Yara Clean Ammonia
# Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to YCA</td>
<td>4</td>
</tr>
<tr>
<td>Highlights</td>
<td>15</td>
</tr>
<tr>
<td>Market outlook</td>
<td>26</td>
</tr>
<tr>
<td>Business overview</td>
<td>65</td>
</tr>
<tr>
<td>Growth and strategy</td>
<td>92</td>
</tr>
<tr>
<td>Financials and financial targets</td>
<td>119</td>
</tr>
</tbody>
</table>
Introduction to Yara Clean Ammonia (YCA)
YCA is a leading global ammonia platform well-positioned to capture the market for clean ammonia

A key enabler of decarbonization of hard-to-abate industries, connecting upstream projects with new customer applications

The #1 integrated midstream platform in the ammonia value chain, with asset-backed supply and a global footprint

Standalone entity backed by majority owner and preferred partner Yara, which has almost 100 years of ammonia experience

Q1 2022 LTM Revenues
USD 3.0bn

Q1 2022 LTM EBITDA
USD 159m

>20%

Market share of merchant/traded ammonia in 2021

Ammonia transported and sold Q1 2022 LTM
4.1mT

Owned and leased purpose-built ammonia vessels
#12

Terminal access in key locations
#18

YCA in brief

Company highlights

Source: Company information
1) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
2) EBITDA is defined as operating income plus depreciation and amortization and interest income and other financial income
3) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
YCA is the clear #1 in ammonia, built on a global integrated business model backed by Yara

YCA integrated model

Highly flexible upstream portfolio

Yara and JV ammonia production

3rd party ammonia sources

3rd party clean ammonia sources

YCA clean ammonia production

#1 global midstream platform

~4.1mT transported

12 specialized vessels\(^1\)

18 terminals (YCA access)\(^2\)

YCA scaled-up midstream platform

Multiple downstream outlets

Yara consuming plants

3rd party customers

Yara clean fertilizer sales

Sales to new applications developed by YCA

Asset-backed and active across the value chain from sourcing to sales, YCA has >20% market share\(^3\) in traded ammonia

Source: Company information

1) Including leased and YCA-owned vessels
2) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
3) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
Clean ammonia offers an attractive solution to decarbonize hard-to-abate sectors...

Rapid growth in GHG emissions from hard-to-abate industries

Ammonia is an attractive solution

- Clean ammonia available through existing blue and green production methods
- Highly versatile with multiple direct applications
- Ideal energy carrier with favorable performance across clean fuel KPIs
- Well-established global infrastructure and storage network

Breakdown of GHG emissions by sector

- Buildings: 13%
- Power: 24%
- Industry: 30%
- Agriculture: 12%
- Transportation: 21%

87% from hard-to-abate industries where ammonia can facilitate decarbonization

1) Based on direct EU emissions in CO2 equivalents
2) KPIs include density, cost, scalability and distribution
... through being a superior clean solution across four sizable segments

**Shipping fuel**
- 50% higher energy density than liquid hydrogen\(^1\)
- Easier to scale than hydrogen, e-methanol and synfuel
- Can be stored at higher temperature than hydrogen, lowering cost
- Competitive all-in cost through existing infrastructure and know-how

**Power generation**
- Alternative for countries with unfavorable renewables conditions
- Economically favorable over carbon capture
- Enables continued use of more flexible producing assets
- Supports continued use of relatively new plants

**Agriculture/Industrial**
- Fertilizers account for a very large share of the emissions of food and agricultural products
- Green fertilizer can provide up to 30% CO2 reduction on a loaf of bread at a marginal cost increase of ~1%\(^2\)
- Green fertilizer requires no infrastructure/value chain changes

**Long-term potential: Hydrogen carrier**
- Mature in transport, infrastructure and know-how
- Lower long-distance transportation cost vs. hydrogen
- Better characteristics for storage vs. hydrogen
- More energy dense vs. hydrogen

---

2. At 1% extra cost on a loaf of bread, clean ammonia can deliver a 15-30% reduction in carbon footprint
Ammonia market expected to grow by >3x supported by the crucial need to decarbonize industries

Total ammonia market expected to grow rapidly to 2050E
USDbn (real terms¹)

Key market drivers

Shipping fuel
Adoption expected to increase rapidly from 2030E driven by anticipated regulations and customers’ environmental focus

Power generation
Market players expect 40-50% co-firing on operational coal-fired plants in selected countries by 2050E, driven by Japan, Korea and Taiwan

Agriculture/Industrial
High-value brands with ability to achieve up to 20% premium on sustainable-labelled food products, highlighting strong adoption incentive. Ammonia market for fertilizer is anticipated to continue to grow

Hydrogen carrier (after 2035E)
Market based on Europe as major import hub for cheap renewable-based hydrogen and Japan as key import market in Asia

Source: Arkwright market study 2021
1) USD 398bn in nominal terms in 2050E, assuming an inflation rate of 2% starting 2021
2) Based on a normalized ammonia price of ~USD 375/tonne
Integrated operations across the midstream ammonia value chain

YCA’s midstream definition

- **YCA’s midstream position is defined differently** from the use of the same term in some other contexts/sectors.
- In the context of YCA, it refers to a **broad set of capabilities** (i.e. key competitive edges) beyond just vessels.
- Accordingly, YCA’s definition encapsulates the **integrated nature** of the existing platform.
- **Direct involvement with upstream (sourcing) and downstream (sales)**.
- Asset-backing, terminals, optimization, and commercial setup support a **differentiated midstream model**.

Source: Company information
Clear market leader today, providing a unique starting point to develop the clean ammonia value chain

Yara Clean Ammonia

Global #1 with >20% market share of merchant/traded ammonia in 2021

Key success factors for YCA

- Reliable, *asset-backed supply and attractive offtaker*
- Deep industry *know-how*, market insight and track record of safe handling
- Specialized fleet of 12 ships
- Global network of 18 terminals located in key locations
- Deep-sea connection to key bunkering hubs
- Scalable platform and business model

Source: Company information
1) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
2) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
YCA combines a leading business with exceptional growth prospects and a value creating project portfolio.

**YCA segments and business areas**

**Ammonia Sales and Logistics (ASL)**

- **Conventional applications (ASL 1)**
  - Integrated midstream platform
  - 100% of current volumes to fertilizer and industrial sectors
  - Well-established business providing earnings today

- **New applications (ASL 2)**
  - Integrated mid and downstream platform
  - New end-markets driving exponential growth
  - Profitably served through existing platform and scale

**Clean Ammonia Projects and Production (CAPP)**

- **Upstream production of clean ammonia**
  - Blue and green ammonia project portfolio
  - Provides asset-backed supply to mid and downstream

**Key financial drivers**

- 100% of current volumes to fertilizer and industrial sectors ✓
- Well-established business providing earnings today ✓
- Integrated midstream platform ✓

**Integrated platform with strong synergies across the value chain**

**Volume x Margin**

**Return x Capital employed**

Source: Company information
Well-established foundation for a continued and mutually beneficial partnership between YCA and Yara

Clear scope of separation of YCA’s assets and business

Included in YCA
- Sourcing and sales contracts
- Access to Yara terminals
- Ammonia vessels
- Blue and green ammonia projects and offtake

Retained by Yara
- Ownership of existing/grey production assets
- Ownership of terminals

A leading global ammonia production base, exclusively marketed by YCA

Large captive ammonia demand, exclusively served by YCA

World’s largest network of ammonia storage infrastructure, access for YCA

Attractive ammonia assets/sites as basis for future clean ammonia projects

Almost 100 years of ammonia safety, project execution and operation experience

Corporate and project services with global footprint available to YCA through SLAs with Yara

Committed and long-term backing from Yara as majority owner and preferred partner

Source: Company information
1) As sole offtaker and supplier to Yara
2) Source: Argus market study (2022)
3) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
YCA is positioned to become a key enabler of the energy transition

By successfully delivering on its business plan, YCA expects to achieve

3mT
CO2 equivalents

Reduction of existing emissions from ammonia production (Scope 1-2)

By 2030E (vs. 2019 baseline)

Equivalent to the emissions of ~650 thousand passenger cars per year²

Green fertilizer can provide up to 30% CO2 reduction of a bread at a marginal cost increase of ~1%³

4mT
CO2 equivalents

Avoided emissions of future conversion and new build projects net of loss in energy efficiency from use of ammonia mainly in shipping fuel³

By 2035E

Equivalent to the emissions from ~4 million passenger flights between Paris and NYC⁴

70%

Reduction in GHG intensity vs. baseline for customers in shipping and power³

By 2035E

Source: Company analysis for Yara Scope 1-2 impact (not third party verified); Arkwright market study 2021; YCA GHG impact assessment for net avoided emissions impact

1) 4.1% extra cost on a loaf of bread, clean ammonia can deliver a 15-30% reduction in carbon footprint; 2) Based on average CO2 emission from passenger vehicles of 4.6 tonnes (United States Environmental Protection Agency study in 2021); 3) Estimated CO2 emission reduction from converting from a future baseline fuel mix to clean ammonia-based combustion net of inherent energy efficiency losses of using ammonia combustion technology in shipping and ammonia co-firing in coal powerplants. Analyze compares GHG intensity of YCA’s clean ammonia portfolio to a future improved GHG intensity baseline per segment, e.g. assuming a higher share of LNG and methanol in the future fuel mix for shipping, and higher share of renewables in the future power generation mix; not a like for like substitution of marine gasoil or coal with clean ammonia. Assumes partial credit for third-party produced volumes distributed by YCA in line with best practice methods. Higher efficiency fuel-cell technology in shipping is not included. 4) 1 tonne CO2 represents the average emission of one passenger on a return flight from Paris to New York ("What exactly is a tonne of CO2?", European Environment Agency).
Highlights
Key highlights

1. Clean ammonia represents a **massive opportunity on top of a structurally robust market for conventional ammonia**

2. **Supportive ammonia market dynamics** expected to significantly increase cross-regional trading activity

3. The #1 global ammonia *midstream platform*¹ with significant barriers to challenge YCA

4. Access to **robust upstream projects** to further develop YCA’s integrated value chain position

5. **Profitable and scalable business model** with attractive economics and growth prospects from clean ammonia

6. **Experienced and performance-oriented organization** with strong backing from Yara

---

**Source:** Company information

¹ Based on volumes of traded ammonia in 2021 - Argus market study (2022)
Significant expected ammonia demand driven by a mix of conventional and new applications

Ammonia market growth to 2050E

<table>
<thead>
<tr>
<th>Year</th>
<th>Conventional applications</th>
<th>New applications</th>
<th>2050E</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>184</td>
<td>48</td>
<td>238</td>
</tr>
<tr>
<td>2050E</td>
<td>470</td>
<td></td>
<td>232</td>
</tr>
</tbody>
</table>

The demand for ammonia is expected to grow significantly to 2050

2050E ammonia demand by application

- Agriculture / Industrial: 27%
- Shipping fuel: 30%
- Power generation: 43%
- Hydrogen carrier: 4%

~50% of 2050E demand expected to come from new applications

2050E ammonia supply by type

- Clean ammonia
  - Grey: 43%
  - Blue: 27%
  - Green: 30%

Majority of supply expected to come from blue and green sources

Source: Arkwright market study 2021; Extracts from IFASTAT, International Fertilizer Association
Decoupling historical pattern of captive consumption will increase the importance of YCA’s midstream position.

Global traded ammonia volumes are expected to grow exponentially:

- **2021**: ~10% ammonia traded, ~18mT traded
- **2050E**: ~50% ammonia traded, ~238mT traded

- Geographically separated supply and demand centers
- Driven by production cost differences caused by several factors, mainly related to cost and availability of energy
- Majority of the demand growth expected to come near shipping hubs – largely in high-cost production regions

Substantially all clean ammonia volumes in new applications are expected to be traded.
Blue ammonia will be the key immediate focus before relative competitiveness of green ammonia improves.

**Blue ammonia**

- "Low-carbon" cost leader throughout the long-term; competitive access to natural resources and infrastructure key to win
- Requires meaningful investments to meet demand potential
- Carbon capture technology commercially ready – one of the most economically viable low-carbon fuels
- Regulatory incentives already in place in certain regions

**Green ammonia**

- Green ammonia projects could breach the blue cost curve but will require significant cost progress
- Further scaling benefits in hydrogen needed along with increased access to ample renewable energy
- Electrolyzer technology still being developed and significant investments needed to achieve competitiveness
- Further regulatory push required and subsidies for green/higher prices on alternatives required

Source: Company information; Arkwright market study 2021
YCA has an established global network with access to asset-backed supply

Overview of YCA’s global footprint

YCA has a differentiated model

#1 global player with >20% market share¹ and leading positions in key regions

Source: Company information

1) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
2) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
Growth supported by solid upstream projects, building on YCA’s leading midstream position

Key success factors

- Access to existing production assets that can be converted to blue or green at lower costs compared to greenfield investments
- Knowledge and experience built through Yara’s almost 100 years of ammonia track record and over 8mT ammonia production capacity
- Market leading position makes YCA the preferred offtaker and partner for Yara and other third-parties, in turn enabling new projects

Blue ammonia
Robust pipeline with solid project economics and profitability without need for further subsidies

Green ammonia
Early mover strategy where government support will be required – anticipated lower costs in the future will increase competitiveness

Selected project candidates

- Majority stake
- Offtake-only
- Own pilots
- HEGRA

Key regions

Well-positioned with a maturing project hopper and additional long-term opportunities

Source: Company information
1) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
2) Estimated volume by the company for the selected candidate projects, excluding third-party project offtake
3) Ammonia production capacity as of 2021
Attractive financial profile, providing earnings and cash flows from existing midstream operations

<table>
<thead>
<tr>
<th>Key metrics (USDm)</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Q1 ’22 LTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>1,248</td>
<td>1,015</td>
<td>2,292</td>
<td>3,009</td>
</tr>
<tr>
<td>EBITDA</td>
<td>107</td>
<td>116</td>
<td>124</td>
<td>159</td>
</tr>
<tr>
<td>Operating income</td>
<td>78</td>
<td>82</td>
<td>85</td>
<td>117</td>
</tr>
<tr>
<td>Sales volume (kT)</td>
<td>4,513</td>
<td>3,932</td>
<td>4,099</td>
<td>4,069</td>
</tr>
<tr>
<td>EBITDA/sold tonne&lt;sup&gt;1&lt;/sup&gt;</td>
<td>24</td>
<td>31</td>
<td>33</td>
<td>42</td>
</tr>
<tr>
<td>Capex</td>
<td>1</td>
<td>0</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Ammonia price (fob Black Sea, USD/tonne)&lt;sup&gt;2&lt;/sup&gt;</td>
<td>235</td>
<td>204</td>
<td>544</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: Company information
1) EBITDA/tonne calculated from the EBITDA contribution from the ASL segment divided by total sold volumes
2) Publication price from Argus direct
3) Based on free cash flow pre change in NWC

Robust unit margins and stable volume development
Capital-light model with high conversion of EBITDA into cash flows<sup>3</sup>
No net interest bearing debt and working capital significantly above normalized levels
YCA benefits from a predictable and scalable economic model with strong value creation potential

Scalable platform with robust margins – YCA is well-positioned to drive volumes while maintaining attractive economics

Key volume characteristics

- Historically stable around 4mT
- Offtake agreements provide visibility
- Predictable demand patterns
- Limited short-term volatility

Key margin drivers

- Scale and scalability
- Offtake and supply access
- Market position
- Efficient logistics infrastructure

Key sources of income

- Commercial services
- Ship-owning operations
- Global ammonia optimization

YCA EBITDA margin: >30 USD/tonne

Based on market reference prices

Producer price, Cost, Margin, Price to customer

Source: Company information
1) Characteristics based on historical track record
2) Based on sales volume from 2012 to 2021
3) Under normal conditions
Experienced management team with almost 200 years of combined industry experience

- Magnus Krogh Ankarstrand
  - 15 years of international mgmt. and team leadership experience
  - 9 years at Yara
  - Former Head of North America and Head of Strategy at Yara

- Hallgeir Storvik
  - 37 years industry and finance experience with Yara and Hydro
  - Former CFO and Head of Strategy at Yara

- Lise Winther
  - 34 years experience with management of large capital projects and technology
  - 13 years at Yara and Hydro
  - Former Head of Cleaner Production at Shell and System Technology at Hydro

- Murali Srinivasan
  - 23 years industry and trade experience with Yara and Hydro
  - Former CFO for Yara Industrial and Crop Nutrition segments

- Bart van Hoof
  - 14 years of international large capital projects and contracting experience
  - 12 years at Yara
  - Former Head of Contracting at Yara Project Organization

- Irene Odhiambo
  - 15 years HR generalist experience
  - 6 years at Yara
  - Previously HR Business Partner at Yara Global Plants and Country HR Manager Yara East Africa

- Joacim Red Christiansen
  - 15 years energy industry experience
  - 10 years at Yara
  - Former Head of M&A and SVP Sustainable Food Ecosystem at Yara, ex. McKinsey consultant

- Hilde Steinfeld
  - 17 years experience from communication and public affairs
  - Ex. consultant and former VP Public Affairs at Burson Cohn & Wolfe
  - Previously diplomat and civil servant

- Bart van Hoof
  - 14 years of international large capital projects and contracting experience
  - 12 years at Yara
  - Former Head of Contracting at Yara Project Organization

- Vibeke Rasmussen
  - 26 years of water and environmental technology leadership experience
  - 9 years at Yara and Hydro
  - Former Director Product Quality and Head of ET & NPK R&D at Yara

- Irene Odhiambo
  - 15 years HR generalist experience
  - 6 years at Yara
  - Previously HR Business Partner at Yara Global Plants and Country HR Manager Yara East Africa

