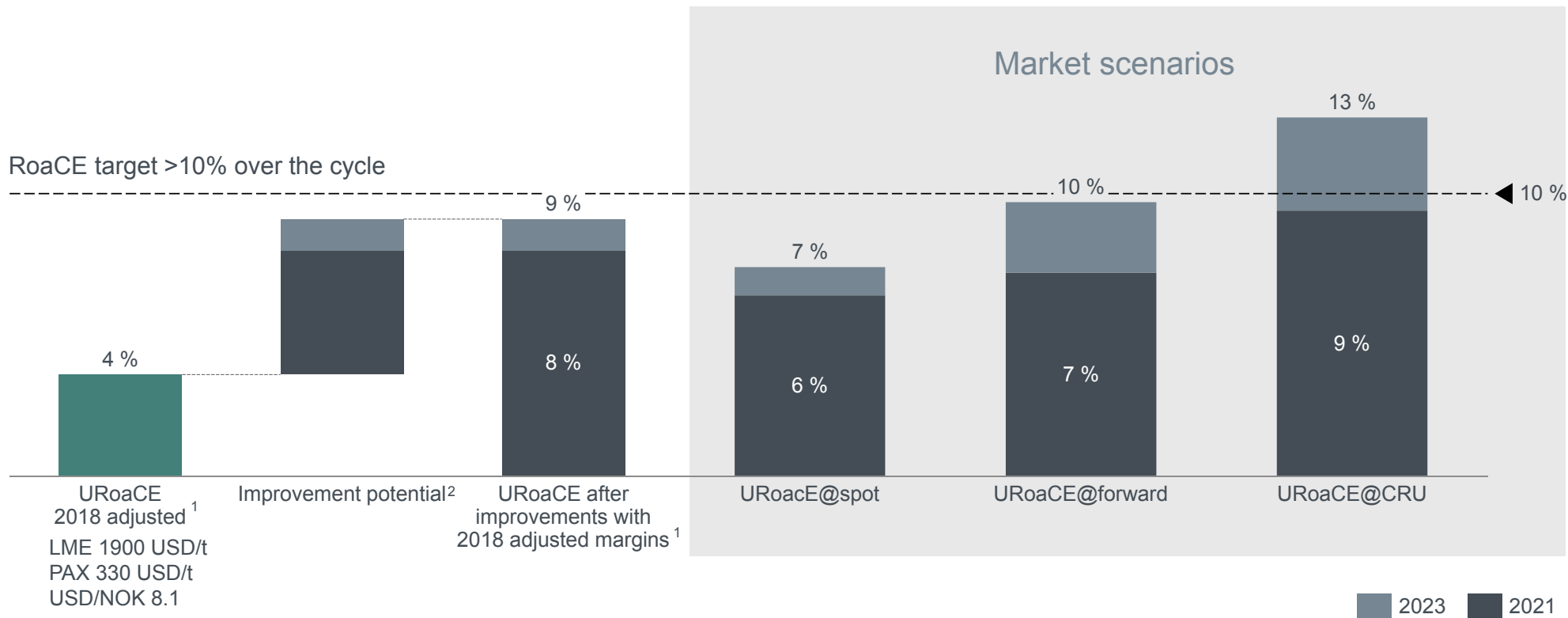
Safe, compliant and efficient operations
– The Hydro Way



Business area	 Bauxite & Alumina	 Primary / Metal Markets	 Energy	 Rolled Products	 Extruded Solutions
Strategic mode	Sustain and improve*		Selective growth	Strategic review	Selective growth
Impact on capital allocation	Sustaining capex and cost efficiency (Creep and recycling with high profitability)		Selected growth investments	Sustaining CAPEX and cost efficiency	Selected growth investments both organic and M&A

*Creep and recycling with high profitability

Hydro's roadmap to targeted profitability



Price assumptions 2021: spot 1800 USD/t, forward 1850 USD/t, CRU 2000 USD/t
 Price assumptions 2023: spot 1800 USD/t, forward 1950 USD/t, CRU 2150 USD/t
 1) PAX adjusted from actual realized 472 USD/t to 330 USD/t, LME adjusted from 2140 USD/t to 1900 USD/t as a basis for the improvement program
 2) Improvement potential of 7.3 BNOK includes 6.4 BNOK in improvement ambitions and 0.9 BNOK in Rolled Products potential
 Detailed assumptions and sources behind the scenarios can be found in the Additional information
 Sources: Republished under license from CRU International Ltd., LME, Hydro analysis



Driving sustainability

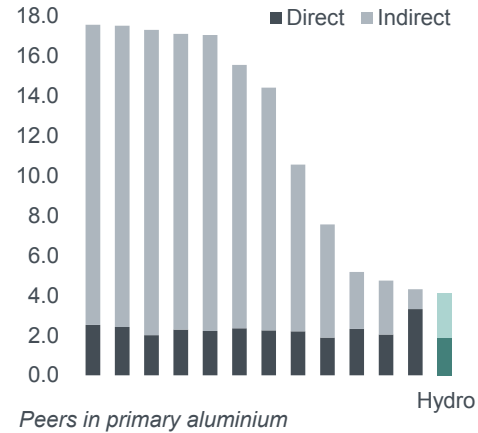
Hydro has a strong starting point

The Hydro Way – a more viable society



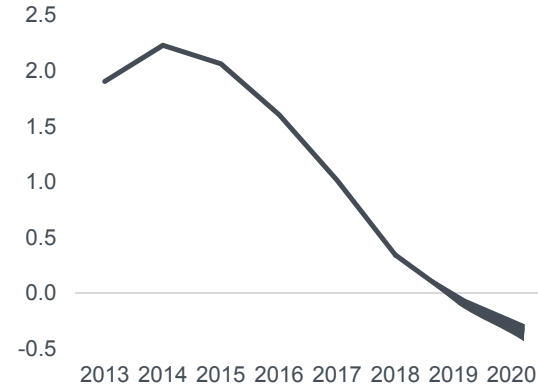
Lowest CO₂ emissions

Emissions from electrolysis,
in tonne CO₂/t Al, 2019



Net carbon-neutral from a life-cycle perspective by 2020

Net emissions (life-cycle)
Million mt

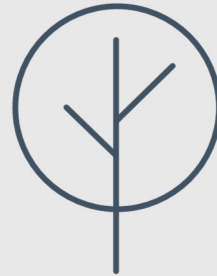


Sustainability: basis for our future positioning

Social responsibility



Environment



Climate



Sustainability in the marketplace: greener products portfolio

Building trust in local communities

Becoming a better neighbor in Brazil



Improving dialog through community meetings in Pára



Targeted activities where we have operations



Our global social responsibility ambition: Empowering 500,000 people with education and skills by end of 2030



Tackling the industry's key environmental challenges across the value chain

- Restoring **biodiversity** at our bauxite mine
- Exploring more sustainable **tailings** management practices
- Turning **bauxite residue** into a resource
- Recovering our historical **bauxite residue** storage areas
- Improving the **recycling** of our key waste streams
- Strengthening our resilience to **water** related risks
- Reducing our key **emissions** to air



Targets and ambitions

1 to 1 rehabilitation of available areas

Utilise 10% of bauxite residue generated (from 2030)

*50% reduction in key non-GHG air emissions by 2030**

* SO_x, NO_x and PM (2017 baseline)

New climate strategy: Cut CO₂ emissions by 30% by 2030



Reduce own emissions



Help customers
reduce their emissions

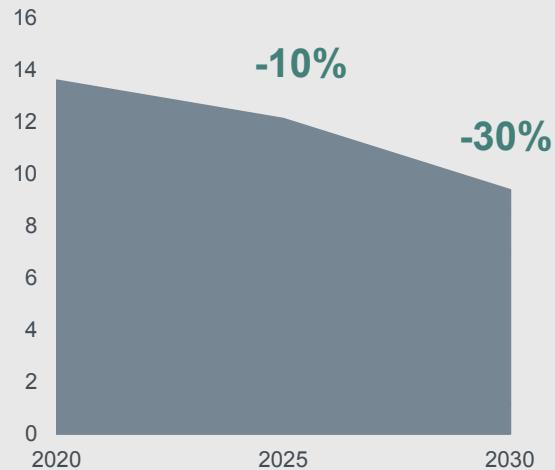


Climate roadmap towards 2030 and beyond

Innovation and technology development key enablers toward CO₂-free processes

Ambition to reduce own emissions by 10% in 2025, 30% by 2030

Total own emissions in million mt CO₂E



**Greener energy mix at Alunorte:
Key enabler for new climate
and environment ambitions**



**R&D for low or zero-carbon
technology towards 2050**

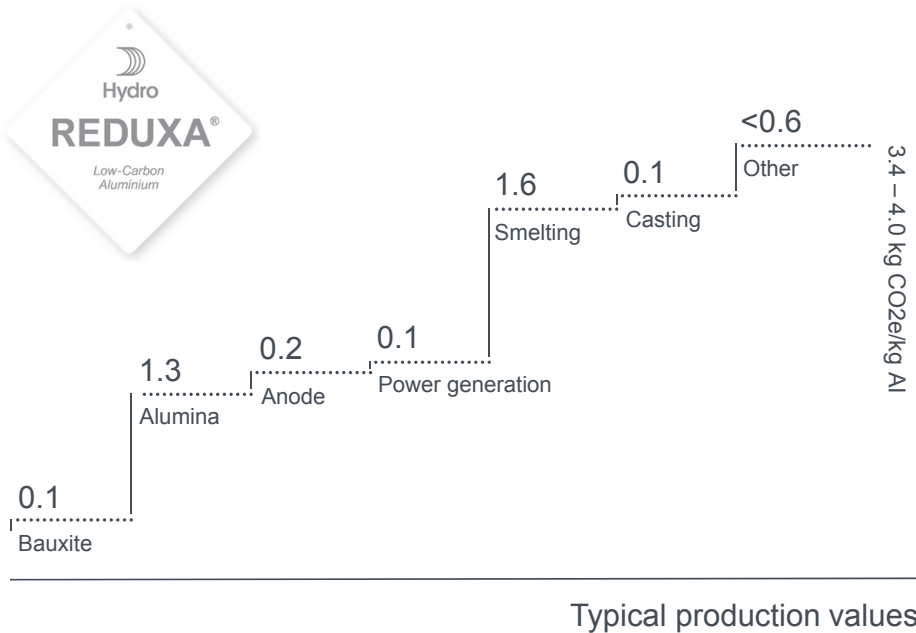
Exploring different paths

- Carbon Capture
- Biomass anodes
- Carbon-free process

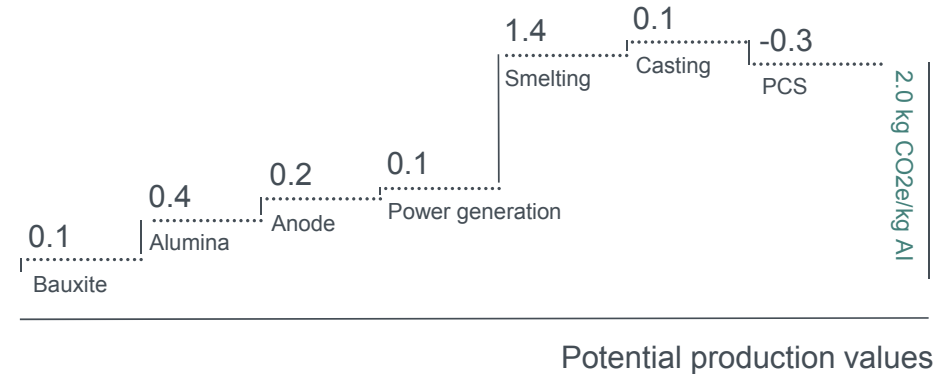
Greener products: From REDUXA 4.0 to 2.0

