Yara
Shades of Green Assessment Update 2023

Sector: Chemicals/Materials

Region: Global

31 March 2023

EXECUTIVE SUMMARY

Yara International ASA ('Yara') is one of the world's largest producers of mineral nitrogen fertilizer, listed on the Oslo Stock Exchange and headquartered in Oslo. This is an update of Yara's Shades of Green Assessments published in 2020, 2021, and 2022.

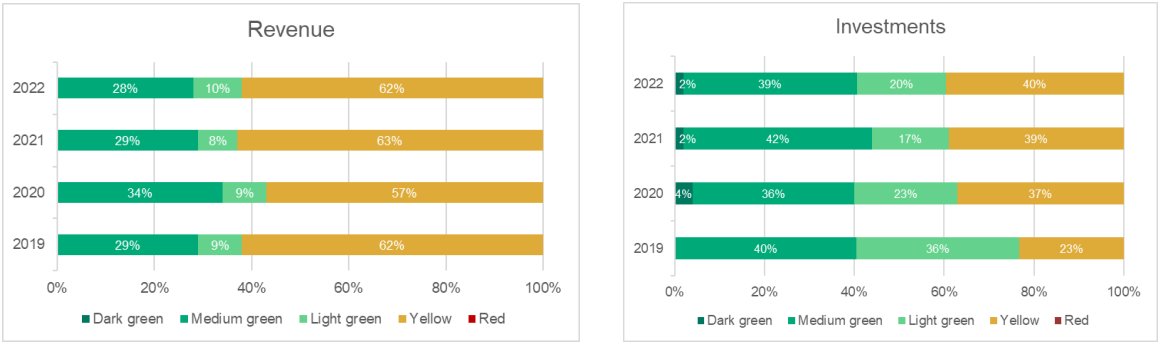

Figure 1: Shading of revenue and investments for Yara from 2019 to 2022[2]

38% of Yara's revenues in 2022 receive a Shade of Green, compared to 37% in 2021.[3] Yara saw a substantial increase in revenues in 2022, from around USD 16 billion to USD 24 billion, in the context of lower production volumes and higher prices for its products. A Medium Green has been assigned to revenues from fertilizers (NPK, nitrates and calcium nitrates) which have approximately 90% less N_2O process emissions because of N_2O catalyst technology. Light Green revenues relate to a wide range of Yara's products and services, for example the sale of Medium Green nitrogen fertilizers and chemicals to industrial clients (i.e. non-agriculture) or their use in explosives (civil and military) - while these products may also have lower emission intensity due to the use of N_2O catalysts, potential end use in carbon intensive sectors or with potentially adverse environmental impacts renders them Light Green. Light Green revenues also include environmental solutions such as NOx abatement for industrial plants and land and sea transport. Given the end-use of Yara's Light Green products is not always known, and could include substantial risks of lock-in and rebound (e.g. retrofitting old vessels with scrubber technology), they could feature Yellow elements if a more detailed analysis is conducted. Yellow is assigned to Yara's other fertilizers (mainly produced from ammonia and urea) and third-party products.

61% of investments in 2022 receive a Shade of Green, the same as in 2021. Yara's investments increased by around 22% in 2022, with Light Green investments showing the largest percentage increase. Yara's Dark Green investments relate to its project to produce hydrogen from renewable electricity for use in in ammonia production at its Porsgrunn site, which is expected to increase in coming years. As a general trend, Yara expects to see increases in investments receiving a Shade of Green, given its strategic focus on fertilizers such as NPKs and nitrates, as well as its investments to reduce nitric acid production emissions.

[1] For the purpose of this assessment, revenue and turnover are used interchangeably, as are investments and CAPEX.
[2] CAPEX figures from 2019-2021 have been adjusted from previous assessments to rectify a minor error.
[3] In this assessment, nitric acid produced with high emissions intensity is considered Yellow, as are investments into the production of such nitric acid. The threshold for 'high emissions intensity' has been taken as 0.230 tCO2e per ton of nitric acid, i.e. the EU ETS benchmark value for 2021-2025 for producing nitric acid. The EU Taxonomy includes a lower threshold: the criteria for alignment of nitric acid production with the substantial contribution to climate change mitigation criteria is 0.038 tCO2e per ton of nitric acid, reflecting the average value of the 10% most efficient installations in 2016 and 2017. Had this threshold been used in shading Yara's revenues and investments, the overall share of green revenues would have decreased by 1 percentage point to 37%, while the overall share of green investments would have decreased to 45%. Yara points to the fact that, per its GHG reduction program, nitric acid plants are planned to be improved towards or beyond the EU Taxonomy thresholds (depending on specific site-feasibility) rather than the BAT threshold.

