

## Capital Markets Day 2024

London, United Kingdom November 27, 2024

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Capital Markets Day 2024

# Accelerating the green aluminium transition

Eivind Kallevik President & Chief Executive Officer





## #1 priority: Health and safety

HRI<sup>2)</sup> per million hours worked

12 months rolling average

#### TRI<sup>1)</sup> per million hours worked





Total Recordable Injuries includes own employees and contractors
 High Risk Incidents included own employees and contractors
 Average over period

## 2024 | Delivering on our key strategic priorities

Delivering on improvement program and commercial initiatives	$\checkmark$		
Deliver on Recycling, Extrusions and Renewable growth ambitions			
Finalize Hydro Rein transaction with Macquarie Asset Management	$\checkmark$		
Executing on Recycling and Extrusions growth projects	$\checkmark$		
NOK 8 billion adjusted EBITDA in Extrusions by 2025	×		
NOK 3 billion adjusted EBITDA in Recycling by 2025	×		
Execute on decarbonization and technology roadmap			
Delivering 10% reduction by 2025	$\checkmark$		
<ul> <li>Progressing on 30% reduction by 2030 and net-zero by 2050</li> </ul>	$\checkmark$		
Seize opportunities in greener aluminium at premium pricing	$\checkmark$		
Achieve 10% adjusted RoaCE over the cycle			
2024 shareholder distribution in line with policy			

## ImprovementoCommercialRoaCE overprogram 2024Image: Source and the cycleNOK 9.9 billionNOK 3.0 billion11.8 percentvs 2024 targetvs 2025 targetNOK 3.9 billionLast 5-year avg.per Q3 2024

#### Delivering on the Hydro 2030 strategy

Alunorte fuel switch

Bio-methane in casting





## The global race for greener positions continues



## Persistent climate commitments



## Industrial competitiveness



## Security of supply and strategic resilience



#### Source: BNEF Transition Metals Outlook 2024, IEA, CRU 1) Economic Transition Scenario: Base-case assessment as a result of cost-based technology change towards 2050, does not necessarily assume that climate objectives are met 2) Net Zero Scenario: Evolution of energy sector to achieve net-zero emissions in 2050, showing a plausible global pathway to achieve main goals of Paris Agreement and remain below 2 degrees of planetary warming

### Aluminium - A critical raw material for the green transition

### Energy transition related demand key driver of growth

200

Global aluminium demand outlook - BNEF Million tonnes



### Challenging end-markets impacting short-term, but long-term remains



North American extrusion demand volume Indexed 2015 = 100



### CBAM challenges and solutions to secure level playing field



7

## It's time to accelerate

The world needs more low-carbon aluminium

### 2030 material decarbonization targets growing in number across industries



### There is limited aluminium below 4 tonne $CO_2$ e per tonne Al available

By 2030 primary production above 4 tonnes  $CO_2e$ /tonne Al will grow by ~7 million tonnes, while below 4 tonnes  $CO_2e$ / tonne Al will grow by less than 1 million tonnes



### Hydro's low-carbon product suite as the preferred solution



Market outreach, customer closeness



Clear roadmap to net-zero established in execution mode



Certified, traceable and lowcarbon aluminium offering



Hydro REDUXA and Hydro CIRCAL in the market



## Our value chain is a unique opportunity

Traceability in own value chain ensures certified, traceable and low-carbon aluminium



**Hydro** 

## Strong global presence

The complete aluminium and renewable energy company

#### Key features

- Market leader in low-carbon aluminium with clear roadmap to net-zero
- High-quality bauxite and alumina production in Brazil
- Second largest aluminium (primary and recycling) producer outside China
- Primary production capacity in Norway, Qatar, Slovakia, Brazil, Canada, Australia
- 9.4 TWh captive hydropower production in the Nordics
- World leader in aluminium extruded profiles
- Broad recycling and remelt network in Europe and the U.S., including extrusion ingot and scrap-based foundry alloys
- Unparalleled technology and R&D organization



Hydro

## Greener earnings uplift potential of NOK 2 billion<sup>1)</sup> by 2030 progressing

#### Executing in 2024

Hydro CIRCAL



#### Hydro REDUXA

Sales volumes, tonnes ('000)



#### Building capabilities for future contributions

#### Production

- Fuel switch and el-boilers at Alunorte enabling lower primary footprint
- Growing Hydro CIRCAL capabilities, also in U.S.
- Hydro **REDUXA 3.0** in industrial batches for automotive

#### Commercial

- Industry first capacity booking agreement with
   Porsche
- New partnership with Siemens Trains for closed loop recycling

#### Nature & Social

 Demonstrating the value of nature through collaboration with Mercedes-Benz on Bauxite Corridor Program

## Greener product capability from total aluminium portfolio<sup>1)</sup>

Million tonnes capacity potential





Hydro 2030:

## Pioneering the green aluminium transition, powered by renewable energy

#### Key priorities towards 2030



Step up growth investments in Recycling and Extrusions to take lead in the market opportunities emerging from the green transition



Step up ambitions within renewable power generation



Execute on ambitious decarbonization and technology road map, and step up to contribute to nature positive and a just transition



Shape the market for greener aluminium in partnership with customers

## Executing on Recycling growth ambitions



- Improving hot metal cost by USD 20-30 per tonne<sup>1)</sup>
- Delivering Alumetal synergies of EUR 10-15 million<sup>2)</sup>



3) Range based on capex. High-range based on ~70% of further potential capex (the NOK 2 billion annually) directed towards recycling. 4) Market normalization assuming historical margins 2013-2021 USD 100 per tonne for existing capacity, new growth assuming USD 200 per tonne, NOK per USD 10.6. Normalized volumes assuming 100% utilization MM and 70% utilization Extrusions. 5) Based on invested capacity which in practice require a certain ramp-up period not considered here, i.e., capturing full invested capacity and not implemented capacity.

- Realizing full value from completed investments
  - Strengthen scrap sorting capabilities, secure scrap
  - Expand global asset base, execute on time and cost

- Diversify product portfolio, grow Hydro CIRCAL offering
- Shape market for recycled products in partnership with customers

1) By 2030, USD 20 per tonne in Extrusions and USD 30 per tonne in Aluminium Metal Recycling real 2024, on average across all assets, 2) by 2027

### Positioning for growth in Extrusions



Stepping up improvement efforts through automation, operational improvements, procurement, recycling and commercial

6	ЪС	
٩	<u>202</u>	

- Investing in press and fabrication consolidation and capacity, value added services, and recycling
- Investments to support capabilities and ability to compete through high service levels



Growing in non-commoditized segments and market share growth in high-growth, profitable and attractive segments

#### Hydro Extrusions EBITDA ambitions

NOK billion



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## Executing on renewable power generation ambitions



#### Hydro Energy

Secure access to renewable power through hydropower, solar and wind



- · Upgrading and expanding hydropower assets
  - Hydro and Lyse collaborating to upgrade and expand existing facilities in Røldal-Suldal
  - Investing in Illvatn pumped storage plant in Luster
- Developing wind and solar projects close to the Hydro smelters in Norway
- Sourcing from external suppliers

#### Batteries and Havrand

Strengthening the focus on Hydro's 2030 strategy, addressing challenging market conditions in the batteries and green hydrogen sectors

#### Hydro Rein

Pursue profitable projects through JV owned by Hydro and MAM<sup>1)</sup>



- 1.7 GW of renewable projects in operations by 2024
  - 8.4 GW gross capacity in development across core markets
- Contributing to secure power for Hydro's portfolio

- Battery materials and green hydrogen will no longer be strategic growth areas for Hydro and no further capital will be allocated
- · Battery and Havrand businesses to be phased out
- Hydro will continue to support Hydrovolt as an industrial owner in close link with the recycling business and strategic partners
- Hydro will continue to test green hydrogen technology at the recycling unit at Høyanger, for internal decarbonization

## Progressing on the roadmap towards net-zero



#### GHG emissions – ownership equity<sup>1)</sup>

10

Million tonnes CO<sub>2</sub>e (% of 2018 baseline emissions<sup>2</sup>)