New energy mix in Alunorte important enabler to reach 2.0

From REDUXA 4.0



Towards REDUXA 2.0 by 2030

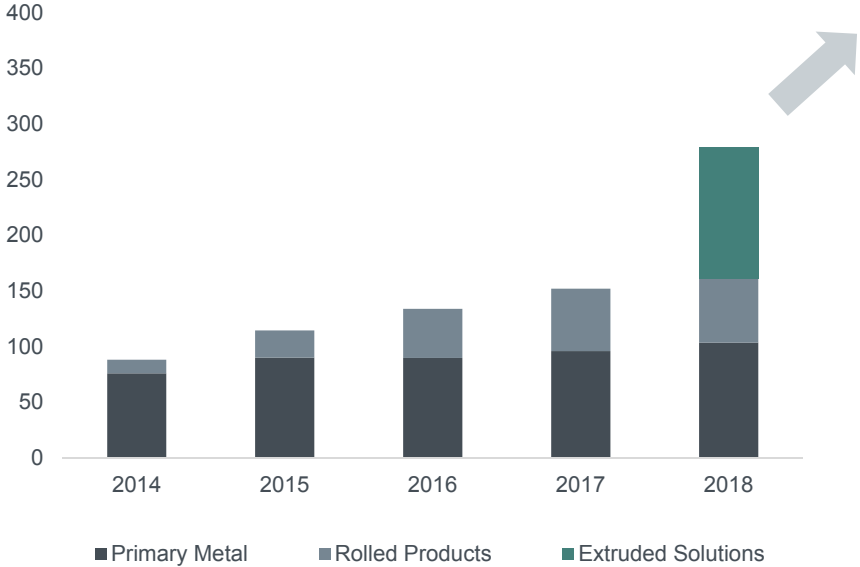


Growing in recycling – expanding CIRCAL portfolio

Competence, technology,
integrated value chain

Recycled post-consumer scrap 2014-2018*

In '000 mt



* Total post-consumer scrap – only a certain amount currently utilized in the CIRCAL product





Økern Portal

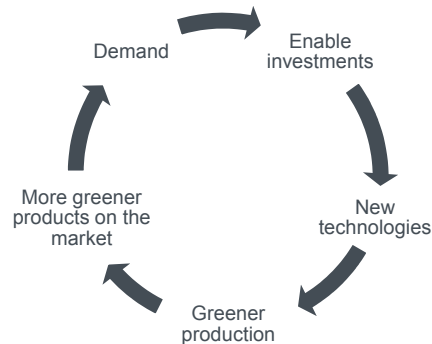
Expanding the market for greener products

1. Educate ourselves and society: What are “greener materials and products”

- Lifecycle emission perspective
- Low-emission primary material
- Post-consumer recycled material
- Design for recycling
- Incentivize recycling

2. Invest in greener production

3. Differentiate and market greener products



Removable
Product Sticker
Reduced info





Strategic priorities

We believe in aluminium

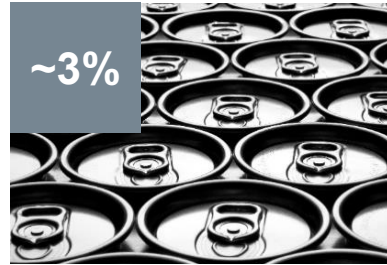
Demand growth across main segments and regions

Solid demand growth across main segments

Transport



Packaging



Buildings and construction

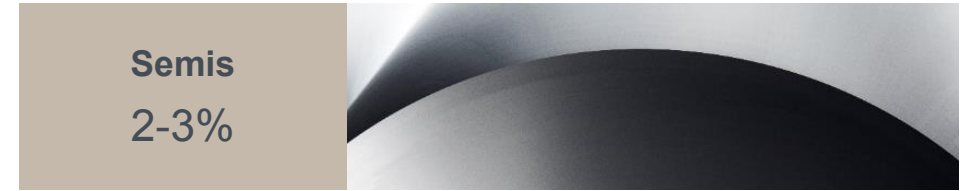


Electrical, consumer durables & industrial



Semis demand growth in segment, CAGR 2018-23

Global demand increasingly supplied by recycled material



Demand growth, CAGR 2018-23

Source: CRU, IAI, Hydro

* Includes both post consumer and fabricated scrap

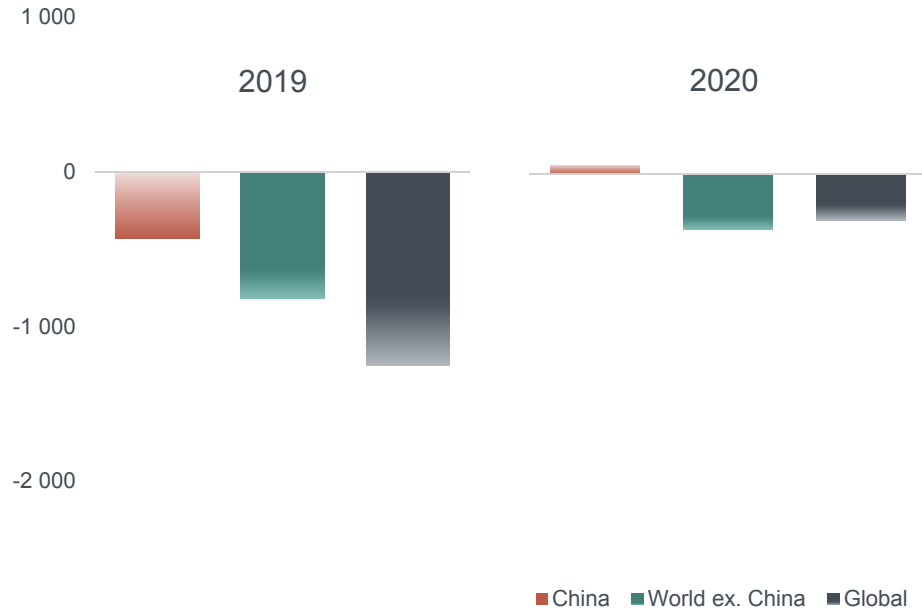
Demand expectations down on increased uncertainty



Global primary aluminium market moving towards a balanced 2020

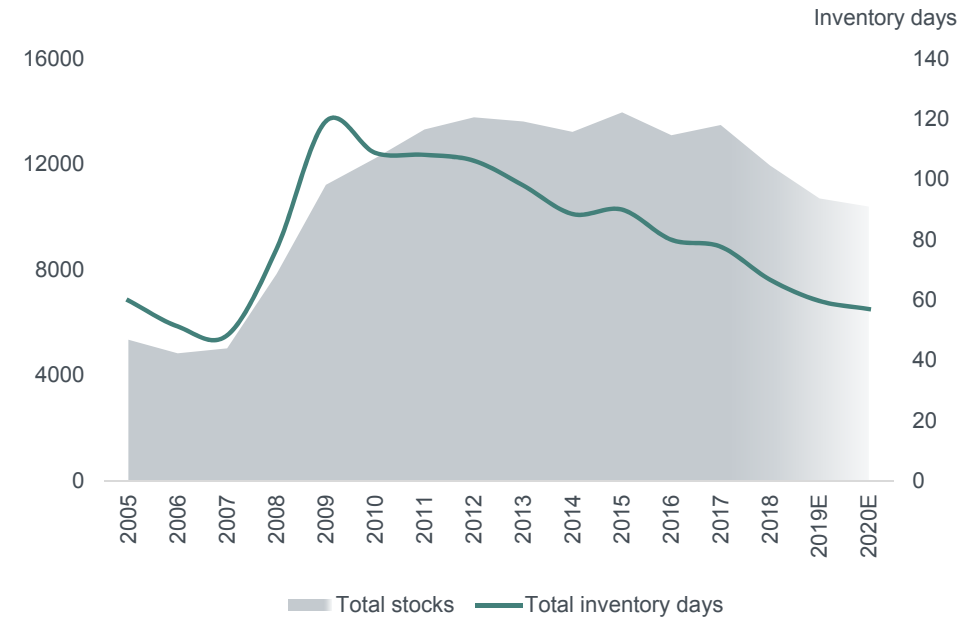
Market balance

Estimated primary market balance, in thousand mt



Inventory levels

Global reported and unreported, in thousand mt



Strategic priorities

1 Cost competitive asset base based on operational excellence and innovation

- Safety, compliance and operational excellence
- 1st and 2nd quartile cost in B&A and PM
- Secure competitive power and raw materials

2 Strong market positions capitalizing on innovation

- Deliver innovative solutions, build on strong customer collaboration
- Grow in Automotive and e-mobility-solutions
- Further explore substitution potential

3 Differentiate on sustainable footprint, products and processes

- Source renewable based power
- Innovation driving expanded product offering of CIRCAL and REDUXA
- Increase recycling

Strategic objectives

Driving long-term shareholder value



- More stable earnings profile
- Less exposed to China
- More downstream customer base
- 10% return target over the cycle



- Sustainable value chain with lower footprint will reduce risk
- Differentiate through sustainable products, developing greener products for the future
- 30% reduction in CO₂ emissions

Strategic priorities • Portfolio management • Capital allocation



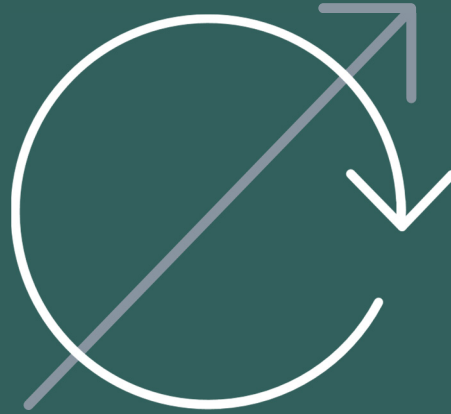
Profitability

ROACE > 10%



Sustainability

CO₂ - 30%



**Lifting profitability,
driving sustainability**



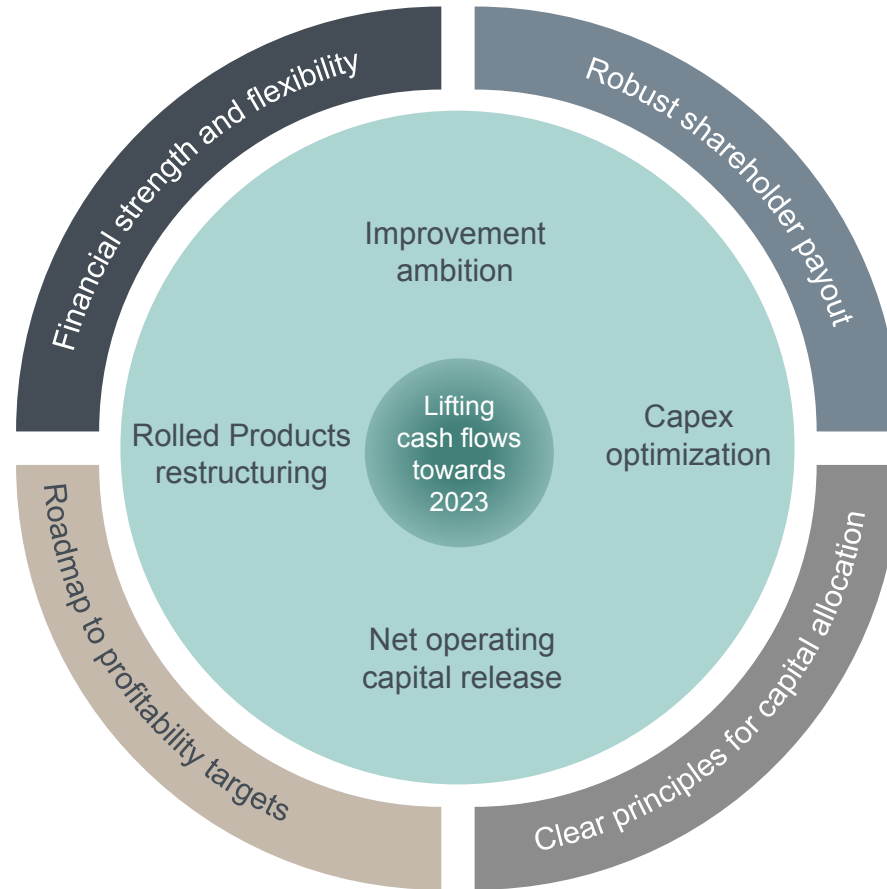
Financial priorities Lifting cash flows and returns

