



# Bank of America – Hydro

## Energy overview

June 9, 2022

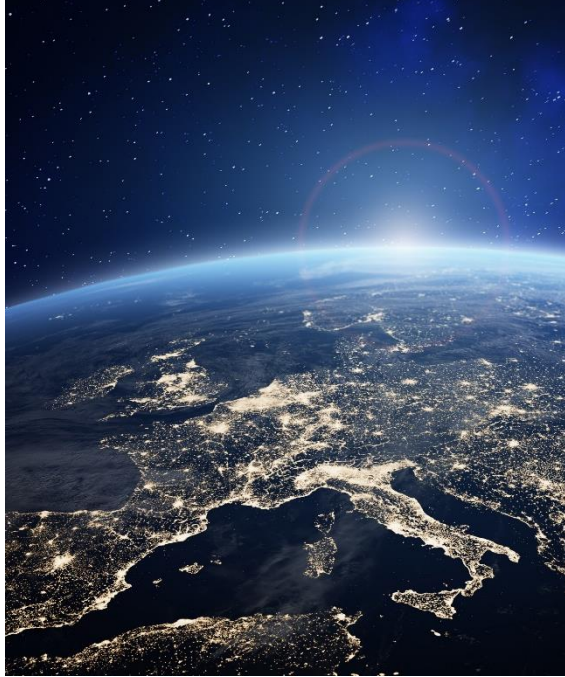


# Sustainability trends creating strategic opportunities



Scaling electrification and decarbonizing industries needed to contain global warming

COP26 pledges by governments on limiting global warming



Will require massive amounts of affordable clean energy



Confirms the need for sustainable and smart mobility



Industry solutions needed to cut emissions from operations



# REPower EU communication

Accelerating the green transition and diversify gas supply

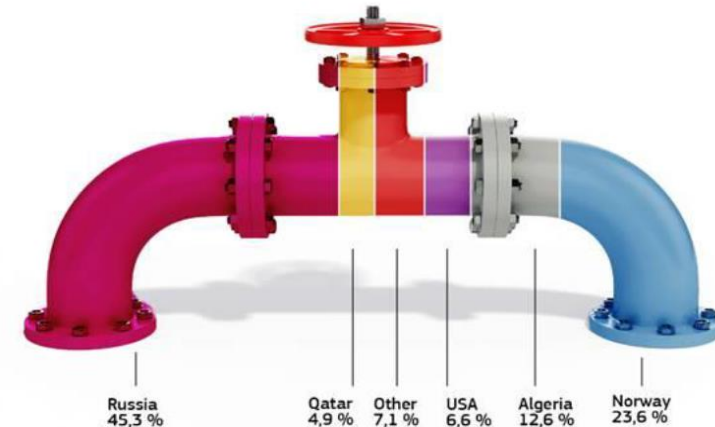
## Main Proposals:

- Independence from Russian gas well before the end of the decade
- Cut Russian gas imports by an estimated 100 bcm by the end of this year
- The plan includes diversifying gas supplies, developing renewable gases more quickly and replacing gas use in heating and power generation
- Sharp increase in renewable power generation, replacing ~38 bcm gas
  - More renewable power; solar rooftop output, more large-scale wind and solar power plants
  - Energy efficiency; heat pumps, EU-wide energy savings

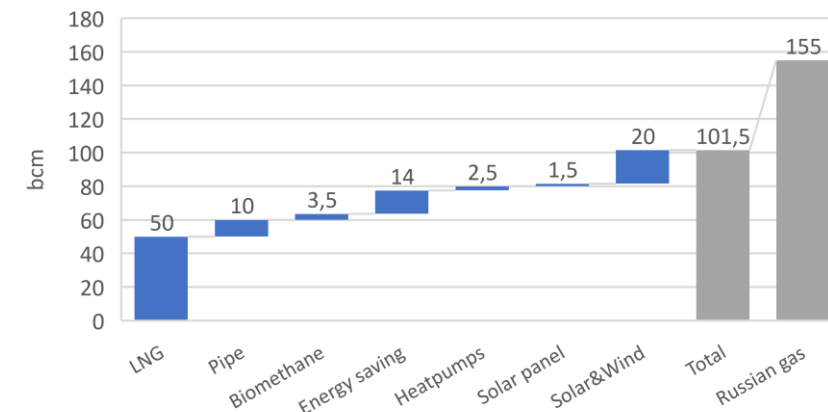
## Expected implications:

- Higher gas- and coal prices will increase power prices short term
- Opportunities in front-loading renewables and hydrogen: “more volume sooner”
- Stronger push for energy savings and more renewables will increase need for demand flexibility
- Europe is more unified – call on Norway to contribute stronger to energy security in Europe (both gas and electricity)

Share in EU natural gas import 2021



Reduce Russian gas by 2/3 this year





# Hydro aims to lead the way decarbonizing the industrial sector



## 1 Strengthen our position in low-carbon aluminium

## 2 Diversify and grow in new energy



 Profitability & Sustainability

# Hydro Energy’s operational and market fundamentals

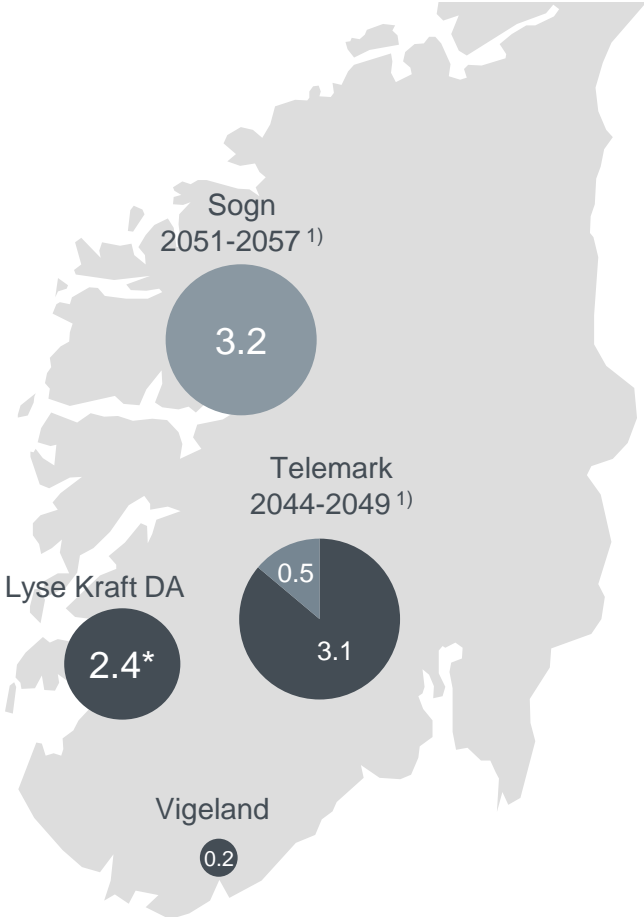
Normal annual production,  
Equity share

9.4 TWh

Operator hydropower

13.0 TWh

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



## Volumes under commercial management

- ~7 TWh contract portfolio Nordics
- ~1 TWh contract portfolio Brazil
- ~4.5 TWh gas consumption
- Serves 100 + plants with energy services/power contract management

## Key commercial processes

- Asset value optimization
- Supply & balancing
- Transmission and networks
- Sourcing and hedging - power and gas
- Invoicing and invoice checking
- Market intelligence and regulatory affairs
- Energy efficiency consulting
- Green project development

1) Reversion year  
\* Production figures for RSK and Lyse Kraft DA are based on a historical average reference as assumed in the transaction. Figures for Sogn and Telemark reflect estimated middle production