GOVERNANCE UPDATE

Yara continues to further develop its climate and environmental governance. In 2021, Yara introduced a two-tiered system for sustainability topics based on its materiality mapping. Among other topics, this includes new commitments in respect of clean technologies, sustainable farm management, circularity, and protection of ecosystems. Yara is lagging on its commitment to set science-based targets for its Scope 1, 2, and 3 emissions, which was expected by 2022, with the delay due to challenges around considering CO_2 emissions in urea production. Having previously been delayed, in 2024 Yara also expects the Science Based Target initiative to publish the methodology for the Sectoral Decarbonization Approach analysis for the fertilizer industry, a process Yara supports. Yara launched its Sustainable Procurement Policy in 2022, which, alongside social and governance topics, addresses climate change, energy, circularity, and water management. The policy focuses primarily on sustainability benchmarking, and by 2025 Yara's ambition is to have 80% of its spend covered by third-party sustainability evaluations by 2025, and 75% of these evaluated suppliers to demonstrate yearly improvement in such evaluations.

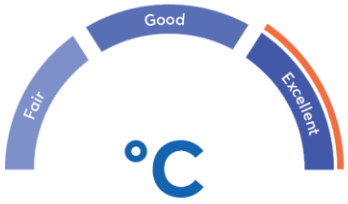

Figure 2: CICERO Shades of Green assesses Yara's governance to be Excellent.

KPIs

Yara's performance in 2022 in respect of the KPIs set out in Table 1 should be viewed in context of production curtailments due to high natural gas prices, as well as reliability issues as some its production plants. These issues have led to a substantial decrease in emissions and increases in intensity metrics. In respect of its direct emissions and emissions intensity, Yara continues to focus primarily on N_2O abatement and energy efficiency projects, at an estimated investment of USD 320 million in over 100 projects across its plants and regions in 2022 that it expects will reduce GHG emissions by around 2 million tCO_2e. From 2025, Yara will focus on its green and low carbon ammonia projects, and optimization and upgrade of production units. Notwithstanding such investments, maintaining operational levels is crucial from an energy efficiency perspective.

Source 3 emissions remain Yara's largest emissions source, with around 56% of its 2022 emissions from the use of its fertilizers. Yara published its Scope 3 emissions reduction target in its 2022 disclosures, with a targeted reduction of 11.1% of emissions from the use of sold products by 2030 from a 2021 baseline. In addition, Yara targets 150 million hectares under active management by 2025, which measures hectares owned by farmers who have registered them in Yara's digital tools. According to Yara, while it encounters difficulties in obtaining primary data from farmers using its digital tools, it relies on own field trials and partnerships to demonstrate the improved crop carbon footprint delivery these can deliver. In 2022, 14.8 million hectares were under active management, meaning a significant increase in registrations is required to achieve this target.

Table 1: Sector Specific Metrics for Yara

	Emissions intensity KPI (tCO_2e/t N-fertilizer produced)	Scope 1+2 / Scope 1+2+3 emissions ($MtCO_2e$)	NO_2 emissions (tonnes)	Energy intensity (GJ/tonne ammonia)
2022	3.1	15.9 / 62.7	7,600	34.3
2021	3.0	17.5 / 75.4	8,700	34.1
2020	3.0	17.7 / 71.1	8,300	33.8
2019	3.0	18.5 / 74.2	8,500	34.1
2018	3.0	18.5 / 70.6	9,400	34.4

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1 Yara key developments 2022

Company update

Yara International ASA ('Yara') is one of the world's largest producers of mineral nitrogen fertilizer, reporting revenues of around USD 24 billion in 2022. Listed on the Oslo Stock Exchange and headquartered in Oslo, Yara has around 17,500 employees, operations in more than 60 countries including 26 production sites, and sales to about 160 countries.

While the core of Yara's operations is the production and sale of nitrogen fertilizers for agriculture, it also offers nitrates for industrial applications, as well as a portfolio of environmental solutions (e.g. for nitrogen oxide abatement, and scrubber technology for reducing maritime emissions).

