



Barents Clean Ammonia

Long-term contracted ammonia infrastructure asset in Norway

August 2026



Project introduction

- Barents Clean Ammonia project was initiated in 2020
- The project's clean ammonia is competitively priced, with short distance to the premium European market
- The project is located in Norway (EEA/EU) with low geopolitical risk
- Now the project is ready to enter FEED, and the plan is to initiate the work in Q4/Q1 2026/27
- Barents Clean Ammonia is seeking partnership with a strategic partner to partly finance the FEED equity including enabling release of EUR 10 million in already awarded grants





Project highlights

World-scale European ammonia opportunity

- The only world-scale low carbon ammonia asset in Europe close to the premium EU market, fully compliant to regulatory framework at low cost.
- Planned IPO shortly after project FID early 2028, offers solid returns in 18 months.

Commercially advanced and well-positioned

- Commercial agreements signed at priced term-sheet level offering a well documented and attractive business case, with access to attractive natural gas.
- Asset closeness to premium EU market providing an excellent commercial position.

Fully established eco-system with strong partners

- Globally recognised partners in all parts of the business ecosystem derisking the project and providing a high quality opportunity all over.
- Ecosystem matured since 2020 offering a mature and high-quality value chain, also technically mature and well advanced in the planning processes.

Attractive returns

- Barents Clean Ammonia offers attractive returns with IRR above 10% (100% project).
- Significant earnings from ammonia sales operations expected providing a high quality investment. NOK 482 million in grant already awarded and not used.



Barents Clean Ammonia⁽¹⁾ project

World-scale clean ammonia facility

Production facility highlights



99% CO₂
capture rate



Clean H₂ capacity:
675 mtpd



Clean NH₃ capacity:
3,000 mtpd



Annual output NH₃:
1 mmtpa

IPCEI project status in EU



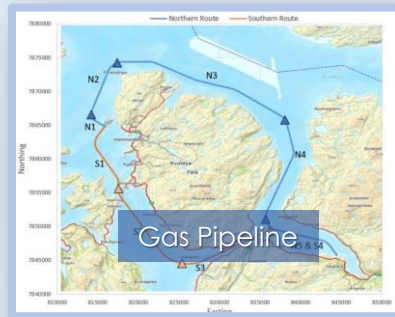
Project ecosystem **matured and ready** for FEED with clear path to FID

Gas supply



- 2.7 MSm³/d of gas purchase from Snøhvit field (oper. since 2007)
- Term sheet signed for 100% of the natural gas supply (long-term) with very low LCA*
- Modification solution for gas export established

Gas feedstock pipeline



- 60 km pipeline from gas plant to ammonia plant
- Concept study performed
- Pipeline route survey performed

Ammonia plant/site



- Option agreement land lease at Markoppneset**
- Plant concept studies completed
- Impact assessment program approved
- Site survey and rock drilling performed
- Reserved 45 MW from grid
- Fresh water supply secured
- FEED contract and EPC option negotiated

CO₂ storage



- 2 million t/year of storage needed
- Term-sheet for transportation and storage signed
- CO₂ storage specification compliance verified

Ammonia sales



- Target 850 000 tons/yr on long-term contracts (with price structures reflecting project cost), and 150 000 tons/yr on short-term contracts
- Ammonia sales term-sheet signed (long-term)
- Ammonia product compliant with EU Taxonomy and Delegated Act on Low Carbon Hydrogen
- Target FOB sales

* [Gas plant CO₂ emissions](#)

** Site regulated for industry since 2006

Project summary

World-scale clean ammonia production in Europe



World-scale 1 million t/ clean ammonia infrastructure asset ready for FEED with IPCEI Hydrogen status in EU

Advanced technical maturity

- Gas source from the Snøhvit field, very low carbon footprint
- Ready for FEED after completing Concept Select (design freeze)
- Topsoe selected as technology partner (since 2020)
- Module based construction strategy, efficient assembly at site
- Market leading environmental and carbon footprint
- Wood Group owner's engineer since 2021
- Site zoned for industrial activity since 2006/2007
- FEED and IG EPCI option negotiated with tier-1 EPC

Advanced commercial maturity

- Competitive clean ammonia pricing from bankable offtakers with contracted cash flow, ECA eligible project
- EU IPCEI grant of NOK 482 million awarded (not used)
- Completed negotiations on long-term gas supply term-sheet (exit possible), bankable counterparties
- Long-term term sheets on ammonia offtake signed (exit possible), bankable counterparties
- Long-term term sheet on CO₂ storage signed (exit possible), bankable counterparties



Barents Clean Ammonia project



Key financial assumptions

- FEED budget: ~ EUR 39 million
- Capex: ~ EUR 2.3 billion (*incl leased items**)
- Target Internal Rate of Return (IRR): >10% pre-tax (provided with NDA)
- Project lifetime: 25 years
- Gas purchase: Long term gas supply agreements, pipeline from Melkøya LNG plant, bankable counterparties
- Ammonia sales: Majority on Long-term ammonia offtake agreements (10-20 years) with bankable counterparties
- CO₂ sequestration: Long-term agreement with 3rd party storage (no reservoir liability), bankable counterparties
- Project financing: Infrastructure and/or PE funds, structured loans, soft funding and equity. *Part of the ammonia facilities will be built and operated by 3rd parties, with a lease/service agreement with Barents Clean Ammonia.

