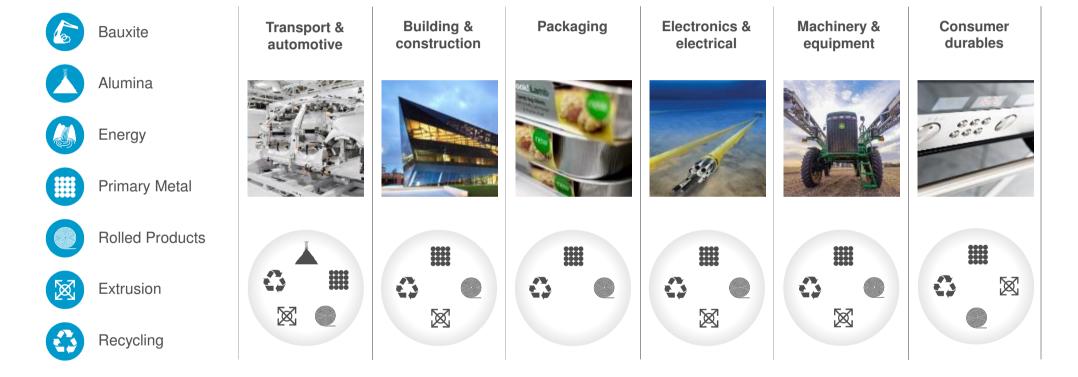


# Norsk Hydro

Svein Richard Brandtzæg 2018 Global Metals, Mining & Steel Conference

#### Fully integrated across the aluminium value chain and markets

Broad products and solutions offering from bauxite to end-user products







#### Alunorte situation – status and measures

#### Status

- Alunorte producing at 50% following orders from environmental authorities and court
- Paragominas producing at 50%, due to reduced Alunorte production
- Albras curtailed 50%, due to reduced Alunorte production
- Timing for resuming 100% production still uncertain
- Environmental authorities have confirmed that there was no overflow from the bauxite residue area

#### Measures

- MNOK ~500 in increasing water treatment capacity by 50%
- MNOK ~250 to support broad collaboration for social change – Sustainable Barcarena Initiative
- Updated emergency preparedness procedures
- Strengthening of local and central environmental resources and competence
- Several other measures and actions already initiated or implemented at Alunorte



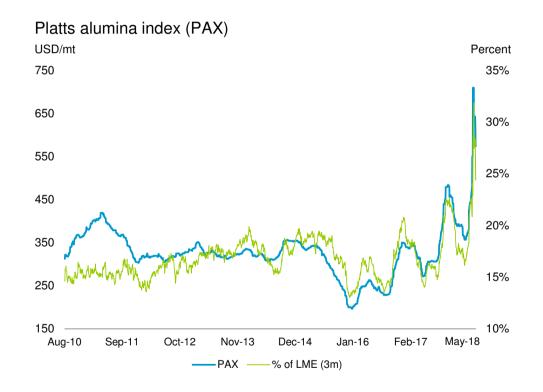
### Negotiations to resume production progressing

- Hydro seeking dialogue with all relevant authorities to find solutions
- Constructive dialogue with Government of Pará, including state environmental agency SEMAS
- Seeking negotiations with Ministerio Publicò
- Other legal and political processes ongoing at state and federal level





### High alumina prices following market uncertainty



- Uncertainty on alumina availability following Alunorte curtailment and Rusal sanctions, triggering price spike and high volatility
- High price arbitrage between China and world outside China incentivizing Chinese exports
  - Some cargos exported from China in March/April
  - Logistical constraints may cause challenges
- Hydro active in the 3<sup>rd</sup> party market sourcing additional volumes of alumina