Governance update

The outcome of Yara's updated materiality assessment undertaken in 2022 is presented in a two-tiered system of sustainability topics:[4]

- For environmental and climate topics, tier 1 consists of: i) opportunities in clean tech, ii) climate change, iii) sustainable farm management and regenerative agriculture, and iv) energy. Existing commitments made by Yara cover the climate change and energy topics, while Yara has made new commitments in respect of opportunities in clean tech and sustainable farm management. For opportunities in clean tech, by 2030 Yara will source/produce at least three million tonnes of reduced carbon ammonia, of which at least 50% will be low-carbon or ultra-low carbon,[5] while for sustainable farm management, Yara targets revenues of USD 1.5 billion by 2025 from the sale of relevant services and products such as bio-stimulants and carbon farming.[6]

- For environmental and climate topics, tier 2 consists of: i) air, water, and waste, ii) protection of ecosystems, and iii) sustainable supply chains. Yara has made commitments in respect of each of these. For protection of ecosystems, for example, Yara will develop a Nature Positive Roadmap, that describes how it will embed nature into its governance and target setting, and pilot Fertilizer Environmental Footprinting, to assess life-cycle impacts of fertilizers.[7] Such measures were initially targeted for 2022, though Yara instead expects its Roadmap to be published in 2023 or, depending on certain changing regulatory requirements, in 2024. For circularity, among other things, Yara has made a commitment to expand its use of recycled or upcycled fertilizers, for example through the use of industrial by-products and waste nutrients in production.

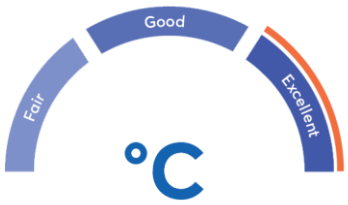
Yara committed to setting science-based targets for its Scope 1, 2 and 3 emissions by 2022, though there is a delay given the challenges around considering CO_2 emissions in urea production. Moreover, Yara, along with Nutrien and the World Business Council for Sustainable Development, continues to support the SBTi in its development of a Sectoral Decarbonization Approach (SDA) analysis for the fertilizer industry, and which is expected to provide an emissions intensity reduction pathway

[4] According to Yara, Tier 1 topics are, as far as practically feasible, tracked on a monthly and/or quarterly basis. They also are considered for inclusion in its strategy scorecard, which would mean incorporation in senior managements incentive schemes. Tier 2 topics are typically tracked on an annual basis.
[5] According to Yara, the definitions of 'low-carbon' and 'ultra-low carbon' are not yet settled and discussions are ongoing among various industry groups. Yara's views in such discussions is that, generally speaking, 'low-carbon' ammonia is produced with 'high-performing' CCS technology, while 'ultra-low carbon' ammonia is produced using renewable energy.
[6] Carbon farming is the sequestering and storing of carbon and/or reducing GHG emissions at a farm level, see e.g: European Parliament study - carbon farming.
[7] In respect of Footprinting, Yara notes a current unwillingness among suppliers to provide primary data, though the mechanisms of the EU's Carbon Border Adjustment Mechanism (CBAM) will lead to disclose in certain key purchased materials, such as ammonia.

aligned with a 1.5-degree scenario. According to Yara, the publication of the SDA should now occur in 2024, having previously been delayed.

Yara launched its Sustainable Procurement Policy in 2022.[8] The policy intends to promote transparency and, when necessary, a higher standard in its supplier's sustainability performance. Alongside social and governance topics, the policy addresses climate change, energy, circularity, and water management. In its current iteration, the policy focuses on sustainability benchmarking: as part of the policy, Yara's ambition is to have 80% of its spend covered by third-party sustainability evaluations by 2025, and 75% of these evaluated suppliers to improve their sustainability performance compared to their previous annual evaluation by 2025. As such, the policy does not include express thresholds for supplier engagement or selection, for example on emissions or energy use, though such factors can be considered via if included in sustainability assessments. Per the policy, during supplier selection, Yara gathers relevant and information and documentation and performs a risks assessment. In assessing a supplier's commitment to sustainability, it may require the completion of checklists, sustainability assessments, or onsite audits. Yara expects suppliers to address improvement areas within an agreed timeframe and evaluates suppliers' performance against sustainability requirements and expectations.

In 2021, Yara underwent its first iteration of a climate scenario analysis process to study strategic long-term risks and opportunities (inc. physical and transition risks). Yara sets out qualitative findings and responses in its Integrated Report, while quantitative results are expected to be available in 2023.