Barents Clean Ammonia project

Main project risks

Market risk

- Market conditions and pricing of clean ammonia remain uncertain; however the project has index-protected margins in offtake term sheets
- Strong demand is forecasted as existing market need to decarbonize and new uses will emerge, but uncertainty regarding timing
- Dependence on long-term offtake agreements to secure contracted and stable cash flows
- Government regulations and support mechanisms could mitigate risk and enhance project viability (e.g. Innovation Fund, Contract For Difference)
- Investment grade offtakers of ammonia, providing infrastructure-like downside

Financial risk

- High upfront investment requirements, but which is ECA compatible with IG EPC option negotiated
- Uncertainty in final CAPEX until FEED/FID is completed
- Ability to raise sufficient equity/debt at favorable terms at financial close

Operational risk

- Volatility in market and feedstock prices, but with margin-spread protection
- Costs of CO₂ transport and storage, potential for further improvement
- Tariffed CO₂ storage with reservoir/storage risk/liability sitting with provider
- Alignment of milestones with CO₂ transport and storage solution
- Melkøya modification project, timing alongside plant's turn-around schedule
- Dependence on stable natural gas supply, but potential risk partly mitigated by LPG storage as backup feedstock source



Key technical data and design information

- Hydrogen technology: Oxyfuel Auto Thermal Reforming
- CO₂ capture rate: > 99 %
- Gas feed: ~2.8 million Sm³/day
- Blue hydrogen capacity: 675 MT/day
- Blue ammonia capacity: 3000 MT/day
- Annual output NH₃: 1 million MT/year
- Ammonia storage in rock cavern ~95 000 m³
(rock quality verified)
- LPG storage in rock cavern ~40 000 m³
(rock quality verified)
- Renewable electricity from grid: 45 MW
- Carbon footprint scope 1-3: 300 g CO₂e/kg H₂
- Total Module Weight: ~60 000 tons



Key schedule figures



2027

Final investment
decision



2031

Est. production
start

Setting the standard for clean ammonia

Multicon



Developing the most carbon and energy efficient ammonia plant in the world

- Minimum emissions & use of clean water
- CO₂ capture rate: > 99 %
- Optimized energy efficiency
- Minimized renewable energy use
- Sustainable solutions and circular practices
- Utilizing the benefit of the cold climate
- Low noise level and light pollution
- Minimum impact on surroundings and biodiversity
- Full EU Taxonomy and Low Carbon Hydrogen Directive (certification) compliance

Project facts

- Established May 2020
- Based on Topsoe ammonia technology
- Design developed with Saipem
- Wood Group Owner's engineer
- EU IPCEI Hydrogen project



Best-in-class **life-cycle** carbon footprint

Life-cycle greenhouse gas emissions (actual footprint)

- 0.3 t CO₂e/t H₂ (well within the taxonomy requirement of 3 t CO₂e/t H₂)
- 3 g CO₂e/MJ (well within the taxonomy requirement of 28,2 g CO₂/MJ)
- 50 kg CO₂e/t ammonia
- Scope 1, 2, and 3 combined to factory gate
- Achieved through carbon capture in excess of 99% carbon capture and other measures

Barents Clean Ammonia will be able to produce clean ammonia compliant to the Delegated Act on low carbon hydrogen

- Sufficient leeway for emissions due to transportation and use of the ammonia





Delegated Act for Low Carbon Hydrogen (DA LCH)

- Following up EU's Gas Package with DA LCH, the Commission arranged a hearing October 2024. Inputs from many industry players was that **project specific numbers for GHG emissions for natural gas** should be allowed, not only standard values¹.
- The EU Commission published DA LCH July 7th 2025
 - Project specific numbers not allowed (except for methane from upstream gas production)
 - Specific emissions numbers in published version lower than in a leaked draft version from April 2025
 - With somewhat more relaxed numbers, more producers will be able to meet the threshold for blue hydrogen/ammonia
- The EU Parliament and EU Council now has 2 months to approve or reject the DA LCH
- **Barents Blue** (Scenario 2 below) will be able to produce blue ammonia **compliant to the draft DA LCH** with sufficient leeway for emissions due to transportation and use of the ammonia.
- **Other projects** (Scenario 3 below) with less ambitious targets and less CO₂ optimized production process, or using natural gas with higher GHG footprint, will have **more challenges** and, in many cases, **struggle to be compliant** to the draft DA LCH.

