Nel Hydrogen

Hydrogen's Role in Zero-Emissions: Mining

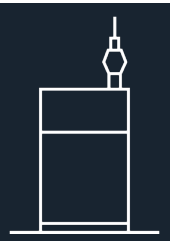
Raymond Schmid
VP Sales & Marketing – EMEA and Oceania
rschmid@nelhydrogen.com


HYDROGEN

Leading pure play hydrogen technology company

Pure play hydrogen technology company listed on the Oslo Stock Exchange (NEL.OSE) since 2014

World's largest electrolyser manufacturer, with >3,500 units delivered in 80+ countries since 1927



Leading manufacturer of hydrogen fueling stations, with ~120 H2Station™ solutions delivered/in progress to 14 countries

In Australia since 5 years with multiple projects operational

Global sales network and offices

543 Employees

Manufacturing facilities in Norway, the US, and Denmark

Strong tailwind for hydrogen solutions

1

Accelerated focus on industrial hydrogen applications

>2,000 GW electrolysis potential

Ammonia

Refinery

Steel

2

Strong momentum within mobility, especially within HDV

>2,000 GW electrolysis potential*

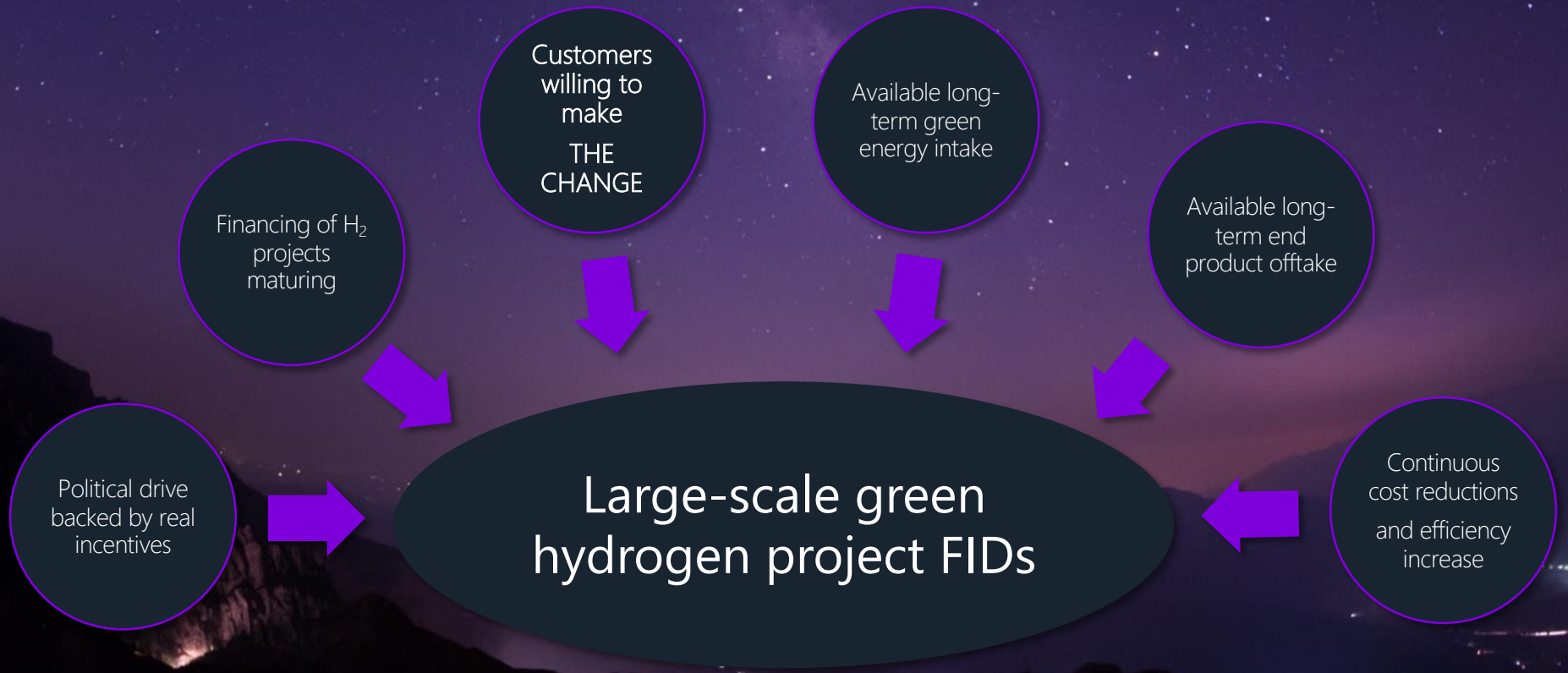
IVECO & Nikola partnering in European fuel cell HDV market