- Hilde Steinfeld
  - 17 years experience from communication and public affairs
  - Ex. consultant and former VP Public Affairs at Burson Cohn & Wolfe
  - Previously diplomat and civil servant

Source: Company information
Key highlights

1. Clean ammonia represents a **massive opportunity on top of a structurally robust market for conventional ammonia**

2. **Supportive ammonia market dynamics** expected to significantly increase cross-regional trading activity

3. **The #1 global ammonia midstream platform**\(^1\) with significant barriers to challenge YCA

4. Access to **robust upstream projects** to further develop YCA’s integrated value chain position

5. **Profitable and scalable business model** with attractive economics and growth prospects from clean ammonia

6. **Experienced and performance-oriented organization** with strong backing from Yara

---

\(^1\) Source: Company information

1) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
Market outlook

1. Market opportunity
2. Conventional market
3. Demand development
4. Supply side economics
Snapshot of the clean ammonia market opportunity

Grey ammonia
An important input for the agriculture and industrial end-markets

Blue ammonia
Key enabler for decarbonization and new segments as the low-carbon cost leader

Green ammonia
Long-term fully renewable option, but will require significant progress on costs

>USD 220bn
(market by 2050E)

Shipping fuel
USD 87bn
Most competitive clean fuel for deep-sea shipping

Power generation
USD 10bn
Flexible low-carbon fuel for base load power generation

Agriculture/Industrial
USD 111bn
Robust and large demand served by mix of grey and clean ammonia

Hydrogen carrier
USD 17bn
Ideal long-distance carrier due to ammonia’s superior properties

Source: Arkwright market study 2021
Note: Market value in real 2021 terms, assuming an inflation rate of 2% starting 2021
Several building blocks needed to fit together for the clean ammonia opportunity to reach its full potential

Market opportunity

1. **Regulatory environment**
   - A global adoption of “fair” CO2 prices or subsidies supporting low-carbon fuels; “true” carbon pricing or forceful regulation required to sufficiently incentivize the transition

2. **Market**
   - Users in key end-markets will shift towards ammonia – or be “pulled” by their final customers

3. **Technology**
   - The technologies required to support the green “hydrogen economy” will be efficiently developed and scaled to make green cost competitive

4. **Infrastructure**
   - The required infrastructure and operational support will be developed in line with market growth

Source: Arkwright market study 2021
A combination of regulatory “pull” and “push” factors expected to support the development of clean ammonia

<table>
<thead>
<tr>
<th>Regulatory “pull”</th>
<th>Regulatory “push”</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Green Deal and Hydrogen Roadmap</td>
<td>‘Cap and trade’ system that drives cost of emissions</td>
</tr>
<tr>
<td>Country-level support</td>
<td>Set to be coupled with carbon border tax system, in which entering goods are taxed according to EU system</td>
</tr>
<tr>
<td>EU Emissions Trading System (ETS)</td>
<td>In this field, the EU sets the direction for global regulation</td>
</tr>
<tr>
<td>Country-specific CO2 taxation</td>
<td>Individual countries broadly follow up international regulation with country-specific efforts (e.g., national, sectorial etc.)</td>
</tr>
</tbody>
</table>

**EU Green Deal** targeting climate neutrality by 2050, including hydrogen as a key pillar

Public investments focused on promoting the hydrogen economy e.g., through infrastructure, technology etc. – with clear direction pointed out for private investment

Governmental organizations can provide support to country-specific projects (i.e. capex subsidies)

However, support is likely to be demand-focused, e.g., contracts for difference for offtake, regulatory requirements for blending with shipping fuel etc.

Source: Arkwright market study 2021
EU ETS prices increased sharply in the last year, supporting transition towards clean ammonia application

Main drivers and regulatory dynamics

- EU ETS saw a significant price surge in 2021/2022 driven by a combination of policy initiatives as well as market fundamentals
- On the policy side, measures taken by the EU have increased the credibility of the scheme, including:
  - "Fit for 55", accelerating allowance reductions (at a rate of 4.4% vs. 2.2% previously)
  - Institutional buy-in from use of EU ETS as a policy instrument
  - The Market Stability Reserve (MSR) seen to “work as intended” (by removing credits in times of oversupply)
  - Carbon Border Adjustment Mechanism (CBAM)
- On the fundamentals side, rising natural gas prices, demand from industrials and higher trading activity have supported prices:
  - Increased demand from the power generation sector due to higher natural gas prices, resulting in increased coal firing
  - Recovery of industrial activity from COVID-19 lows
  - Broader participation by financial players

Prices will likely trend higher as allowances are reduced, new sectors are included and the CBAM is introduced

Source: Arkwright market study 2021
1) Fixed conversion from Euros using the 2022 average exchange rate of 1.1012 (as of May 30, 2022)
Different “colors” indicate different production processes for hydrogen and related carbon intensity

1) Indirect emissions (Scope 3) from natural gas and embedded assets are not included in the values
2) Fertilizers Europe Carbon footprint calculator
3) IRENA Innovation outlook: renewable ammonia
4) Combining hydrogen with nitrogen from the air
5) SMR = Steam Methane Reforming, ATR = Autothermal Reforming

The Haber-Bosch process is used to synthesize ammonia from hydrogen, producing an identical ammonia molecule regardless of “color”
Significant growth opportunity in ammonia driven by the development of the clean ammonia market

~50% of 2050 demand is projected to come from new applications, with shipping fuel as the main contributor

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (in mT)</th>
<th>Market opportunity</th>
<th>New applications</th>
<th>Conventional applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021E</td>
<td>184</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2030E</td>
<td>198</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2040E</td>
<td>214</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2050E</td>
<td>232</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (in USDbn)¹</th>
<th>Market opportunity</th>
<th>New applications</th>
<th>Conventional applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021E</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2030E</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2040E</td>
<td>144</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2050E</td>
<td>224</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ammonia supply expected to shift towards blue and green

Source: Arkwright market study 2021
¹ Market value in real 2021 terms, assuming an inflation rate of 2% starting 2021
Future ammonia market expected to rely heavily on cross-regional transportation

Traded ammonia volumes are expected to grow substantially...

-10%  -10%  -12%  -19%  -32%  -43%  -51%

Traded ammonia volumes are expected to grow substantially...

Substantially all clean ammonia volumes in new applications are expected to be traded

Imbalance between locations of low-cost supply and demand as key consumption hubs will be more geographically spread (i.e. shipping) and have less favorable conditions for direct production

Source: Arkwright market study 2021
The ammonia market is highly specialized/complex, providing a strong fit with YCA’s competitive edge

Merchant ammonia market requires a high degree of specialization...

- Illiquid market, without real possibility to do paper trade, hedging, etc.
- Limited storage capacity
- Most volumes are contracted out between players
- Long-term professional players with high safety requirements and standards
- Price semi-transparency (market price once a week that is up to 5 publications)
- Reliability issues both on producer and consumer side

... which is expected to remain high in the coming years

YCA uniquely positioned across key success criteria

- Reliable and asset-backed supply
- Global scale and flexibility
- ~100 years of ammonia experience
- Track record of safe operations
- Market insight
- Existing long-term customer relationships

Source: Company information
Market outlook

1. Market opportunity
2. Conventional market
3. Demand development
4. Supply side economics
The gross ammonia market primarily serves captive production of urea and other fertilizer products.

- ~75% of ammonia is consumed in captive downstream production (i.e. consumed on-site)
- International trade in ammonia represents ~10% of the overall market
- The largest domestic merchant markets (where volumes stay within a country's borders) are China and US
- Merchant volumes include optimization within internal production systems (such as Yara volumes flowing through YCA)

Fertilizer markets consumes the majority of ammonia:

- Ammonia is the key intermediate for all nitrogen fertilizer products, with fertilizer representing >70% of gross ammonia consumptions
- Urea is the main nitrogen product, consuming ~45% of gross ammonia
- Industrial demand primarily relates to the use of ammonia as feedstock in the chemicals industry, consuming <30% of gross ammonia
- Large nitrogen-consuming countries are large producers of ammonia (USA, China, Russia and India), but not necessarily key merchant exporters

Source: Argus market study (2022)
1) NPK includes fertilizer products used as inputs to NPKs. Nitrates includes urea in UAN
Main trade patterns in the merchant market driven by geographical spread of net exporters and importers

Top 10 importers represent almost 70% of traded volumes

Top 10 exporters represent almost 85% of traded volumes

- There are 4 main categories of buyers in the merchant market:
  1. Industrial customers, primarily in the chemicals industry
  2. Producers of phosphate fertilizers as the regions with phosphate reserves often lack nitrogen capacity
  3. Some nitrate production capacity is based on purchased ammonia
  4. Direct application on the field (only common in US)

- Ammonia exporters have access to competitive feedstock/energy, coupled with a deficit of domestic demand (for ammonia and fertilizers)
- Most of the merchant market is seaborn (deep-sea), with limited volumes via rail
- Majority of export capacity comes from dedicated merchant ammonia plants (as opposed to surplus ammonia from integrated plants)
- The majority of Russian export volumes removed during 2022
Historical volume and price drivers in the merchant ammonia market

### Long-term volume and price development

- **International trade (LHS)**
- **Yuzhny fob (RHS)**

### Key drivers

#### Stalled volume development over the last decade
- Gross ammonia production grew at a CAGR of ~1.5% between 2010-21
- International ammonia trade expanded during the 2000s
- Growth during the 2000s from downstream demand linked to processed phosphates and industrial end-uses, plus uneconomic ammonia plant closures
- Stagnant trade volumes over the previous decade given expansion in integrated processed phosphates operations and construction of integrated ammonia plants (as opposed to merchant capacity) – increasing the proportion of captive ammonia consumption

#### Pricing dynamics vary depending on the state of the market
- **Price floor (in a supply-driven market):** Price set by the cost base of the marginal/swing producer. The cost is predominantly driven by the cost of energy (natural gas or coal)
- **Price ceiling (in a demand-driven environment):** Price typically constrained by the value of urea (on same nitrogen content basis) and the corresponding upgrading margin (from ammonia to urea)
Supply and demand outlook indicates structural support for a robust market over the next few years

Limited number of merchant ammonia plants in the pipeline
- Ma’aden’s new 1.1mT ammonia plant started operations in Q1 2022. From the second half of this decade, it is expected to feed a domestic phosphate plant, reversing the capacity addition
- Shipments from the 0.35mT Salalah Methanol in Oman is expected to start during production during 2022
- Gulf Coast Ammonia’s 1.3mT merchant plant is expected to commence operations in 2024

Russian supply loss removes large merchant volumes
- In 2021, Russia exported ~3.9mT of ammonia, representing >20% of global merchant volumes
- No Russian export terminals; instead, ammonia is shipped from the Black Sea and Baltics (via pipeline and rail)
- In 2022, ~3mT of Russian ammonia has been removed from the market, causing a large supply deficit in the “west”
- With a surplus in the “east”, Middle Eastern producers are best-placed to replace Russian exports

Source: Argus market study (2022)
1) Potential switch to integrated urea production not included in the supply and demand chart
2) Excluding return of Russian export capacity after 2022
Market outlook

1. Market opportunity
2. Conventional market
3. Demand development
4. Supply side economics
Demand from new applications is expected to come exclusively from clean ammonia

Demand focused on key applications

**Shipping fuel**
- Ammonia is the most promising scalable clean fuel solution
- Regulation to drive ship owners towards fleet conversion and orderbook commitments
- Current decarbonization toolbox is insufficient to achieve GHG reduction targets

**Power generation**
- Ammonia in power generation can help decarbonize countries which have unfavorable conditions for renewables and therefore need a reliable, flexible back up power source
- Japan has stated clear targets for ammonia co-firing and is expected to be leading the market

**Agriculture/Industrial**
- Grey ammonia is expected to continue to play an important role in the agricultural and industrial market
- Industry standards, cost incentives and end consumer demand to act as a pull for clean ammonia in fertilizers

**Hydrogen carrier**
- Emerging hydrogen roadmaps at national level outlining ambitious targets
- Ammonia will be key for large-scale hydrogen import (i.e. linking demand centers and low-cost supply)
- Driven by ammonia’s superior transport attributes, existing infrastructure and lower handling complexity

Source: Arkwright market study 2021
1) Market value in real 2021 terms, assuming an inflation rate of 2% starting 2021
Rapid growth in the use of ammonia as a shipping fuel is expected to create a USD 87bn market by 2050

Ammonia demand outlook in the shipping fuel segment

Key drivers

- Current toolbox insufficient to reach IMO’s emission reduction targets – a clean fuel alternative is required
- Likely inclusion of shipping in the EU ETS increases price of fossil fuels
- Ammonia scores best across clean fuel KPIs and will be particularly important for deep-sea shipping
- Engine commercial readiness and fuel availability expected second half of this decade
- Retrofit adoption of c. 10% gradually from 2028 driven by selected segments
- Market take-off of newbuilds towards 2040 and 2050 with 50-60% adoption

Source: Arkwright market study 2021

1) All vessels capable of running on ammonia; blend-in rates differ per segment
IMO targets and guidelines together with regional and national regulations drive demand for low-carbon fuels

IMO targets

- IMO sets global standards for the maritime industry. Their mandate includes GHG emission reduction
- IMO 2030 and IMO 2050, setting emission reduction targets
- The IMO targets set the standard for future shipping and influence ordering details of new vessels

IMO guidelines

- IMO provides a regulatory framework to meet environmental targets
- Technical efficiency standards and measurements (e.g., EEDI¹, EEXI²)

Regional (EU)

- Regional bodies, like the EU, have their own legislations on top of the global IMO regulations
- Likely inclusion of shipping in the EU ETS and potential carbon tax system

National

- Individual countries follow up the international and regional requirements in addition to setting their own climate targets
- Potential carbon taxes and port/area specific limits

Selected examples

- Some nations are enforcing stricter environmental regulations which will boost demand for low-carbon solutions

Implications

- Shipowners must take measures to meet the efficiency criteria, which mandate design improvements for both current and newbuilt vessels
- Inclusion of maritime sector in the ETS and carbon tax system will bridge part of the cost gap between low-carbon and fossil fuels

Source: Arkwright market study 2021

1) EEXI: Energy Efficiency Existing Ship Index measures existing ships energy efficiency; EEDI: Energy Efficiency Design Index applies to newbuilt vessels and estimates the grams of CO2 per transport work
2) E.g., Norway plans to more than triple its national tax on CO2 emissions

Yara Clean Ammonia
The IMO has set targets to reduce GHG emissions by 40% and 50% by 2030 and 2050, respectively.

The industry’s current toolbox can reduce emissions by 20-25% – clean fuel alternatives will be required to meet IMO’s targets.

IMO CO2 emission reduction targets

<table>
<thead>
<tr>
<th>Year</th>
<th>CO2 emissions (mT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005A</td>
<td>Business as usual</td>
</tr>
<tr>
<td>2016A</td>
<td>IMO targets</td>
</tr>
<tr>
<td>2030</td>
<td>70% CO2 intensity reduction</td>
</tr>
<tr>
<td>2040</td>
<td>40% CO2 intensity reduction</td>
</tr>
<tr>
<td>2050</td>
<td>Beyond current toolbox</td>
</tr>
</tbody>
</table>

Fuel reduction estimate

(estimated savings potential)

- Deadweight increase: 3-4%
- Buibous and hull lines: 3-5%
- Support system: 3-7%
- Propulsion: 5-8%
- Engine: 2-3%
- Ship speed: 7-10%

20-25%

Source: Arkwright market study 2021
Note: Reduction measured against 2008 baseline
Maritime transport likely to be included in the EU ETS from 2024, introducing a carbon quota for the sector

**Key milestones**

**July 2021**: The legislation was first introduced by the European Commission (as part of the “Fit For 55” package)

**May 2022**: ENVI¹ voted to accelerate implementation and broaden the scope

**8 June 2022**: Amended proposal rejected by the EP, deadline for ENVI¹ to find a compromise solution: 23 June 2022

**22 June 2022**: EP voted in favor of a draft law to include shipping (and road transport) in the EU ETS

The parliament will now defend this position in the upcoming negotiations with member states, as agreement between Parliament and Council² is necessary for the law to enter into force

**Draft law (22 June 2022)**

- **Implementation and emissions covered**
  - From 2024: 100% of emissions from intra-European routes and 50% of emissions from extra-European routes³ (from 2024 until the end of 2026)
  - From 2027: 100% of emissions from all trips to be covered⁴

- **Scope of ships covered by ETS**
  - >400 gross tonnage and offshore service vessels

- **Type of emissions covered by ETS**
  - Carbon dioxide, methane and nitrous oxide

- **Cost exposure**
  - “Polluter pays” principle allows shipowners to pass on carbon cost to the commercial operator

Inclusion of shipping in the EU ETS will bridge part of the cost gap between low-carbon and fossil fuels

---

Source: European Parliament; Arkwright Market study 2021; S&P Global news; other news sources

1) European Parliament’s Committee on Environment, Public Health and Food Safety (ENVI)
2) 55% of member states representing at least 65% of the total EU population must agree
3) From and to the EU
4) With possible derogations for non-EU countries where coverage could be reduced to 50% subject to certain conditions
Ammonia is the most promising solution for clean fuel in deep-sea shipping

Comparison of shipping fuel alternatives

- **Ammonia**: Low-carbon shipping fuel – scoring card
  - Fuel production costs: High
  - Scalability: High
  - Capex need: Low
  - Transportation/logistics: Limited
  - Technology readiness: Low
  - Overall assessment as a clean fuel alternative: Strong

- **E-Methanol**: Low-carbon shipping fuel – scoring card
  - Fuel production costs: Low
  - Scalability: High
  - Capex need: Low
  - Transportation/logistics: Advanced
  - Technology readiness: High
  - Overall assessment as a clean fuel alternative: Limited

- **Hydrogen**: Lower energy density disadvantageous for longer-distance shipping
  - Limited existing infrastructure vs. ammonia
  - Hydrogen fuel cells are not expected to be available at commercial scale before 2028/2029, while ammonia engines should be available from 2024/2025

**E-Methanol**
- E-Methanol is not a zero-carbon fuel, as it emits CO2 when combusted
- Methanol will only be emission-free if the carbon going into e-methanol is captured from a source where it would otherwise be emitted or captured after combustion; this is very expensive and difficult to scale
- In light of its low scalability, there is limited incentive for large-scale adoption

**Hydrogen**
- Lower energy density disadvantageous for longer-distance shipping
- Limited existing infrastructure vs. ammonia
- Hydrogen fuel cells are not expected to be available at commercial scale before 2028/2029, while ammonia engines should be available from 2024/2025

"Ammonia (green and blue) is the most promising carbon-free deep-sea fuel in the long run" – DNV

Source: Arkrwright market study 2021
Fuel cost parity between ammonia and MGO requires CO2 pricing of USD ~250 per tonne¹

Shipping fuel cost comparison requires several aspects:

- **Price of fuel**
- **Energy density in fuel**
- **Engine combustion efficiency**

In addition, the price of carbon will likely play an increasingly important role going forward:

- **Price of CO2 emissions**
- **Carbon intensity embedded in fuel (well to wake)**

- **Other elements to consider over a ship's lifetime, albeit not reflected here, could be:**
  - Alternative value of cargo space needed for fixed fuel installations
  - Capex
  - Etc.