Scenario	GHG “well-to-factory gate” Polaris storage t CO ₂ e/t H ₂	GHG “well-to-factory gate” North Sea storage t CO ₂ e/t H ₂
1. Project specific data allowed	0.19	0.51
2. Tabulated mandatory values for CO ₂ &N ₂ O, methane project specific	1.08	1.40
3. Tabulated mandatory values for all components CO ₂ , N ₂ O and CH ₄	2.03	2.35

1. Draft DA LCH opens for project specific methane GHG, details to be given in another forthcoming DA

Markoppneset plant site



Located in Hammerfest municipality in Northern Norway

- Next to Repparfjord – sheltered waters and no sea ice
- Local supplier industry (re LNG facility) 35-45 min drive
- Lakselv and Alta (30,000 inhabitants) within driving distance
- Material balance at site, no need for transport of mass
- Abundant access to clean water

Construction camp planned at plant site, both permanent and temporary buildings.

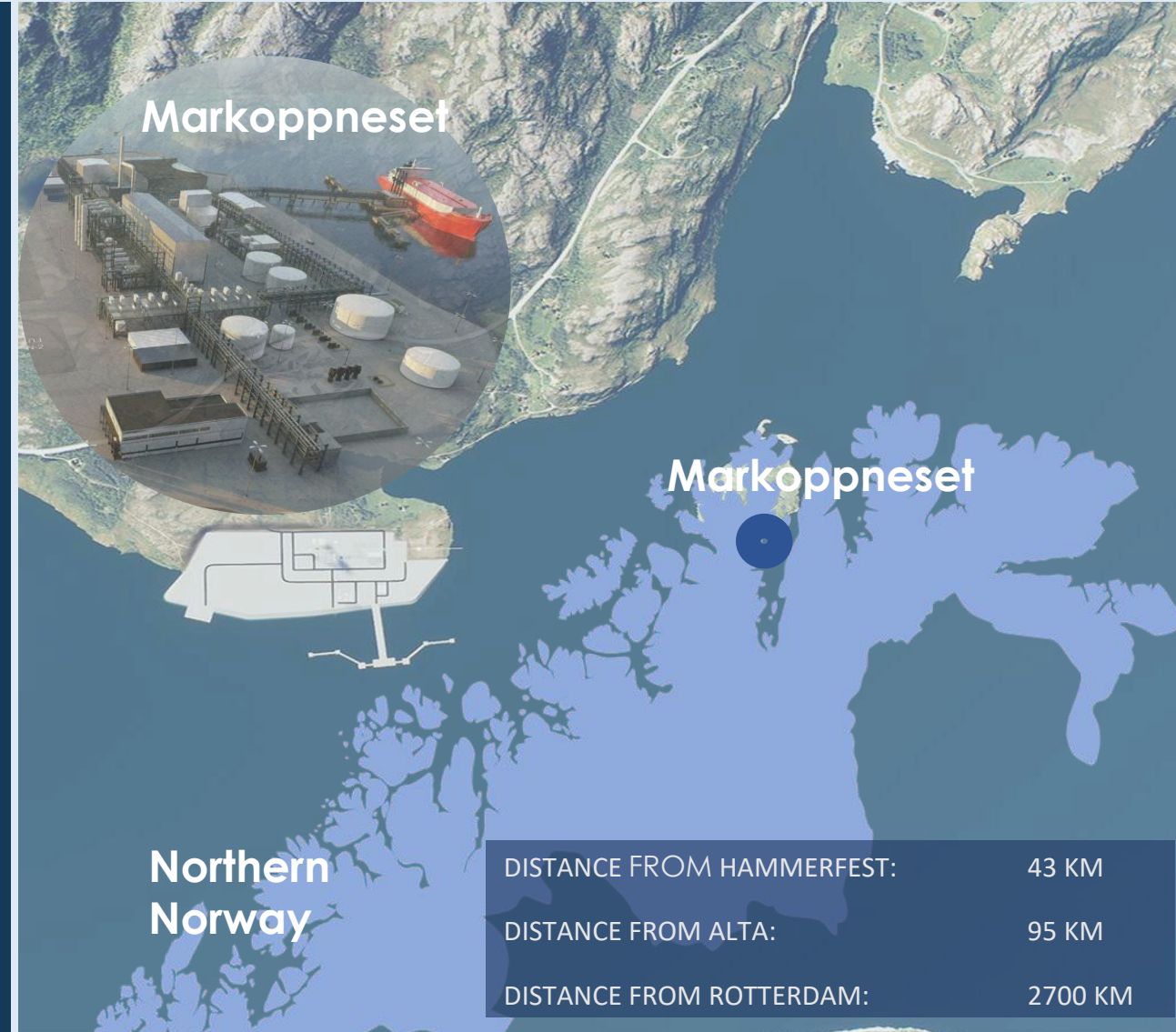
Module based construction strategy

- Efficient plant assembly with local roro quay handling the modules with up to 10,000 tons of weight (verified by rock drilling/sampling on site, onshore and in the waters).

Subsea gas pipeline between Melkøya LNG facilities at Hammerfest and the site.