Yara started publishing an annual EU Taxonomy report in 2021. For 2022, it determined that 10.4% of revenue, 40.1% of CAPEX, and 36.4% of OPEX was considered EU Taxonomy-eligible (i.e. relates to economic activities as described in the EU Taxonomy).[9]

The overall assessment of Yara's governance structure and processes gives it a rating of **Excellent.**

[8] Yara - Sustainable Procurement Policy
[9] Yara - EU Taxonomy Report

Key performance indicators

GHG emissions

Table 2: The table summarises Yara's CO_2-emissions and main CO_2-emission reduction targets				
Emissions[10]	**Total** (tons CO_2eq)	**Scope 1**	**Scope 2** (market based)	**Scope 3**
Main Targets	Aspiration to be climate neutral by 2050. Reduction in CO_2e emissions intensity for Scope 1, 2 and upstream Scope 3 emissions from production by 10% between 2018 and 2025.	Reduction in absolute Scope 1 and 2 emissions by 30% by 2030 compared to 2019.		Reduction in absolute Scope 3 emissions from use of sold products by 11.1% by 2030 compared to 2021.
2022	62.7	14.9	1.0	46.8
2021[11]	77.2	16.5	1.0	59.7
2020	71.1	16.6	1.1	53.4
2019	74.2	17.1	1.4	55.7
Change 2019-22	-15.7%	-12.9%	-28.6%	-16%
Main sources (2022)	Scope 1: 23.8% Scope 2: 1.6% Scope 3: 74.6%	Production of mineral fertilizers, mainly due to the use of natural gas in the production of ammonia	Purchased energy	• Purchased fuels and raw materials (around 14% of emissions) • Upstream and downstream transport (around 4% of emissions) • Sold products, specifically use of fertilizer (around 56% of emissions) including from over-fertilization

[10] All Scope 2 emissions in this Table 2 are market based, including for the purposes of calculating total emissions.
[11] Yara has restated / recalculated its figures for 2021 since publishing its 2022 Sustainability Report, due to i) some production volumes being included in calculation of emissions from fertilizer use, and ii) dialogue with the Science Based Targets initiative leading to certain changes in the scopes and boundaries of its calculations.

In 2022, Yara reported a significant decrease in CO_2e emissions of 18.8% from 2021. Yara's Scope 1 emissions decreased by 9.7%, which Yara primarily attributes to the curtailment of production due to the energy crisis and market conditions, while Scope 3 emissions decreased by 21.6%, attributable to selling significantly less fertilizer with high nitrogen content (thereby reducing emissions from their end use).

Yara's aspiration is to become climate neutral by 2050 (Scope 1, 2 and 3). Relevant intermediate targets include:[12]

1) reducing CO_2e emissions intensity from production by 10% by 2025 (2018 baseline) for Scope 1, 2, and upstream Scope 3 emissions from purchased ammonia only,
2) reducing absolute Scope 1 and 2 emissions by 30% by 2030 compared to 2019, and
3) reducing absolute Scope 3 emissions from use of sold products by 11.1% by 2030 compared to 2021.

In respect of its emissions intensity target, Yara's emission intensity increased to 3.1 tCO_2e/t N-fertilizer produced in 2022, having been 3.0 tCO_2e/t N-fertilizer since 2018. Yara attributes this increase to multiple curtailments of ammonia production in 2022 and reliability issues at some plants. As such, while it successfully implemented efficiency projects in 2022 with GHG emission reductions of around 0.7 million tCO_2e, such effects were offset by unproductive energy use. Nonetheless, Yara considers itself well on track to reach the target, investing an estimated USD 320 million in over 100 projects across its plants and regions. Together, Yara expects that these will account for GHG emission reductions of around 2 million tCO_2e. Around two-thirds of reductions stem from the installation / improvements to N_2O abatement in nitric acid plants—for example, the installation of the technology in Yara's plant in Cartagena, Colombia, resulted in a reduction of 400,000 tCO_2e p/a. Other types of efficiency projects referred to by Yara are machinery electrification and the use of bio-based fuels (though no bio-based projects have been implemented to date).

In respect of absolute emissions, Yara's emissions in 2022 represented a decrease of around 15.7% from the 2019 benchmark. While this means that a further decrease of around 14.3% is required by 2030 to achieve its target, Yara attributes decreases in 2022 primarily to curtailments in production driven by external conditions. Yara sets out a climate roadmap to 2030 in its Sustainability Report. Until 2025, its focus is on N_2O abatement, energy efficiency, electrification of machinery, and renewable energy sourcing (which can include the use of PPAs and energy certification). From 2025, its focus is on its green and low carbon ammonia projects, and optimization and upgrade of production units.

