



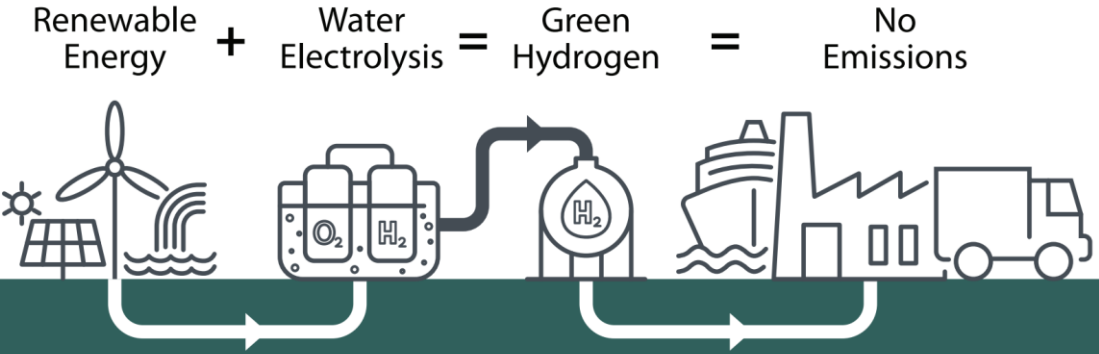
# Accelerating the transition to a cleaner future with green hydrogen

Per Christian Eriksen, Head of Hydro Havrand

Pareto Securities Energy Conference, 15 September 2021

# Green hydrogen enables transition from fossil fuels

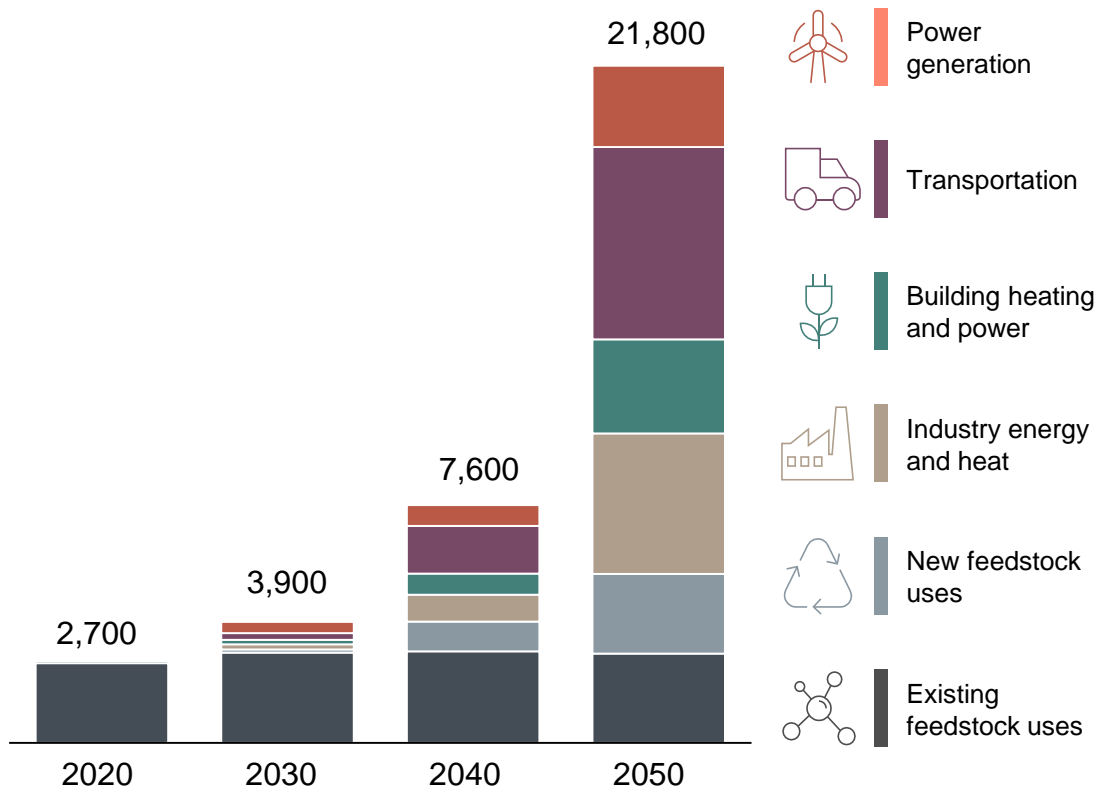
Green hydrogen will play significant role in decarbonizing heavy industry and transport, totaling 1/3 of global emissions



# Demand to rise 7-fold by 2050 – green to rise 7000-fold

Globally, more than 1/3 of large-scale announced hydrogen projects tied to industry

Global hydrogen demand, TWh



Source: Hydrogen Council; BNEF Hydrogen Economy Outlook 2020; von der Leyen speech to the Hydrogen Council, 2021