Land site regulated for industrial activity since 2006/2007

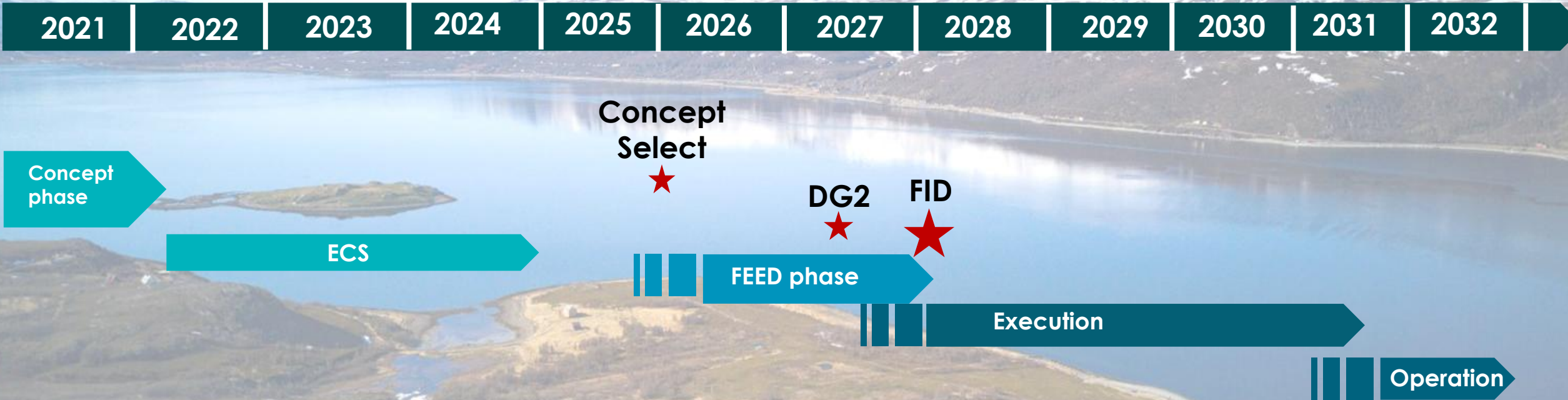
- Planning program approved, detailed zoning next step
- Municipality owns site, but some additional acreage to be purchased by municipality and the entire area leased to the project
- Entire land area for plant is about 450 acres



Timeline Barents Clean Ammonia



High level Schedule



Partnership set-up



Information property and copyright of Barents Blue AS

Picture of plant site



Advanced technical maturity

Grid connection approved and power reserved (45 MW)

Concept studies and impact assessment

- Plant conceptual studies and extended concept studies completed
- Concept study for pipeline from gas plant completed
- Low-cost concept developed for gas supply at Melkøya
- Impact assessment studies (approx. 80% completed)

Several carbon transport and storage options

Advanced discussions on FEED contract and execution model

- FEED Conditions of Contract negotiated
- Optional EPC Conditions of Contract and term sheet covering main elements negotiated
- EPC option include option for 2 years of operation of the plant and certification of operators
- Saipem has a project using the same ammonia technology from Topsoe in execution in Australia (Perdaman project)





Barents Clean Ammonia **uses** proven technology

The proven technology provides cutting edge project without technology risk

BCA uses SynCOR™ technology applied to 7 plants worldwide with more than 75 years of combined proven running time. High availability of 99% experienced.

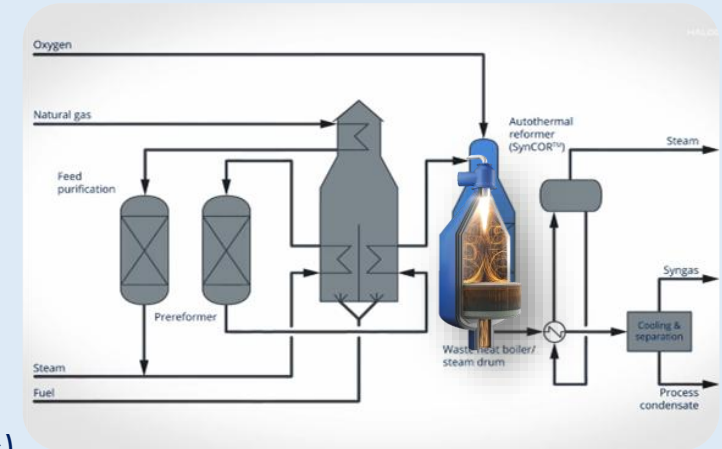
Topsoe has been applying the proven S-300 (ammonia) converter since 1999.

Carbon capture rate of 99%+ achieved by system integrating proven BASF technology into novel BCA design while maximizing energy efficiency.

Combined system allows full automation of entire plant, an industry step-change.

Carbon capture and storage is proven technology (storage used for 40+ years).

Large scale storage and transport of ammonia proven technology (used over 50 yrs).