Achieved reductions			Reduction targets		
	since 2018	10% by 2025	30% by 2030	100% by 2050	Status
Bauxite & ~25% Alumina		~9 ~20%		<ul> <li>Fuel switch from heavy fuel oil to natural gas at Alunorte (~434,000 tonnes CO<sub>2</sub>e reduction at Alunorte<sup>3)</sup>)</li> <li>Three x 60MW electrical boilers installed (~248,000 tonnes of CO<sub>2</sub>e reduction at Alunorte<sup>3)</sup>).</li> <li>2030: Potential for additional four electrical boilers to be installed and coal to be substituted with Biomass, achieving a 70% reduction at Alunorte</li> </ul>	Completion Q4 2024 Completion Q4 2024 Verification ongoing
Casting,			~7	<ul> <li>Renewable PPAs</li> <li>Smelter process improvements</li> <li>Casting, recycling, extrusion and other improvements</li> </ul>	Ongoing Ongoing Ongoing
extrusions and anode production Electricity		~10%	~10%	<ul> <li>Biomethane in casting and anode production (at Sunndal)</li> <li>Emission-free plasma technology for remelting (at Sunndal)</li> <li>Green hydrogen in casting (at Høyanger)</li> <li>Exploring technology to decarbonize calcination in B&amp;A</li> </ul>	Implementation Pilot testing Pilot testing Exploring
(scope 2)		~35%	~40%	<ul> <li>CO<sub>2</sub>-free PPAs across portfolio</li> </ul>	Continuous
Electrolysis ~30% process emissions		~35%	~40%	<ul> <li>Develop HalZero technology with implementation towards 2050</li> <li>Develop carbon capture and storage solution to decarbonize existing smelters</li> <li>Develop anodes with biomaterial mix</li> <li>Implement carbon removal to cover any residual emissions</li> </ul>	Industrial scale pilots by 2030 R&D R&D
2018 baseline		2025	2030	2050	

1) Scope 1 and scope 2. 2) 2018 rebased baseline post-Alunorte transaction as of December 1, 2023 3) Hydro equity share Alunorte.

## Contributing to the global Nature Positive goal



## Ambition for no net loss (NNL) of biodiversity



#### Paragominas bauxite mine:

 Developing KPIs for NNL target, review, and advance current rehabilitation methods and support the development of biodiversity offsets "beyond the fence"

#### New projects:

 Illvatn pumped storage project to be developed with a NNL biodiversity ambition

#### Partnering to contribute to nature positive outcomes



#### Teaming up with Mercedes-Benz:

- Mercedes to join the Corridor project with Hydro, Imazon, IPAM and CEA
- Project ambition to deliver social, nature and climate benefits in the region
- Stretching over 244 km along the bauxite pipeline between Paragominas and Alunorte

## Value chain emissions



#### **Direct emissions**

 Hydro will significantly reduce its total emissions of SO<sub>2</sub>, NOx and dust, supporting Hydro's 2030 target to reduce material non-GHG emissions by 50%

#### Indirect emissions

 Hydro will publish its first estimation of non-GHG emissions linked to its electricity consumption in AR2024

### Improving lives and livelihoods wherever we operate, supporting a Just Transition



#### Respect and promote human rights

Fundament

Strengthening of the human rights' due diligence processes for own operations, value chain and affected communities



Areas of impact

## Support positive local development

Strengthening local engagement in 2024 by launching the Just Transition program

## Invest in education

More than 200,000 people reached with enhanced skills and education since 2018<sup>1)</sup>. On track to reach the goal of 500,000 people by 2030

## Responsible supply chain

New CEO KPI related to human rights due diligence in the supply chain

## Partnerships are advancing to the next stage

BROMPTON VOLEVO Volvo Group

Some of the world's most ambitious companies rely on Hydro to future-proof their businesses



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## Business areas at the forefront





- Execute on 2030 decarbonization targets and position as sustainability leader
- Develop low-carbon offering
- Strengthen profitability through podium position and optimized capex



- Pursue profitable captive hydropower growth options
- Hydro Rein JV with Macquarie enables further development of renewable power production

### Aluminium Metal

- Step up growth and be an industry leader within recycling
- Partner with customers to shape markets for low-carbon aluminium
- Deliver on roadmap to net-zero with technology leadership



- Step up growth investments aiming to increase market share in attractive, high-growth segments
- Utilize market leader position to shape the markets for greener aluminium and partner with customers on new greener solutions



Alumina business operating cost curve (2024)

USD per tonne Alumina, world excluding China



Resource spend Norwegian hydropower players 2023 NOK per MWh





Smelter business operating cost curve (2024)

#### USD per tonne Aluminium





## Launching new improvement program



Drive profitability towards 2030

#### Strong track record of delivering improvements

NOK billion





#### NEW: 2030 improvement program





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## Extrusions: Strengthening improvements and accelerating growth

Paul Warton

Executive Vice President, Hydro Extrusions

## Extrusions demand significantly down over last years, long-term growth prospects remain attractive



Lower demand compared to base case for NOK 8 billion target

('000 tonnes) 4,000 Forecast EU April 2021 EU October 2024 NA April 2021 3,500 NA October 2024 -22% 3,000 2,500 2,000 0 2010 2015 2020 2025 2030

Extrusion demand estimates (CRU)

Extrusion demand CAGR 2024-30



## Solid EBITDA per tonne generation despite weak markets



Segment position and margin management as key drivers

Hydro Extrusions realizing solid EBITDA per tonne in weak markets Hydro Extrusions EBITDA per tonne, NOK



Extrusion demand CAGR 2024 - 30



Source: CRU 1) In real terms, 2014 EBITDA per tonne is ~1.825 NOK. Adjusted for 2024 FX and in real terms, EBITDA per tonne in 2014 is at ~2.775 NOK

## Hydro Extrusions leveraging opportunities from greener transition and substitution towards aluminium





## Growing automotive exposure through long-term contracts



3.5 – 3.8

Slower transition to EV growth short-term, long-term potential remains attractive



Record levels of OEM sole supply contracts Revenue in EUR billion

0.9 - 1.0

3

contracts

In process



Total new long-

term business

## Customers from all industries collaborating with Hydro Extrusions to make greener products



- · Global customer, served on two continents, supporting VELUX decarbonization also in the U.S.
- · Currently delivering prototypes made with lowcarbon aluminium
- VELUX has a target to shift entire supply to lowcarbon aluminium in near future
- · Target locations: Low-carbon extrusion ingots from Monett, MO, extrusion in Gainesville, GA



#### Partnerships



Extrusions Europe Partnership program creating value by moving customers "up the sustainability ladder"



#### Hvdro Innovative Partner

Frontrunner in the market You are a frontrunner in the market when it comes to artners. As a Hydro Innovative Partner we will borate as a team and give you our full support to vate and lead in sustainability.



#### Hydro Plus Partner Take the next step

sustainability journey. As a Hydro Plus Partner, w in our mission to offer more sustair



#### Not only automotive







**Hydro** 

### Future-proofing customers

Greener sourcing and production

#### Hydro Extrusions sustainability targets 2030





Reduce own emissions



Help customers realize their sustainability ambitions and positions



**Hydro** 

## Extrusions is acting as market leader to reach 2030 sustainability targets across all Business Units





Second wind turbine installed in **Ghlin, Belgium** and exploring opportunities for fuel switch to decarbonize the recycling facility.



Holistic sustainability approach in Trzianka, Poland. Heat pumps and other equipment.



Setting the standard for transparency and documentation in North America with Environmental Product Declarations published.



Hydro and Siemens Mobility to **close the loop** for aluminium in trains.



Building Systems recycling facility in Atessa, Italy to produce own Hydro CIRCAL recycled aluminium.



Electricity sourcing. More **renewable electricity** for the sites, both on-site and PPA's. Europe and North America.



Installation of **AMR**<sup>1)</sup> sensors across plants in Hydro Extrustions with **real-time tracking** of energy, water, gas consumption and vibration at machines in plants.