Investor Day – Oslo, September 24, 2019

Pål Kildemo
EVP and CFO

Driving long-term shareholder value

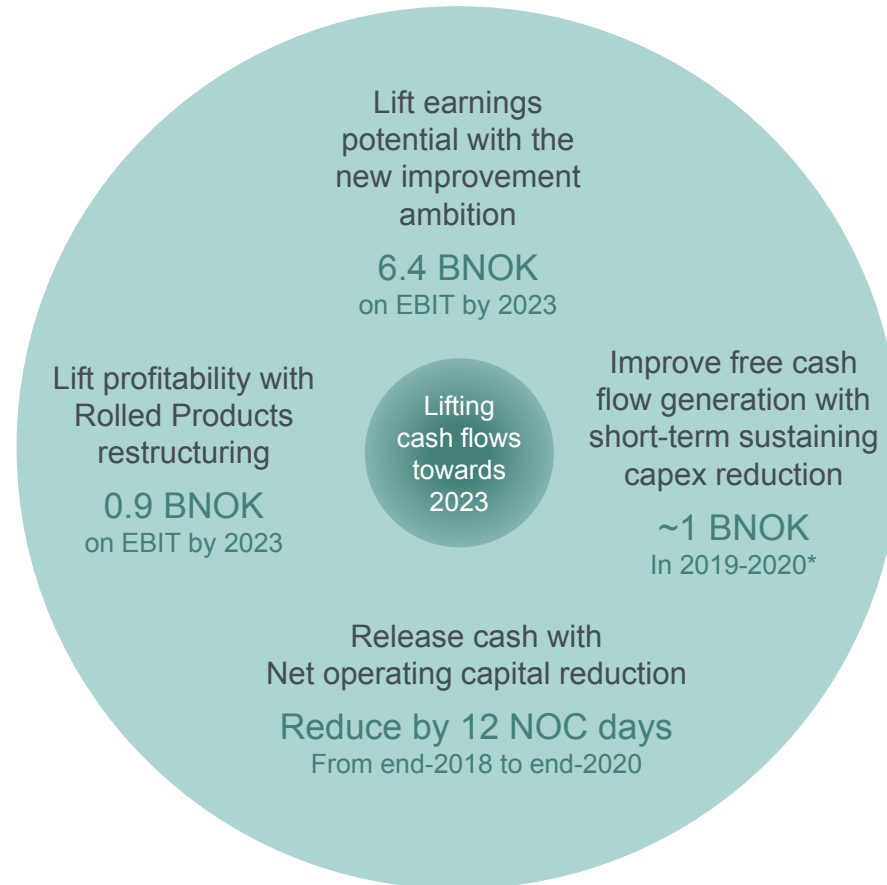
Lifting cash flows and returns





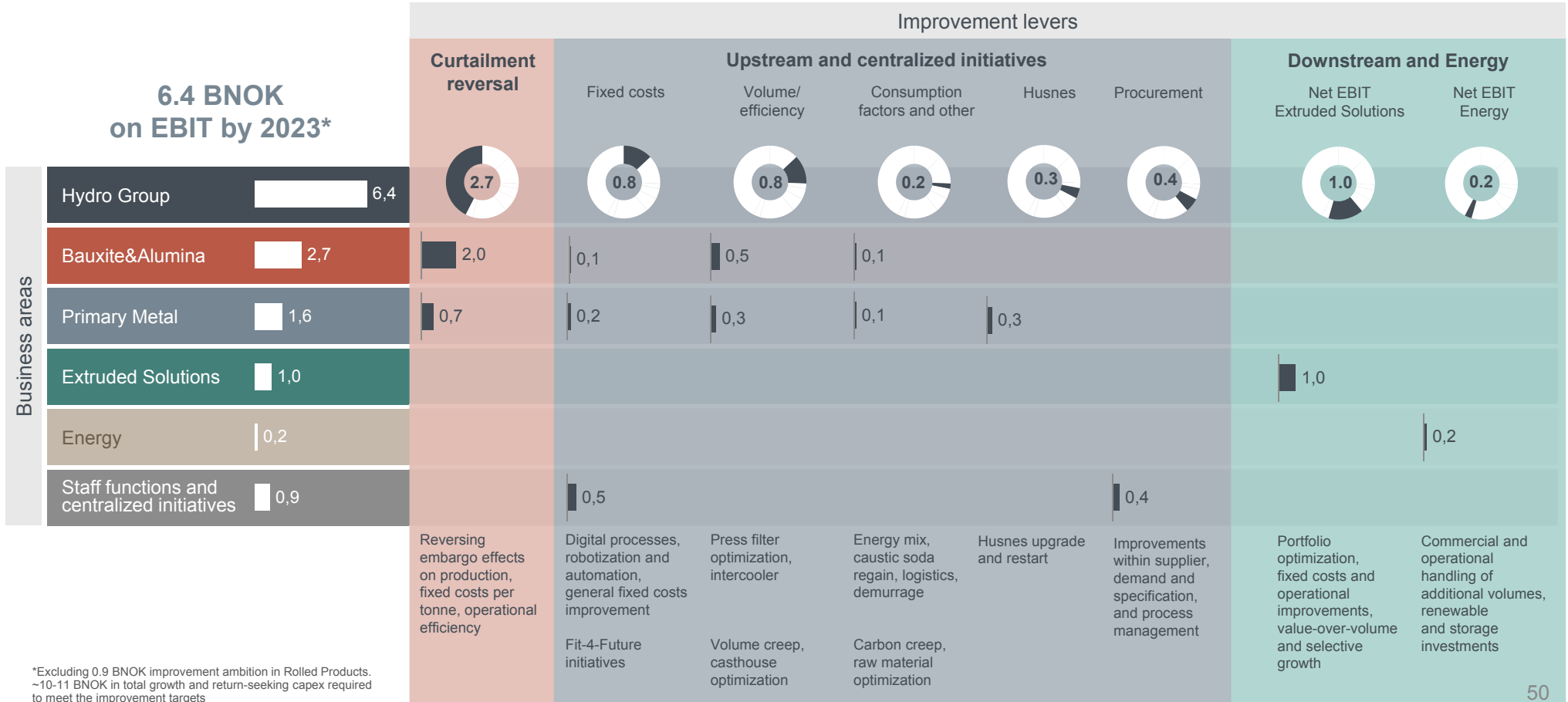
Lifting cash flows

Several initiatives to strengthen performance



Revitalizing the improvement drive

Targeted improvements to deliver ambitious potential

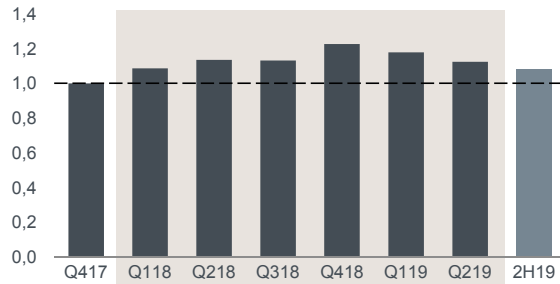


*Excluding 0.9 BNOK improvement ambition in Rolled Products. ~10-11 BNOK in total growth and return-seeking capex required to meet the improvement targets

Upstream costs returning to the pre-curtailment levels

Fixed costs expected to be back at around Q4-17 levels with full production

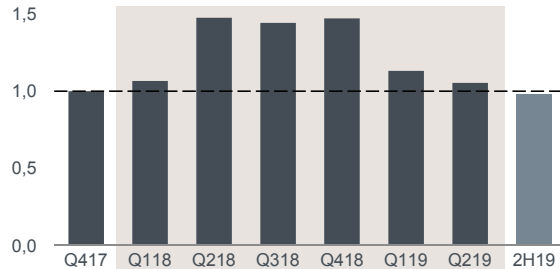
Alunorte cash cost development, USD/t indexed to Q4 2017



2H19 above Q417 levels

- Negative volume effects vs record high production levels in Q417
- Lower caustic and coal costs, but higher fuel oil costs
- Fixed costs inflation, but positive currency effects. Higher fixed costs in the ramp-up phase

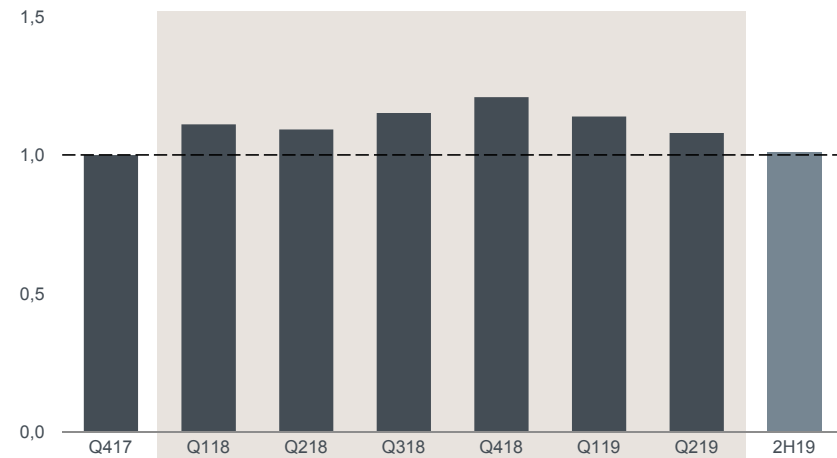
Paragominas cash cost development, USD/t indexed to Q4 2017



2H19 slightly below Q417 levels

- Positive currency effects
- Fixed costs inflation and negative volume effects

Primary Metal Business operating cost (BOC) development USD/t indexed to Q4 2017



2H19 at a similar level as Q417

- Similar raw material costs level
- Fixed costs inflation, but positive currency effects
- Minor operational inefficiencies in the ramp-up phase

2H19 based on the estimated realized raw material and fixed costs and volumes for Bauxite&Alumina and Primary Metal. Implied costs (not shown here) are affected by a number of other factors impacting EBITDA.