# Well placed to position for growth in new energy



Batteries  
Hydro REIN  
Hydro Havrand

Renewable energy, batteries and hydrogen critical for green transition to happen

Industrial and political push especially for European sustainable value chains

Breaking new ground from piloting to asset heavy and capital intensive

Partnerships needed to succeed

Helping industrial customers to succeed with electrification and decarbonization



Hydro

116 years of solving global challenges by industrial development based on green energy

Strong operational footprint and sustainability front runner

Experience with industrialization of innovation. Long experience with large scale investments

Experienced and trusted partner globally

Experienced solutions provider for industrial customers



# Large execution capacity due to strong platform

Business area with supporting competence as foundation for speed and de-risking

## Energy Operations & Energy Markets



## REIN



## Batteries



## HAVRAND



## Projects



Operational scale, commercial competence

Strong industrial partners

Deliver on project pipeline in renewable energies and technologies  
Area specific competencies: technologies, business models, geographies

Project development and implementation

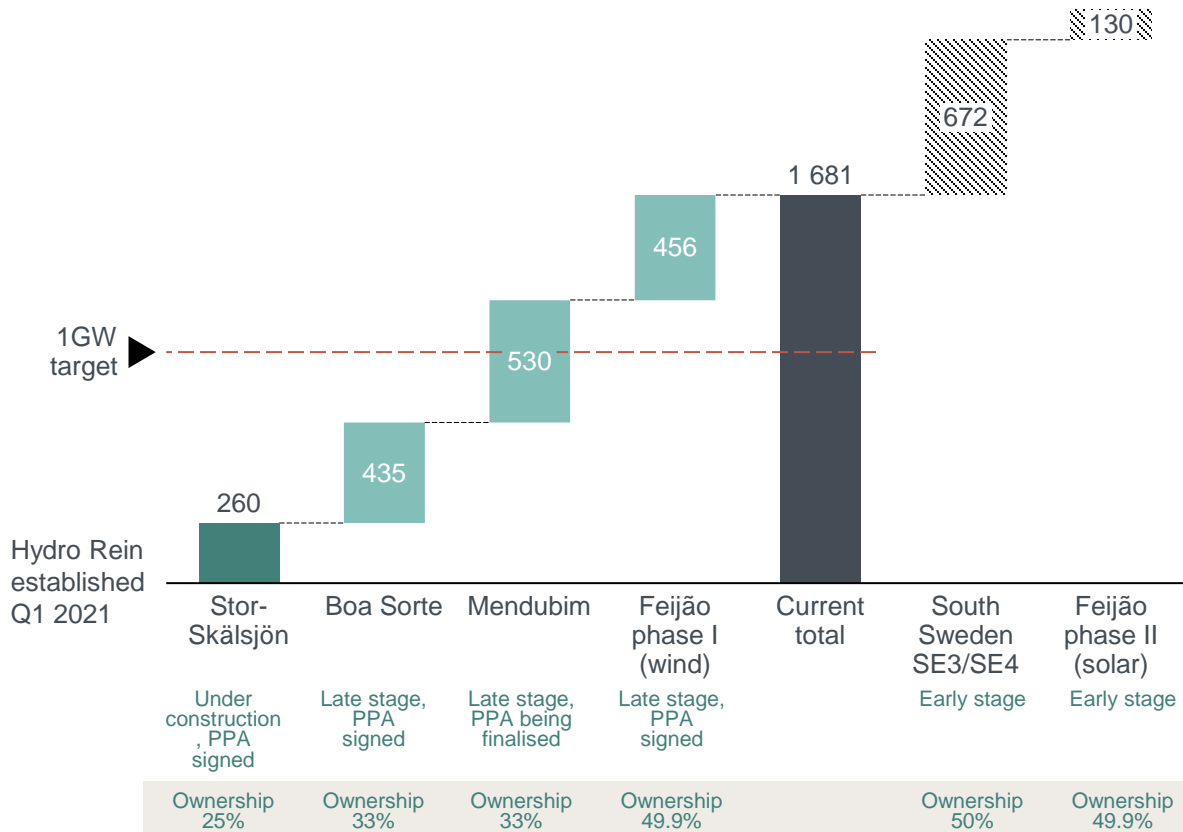
# Hydro Rein growing portfolio beyond 1 GW