## Delivering on growth projects, re-shaping investment agenda towards press replacements and automation



Hydro Extrusions CAPEX agenda – short- and long-term

Total capacity and added capabilities:

70,000 of press capacity for other segments

45,000 tonnes of automotive capacity (half under execution)

250,000 tonnes of recycling capacity

Complete $\equiv^*$	Ramping up	Under execution
Hueck M&A	The Dalles cast (U.S.)	Hungary automotive press
Navarra recycling	Nenzing press	Tønder automotive press
Sjunnen recycling	Rackwitz press	Atessa Recycling
Poland greener press	City of Industry press (U.S.)	
Precision Tubing China Automotive press	Phoenix press and fabrication	
	Cressona recycling and presses (U.S.)	
	Hungary recycling – ramp up Q4 2024	
		Installing advanced automotive

Project pipeline

Press replacements

(Albi & Gainesville in progress)

- Focus on improving capabilities and productivity
- Strong benefits for operational performance with clear savings

presses meeting medium-term

Atessa to strengthen internal supply

Hydro CIRCAL production in

demand

30

## Press consolidations giving new capabilities and cost savings, automation project providing strong returns



## Press consolidation example: Cressona (U.S.)



Based on cost savings alone

IRR: 20-25%

Automated Fabrication cells



Automation Example – Fabrication Plant: One AGV<sup>1)</sup> = 3 FTEs<sup>2)</sup> saved (~1 year payback) Simple automation of a fabrication machine = 3 FTEs (< 2 years payback)

Complex automation of material flow and process steps (Payback ~4 to 5 years)

## Extrusions stepping up ambitions on operational and commercial improvements



Ambitious improvement targets 2030 supported by dedicated value streams

Category	Description		
⊶∽∽ ⊖⊖⊖ Commercial ambitions	<ul> <li>Increase market share in key, dedicated segments through solution offerings and high service level</li> <li>Greener offerings supporting market share growth</li> </ul>		
Hot metal cost	<ul> <li>Reduction in hot metal cost in Hydro Extrusions recyclers through using more PCS and less ingot</li> <li>Improving operational performance &amp; energy efficiency</li> </ul>		
Automation	<ul><li>Reducing labor through automizing key process steps</li><li>Improves productivity, quality and safety</li></ul>		
EBS <sup>1)</sup> / Operational improvements	<ul> <li>Downtime reductions</li> <li>Labor productivity improvements</li> <li>Scrap rate and metal improvements</li> </ul>		
Procurement	<ul> <li>Hydro Extrusions wide initiative covering procurement savings on all categories, including CAPEX</li> </ul>		

Improvement ambition towards 2030

(2024 baseline, real terms)



## NOK 8 billion target in 2025 challenged by weak shortterm demand – Strengthened improvement agenda



Underlying extrusion demand in key regions and segments not sufficient to deliver NOK 8 billion

#### Hydro Extrusions EBITDA ambitions





Lower recycling and extrusion volumes

## Roadmap to 2030 target underpinned by stronger improvement agenda and structural demand recovery



Cyclical improvement in extrusions demand and improvement program supporting long-term targets



- Growing in **non-commoditized segments** fitting with Hydro Extrusions' capabilities + Market share growth ambition in high-growth, profitable segments
- · Investments to support capabilities and ability to compete through high service levels
- Press and fabrication capacity, value added

- Segmentation and improved greener offerings as key
- Increased digitalization throughout all processes
- Standardization generating value across extrusion value chain – from understanding profit to driving procurement and reducing energy consumption

Sustainability giving commercial opportunities



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## Aluminium Metal: Accelerating through innovation, collaboration and growth

Hanne Simensen

Executive Vice President, Hydro Aluminium Metal

## Long-term outlook remains strong

Solid growth in demand for low-carbon recycled and primary aluminium expected towards 2030 and beyond

#### Global aluminium consumption

In million tonnes



### Greener demand growth outpacing rest of the market CAGR 2024-30



#### Source: CRU

1) Tonnes of CO2e per ton of primary aluminium produced, including full value chain emissions, 2) Hydro and Bain analysis from 2022, 2022-2030 CAGR

3) Does not distinguish between post-consumer scrap and process scrap

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## Low-carbon aluminium expected to be in limited supply – Hydro well positioned



Total supply of aluminium with mine to metal emissions below 4 kg CO<sub>2</sub>e / kg Al is ~8 million tonnes

Cradle-to-gate emissions curve 2023 (tonnes CO<sub>2</sub>e per tonne Al)



## Hydro has a unique value proposition in aluminium



One-stop-shop for high-quality, low-carbon aluminium: Going to market with a combined offering of primary and recycled aluminium, and transparency in the value chain

High-quality aluminium products and alloy development





World class R&D supporting our partners with low-carbon aluminium



# Two complementary business models allow flexibility to pursue opportunities in fluctuating markets



Primary value chain **Primary Production** Characteristic Recycling Bauxite mining Alumina refining Primary smelting Operations Larger units Smaller units Stable raw Complex, regional & fragmented raw material value chain material value chain Distance to customers Close to the High customer productivity Flexible Full market Export based Conversion offering offering Recycling value chain Sensitive to LME neutral Financial LME Margin based Cost curve Collection Processing & sorting Melting based One offering Circular economy Low-carbon Greener offering with low-carbon Greener offering



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## Primary production: Accelerating competitiveness to maintain leading position

Hanne Simensen

Executive Vice President, Hydro Aluminium Metal

# Leveraging our competitive advantage to further strengthen our position



Strategic priorities to protect and develop the unique position of Hydro's Primary portfolio



#### Safeguard strong cash flow

- Long-term *renewable power* and *raw material* diversification
   Albras power secured, active in the Nordic power market
- · Maintain and improve asset integrity through infrastructure investments

#### Further enhance competitiveness

- Product and segment adjustment, and portfolio flexibility
- Operational *debottlenecking, digitalization, robotization and automation*



## 7

#### Sustainability as a competitive advantage

- Breakthrough technologies and operational levers towards *net-zero*
- Enhancing local *lives and livelihoods,* and contribute towards *Nature Positive*

 $CO_2 e < 4kg^{1}$ vs 15.1 kg global average

High share of Value added products



EBITDA avg 21-24<sup>2)</sup> NOK 14.2 billion

ROACE avg 21-24<sup>2)</sup> 23%



## Strengthen competitiveness through cutting edge technology, debottlenecking, digitalization and robotization

Category	Description	Improvement Program
Creep Organic production increases	<ul> <li>Maximizing asset utilization at competitive capex levels</li> <li>Track record of ~100kt since 2014 – up to ~80kt further potential</li> </ul>	Commercial excellence
Technology Upgrades to enhance performance	<ul> <li>Leveraging technology advancements to further enhance performance</li> <li>Improving energy and raw material efficiency, and CO<sub>2</sub> footprint</li> </ul>	0.8 Procurement
o I o IDigitalizationI o I o ILeveraging advanced digitalI o I o Itechnologies	<ul> <li>Taking operational efficiency to the next level with new technology</li> <li>Equipping a forward thinking organization</li> </ul>	Operational 0,5
Robotics and Automation Optimizing productivity and enhancing safety	<ul> <li>Protecting workforce by <i>automizing hazardous tasks</i></li> <li>Improving <i>productivity, minimizing human error</i> and reducing <i>variability</i></li> </ul>	2030 target

## Roadmap to net-zero – Milestones in 2024

Pursuing sustainability strategy to differentiate Hydro on climate, nature and social aspects to capitalize on low-carbon market growth

#### Fuel switch

- Alunorte fuel switch to reduce carbon footprint of primary portfolio
- Decarbonizing casthouses
  - Hydrogen pilot Høyanger under construction
  - Plasma pilot Sunndal passed DG3
  - Bio-gas switch in Sunndal casthouse to commence by year-end 2024



#### Decarbonized processes

- CCS and bio-materials in anode production to decarbonize existing portfolio
  - Working with portfolio of companies to find technical solutions on CCS
  - Promising test of bio-based packing coke
- HalZero new process technology
  - Construction of test facility in Porsgrunn on plan
- Ambition to reach industrial scale pilot volumes by 2030



### Post consumer scrap (PCS) in primary production

- Opened recycling units at Høyanger and Årdal to use PCS to lower footprint of primary metal
- Working with customers to ensure quality and qualification of products







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## Recycling: Accelerating through improved margins and execution on growth

Hanne Simensen

Executive Vice President, Hydro Aluminium Metal

## Hydro meeting customer needs with unique capabilities within recycling



Scrap procurement excellence



Advanced scrap sorting capabilities



Material management and metallurgical expertise



#### Multiple product outlets

1) Recycling in Metal Markets and Hydro Extrusions, Alumetal included from July 2023. PCS share in 2030 indicative, dependent on the portfolio mix. 2) Simplified example based on the average input mix above conversion for a European recycling plant, irrespective of the conversion share and plant size. Weighted average cost above LME calculated using market references and painted scrap price as a proxy for mixed scrap types. There are large regional and plant differences in scrap composition, usage and pricing.

