CDP SCORE REPORT - CLIMATE CHANGE 2021

Nouryon

Region	Europe
Country	Netherlands
Questionnaire	Chemicals
Activity Group	Chemicals

The CDP Score Report allows companies to understand their score and indicate which categories require attention to reach higher scoring levels. This enables companies to progress towards environmental stewardship through benchmarking and comparison with peers, in order to continuously improve their climate governance. Investors will additionally receive a copy of the CDP Score Report upon request. For further feedback please contact your account manager or your key CDP contact.

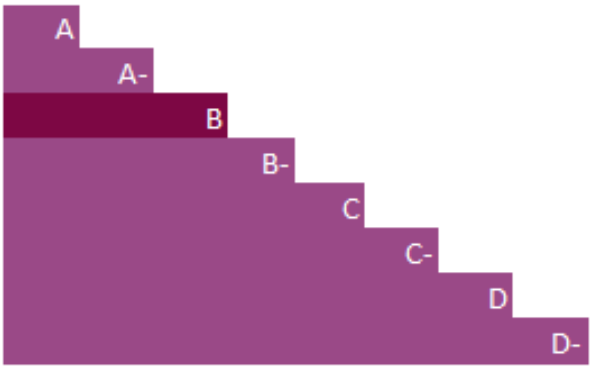
Your CDP score

B

Average performance

Chemicals	Europe	Global Average
B	B	B-

UNDERSTANDING YOUR SCORE REPORT



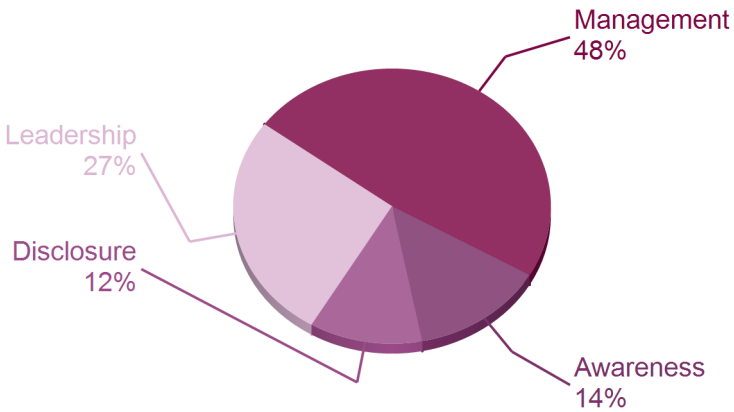
Nouryon received a B which is in the Management band. This is same as the Europe regional average of B, and same as the Chemicals sector average of B.

Leadership (A/A-): *Implementing current best practices*
Management (B/B-): *Taking coordinated action on climate issues*
Awareness (C/C-): *Knowledge of impacts on, and of, climate issues*
Disclosure (D/D-): *Transparent about climate issues*

ACTIVITY GROUP PERFORMANCE

Chemicals

Your company is amongst 48% of companies that reached Management level in your Activity Group



A sample of A-list companies from your Activity Group:
Borregaard ASA
Colgate Palmolive Company
Estee Lauder Companies Inc.
FIRMENICH SA
International Flavors & Fragrances Inc.