### Demand driven both by substitution and expansion into new markets

Aluminium is the fastest-growing base metal in the world



Marine / Offshore applications



Zero-emission electrical car ferries in 100% aluminium for light-weighting



B&C, e.g. Supertall buildings



Transportation, truck & trailer applications



Aluminium in solar panels



Industrial applications, e.g. furnitures



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

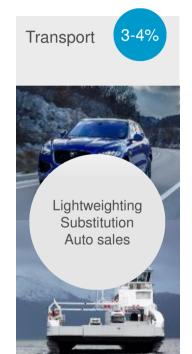


Automotive, stong drive towards EV

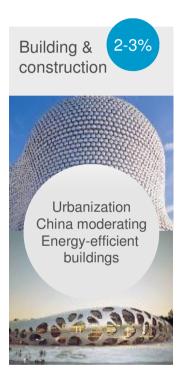


#### Aluminium's reach is growing in response to key long-term trends

Substitution continues to be a key driver for aluminium















Global semis demand for segment, CAGR 2017-2027

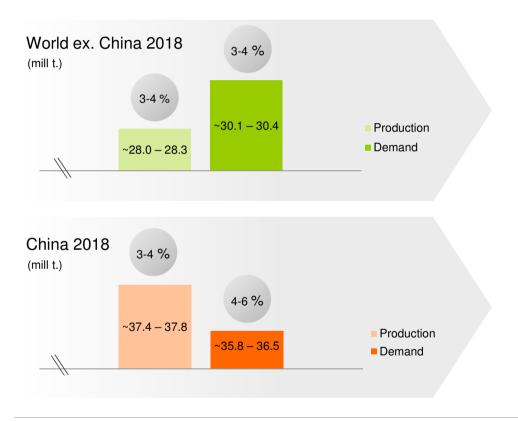
Source: CRU, Hydro Analysis

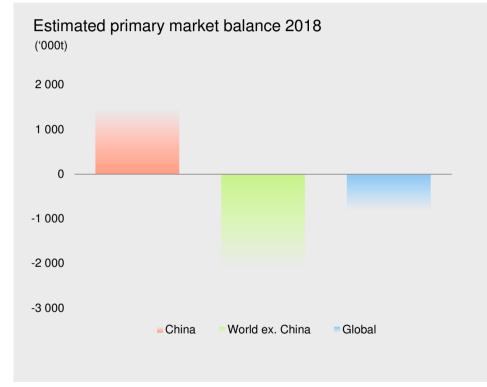


<sup>\*</sup> Post-consumer and fabrication scrap

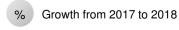
<sup>\*\*</sup> Unallocated creep estimated at same level as unallocated disruptions

# Primary aluminium market moving towards deficit in 2018, increased uncertainty





Source: CRU, Hydro analysis







#### Better, Bigger, Greener

Hydro's aspiration for higher value creation

#### Better

### Raise performance and improve customer offering

- Extend Hydro's leadership in advanced technology and product innovation
- Create value through raw materials access, customer collaboration and integrated model
- Continue benchmark performance and ensure attractive returns over the cycle



### **Expand the use of aluminium and strengthen Hydro's platform for growth**

- Promote Hydro and aluminium through valueadding products and solutions for our customers
- Be the preferred partner and most trusted voice of the aluminium industry
- Pursue selective growth from raw materials to products, solutions and recycling



#### Lead the transition towards sustainable solutions

- Advocate aluminium as a building block for the low-carbon, circular economy
- Continue to improve footprint from own production, recycling and sustainable solutions
- Making a positive difference by strengthening local communities and our business partners



#### Industry-leading improvement drive

Better improvement program hit by Brazil situation, not expected to reach 2018 target



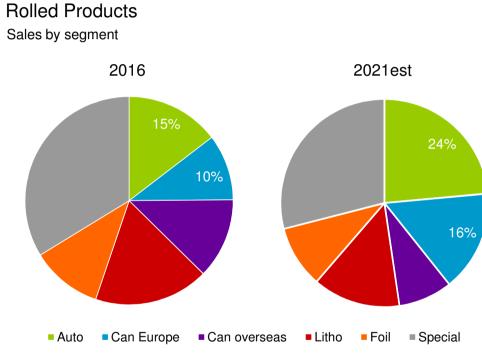


<sup>1)</sup> Real 2015 terms. Includes some larger investments of NOK 3-3.5 billion NOK in 2015-2019: AL3 and UBC in Rolled Products. Creep projects in Primary Metal. Alunorte debottlenecking in B&A.

#### Proven track-record of value creation with further potential

Successful value-over-volume strategy, increasing sales within higher-margin segments







<sup>\*</sup> Net Added Value: calculated as operating revenues less cost of material, including freight costs out

### Hydro in premium segment for casthouse products

Extrusion ingots customer value survey 2017\*



<sup>\* 2017</sup> Customer satisfaction survey for Europe performed by Malik (PIMS)



Karmøy pilot now producing the world's most climate and energy-efficient aluminium



- Ramp-up during first half 2018
- Technology implementation program established to tailor-make spin-off packages/solutions for other electrolysis lines
  - ~50% of 200 000 mt creep ambitions
     estimated annual EBITDA effect
     of MNOK ~300\*
- Net Hydro capex 2015-2018 BNOK 2.7
  - Total capex BNOK 4.3
  - Enova support BNOK 1.6