# Green hydrogen enables leaps towards greener metals



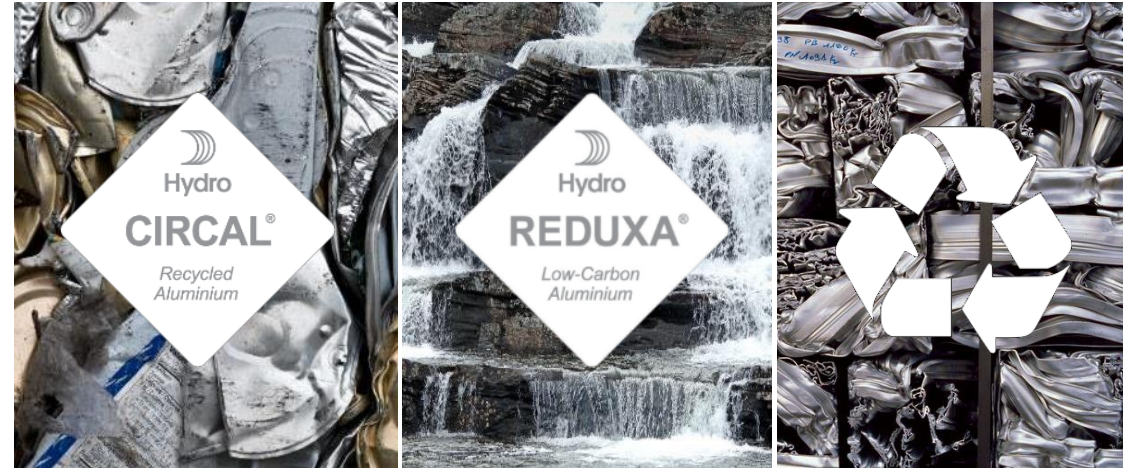
High-heat processes can be fully decarbonized with green hydrogen

## Fossil-free steel: SSAB and Volvo Group



- Ambition to deliver world's first vehicles of fossil-free steel
- Replace coal with hydrogen to make fossil-free steel in 2026
- Will cut Sweden's CO2 emissions with 10%

## Low-carbon aluminium: Hydro

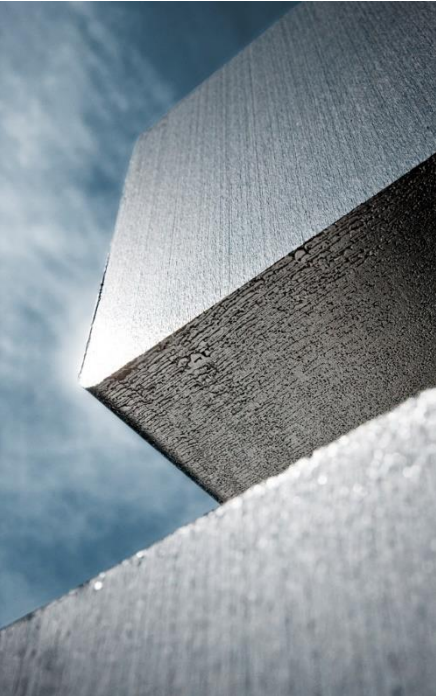


- Ambition to reduce CO2 emissions by 30% by 2030
- Potential across the aluminium value chain
- Decarbonizing casting process and anode production