Ammonia requires only carbon pricing of USD ~250/tonne in order to reach cost parity with MGO, assuming respective fuel price levels of 750 USD/t for MGO and 500 USD/tonne for ammonia:

- MGO price assuming oil price of 80 USD/barrel and historical correlation
- Ammonia price based on natural gas cost of 4.5 USD/MMBtu and with 90% carbon capture
- Considering fuel cost, energy density, combustion efficiency and carbon cost

**Cost of MGO vs. blue ammonia at selected carbon price levels¹**

<table>
<thead>
<tr>
<th>CO2 tax (USD/t)</th>
<th>0</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGO (USD/GJ)</td>
<td>32</td>
<td>38</td>
<td>45</td>
<td>52</td>
<td>58</td>
<td>65</td>
<td>71</td>
</tr>
<tr>
<td>Blue ammonia (USD/GJ)</td>
<td>57</td>
<td>58</td>
<td>60</td>
<td>61</td>
<td>62</td>
<td>64</td>
<td>65</td>
</tr>
<tr>
<td>MGO vs. Blue ammonia</td>
<td>-78%</td>
<td>-52%</td>
<td>-33%</td>
<td>-18%</td>
<td>-7%</td>
<td>+1%</td>
<td>+9%</td>
</tr>
</tbody>
</table>

Source: Company information; Arkwright market study 2021

¹ Assuming brent price of 80 USD/bbl and natural gas price of 4.5 USD/MMBTU
Ammonia fueled engines expected to be ready from 2024–2025 with commercialization in 2028–2029

Timeline for expected availability of ammonia as a shipping fuel

Selected ship-owners involved in ammonia-as-a-fuel projects

Source: Arkwright market study 2021
Ammonia co-firing in power generation can support the emergence of a USD 10bn market in Asia by 2050

Ammonia demand outlook in the power generation segment

<table>
<thead>
<tr>
<th>Year</th>
<th>Base case</th>
<th>Upside case</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021E</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>2025E</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2030E</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>2035E</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>2040E</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>2045E</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>2050E</td>
<td>20</td>
<td>62</td>
</tr>
</tbody>
</table>

Key drivers

- Provides cleaner power generation in countries with unfavorable renewable conditions through decarbonization of existing coal-based base load capacity
- Ammonia co-firing has large potential to reduce emissions for large-scale coal-fired power plants
- Especially relevant for countries with high exposure to coal and high cost and low load factor of renewables – e.g., Japan
- Significant upside potential from additional ammonia used, as well as from further countries adopting ammonia co-firing and replacing oil-fired electricity generation
- Technological development needed: development for inclusion of very high ammonia shares and to ensure low NOx emissions

Source: Arkwright market study 2021

1) Assumes Japan realizes 100% ammonia-fired power plants by 2050; 50% of Taiwan and South-Korea potential realized; 20% of small- and medium-scale oil-fired backup electricity generation replaced by ammonia-fired gas turbines
2) Due to low flammability and radiation intensity
3) Ammonia co-firing might have higher NOx-formation than pure coal firing without NOx abatement technology
Countries with high cost of renewables and high share of coal are most relevant for ammonia co-firing

Indicative evaluation of co-firing opportunities

Benefits of ammonia co-firing

- Provides an alternative for countries with unfavorable conditions for renewable production – both in terms of price and capacity potential
- Reduces emissions yet allows continued use of relatively new fleets of coal- and gas-fired power plants with long remaining lifetime
- Enables continued use of more flexible production assets that can complement the intermittency of renewables production
- Economically favorable over CCS – and beneficial by having a more flexible opex profile vs. large investments

Source: Arkwright market study 2021
Japan, Taiwan and South Korea are key potential demand centers for ammonia in power generation

Main potential countries

- **Japan**
  - Japan has clear targets for ammonia co-firing
  - By co-firing with 20% ammonia on all coal-fired power plants in Japan, CO2 emission from the electricity sector can be reduced by 10%
  - Green Innovation Fund and tax incentives estimated to induce ~ USD 150bn in private investment over next 10 years
  - Plan to establish scheme for short-term subsidy with funds of c. USD 9bn in next three years with incentive-based payouts

- **South Korea**
  - Ranked as the world’s 7th biggest coal consumer with strong public ambitions for reaching carbon neutrality
  - Mature ammonia infrastructure, world’s 4th largest importer
  - Major institutions formed Green Ammonia Alliance in 2021

- **Taiwan**
  - Ranked as the world’s 14th biggest coal consumer, with limited renewable options
  - Amid neighboring countries with mid-century net-zero targets, Taiwan is expected to take appropriate measures

Demand development

- **Japan**
  - Ammonia needed for 20% co-firing rate of all coal-fired power plants in operations in Japan

- **South Korea**
  - 15 mT

- **Taiwan**
  - 7 mT

- **Other**
  - 48 mT

- **Japan global demand view 2050E**
  - 100 mT

Source: Arkwright market study 2021
1) Assumes 1 yen = 0.0090 USD
2) Argus market study (2022)
3) Japanese government estimates
Demand from conventional applications is expected to support a traded and captive market of USD 111bn by 2050

Ammonia demand outlook in the agriculture/industrial segment

<table>
<thead>
<tr>
<th></th>
<th>2025E</th>
<th>2030E</th>
<th>2035E</th>
<th>2040E</th>
<th>2045E</th>
<th>2050E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey volumes</td>
<td>190</td>
<td>198</td>
<td>206</td>
<td>214</td>
<td>223</td>
<td>232</td>
</tr>
<tr>
<td>Blue volumes</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Green volumes</td>
<td>185</td>
<td>185</td>
<td>170</td>
<td>156</td>
<td>150</td>
<td>143</td>
</tr>
</tbody>
</table>

Key drivers

- **Conventional applications** (i.e. fertilizer and industrial segments) are expected to remain key sources of ammonia demand.
- Demand for green fertilizer supported by:
  - Food companies gradually committing to reducing emissions.
  - Minimal infrastructure or value chain changes required for green fertilizer.
  - CO2 savings in the food industry with only small impact on cost.
  - More than 50% of customers demonstrating the willingness to pay within the food industry, compared to other sectors.
- Decreasing contribution from grey production, yet it will remain an important source of ammonia going forward.
- Blue ammonia includes a mix of new capacity and grey conversions.

Demand development

<table>
<thead>
<tr>
<th>Source: Arkwright market study 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Green ammonia would constitute only 0.5-1.0% price increase on finished goods</td>
</tr>
</tbody>
</table>
Green ammonia has a strong business case of providing up to 30% CO2 reduction at a ~1% marginal cost increase

**Food companies are recognizing the need to reduce their emissions**

- Global brands are pushed to take responsibility for their emissions throughout the value chain
- Many brands pledging net-zero targets by 2040-2050
- The brands can use their value chain power to drive the adoption of green fertilizer at farms to reduce emissions

**Fertilizer accounts for a very large share of CO2 emissions, but a small share of the cost**

- Fertilizer used at farms often accounts for a large share of total emissions for an end-product
- However, the cost for fertilizer is often marginal compared to other cost components
- The result is a very strong value proposition for brands to reduce their emissions significantly with a marginal cost increase

**Impact on end-consumers is marginal and likely within willingness to pay for a “green” product**

- At 1% extra cost on a loaf of bread, clean ammonia can deliver a 15-30% reduction in carbon footprint
- 2x increase in fertilizer cost only results in paying €0.05 extra for a cup of coffee
- Demonstrated ability of high-value brands to take out up to 20% premium on sustainable products
- Green ammonia at 2-3x the price of conventional ammonia only constitute a minor green premium for end-customers
- More than 50% of consumers are willing to pay a green premium for food products

*Source: Arkwright market study 2021*
The use of ammonia as a hydrogen carrier is expected to emerge as a USD 17bn market by 2050.

Ammonia demand outlook in the hydrogen carrier segment

<table>
<thead>
<tr>
<th>Global hydrogen demand (in mT hydrogen)</th>
<th>20-45</th>
<th>30-45</th>
<th>45-70</th>
<th>70-80</th>
</tr>
</thead>
<tbody>
<tr>
<td>mT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>15</td>
<td>4</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Asia</td>
<td>5</td>
<td>11</td>
<td>26</td>
<td>36</td>
</tr>
</tbody>
</table>

Key drivers

- **Hydrogen roadmaps are being drawn up globally** through public investments focused on promoting the hydrogen economy.
- **Supply and demand centers will differ** due to land use constraints, infrastructure availability and potential, production cost differences and capacity for direct electrification.
- **Europe and Asia** are expected to become key demand centers with significant import need.
- **Ammonia is the most promising long-distance hydrogen carrier** due to favorable attributes such as ease of transport leading to lower cost.

Source: Arkwright market study 2021
Ammonia will provide an important link for deep-sea transportation of hydrogen

Geographically separated supply and demand centers

Hydrogen production cost from solar PV and onshore wind systems in the short-term (USD/kgH2)

Source: Arkwright market study 2021

Alternatives for hydrogen transport

- Pipelines
- Ammonia as a carrier (Ideal for distances >1,000km)
- Liquefied hydrogen

Advantages of ammonia

- Mature in transport, infrastructure and know-how
- More energy dense vs. hydrogen
- Better characteristics for storage vs. hydrogen
- Lower all-in long-distance transportation cost vs. hydrogen

Demand development

Yara Clean Ammonia

Source: Arkwright market study 2021
Ammonia market expected to be USD 224bn in 2050 driven by strong mega trends across four different end-use applications.

**Total ammonia demand (2050E)**

- **Shipping fuel**: 182mT, USD 87bn
- **Power generation**: 20mT, USD 10bn
- **Agriculture/Industrial**: 232mT, USD 111bn
- **Hydrogen carrier**: 36mT, USD 17bn
- **Total**: 470mT, USD 224bn

~50% expected to be traded

Growth underpinned by four distinct segments where each one on their own represents a significant opportunity for YCA.

Source: Arkwright market study 2021
Note: Market value in real 2021 terms, assuming an inflation rate of 2% starting 2021
Market outlook

1. Market opportunity
2. Conventional market
3. Demand development
4. Supply side economics
Blue ammonia will reach scale first, but green expected to eventually surpass blue volumes

Ammonia volumes

<table>
<thead>
<tr>
<th>Year</th>
<th>Green</th>
<th>Blue - for new applications</th>
<th>Blue - for conventional applications</th>
<th>Grey</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020A</td>
<td>184 mT</td>
<td>191 mT</td>
<td>203 mT</td>
<td>5 mT</td>
</tr>
<tr>
<td>2025E</td>
<td>184 mT</td>
<td>185 mT</td>
<td>203 mT</td>
<td>12 mT</td>
</tr>
<tr>
<td>2030E</td>
<td>185 mT</td>
<td>170 mT</td>
<td>233 mT</td>
<td>11 mT</td>
</tr>
<tr>
<td>2035E</td>
<td>156 mT</td>
<td>54 mT</td>
<td>294 mT</td>
<td>53 mT</td>
</tr>
<tr>
<td>2040E</td>
<td>150 mT</td>
<td>39 mT</td>
<td>379 mT</td>
<td>66 mT</td>
</tr>
<tr>
<td>2045E</td>
<td>143 mT</td>
<td>39 mT</td>
<td>379 mT</td>
<td>48 mT</td>
</tr>
<tr>
<td>2050E</td>
<td>143 mT</td>
<td>48 mT</td>
<td>470 mT</td>
<td>79 mT</td>
</tr>
</tbody>
</table>

Key factors impacting relative competitiveness of grey, blue and green ammonia

- Regional development of natural gas prices
- Timing and implementation of carbon taxation schemes
- Relative price differential vs. alternatives
- Regional development of natural gas prices
- Timing and implementation of carbon taxation schemes
- Speed of cost reduction and regional differences in CCS availability
- Access to renewables capacity
- Rate of improvement in cost of renewables
- Electrolyzer cost
- Construction and civil costs in "stranded" areas
- "Greenium" that customers are willing to pay

Source: Arkwright market study 2021
Blue ammonia to be cost competitive with grey by 2035 and green ammonia becoming cost competitive over time

Key assumptions and trends

- Blue ammonia with high capture rates (90%+) expected to be cost competitive with grey ammonia with CO2-taxation between 2030-2035
- Green ammonia expected to require significant premium and subsidies in order to be competitive short-term due to high capex, present electrolyzer efficiency rates and competition for renewable electricity in grid-connected locations
- Green ammonia will prevail in the long-term as total plant capex comes down and efficiencies and load factors increase as the industry develops, but will take time until it becomes cost competitive without subsidies
- Blue ammonia is expected to be key to scale up ammonia application in new segments such as shipping fuel and power generation until green ammonia is mature

Source: Arkwright market study 2021
1) Assuming "global" CO2 prices increasing towards 50 USD/t by 2030
2) Assuming an inflation rate of 2% starting 2021
Differences in regional competitiveness of blue ammonia driven by gas, CO2 storage costs and incentive mechanisms

Relative regional competitiveness:

- **North America**: Sweet spot for blue hydrogen – lowest gas prices and only place with existing CO2 value chain and well-established incentive mechanism for CCS through 45Q tax incentive.
- **Middle East**: Cheap gas and suitable reservoirs for large-scale CO2 storage – “runner-up” to the US.
- **Australia**: Domestic gas supply and promising CO2 storage locations – relatively competitive region for blue production.
- **South America**: Gas supply varies by location – some areas (e.g., Argentina) with promising low-cost storage areas.
- **Europe**: Gas imports from US and Russia. In early days of CO2 storage and costs are currently high.
- **Eastern Asia**: Relies on gas import, limited/no real storage options in region as of yet.
- **Africa**: Varying gas supply/prices but specific locations with good potential – no current storage initiatives.

Scoring on key cost drivers:

- **North America**: Low cost
- **Middle East**: Low cost
- **Australia**: Low cost
- **South America**: High cost
- **Europe**: High cost
- **Eastern Asia**: High cost
- **Africa**: High cost

Source: Arkrwright market study 2021

1) Assumes LNG export price into Asia as “true price” for a Middle Eastern exporter, due to this being the alternative value of the gas – actual Middle Eastern production cost lower.
In the US, the 45Q tax credit is already in place, supporting economics of blue ammonia production

<table>
<thead>
<tr>
<th>Credit amount (per tonne of CO2)</th>
<th>Equipment placed in service before Feb-2018</th>
<th>Equipment placed in service on Feb-2018 or later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geologically sequestered CO2</td>
<td>USD 23.82 in 2020¹</td>
<td>USD 31.77 in 2020 → increasing to USD 50 by 2026²</td>
</tr>
<tr>
<td>Geologically sequestered CO2 with EOR</td>
<td>USD 11.91 in 2020¹</td>
<td>USD 20.22 in 2020 → increasing to USD 35 by 2026²</td>
</tr>
<tr>
<td>Other qualified use of CO2</td>
<td>None</td>
<td>USD 20.22 in 2020 → increasing to USD 35 by 2026²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Claim period</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Until 75mT CO2 are captured and sequestered</td>
<td>12-year period once facility is placed in service</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Qualifying facilities</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capture carbon after 10-Mar-2018</td>
<td>Begin construction before 1-Jan-2026</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual capture requirement</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capture at least 500,000 tonnes</td>
<td>Power plants: Capture at least 500,000 tonnes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Facilities that emit no more than 500,000 tonnes per year: Capture at least 25,000 tonnes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DAC³ and other facilities not described above: Capture at least 100,000 tonnes</td>
</tr>
</tbody>
</table>

Source: Congressional Research Service ("The Tax Credit for Carbon Sequestration (Section 45Q)", 2021)

---

¹  Inflation-adjusted annually (as computed and published by the US Secretary of Commerce)
²  Then inflation-adjusted (as computed and published by the US Secretary of Commerce)
³  DAC = direct air capture
Cost of green ammonia expected to fall ~50% by 2040 from improvements across the value chain

Green ammonia production cost by 2040

Ammonia production cost (LCOA) USD/t

Key drivers

- **Electricity costs**
  - Power prices expected to fall
  - Cost decline in line with overall LCOE for the most promising regions

- **Load factor**
  - Increased load factor for dedicated renewables plants allows downsizing of hydrogen capacity – in turn, providing significant capex savings

- **Electrolyzer capex**
  - ~70% expected to come from value chain efficiencies, remainder from tech improvements

- **Electrolyzer efficiency**
  - Higher electrolyzer efficiency reduces power need and allows downsizing of the incoming power supply infrastructure

- **Plant scaling effects**
  - ~40% cost reduction on balance of plant expected as stack sizes double
  - Project management, engineering and owner cost expected to fall as industry matures

2021E 2040E

-1,100 560

Lower electricity prices
Load factor improvement
Reduced electrolyzer capex
Electrolyzer efficiency
Scaling and down-sizing effects on balance of plant and civil
O&M efficiencies
Other

Supply side economics

Yara Clean Ammonia

Source: Arkwright market study 2021
Regional competitiveness for green ammonia is shaped by renewables cost and distribution cost into end markets

Supply side economics

Relative regional competitiveness

- **Middle East**: Very favorable renewables cost and potential to build facilities with competitive distribution cost.
- **North America**: “Average” renewables cost, particularly in regions with optimal logistics for production.
- **Africa**: Varying cost of renewables and distribution; sites in North Africa combine low cost with competitive logistics.
- **South America**: Highly favorable renewables cost; requires elaborate logistics from production site to port and into markets.
- **Australia**: One of the lowest-cost renewables regions, but higher on the distribution cost curve and potentially capex.
- **Eastern Asia**: Parts of Asia with competitive renewables cost and other parts with competitive logistics, but few areas with both.
- **Europe**: High alternative cost of renewables implies that Europe will not be a key location for new low-cost ammonia production.