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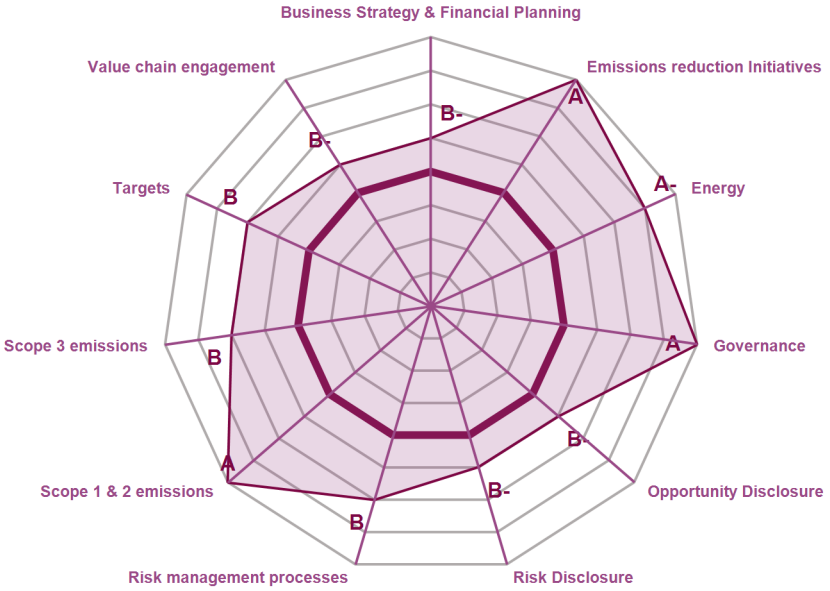
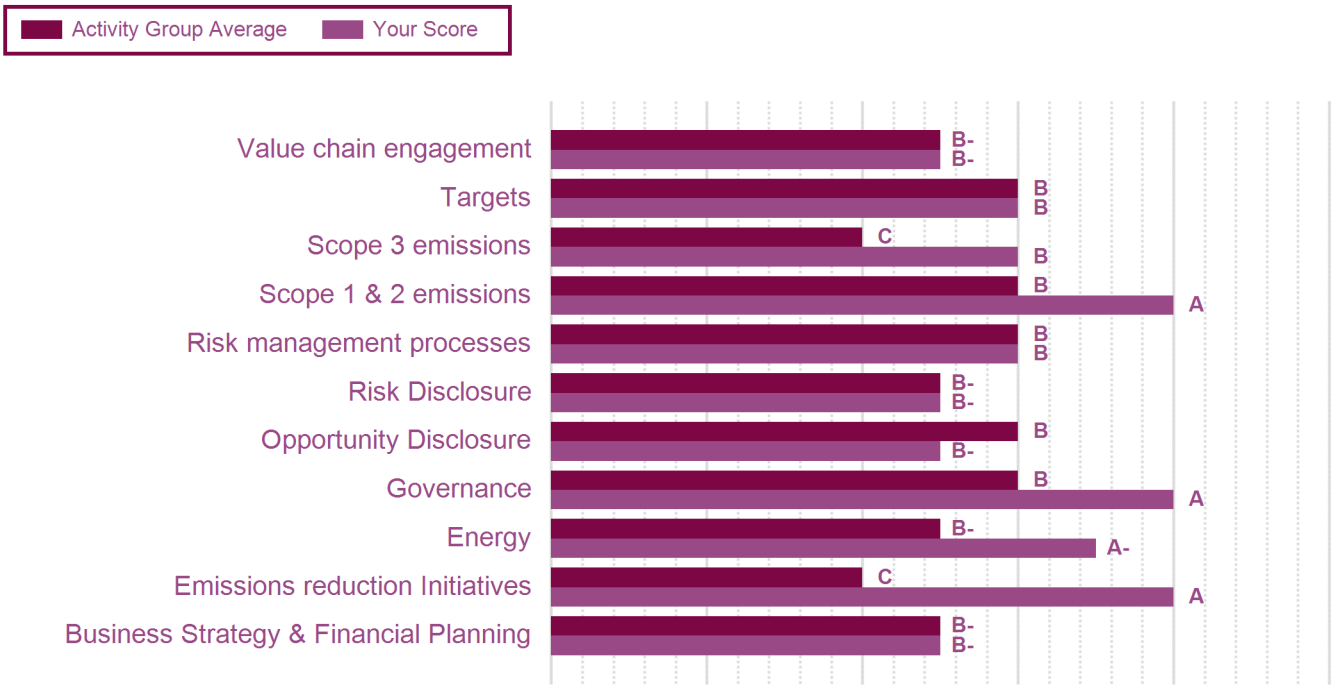
CATEGORY SCORES



If a company scored C or below, they will not have been scored for management or leadership points (the dark purple line represents this). Please download the *'CDP Scoring Introduction'* for more information.

CATEGORY SCORES BENCHMARKING



Scenario analysis — No, but we anticipate using qualitative and/or quantitative analysis in the next two years

Each category score in the bar chart represents the progression within each scoring level. Some categories have not been included for category score breakdown as either not enough questions feed into these categories to give a representative score or they are not scored at Management and Leadership levels.

Scoring categories are groupings of questions by topic. They are sub-groups of the 2021 questionnaire modules and are consistent across all sectors. Weighting applied to each category varies across sectors to highlight the areas most important to environmental stewardship in specific sectors. To find out more about category weightings for each sector, please download the 'CDP Scoring Categories and Weighting' documents.

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Nouryon became a standalone company in October 2018, and from the beginning, our company purpose has included our commitment to a sustainable future. We dedicate ourselves to strengthening this commitment in our own company and operations, in our R&D and solutions for customers, and in being a responsible partner to the communities in which we operate. Our 2020 sustainability progress included an unyielding focus on customers, productivity and safety, which resulted in new, innovative solutions for our end-markets and solid financial performance for Nouryon. In fact, 33% of our total revenue last year came from Eco-Premium Solutions that deliver a significant sustainability benefit to our customers over the most mainstream market alternative.
Based on insights from internal and external stakeholders, we developed and rolled out our sustainability approach, which includes clear priorities and tangible sustainability targets.