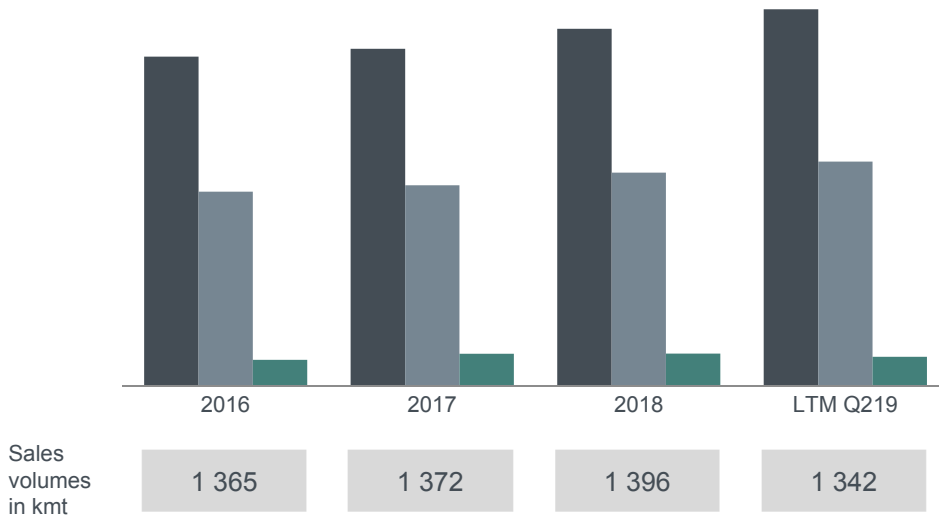
Alunorte under 50% production embargo with subsequent 50% curtailments of Paragominas and Albras (March/April 2018 to May 2019)

Portfolio optimization and increased focus on costs in Extruded Solutions

Delivering value added to our customers *at a reasonable cost* - Net added value (NAV) replaced with Direct contribution (DC)

NOK per kg

■ NAV/kg ■ DC/kg ■ UEBIT/kg



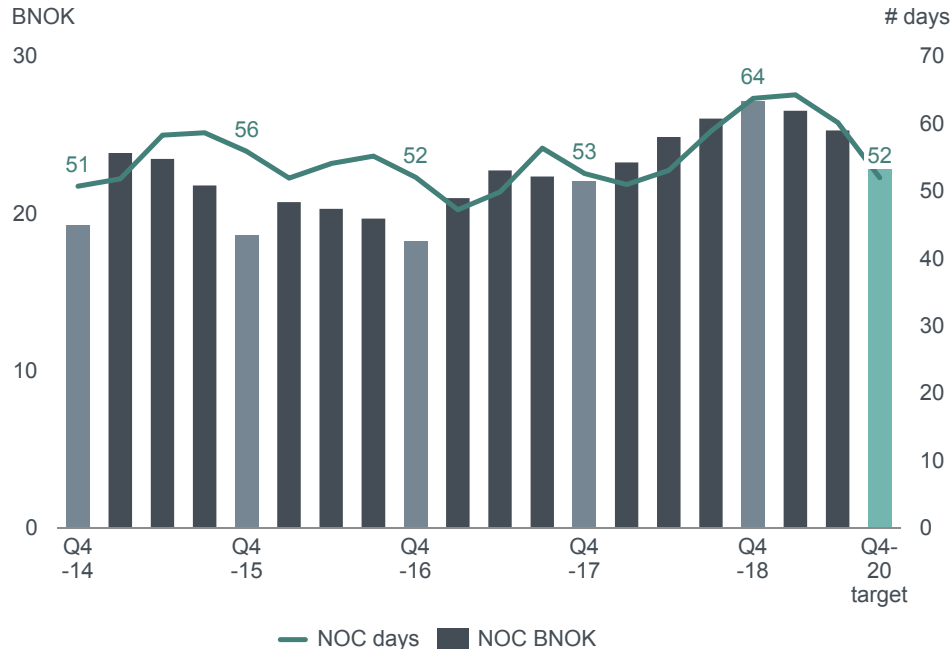
Continuous portfolio review aiming to optimize and streamline footprint, reduce costs

- Several restructuring efforts in Europe – addressing softening demand in several markets
 - Full closures: Pinto (Spain), Redditch (UK), Rotherham (UK), Wakefield warehouse (UK), Lodz warehouse (Poland), Dusseldorf office (Germany)
 - Divestments: Chisineu Cris (Romania)
 - Demanning: Administrative cost reduction project
- Full closures in North America: Belton (South Carolina), Kalamazoo (Michigan)
- Business largely transferred to other sites
- Exploring additional restructuring and cost reduction initiatives
- So far, restructuring and impairment cost of MNOK 228 booked in Q219 (items excluded)

Net added value (NAV) calculated as operating revenues less cost of material, including freight costs out
 Direct contribution (DC) calculated as NAV less process variable costs and direct labour costs

Releasing NOC built in 2018 on the back of the Alunorte situation, market and macro uncertainty

Net operating capital development



Key issues resulting in NOC build in 2018

- Alunorte embargo led to increased alumina inventory levels at higher alumina price
- Market uncertainty (Section 232; Rusal sanctions) led to higher metal inventory levels and changes in supplier mix/credit terms

Target

- 52 NOC days by end-2020
- Equivalent to ~4 BNOK in NOC release vs end-2018
- Most of the release expected in 2019

Key initiatives behind NOC release

- Focus on reducing inventory levels across all business areas
- Optimizing material flow from raw materials to finished goods
- Benchmarking tools and regular follow-up procedures established
- Tight collaboration between sales and metal purchasing

Key risks

- Macro development
- Operational performance

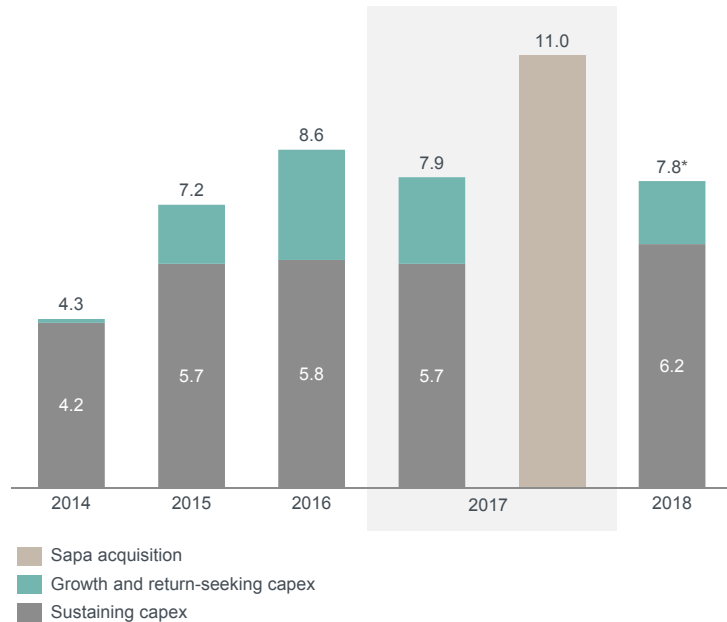
NOC-days definition: Average OB+CB NOC book value quarter / Revenue quarter * days in quarter
 Chart shows NOC book value end of quarter
 Including Sapa NOC prior to Q417, fully consolidated from Q417

Reducing short-term sustaining capex by ~1 BNOK



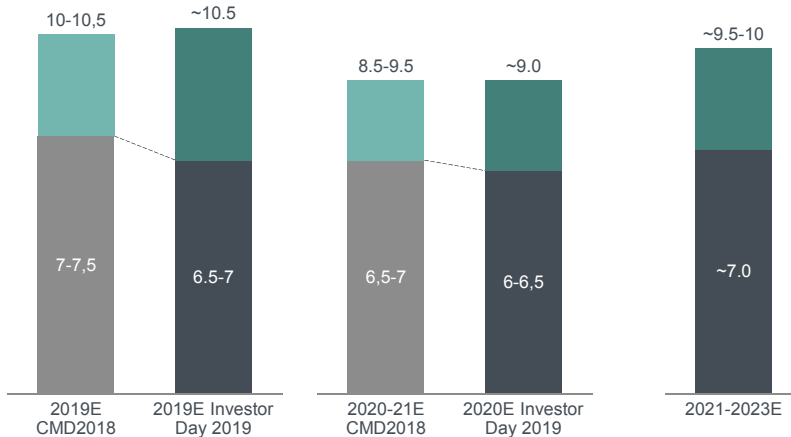
Project pipeline to be based on updated capital allocation framework and strategic priorities

Historical capex, BNOK



Updated capex guidance vs CMD 2018, BNOK

Short-term sustaining capex reduction of ~1 BNOK in 2019-2020 driven by optimization and initiatives to reduce sustaining capex spend



Longer-term capex

Main sustaining projects

- Alunorte robustness
- Pipeline replacement in B&A
- Smelter relining and asset integrity in PM
- Paragominas new mine area (from 2022)

Main growth and return-seeking projects

- Husnes restart and upgrade
- Automation, process control and efficiency in PM
- Selected customer-driven growth in ES
- Energy wind and battery storage
- Fuel switch project in B&A

Capex including Extruded Solutions

*Excluding the Pis/Cofins adjustments in Brazil in 2018. Including the adjustment, 2018 capex amounted to BNOK 7.0

Growth and return-seeking capex guidance only includes capex necessary for delivering on targeted improvement ambitions



Lifting returns

Long-term financial priorities

Financial strength and flexibility

- Maintain investment grade credit rating
 - Currently BBB (S&P), Baa2 (Moody's*)
- Balance sheet ratio targets over the cycle:
 - Funds from operations to adjusted net debt > 40%
 - Adjusted net debt to equity < 55%
- Strong liquidity

Roadmap to profitability targets

- URoaCE > 10% over the cycle for Hydro group
- URoaCE > CoC for business areas over the cycle
- Differentiated return requirements by and within business areas



Robust shareholder payout

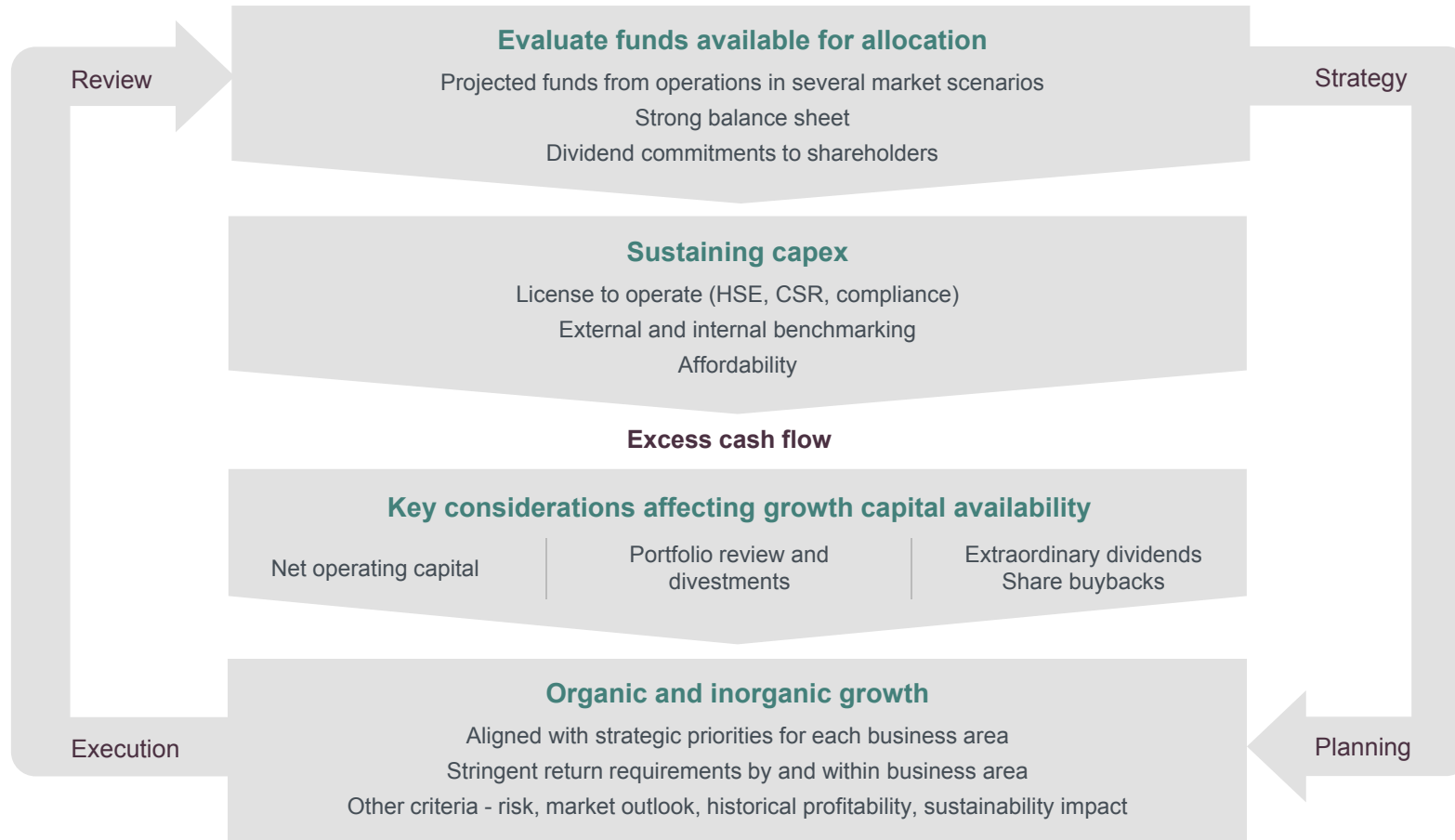
- 40% payout ratio of Net Income over the cycle
- Dividend floor of 1.25 NOK/share
- Supplementary share buybacks or extraordinary dividends