Scoring on key cost drivers

- **Hydrogen production cost (USD/kg H2)**
- **Ammonia distribution cost to major maritime hub (USD/t NH3)**

Source: Arkwright market study 2021

Note: Price levels refer to 2040E

1) Using Arkwright assumptions on hydrogen production cost with analyst views on regional power cost
Summary of the market outlook

**Demand:** Demand expected to **increase significantly in the future**

Driven by usage of clean ammonia in key industries: *shipping fuel, power generation, agriculture/industrial and hydrogen carrier*

These end-markets are expected to create **demand of USD 224bn**, or 470mT, for ammonia in 2050, of which ~50% is expected to be traded.

**Supply:** Grey ammonia to remain key in supplying conventional markets until blue or green is at cost parity with grey cost.

Blue ammonia is scalable and will be cost competitive in the short-term with particularly attractive economics in the US – will be key to enable the decarbonization of shipping fuel and power generation.

Blue expected to be low-carbon cost leader also in the medium-term, while green ammonia will become cost competitive as the industry develops.

Source: Arkwright market study 2021

1) Market value in real 2021 terms, assuming an inflation rate of 2% starting 2021
Business overview

1. Introduction to YCA
2. Deep-dive on the current YCA platform
3. Business model
4. Competitive dynamics and positioning
Introduction to YCA

Snapshot of the current YCA platform

Footprint

4.1mT
Sales volume
Q1 2022 LTM

>20%
Market share of merchant/traded ammonia in 2021

USD 159m
EBITDA
LTM Q1 2022

Key highlights

- **Leading global ammonia footprint** with physical presence in almost 40 countries, including key trading hubs
- **Infrastructure in place** with access to Yara’s terminal and production network
- **Specialized fleet of 12 ships**
- **Integrated, asset-backed platform** covering the entire midstream ammonia value chain
- **Profitable business model** delivering robust margins
- **Experienced and competent organization** with a long track record in safe and efficient handling of ammonia

Attractive platform for profitable growth, leveraging YCA’s leading scale and position

Source: Company information; Argus market study (2022)

1) Based on traded market volumes from Argus market study
2) YCA has exclusive access, and manages and optimizes use of Yara's ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara

---

Yara Clean Ammonia

#12
Owned and leased vessels

#18
Terminals in key locations

YCA terminal access
Third-party terminals
Yara export production sites
Countries present
YCA combines a leading business with exceptional growth prospects and a value creating project portfolio

**Ammonia Sales and Logistics (ASL)**

- **Conventional applications (ASL 1)**
  - 100% of current volumes
  - Global platform to deliver ammonia to agriculture and industrial sectors

- **New applications (ASL 2)**
  - Shipping fuel
  - Power generation
  - Hydrogen carrier

**Clean Ammonia Projects and Production (CAPP)**

- Direct investments in brown- and greenfield upstream projects and capital-light offtake contracts with Yara and third-parties
- Blue ammonia projects
- Green ammonia projects

Source: Company information
YCA, as part of Yara, has a long history as a leading player in the ammonia value chain

1) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
Lean organizational setup rigged for growth and vertical expansion

Organizational setup

Management and administration

Certification and product mgmt.

Yara corporate services

Commercial

Upstream business development

Upstream projects and technology

Number of YCA FTEs including dedicated FTEs through SLAs with Yara

Key highlights

- Highly competent organization with significant industry experience and employees with long tenure from Yara
- Employees are located across Europe, US, Singapore and Australia with the majority in Switzerland and Norway
- The commercial department organizes operations throughout the midstream value chain, and develops customer relations and bunkering solutions within the shipping and power segments
- The YCA workforce comprises 34 FTEs in YCA legal entities and 13 dedicated FTEs working for YCA through SLAs with Yara
- In addition, YCA draws on significant resources from Yara through SLAs

Key Yara corporate services

- IT
- Indirect Procurement
- Finance
- HR services
- Ethics and Compliance
- Internal audit
- Legal
- HESQ
- Energy Sourcing
- Marketing
- Administration and facility mgmt.
- Terminal operations

Source: Company information
Business overview

1. Introduction to YCA
2. Deep-dive on the current YCA platform
3. Business model
4. Competitive dynamics and positioning
YCA is fully integrated across the ammonia midstream segment

End-to-end operations across the midstream value chain

**A. Sourcing and planning**
- Asset-backed with multiple sourcing points globally (Yara and third-parties)
- Diversification provides high security of supply
- In-house planning system

**B. Commercial activities**
- Sales of ~4mT ammonia to Yara and third-parties globally
- Mission-critical supplier with long-term relationships with key customers
- Predictable contract dynamics based on reference prices, lowering risk

**C. Shipping and terminals**
- YCA operates a fleet of 12 vessels (of which 5 are owned by YCA)
- Access to 18 terminals providing global reach
- Scale enables above 90% vessel utilization

**Selected scale benefits for YCA**
- **Diversification**
  - Lower risk achieved through multiple sourcing points and consumers
- **Planning and optimization**
  - Ability to magnify returns by leveraging YCA's leading infrastructure and optimizing trade routes/fleet utilization
- **Synergies and network effects**
  - Unmatched insight from being a leading partner to both suppliers and consumers – allowing YCA to optimize positions and harness scale benefits

Source: Company information
1) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
2) Based on sales volume from 2012 to 2021
Dynamic planning approach ensures efficient operations and high level of flexibility

Business logic

- Yara’s asset-backed production footprint and consumption footprint create concentric “circles” of business in Western Europe, Americas and Asia
- Adding contracts in regions with current presence to leverage scale and optimize logistics
- Adding customers when new supply capacities become available
- Adjusting long vs. short position (i.e. contract position) depending on YCA’s market expectations

Long-term planning

- Planning of Yara and third-party longer-term supply and sales contracts
- Forecasting of supply and demand for the next year
- Tilt long or short based on market expectations
- Evaluate which new supply and sales contracts YCA should target

Operational planning

- Based on regular communication, stock level and 6-8 week production and consumption plan from each plant
- Optimization to minimize milage and costs while preserving flexibility
- Rolling plan in YCA’s planning tool, including schedules for vessels and pick-up from and delivery to terminals

Yara Clean Ammonia

Source: Company information
Attractive value proposition to both suppliers and consumers

### Suppliers (upstream)
- YCA can provide selected suppliers with **highly predictable and lower risk offtake commitments**
- YCA’s large, integrated and global network supports improved economics for suppliers
- YCA has a **flexible fleet** with regards to port connectivity and capacity, and a strong track record of safe handling of ammonia

### Consumers (downstream)
- YCA is **asset-backed with multiple sourcing points**, providing security of supply to consumers
- The strength of the **sourcing setup** enables YCA to offer **long-term contracts** and visibility for consumers

YCA is a trusted partner providing critical services to both suppliers and consumers
YCA acts as preferred offtake partner for Yara and third-party producers

Yara ammonia production

- Yara-owned export volumes sourced by YCA
- Volumes driven by difference in plants’ production and on-site consumption of ammonia
- Largely predictable volumes (under normal conditions)
- Arm’s length evergreen agreements

~2.0mT 2021 volumes

External ammonia production

- Typically sourced from other large fertilizer producers with excess ammonia
- Historically, these volumes have been largely sourced under term, rather than spot contracts
- More diversified third-party sourcing in 2022 (i.e. to replace volumes impacted by sanctions)

~1.2mT 2021 volumes

Yara JV partner production

- Volume sourced from Yara JVs
- Operates similar to own plants with largely established volume patterns from internal production planning
- Long-term arm’s length agreements

~0.9mT 2021 volumes

Source: Company information
1) Freeport volumes are allocated based on equity ownership (68% Yara, 32% BASF). Accordingly, Yara’s equity production has been classified as part of Yara’s ammonia production while volumes sold on behalf of BASF (surplus) have been classified as Yara JV partner production.
2) Evergreen contract with termination of the agreement being subject to mutual agreement.

Asset-backed sourcing through Yara/JVs provides important scale and security of supply
Majority of volumes sourced under term contracts, with selective use of spot market for short-term balancing

~90% of total volumes (2021)

### Term contracts
- Merchant market for ammonia is largely based on term contracts
- Benefits from strong relationships, providing high supply visibility and predictability (under normal conditions)
- Regular negotiation of terms and prices based on market quotations
- Limited price exposure as YCA matches supply with demand

~10% of total volumes (2021)

### Spot purchases
- The spot market is primarily used to balance short-term fluctuations in volumes
- Serving spot enquires forms part of YCA’s market presence
- Limited exposure to ammonia price fluctuations as most spot positions are closed relatively quickly
- Spot purchases are part of YCA’s planning and optimization decisions and provides flexibility to further optimize trade flows
- Can take opportunistic spot cargos to lock-in short-term profit opportunities, but the extent is limited and based on known sourcing or delivery need
- Recent sanctions has tilted YCA more towards spot (in 2022)

Generally, limited price risk as sourcing and sales contracts are based on indexed market references

Source: Company information
Sourcing example (1/2): YCA handles ~200kT ammonia per year from Sluiskil

Sluiskil: Yara plant with 1.9mT Ammonia capacity

- 1929: Start of ammoniumsulphate production
- ~1.9mT: Annual ammonia production capacity
- ~0.2mT: Ammonia volumes exported/transported by YCA

- Sluiskil is Yara’s largest ammonia plant, strategically located in the Netherlands
- Most of the volumes produced are used as input to other nitrogen/fertilizer products – however, Sluiskil also exports ~10% of its production
- Exported volumes are often transported to other Yara plants in Europe with deficit of ammonia, i.e. balancing Yara’s network
- Sluiskil’s location offers deep-sea connection
- YCA is responsible for efficient transportation and inventory management

Overview of Sluiskil’s vessel loading/terminal setup

- Terminal setup for ammonia loading to vessels
- Vessels at the quay for loading

Source: Company information
Sourcing example (2/2): YCA serves the Asian market with ~600kT export from Pilbara

Strategically located, covering the Asian market

- ~1,700NM Sea distance from Pilbara to Singapore
- ~3,300NM Sea distance from Pilbara to Japan
- ~3,500NM Sea distance from Pilbara to South Korea

Key highlights

- Broad coverage of the Asian market through Pilbara and limited third-party sourcing
- YCA mainly sells to external consumers in Asia on term contracts
- Annual ammonia export capacity of ~600kT at Pilbara

Strategically located on the north-west coast of Australia

Yara clean Ammonia

Source: Company information; Sea-distances.org
1) Based on historical volumes
2) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
3) Kagoshima port
4) Busan port
# YCA is a reliable supplier of ammonia to Yara and third-party consumers

<table>
<thead>
<tr>
<th>Sales to Yara</th>
<th>Sales to third-party consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of consumers</strong></td>
<td><strong>Contract portfolio</strong></td>
</tr>
<tr>
<td>Porsgrunn</td>
<td>Rostock</td>
</tr>
<tr>
<td>~40% of volumes are shipped directly from other Yara plants, ~60% covered from third-parties</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Company information

1) Including Yara JV partner production
2) Evergreen contract with termination of the agreement being subject to mutual agreement
YCA has access to Yara owned terminals in key regions

YCA has exclusive access to Yara terminals

<table>
<thead>
<tr>
<th>Terminals in key regions¹</th>
<th>Total terminal capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>~600kT</td>
</tr>
</tbody>
</table>

Terminal access is a clear competitive edge – increasingly difficult to replicate due to several factors:

- Difficult to obtain permits
- Limited availability of attractive land
- Relatively high capex/investments
- Limited third-party terminal market

YCA handles inventory management for Yara

- Evergreen agreement² with Yara governing all relevant Yara plants and storage facilities
- YCA receives weekly updates on inventory levels at the plants and uses this in planning
- YCA is responsible for managing the ammonia tanks and holding inventories between predetermined levels, based on the plants’ production and consumption schedules
- YCA calculates the need for refill and uses this in delivery planning – inventory turnover is ~1 month³

Source: Company information

1) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
2) Evergreen contract with termination of the agreement being subject to mutual agreement
3) Assuming average inventory of 0.1mT linked to European average sales of 2mT p.a.
YCA has a fleet of 12 owned and leased vessels to support its midstream operations

Overview of YCA’s fleet of owned and leased vessels

**Owned vessels**
- **Medium gas carriers**
  - 2 Owned
  - 2016 Built
  - 76k Total cbm
- **Handysize carriers**
  - 3 Owned
  - 2016 Built
  - 62k Total cbm

**Chartered vessels**
- **6 (+1)**
  - 6 vessels + 1 barge
- **10 years**
  - Average age
- **146k**
  - Total cbm
- **1.5 years**
  - Average remaining duration

**Key highlights**
- **12 dedicated vessels with >90% utilization,** ensuring efficient operations in a specialized shipping segment with most capacity tied up on term contracts
- **Flexible fleet strategy** with direct ownership and leasing when financially favorable
- **Access to LPG vessels** (in the market), which can be converted to ammonia carriers

**YCA continuously evaluates its fleet composition and invests in vessels when it creates value**

Source: Company information
1) Including Gaz Serenity, which will be replaced. YCA has entered into a charter agreement for a new vessel per 16 June to replace Gaz Serenity. Details will be provided later
2) Excluding 1 barge
3) Excluding Gaz Serenity
Business overview

1. Introduction to YCA
2. Deep-dive on the current YCA platform
3. Business model
4. Competitive dynamics and positioning
Attractive and integrated midstream business model driven by volume and margin

Volume

- Predictable volumes and trading patterns under normal conditions

Margin

- Robust margin on midstream volumes

Commercial services
Ship-owning operations
Global ammonia optimization

EBITDA
Overview of the YCA’s global network and trade flows

**Europe:** Mostly import from Europe coupled with third-party sourcing delivered to Yara plants

**Americas:** Yara sourcing hub with local deliveries to Yara and third-parties, and Yara deliveries to Europe

**Asia-Pacific:** Volume deliveries from Pilbara to third-party consumers

**Key trade routes**
1. Trinidad to US gulf coast and Europe and Brazil
2. Between a number of sourcing and delivery points in Europe
3. Pilbara, Australia to east and southeast Asia

**Source:** Company information
1) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara

Global midstream operations to balance/optimize Yara’s production system and serve third-party producers/consumers
Relatively stable underlying volume development underpinned by contracts

YCA sales volume development

Typical drivers of volume fluctuations:
1. Structural changes in connection with closure of plants
2. Construction of new plants
3. Reliability issues at ammonia plants
4. Consumption level of finished fertilizer plants

Larger fluctuations typically driven by specific events (and not generally tied to cyclical economic developments)
Well-established pricing mechanisms at both ends (i.e. sourcing and sales)

Illustrative margin build-up

A  Producer price
YCA generally sources from producers with negotiated prices linked to ammonia market reference prices

B  Consumer price
YCA generally sells to consumers (both Yara and third-parties) at delivered terms (e.g. CFR, DAT), reflecting the market value of delivered ammonia including YCA’s value proposition

Gross margin
On volumes sourced from Yara and JVs, YCA generally earns a percentage-based remuneration linked to producer price¹
On externally sourced volumes, YCA generally earns a margin equivalent to the difference in consumer and producer prices, less costs

Source: Company information
1) For some volumes, YCA has a timing/lag exposure through inventory positions
Scale effects and optimization support robust margins for YCA

Illustrative margin build-up

<table>
<thead>
<tr>
<th>Volume</th>
<th>Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
</tr>
</tbody>
</table>

Direct costs related to freight, such as charter rates and fuel in addition to other COGS incurred in operations
Limited through YCA’s high level of operational efficiency
Admin costs with clear benefits from economies of scale, such as management, route optimization and handling of risk and guarantees
YCA on average earns a margin of >30 USD/tonne, driven by i) superior scale and position, ii) ship-owning and logistics, iii) optimization and iv) value proposition in the market
On volumes sourced from Yara and JVs, YCA is generally exposed to some commodity price sensitivity given percentage-based remuneration
On externally sourced volumes, YCA is generally exposed to commodity price movements between the typically limited time between sourcing and sale

Source: Company information
1) For some volumes, YCA has a timing/lag exposure through inventory positions
Business overview

1. Introduction to YCA
2. Deep-dive on the current YCA platform
3. Business model
4. Competitive dynamics and positioning
A clear set of capabilities is required to succeed across the midstream ammonia value chain

Key success criteria

- Reliability of supply
- Operational know-how
- Customer relationships
- Global infrastructure and network
- Efficient financing
- Track record of safe operations
- Market insight

Clear advantages of having a large and integrated platform, both today and in the future
YCA has a leading integrated midstream ammonia platform...