#### Proven track record in realizing value from scrap

#### Increasing post-consumer scrap (PCS) share in production



Improving relative cost position

Average metal input cost above LME, depending on PCS share<sup>2)</sup>

0% PCS 15% PCS 35% PCS

#### Meeting growing customer demand for Hydro CIRCAL



## Current cyclical downturn, strong long-term fundamentals

Average EBITDA margin improving over time, high volatility post-covid tracking building & construction demand

MM extrusion ingot recycling EBITDA margin in USD/tonne, indexed to 2013



### Global megatrends support recycling

Increasing focus on circular economy and decarbonization from key stakeholders



### Along with growing scrap generation and recovery rates

Global estimated recovery of post-consumer scrap, mill tonnes



## Scrap exports expected to decrease from ~2030 as China is becoming more scrap self-sufficient

Critical to keep low-grade scrap in Europe/U.S. through regulation, sorting and domestic applications



Scrap generation increasing at higher rates in China vs Europe/U.S. in line with the economic maturity curve

PCS generation in key markets, million tonnes and CAGR





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# Hydro aiming to keep more low-grade scrap in Europe/U.S. through sorting and upcycling



Mixed scrap exported to Asia either due to push (limited local use) or pull (higher value) drivers



## Roadmap to 2030 ambitions

Strengthening margin robustness and growing through the cycle



Improving recycling margins in weak markets



Realizing full value potential from completed investments



Driving profitable growth, positioning for the future



# Accelerating hot-metal cost improvements as key competitive advantage in Aluminium Metal Recycling



Controlling the controllables – exercising discipline and pushing the boundaries in weak markets





 Azuqueca has demonstrated significant HMC improvements through scrap optimization and complex cross-functional optimization system from daily operations to advanced analytics and technology



Improving relative cost position and strengthening recycling margins through ambitious hot metal cost (HMC) improvements

-30

USD/mt by 2030<sup>1)</sup> average across the recycling portfolio



## Executing on strategic growth projects in recycling



Progressing on key strategic priorities, positioning for the future



Customer centric approach



Partnership with Brompton bikes on 100R fully recycled aluminium



First commercial sale of CIRCAL in the U.S.

**Building Systems** developing Circularity concept (Window-to-Window), collecting end-of-life scrap from customers

Scrap-sorting and sourcing



HySort operations started in Alusort JV in the U.S., first deliveries to Cassopolis

Høvanger recycler to supply RSI<sup>1)</sup> to the Norwegian primary casthouses



Multi-year agreement with Sims Alumisource to sort PCS scrap to ENA casthouses



Cassopolis advanced casthouse, ongoing qualifications with automotive customers in the U.S.

Portfolio





HyForge Rackwitz with horizontal casting line producing forging stock for automotive applications

#### RFA<sup>2)</sup> integration and synergies



On track to realizing synergy potential from the Alumetal acquisition



## Alumetal becoming an integral part of the Aluminium Metal metal network

On track to realize EUR 10-15 million<sup>1)</sup> in annual EBITDA uplift by 2027

EUR 10-15 million

synergy potential

bv 2027

 $RFA^{2)}$  – Critical contributor to realizing the recycling strategy

Portfolio diversification and de-risking

Security of PCS supply

Outlet for mixed scrap grades

Sorting capabilities

Enabling synergies in the AM portfolio along the identified improvement clusters

Kęty expansion and modernization

Value creation from sorting capacity & capabilities

Low-carbon product development and commercialization

Insourcing aluminium recovery from dross from Hydro recycling plants

Replacing standard ingot with recycled ingot to Norwegian smelters

Other commercial and operational synergies

Progress made on multiple initiatives in 2024 - selected examples







Environmental product Declaration (EPD) in place for recycled foundry alloy aluminium products



~8 kmt of dross from the European recyclers purchased or processed in Alumetal



Hvdrc

## Approved projects delivering on the 2030 PCS target

Recycling post-consumer scrap (PCS) capacity roadmap

Million tonnes PCS



1) Based on invested capacity which in practice require a certain ramp-up period and market support not considered here, i.e. capturing full invested capacity and not implemented capacity.

#### Approved creep / growth projects









Torija greenfield

Kety upgrade, Alumetal HyForge Henderson

Atessa







NowaSol HySort

Luce upgrade

Wrexham HySort

#### Installed new capacity



Navarra recvcling

+5 kt PCS





HyForge Rackwitz



Alumetal transaction +155 kt PCS



Cassopolis greenfield +40 kt PCS



Hungary recycling +13 kt PCS. 2025



Sjunnen recycling

+5 kt PCS

Årdal PFA line +25 kt PCS









Spanish Fork EcoMelt Høyanger recycling +37 kt RSI

Cressona BayZero



Alusort JV +20 kt sorting capacity

+13 kt PCS



Hueck & The Dalles +16 kt PCS



# Approved projects to deliver on the 2030 EBITDA target in normalized market



#### Recycling adjusted EBITDA roadmap

NOK billion



1) Using 2024 YTD NOK to USD of 10.6, new/growth capacity using USD 200 per tonne margins. 2) Based on invested capacity which in practice require a certain ramp-up period not considered here, i.e. capturing full invested capacity and not implemented capacity. 3) By 2030, USD 20 per tonne in Extrusions and USD 30 per tonne in AM Recycling, on average across all assets, real 2024 figures 4) Range based on capex. High-range based on ~70% of further potential capex (the NOK 2 billion annually) directed towards recycling.

# Aluminium Metal's leading market offering is enabled by Judro value chain transparency and flexibility in two business models









Capital Markets Day 2024

## Bauxite & Alumina: Accelerating through profitability and sustainability

John Thuestad

Executive Vice President, Hydro Bauxite & Alumina

## Alumina refineries profitable in 2024, tightness to persist into 2025





#### Alumina raw material prices USD per tonne





**Hvdro** 

## Significant position enhancement since last year

Several initiatives executed to boost robustness and stability, enabling full market advantage



#### Strong financial results

• USD 25 per tonne lower cost from fuel switching, increased productivity



### on track

Supporting Hydro's decarbonization target by switching from fuel oil to natural gas conversion and installation of 180 MW of electrical boilers



#### Tailing safety

In 2024, Hydro will complete a 3rd party audit of GISTM<sup>1)</sup> to attest conformance of our Bauxite & Alumina assets, delivering on the ICMM<sup>2)</sup> commitment

Hydro

## 2()24



#### Operational improvements on track

• The fuel switch considerably reduces maintenance requirements, thus increasing uptime at Alunorte

Electrical boiler installation improves productivity and reduces energy waste



#### **Optimizing asset** management

- World's only Bauxite Mine and Alumina Refinery with ISO 55001 accreditation
- Capex avoided from AI and prescriptive maintenance – estimated cost saving of NOK 200 million in 2024



## Improvements and commercial initiatives at the core



Hydro Bauxite & Alumina successfully improved its operations through the entire value chain in 2024



#### Paragominas

- Bauxite trucking to refinery: 17 percent decrease of total haulage cost per tonne, despite 21 percent increase in haulage distance
- Overburden removal cost per tonne decreased by 28 percent, mitigating increase in volume removed per tonne of bauxite by 28 percent



### Alunorte

- Fuel switching from heavy fuel oil to natural gas is expected to have a continuous and long-term financial impact (USD 25 per tonne, USD 160-200 million annually)
- The coming **2025 renewable power PPA's** with Hydro Rein will continue to drive down total energy costs.



