

### Fearnley Securities 5th Annual Renewables & Clean-Tech Conference 2023



**Leiv Kallestad, CFO Horisont Energi** 29 November Accelerating the transition to carbon neutrality

Clean energy production

Carbon capture and storage



## A Norwegian clean energy and carbon capture and storage company





## Navigating opportunities and challenges through 2023

							LOI with VNG for clean ammonia
+	Gismarvik selected for CO2 terminal site	Fertiberia to partner with Horisont Energi on Barents Blue	Cooperation agreement with E.ON to realize a European CCS value	Barents Blue project secured power for first project phase	Partnering with PGNiG Upstream Norway as Polaris operator	JDA signed with Fertiberia for Barents Blue development	offtake
			chain				LOI with Barents Naturgass for clean ammonia offtake
_							
-		Equinor and Vår En discontinue participa Barents Blue project in	tion in for new projects	leverage expertise following negative nsing outcome			



## Green growth companies in Oslo facing headwind

- Challenging conditions for several companies, as interest rates rise and cost of capital increases
- Reduced access to capital
- HRGI with runway
  through 2024





# A clean ammonia and CCS value chain in the making





Ammoniakk produks

## Clean ammonia



#### Highlights Barents Blue, clean ammonia The project is part of the IPCEI hydrogen program, Hy2Use





"Best in class" CO<sub>2</sub> footprint - Scope 1, 2 and 3 Above 99% CO<sub>2</sub> capture rate

Europe's first world scale clean ammonia plant

Developing new, clean industry in Northern Norway EU Taxonomy compliant pursuant to delegated acts for hydrogen and anhydrous ammonia

## Barents Blue Europe's first world scale clean ammonia plant

#### Combined with the Polaris CCS project, Barents Blue will offer a best-inclass lifecycle carbon footprint, with more than 99% CO<sub>2</sub> capture

- Located in Hammerfest, in the north of Norway
- Joint development agreement signed with the Spanish ammonia specialist Fertiberia for realization of the project
  - Focus is on the first production line (train) of 1 million tonnes/year of clean ammonia
  - Aligned on scope for the Concept Select milestone
  - Modifications at Melkøya studied with Aibel, and dialogue with Snøhvit established
- Interface activities for **Polaris CO**<sub>2</sub> storage, early study definition of a possible CO<sub>2</sub> terminal in connection with ammonia facilities
- Good progress in commercial aspects, for both feedstock and offtake
  - LOI with VNG Handel & Vertrieb GmbH for offtake of 100.000-300.000 tonnes/year
  - LOI with Barents Naturgass AS for offtake of 100.000 tonnes/year
- Secured sufficient power supply for the first stage of the project
- EU Taxonomy compliant pursuant to delegated acts for hydrogen and anhydrous ammonia
- Barents Blue has received conditional grant of **NOK 482 million from Enova**, as part of the IPCEI Hydrogen programme, Hy2Use















## Polaris carbon storage licence

## Polaris is a key part of the Barents Blue project with capacity for offer for $CO_2$ storage for Norwegian and European customers.

- Signed LOI with PGNiG Upstream Norway where the aim is to get the energy company to enter as partner and operator in the  $CO_2$  licence by the end of 2023
  - This subject to approval from Norwegian authorities, and board approval from both companies
- The Polaris licence has performed well in the work obligations in the first phase of the licence programme
  - The work done includes 3D seismic reprocessing, feasibility studies for subsea and subsurface, concept studies, offshore surveys and operations
  - Horisont Energi have matured two main concepts tailored to CCS developments, the terminal and pipeline concept, and direct offshore injection from vessel to well.
- Signed LOI with E.ON for storage of one million tonnes of CO<sub>2</sub> in Polaris
- Polaris is an important project in the development of a CCS value chain in Northern Norway.





#### Project highlights

- The only CO<sub>2</sub> licence located in the Barents Sea
- Contributes to achieve significant emission reductions
- Developing a fit for purpose cost efficient storage asset
- Focus on sustainable and inherently safe solutions in design
- Safe and long-term sequestration of CO<sub>2</sub>
- An important milestone in developing carbon storage as a major green industry in the north of Norway

#### Key figures





### Gismarvik CO<sub>2</sub> terminal – strategic location in the southern part of Norway

### The largest planned CO<sub>2</sub> terminal in Norway with an annual capacity of up to 20-24 million tonnes

- Signed Agreement in 2022 with Haugaland Industrial Park for a landbased CO<sub>2</sub> terminal planned at the deep-water port of Gismarvik
- The infrastructure is in place, with secured access to electricity, water, and sewage, and a large harbour basin with deep-sea quay
- Transport of CO<sub>2</sub> by pipeline for permanent storage under the seabed of the Norwegian Continental Shelf
- Goal of taking equity positions in carbon storage projects which can be connected to the Gismarvik CO<sub>2</sub> terminal
- The CO<sub>2</sub> terminal is designed to receive small and large volumes of CO<sub>2</sub> from domestic and European customers, arriving by ship or truck
- The ambition is to develop a European CCS value chain together with our partners E.ON and Koole Terminals.





## Gismarvik CO<sub>2</sub> terminal

Gismarvik CO<sub>2</sub> terminal Local CO<sub>2</sub> customers

> Shipping from large European hubs

> > One of Europe's largest CO<sub>2</sub> injection hubs with **24 mtpa** capacity

• Provide solution for several carbon storages

Direct shipping from customer

- Economics of scale enables commercialization of CCS value chain
- Dependable with robust operations and known technology
- Enabler for local value creation and CO<sub>2</sub> reductions
- Scalable with the development of the CCS market
- Prepared for future **European** CO<sub>2</sub> **pipeline**



## **Company highlights**





#### Experienced and committed team

Advancing three strategic projects with high activity levels anticipating significant upcoming milestones. Cash position remains satisfactory and supports current activities going forward until the end of 2024.



#### Barents Blue | Clean ammonia project

Europe's first world-scale clean ammonia plant Best-in-class life-cycle carbon footprint setting the standard for clean ammonia.



#### Polaris CO<sub>2</sub> licence | CCS

PGNIG to become partner and operator on Polaris by the end of the year (subject to approval from Norwegian authorities). New license applications in progress.



## Establishing a CO<sub>2</sub> terminal at Gismarvik in the south part of Norway

Developing a European CCS value chain in cooperation with E.ON and Koole Terminals.



www.horisontenergi.no