<table>
<thead>
<tr>
<th>Project execution and production</th>
<th>Sourcing, optimization and shipping</th>
<th>Global distribution, storage and sales</th>
<th>Ammonia fuel bunkering</th>
<th>Customers (existing MoUs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated part of Yara as a major ammonia offtaker</td>
<td>Specialized skills and in-house systems as nucleus of operations</td>
<td>Global and scalable platform with 18 terminals</td>
<td>Production close to most major bunkering hubs</td>
<td>Strong and long-standing customer relationships</td>
</tr>
<tr>
<td>Reliable, asset-backed supply complemented by third-party sourcing</td>
<td>12 specialized carriers that handle &gt;20% of globally traded volumes</td>
<td>Industry leading track-record of safe handling</td>
<td>Agreement with Azane for first Scandinavian bunker network</td>
<td>Attractive partner given leading market position</td>
</tr>
</tbody>
</table>

Source: Company information
1) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
2) Production is currently covered by Yara
3) Ammonia fuel bunkering does currently not exist, YCA and other players are working on various solutions
4) YCA has exclusive access, and manages and optimizes use of Yara's ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
...with a differentiated approach and a clear #1 position

<table>
<thead>
<tr>
<th>Company</th>
<th>Est. traded volumes (mT)</th>
<th>Number of terminals</th>
<th>Number of vessels (owned + leased)</th>
<th>Asset-backed supply</th>
<th>Global platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>YCA</td>
<td>&gt;4</td>
<td>18</td>
<td>12</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Trammo</td>
<td>2-2.5</td>
<td>0</td>
<td>9</td>
<td>X</td>
<td>(✓)</td>
</tr>
<tr>
<td>CF</td>
<td>1-2</td>
<td>6</td>
<td>0</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>KOCH</td>
<td>1-2</td>
<td>4</td>
<td>4</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>MAXAM</td>
<td>1-2</td>
<td>1</td>
<td>7</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Nutrien</td>
<td>1-2</td>
<td>4</td>
<td>4</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>OCI Fertilglobe</td>
<td>1-2</td>
<td>4</td>
<td>4</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TOLIPTIAZOT</td>
<td>1-2</td>
<td>4</td>
<td>4</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mitsubishi Chemical</td>
<td>1-2</td>
<td>4</td>
<td>4</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>&lt;1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>✓</td>
<td>X</td>
</tr>
</tbody>
</table>

Source: Argus market study (2022)

1) Selected merchant ammonia players
2) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara. Number of terminals not including one terminal in Colombia, in which Yara has a ~30% stake.
3) Represents globally diversified platform on both export and import
Summary of the current YCA platform

**Market position:** The #1 midstream player with >20% market share\(^1\), global footprint and integrated platform

**Infrastructure:** Global network of 12 vessels and 18 strategically located terminals\(^2\), with deep-sea connection to key hubs

**Value proposition:** A trusted partner to both producers and consumers, supported by diversified asset-backed supply and credibility as offtaker

**Business model:** Attractive business model with relatively stable volumes and robust margins underpinned by YCA’s competitive edges

**Positioning:** Key success factors required to succeed in the integrated midstream position support natural barriers to challenge YCA

---

Source: Company information

1) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
2) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreements with Yara
Growth and strategy

1. Ambition and clean ammonia strategy
2. Deep-dives across the value chain
3. Summary perspectives
YCA’s strategic ambition

YCA aims to significantly grow its leading global position as the world’s largest ammonia platform, driving the development of clean ammonia globally:

- **Enabling the energy transition** by connecting low-carbon energy sources to food, fuel and energy markets through world-scale production, logistics and sales

- **Leveraging existing midstream platform** to capture leading market shares across the clean ammonia value chain

- **Bold, long-term, trusted, and reliable; partnering** with like-minded industry leaders to unlock the blue and green value chains

Source: Company information

1) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
YCA’s strategy builds on existing success factors and competitive edge

**Key success factors**

- Reliable and asset-backed supply
- Global scale and flexibility
- ~100 years of ammonia experience
- Track record of safe operations
- Market insight
- Existing long-term customer relationships

**YCA’s competitive edge**

**Upstream**

- Handled by Yara today – own production to be developed by YCA
  - Access to Yara's project portfolio
  - Project development expertise
  - Credible offtaker

**Integrated midstream**

- #1 global midstream player
  - Asset-backed supply
  - Existing platform and access to infrastructure
  - Long-standing relationships

**Downstream**

- Leverage commercial partners to create demand “pull” in new segments
  - Asset-backed supply
  - Partnerships with sector leaders
  - Sites near key hubs and terminals

**Unique starting position as the market leader in midstream ammonia**

**Integration will remain critical in building scale and creating value in the developing clean ammonia market**

Source: Company information

1) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
Three-pronged strategy to capture a leading position in the clean ammonia market

Scale integrated midstream platform while expanding into upstream and downstream segments

**Upstream**
- ✓ Develop ~2.1mT of blue asset backed supply with focus on North America
- ✓ Flexible approach to technology and project/ownership structures, including capital-light offtake
- ✓ Leverage partnership with Yara, providing access to existing sites and infrastructure
- ✓ Support mid- and downstream expansion

**Integrated midstream**
- ✓ Utilize existing scale to capture a leading market share of clean ammonia growth
- ✓ Further expand scale of current platform
- ✓ Complement existing terminal access with selective investments
- ✓ Flexible fleet ownership model
- ✓ Monetize scale benefits and capture optimization opportunities

**Downstream**
- ✓ Develop new demand together with customers and partners, with focus on shipping fuel and power generation
- ✓ Secure long-term outlets for new upstream production
- ✓ Partner with industry-leading customers to establish efficient infrastructure
- ✓ Drive ammonia bunkering solutions to solve last-mile distribution

Developing the global integrated industry leader across the value chain

Upstream projects are more capital intensive yet an important pillar to support value capture in mid- and downstream segments
Growth and strategy

1. Ambition and clean ammonia strategy
2. Deep-dives across the value chain
3. Summary perspectives
### Integrated midstream platform requires less than proportional capex to scale

#### Key assets

<table>
<thead>
<tr>
<th>Organization and systems</th>
<th>Current platform</th>
<th>Scalability</th>
<th>Synergies</th>
</tr>
</thead>
</table>
|                         | **100’s** of years of combined experience from **47** dedicated employees\(^1\) across the globe | ![circle](scalability.png) | ▪ **Existing capabilities in place** that can handle significant volume increase without material incremental investments  
▪ **Clear differentiator** in the market |
| Terminals               | **18** terminals in strategic locations with **~600kT capacity**\(^2\) | ![circle](scalability.png) | ▪ **Available capacity** in existing terminal network and incremental throughput from inventory optimization  
▪ **Leveraging on-site terminals at production plants and terminals on customer sites** |
| Vessels                 | **12** owned and leased vessels with total capacity of close to **284kcbm** | ![circle](scalability.png) | ▪ **Building a merchant ammonia fleet (from scratch)** requires “oversizing” to maintain necessary capacity buffer, creating a natural barrier to entry  
▪ **YCA requires close to proportional investments** (vs. volume growth) given high utilization |

**Scalability:** 100% is fully scalable without incremental capex, while 0% scales 1:1 with volumes

---

**Capex synergies from existing platform and integrated model (up-and-downstream)**

---

**Yara Clean Ammonia**

---

**Source:** Company information

1) Including FTEs working for YCA through SLAs with Yara
2) YCA has exclusive access, and manages and optimizes use of Yara’s ammonia tank infrastructure at terminals through sourcing and supply agreement with Yara
3) Excluding volumes from 1 barge
Value accretive growth plan builds on existing infrastructure and co-investments with partners

<table>
<thead>
<tr>
<th>YCA’s mid- and downstream investment principles</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="List of investment principles" /></td>
</tr>
</tbody>
</table>

**Terminals**
- Selective (co) investments in new capacity in strategically located areas
- Investments in terminals at new YCA production sites included in upstream capex
- Downstream terminals at customers’ sites principally covered by external capex

**Vessels**
- Additional vessel capacity required as volumes scale given YCA’s currently high vessel utilization
  - Some scale effects, however partially offset by an expected increase in average travel length
- YCA operates a flexible vessel strategy, with room to own or lease when financially favorable

**Bunkering solutions**
- Scale benefits from leveraging YCA’s terminal and route network
  - Initial investments will be tilted towards developing mobile units for last-mile coverage
  - Over time, the majority of investments are expected to be covered by partners

---

Investments of up to USD 0.4bn by 2030 expected to significantly increase midstream capacity and add downstream presence

---

Source: Company information

1) Up to USD 250m expected to be invested in terminals and vessels, and up to USD 150m expected to be invested in bunkering solutions.
Clear prioritization of key end-use applications, leveraging YCA’s partnerships and market access

**YCA’s mid term focus**
- **Global market** with volumes and early investments focused on key bunkering hubs
- New bunker solutions needed
- YCA investments in last-mile infrastructure to strengthen reach and market position

**YCA’s strategic approach**
- Global market with volumes and early investments focused on key bunkering hubs
- New bunker solutions needed
- YCA investments in last-mile infrastructure to strengthen reach and market position

**Development and roll-out to 2030**
- **Shipping fuel**
- **Power generation**
- **Agriculture/Industrial**

**After 2030**
- **Hydrogen carrier**
  - Limited volumes and activity pre-2030
  - YCA will await investments until hydrogen network/infrastructure is established

- **Power generation**
  - Yara is a front-runner in developing green food chains
  - Yara developing green fertilizer markets providing demand for YCA
  - Yara leads marketing/downstream efforts

- **Point-to-point delivery**
- **Downstream infrastructure** based on receiving terminals
- Import terminals and distribution likely developed by partners, potentially with YCA (co-) investments (if needed)
YCA will primarily focus on commercial operations in the downstream segment

Key principles of YCA’s downstream focus

<table>
<thead>
<tr>
<th>YCA investments</th>
<th>Commercial operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping fuel</td>
<td>✓ Bunkering solutions</td>
</tr>
<tr>
<td></td>
<td>✓ Customer interface + last mile delivery</td>
</tr>
<tr>
<td>Power generation</td>
<td>✗ Covered by customers/partners</td>
</tr>
<tr>
<td></td>
<td>✓ Customer interface</td>
</tr>
<tr>
<td>Agriculture/Industrial</td>
<td>✗ No downstream investments</td>
</tr>
<tr>
<td></td>
<td>( ✓ ) Jointly with Yara</td>
</tr>
<tr>
<td>Hydrogen carrier</td>
<td>To be developed in the future</td>
</tr>
</tbody>
</table>

Capital-light approach to develop downstream markets together with customers and partners

Strategy focused on developing downstream markets via commercial organization

Downstream capex limited to shipping segment and integrated with midstream investments

Source: Company information
Phased bunkering strategy with selective investments in last-mile solutions

Deep-dives across the value chain

YCA’s existing terminal and vessel network provide coverage of major bunkering hubs

<table>
<thead>
<tr>
<th>World’s largest bunkering ports (ranked)</th>
<th>Singapore: ✓</th>
<th>Rotterdam: ✓</th>
<th>Fujairah, UAE: ✓</th>
<th>Hong Kong: ✓</th>
<th>Panama: ✓</th>
<th>Zhoushan, China: ✓</th>
<th>Busan, South Korea: ✓</th>
<th>Gibraltar: ✓</th>
<th>Gothenburg, Sweden: ✓</th>
<th>Houston, USA: ✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>YCA coverage</td>
<td>Pilbara and third-party terminals</td>
<td>Sluiskil and European network</td>
<td>No terminals in Middle East</td>
<td>Coverage from Trinidad</td>
<td>Pilbara and third-party terminals</td>
<td>Pilbara and third-party terminals</td>
<td>European network</td>
<td>European network</td>
<td>European network</td>
<td>Freeport and Tampa</td>
</tr>
</tbody>
</table>

Key focus areas to 2030

1. **Initial phase**
   - Mobile units North Sea/ Northern Europe
   - Together with partners, invest in mobile flexible bunkering solutions with focus on the North Sea
   - Will cover the need until region has reached sufficient scale

2. **New markets**
   - Mobile units globally
   - Build new/move the mobile bunkering solutions to provide infrastructure in new markets
   - Leverage experience and best-practices from initial phase

3. **Maturing markets**
   - Develop large-scale permanent solutions
   - When markets scale, develop larger permanent (onshore) bunkering solutions
   - Will be pursued together with partners

Mobile units
- Capital efficient
- Flexible barges
- No need for permits (ease of regulations)

Source: Company information
1) "2020 Global Bunker Rankings by Port" and "2020 Global Bunker Rankings by Supplier" published at IPEC 2021
Partnering with industry leaders to decarbonize the shipping industry

The Castor Initiative is an ammonia-fueled tanker joint development project. The members of the coalition are MISC Berhad, Lloyd's Register, Samsung Heavy Industries, Man Energy Solutions and joined by Yara and Jurong Port in Feb ‘21

- Develop the world’s first ammonia fueled tanker
- The coalition has a diverse circle of maritime expertise to ensure and support the complete ecosystem required for the ammonia-fueled tanker to operate

The project partners, spanning the entire value chain for ammonia as a maritime fuel, will develop the world’s first ammonia bunkering terminals, enabling cost efficient and safe distribution, storage and transfer

- World’s first green ammonia bunkering terminals, both onshore and floating concepts
- April 1 2022: Announced that YCA pre-ordered 15 floating bunkering terminals from Azane

Further details on next page
MoU with NorSea to establish a new, secure supply chain for ammonia bunkering

Overview of the NorSea network

Key highlights

- NorSea and YCA have signed an MOU for to establish ammonia bunkering infrastructure for the North Sea
- NorSea is the largest logistics operator for North Sea activities, with over 10,000 landings per year, including all large oil and gas players in the region
- The first green ammonia bunkering is targeted to start in 2024
- At the outset, the scope includes all NorSea bases in the North Sea

NorSea involvement

- NorSea will operate the bunkering terminals
- Commercial and ownership strategy to be defined

YCA involvement

- YCA will supply clean ammonia to terminals and handle safety aspects
- YCA will, in close cooperation with partners, develop and scale the logistics to ensure sufficient supply

NorSea
- Founded in 1965
- 4.5m sqm base area
- >10,000 port calls

YCA
- Technology
- Construction

Overview: Deep-dives across the value chain

Upstream

Integrated midstream

Downstream

Shipping fuel

Agriculture/Industrial

Power generation

Hydrogen carrier

Example of a NorSea base

NorSea operations

Yara Clean Ammonia
Partnering with industrial leaders in Japan to develop local demand and infrastructure

MoU with Jera

Yara and Jera, Japan’s largest power generation company, will collaborate on the production, delivery and supply chain development for blue and green ammonia, to enable zero-emission thermal power generation in Japan

- Clean ammonia bunkering and distribution in Japan
- YCA to develop clean ammonia for co-firing
- Separately, in May 2022, Jera announced acceleration of its ammonia co-firing pilot at the Hekinan power plant

MoU with SUMITOMO CHEMICAL

Yara and Sumitomo Chemical, one of Japan’s leading chemical companies, will collaborate on the potential supply of clean ammonia to Sumitomo Chemical

- Clean ammonia supply for petrochemicals, plastics and/or energy
- Distribution based on Sumitomo Chemical’s plants in Japan

Source: Company information
YCA’s value chain involvement and investment approach to upstream projects

**Sources**

- **Grey ammonia**
  - Competitive gas supply
  - Efficient plant operations
  - Well-invested infrastructure
  - Regulatory environment

- **Blue ammonia**
  - Competitive gas supply
  - Regulatory support schemes
  - Geological conditions for CO2 storage
  - Regional CO2 infrastructure

- **Green ammonia**
  - Cheap and reliable renewables
  - Regulatory, including state support
  - Niche with green premium
  - Electrolyzer cost and technology

**Key success factors**

- Competitive gas supply
- Efficient plant operations
- Well-invested infrastructure
- Regulatory environment
- Geological conditions for CO2 storage
- Regional CO2 infrastructure
- Regional CO2 infrastructure
- Niche with green premium
- Electrolyzer cost and technology
- Regulatory environment
- Efficient plant operations
- Well-invested infrastructure
- Regulatory environment
- Geological conditions for CO2 storage
- Regional CO2 infrastructure
- Niche with green premium
- Electrolyzer cost and technology

**Input/feedstock**

- Feedstock
  - H2 from SMR or ATR
  - CO2 Storage (CCS)

**Hydrogen production**

- H2 from electro-lysis of H2O

**Ammonia production**

- Blue ammonia
- Green Ammonia

---

Source: Company information

1) Combining hydrogen with nitrogen from the air
2) YCA will not be directly involved in storage of CO2
3) SMR = Steam Methane Reforming, ATR = Autothermal Reforming

Value chain involvement to be evaluated on case-by-case basis
Upstream roadmap builds on a flexible approach to select and develop the most robust projects

YCA's upstream investment principles

- **Upstream perimeter**: Hydrogen production and third-party sourcing thereof
- **Hydrogen shade**: Blue and green, with a mid-term focus on the former
- **Project structure**: Majority/minority equity participation and offtake-only
- **Type of construction**: Brownfield and greenfield
- **Project sourcing**: Access to Yara's asset portfolio and third-party projects
- **Buy vs. build**: YCA may opportunistically engage in M&A

Upstream investment roadmap

<table>
<thead>
<tr>
<th>Short-term</th>
<th>Mid-term</th>
<th>Long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected pilot projects</td>
<td>Build commercial-scale capacity</td>
<td>Large supply growth to meet demand</td>
</tr>
<tr>
<td>- Ongoing projects leveraging Yara's existing asset portfolio</td>
<td>- Blue projects key in this transitional phase</td>
<td>- Large-scale projects both in blue and green</td>
</tr>
<tr>
<td>- Develop technical and commercial insights</td>
<td>- Focus on projects where government support is present/with favorable regional conditions</td>
<td>- Green likely the main volume driver in most competitive regions when cost parity approaches</td>
</tr>
<tr>
<td>- Cargos for early testing of end-markets</td>
<td>- Progress mid-term project portfolio</td>
<td>- “Subsidized” green ammonia projects could breach the blue cost curve by 2035+</td>
</tr>
<tr>
<td>- Progress mid-term project portfolio</td>
<td>- Potential investment in a green project (depending on sufficient government support)</td>
<td></td>
</tr>
</tbody>
</table>

Mid-term focus weighted towards large-scale blue projects, with green becoming more important in the long-term
Mix of different project structures with varying levels of commercial and capital exposure for YCA

Blue ammonia project structures and YCA involvement

- **Value chain**
  - Ammonia production (incl. Haber-Bosch)
  - Carbon-capture and sequestration (CCS process)
  - Clean ammonia offtake
- **Model 1:** Offtake-only (asset-light)
- **Model 2:** Ownership or cost of CCS + offtake
- **Model 3:** Fully integrated

- **Example projects** (Large scale projects)
  - Sluiskil CCS

Green ammonia project structures and YCA involvement

- **Value chain**
  - Hydrogen production (via electrolysis)
  - Ammonia production (incl. Haber-Bosch)
  - Ammonia offtake
- **Model 1:** Offtake-only (asset-light)
- **Model 2:** Ownership of hydrogen/ammonia prod.