### Commercial

 By actively executing 3<sup>rd</sup> party contracts, swaps and trades, B&A Commercial rebuilt its book back to 2023 profitability level from 2025, offsetting the reduced equity offtake as a result of the Alunorte transaction

## Strengthening robustness



#### Competitive cost position – a solid starting point



#### Improvement initiatives





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Mine fleet optimization

Increased steam generation with electrical boilers

Bauxite silica control program

Port logistics optimization

Asset availability increase - Advanced monitoring

#### 2030 improvement program



## Executing on greener alumina roadmap

Alunorte will reduce emissions by 70 percent by 2030

#### Decarbonization roadmap for Bauxite & Alumina

Tonnes CO<sub>2</sub>e per tonne Alumina



### Lowering the position on the emission curve from the first quartile to **the first decile**

CO<sub>2</sub>e per tonne Alumina (scope 1 and 2)<sup>1)</sup>



## Sustainability is more than low-carbon



Contributing to Nature Positive and supporting a Just Transition in Brazil

#### Social: Effectively supporting communities

- In 2022, Hydro delivered three TerPaz community centers to vulnerable communities in Belem.
- Each TerPaz center services 1,500 people a day. Offering administrative, health, educational and recreational services.
- By creating safe spaces and developing community identities, they helped reaching a major crime drop of over 70 percent in their respective communities.
- Four more centers are to be delivered in 2025, in Barcarena and Paragominas (around Hydro's mine and refinery) as well as Moju and Tomé-Açu (along the pipeline).





#### Nature:

### Ensuring optimal footprint

- Hydro is a world leader in:
  - Reforestation through its deforestationmining reforestation 3-years cycle.
- Tailings and residue management through tailings dry backfill, which removes the need to create any new tailings dams going forward.
- Residue press filters/ dry stacking allows residue storage at up to 80% solid content, reducing the storage area needed and greatly improving the geotechnical stability of the storage area.
- In 2024, Hydro will complete a 3rd party audit of GISTM<sup>1</sup>) to attest conformance of its Bauxite & Alumina assets, delivering on the ICMM<sup>2</sup>) commitment

# Hydro Bauxite & Alumina sustainability agenda enabling strategic partnerships



### Mercedes-Benz

Long-term development program in the Amazon region

- Mercedes-Benz has joined Hydro in the long-term Corridor program, together with the Brazilian NGOs IPAM, Imazon, CEA, Boston Consulting Group and other partners.
- It is committed to promote **positive impact to people** and **nature** in the **Amazon** along the bauxite slurry pipeline operated by Hydro, stretching 244km, from Paragominas to Alunorte.
- The aim is to **protect human rights**, the generation of income for **local communities**, **restoration of nature** and the development of **low-carbon value chains** in the region.



Turning bauxite residue from waste to marketable products

- Hydro has one of the most advanced portfolio of pilot projects in the industry, with the aim to **remove residue storage by 2040**.
- The most progressive and scalable in the portfolio of pilot projects is Hydro's **partnership with New Wave Aluminium**.
- Together we are building a solution in Alunorte capable of processing ~50,000 tonne residue per year and extracting lowcarbon iron from the residue.
- Converting all of Hydro's residue through this process could deliver over **1.1 million tons of low-carbon iron**.

Sustainability efforts in alumina production is a key enabler to enhance Hydro's offering of low-carbon aluminium - Achieving this relies on collaboration with customers and industry partners



Capital Markets Day 2024

## Energy: Accelerating the green aluminium transition

Kari Ekelund Thørud Executive Vice President, Hydro Energy

# Global renewable investments have surged, driven by China, U.S. and EU

### IEA: The world invests almost twice as much in clean energy as it does in fossil fuels

billion USD (2023)



Solar and wind power development in China



Solar and wind power development in the U.S.



Solar and wind power development in the EU



## Lower Norwegian power surplus

Wind and hydropower interplay is key in the future energy system





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2 0 0 0

0

2024-02-05 00:00:00

2024-02-05 15:00:00

2024-02-06 06:00:00

2024-02-06 21:00:00

2024-02-07 12:00:00

2024-02-08 03:00:00

-Hydro — Wind

2024-02-08 18:00:00

2024-02-10 00:00:00

2024-02-09 09:00:00

2024-02-10 15:00:00

#### Hourly power production by source in price area NO2, Week 6 2024 MWh/h

Wind power production

400

200

0

**Hydro** 

## Volatility increases the need and value of flexibility



Norwegian hydropower adds flexibility at lower costs than alternatives, with lower degree of cannibalization

Pumped storage hydropower: Opportunity to shift energy production between hours and seasons

Commercial opportunities analyzing, optimizing and acting on hydropower and onshore wind interplay



# Focus on core business and key strategic priorities towards 2030, building on strong production platform





Industry leader on cost and operational performance

### Shaping portfolio and organization



NOK 200 million in EBITDA improvements – Combination of restructuring and organizational cost



Portfolio positioned for internal sourcing and increased value of flexibility



Shape organization to fit agenda in renewable power generation

Operational improvement program NOK 200 million by 2030 baseline year 2024



Commercial ambition: NOK 200 million by 2030 baseline year 2024

## Active sourcing agenda

Portfolio of equity power and PPAs



#### Norway: Power sourcing for Hydro smelters <sup>1)</sup>



#### Brazil: Power sourcing for B&A and Albras<sup>2)3)</sup>

**Hydro** 

## Several routes to secure power at competitive prices



## Upgrading and expanding hydropower assets

Røldal-Suldal Illvatn



## Developing wind and solar projects including JVs

Wind power projects close to smelters Hydro Rein JV



## Sourcing from external suppliers

10 TWh long-term contract portfolio Signficant player in the PPA market



## Hydro Rein contributing to renewable growth ambitions





## 1.7 GW of renewables projects reaching COD<sup>1)</sup> in 2024



Projects delivered on time, on budget, and with high safety and sustainability standards


# Pioneering the green aluminium transition, powered by renewable energy

### Snøheia & Høyanger

Renewable electricity to supply the smelter and fuel switch from natural gas to green hydrogen in recycler



Mendubim & Alunorte

Renewable electricity to support new electric boilers at the alumina refinery



Hydro

# Pursuing value creation opportunities towards 2030

An industry leader on HSE, performance and sustainability

2

High performance and profitability ambitions: Energy Classic ROACE > 15% average Hydro Rein JV platform eIRR 10 – 20 % Commercial ambition NOK 550 million

3

Active sourcing agenda and robust portfolio supporting all BAs. Grow Nordic captive portfolio with new renewable energy projects within hydropower, wind and solar power

4

5

Upgrading existing hydropower assets to capture increasing value of flexibility

Continue to develop innovative energy solutions and contribute to decarbonize the aluminium value chain





Capital Markets Day 2024

# Accelerating through focused growth and strong performance drive

Trond Olaf Christophersen Executive Vice President & Chief Financial Officer

# Upstream value drivers supporting 2024 financials

Adjusted RoaCE

over the cycle

Average last 5 years

22.2%

2022

2023

14.3

2020

7.2%

LTM

Q3

2024

18.6%

2021

3.7%

2020



1) Free cash flow defined as net cash provided by operating activities less net cash used in investing activities, adjusted for purchases of short-term investments, sales of short-term investments and net cash received or paid for short- and long-term collateral.