Yara published its Scope 3 emissions reduction target in its 2022 disclosures, with a targeted reduction of 11.1% of emissions from the use of sold products by 2030 from a 2021 baseline. It also targets 150 million hectares under active management by 2025, which measures hectares owned by farmers who have registered them in Yara's digital tool(s). Among other things, these allow for improved fertilizer optimization through, for example, use of data and sensors, and provides training on regenerative agricultural practices. According to Yara, while it encounters difficulties in obtaining primary data from farmers using its digital tools, it relies on own field trials and partnerships to demonstrate the improved crop carbon footprint delivery these can deliver. In 2022, 14.8 million hectares were under active management.

Yara also has other emissions to air from its plants. In 2022, 7,600 tNOX (measured as NO2) were emitted, an decrease from 8,700 tNOX in 2021.

[12] As well as these overarching targets/aspirations, Yara also has individual GHG targets for all its ammonia and nitric acid plants.

Energy use

Table 3: Energy KPIs for Yara					
KPI Category	**2018**	**2019**	**2020**	**2021**	**2022**
Energy intensity (GJ/tonne ammonia)	34.3	34.1	33.8	34.1	34.3
Energy consumption (million GJ)	301	285	279	273	246

Around 90% of Yara's energy consumption relates to the production of ammonia and Yara has an energy intensity target, to reduce the energy intensity of its ammonia production to 32.7 (GJ/tonne ammonia) by 2025. Performance in 2022 was 0.9 GJ/tonne higher than the target set for 2022, driven again by curtailment in production and reliability issues at some plants, though Yara considers itself on track to meet its 2025 target, if it can avoid frequent start up and shutdown of plants.

Yara consumed 246 million GJ of energy is 2022, a decrease of 27 million GJ from 2021, driven primarily by reduced ammonia production because of high natural gas prices. Of this, natural gas accounted for around 93% of all energy consumed. Yara also purchased around 2,184 GWh of electricity in 2021, of which around 14% was certified low carbon (via guarantees of origin). Yara purchases the majority of its natural gas on the spot market and, on account of its plant location in Canada, expects some exposure to fracked natural gas in its production system.

2 Assessment of Yara's revenues and investments

Shading of Yara's revenue and investments[13]