Clear principles for capital allocation

- Capital allocation in line with strategic priorities and return requirements by business area
- Competitive and affordable sustaining capex
- Strict prioritization, continuous review and reallocation

*Moody's revised Hydro's credit rating outlook from stable to negative on March 28, 2019

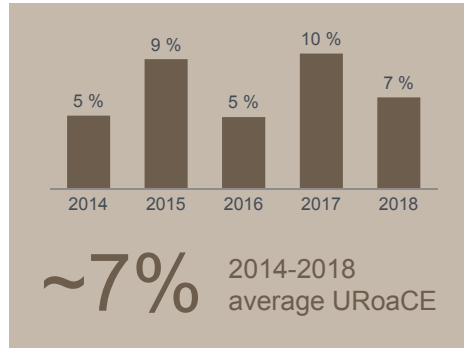
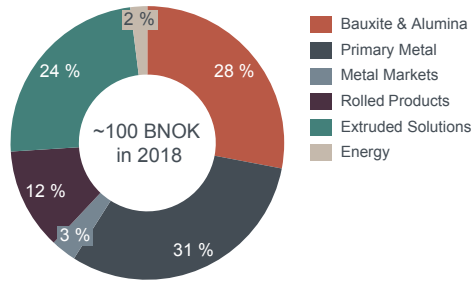
Clear principles for capital allocation



Capital return dashboard for Hydro

Hydro targets URoaCE above 10% over the cycle

Capital employed¹⁾

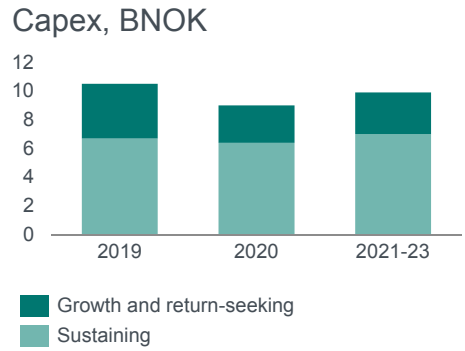


10%
URoaCE target over the cycle

9%
Nominal long-term cost of capital

**6.4 + 0.9
BNOK***
on EBIT by 2023 in improvement potential

12 NOC days reduction
From end-2018 to end-2020



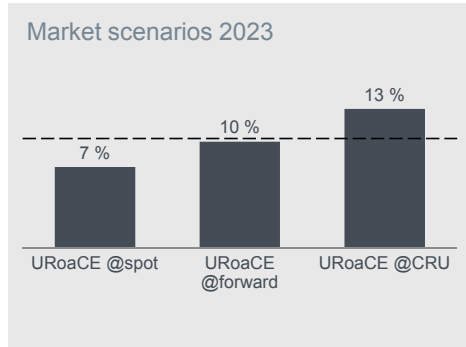
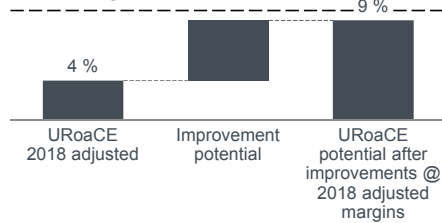
1) Graph excludes (8.2) BNOK in capital employed in Other & Elimination
*6.4 BNOK in improvement ambitions, 0,9 BNOK in Rolled Products restructuring

Hydro roadmap to profitability

Main drivers – improvement measures and market support

URoACE potential

>10% target



Main further upside drivers

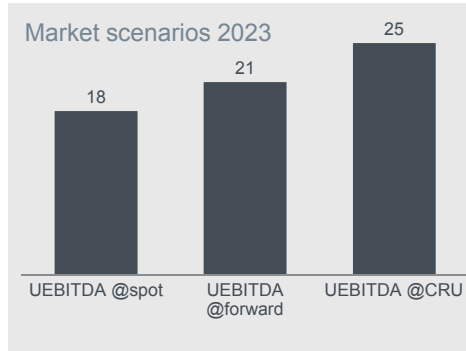
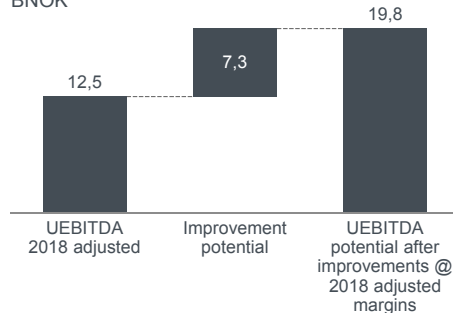
- Technology and digitization
- Sustainability differentiation and premium
- Portfolio optimization
- High-return growth projects
- Positive market and macro developments

Main downside risks

- Negative market and macro developments, incl. trade
- Operational disruptions
- Project execution and performance
- Deteriorating relative positions
- Regulatory frameworks, CSR and compliance

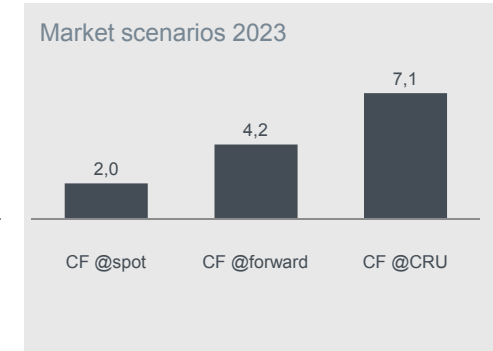
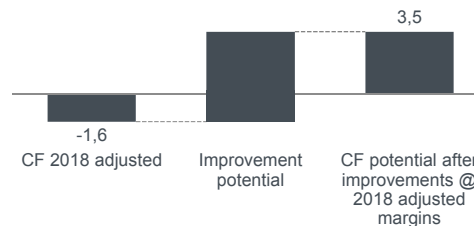
UEBITDA potential

BNOK



Cash flow potential after capex, tax and dividend floor

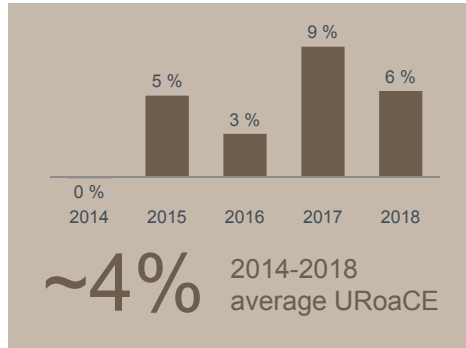
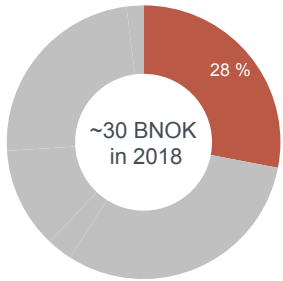
BNOK



Capital return dashboard for Bauxite & Alumina

Returns below the cost of capital reflecting challenging markets, embargo and operational issues during the early years

Capital employed in B&A

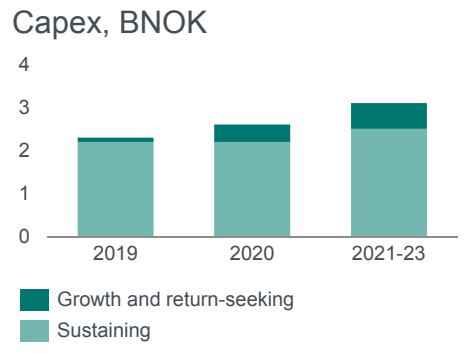


URoACE > CoC

10-11%
Nominal long-term cost of capital

2.7 BNOK
on EBIT by 2023 in improvement potential

- Key initiatives to reduce NOC
- Reduction in commercial stocks
 - Reduction in caustic soda price and alumina inventories
 - Reduction in Paragominas inventories

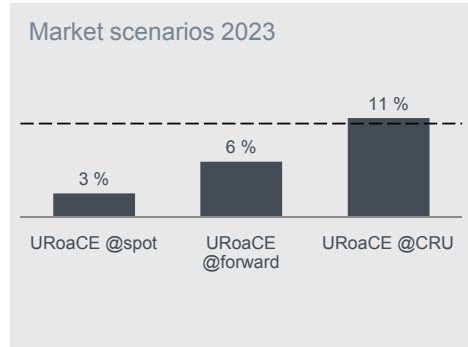
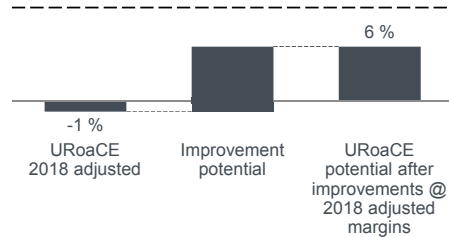


Bauxite & Alumina roadmap to profitability

Main drivers – production and raw material optimization, market support

URoACE potential

10-11% nominal CoC



Main further upside drivers

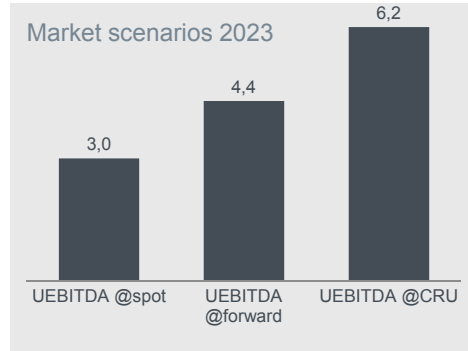
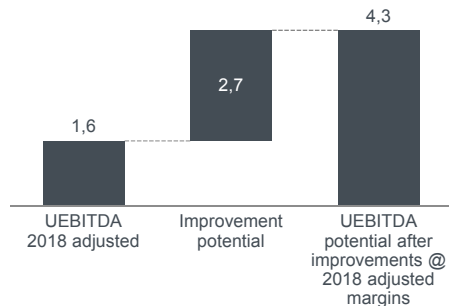
- Faster ramp-up and additional operational improvements
- Fuel switch project
- Commercial performance, incl. shift from LME to PAX contracts
- Fleet optimization at the mine
- Sustaining capex optimization
- Positive market and macro developments