Hvdro

# Resilient financial framework driving LT shareholder value

Solid framework for lifting returns and cash flow, and managing uncertainty



Hydro

# New improvement program

Drive profitability towards 2030

### Hydro has a strong track record of delivering improvements



NOK 4.5 billion delivered through the USD 300 program and "from B to A" NOK 3.0 billion delivered through the *better* improvement ambition

Initial ambition to deliver NOK 7.3 billion achieved already in 2022

Estimated to deliver NOK 9.9 billion by end of 2024 Additional transparency – will give additional insight into the improvements and drivers



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**Clearer link to bottom-line** – link between improvement impact and P&L impact

Hydro

# Redesigned 2030 improvement programs



Three main programs to drive improvements - measurement methodology tailored to each program



Operational improvement program

- Improvement in operational metrics through targeted initiatives and continuous improvement
- Cost reduction and efficiency improvements in support functions







- Improvements through procurement and sourcing savings
- Driven through individual procurement initiatives





- Improvements achieved through
   commercial activities and growth projects
- Key drivers include new aluminium products, greener premiums and extrusions market share





Digital enablement

- Enabling digital initiatives across improvement programs
- Predictive maintenance and production optimization

# New operational improvement program



Hydro ambition of NOK ~2.5 billion

Mitigate structural cost pressure, drive efficiency for refinery & mining



- Increased mine plant and refinery
   productivity
- · Increased asset availability
- Reduced cost or mitigation of cost pressure in mine, refinery and port

Improve operational efficiency



- Increased production volume
- Reduced raw material consumption
- Reduced energy consumption
- Reduced CO<sub>2</sub> emissions
- Improved downtime

## Reduce hot metal cost in recycling



- Optimization of raw material mix, including PCS
- Scrap procurement and sorting capabilities
- Production optimization

## Improve efficiency of support functions



- Process improvements and digitalization
- License optimization and systems integrations
- Centralization of business services

 Advanced Asset Monitoring - Digital Implementation

Main drivers

Key initiatives

- Energy mix optimization
- Bauxite Quality Control Program
- Mine Fleet Optimization
- Port logistics optimization

- Automation
- Productivity investments
- Digital initiatives
- Continuous improvement

- Optimization system based on advanced analytics
- Technology for scrap analysis
- Continued development of capabilities in scrap sourcing and production optimization
- Virtual accountant
- Merging local organizations with larger GBS ecosystem
- Optimization of specific service offerings
- Continuous improvement though
   GBS Business system

# Procurement program to deliver NOK~1 billion by 2030

Measures procurement efforts to fight inflation, reduce the spend baseline and create value

- Addressing total Hydro spend
- Enabling increased productivity through improved specifications, quality and services
- Decentralized procurement close to businesses realities, with joint procurement activities to leverage Hydro purchasing scale and address common challenges in supply chain
- Increased spend management and synergies through better cross plant and cross functional cooperation, best practice sharing and technology enhancements





Bauxite & Alumina procurement Potential enabled by implementation of new digital procurement solutions. Main projects addressing logistics and raw material categories





**Extrusions procurement** Invest in resources and competences to lead strategic category management and total cost of ownership

IIM

OM

# Commercial excellence program

NOK ~3 billion commercial potential across portfolio, including remaining potential from the greener uplift ambition

	Market share	Increase market share in key segments through solution offerings and high service level	NOK - ~ 3	
	Commercial alumina portfolio	Increasing commercial impact from alumina portfolio leveraging strong market capabilities		
	Hydropower flexibility & trading	Driving increased commercial value from flexibility of hydropower portfolio and deep power market expertise		
	New products offerings	New aluminium product offerings (HyForge, automotive, etc) and strategic partnerships	billion	
	Greener products	Increasing uplift from greener products		
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# 2025: Capitalizing on improvements

Market volatility persists into 2025





- Annual adjusted sensitivities based on normal annual business volumes. LME 2,300 USD/mt, realized premium 370 USD/mt, PAX 400 USD/mt, petroleum coke 400 USD/mt, pitch 900 EUR/mt, caustic soda 390 USD/mt, coal 90 USD/mt, USDNOK 10.72, BRLNOK 2.08, EURNOK 11.60
- Assumptions and sources behind the scenarios can be found in Additional information
- Cautionary note: PAX sensitivity refers to consolidated EBITDA impact

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# Capital allocation reflecting strategic modes

Strategic modes reflect global megatrends and high-return opportunities



		Safe, compliant a The I	nd efficient operations Hydro Way			
Businesses	Bauxite & Alumina	Aluminium Metal	Recycling	Energy	Extrusions	
Strategic mode	Sustain and improve	Sustain and improve	Growth	Selective growth	Growth	
Towards 2030	Strengthen reliability, improve sustainability footprint, improve cost position	Robustness and greener, increase product flexibility, improve cost position	Substantial shift in conversion of post-consumer scrap	Growth in renewable power	Optimizing and renewing capacity and capabilities	

# Capital discipline and focused growth

Sustaining capex has peaked and will start to normalize



### Growth & Return seeking investments<sup>2)</sup>

#### Recycling

- Increase proportion of post consumer scrap (PCS), lowering metal cost
- · Improved economies of scale in brownfield expansions
- Sorting technology and equipment standardization

#### Extrusions

- Press replacements with significant cost reductions and increased productivity, also giving fit for future capabilities.
- Focus on high growth segments including automotive, systems business and commercial transportation

#### Decarbonization

- Alunorte Fuel switch project (IRR 20+%) and electrical boilers
- CCS and HalZero
- Hydropower investments



1) Based on November 2024 forward rates

2) Growth and return seeking investments distribution for 2025-2027

3) Including Hydropower investments

# Torija: Designed to be a high-margin recycler

)))) Hydro

Investing EUR 180 million in next generation extrusion ingot casthouse in strategic Iberian market



#### Superior product mix

- Strategically positioned to produce high share of lowcarbon advanced products
- Capability to serve strategic automotive partnerships

#### Competitive hot metal cost

- High PCS share including significant volumes of lowergrade scrap types available in Iberia
- Proven material optimization capabilities in Azuqueca

#### Synergies and scale effects

• Fixed costs synergies and optimization possibilities with Azuqueca in the Iberian portfolio

- CAPEX: EUR 180 million
- Annual capacity: 120 Kt
- PCS capacity: 70Kt
- CIRCAL capacity: 60Kt
- Commissioning end-2026



1) Using average assumed margins across the cycle. 2) «Standard remelter» modeled as a 70 kmt plant with standard casthouse equipments and product mix (i.e. no greener or automotive/ advanced product capabilities). Raw material input consisting mostly of standard ingot, conversion and clean market scrap with some furnace-ready PCS.

# Greener investments drive value creation

Hydro's largest prioritized investment areas combine sustainability and profitability

### Recycling (PCS)

Several large recycling projects completed or near execution:

- Cassopolis√
- Alumetal 🗸
- Rackwitz 🗸
- Hungary ✓
- Cressona 🗸

### IRR 15-30%

Targeting 850 -1200 ktonnes PCS consumption uplift by 2030

### B&A (El-Boilers)

Substantial decarbonization investments in B&A with positive business cases:

Elboiler pilot ✓

IRR: 20%+

- Alunorte Fuel Switch  $\checkmark$
- Elboiler expansion: In execution

Bauxite and Alumina

CO<sub>2</sub> reductions under

excecution:

~700 000 tonnes per

year

### Electrolysis abatement

Technology roadmaps in Aluminium Metal to produce net-zero carbon primary metal

HalZero: Investment decision taken on Stage 2 facility ✓ CCS: Progressing towards first carbon capture

Creating a pathway to

net-zero carbon

primary aluminium

R&D

Other

- Energy savings initiatives with short payback time
- Hydropower growth
- Fully electric presses:
   Nenzing
- Tønder
- Trzcianka Greener Press √

### IRR 10-35%

Combining profitability with sustainability improvement

#### Greener investments / Total Investments



Other

Alumetal



# Net Operating Capital performance to improve in 2025



Higher upstream prices driving Net Operating Capital build up in 2025



Strong ambitions to reduce inventory levels and further improve Net Operating Capital days in 2025

Targeted stock reductions expected to have a positive impact on Net Operating Capital of NOK ~0.5 billion in 2025

- Upstream segments will seek to optimize inventory volumes through tight internal cooperation, contingency planning and improved IT systems
- Downstream segments will continue efforts to reduce inventory volumes, with a special focus on reductions of scrap and WIP
- These efforts are expected to bring Net Operating Capital days down by two days in 2025
- The positive market outlook for 2025 is anticipated to result in an overall Net Operating Capital increase of NOK 1-2 billion

Focused efforts on optimizing and reducing inventory levels have resulted in a significant reduction in Net Operating Capital days since 2023

# Hydro profitability growth roadmap

Main drivers: Improvement efforts, growth and market development





#### Main upside drivers

19

CF potential

19

CF @ external

real '24

Sustaining

CAPEX, tax

and other

- · Sustainability differentiation and ability to produce net-zero aluminium
- Positive market and macro developments
- High-return growth projects
- Technology and digitization
- Portfolio optimization

#### Main downside risks

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

1) Cash flow calculated as EBITDA + tax + long-term sustaining CAPEX + other (lease payments, interest expenses) Assumptions and sources behind the scenarios can be found in Additional information