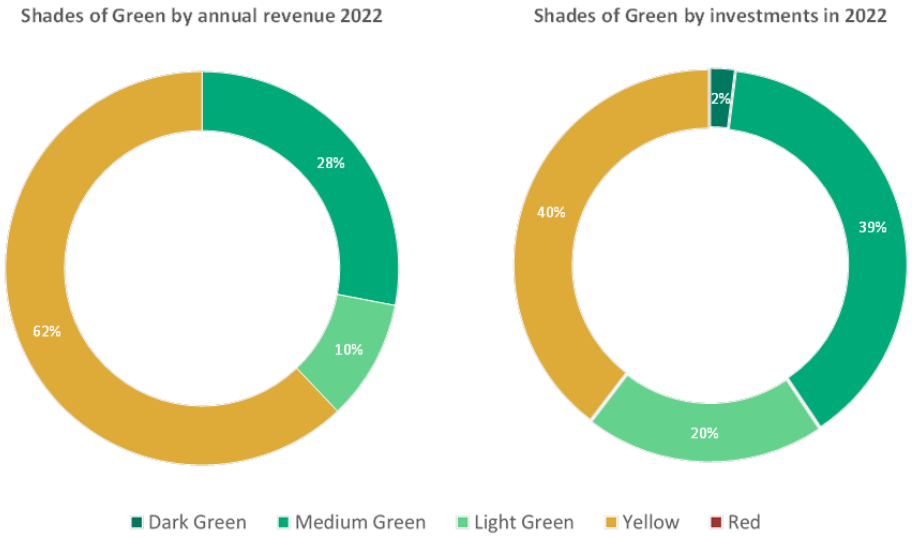


Figure 3: Shading of Yara's revenue and investments

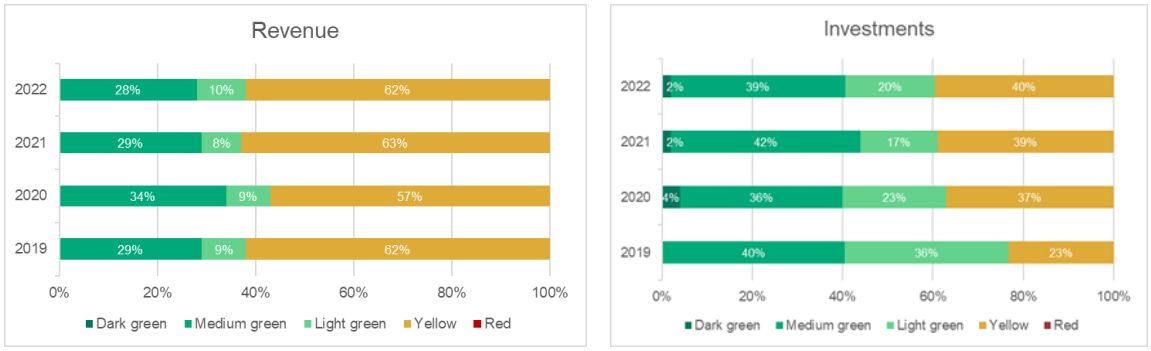


Figure 4: Shading of revenue and investments for Yara from 2019 to 2022[14]

Revenues

Overall, 38% of Yara's revenue receive a Shade of Green in 2022, a one percent point increase on last year. 2022 saw a substantial increase in Yara's revenues from around USD 16 billion to USD 24 billion, in the context of lower production volumes and higher prices for its products.

[13] Investors should note that our assessment is based on data reported or estimated by the company and has not always been verified by a third party. We analyse revenue, operating costs and investments, however there is typically not an explicit link between sustainability and financial data. Our shading often requires allocating line items in financial statements to projects or products, for this we rely on the company's internal allocation method. In addition, there are numerous ways to estimate, measure, verify and report e.g. data on emissions, which may make direct comparisons between companies or regulatory criteria difficult and somewhat uncertain.

[14] Figures from 2019-2021 have been adjusted from previous assessments to rectify a minor error.

Yara does not currently have revenue streams shaded Dark Green. CICERO Shades of Green would allocate a Dark Green shading to revenue streams stemming from fertilizer products and services that are part of a fully decarbonized and climate resilient future. Green ammonia would, for example, likely receive a Dark Green shading.

28% of Yara's revenues in 2022 are considered Medium Green, compared to 29% in 2021.[15] This represents revenue from fertilizers (NPK, nitrates and calcium nitrates) which Yara produces with approximately 90% less N_2O process emissions on account of N_2O catalyst technology applied in the production of a key intermediate product, nitric acid. These fertilizers could be part of a 2050 solution but are not currently Dark Green given they i) are currently predominantly produced using grey ammonia, and ii) need to be coupled with effective means for reducing emissions from the (over) use of fertilizers.

10% of Yara's revenues in 2021 are considered Light Green, compared to 8% in 2021. Light Green revenues relate to a wide range of Yara's products and services. Light Green revenues relate to a wide range of Yara's products and services, for example the sale of Medium Green nitrogen fertilizers and chemicals to industrial clients (i.e. non-agriculture) or their use in explosives (civil and military) - while these products may also have lower emission intensity due to the use of N_2O catalysts, potential end use in carbon intensive sectors or with potentially adverse environmental impacts renders them Light Green. Other Light Green revenues include environmental solutions such as NOx abatement for industrial plants and land and sea transport, for example AdBlue/Air1, a high concentration urea-based reagent used by heavy-duty diesel vehicles to reduce NOx emissions. While these activities are shaded Light Green, they can feature substantial risks of lock-in and rebound (e.g. retrofitting old vessels with scrubber technology) and could feature Yellow elements if a more detailed analysis is conducted.

The remaining 62% of Yara's revenues in 2022 are considered Yellow, compared to 63% in 2021. Yellow shadings are allocated to revenue streams from all other products (mainly ammonia and urea, and third-party products) as well as some of Yara's industrial services. Yellow shaded revenue also includes the market reference price of the ammonia value of the nitrogen component in the products, as well as nitric acid with high emissions intensity (see sub-section on methodology below).

Investments

Overall, 61% of Yara's investments receive a Shade of Green investments showing that largest percentage increase. As a general trend, Yara expects to see increases in investments receiving a Shade of Green, given its strategic focus on fertilizers such as NPKs and nitrates, as well as its investments to reduce nitric acid production emissions.

2% of Yara's investments in 2022 are considered Dark Green, the same as in 2021. This represents allocations to its project to produce hydrogen from renewable electricity for use in ammonia production at its Porsgrunn site. This is expected to receive increased investment in the coming years, with Yara setting production targets by 2030 for reduced carbon ammonia.

39% of Yara's investments in 2022 are considered Medium Green, a 3% decrease from 2021. These are investments related to nitrate, nitric acid and NPK related assets, with low emissions intensity and which are not mainly dedicated to industrial applications. Yara's investments into ammonia production at its Freeport and Hull sites are shaded Medium Green. This is because they produce ammonia with significantly better emissions intensity than industry best practices, however they are currently closely linked to the petrochemical industry as they utilise respective by-products.