Nouryon will continue to invest in solutions that bring sustainable benefits to our customers and society which, in turn, will help fuel our continued growth. In support of the objectives of the UN's Paris Agreement on climate change, we have set ambitious targets to reduce our emissions by 25% between 2020 – 2025 and increase our use of low carbon energy to 60%. Put simply, we will reduce our greenhouse gas emissions by 2025 even as we increase volumes and grow.

Our continuing efforts to improve on key sustainability metrics is reflected in our 2020 EcoVadis Silver rating, which places us in the top 10% of companies scored by performance, safety, sustainability, and innovation, we have established a world-class business and built strong partnerships with our customers and our communities.

Humankind faces numerous, urgent challenges which also present opportunities for Nouryon. Chemistry plays a vital role in solving these challenges. Nouryon works with our customers, partners, and people to develop the essential solutions our changing world needs. For example, Nouryon contributes to feeding a growing population; improving health, sanitation, and medicine; and making buildings and infrastructure more sustainable and durable, while mitigating our own greenhouse gas emissions and improving our resource efficiency and energy consumption management.

In 2020, Nouryon launched a growth strategy aimed at exceeding customer expectations, outperforming the competition, and increasing the strength of our specialty's portfolio. As part of this strategy, we increased our focus on important end-markets (Agriculture, Buildings and infrastructure, Cleaning goods, and Personal care) and took steps to expand profitably in emerging markets like China, Southeast Asia, and India. Each of these end markets offers us opportunities to contribute to a more sustainable future by adding new, sustainable solutions to our portfolio. Our plans also include growing in new applications and geographies through acquisitions and partnerships; further expanding our sustainable product offering; and maximizing the capacity utilization and flexibility of our manufacturing plants. Finally, we aim to transition from ingredient supplier to solution provider and continue to execute successfully on cost and productivity initiatives.

On July 1, 2021, Nouryon spun off its base chemicals business, Nobian. This reflects the Nouryon company strategy that we launched last year to grow our leading positions and exceed our customers' expectations by delivering innovative, sustainable solutions that meet society's everyday needs.

This year's Nouryon CDP submission is done over the year 2020 so including Nobian.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2020	December 31 2020	Yes	2 years

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Argentina
Belgium
Brazil
Canada
China
Denmark
Finland
France
Germany
India
Italy
Japan
Mexico
Netherlands
Norway
Singapore
Sweden
Switzerland
Taiwan, Greater China
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

EUR

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Financial control

C-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

Bulk organic chemicals

Ethylene oxide & Ethylene glycol
Polymers

Bulk inorganic chemicals

Hydrogen

Other chemicals

Specialty chemicals
Specialty organic chemicals

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	Nouryon's Board of Directors is charged with oversight of the Nouryon Group and its executive management. The Board of Directors' responsibilities include setting and reviewing the company strategy, supervising our risk management and monitoring performance on climate actions. The Board has ultimate responsibility for incorporating sustainability into the strategy and monitoring performance. Our Board considers climate-related issues on a number of levels. The full Board, led by our Chairman and CEO, is regularly briefed on our sustainability initiatives including climate change, including the update our CSO makes to the board. In 2020 for example, the board discussed updates on reductions in product carbon footprint, renewable energy usage (percentages) in our operations, and corporate targets on carbon reduction and low carbon energy. Our Audit Committee oversees the company's risk assessment and management, which includes risks related to climate change. Finally, our Board intends to establish a new Corporate Responsibility Committee which will oversee the company's policies and practices relating to, among other things, sustainability and climate change.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The Board has ultimate responsibility for incorporating sustainability into the strategy and monitoring performance. Our Board considers climate-related issues on a number of levels. The full Board, led by our Chairman and CEO, is regularly briefed on our sustainability initiatives including climate change.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Chief Operating Officer (COO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

In the organization, the highest level of responsibility for climate risks and opportunities is with our Chairman and CEO who has oversight of strategies and performance. Sustainability issues are also addressed by members of the Leadership Team, reporting to the CEO. Operational and environmental sustainability, including any potential physical asset risks or impacts due to climate change is managed by the Chief Integrated Supply Chain Officer, who reports directly to the CEO. This role aligns with CDP's corresponding job category of COO, and has oversight of all manufacturing sites, procurement, and energy purchasing. This includes overseeing our performance on greenhouse gas emissions and energy use, eco-efficiency program, and water management strategy. This ensures that our sustainability performance is supported at all our manufacturing sites around the globe.

The Chief Sustainability & Communications Officer, develops and oversees Nouryon's global sustainability program and approach. The CSO reports to our Executive Vice President, Business Affairs, General Counsel & Corporate Secretary.

The Chief Procurement Officer (CPO) is responsible for developing and driving the sustainability strategy with our suppliers, including improving supplier sustainability performance and reports to the Chief Integrated Supply Chain Officer. The Energy Director monitors potential transition risks such as energy price trends, and delivery of our Scope 2 (low carbon energy) strategy.