SynCOR™ ammonia reference plants	Syngas Product	Year	NH ₃ -equal capacity Mtpd
Hyco	H ₂ /CO	2002	450
Sasol, Sasolburg	GTL, NH ₃ and methanol	2004	2 x 2,300
Oryx, Qatar	GTL	2006	2 x 5,700
Chevron, Escravos	GTL	2014	2 x 5,700
Tigas, Turkmenistan	Methanol	2019	4,500
Uzbhekistan	GTL	2020	2 x 6,300
Perdaman Project Destiny (in execution, 50+% complete)	Urea	2027/28	1 x 3,500

Advanced commercial maturity



Gas supply negotiated term sheets

- Catering for volume requirements and competitive terms
- Gas sourced from nearby gas plant with very low LCA

Parts of ammonia production signed up in bankable term sheet

- Additional term sheets under discussion with ammonia offtakers in various segments of the market (fertilizers, chemicals, shipping and power) including energy companies and aggregators
- Securing 100% of the gas supply requirement, establishing a stronger investor group for Barents Clean Ammonia and the 2025 adoption of the Delegated Act on low carbon hydrogen adds momentum to the offtake discussions

Advanced CO2 storage concepts

- Main concept third-party tariffed storage on Norwegian Continental Shelf, with storage provider taking storage liability
- Major economic upside if the alternative Polaris storage solution can be developed

NOK 482 million awarded in grants from Enova (IPCEI Hy2Gen)

- NOK 75 million (earmarked FEED) and NOK 25 million (of NOK 40 million earmarked dissemination) may be used in FEED up until DG2
- Need new project partner to access grants (award criteria)





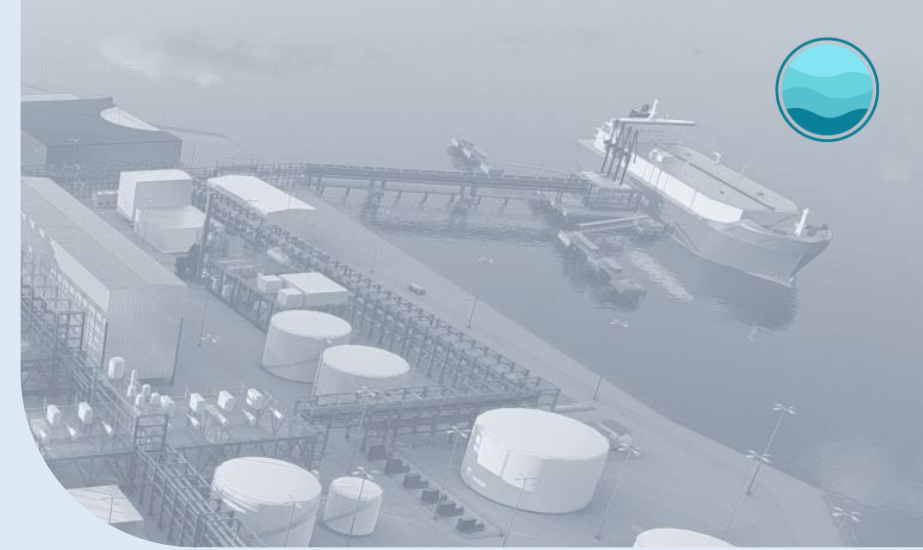
Ammonia sales

Ammonia sales target: 850 mtpa under long-term agreements

Most mature sales processes

Counterparty	Type *)	Volume / shares	Deal stage	Status	Next Task
European Energy group	Ammonia buyer	200-300,000 t/year	Completed	Signed term-sheet	Fully termed, binding agreement
European Energy group	Ammonia buyer	250-500,000 t/year	Negotiation	Draft term-sheet	Signed term-sheet
European Energy group	Ammonia buyer	200-250,000 t/year	Initial stage	Draft pricing principles	Draft term-sheet
Industrial company	Ammonia buyer	500,000 t/year	Initial stage	Draft term-sheet	Negotiation
Energy trader	Ammonia buyer	300,000 t/year	Negotiation	Draft term-sheet	Signed term-sheet

*) Target ammonia buyers that have the financial and operational strength to support major volumes and long-term commitments. Currently energy companies and aggregators appear to be the most likely candidates for entering into long-term agreements for substantial volumes.



Industrial partners

Barents Blue, is focusing on delivering world class clean energy assets with tier-1 partners.

Topsoe is the selected technology partner delivering the SynCOR™ Ammonia technology, having decades of ammonia experience and is the leading licensor in the low carbon ammonia space.

Saipem is the selected EPC partner with high-quality project execution and 40 years of experience with Topsoe ammonia technology. Saipem is executing another project using the same technology in Australia.

Wood Group is the owners engineering partner with high level engineering quality, and has supported the project since 2021, derisking the engineering deliveries.

TOPSOE



wood.



“Barents Blue will be a flagship project of great importance for Norway and Europe.”