20% of Yara's investments in 2022 are considered Light Green, compared to 17% in 2020. These relate to investments associated with its mining activities, plus investments at two urea sites which predominantly use urea for Light Green environmental solutions products. Yara's mine involves fossil fuel use, and features climate and environmental risks (e.g.

[15] In calculating this revenue, the value of the ammonia required for producing the nitrates, as well as intermediate nitric acid with high emissions intensity has been subtracted (see sub-section on methodology below).

biodiversity and local opposition). Such activities nonetheless receive a Light Green shade because the mined outputs are used as inputs in Yara's premium fertilizers. This is turn, embeds the mined materials in a trajectory toward a 2050 solution. Investments in Yara's Siilinjärvi mine increased by around 89% in 2022.

40% of Yara's investments in 2022 are considered Yellow, compared to 39% in 2021. These relate to investments in urea and ammonia plants' fossil fuel infrastructure, and investments that are not directly tied to the actual production of low emission intensity NPK, nitrates, nitric acid, or low-carbon ammonia.

Shading methodology

In shading Yara's revenues, the value of nitric acid produced with high emissions intensity is subtracted from revenue from nitric acid-dependent final products and considered Yellow. Similarly, in shading investments, investments into the production of nitric acid with a high emissions intensity are considered Yellow. The threshold for 'high emissions intensity' has been taken as 0.230 tCO_2e per ton of nitric acid. This threshold is the EU ETS benchmark value for 2021-2025 to produce nitric acid. This threshold was also used in shading Yara's revenues and investments in Yara's previous Shades of Green Assessments.

In the proposal for the EU Taxonomy, as well as early draft versions of the EU Taxonomy, the EU ETS threshold of 0.230 tCO_2e per ton of nitric acid was the threshold for alignment with the EU Taxonomy's substantial contribution to climate change mitigation criteria.[16,17] In the final version of the EU Taxonomy, the threshold for alignment of nitric acid production with substantial contribution to climate change mitigation criteria was updated to 0.038 tCO2e per ton of nitric acid.[18] This reflects the average value of the 10% most efficient installations in 2016 and 2017, as set out in the in the Annex to the Implementing Regulation (EU) 2021/447.[19] The BAT threshold is expected to tighten significantly.

Had this threshold been used to differentiate high versus low emissions intensity nitric acid in shading Yara's revenues and investments, the overall shade of green revenues would have dropped to 37%, while the overall shade of green investments would have dropped to 45%.[20]

The expected tightening of both thresholds reflects that large improvements are required from nitric acid producers and that, as a transitional activity, emissions associated with nitric acid production must continue to decline. Given they represent bridging and transition solutions respectively, the requirements for Medium Green and Light Green shadings increase over time. To maintain shadings, companies must also therefore demonstrate continuous improvements. Through 2022, only five of Yara's nitric acid plants performed below the EU Taxonomy threshold. Yara points to the fact that, per its GHG reduction program, nitric acid plants are planned to be improved towards or beyond the EU Taxonomy thresholds (depending on specific site-feasibility) rather than the BAT threshold. Yara is also undertaking an analysis against the EU Taxonomy's Do No Significant Harm criteria, to implement improvements for gaps, while it notes its increased emphasis on a more holistic nature-focus should in time bring improvements in other areas such as water use.

A similar approach is taken with ammonia: the ammonia value of the nitrogen component in any products assigned a Shade of Green is deducted, while investments in ammonia plants is considered Yellow.

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[16] https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy-annexes_en.pdf

[17] Annex I to the Commission delegated regulation supplementing Regulation (EU) 2020/852 by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives (europa.eu)

[18] https://ec.europa.eu/finance/docs/level-2-measures/taxonomy-regulation-delegated-act-2021-2800-annex-1_en.pdf

[19] L_2021087EN.01002901.xml (europa.eu)

[20] Note that these figures do not represent a comment on EU Taxonomy alignment - instead, they represent the percentage of Yara's revenues and investments that would receive a green shade if the EU Taxonomy threshold had been used as part of our Shades of Green methodology instead of the EU ETS threshold.

Investments into assets that yield revenue streams that are associated with multiple Shades of Green are split up according to the asset value attribution.