Sources: External scenario is based on CRU price and premium assumptions and S&P Global FX assumptions, with adjustments as specified in the footnotes Note: Refers to consolidated EBITDA and cash flow impact

# Bauxite & Alumina profitability growth roadmap

Main drivers: Fuel switch, commercial differentiation and market development



# q AEBITDA potential after improvements





6

CF @ forward

real '242)



CF @ last 5

year average

2

CF @ external

real '24

### Main upside drivers

- Positive market and macro developments
- Further commercial differentiation, incl. greener alumina
- Fleet optimization at the mine
- Sustaining CAPEX optimization

### Main downside risks

- Operational disruptions
- Negative market and macro developments
- Regulatory, CSR and country risk
- Supply chain disruptions
- Value chain concentration in Brazil

1) Cash flow calculated as EBITDA + tax + long-term sustaining CAPEX. 2) 17% of LME forward price deflated by 2.5%. Assumptions and sources behind the scenarios can be found in Additional information

Sources: External scenario is based on CRU price and premium assumptions and S&P Global FX assumptions, with adjustments as specified in the footnotes Note: Refers to consolidated EBITDA and cash flow impact

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# Aluminium Metal profitability growth roadmap

Main drivers: Improvement efforts, commercial differentiation and market development



1) Cash flow calculated as EBITDA + tax + long-term sustaining CAPEX Assumptions and sources behind the scenarios can be found in Additional information

Sources: External scenario is based on CRU price and premium assumptions and S&P Global FX assumptions, with adjustments as specified in the footnotes

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# Metal Markets profitability growth roadmap

Main drivers: Recycling growth, commercial differentiation and market development





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# Extrusions profitability growth roadmap

Main drivers: Improvement program and commercial ambition



1) Cash flow calculated as EBITDA + tax + long-term sustaining CAPEX. "Other" includes the effects from underlying market growth Assumptions and sources behind the scenarios can be found in Additional information

# Energy profitability growth roadmap

Main drivers: Net spot sales volume and market development



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# Resilience and optionality through full value chain presence

Integration brings resilient financial results, broader access to attractive growth and superior customer offering

Hydro quarterly AEBITDA per BA (indexed per  $BA - Q1 \ 2018 = 100)^{1)}$ 



### Enabling financial resilience.....

Resilience in financial results in spite of volatility in business cycles and performance of individual business areas

Capital allocation directed towards the most attractive opportunities across value chain at any given time and ability to stage according to market needs

### ....and unique value creation opportunities

Preferred and trusted supplier and sustainability partner on the way to net-zero

Integrated value chain enables traceability "under one roof" in unique customer offering

Partnerships with customers along the value chain unlock innovative business opportunities driven by green transition

# Aiming for competitive returns to shareholders

- Aiming for competitive shareholder returns compared to alternative investments in comparable companies
- Distribution proposal to be communicated at Q4 release
- Five-year average payout ratio 2019-2023 of 74%<sup>2)</sup>, excluding share buy-backs
- Hydro's capital structure policy to maintain an adjusted net debt target over the cycle around NOK 25 billion remains unchanged
- The target includes current year shareholder distribution
- Share buybacks ongoing, approximately 32% of the program repurchased as of November 20, 2024

- 1) Based on share price at year end
- Average dividend per share divided by average adjusted earnings per share from continuing operations for last five years.
- 3) Distributed share of underlying net income including share buy-backs

### Solid dividend track record





#### Hydro's Dividend Policy

- Pay out minimum 50 percent of adjusted net income as ordinary dividend over the cycle
- The dividend policy has a floor of NOK 1.25 per share
- Share buybacks or extraordinary dividends will supplement dividends during periods of strong financials, due consideration being given to the commodity cycle and capital requirements for future growth
- The pay out should reflect Hydro's aim to give its shareholders competitive returns, benchmarked against alternative investments in comparable companies

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# Key messages

### Financial strength and flexibility

• Investment grade credit rating

### Robust shareholder payout

• Aiming for competitive returns to shareholders aligned with dividend policy and capital structure targets

### Strong performance drive, increasing resilience

- New improvement program of NOK 6.5 billion by 2030, to focus scope, add transparency and clarify link to bottom-line
- Lifting NOC performance, partially offsetting market effects
- Solid profitability roadmaps for Hydro and business areas

### Capital discipline with clear allocation priorities

 85% of growth & return seeking capex allocated to strategic growth areas 2024-27



# Key takeaways from today



Accelerating growth, value creation and sustainability – Supported by resilient financial framework driving long-term shareholder value



Executing on Recycling, Extrusions and renewable growth ambitions

 Recycling and Extrusions executions towards 2030 ambitions strengthened by improvements, market recovery expected



Progressing on pathway to net-zero

- Delivering on 10% reduction by 2025 from fuel switching and el-boilers at Alunorte
- Executing on initiatives in all steps towards 2030 and 2050



New improvement program

- Robust position across business areas, with ambition to strengthen further
- New improvement program to focus scope, add transparency and clarify link to bottom-line



Capital discipline and focused growth guiding capital allocation

- 85% share on non-sustaining capex allocated to strategic growth areas
- Expected profitable returns from growth projects in the range of 10-35% IRR



Shaping the market for greener in partnership with customers

- Progressing on greener earnings uplift potential in 2024
- Partnerships advancing and building capabilities for contributions towards 2030



Aiming for competitive returns to shareholders

- Solid dividend track record
- Expecting distribution in accordance with dividend policy, to be announced in Q4 release



Capital Markets Day 2024

# Appendix

# Guidance: Year-end adjusted net debt



Note that the information on this page is based on forward looking information from current point in time and changes might occur during the coming quarter

### Adjusted net debt YE - moving parts to keep in mind:

- Q4 EBITDA guiding as per Q3 2024 below
- 2024 capex guiding NOK 15 billion
- Updated YE NOC guidance at NOK 29 billion

- SBB ongoing
- No shareholder distribution from Alunorte affecting 2024 YE adjusted net debt

#### Bauxite & Alumina

- Higher production volume
- Higher alumina price
- Higher fixed costs of between NOK 400 and 500
  million
- Flat raw material cost

### Extrusions

- Lower sales margins
- Lower sales volumes and recycling margins
- Higher variable costs
- Continued soft extrusions markets

#### Aluminium Metal

- ~71% of primary production for Q4 2024 priced at USD 2 445 per mt.
- ~42% of premiums affecting Q4 2024 booked at USD ~ 507 per mt.
- Q4 realized premium expected in the range of USD 380 and 430 per mt.
- Higher raw material cost between NOK 850 and 950 million driven by alumina
- Positive effect of alumina hedge of approximately NOK 300 million QoQ
- Seasonally lower fixed costs in Q3 are projected to return to normal levels in Q4, resulting in a negative quarter-over-quarter impact of NOK 100 million

### Metal Markets

- Seasonally lower volumes and continued margin pressure in the recyclers
- Lower results from sourcing and trading activities
- Continued volatile trading and currency effects
- Guidance for YE Commercial Adjusted EBITDA excl. currency and inventory of NOK 700 - 900 million

### Energy

- Stable production
- Seasonally higher prices and price area differences
- Price and volume uncertainty

## Raw material costs development







Indication of current market prices





Fuel Oil A1 (indexed) Henry Hub Natural Gas Spot Price (indexed)

NO2 (indexed)



Steam coal (indexed) Q3-20 Q4-20 Q1-22 Q2-22 Q3-22 Q4-22 Q1-23 Q2-23 Q3-23 Q4-23 Q1-21 Q2-21 Q3-21 Q4-21 Q1-24 Q2-24 **3**3-24

8 7

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3

2

# 2026 hedging mandate completed in October

460 kt aluminium hedged at ~2,600 USD/t

### Aluminium hedges of 110-460 kt/yr 2024-2026 in place

- 2024: 73 kt remaining at a price of ~2400 USD/t
- 2025: 450 kt hedged at a price of ~2400 USD/t
- 2026: 460 kt hedged at a price of ~2600 USD/t
- Pricing mainly in NOK. Net USD exposure hedged via USD/NOK derivatives
- Corresponding raw material exposure partially secured using financial derivatives or physical contracts