- **Example projects** (Large scale projects)
  - HEGRA

- **Example projects** (Multiple third-party projects ongoing)

Source: Company information

1) YCA will not be directly involved in storage of CO2.
YCA and Yara will cooperate extensively in developing clean ammonia production and sourcing

Governance structure/framework

Key principles

YCA will be Yara’s preferred supplier of clean ammonia and/or clean ammonia certificates for fertilizer and industrial use
- YCA will be entitled to have a Last Look if Yara would like to source from another supplier

YCA will be the preferred “Yara Group” owner of clean ammonia assets
- YCA will be entitled to have a Last Look at the principal investment decision, as well as a preferred right to acquire any Yara-produced clean ammonia based on a Last Look mechanism

YCA will take project lead for all Yara clean ammonia projects
- Right to take lead at the first internal decision point or earlier

If YCA does not exercise its rights to take project lead at the first internal decision point and ownership at principal investment decision, Yara is in principle free to continue the project in coordination and project participation from YCA

No sunk capital cost to be charged to the pilot projects Skrei, Haddock and Yuri (at Yara’s sites) for the use of Yara’s Haber-Bosch synthesis plants. Future projects will pay a capital cost at arm's length reflecting alternative use for Yara

Yara offers to operate and maintain YCA assets on Yara sites at arm's length conditions based on cost and 10% mark-up
**Project pipeline to 2030 weighted towards blue projects in North America**

<table>
<thead>
<tr>
<th>Type</th>
<th>Project names</th>
<th>Framework in place</th>
<th>Volume (kT)(^1)</th>
<th>Type</th>
<th>YCA capex</th>
<th>Indic. start of production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue ammonia</td>
<td>Grey to blue (CCS) North America</td>
<td>✓</td>
<td>~600</td>
<td>Offtake</td>
<td>-</td>
<td>2026 – 2029</td>
</tr>
<tr>
<td></td>
<td>Sluiskil CCS Europe</td>
<td>✓</td>
<td>~400</td>
<td>Offtake</td>
<td>-</td>
<td>2025 – 2029</td>
</tr>
<tr>
<td></td>
<td>New project North America</td>
<td>✓</td>
<td>~1,100</td>
<td>Majority stake</td>
<td>USD 1.5 – 1.8bn(^2)</td>
<td>2028 – 2030</td>
</tr>
<tr>
<td>Green ammonia</td>
<td>HEGRA Norway</td>
<td>✗</td>
<td>~400</td>
<td>Majority stake</td>
<td>TBA(^3)</td>
<td>2027 – 2030</td>
</tr>
<tr>
<td></td>
<td>Skrei (pilot project) Norway</td>
<td>✓</td>
<td>~20</td>
<td>Owned</td>
<td>USD ~50m(^4)</td>
<td>2023</td>
</tr>
<tr>
<td></td>
<td>Yuri (pilot project) Australia</td>
<td>✓</td>
<td>~3</td>
<td>Offtake</td>
<td>-</td>
<td>2025 – 2026</td>
</tr>
</tbody>
</table>

**Pipeline is continuously evaluated and projects may be replaced from a deeper project hopper**

- 4 commercial-scale projects
- 3 blue projects for which sufficient frameworks are already in place
- Framework, including sufficient level of government support, yet to be concluded for HEGRA. Company to revert on capex
- 2 pilot projects to provide important technical and commercial insights
- Additional mid-term volumes from third-party offtake (not included in the project summary)

---

1) Assuming 100% offtake from upstream projects for YCA. Under the current agreement for Sluiskil, YCA has the right to offtake 50% of the gross volume of ~400kT plus any surplus from Yara’s 50% share of the volumes
2) Capex calculated based on an assumed 70% ownership for YCA
3) Framework, including sufficient level of government support, yet to be concluded for HEGRA. Company to revert on capex
4) Net capex after ENOVA support, which is still subject to ESA approval
YCA plans to invest in a large-scale new blue ammonia project located in the US

Key highlights

- **Volume**: ~1,100kT
- **Indicative start of production**: 2028-2030
- **Investment for YCA**: USD 1.5 – 1.8bn
- **Carbon capture rate**: >90%, ATR technology
- **Commercial exposure**: Full equity participation, with 100% offtake for YCA

Strategic rationale

- Competitive access to natural gas
- High carbon capture rate combined with low cost of CO2 transport and storage
- Access to US tax credits (45Q)
- Potential to leverage YCA’s existing midstream presence in US
- Strategically located in the US, with access to deep-sea transportation, connecting the plant to overseas markets

EBITDA build-up

Grey ammonia cost | Grey margin | Grey ammonia price | CCS costs | Blue margin | Blue ammonia price
--- | --- | --- | --- | --- | ---

Grey ammonia upstream margin represents difference between merchant ammonia market price and delivered cost (i.e. production costs, largely comprised of natural gas cost and transportation to market)

The transition from grey to blue ammonia is expected to support a blue price premium on top of grey ammonia pricing. Premium level linked to certificate attributes, carbon cost and price elasticity in specific end-markets

Source: Company information

1) Assuming 100% offtake for YCA on an annual basis when fully operational
2) Capex calculated based on an assumed 70% ownership for YCA
YCA seeks to secure long-term offtake of blue ammonia from CCS additions to grey assets

**Grey to blue CCS: Blue offtake and costs of CCS**

- **YCA offtake volume**: ~600kT
- **Estimated completion**: 2026 – 2029
- **Investment for YCA**: None, but long-term CCS contract will be capitalized
- **Commercial exposure**: Fixed costs for CCS and full share of blue margin
- **Technology type**: To be concluded
- **Strategic rationale**:
  - Cost competitive
  - Leveraging existing production infrastructure
  - Tax credit (45Q) already in place

**Sluiskil CCS: Blue offtake with shared margin capture**

- **YCA offtake volume**: ~400kT
- **Estimated completion**: 2025 – 2029
- **Investment for YCA**: None
- **Commercial exposure**: 50/50 profit sharing of blue margin with Yara
- **Technology type**: To be concluded
- **Strategic rationale**:
  - Leveraging existing production infrastructure at Europe's largest ammonia facility
  - Support future competitiveness for Yara ammonia operations in Europe

---

Source: Company information

1. Not yet committed by YCA or partners, subject to ongoing discussions
2. Assuming 100% offtake for YCA. Under the current agreement for Sluiskil, YCA has the right to offtake 50% of the gross volume of ~400kT plus any surplus from Yara’s 50% share of the volumes
3. Timing subject to final decision on sequestration solution
YCA’s HEGRA project represents a competitive green project in a European context

Overview of HEGRA (Yara Herøya plant)

- Large-scale green ammonia plant in Porsgrunn, Norway, utilizing Yara’s existing plant infrastructure
- Completion during 2027 – 2030, subject to receipt of necessary state support
- Skrei pilot project on site with Enova support

100% Renewable input as energy in the green ammonia production

~400kT Production capacity (tonnes ammonia)

~800kT Annual CO2 emission reduction

Strategic rationale

**HEGRA can create a substantial impact:**
- One of the largest decarbonization opportunities in Norway, representing 3% of the national 2030 reduction target\(^1\), with annual CO2 removal of ~800,000 tonnes
- The project is one of the most important contributors within Yara’s GHG reduction roadmap
- Significant learning effects for future projects when levelized costs come down
- Enables development of new ammonia markets such as shipping, power generation and green fertilizers

**HEGRA is likely the most competitive green project in Europe:**
- Access to renewable (RED-II compliant) and competitive grid power, expected to be among the cheapest in Europe
- Leverages existing infrastructure at Herøya, including the ammonia synthesis plant (Haber-Bosch)

**Project dependent external funding support:**
- Access to state support needed to provide (a to be agreed upon) level of reasonable return – *framework required*

\(1\) Based on 1990 baseline emissions of 51.4mT CO2 equivalents and a 2030 national reduction target of 50%
\(2\) Enova support subject to ESA approval
Robust certification schemes required to enable transition and expected to strengthen YCA’s edge

Clear rationale for certification schemes
1. Grey, blue and green ammonia is the same molecule, the only difference is how they are produced.
2. Initial physical availability of clean volumes limited to few locations of production.
3. Large share of initial production expected to be produced at existing sites making it impossible to physically separate volumes.
4. Requiring physical flow of products would increase need for shipping small volumes and slow down the rate of adoption/roll-out.

Yara’s certification scheme is based on multi-site mass balance within company borders¹

Various other similar ammonia certification schemes are also under development

Benefits for customers and the industry
- Enabling significantly lower GHG emissions
- Aggregation of volumes and reduced distance of transportation
- Better availability of clean products
- Compatible with regulated markets
- Similar handling process as e.g. purchase of green or clean electricity

Benefits for YCA
- Global system can be leveraged to make clean ammonia available
- Trade flows and logistics can be optimized
- Scale benefits from large combined volumes

---

¹ Based on ISO 14067 and 22095 standards and verified by DNV. Concept already used in e.g. food and plastics supply chains.
Growth and strategy

1. Ambition and clean ammonia strategy
2. Deep-dives across the value chain
3. Summary perspectives
Three-pronged strategy to capture profitable growth opportunities as the clean ammonia market develops

Key financial drivers:
- Volume
- Margin

Integration will remain critical in building scale and value creation

EBITDA 2021
- Grow with the market for conventional applications (ASL 1, integrated midstream)

Expand into new applications (ASL 2, mid- and downstream)
- Expand into clean ammonia production (CAPP, upstream)

ASL EBITDA Mid-term (2030)
- Return
- Capital employed

ILLUSTRATIVE

Source: Company information
Integration across the value chain has clear benefits and will remain an important pillar going forward.

**YCA value chain presence**

- **Upstream**
  - Supply flexibility
  - Supply security
  - Existing scale
  - Long-term offtaker

- **Integrated Midstream**
  - Presence in segment
  - Creates value in another segment

- **Downstream**
  - YCA value chain presence

**Selected YCA integration benefits**

- **Value creation**
  - Optimized midstream costs (i.e. improved netbacks)
  - Value-driven proposition in selected customer segments
  - Scalability implies less than proportional investments to capture incremental volumes
  - Access to attractive positions in upstream projects, with YCA as an important contributor to realization

- **YCA value chain presence**
  - Supply flexibility
  - Supply security
  - Existing scale
  - Long-term offtaker

- **Logic**
  - Integrated business coupled with a certification scheme for clean (ammonia) attributes enables supply of physical ammonia from a nearby source
  - Reliability of supply and ability to guarantee long-term supply coming from a diverse set of asset-backed sourcing positions
  - Development of new segments (in ASL 2) will benefit from existing platform and scale of ASL1
  - Consolidated downstream demand makes YCA an attractive offtaker for third-party projects
Growth investments of USD 2.0 – 2.3bn\(^1\) + HEGRA\(^2\) to capture leading share in clean ammonia by 2030

### Investment strategy

- **Upstream**: Investments in blue and green ammonia production capacity (including offtake):
  - **Step 1**: Invest selectively in pilot projects for green ammonia (ongoing)
  - **Step 2**: Target large-scale investments primarily in blue ammonia
  - **Step 3**: Greenfield investments in blue (mid-term) and green (long-term) ammonia

- **Integrated midstream**: Capacity investments to scale platform to accommodate clean ammonia:
  - **Terminals**: Less than proportional investments required due to existing capacity and leveraging infrastructure across the value chain
  - **Vessels**: Scaled in line with volumes, but with a flexible ownership strategy

- **Downstream**: Selective investments in targeted end-markets, primarily ship bunkering:
  - Most short-term investments will be in mobile bunkering solutions
  - YCA’s existing terminal and ship infrastructure provide backbone – hence lowering capex requirement
  - Lead with commercial organization and leverage partners to spread investments

### Illustrative Capacity/volume impact (mT)

<table>
<thead>
<tr>
<th>Years</th>
<th>2021</th>
<th>Mid-term (2030)</th>
<th>Up to USD 400m</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USD 1.6 – 1.9bn(^1) + HEGRA(^2)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mid-to-long term</strong></td>
<td></td>
<td>-2.5(^3)</td>
<td></td>
</tr>
<tr>
<td><strong>Up to USD 400m</strong></td>
<td></td>
<td>-2.5(^3)</td>
<td>-2.5(^3)</td>
</tr>
</tbody>
</table>

Source: Company information

1) Capex calculated based on an assumed 70% ownership for YCA.
2) Framework, including sufficient level of government support, yet to be concluded for HEGRA. Company to revert on capex.
3) Assuming 100% offtake from upstream projects for YCA. Under the current agreement for Sluiskil, YCA has the right to offtake 50% of the gross volume of ~400kT plus any surplus from Yara’s 50% share of the volumes.
Benchmarking YCA’s positioning vs. adjacent industry groups and value chains

YCA combines attractive growth prospects – underpinned by energy transition/decarbonization focus – and a strong market backdrop...
Financials and financial targets

1. Historical financials
2. Financial targets
Financial performance is normally a consequence of business attractiveness and competitive edges

*Few businesses are expected to be more attractive than ammonia going forward if expected growth materializes*

Key competitive edges:
- Asset-backed sourcing
- Access to terminals
- Optimization options
- Business intelligence
- Global platform
Combined financials shows somewhat lower results vs. segment financials due to the following factors:

<table>
<thead>
<tr>
<th>Basis of preparation</th>
<th>Segment financials description</th>
<th>EBITDA impact Q1 2022 LTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yara segment financials</td>
<td>Segment financials as presented for Yara’s Clean Ammonia segment, reflecting core activities of YCA today (primarily related to the YCA’s ASL 1 segment)</td>
<td>USD 166m</td>
</tr>
<tr>
<td>Group/overhead costs</td>
<td>Adjustments related to allocated costs from Yara not previously included in segment reporting</td>
<td>- USD 2m</td>
</tr>
<tr>
<td>Project costs</td>
<td>Adjustments related to projects previously booked outside of Yara’s Clean Ammonia segment</td>
<td>- USD 1m</td>
</tr>
<tr>
<td>Perimeter adjustments</td>
<td>Adjustments related to differences in perimeter/scope of YCA vs. Yara’s segment reporting for Clean Ammonia</td>
<td>- USD 4m</td>
</tr>
<tr>
<td>Combined financials</td>
<td>Basis for historical financials and key focus for analysis herein (unless otherwise stated)</td>
<td>USD 159m</td>
</tr>
<tr>
<td>Standalone adjustments</td>
<td>Adjustments that will be a consequence of the carve-out and related matters, but have not occurred historically, estimated to account for ~USD 4-5m</td>
<td></td>
</tr>
</tbody>
</table>

EBITDA impact Q1 2022 LTM:
- USD 2m
- USD 1m
- USD 4m

Source: Company information
YCA’s reporting structure is based on 2 reporting segments

- Financial results from existing midstream operations
- Costs associated with fleet/vessel management and operations, as well as current ASL organization in Geneva
- ASL will also cover future mid- and downstream exposure (referred to as ASL 2 elsewhere in this presentation)

**Ammonia Sales and Logistics (ASL)**

- **EBITDA, USDm**
  - 2019: 110
  - 2020: 122
  - 2021: 133
  - Q1 2022 LTM: 170

- **Key operating segment today**

**Clean Ammonia Projects and Production (CAPP)**

- **EBITDA, USDm**
  - 2019: -3
  - 2020: -6
  - 2021: -10
  - Q1 2022 LTM: -11

- CAPP segment reflects YCA’s upstream projects
  - Today, CAPP is primarily comprising costs
- Costs include direct project development costs as well as employee and other operational costs related to project and market development
  - The segment also contains the majority of group admin and HQ costs