3 Terms and methodology

This analysis aims to be a practical tool for investors, lenders, and public authorities for understanding climate risk. CICERO Shades of Green encourages the client to make this annual update to the company assessment publicly available. If any part of the annual update or company assessment is quoted, the full report must be made available. Our annual assessment update, including governance, is relevant for the reporting year covered by the analysis. This annual assessment update is based on a review of documentation of the client's policies and processes, as well as information provided to us by the client during meetings, teleconferences, and email correspondence. In our review, we have relied on the correctness and completeness of the information made available to us by the company.

Shading corporate revenue and investments

Our view is that the green transformation must be financially sustainable to be lasting at the corporate level. Therefore, we have shaded the company's current revenue-generating activities, investments, and operating expenses.

Shading	Examples
Dark Green is allocated to projects and solutions that correspond to the long-term vision of a low-carbon and climate resilient future.	Solar power plants
Medium Green is allocated to projects and solutions that represent significant steps towards the long-term vision but are not quite there yet.	Energy efficient buildings
Light Green is allocated to transition activities that do not lock in emissions. These projects reduce emissions or have other environmental benefits in the near term rather than representing low carbon and climate resilient long-term solutions.	Hybrid road vehicles
Yellow is allocated to projects and solutions that do not explicitly contribute to the transition to a low carbon and climate resilient future. This category also includes activities with too little information to assess.	Healthcare services
Red is allocated to projects and solutions that have no role to play in a low-carbon and climate resilient future. These are the heaviest emitting assets, with the most potential for lock in of emissions and highest risk of stranded assets.	New oil exploration

The approach is an adaptation of the CICERO Shades of Green methodology for the green bond market. The Shade of Green allocated to a green bond framework reflects how aligned the likely implementation of the framework is to a low carbon and climate resilient future, and we have rated investments and revenue streams in this assessment similarly. We allocate a shade of green to the revenue stream and investments according to how these streams reflect alignment of the underlying activities to a low carbon and climate resilient future and taking into account governance issues. In addition to shading from dark green to red, CICERO Shades of Green also includes a governance score to show the robustness of the environmental governance structure. When assessing the governance of the company, CICERO Shades of Green looks at five elements: 1) strategy, policies, and governance structure; 2) lifecycle considerations including supply chain policies and environmental considerations towards customers; 3) the integration of climate considerations into their business and the handling of resilience issues; 4) the awareness of social risks and the management of these, and 5) reporting. Based on these aspects, an overall grading is given on governance strength, falling into one of three classes: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

CICERO Green has completed a light touch assessment of social safeguards with a focus on human rights and labor rights risks. This assessment is meant to provide information to readers on the context in which Yara operates and its approaches to the social risks it faces. It should not be taken as a full screening of alignment with relevant national or international laws, guidelines, or principles.

About CICERO Shades of Green

CICERO Shades of Green, now a part of S&P Global, provides independent, research-based second party opinions (SPOs) of green financing frameworks as well as climate risk and impact reporting reviews of companies. At the heart of all our SPOs is the multi-award-winning Shades of Green methodology, which assigns shadings to investments and activities to reflect the extent to which they contribute to the transition to a low carbon and climate resilient future.

CICERO Shades of Green Company Assessments indicate the greenness of a company by providing a shading of revenues, operating costs and capital expenditures, as well as an assessment the company's governance structure. CICERO Shades of Green also provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green, sustainability and sustainability-linked bond investments. CICERO Shades of Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Shades of Green is independent of the company being assessed, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Shades of Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of assessments.

Environmental Finance Bond Awards 2022 Winner
External assessment provider of the year

- **2021** Largest External Reviewer, Climate Bonds Initiative Awards
- **2020** External Assessment Provider Of The Year, Environmental Finance Green Bond Awards
- **2020** Largest External Review Provider In Number Of Deals, Climate Bonds Initiative Awards
- **2019** External Assessment Provider Of The Year, Environmental Finance Green Bond Awards
- **2019** Largest Green Bond SPO Provider, Climate Bonds Initiative Awards
- **2018** External Assessment Provider Of The Year, Environmental Finance Green Bond Awards
- **2018** Largest External Reviewer, Climate Bonds Initiative Awards
- **2017** Best External Assessment Provider, Environmental Finance Green Bond Awards
- **2016** Most Second Opinions, Climate Bonds Initiative Awards

Appendix 1: Referenced documents list

Document Number	Document Name	Description
1	Integrated Report 2021	
2	Integrated Report 2022	
3	Sustainability Report 2021	
4	Sustainability Report 2022	
5	EU Taxonomy Report 2022	
6	Sustainable Procurement Policy	