### B&A and AM BRL/USD Hedge

- USD 860 million sold forward for 2024-2026
  - 2024: USD 56 million remaining at avg. rate 6.19
  - 2025: USD 350 million hedged at avg. rate 5.33
  - 2026: USD 175 million hedged at avg. rate 5.48
- Aim to reduce volatility and uncertainty in Alunorte and Albras cash flows, as well as support robust cost curve positions

### Strategic hedging status<sup>1)</sup>



### Utilizing Hydro's hedging policy to deliver on strategic ambitions

- Flexibility to hedge in certain cases
  - Support strong cost position
  - Strong margins in historical perspective, e.g., supporting ARoaCE target
  - Larger investments

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# Significant exposure to commodity and currency fluctuations



### Aluminium price sensitivity +10%



### Other commodity prices, sensitivity +10%





### Currency sensitivities +10%

Sustainable effect:					
NOK million	USD	BRL	EUR		
AEBITDA	5,070	(1,050)	(150)		
One-off reevaluation effect:					
Financial items	(1,320)	1,450	(3,730)		

- Annual adjusted sensitivities based on normal annual business volumes. LME 2,300 USD/mt, realized premium 370 USD/mt, PAX 400 USD/mt, petroleum coke 400 USD/mt, pitch 900 EUR/mt, caustic soda 390 USD/mt, coal 90 USD/mt, gas (Henry Hub) 2.34 USD/MMBtu, USDNOK 10.72, BRLNOK 2.08, EURNOK 11.60
- Aluminium price sensitivity is net of aluminium price indexed costs and excluding unrealized effects
   related to operational hedging
- Excludes effects of priced contracts in currencies different from underlying currency exposure (transaction exposure)
- Currency sensitivity on financial items includes effects from intercompany positions
- 2025 Platts alumina index (PAX) exposure used
- Adjusted Net Income sensitivity calculated as AEBITDA sensitivity after 30% tax
- Sensitivities include strategic hedges for 2025 (remaining volumes for 2025, annualized)

## Bauxite & Alumina sensitivities



### Annual sensitivities on adjusted EBITDA if +10\% in price



#### Revenue impact

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)

Annual adjusted sensitivities based on normal annual business volumes. LME 2,300 USD/mt, realized premium 370 USD/mt, PAX 400 USD/mt, petroleum coke 400 USD/mt, pitch 900 EUR/mt, caustic soda 390 USD/mt, coal 90 USD/mt, gas (Henry Hub) 2.34 USD/MMBtu, USDNOK 10.72, BRLNOK 2.08, EURNOK 11.60 2025 Platts alumina index (PAX) exposure used Note: Refers to consolidated EBITDA impact

## Aluminium Metal sensitivities



## Annual sensitivities on adjusted EBITDA if +10% in price



### 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
- ~ 2-3 months lag
- · Mainly priced on Platts index

#### 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

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

Annual adjusted sensitivities based on normal annual business volumes. LME 2,300 USD/mt, realized premium 370 USD/mt, PAX 400 USD/mt, petroleum coke 400 USD/mt, pitch 900 EUR/mt, caustic soda 390 USD/mt, coal 90 USD/mt, gas (Henry Hub) 2.34 USD/MMBtu, USDNOK 10.72, BRLNOK 2.08, EURNOK 11.60 Note: Refers to consolidated EBITDA impact

# CAPEX sensitivity to FX



### Annual sensitivities on CAPEX if +10% in currency <sup>1</sup>) NOK million



### Capex currency exposure <sup>3)</sup>

- BRL ~35%
- USD ~20%EUR ~20%
- EUK ~20 /0
  NOK and other
- NOK and other ~25%

The estimates for the different currencies exposures for capex are based on the 2025-2027 allocation guidance.

The annual sensitivity estimates are based on the 2025 allocation guidance of NOK 15 billion

There is possible underlying FX exposure in the Norwegian smelters for the EUR and for the USD

3) Based on 25-27 allocation

## Scenario assumptions



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

- Starting point AEBITDA Q3 2024 LTM
- Cash flow calculated as AEBITDA less EBIT tax and long-term sustaining CAPEX, less lease payments and interest expenses for Hydro Group
- Tax rates: 25% for business areas, 50% for Energy, 33% (LTM) for Hydro Group
- ARoaCE calculated as AEBIT after tax divided by average capital employed
  - Average capital employed assumed to increase with assumed CAPEX above depreciation 2025-2030
- 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, raw material prices, downstream margin developments, premiums, inflation, currency, depreciation, taxes, investments, interest expense, competitors' cost positions, and others
- External scenario is based on CRU price and premium assumptions and S&P Global FX assumptions, with adjustments as specified in the footnotes
- EBITDA sensitivities refers to consolidated impact.
   From a cash perspective exposures may be smaller due to minority interests
- Full operational and commercial improvement targets included in roadmaps, while 40% of Procurement target is included, reflecting that part of target is mitigation of cost pressure and CAPEX reduction

		2025		2030			
Assumptions used in scenarios	Q3 2024 LTM	Forward real 2024	Last 5 year average	CRU / S&P Global real 2024	Forward real 2024	Last 5 year average	CRU / S&P Global real 2024
LME, USD/mt	2,300	2,550 (deflated by 2.5%)	2,260	2,520 (deflated by 2.5%)	2,370 (deflated by 2.5%)	2,260	2,690 (deflated by 2.5%)
Realized premium, USD/mt	370	420 <sup>1)</sup>	430	430 <sup>4)</sup> (deflated by 2.5%)	420 <sup>1)</sup>	430	570 <sup>4)</sup> (deflated by 2.5%)
PAX, USD/mt	400	440 <sup>2)</sup> (deflated by 2.5%)	340	390 (deflated by 2.5%)	400 <sup>2)</sup> (deflated by 2.5%)	340	360 (deflated by 2.5%)
Gas, USD/MMBtu	2.34	3.17 (deflated by 2.5%)	3.46	3.15 (deflated by 2.5%)	2.96 (deflated by 2.5%)	3.46	3.25 (deflated by 2.5%)
Caustic soda, USD/mt	390	370 <sup>1)</sup>	430	420 (deflated by 2.5%)	370 <sup>1)</sup>	430	420 (deflated by 2.5%)
Coal, USD/mt	90	120 (deflated by 2.5%)	140	150 (deflated by 2.5%)	120 <sup>3)</sup> (deflated by 2.5%)	140	130 (deflated by 2.5%)
Pitch, EUR/mt	900	850 <sup>1)</sup>	870	970 <sup>5)</sup> (deflated by 2.5%)	850 <sup>1)</sup>	870	1,040 <sup>5)</sup> (deflated by 2.5%)
Pet coke, USD/mt	400	330 <sup>1)</sup>	450	490 <sup>5)</sup> (deflated by 2.5%)	330 <sup>1)</sup>	450	530 <sup>5)</sup> (deflated by 2.5%)
NO2, NOK/MWh Nordic system, NOK/MWh	630 500	580 <sup>6)</sup> 450 (deflated by 2.5%)	900 650	580 <sup>7)</sup> 450 <sup>7)</sup> (deflated by 2.5%)	640 <sup>6)</sup> 520 (deflated by 2.5%)	900 650	640 <sup>7)</sup> 520 <sup>7)</sup> (deflated by 2.5%)
USDNOK EURNOK BRLNOK	10.72 11.60 2.08	11.00 12.06 1.91	9.69 10.73 1.90	10.32 <sup>8)</sup> 11.43 <sup>8)</sup> 1.92 <sup>8)</sup>	10.91 12.87 1.91	9.69 10.73 1.90	8.58 <sup>8)</sup> 10.10 <sup>8)</sup> 1.56 <sup>8)</sup>

1) Spot price 2) 17% of LME forward price deflated by 2.5%. 3) 2026 nominal forward price deflated by 2.5% 4) Realized premium based on CRU standard ingot premium 5) Historic average % of LME, using CRU LME price deflated by 2.5% 6) Based on Nordic system forward price and constant NO2-Nordic system area price difference 7) Based on price from forward case 8) Based on S&P Global Source: Republished under license from CRU International Ltd. and S&P Global

## Next event Fourth quarter results and 2024 Annual Report February 14, 2025

For more information see www.hydro.com/ir

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