**Historical financials**

- **Costs related to upstream projects and group admin**
Strong historical financial performance with positive EBITDA momentum

### Income statement and selected APMs

<table>
<thead>
<tr>
<th></th>
<th>2019 USDm</th>
<th>2020 USDm</th>
<th>2021 USDm</th>
<th>Q1 2022 LTM USDm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue and other income</strong></td>
<td>1,248</td>
<td>1,015</td>
<td>2,292</td>
<td>3,009</td>
</tr>
<tr>
<td>Finished goods sold and consumables used</td>
<td>-1,133</td>
<td>-884</td>
<td>-2,149</td>
<td>-2,828</td>
</tr>
<tr>
<td><strong>Gross profit</strong></td>
<td>115</td>
<td>131</td>
<td>144</td>
<td>181</td>
</tr>
<tr>
<td>Payroll and related costs</td>
<td>-5</td>
<td>-6</td>
<td>-6</td>
<td>-6</td>
</tr>
<tr>
<td>Leasing depreciation(^2)</td>
<td>-10</td>
<td>-20</td>
<td>-24</td>
<td>-27</td>
</tr>
<tr>
<td>PPE depreciation</td>
<td>-14</td>
<td>-14</td>
<td>-14</td>
<td>-15</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>-8</td>
<td>-10</td>
<td>-15</td>
<td>-17</td>
</tr>
<tr>
<td><strong>Operating income</strong></td>
<td>78</td>
<td>82</td>
<td>85</td>
<td>117</td>
</tr>
<tr>
<td>EBITDA (ASL)</td>
<td>110</td>
<td>122</td>
<td>133</td>
<td>170</td>
</tr>
<tr>
<td>EBITDA (CAPP)</td>
<td>-3</td>
<td>-6</td>
<td>-10</td>
<td>-11</td>
</tr>
<tr>
<td><strong>EBITDA (total)</strong></td>
<td>107</td>
<td>116</td>
<td>124</td>
<td>159</td>
</tr>
</tbody>
</table>

Ammonia price (fob Black Sea USD/tonne) | 235 | 204 | 544 | N/A

### Comments

- All revenue currently generated in the ASL segment
- Revenue and other income are largely driven by the ammonia price and volumes sold
- Finished goods and consumables used are primarily comprised of the cost of ammonia, typically contributing between 92% and 96%, in addition to variable costs related to shipping
- Leasing depreciation represents depreciation of right-of-use assets (i.e. leased vessels)
- Higher number of leased vessels following dry docking of own vessels has been the main driver for higher depreciation costs in 2021
- Relatively stable depreciation of fixed assets (primarily owned vessels) reflecting use of straight-line method
- Other operating expenses primarily driven by costs within the CAPP segment, related to early-stage upstream projects and certain group administration costs

---

\(^1\) Alternative Performance Measures (APMs). EBITDA/tonne is an APM for the ASL segment only and not for the CAPP segment.

\(^2\) Short-term leasing of USD 10m was classified as finished goods sold and consumables used in 2019 in relation to implementation effect of IFRS 16. This is capitalized from 2020 and onwards.

Source: Company information; Argus

Yara Clean Ammonia
YCA’s EBITDA is impacted by movements in ammonia prices

Fluctuation in ammonia prices and lag-impact on YCA’s EBITDA/t

- **I** Illustrative ‘historical floor’ at low NH3 prices
- **II** Results impacted by increased external ammonia sourcing at higher prices
- **III** NH3 FOB Black Sea price (USD/t)

**Robust business with attractive earnings** even at low ammonia prices, illustrated by the “EBITDA margin floor” at ~USD 30/t during 2020:

1) **Direct price effect**: Higher ammonia prices support higher profitability since YCA’s margin for certain volumes is based on a percentage-reference to ammonia prices.

2) **Volatility effect**: Ammonia revenue and costs are typically recognized based on current ammonia prices. However, revenue from sales to Yara European plants and costs of sourcing from Yara’s European plants, is based on a ~1-month lag.

For a share of the volumes, **YCA has a direct exposure to ammonia price effects**, as illustrated by 2 recent periods, H1 2021 (II) and around year-end 2021 (III):

1) **Direct price effect**:
   - Higher ammonia prices support higher profitability since YCA’s margin for certain volumes is based on a percentage-reference to ammonia prices.

2) **Volatility effect**:
   - Ammonia revenue and costs are typically recognized based on current ammonia prices. However, revenue from sales to Yara European plants and costs of sourcing from Yara’s European plants, is based on a ~1-month lag.

**Source**: Company information; Argus

1) Based on Yara’s segment reporting for the Clean Ammonia segment
2) The price increases are passed on to Yara’s production plants, but with a time lag of ~1 month
### EBITDA sensitivity to changes in ammonia price and sales volumes

<table>
<thead>
<tr>
<th>Type of sensitivity</th>
<th>Scenario</th>
<th>Illustrative EBITDA impact</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price</strong></td>
<td>USD 100/t in NH3 market price</td>
<td>~USD 12m (Positive impact)</td>
<td>Annual</td>
</tr>
<tr>
<td><strong>Volume sensitivity</strong></td>
<td>USD 100/t in NH3 market price</td>
<td>~USD 5m (Negative impact)</td>
<td>Monthly</td>
</tr>
<tr>
<td>One-off effects that are temporary/reverses assuming that prices revert to &quot;starting point&quot;</td>
<td>0.5mT volumes of transported NH3</td>
<td>~USD 15-20m (Positive impact)</td>
<td>Annual</td>
</tr>
</tbody>
</table>

Source: Company information

Note: Based on the structure and composition of YCA’s contracts and trading routes, as well as the prevailing ammonia market structure, as of the date of this presentation.
As of today, CAPP is primarily comprised of costs related to upstream projects and admin/HQ

Other operating expenses (CAPP)

USDm

- Admin and other project costs
- Direct project costs

Comments

- CAPP segment includes costs related to early-stage upstream projects as well as certain group administration costs
- Early phase project development costs are expensed until the project has passed principal investment decision, after which costs are capitalized
  - During 2021, YCA started to capitalize certain project-related costs for Skrei
- Group administration/HQ costs are mainly related to costs of operating the group’s growth strategy and general project and market development outside of the current ASL segment
- As YCA accelerates its project development, both direct project costs and group administration costs are expected to grow accordingly
- Over time, when upstream projects become operational, CAPP is expected to be a significant contributor to volumes and earnings

Source: Company information
1) Includes HEGRA, Skrei and Yuri projects only
Limited seasonal volume variance as EBITDA fluctuations mainly reflect changing ammonia prices

Quarterly snapshot

<table>
<thead>
<tr>
<th>Volume (% of full year)</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>23%</td>
<td>24%</td>
</tr>
<tr>
<td>Q2</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>Q3</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>Q4</td>
<td>27%</td>
<td>26%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EBITDA(^1) (% of full year)</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Q2</td>
<td>29%</td>
<td>35%</td>
</tr>
<tr>
<td>Q3</td>
<td>22%</td>
<td>31%</td>
</tr>
<tr>
<td>Q4</td>
<td>27%</td>
<td>12%</td>
</tr>
</tbody>
</table>

\(^1\) Based on Yara's segment reporting for the Clean Ammonia segment
No net interest bearing debt and working capital significantly above normalized levels

Balance sheet

<table>
<thead>
<tr>
<th>USDm</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Q1 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intangible assets</strong></td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td><strong>Property, plant and equipment</strong></td>
<td>240</td>
<td>227</td>
<td>221</td>
<td>218</td>
</tr>
<tr>
<td><strong>Right-of-use assets</strong></td>
<td>33</td>
<td>26</td>
<td>32</td>
<td>42</td>
</tr>
<tr>
<td><strong>Other non-current assets</strong></td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total non-current assets</strong></td>
<td>329</td>
<td>309</td>
<td>308</td>
<td>321</td>
</tr>
<tr>
<td><strong>Inventories</strong></td>
<td>33</td>
<td>24</td>
<td>120</td>
<td>179</td>
</tr>
<tr>
<td><strong>Trade receivables</strong></td>
<td>96</td>
<td>73</td>
<td>280</td>
<td>277</td>
</tr>
<tr>
<td><strong>Prepaid expenses and other current assets</strong></td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td><strong>Gross debit positions</strong></td>
<td>181</td>
<td>133</td>
<td>0</td>
<td>113</td>
</tr>
<tr>
<td><strong>Cash and cash equivalents</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td>643</td>
<td>543</td>
<td>715</td>
<td>901</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>445</td>
<td>399</td>
<td>400</td>
<td>452</td>
</tr>
<tr>
<td><strong>Deferred tax liabilities</strong></td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td><strong>Long-term lease liabilities</strong></td>
<td>20</td>
<td>12</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total non-current liabilities</strong></td>
<td>21</td>
<td>13</td>
<td>23</td>
<td>31</td>
</tr>
<tr>
<td><strong>Gross credit positions</strong></td>
<td>68</td>
<td>48</td>
<td>80</td>
<td>89</td>
</tr>
<tr>
<td><strong>Trade and other payables</strong></td>
<td>81</td>
<td>54</td>
<td>183</td>
<td>292</td>
</tr>
<tr>
<td><strong>Current tax liabilities</strong></td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td><strong>Other current liabilities</strong></td>
<td>10</td>
<td>9</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td><strong>Short-term lease liabilities</strong></td>
<td>13</td>
<td>15</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total current liabilities</strong></td>
<td>176</td>
<td>131</td>
<td>292</td>
<td>417</td>
</tr>
<tr>
<td><strong>Total equity and liabilities</strong></td>
<td>643</td>
<td>543</td>
<td>715</td>
<td>901</td>
</tr>
<tr>
<td><strong>Net working capital</strong></td>
<td>41</td>
<td>38</td>
<td>211</td>
<td>164</td>
</tr>
</tbody>
</table>

Comments

- **PPE and right-of-use assets**
  - Fixed assets mainly comprise YCA’s 5 owned vessels (PPE) in addition to leasing agreements on vessels
  - No terminals included as these are owned by Yara

- **Net debt**
  - YCA is today funded by a cash-pool arrangement with Yara
  - Shortly after the organization of Yara’s Clean Ammonia assets into a newly established and wholly-owned Yara subsidiary (i.e., YCA), YCA is expected to have approximately zero net interest-bearing debt, excluding leases

- **Net working capital (NWC)**
  - Primarily comprising trade working capital items, which is directly linked to ammonia price levels
  - Over the period, YCA’s NWC in percentage of revenue has been relatively stable, typically in the ~5% range
  - Current NWC of USD 164m (and adjusted of USD 257m) is significantly higher than normalized levels, with subsequent cash release on retracting ammonia prices

Source: Company information

1) In Yara International cash-pooling arrangement
2) NWC is defined as trade receivables plus inventories and prepaid expenses and other current assets, less trade and other payables and other current liabilities
3) Trade working capital is defined as receivables plus inventories, less trade and other payables
4) NWC as % of revenue calculated as average NWC over the year (year start and year end) divided by the revenue for the year
5) USD 93m of overdue payables as of Q1 2022, which will be retained by Yara due to sanctions against Russia and certain Russian entities and individuals, as well as Belarus
Generally strong cash generation is currently impacted by NWC build-up from high ammonia prices

Key cash flow items

<table>
<thead>
<tr>
<th>USDm</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Q1 2022</th>
<th>LTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income before tax</td>
<td>80</td>
<td>81</td>
<td>88</td>
<td>88</td>
<td>126</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>24</td>
<td>34</td>
<td>38</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Income taxes paid</td>
<td>-15</td>
<td>-3</td>
<td>-6</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other¹</td>
<td>-1</td>
<td>-1</td>
<td>-4</td>
<td>-10</td>
<td></td>
</tr>
<tr>
<td>Operating cash flow pre change in NWC</td>
<td>88</td>
<td>110</td>
<td>116</td>
<td>157</td>
<td></td>
</tr>
<tr>
<td>Capex</td>
<td>-1</td>
<td>0</td>
<td>-9</td>
<td>-8</td>
<td></td>
</tr>
<tr>
<td>Payments of lease liabilities¹</td>
<td>-10</td>
<td>-19</td>
<td>-25</td>
<td>-27</td>
<td></td>
</tr>
<tr>
<td>Free cash flow² pre change in NWC</td>
<td>77</td>
<td>91</td>
<td>63</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>Change in NWC³</td>
<td>42</td>
<td>4</td>
<td>-171</td>
<td>-116</td>
<td></td>
</tr>
<tr>
<td>Free cash flow²</td>
<td>119</td>
<td>94</td>
<td>-88</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Comments

- Operating cash flow pre change in net working capital has increased gradually since 2019
- Limited capex over the period. Increase in 2021 primarily related to dry docking of own vessels
- Lease payments have increased primarily due to more vessels to support the operation following dry docking of owned vessels
- Net working capital is largely linked to the ammonia price, driving a significant increase in 2021 and Q1 2022 LTM
- Higher cash taxes in 2019 due to changes in tax regime/rates relating to Switzerland resulting in some one-off effects
- Cumulative conversion of EBITDA into free cash flow⁴ of >70% from 2019 to 2021
- 2021 and Q1 2022 LTM free cash flow heavily impacted by a spike in NWC

Source: Company information

1) Interest on lease liabilities are included in ‘other’
2) Free cash flow is an APM defined as operating cash flow less capex and lease payments, and are consequently excluding financing transactions with Yara
3) Deviations in change in NWC versus delta from balance sheet are primarily related to currency effects
4) Free cash flow pre change in NWC

Historical financials

<table>
<thead>
<tr>
<th>Year</th>
<th>Income before tax</th>
<th>Depreciation and amortization</th>
<th>Income taxes paid</th>
<th>Other¹</th>
<th>Operating cash flow pre change in NWC</th>
<th>Capex</th>
<th>Payments of lease liabilities¹</th>
<th>Free cash flow² pre change in NWC</th>
<th>Change in NWC³</th>
<th>Free cash flow²</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>80</td>
<td>24</td>
<td>-15</td>
<td>-1</td>
<td>88</td>
<td>-1</td>
<td>-10</td>
<td>77</td>
<td>42</td>
<td>119</td>
</tr>
<tr>
<td>2020</td>
<td>81</td>
<td>34</td>
<td>-3</td>
<td>-1</td>
<td>110</td>
<td>0</td>
<td>-19</td>
<td>91</td>
<td>4</td>
<td>94</td>
</tr>
<tr>
<td>2021</td>
<td>88</td>
<td>38</td>
<td>-6</td>
<td>-4</td>
<td>116</td>
<td>-9</td>
<td>-25</td>
<td>63</td>
<td>-171</td>
<td>-88</td>
</tr>
<tr>
<td>Q1 2022</td>
<td>88</td>
<td>42</td>
<td>-88</td>
<td>-10</td>
<td>122</td>
<td>-27</td>
<td>-27</td>
<td>5</td>
<td>-116</td>
<td>5</td>
</tr>
</tbody>
</table>
Financials and financial targets

1. Historical financials
2. Financial targets
Segment financial targets
Ammonia Sales and Logistics (ASL) (1/2)

Conventional applications (ASL 1)

2021

Mid to long term

Stable

>20%  

New applications (ASL 2)

Mid term

(Up to 2030)

>20%

Long term

(After 2030)

Considerably higher driven by YCA’s upstream projects (~2.5mT)\(^1\)

YCA market share in traded ammonia (%)

2021

Mid to long term

>20%  

Stable

YCA targets to extend its market leading position to the rapidly growing clean ammonia market, capturing high volume growth. YCA aims to sell all asset-backed production, with a volume target of ~2.5mT\(^1\) by 2030, plus additional volumes from third-party sourcing. Of these volumes, 300kT are expected to be captively supplied for downstream use in green and blue fertilizers.

Stable volume development in conventional applications expected where YCA targets to maintain its market-leading position and replace any converted volumes (i.e. to blue or green) with additional grey volumes.

Source: Company information

1) Assuming 100% offtake from upstream projects for YCA. Under the current agreement for Sluiskil, YCA has the right to offtake 50% of the gross volume of ~400kT plus any surplus from Yara’s 50% share of the volumes

2) Based on volumes of traded ammonia in 2021 - Argus market study (2022)
Segment financial targets
Ammonia Sales and Logistics (ASL) (2/2)

Robust margins for conventional applications supported by YCA’s existing margin drivers. Accordingly, YCA targets EBITDA margins >30 USD/t

For new applications (i.e. excluding the fertilizer segment), YCA expects ~10 USD/t higher margin than in ASL 1 from optimization from increased scale and to cover additional investments. For clean ammonia in the fertilizer segment, YCA expects materially lower margins given largely captive volumes and hence different level of involvement from YCA

Attractive potential for profitable growth, combining YCA’s leading platform with development of clean ammonia market
### Segment financial targets

**Clean Ammonia Projects and Production (CAPP)**

#### Selected upstream projects (to 2030)

<table>
<thead>
<tr>
<th>Type</th>
<th>Project names</th>
<th>Framework in place</th>
<th>Volume (kT)</th>
<th>Type</th>
<th>YCA capex</th>
<th>Indic. start of production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue ammonia</td>
<td>Grey to blue (CCS) North America</td>
<td>✓</td>
<td>~600</td>
<td>Offtake</td>
<td>-</td>
<td>2026 – 2029</td>
</tr>
<tr>
<td></td>
<td>Sluiskil CCS Europe</td>
<td>✓</td>
<td>~400</td>
<td>Offtake</td>
<td>-</td>
<td>2025 – 2029</td>
</tr>
<tr>
<td></td>
<td>New project North America</td>
<td>✓</td>
<td>~1,100</td>
<td>Majority stake</td>
<td>USD 1.5 – 1.8bn²</td>
<td>2028 – 2030</td>
</tr>
<tr>
<td>Green ammonia</td>
<td>HEGRA Norway</td>
<td>✓</td>
<td>~400</td>
<td>Majority stake</td>
<td>TBA²</td>
<td>2027 – 2030</td>
</tr>
<tr>
<td></td>
<td>Skrei (pilot project) Norway</td>
<td>✓</td>
<td>~20</td>
<td>Owned</td>
<td>USD ~50m⁴</td>
<td>2023</td>
</tr>
<tr>
<td></td>
<td>Yuri (pilot project) Australia</td>
<td>✓</td>
<td>~3</td>
<td>Offtake</td>
<td>-</td>
<td>2025 – 2026</td>
</tr>
</tbody>
</table>

**Ambitions and targets**

**Attractive returns**

≥7% after-tax real rate of return on upstream projects

**Flexible ownership strategy**

Investments in both blue and green projects and in different constellations (majority stake, minority stake, offtake-only etc.)