Anglo American/ENGIE to develop fuel cell electric mining trucks

Hyundai reveals HDV concept – plan to deliver 1,600 trucks to Switzerland

* At 50% market share. Image credits: Nikola Corporation, Anglo American, Hyundai

Main triggers for large-scale green hydrogen projects are pushing projects towards final investment decisions



Nel’s Latest Projects supporting Mining Projects

Nel Alkaline and PEM water electrolyser solutions ready for large scale industrial plants

KEY COMMERCIAL DEVELOPMENTS

Alkaline electrolyser – 3,880Nm^3/h (8.4T/day, 20MW)

H2Synergy 20 MW plant; Image credit: Everfuel

- Client: Everfuel
- Mobility + Refinery
- Frederica, Denmark
- Operation: early-2023

- Nel was awarded a 20 MW electrolyser contract for the green hydrogen production facility adjacent to the Federica refinery

- Based on renewable wind power

COMMERCIAL DEVELOPMENTS

PEM electrolyser – 3,960Nm^3/h (8.4T/day, 20MW)

- Client: Iberdrola (Fertiberia)
- Green Ammonia
- Puertollano, Spain
- Operational

Iberdrola, one of the largest electricity utilities in the world, has together with world-leading fertilizer Fertiberia launched a project to establish the largest green hydrogen plant in Europe

The Project includes 100 MW photovoltaic plant, a 20 MWh battery and a 20 MW water electrolyser

COMMERCIAL DEVELOPMENTS

Alkaline electrolyser - 700Nm^3/h (1.5T/day, 3.5MW)

- Client: Engie – Anglo American
- Mining Trucks
- Mogalakwena Platinum Mine, South Africa
- Delivery: 2022

- Replace diesel-fueled mining trucks to the world's largest hydrogen fuel cell mining haul trucks

- Electricity to power the electrolyser will come partly from the grid and partly from a local solar farm

- If successful, over 400 mine haul trucks could be rebuilt to use hydrogen fuel (10,000 globally)

Source: Engie and Anglo American

Alkaline electrolyser - 970Nm^3/h (2T/day, 5MW)

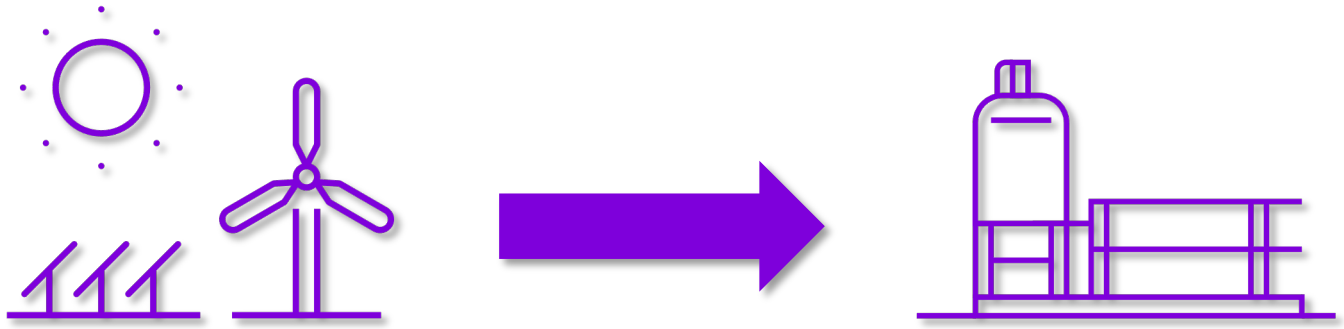
Source: Glencore Nikkelverk

- Client: Glencore Nikkelverk
- Nickel Production
- Kristiansand, Norway
- Delivery: mid-2023

- The client is already familiar with alkaline electrolyser technology as it currently operates a similar system in Kristiansand delivered by Nel

- Nikkelverk was Nel's first commercial client (initial system delivered in 1961)

Alkaline electrolyser – 1,940Nm^3/h (4T/day, 10MW)