Target IPO during 2022

## Hydro Rein ownership portfolio

(MW installed capacity, 100% basis)



## Recent developments in Hydro Rein



**Stor-Skalsjön:** Eolus and Hydro Rein sell 75% of the shares in the project company to MEAG at an EV of EUR 361 million. Hydro Rein to remain a long-term shareholder with a 25% ownership.

**Telenor PPA:** 10-year PPA contract with Telenor Infra through Hydro Energy, delivering power from the wind park Stor-Skalsjön. First transaction showing Hydro Rein and Hydro Energy's ability to offer renewable power solutions to external customers



**Boa Sorte:** Partnership with Atlas Renewable Energy to develop and build 435 MWp solar project in Minas Gerais, Brazil

- PPA signed
- Capex estimate: ~USD 320 million (100% basis)

**Mendubim:** Partnership with Scatec and Equinor to develop 530 MWp solar project in Brazil






- PPA currently being finalized
- Capex estimate: ~USD 390 million (100% basis)

**Feijão:** Partnership with Macquarie Asset Management's Green Investment Group to develop and build 456 MW wind project in PiauÍ and Pernambuco, Brazil.

- PPA signed
- Capex estimate ~USD 700 million (100% basis)



# Continue to build a battery portfolio through industrial partnerships

2022	 Commercial production started  <b>Vianode</b> Partnership with Altor and Elkem
2021	 Construction started of battery recycling plant in Norway
2020	 Founded by Hydro and Northvolt
2019	 Initial investment
2017	 Initial investment



30% ownership

## Vianode - Creating a European leader in sustainable battery materials

- Hydro will have a 30% ownership
- Total investments in first-phase plant including preparations for potential full-scale plant estimated to ~NOK 2 billion.
- Investment decision expected before the summer 2022
- Production of synthetic graphite for >20,000 EVs in the first phase, >1 million at full-scale



50% ownership

## Hydrovolt preparing for commercial production

- Joint Hydro-Northvolt battery recycling facility
- One of the most technologically advanced battery recycling plants globally and largest facility in Europe
- Test production going well, commercial production to start in May
- Preparing for expanding value chain position and international growth

# Hydro Havrand – creating global green hydrogen leader



Fully integrated – owner, developer and operator

## Contribute to Hydro target of reducing own emissions by 30% by 2030

- Substantial potential for industrial hydrogen consumption in Hydro
- Large internal demand for gas that can be replaced by green hydrogen solutions.

## Maturing projects across the aluminium value chain

Hydro Aluminium Metal



Speira (rolled products)



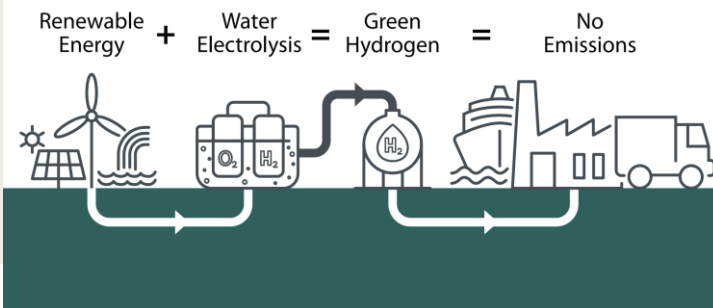
Hydro Extrusions



## Working in strong partnerships to build scale and accelerate growth

Delivering across industries supported by partnerships

- Heavy industries
- Maritime sector
- Long-distance road transport





# Joining forces, competencies and capital





**Hydro**

*Industries that matter*