<sup>\*</sup> Calculation based on actual EBITDA margin 2017

#### Hydro acquires ISAL, Aluchemie and Alufluor

Strengthening Hydro's position as Europe's #1 supplier of value-add products

#### Transaction details

- Binding offer to Rio Tinto to acquire
  - 100 % in Icelandic aluminium plant ISAL
  - Remaining 53 % in Dutch anode facility Aluchemie
  - 50 % in Swedish aluminium fluoride plant Alufluor AB
- Agreed enterprise value of USD 345 million, subject to post-closing adjustments
- Significant improvement potential, including technology, freight and anode investment synergies

#### Strategic rationale

- Increases Hydro's total primary aluminium capacity to 2.4 million tonnes per year\*\*
- Further improving Hydro's position as the low-carbon aluminium producer by lifting the share of renewables-based aluminium production to more than 70 %
- Strengthens Hydro's position as Europe's leading supplier of extrusion ingot
- Reinforces Hydro's strategic direction as a fully-integrated aluminium company



**Alufluor** 



**Aluchemie** 

<sup>\*</sup> Pending statutory consultation with Rio Tinto employees and stakeholders, in accordance with French and Dutch law

<sup>\*\*</sup> Consolidated capacity

#### Part of the solution – turning words into action

Industrial strategy, business development and climate ambitions hand in hand



## Value-creating, climate friendly investments

Karmøy technology pilot Primary Metal, Norway

Automotive line 3
Rolled Products, Germany

**UBC recycling line**Rolled Products, Germany

Wind power sourcing Energy, Norway

Fuel switch Project
Bauxite & Alumina, Brazil



### Hydro's climate strategy converted into low-carbon products

Our uniqueness is our integrated value chain, share of hydropower and post-consumer scrap recycling

#### Hydro 4.0







All-in approach

Maximum or below 4.0 kg CO2e/kg Al

Verified according to ISO 14064 by DNV GL

Hydro 75R

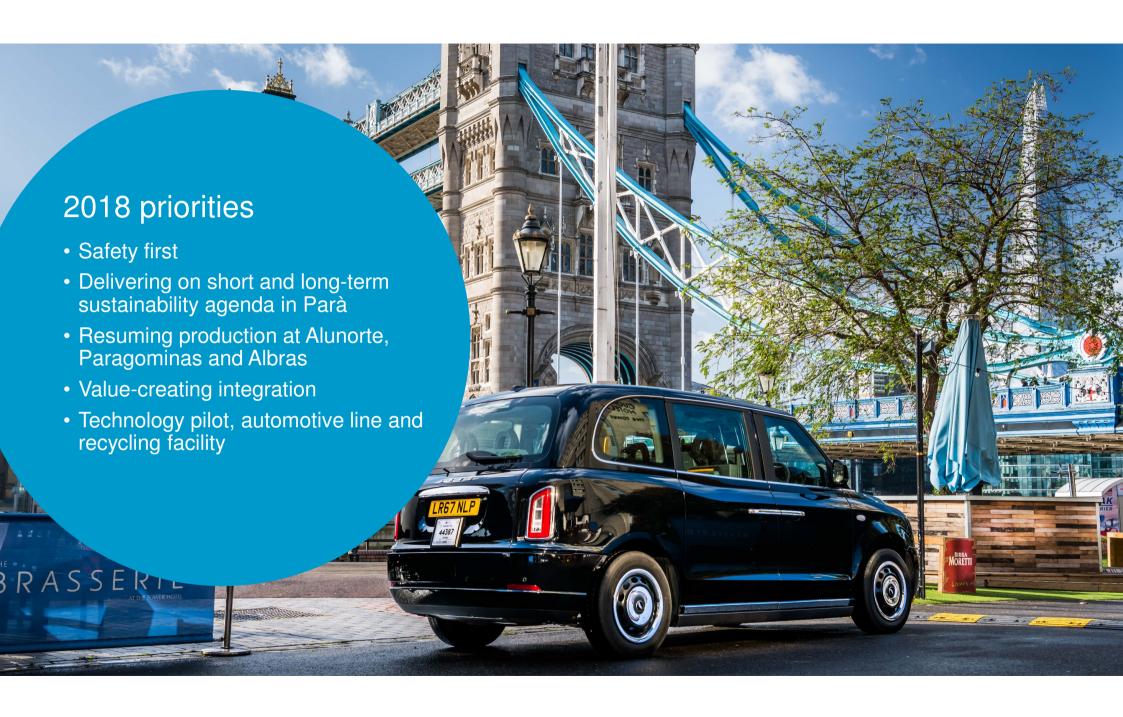




At least 75% post-consumer recycled aluminium

Verified by DNV GL based on traceability and quality principles developed by Hydro







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