SKOVGAARD ENERGY

TOPSOE Vestas

- Client: Skovgaard Energy
- Green Ammonia
- Lemvig, Denmark
- Delivery: Q3-2023

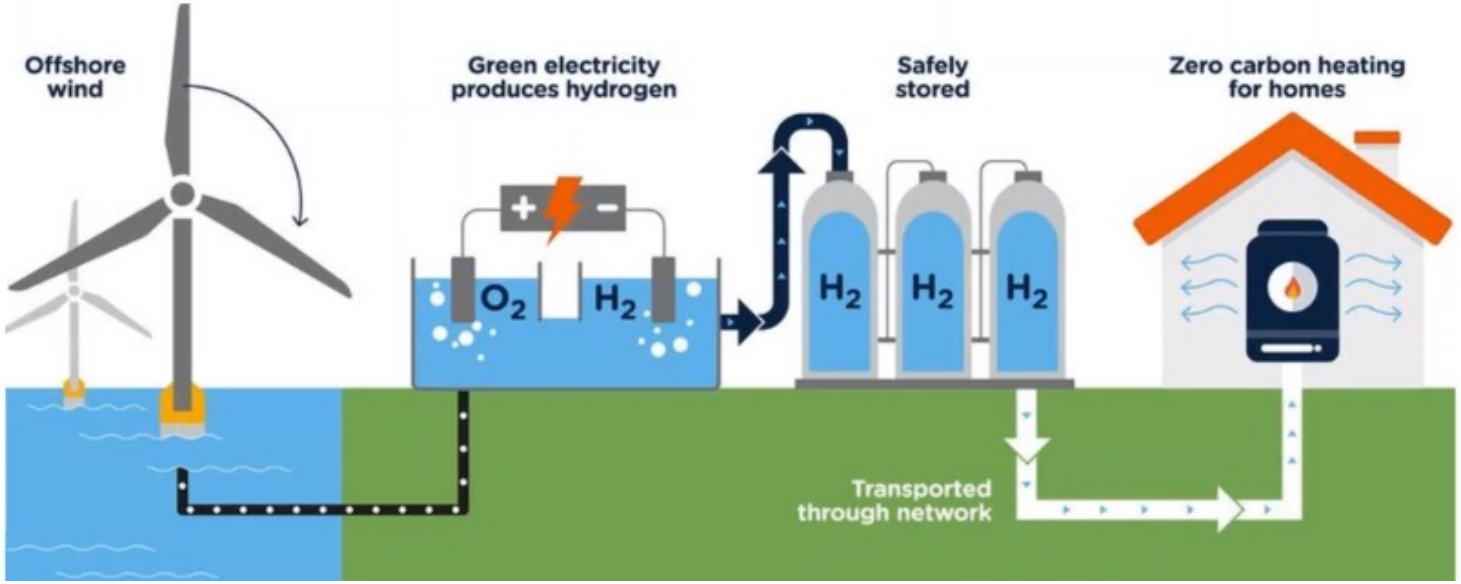
- The project in Denmark will be the world's first dynamic green ammonia plant where renewable electricity from wind and solar will be connected directly to the electrolyser

- This is a demo plant that will test how an ammonia reactor can fluctuate operations based on renewable power input

nel

Alkaline electrolyser - 970Nm^3/h (2T/day, 5MW)

A bright future for Levenmouth': £18m for world's first project to heat homes with 100% green hydrogen



- Client: SGN
- District Heating & Cooking
- Levenmouth, Scotland
- Delivery: Q2-2023

- Electrolyser used for the world's 1st hydrogen to homes heating network
- Powered by nearby offshore wind and grid electricity
- Will supply 300 households with zero carbon heat (potential to expand to 900)

SGN
Your gas. Our network.

COMMERCIAL DEVELOPMENTS

PEM electrolyser – 492Nm³/h (1T/day, 2.6MW)