Main downside risks

- Negative market and macro developments
- Operational disruptions and project execution, incl. press filter ramp-up
- Regulatory and country risk
- Opening of new mining areas requiring large investments

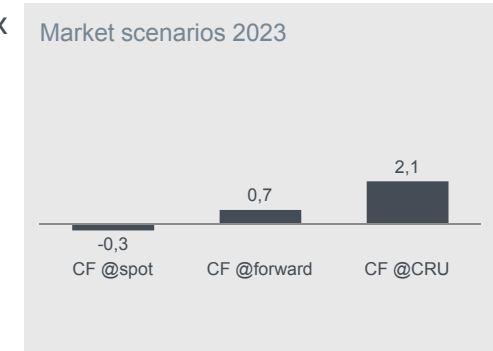
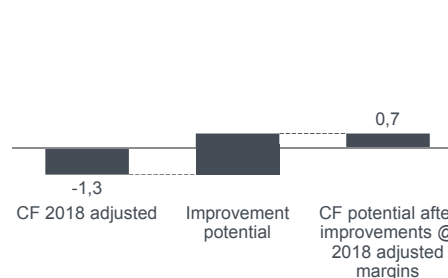
UEBITDA potential

BNOK



Cash flow potential after capex, tax

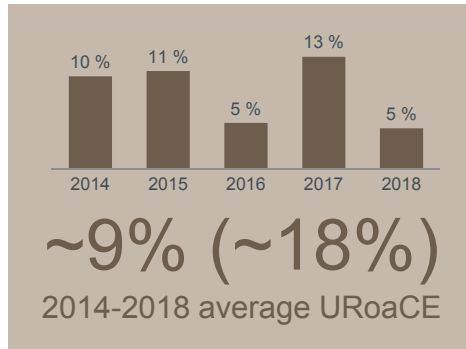
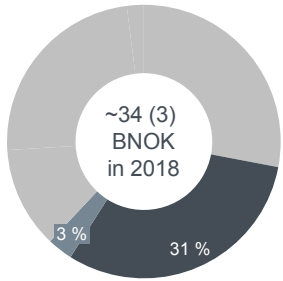
BNOK



Capital return dashboard for Primary Metal & Metal Markets

Returns below the cost of capital mainly reflecting challenging markets and the Alunorte situation. Good returns in recycling

Capital employed in PM (MM)



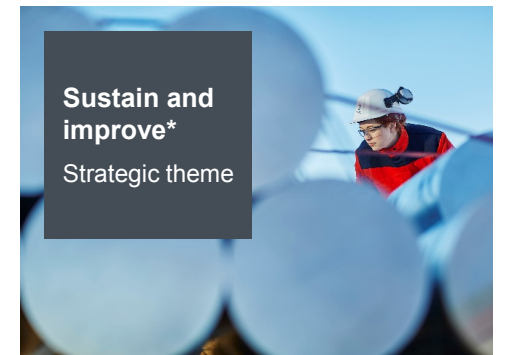
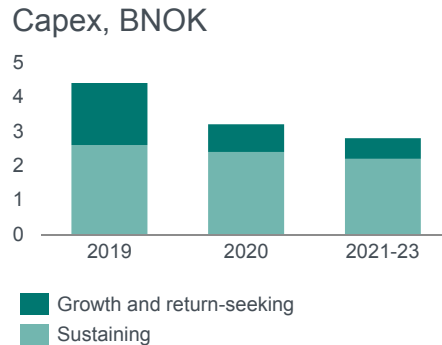
URoaCE > CoC

10%-11%
(7-8%)
Nominal long-term
cost of capital

1.6 BNOK
on EBIT by 2023 in
improvement potential

Key initiatives to
reduce NOC

- Reduction in alumina and ingot inventories (safety stocks)



* Creep and recycling with high profitability

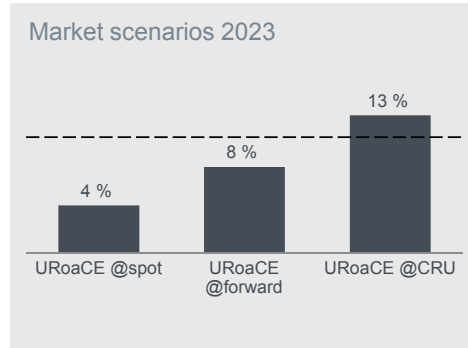
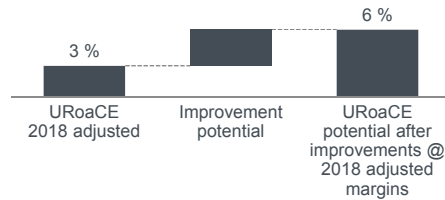
Primary Metal and Metal Markets roadmap to profitability



Main drivers – efficiency gains from Industry 4.0 and production creep, market support

URoaCE potential

10-11% nominal CoC



Main further upside drivers

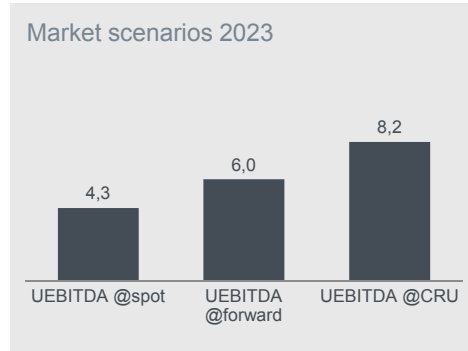
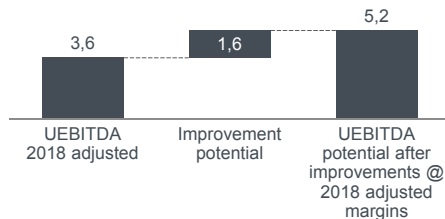
- Commercial differentiation, incl. greener brands
- Recycling opportunities
- Portfolio optimization
- Further potential in automation, process control and efficiency, operational excellence
- Positive market and macro developments

Main downside risks

- Negative market and macro developments
- Deteriorating relative cost and market positions
- Operational disruptions and project execution
- Regulatory and country risks, incl. tax

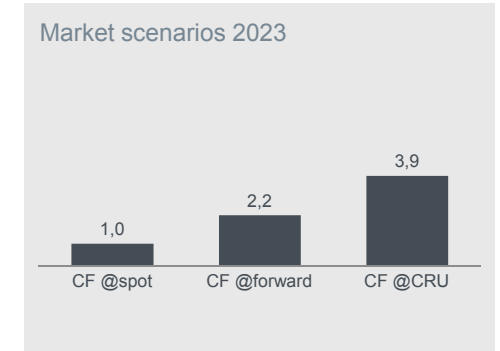
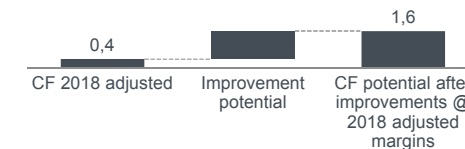
UEBITDA potential

BNOK



Cash flow potential after capex, tax

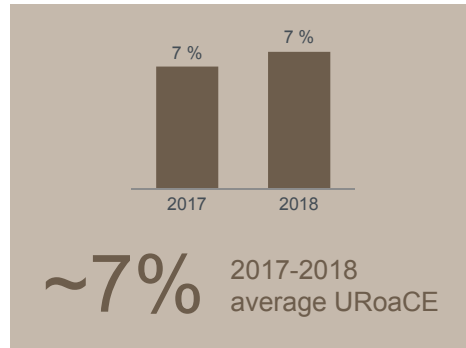
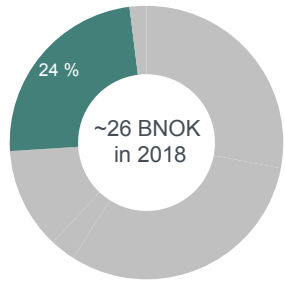
BNOK



Capital return dashboard for Extruded Solutions

Returns in line with the cost of capital reflecting leading market positions and value-over-volume strategy

Capital employed in ES



URoaCE > CoC

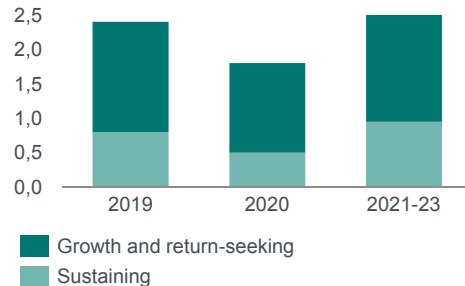
7-8%
Nominal long-term cost of capital

1.0 BNOK
on EBIT by 2023 in improvement potential

Key initiatives to reduce NOC

- Reduction in safety billet stocks

Capex, BNOK

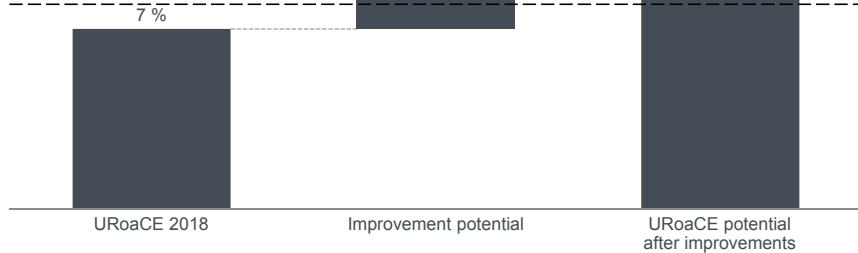


Extruded Solutions roadmap to profitability

Main drivers – portfolio and cost optimization, value-over-volume strategy and selective growth

URoACE potential

7-8% nominal CoC



Main further upside drivers

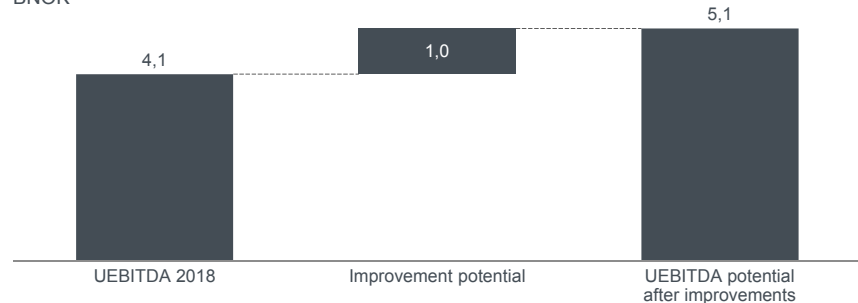
- Continued value-over-volume strategy
- Selective profitable growth incl. larger projects
- Continuous portfolio review and optimization
- Operating and fixed cost optimization
- Positive market and macro developments

Main downside risks

- Negative market and macro developments
- Operational disruptions and project execution
- Inability to meet customer expectations