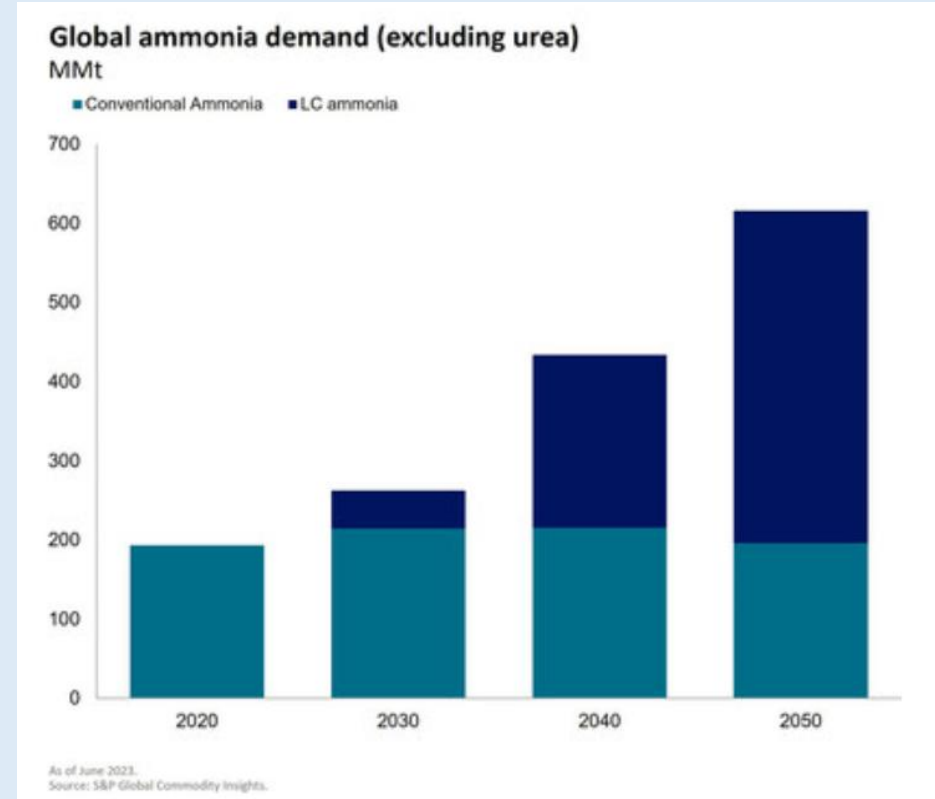
“The project will demonstrate that new, energy-efficient technology for ammonia production including carbon capture can make low-emission ammonia competitive.”

NILS KRISTIAN NAKSTAD
Former CEO Enova

Ammonia market



- Clean ammonia from Norway can contribute to energy diversification and food supply chain security in the EU
- Ammonia is today mainly produced using grey hydrogen. The total market (fertilizers and chemicals) is approx. 190 Mtpa (12 Mtpa for Western and Central Europe)
- The current market is fragmented and regional and dominated by captive grey supply
- Prices have historically been correlated to gas prices with only ~10% of produced ammonia being traded
- Clean ammonia is expected to grow significantly towards 2050 as the existing market needs to de-carbonize and new uses develop (shipping, power and ammonia used as an energy carrier)



Demand is driven by production and decarbonization targets set by governments and regional institutions, regulations, incentives and market pull.

As the energy transition gains momentum, supply will become more global and increasingly traded. Norway is likely to be one of few countries in Europe to export ammonia.

Price formation is likely to change with increased CO2 cost, development of new uses and increased trading. Alternative pricing options include CfD arrangements.

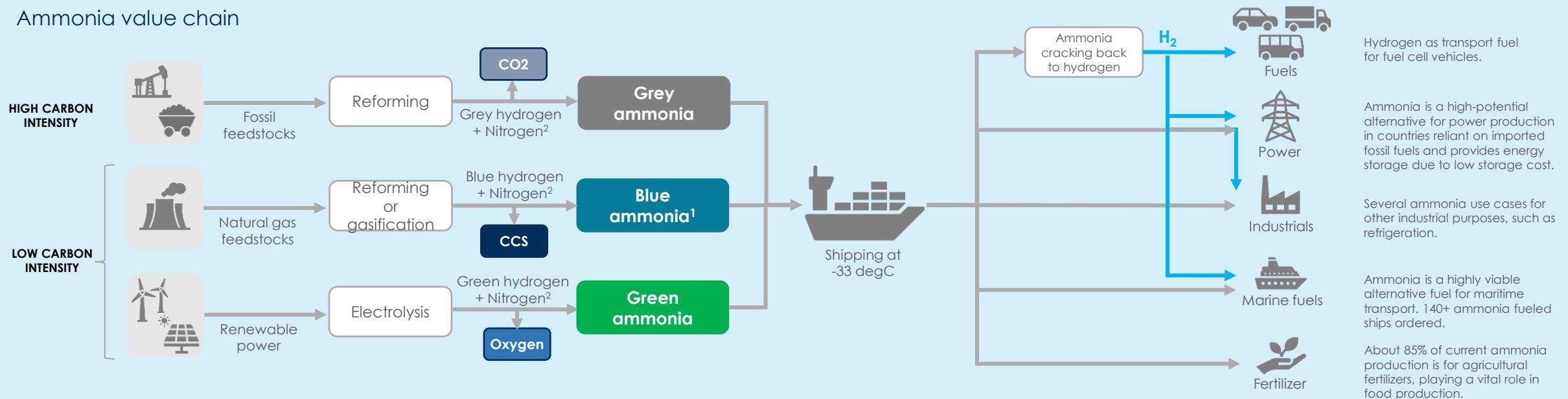
Blue ammonia is important to achieve energy transition ambitions in Europe given the availability and cost of green ammonia.