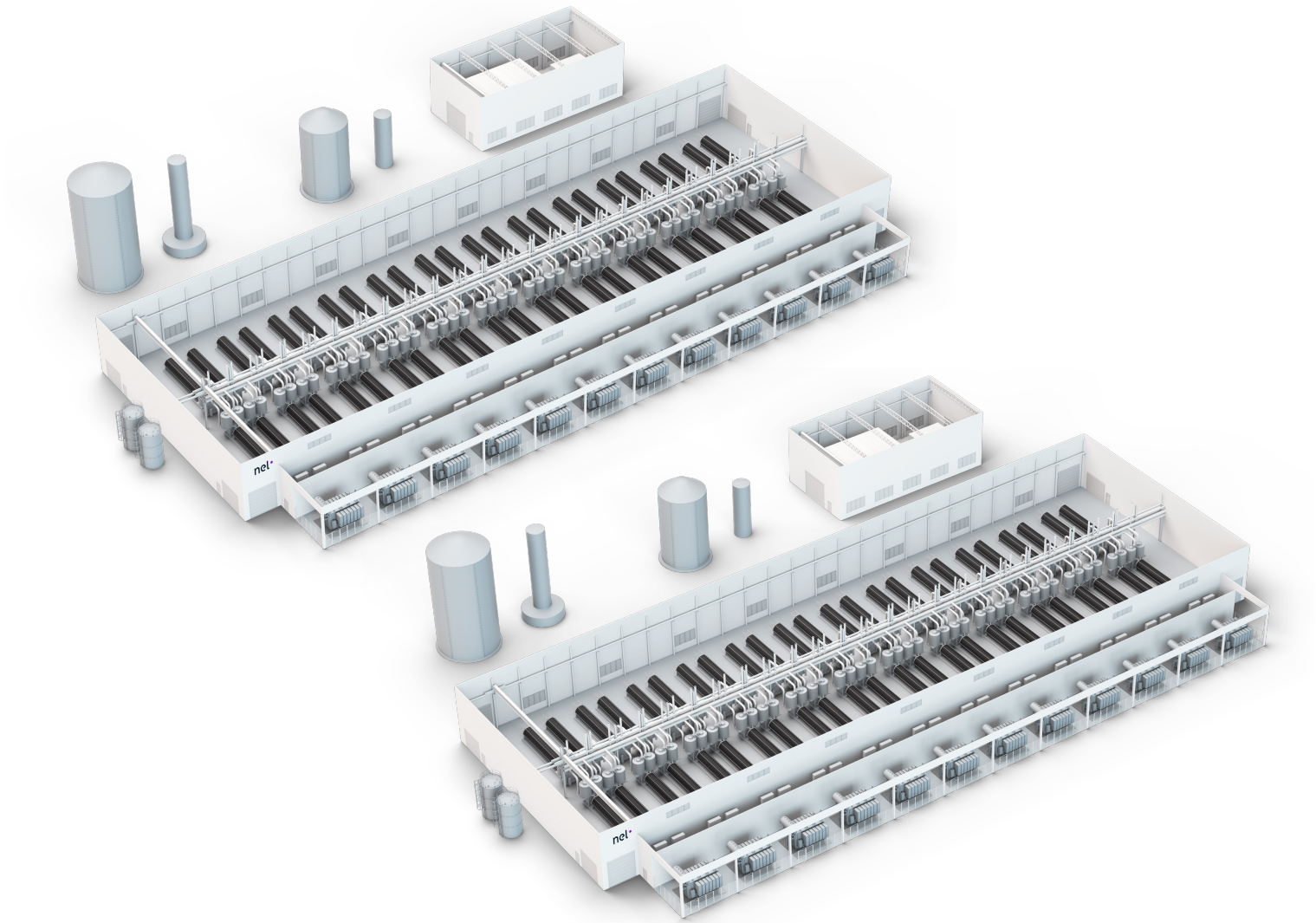
- Client: Viva Energy
- Mobility
- Corio, VIC, Australia
- Delivery: Q3-2023

- Will be the biggest in Australia

- Containerized solution to supply fuel cell grade hydrogen directly on site to a dedicated fueling station

COMMERCIAL DEVELOPMENTS

Alkaline Electrolyser (83T/day, 200MW)



- Client: Undisclosed, USA
- Production: Feb'23-mid'24

- The client has secured both a 20-year green power purchase agreement and a 20-year offtake agreement for 100% of the end product

- Nel was chosen based on maturity of technology and installed production capacity

COMMERCIAL DEVELOPMENTS

- Pipeline is still growing and projects are getting bigger
- Customers concerned about industry supply constraints
- Several paid large-scale FEED studies ongoing and new studies will be initiated

Nel will pursue projects where we have:

- A suitable technology offering
- High quality counterparties
- High probability for project FID
- An acceptable risk profile

nel

Investment decision to build 2nd alkaline production line at Herøya taken

- Increases total annual alkaline production capacity to ~1 GW
- Line 2 is expected to go live in April 2024
- Based on main principles from Line 1 with continuous improvements implemented

number one by nature

rschmid@nelhydrogen.com