# Hydro Havrand: Creating a global renewable hydrogen leader

Powering greener industries

Owned by Hydro, a global aluminium and energy company



Hydrogen's future is fossil-free: we do **green-only**



Hydro potential offtake gives platform for growth

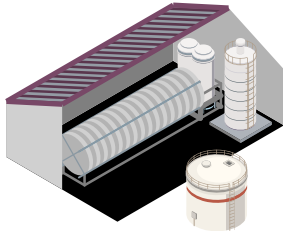
4 GW  
potential offtake\*

80+  
potential locations



Global reach

Fully integrated – owner, developer and operator



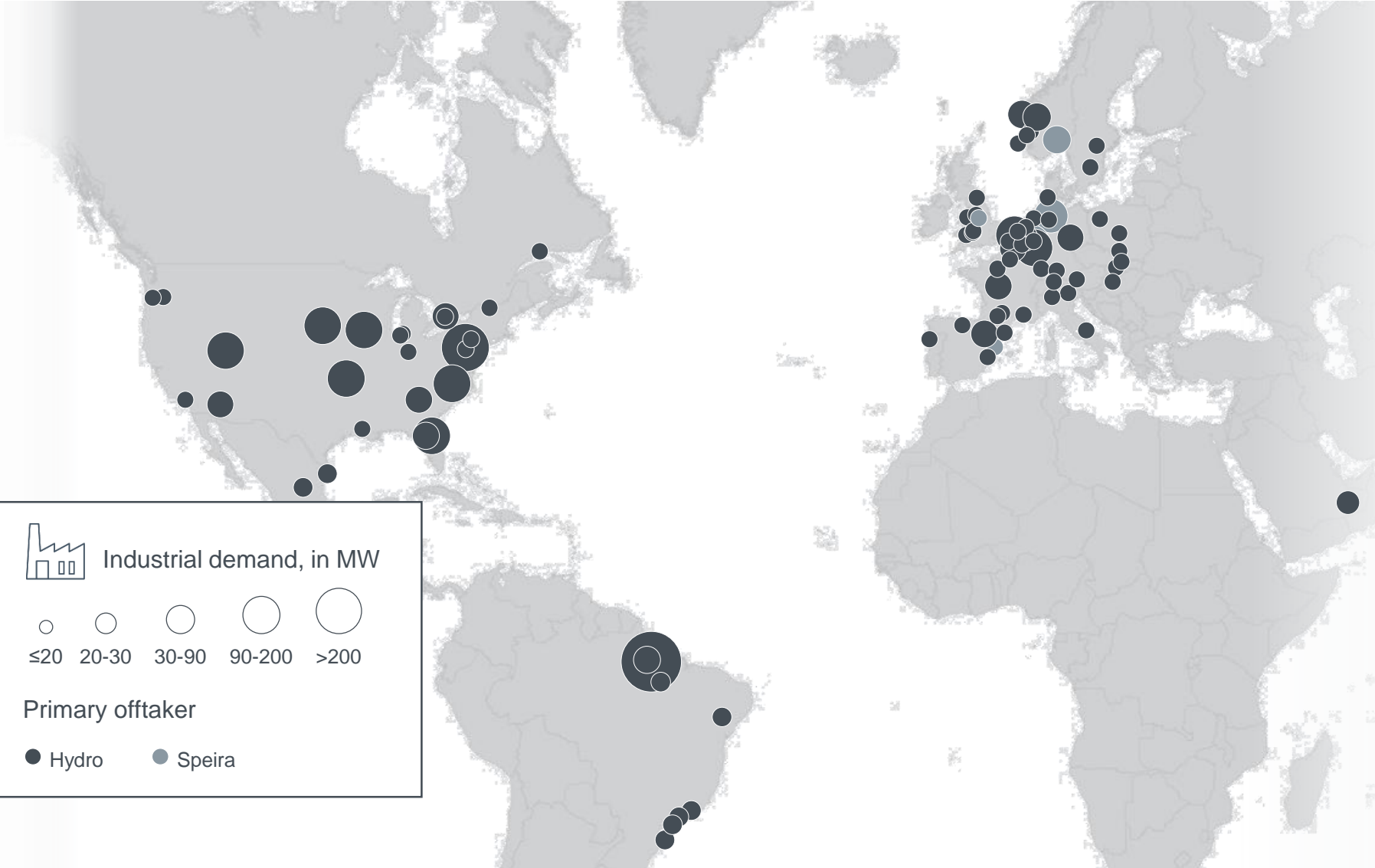
- Maturing projects in Norway and Europe
- 2025: First mover portfolio realised
- 2030: Global footprint


International developer, for industry and transport



\* Potential long-term offtake includes Speira, previously Hydro Rolling

# 4 GW potential long-term demand from partner industrial sites in strategic locations



 Industrial demand, in MW

○ ≤20   ○ 20-30   ○ 30-90   ○ 90-200   ○ >200

Primary offtaker

● Hydro   ● Speira

Industrial partners' gas use replaced with on-site green hydrogen production **1**

Hydrogen clusters serve industrial players, long-distance transport and shipping **2**

Interconnectivity between the sites **3**

# Hydro Havrand ready to move early and capture market positions



Companies originated from Hydro (not exhaustive)

2021  
Hydro establishes green hydrogen company



Lyse Kraft DA



- 1 **First mover position with offtake at scale** and 4 GW demand potential from Hydro and Speira
- 2 **Building portfolio of profitable at-scale green** hydrogen plants to capture nascent, but fast-growing attractive third-party market
- 3 **Uniquely positioned** with existing capabilities, access to competitive renewable power from Hydro – a global leader in industrial power sourcing
- 4 **Strong execution model** combining Hydro’s capabilities, strong management team, and partner ecosystem to serve Hydro and third-party demand

# Strong position to kick-start the green hydrogen economy

Our bold and simple plan: to enable industry and transport to make the shift from fossil fuels to renewable energy through green hydrogen

- Green hydrogen will play significant role in decarbonizing heavy industry and transport, totaling 1/3 of global emissions
- Attractive hydrogen projects on Hydro sites our springboard to global opportunities
- Fully integrated player, offering green hydrogen and unique industry and energy expertise on how to make the fuel switch





**Hydro**