Low carbon hydrogen a key component in world energy

Low Carbon Ammonia is the most attractive Low Carbon Hydrogen carrier⁴. Furthermore, critical to decarbonize world ammonia production³ to achieve carbon neutrality – USD trillion markets

Ammonia value chain



Ammonia as the world's second largest industrial gas has been transported in large scale for over 50 years and there are over 100 ports that can receive ammonia and a large fleet of gas ships to transport it.

¹ Compliant with EU Low Carbon Hydrogen directive requirements

² Nitrogen from air, available in abundance everywhere

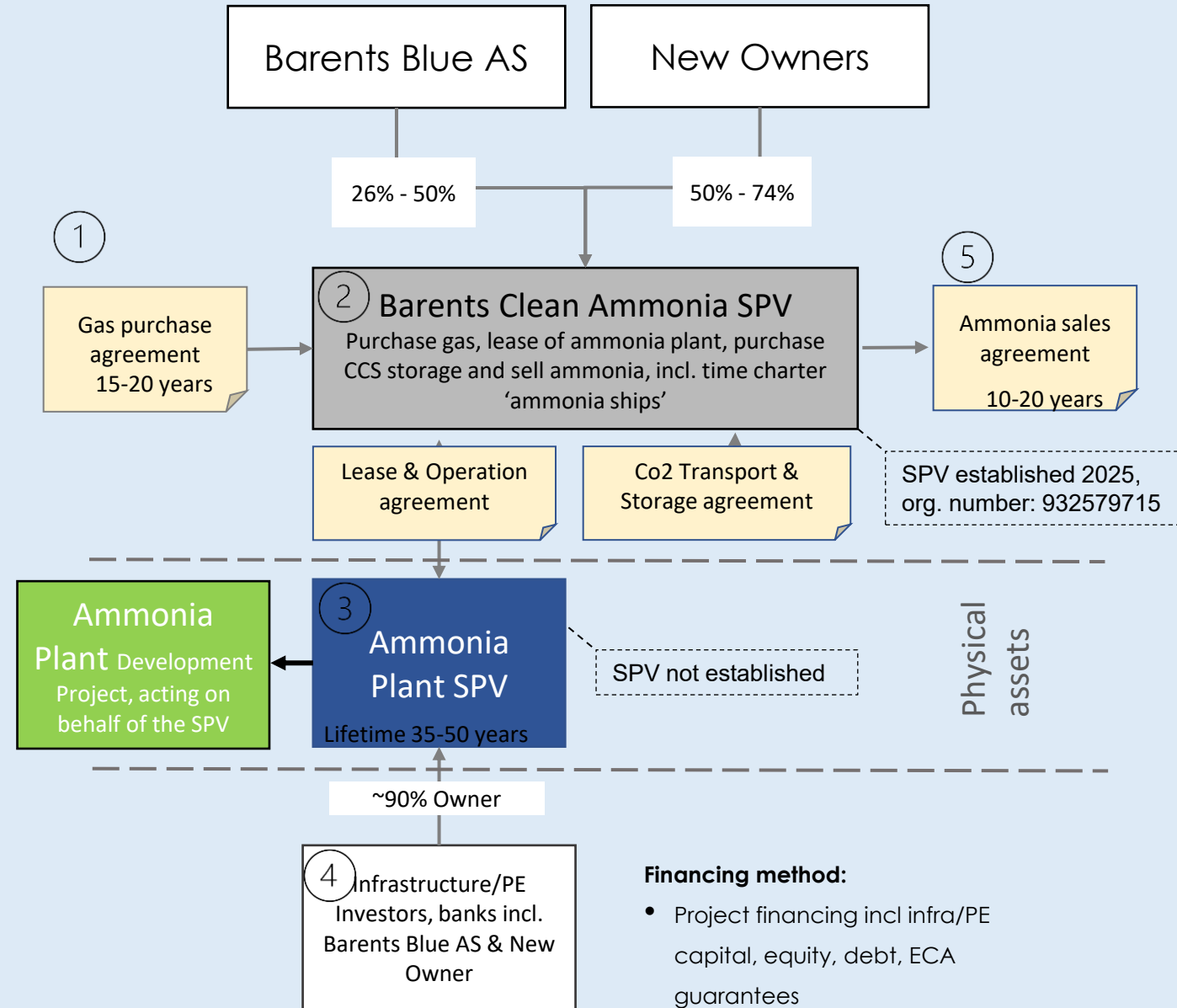
³ Ammonia production emits 0.5 Giga tons CO₂/yr today

⁴ Ammonia has the highest energy density of all hydrogen carriers/derivatives

Existing and planned SPV structure



- ① Gas purchase: Long term gas purchase agreements. Tie-in study to upstream gas plant to provide cost, gas spec, and regularity
- ② Barents Clean Ammonia SPV: Commercial company purchasing gas and selling ammonia, storing CO₂
- ③ Ammonia Plant SPV: Infrastructure entity that owns the ammonia plant
- ④ Owners of Ammonia Plant SPV include infrastructure & PE investors, banks and plant users
- ⑤ Ammonia sales: Long term ammonia sales agreements. Optimized delivery conditions