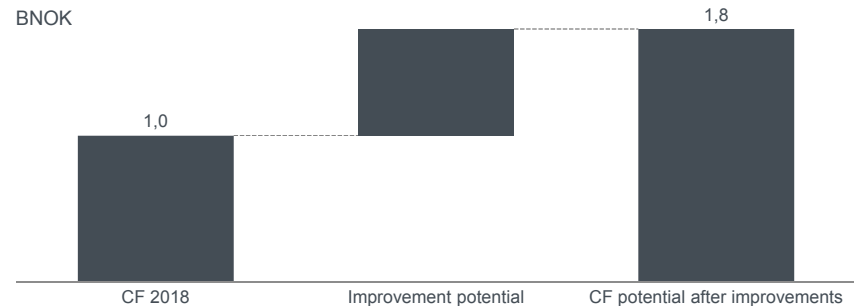
UEBITDA potential

BNOK



Cash flow potential after capex and tax

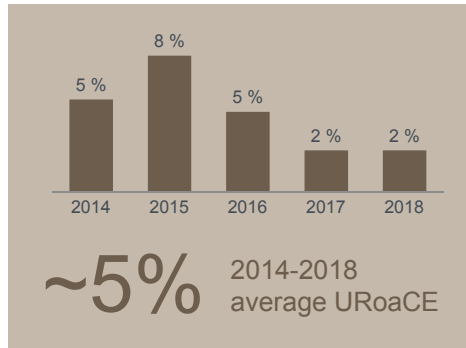
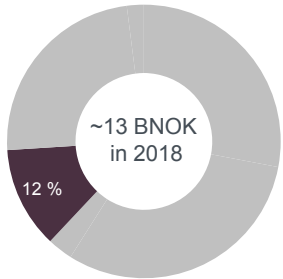
BNOK



Capital return dashboard for Rolled Products

Returns below the cost of capital due to continuous margin pressure and operational challenges

Capital employed in RP

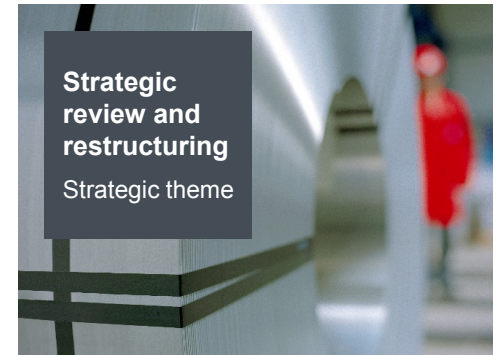
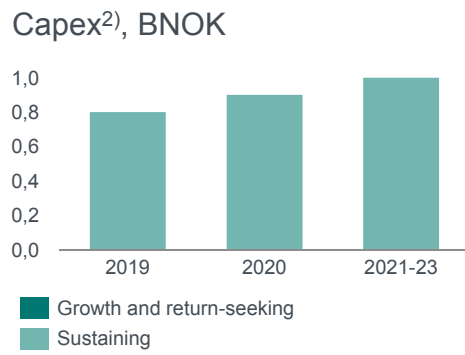


URoACE > CoC

7-8%
Nominal long-term cost of capital¹⁾

0.9 BNOK
on EBIT by 2023 in improvement potential

0.9 BNOK
in NOC release from 2018 to 2021
Optimize material flow from raw materials to finished goods

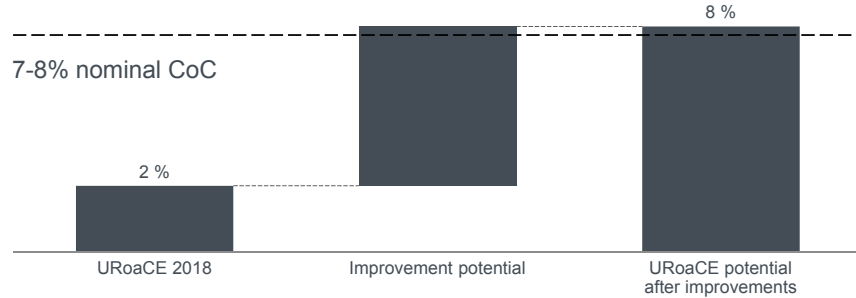


1) Relevant for the rolling business. CoC for the Neuss smelter in line with 10-11% for the upstream business
2) Excluding limited capital expenditures related to the manning reduction.

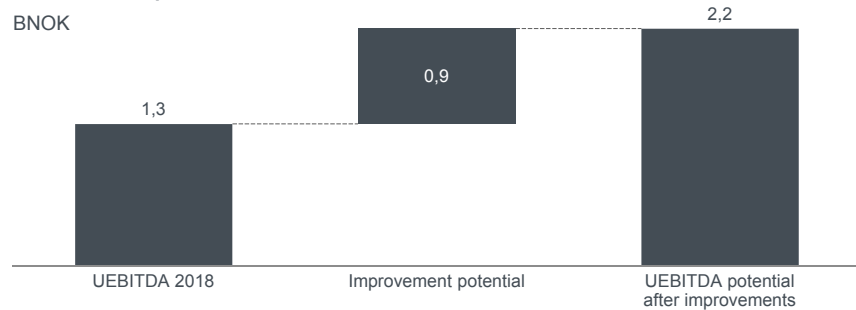
Rolled Products roadmap to profitability

Main drivers – restructuring focused on cost and efficiency improvements

URoACE potential



UEBITDA potential



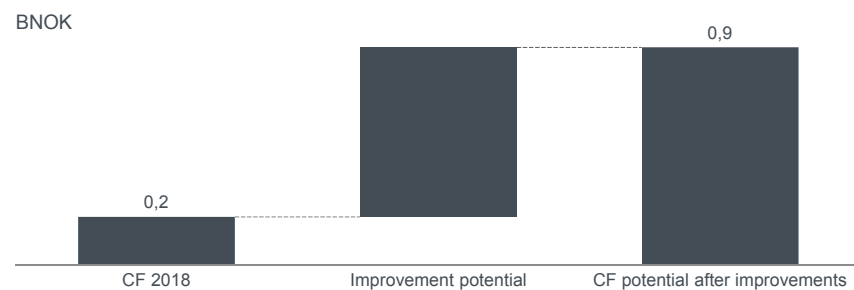
Main further upside drivers

- Growth in attractive market segments or recycling
- Process improvements with digitization and automation
- Potential next steps in the strategic review
- Positive market and macro developments

Main downside risks

- Restructuring execution
- Negative market and macro developments
- Intensifying competition
- Operational disruptions and performance

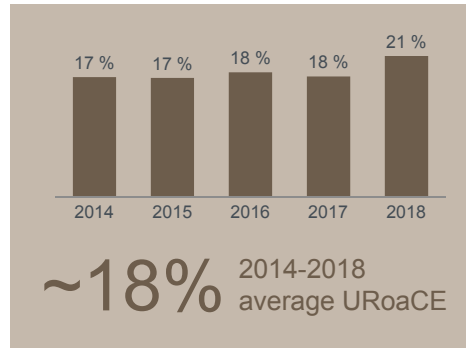
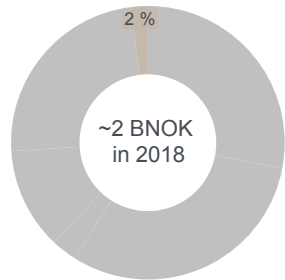
Cash flow potential after capex and tax



Capital return dashboard for Energy

Returns significantly above the cost of capital reflecting the depreciated asset base

Capital employed in Energy



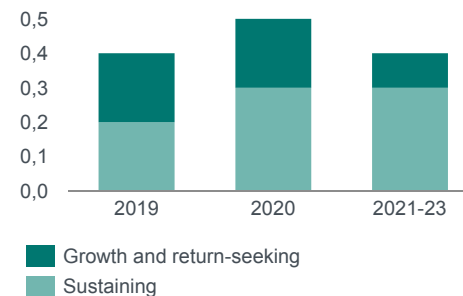
URoACE > CoC

6-7%
Nominal long-term cost of capital

0.2 BNOK
on EBIT by 2023 in improvement potential

0.7 BNOK
in EBIT upside due to the new contract portfolio from 2021

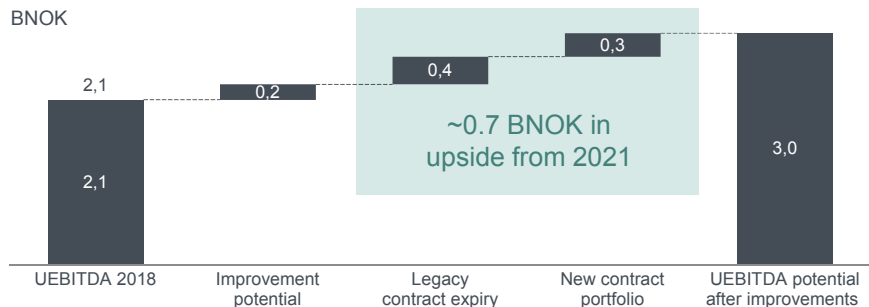
Capex, BNOK



Energy with a significant upside to cash generation

Main drivers – changes in contract portfolio from 2021 and new business potential

UEBITDA potential



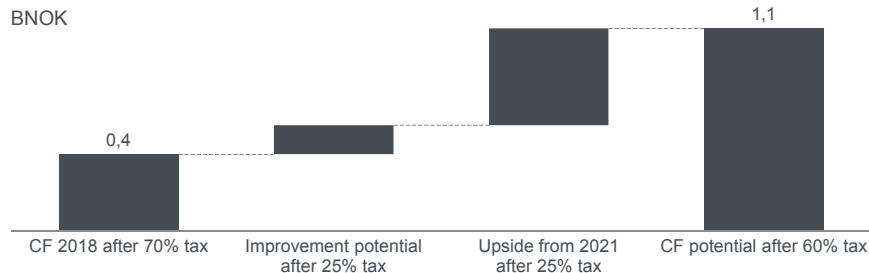
~0.7 BNOK in upside from 2021

- ~0,4 BNOK from expiry of the legacy supply contract entered in 2008
- ~0,3 BNOK due to the changes in contact portfolio, incl. a new 8TWh internal contract with Primary Metal in Norway
 - Net power sourcing cost, internal and external, to Primary Metal largely unchanged¹⁾

Main further upside drivers

- Additional growth opportunities
- Further commercial and operational improvements
- Positive market and macro developments

Cash flow potential after capex and tax²⁾



Main downside risks

- Negative market and macro developments
- Regulatory and framework conditions, incl. tax
- New project execution

Assumptions behind the scenarios can be found in the Additional information

1) The contract is priced in accordance with average external contract prices. EUR/NOK exposure in PM increases from 2021 as a result of the new contract portfolio. As such, power costs in PM will vary with the EUR/NOK exchange rate.