**Key enabler**

Certificates

Mix of certificates and physical volumes to optimize logistics and reduce carbon footprint

---

Source: Company information, based on current estimates/expectations

1) Assuming 100% offtake from upstream projects for YCA. Under the current agreement for Sluiskil, YCA has the right to offtake 50% of the gross volume of ~400kT plus any surplus from Yara’s 50% share of the volumes.

2) Capex calculated based on an assumed 70% ownership for YCA.

3) Framework, including sufficient level of government support, yet to be concluded for HEGRA. Company to revert on capex.

4) Net capex after ENOVA support, which is still subject to ESA approval.

~2.5mT of asset-backed clean ammonia volumes targeted by 2030 with additional volumes expected from third-party sourcing.
## Group financial targets and outlook

### Capex
- **Ammonia Sales and Logistics (ASL 1 and 2):** YCA expects to invest up to USD 400m in infrastructure related to mid- and downstream until 2030\(^1\)
- **Clean Ammonia Projects and Production (CAPP):** Current project pipeline with total capex of USD 1.6 – 1.9bn\(^2\) + HEGRA\(^3\) until 2030
- Minor maintenance capex expected until start of production from the major upstream projects towards the end of the decade

### Tax
- Long-term corporate tax rate of ~20%, representing a blend of respective corporate tax rates in Norway, Switzerland and US
- Tax rate lower at present (14-15%). Production growth expected to increase tax rate towards the end of the decade

### Capital structure and allocation
- YCA may raise equity to support its accelerated YCA’s growth plans
- YCA aims to establish a standalone capital structure that is independent from Yara. The final decision will be ratified when further funding is required, and will depend on market conditions at that time
- Flexibility to consider various structures to optimize funding, including partner/co-investments, minority stakes, project finance etc.
- Over the near to mid term, YCA expects to maximize value creation by executing on its growth plan. Accordingly, YCA’s current intention is to re-invest any cash flows that it may generate

---

Source: Company information

1) Assumes that the future proportion of owned vs. leased vessels remains aligned with today’s fleet ownership structure
2) Capex calculated based on an assumed 70% ownership for YCA
3) Framework, including sufficient level of government support, yet to be concluded for HEGRA. Company to revert on capex
Summary of YCA’s historical financials and targets

<table>
<thead>
<tr>
<th>2 reporting segments:</th>
<th>ASL has driven robust historical performance while CAPP is currently a cost center that is expected to contribute to future earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL:</td>
<td>Performance driven by sales volumes as well as both “direct” and “temporary” earnings effects from changes in ammonia price</td>
</tr>
<tr>
<td>Balance sheet:</td>
<td>Robust balance sheet with no NIBD (expected) combined with NWC significantly above normalized levels, providing a potential cash release</td>
</tr>
<tr>
<td>Cash flows:</td>
<td>Historically high conversion of EBITDA into cash flows, however, current spike in ammonia prices have caused a build-up in NWC</td>
</tr>
<tr>
<td>Financial targets:</td>
<td>Well-defined targets anchored on profitable growth as the clean ammonia market develops</td>
</tr>
</tbody>
</table>

Source: Company information
Appendix – Market outlook

1. Demand side perspectives
2. Supply side perspectives
Adoption pace expected to increase rapidly after introduction of the first vessels in 2024

30% of the global fleet expected to be ammonia fuelled by 2050

Ammonia newbuilds and retrofits per year
Number of ammonia fuelled vessels built and retrofitted per year

Ammonia fleet development
Number of ammonia fuelled vessels in fleet

Several vessel owners report that they are ready to order ammonia ships once the technology is proven. The adoption percentage on newbuilds is thus expected to increase fast between 2030 and 2040. Retrofit share expected to be ~10%

Source: Arkrweight market study 2021

1) All vessels capable of running on ammonia
Ammonia blend-in rate expected to start at ~20%

Improved infrastructure, tighter regulations and improved economics are expected to gradually drive the blend-in rate upwards to ~70% in 2050

Ammonia blend-in rate
Average share of ammonia blend-in rate for total ammonia fuelled fleet

- Infrastructure
  - The ammonia infrastructure is expected to be developed over time, starting in the major ports. Thus, all new vessels will be dual fuels to add flexibility before the ammonia bunkering infrastructure is sufficiently developed on a global scale.

- Economics and regulations
  - Vessel owners will gradually increase the blend-in rate of ammonia to minimize cost while meeting the IMO requirements for year-by-year emission reductions.
  - Development supported by reduced cost of ammonia.

- Technology requirements
  - For combustion engines, 80-85% is the current maximum share of ammonia in order to maintain an efficient combustion process.
  - The introduction of ammonia fuel cells will enable pure ammonia propulsion, increasing blend-in rate further.

Ammonia blend-in rate expected to be limited by lacking infrastructure and economic incentives in the introduction phase.
In the longer term, blend-in percentage will be driven by a developed infrastructure and regulations tightening in line with IMO targets.

Source: Arkwright market study 2021
Ammonia is the best “zero emission” shipping fuel

Source: Arkwright market study 2021
Note: “Zero-emission” fuels refer to fuels that have zero emissions when combusted/used on the ship; the CO2-numbers indicated show the life-cycle emissions. For ammonia the mix of green and blue ammonia expected in 2035 is assumed
1) Assuming EU 4th tier (marginal CO2 equivalent capacity) electricity supply to charge batteries – renewable power source would equal ~8 kg CO2 per GJ propulsion (battery production emission)
2) Non-grid connected renewable power as electricity source
# Overview of fuel cost parity between MGO and blue ammonia

<table>
<thead>
<tr>
<th>CO2 tax (USD/t)</th>
<th>MGO (USD/GJ)</th>
<th>Blue ammonia (USD/GJ)</th>
<th>MGO vs. Blue ammonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>23</td>
<td>45</td>
<td>-99%</td>
</tr>
<tr>
<td>50</td>
<td>29</td>
<td>46</td>
<td>-59%</td>
</tr>
<tr>
<td>100</td>
<td>36</td>
<td>48</td>
<td>-34%</td>
</tr>
<tr>
<td>150</td>
<td>42</td>
<td>49</td>
<td>-16%</td>
</tr>
<tr>
<td>200</td>
<td>49</td>
<td>51</td>
<td>-3%</td>
</tr>
<tr>
<td>250</td>
<td>56</td>
<td>52</td>
<td>+6%</td>
</tr>
<tr>
<td>300</td>
<td>62</td>
<td>53</td>
<td>+14%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brent price</th>
<th>57 USD/bbl</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGO price</td>
<td>552 USD/t</td>
</tr>
<tr>
<td>Ammonia price</td>
<td>379 USD/t¹</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MGO (USD/GJ)</th>
<th>Blue ammonia (USD/GJ)</th>
<th>MGO vs. Blue ammonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>119</td>
<td>-176%</td>
</tr>
<tr>
<td>50</td>
<td>121</td>
<td>-142%</td>
</tr>
<tr>
<td>56</td>
<td>122</td>
<td>-117%</td>
</tr>
<tr>
<td>63</td>
<td>123</td>
<td>-96%</td>
</tr>
<tr>
<td>70</td>
<td>125</td>
<td>-79%</td>
</tr>
<tr>
<td>76</td>
<td>126</td>
<td>-66%</td>
</tr>
<tr>
<td>83</td>
<td>128</td>
<td>-54%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MGO vs. Blue ammonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD 80/bbl</td>
</tr>
<tr>
<td>750 USD/t</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Future assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGO (USD/GJ)</td>
</tr>
<tr>
<td>32</td>
</tr>
<tr>
<td>38</td>
</tr>
<tr>
<td>45</td>
</tr>
<tr>
<td>52</td>
</tr>
<tr>
<td>58</td>
</tr>
<tr>
<td>65</td>
</tr>
<tr>
<td>71</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brent price</th>
<th>110 USD/bbl</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGO price</td>
<td>1,056 USD/t</td>
</tr>
<tr>
<td>Ammonia price</td>
<td>1,100 USD/t²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MGO vs. Blue ammonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD 80/bbl</td>
</tr>
<tr>
<td>750 USD/t</td>
</tr>
</tbody>
</table>

Source: Arkwright market study 2022
1) Black Sea
2) NWE CFR Europe

Yara Clean Ammonia
**Hydrogen carrier demand outlook methodology**

<table>
<thead>
<tr>
<th>Hydrogen demand (mT)</th>
<th>% of hydrogen demand from traded imports (2050E)</th>
<th>% traded as ammonia (2050E)</th>
<th>Ammonia as a hydrogen carrier demand (mT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>Japan</td>
<td>EU</td>
<td>Japan</td>
</tr>
<tr>
<td>2030E</td>
<td>20-30</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2040E</td>
<td>30-45</td>
<td>53%</td>
<td>11</td>
</tr>
<tr>
<td>2050E</td>
<td>60-70</td>
<td>60-60%</td>
<td>36</td>
</tr>
<tr>
<td><strong>Ammonia mass equivalent (mT)</strong></td>
<td><strong>15-20%</strong></td>
<td><strong>33%</strong></td>
<td><strong>50%</strong></td>
</tr>
</tbody>
</table>

- EU
- Japan

Source: Arkwright market study 2021

1) Limited concrete plans by governments introducing uncertainty around outlook estimates

*Relatively conservative assumption as ammonia has better economics than liquefied hydrogen*
Appendix – market outlook

1. Demand side perspectives
2. Supply side perspectives
Grey and blue ammonia production costs

Long-term production cost (LCOA) USD/t in 2021 real terms

Key assumptions

- Traditional grey production using steam methane reforming (SMR) based on natural gas
- Long-term grey marginal cost based on North America as location for new grey plants
- Blue production with carbon capture and storage as part of the SMR process; entails adding carbon capture to existing SMR technology/facilities
- SMR plant with expected economic lifetime of 15 years
- WACC: 9% for grey, 8% for blue
- Long-term Henry Hub gas price: $4.5/mmbtu
- 1,000 kT ammonia capacity

Source: Arkwright market study 2021
Green ammonia production cost

Current production cost (LCOA) of new-build with FID in 2021, USD/t in 2021 real terms

Key assumptions

- Green production based on electrolysis with renewable energy sources
- Production in Middle East or similar country with low-cost renewables
- Using current PEM technology
- Dedicated onshore wind; 38% load factor
- WACC: 6%
- Electricity cost: 32 USD/MWh
- 1,000 kT ammonia capacity
Overview of key assumptions for blue and green ammonia cost

<table>
<thead>
<tr>
<th>LCOA USD/t NH3</th>
<th>2021E</th>
<th>2025E</th>
<th>2030E</th>
<th>2035E</th>
<th>2040E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue ammonia</td>
<td>475</td>
<td>478</td>
<td>480</td>
<td>480</td>
<td>479</td>
</tr>
<tr>
<td>Green ammonia</td>
<td>1,055</td>
<td>895</td>
<td>742</td>
<td>647</td>
<td>580</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumption</th>
<th>2021E</th>
<th>2025E</th>
<th>2030E</th>
<th>2035E</th>
<th>2040E</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 price (global)</td>
<td>0 USD/ton CO2</td>
<td>25 USD/ton CO2</td>
<td>50 USD/ton CO2</td>
<td>62.5 USD/ton CO2</td>
<td>75 USD/ton CO2</td>
</tr>
<tr>
<td>Gas price</td>
<td>4.5 USD/MMBTU</td>
<td>4.5 USD/MMBTU</td>
<td>4.5 USD/MMBTU</td>
<td>4.5 USD/MMBTU</td>
<td>4.5 USD/MMBTU</td>
</tr>
<tr>
<td>CO2 cost (capture/storage)</td>
<td>40/35 USD/ton CO2</td>
<td>40/30 USD/ton CO2</td>
<td>37/25 USD/ton CO2</td>
<td>35/20 USD/ton CO2</td>
<td>35/20 USD/ton CO2</td>
</tr>
<tr>
<td>Load factor</td>
<td>38%</td>
<td>42%</td>
<td>45%</td>
<td>46%</td>
<td>47%</td>
</tr>
<tr>
<td>Electrolyser efficiency</td>
<td>72%</td>
<td>75%</td>
<td>78%</td>
<td>80%</td>
<td>81%</td>
</tr>
<tr>
<td>Power price</td>
<td>32 USD/MWh</td>
<td>29 USD/MWh</td>
<td>24 USD/MWh</td>
<td>22 USD/MWh</td>
<td>21 USD/MWh</td>
</tr>
<tr>
<td>Electrolyser cost</td>
<td>490 USD/kW</td>
<td>400 USD/kW</td>
<td>320 USD/kW</td>
<td>250 USD/kW</td>
<td>220 USD/kW</td>
</tr>
<tr>
<td>BoP cost</td>
<td>470 USD/kW</td>
<td>400 USD/kW</td>
<td>290 USD/kW</td>
<td>190 USD/kW</td>
<td>140 USD/kW</td>
</tr>
<tr>
<td>Contingency &amp; project cost</td>
<td>570 USD/kW</td>
<td>440 USD/kW</td>
<td>360 USD/kW</td>
<td>290 USD/kW</td>
<td>255 USD/kW</td>
</tr>
</tbody>
</table>

Source: Arkwright market study 2021

1) Equals hydrogen plant utilization
Hydrogen production costs excluding ammonia synthesis

Hydrogen production cost (LCOH) USD/kg

Source: Arkwright market study 2021
Note: Hydrogen assumed to be supplied on stable rates corresponding to minimum 70% load factor/availability to match the technical minimum of ammonia plant (i.e. including large scale hydrogen storage)
The ammonia production process in detail

1) Either (partly) emitted to air, (partly) liquified and used for various industrial purposes, or fed into Urea fertilizer plants together with NH\textsubscript{3} in integrated ammonia-fertilizer plants to produce Urea.
Appendix – financials and financial targets
# Income statement

<table>
<thead>
<tr>
<th>USDm</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Q1 2022 LTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue from contracts with customers</td>
<td>1,247</td>
<td>1,014</td>
<td>2,291</td>
<td>3,008</td>
</tr>
<tr>
<td>Other income</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Revenue and other income</strong></td>
<td><strong>1,248</strong></td>
<td><strong>1,015</strong></td>
<td><strong>2,292</strong></td>
<td><strong>3,009</strong></td>
</tr>
<tr>
<td>Finished goods sold and consumables used</td>
<td>(1,133)</td>
<td>(884)</td>
<td>(2,149)</td>
<td>(2,828)</td>
</tr>
<tr>
<td>Payroll and related costs</td>
<td>(5)</td>
<td>(6)</td>
<td>(6)</td>
<td>(6)</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>(24)</td>
<td>(34)</td>
<td>(38)</td>
<td>(42)</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>(8)</td>
<td>(10)</td>
<td>(15)</td>
<td>(17)</td>
</tr>
<tr>
<td><strong>Operating costs and expenses</strong></td>
<td><strong>(1,170)</strong></td>
<td><strong>(934)</strong></td>
<td><strong>(2,208)</strong></td>
<td><strong>(2,892)</strong></td>
</tr>
<tr>
<td>Operating income</td>
<td>78</td>
<td>82</td>
<td>85</td>
<td>117</td>
</tr>
<tr>
<td>Interest income and other financial income</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Foreign exchange gain</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Interest expense and other financial items</td>
<td>(4)</td>
<td>(3)</td>
<td>(2)</td>
<td>(2)</td>
</tr>
<tr>
<td><strong>Income before tax</strong></td>
<td><strong>80</strong></td>
<td><strong>81</strong></td>
<td><strong>88</strong></td>
<td><strong>126</strong></td>
</tr>
<tr>
<td>Income tax expense</td>
<td>(8)</td>
<td>(7)</td>
<td>(12)</td>
<td>(17)</td>
</tr>
<tr>
<td><strong>Net income</strong></td>
<td><strong>72</strong></td>
<td><strong>74</strong></td>
<td><strong>76</strong></td>
<td><strong>108</strong></td>
</tr>
</tbody>
</table>

Source: Company information

Note: quarterly figures are unaudited accounts
Illustrative model for new blue asset in North America

Selected company assumptions:

- Volume: ~1,100kT (100%)
- Gas efficiency: 30-33 MMBTU/t NH₃
- CO₂ emissions from NH₃: 2.0 t CO₂/t NH₃
- CO₂ capture rate: 90% (ATR technology)
- Variable production costs: ~USD 25/t
- Fixed production costs: USD 20-30m

Illustrative model: Calculating EBITDA run-rate basis (USDm) – 100% basis

- Revenue
- Variable costs
- CO₂ costs emissions
- CO₂ costs sequestered
- Fixed costs

Illustrative EBITDA plus tax credits

Selected company assumptions:

- Fixed costs (typically between USD 20-30m for a similar-sized plant)

Source: Company information
1) P&L impact to be scaled according to equity stake in project