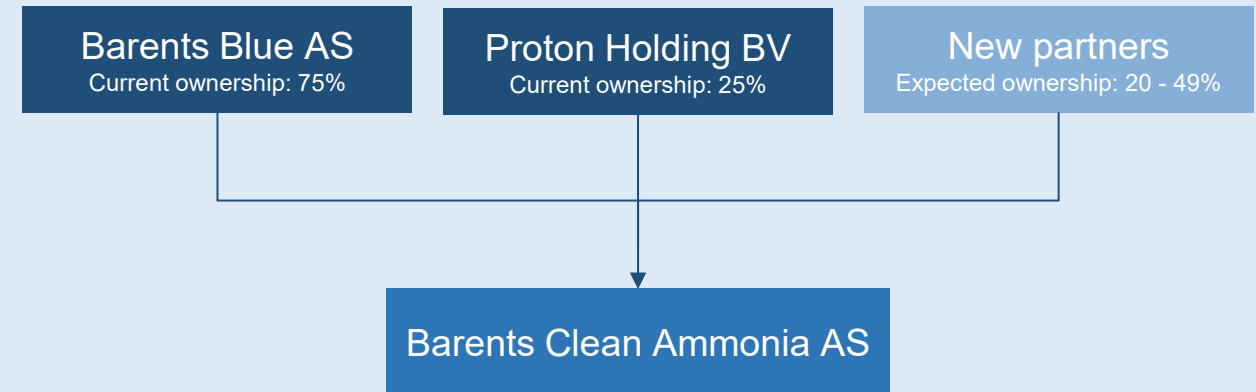


Barents Clean Ammonia



- Barents Blue AS owns 75% of recently established project company Barents Clean Ammonia AS, which is the owner of the Barents Clean Ammonia project
- Remaining 25% is owned/optioned by Dutch project engineering and development company Proton Ventures Holding BV, a pioneer in the clean ammonia industry since 2001
- Barents Blue AS will be the project leader and provide services to the project company in the development phase
- Services will be provided on terms agreed in the Project Agreement between the owners of Barents Clean Ammonia AS
- Barents Blue AS intends to further dilute its ownership in the project company by inviting a strategic partner into the project, to strengthen both its financial foundation and the project partnership

Company structure project SPV



Proton Ventures Holding

New partner in the Barents Clean Ammonia project SPV



- Established in 2001 and headquartered in Schiedam, Netherlands
- Specialized engineering and project development company with a strong focus on ammonia and hydrogen infrastructure
- Consultancy, design, and turnkey solutions for ammonia production plants and storage terminals
- Executed a wide range of projects across Europe and internationally
- Long lasting track record (>20 years) for development of green ammonia production projects



**Empowering green ammonia
and energy solutions**



FEED and Project financing from several capital sources

Sources FEED financing	MEUR
Contributions by partners in Barents Clean Ammonia (herof Barents Blue if 25% share = 7 MEUR)	28
In-kind contributions from Topsoe and Saipem	2
Awarded IPCEI grant (part of Enova support)	9
Sum FEED financing	39

Sources FID financing	MEUR
Infrastructure capital (no dilution of Barents Blue owners)	2,000
Awarded state aid from Enova, IPCEI grant	35
Equity or state aid from BCA owners ex Barents Blue	50
Equity or additional state aid from Barents Blue	10
Debt financing on BCA owner equity	205
Sum FID financing	2,300

FEED financing comments

- Total FEED budget for all equity partners in BCA EUR 39 million, the first part of the FEED until DG2 has a budget of EUR 10 million
- The proceeds from this Private placement and divestment shares in Barents Clean Ammonia will ensure Barents Blue has sufficient capital to fund its share of FEED cost

Barents Blue – indicative capital sources	MEUR
This Private placement, equity investors	10
Divestment of shares in Barents Clean Ammonia	10-15
Sum capital sources	20-25

CAPEX financing comments

- Total investment at FID of EUR 2.3 billion (excl. ASU and CO2 facilities)
- Assumed a lease of the air separation unit and CO2 facilities)
- 90% of investment at FID from infrastructure investor
- Debt added on top of equity from BCA owners and the state aid from Enova
- Export credit agency guarantees (eligible project)
- Potential Innovation Fund support (plan to submit application in 2026/2027 IF round - indicative grant amount +/- 200 MEUR)

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“Barents Clean Ammonia is a leading clean ammonia project offering cost-effective clean ammonia with market leading sustainability performance.”

BJØRGULF EIDSEN
Project Founder and Chair of the
Board in Barents Clean Ammonia



Project highlights

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Invite to strategic partnership

The Barents Clean Ammonia project is seeking a new strategic partner:

- FEED budget of EUR 39 million
- FEED equity financing will release EUR 10 million in awarded grant, the remaining EUR 29 million at FID
- Final investment decision and financial close end of 2027
- Suppliers Topsoe and Saipem ready to kick-off the FEED
- The project owners invite a strategic partner to onboard the Barents Clean Ammonia project owner group

With the FEED equity, the Barents Clean Ammonia project will be in position to move the project to FID and alongside the FEED work, develop the full project financing scheme and finalise permitting.





Barents Clean Ammonia

Thank you.