2) Effective tax rate for Energy is expected to decrease from around 70% in 2018 to around 60% from 2021 mainly due to positive EBIT effects not being subject to resource rent tax

Sustainability translated into profitability

Alunorte fuel switch project

Significantly lower energy costs



Karmøy technology pilot

Spin-off effects: volume creep, lower energy consumption



Recycling in Metal Markets

12% RoaCE avg. last 5 years



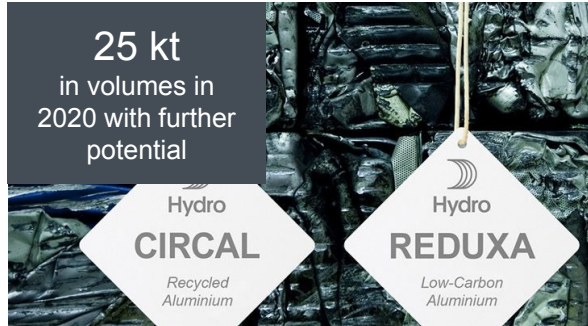
Automotive growth

~20-30% higher margins vs average portfolio¹⁾



Greener brands

25 kt in volumes in 2020 with further potential



Battery solutions - Corvus

40% CAGR in deployed battery packs (MWh) 2013-2018



1) Based on EBITDA/t margins in the Rolled Products portfolio

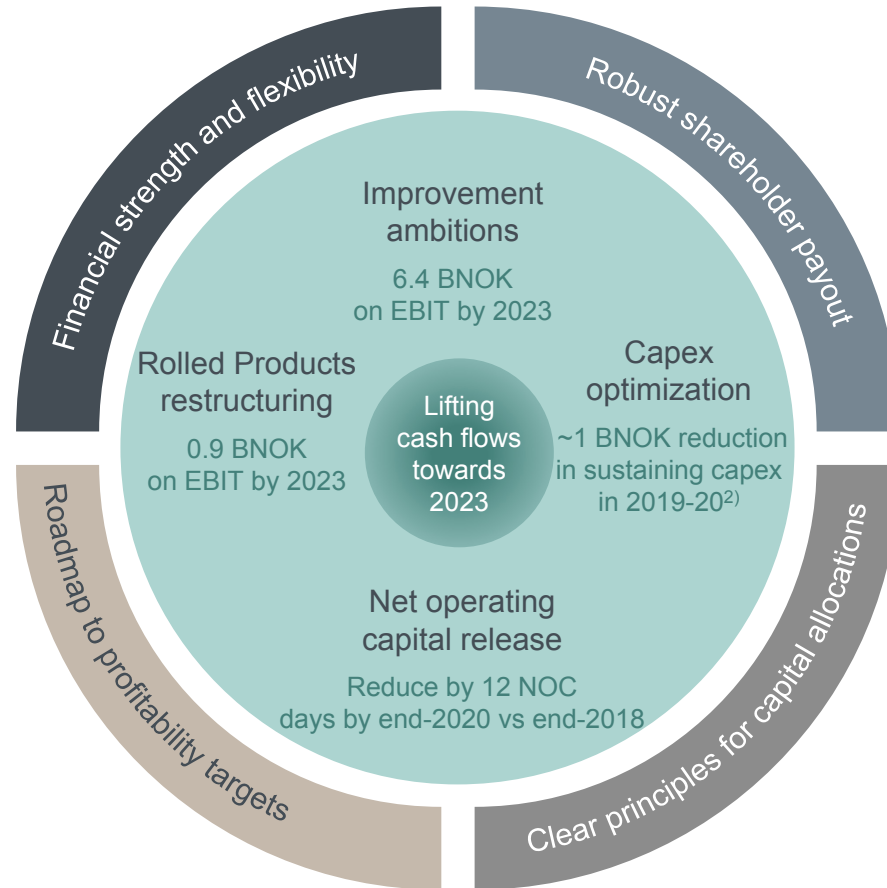
Driving long-term shareholder value

Financial strength and flexibility

- Maintain investment grade credit rating
 - Currently BBB (S&P), Baa2 (Moody's¹⁾)
- Balance sheet ratio targets over the cycle:
 - Funds from operations to adjusted net debt > 40%
 - Adjusted net debt to equity < 55%
- Strong liquidity

Roadmap to profitability targets

- URoaCE > 10% over the cycle for Hydro group
- URoaCE > CoC for business areas over the cycle
- Differentiated return requirements by and within business areas



Robust shareholder payout

- 40% payout ratio of Net Income over the cycle
- Dividend floor of 1.25 NOK/share
- Supplementary share buybacks or extraordinary dividends

Clear principles for capital allocation

- Capital allocation in line with strategic priorities and return requirements by business area
- Competitive and affordable sustaining capex
- Strict prioritization, continuous review and reallocation

1) Moody's revised Hydro's credit rating outlook from stable to negative on March 28, 2019
 2) Compared to CMD 2018

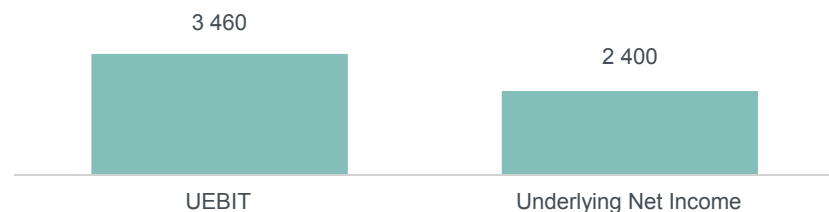


Additional information

Significant exposure to commodity and currency fluctuations

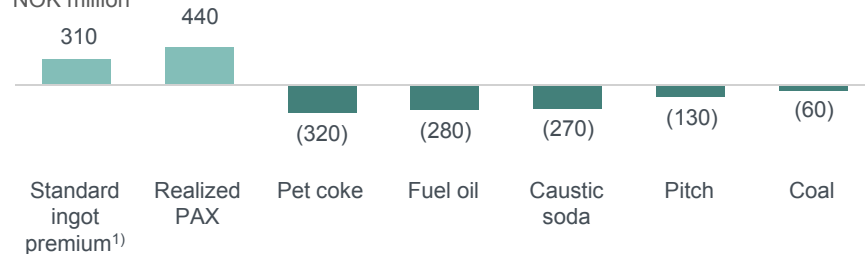
Aluminium price sensitivity +10%

NOK million



Other commodity prices, sensitivity +10%

NOK million



1) Europe duty paid

Currency sensitivities +10%

Sustainable effect:

NOK million	USD	BRL	EUR
UEBIT	3 290	(1 060)	(250)

One-off reevaluation effect:

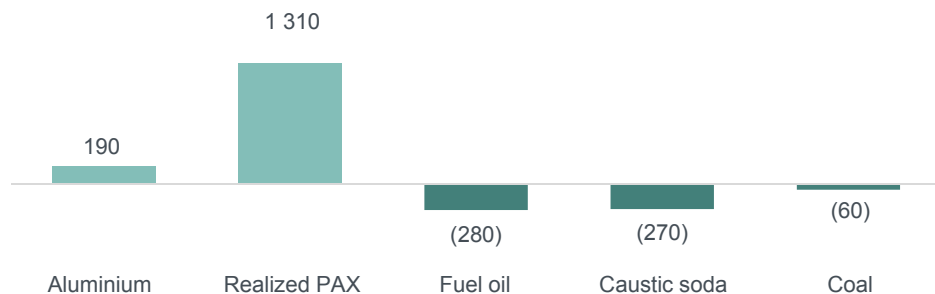
Financial items	30	750	(3 200)
-----------------	----	-----	---------

- Annual sensitivities based on normal annual business volumes (incl. 100% production at Alunorte, Paragominas and Albras) and LME USD 1 900 per mt, PAX 330 USD/t. Other prices as realized in 2018 standard ingot premium 160 USD/mt, fuel oil USD 510 per mt, petroleum coke USD 420 per mt, pitch 760 USD/t, caustic soda USD560 per mt, coal USD 85 per mt, USD/NOK 8.1, BRL/NOK 2.2, EUR/NOK 9.6
- Aluminium price sensitivity is net of aluminium price indexed costs and excluding unrealized effects related to operational hedging
- BRL sensitivity calculated on a long-term basis with fuel oil assumed in USD. In the short-term, fuel oil is BRL-denominated
- Excludes effects of priced contracts in currencies different from underlying currency exposure (transaction exposure)
- Currency sensitivity on financial items includes effects from intercompany positions
- 2018 Platts alumina index (PAX) exposure used
- U NI sensitivity calculated as U EBIT sensitivity after 30% tax

Bauxite & Alumina sensitivities

Annual sensitivities on underlying EBIT if +10% in price

NOK million



Currency sensitivities +10%

NOK million	USD	BRL	EUR
UEBIT	1 000	(720)	-

Revenue impact

- ~14% of 3-month LME price per tonne alumina with one month lag
- Realized alumina price lags PAX by one month

Cost impact

Bauxite

- ~2.45 tonnes bauxite per tonne alumina
- Pricing partly LME-linked

Caustic soda

- ~0.1 tonnes per tonne alumina
- Prices based on IHS Chemical, pricing mainly monthly per shipment

Energy

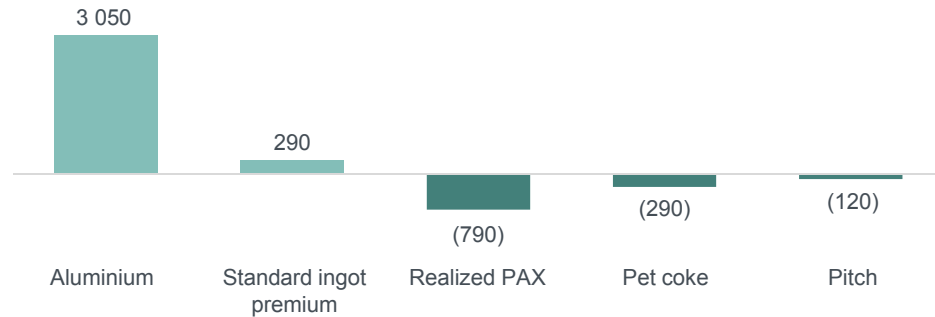
- ~0.12 tonnes coal per tonne alumina, Platts prices, one year volume contracts, weekly per shipment pricing
- ~0.11 tonnes heavy fuel oil per tonne alumina, prices set by ANP/Petrobras in Brazil, weekly pricing (ANP) or anytime (Petrobras)
- Increased use of coal as energy source in Alunorte

Primary Metal sensitivities



Annual sensitivities on underlying EBIT if +10% in price

NOK million



Currency sensitivities +10%

NOK million	USD	BRL	EUR
UEBIT	1 900	(340)	(260)

Revenue impact

- Realized price lags LME spot by ~1-2 months
- Realized premium lags market premium by ~2-3 months

Cost impact

Alumina

- ~1.9 tonnes per tonne aluminium
- ~14.5% of 3-month LME price per tonne alumina, increasing volumes priced on Platts index
- ~ 2-3 months lag

Carbon

- ~0.40 tonnes petroleum coke per tonne aluminium, Pace Jacobs Consultancy, 2-3 year volume contracts, quarterly or half yearly pricing
- ~0.08 tonnes pitch per tonne aluminium, CRU, 2-3 year volume contracts, quarterly pricing

Power

- 13.9 MWh per tonne aluminium
- Long-term power contracts with indexations

Assumptions behind scenarios

Scenarios are not forecasts, but illustrative earnings, cash flow and return potential based on sensitivities

- Starting point – UEBITDA 2018 with LME price adjusted to 2016-2018 average, PAX to 17% of LME, and excluding Albras power sales of 450 MNOK. Production, fixed costs and other raw material costs as realized in 2018
- Improvement potential in real 2018 terms, after depreciation
 - Improvement effects assumed to have the same impact on EBIT and EBITDA, excluding minor depreciation effects
- Cash flow calculated as UEBITDA less EBIT tax and 2021-2023 average capex less 1.25 NOK/share in dividend floor for the Hydro Group
 - Tax rates: 25% for business areas, 60% for Energy, 30% for the Hydro Group
- URoACE calculated as UEBIT after tax divided by Capital employed Q2-19 less 4 BNOK in NOC release for the Hydro Group.
 - 0.9 BNOK in NOC release included for Rolled Products. No NOC release included for other business areas
- The actual earnings, cash flows and returns will be affected by other factors, not included in the scenarios, including, but not limited to:
 - Production volumes, alumina sales priced on PAX, raw material prices, downstream margin developments, premiums, inflation, currency, depreciation, taxes, investments, interest expense, competitors' cost positions, and others

Price assumptions

	2018	2023		
		Spot	Forward	CRU
Starting point, USD/t	LME 2140 PAX 472 USD/NOK 8,1 BRL/NOK 2,2	1 800	2 100	2 350
Prices used in scenarios				
LME USD/t	1900 (2016-2018 average)	1 800	1 950 (deflated with 2%)	2 150 (deflated with 2%)
PAX, USD/t ~17% of LME	330	300	330	370
USD/NOK	8,1	8,1	8,1	8,1
BRL/NOK	2,2	2,2	2,2	2,2

Next event

Third quarter results October 23, 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

Notes



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We are aluminium