To support our strategy and share information across the organization, we also have a global Sustainability Network that drives sustainability across our organization that supports the deployment of processes. The Network is chaired by the Sustainability Director and consists of representatives of all businesses and key functions across all regions. Each business has appointed a sustainability focal point to support the integration of sustainability throughout the business.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	No, and we do not plan to introduce them in the next two years	

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	We consider short-term risks to be anything that impacts our business in the next three years.
Medium-term	3	5	Our medium-term focus is on major risks that may impact achievement of our strategy in the next three-to-five years.
Long-term	5	100	We recognize there are relevant risk factors beyond the five-year horizon that could impact our strategy (long-term) risks.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

We define substantive financial or strategic impact for climate-related risks in the same way we define a material impact within our financial reporting which suggests significant material concerns of an item to users of a company's financial statement. A matter is "material" if there is a substantial likelihood that a reasonable person would consider it important. Therefore, there is no specific value or percentage or earnings but rather a consideration of the impact, financial or strategic, on the valuation of the company or on our reputation.

When evaluating climate-related financial impacts, we consider a Critical impact to have an impact > €100M to EBIT, High impact from >€50 and <€100M to EBIT, and Medium impact from >€10M and <€50M to EBIT. Health, Safety, Environment, and Security impacts have additional metrics related to environmental incidents that would result in regulatory actions or penalties.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

The Audit Committee of the Board of Directors, as well as the Risk, Control, and Cyber Steering Committee comprised of senior management, each oversee risks and actions and remain informed on the latest developments. Our Compliance department oversees Nouryon's compliance with anti-bribery, antitrust, trade compliance, economic sanctions, and data privacy laws, and is also tasked with supporting Nouryon's commitment to a culture of integrity, responsibility, and respect. We are currently in the process of TCFD analysis in 2021, including scenario analysis for both transition and physical risks. We plan to use the scenarios to assess risks over all time horizons, short, medium, and long term, and the analysis covers all areas of our value chain - upstream, downstream, and direct operations. We plan to disclose the results of our scenario analysis in the future after the exercise has been completed. See 3.2B for more information.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Globally, our operations are increasingly subject to regulations that seek to reduce emissions of greenhouse gases ("GHGs"), such as carbon dioxide and methane, which are contributing to changes in the earth's climate. For example, we are already managing and reporting GHG emissions, to varying degrees, as required by law for our sites in locations subject to U.S. federal and state requirements, EU requirements and/or ETS requirements. Although these sites are subject to existing GHG legislation, few have experienced or anticipate significant cost increases as a result of these programs, although it is possible that GHG emission restrictions and costs from regulations may increase over time. Potential consequences of such restrictions include capital requirements to modify assets to meet GHG emission restrictions and/or increases in energy costs above the level of general inflation, as well as direct compliance costs.
Emerging regulation	Relevant, always included	New climate-related regulations may impact direct and indirect costs. For example, new potential carbon pricing mechanisms such as the carbon border adjustment mechanism in the EU or potential carbon taxes or cap and trade programs in the US could impact some of our products negatively, such as products shipped from the US to the EU, or positively, such as some of our products covered by the EU ETS currently. This is relevant and always included, because climate-related policy developments could affect suppliers in the oil and gas sector and could increase our raw material prices - specifically ethylene, one of our most significant raw materials. We consistently monitor emerging regulations such as these carbon policy examples that have the potential to impact our business.
Technology	Relevant, always included	As concern over climate change grows, there is the potential for our customers to substitute products with lower emissions alternatives, which is why the risk type is relevant and always included. However, the risk of our customers shifting to lower emitting products also has presented opportunities for Nouryon. For example, our Eco-Premium Solutions are products that offer significant sustainability benefits over mainstream alternatives in the market while providing the same or better functionality. When developing these solutions, we put special focus on delivering environmental benefits as well as direct benefits to our customers' operations. For example, Nouryon conducted a life cycle assessment in 2020 that shows our production process for hydrogen peroxide has superior emissions performance compared to the industry. By measuring and tracking the environmental performance of our products, we can compare ourselves to our competitors and guide innovation to keep our products competitive from both a performance and greenhouse gas emissions perspective.
Legal	Relevant, always included	Our global footprint exposes us to increasingly stringent laws and regulations on a broad range of subjects, such as safe use of hazardous compounds, environmental releases, greenhouse gas emissions, and product liability. As a chemicals company, we have extensive experience with mandates and regulations of our products. These risks are mitigated by monitoring compliance with climate-related laws and regulations through our internal subject matter experts, who provide guidance and training to the company and employees as necessary.
Market	Relevant, always included	Nouryon operates in highly competitive markets, and as a global manufacturer of chemicals we rely on certain readily available raw materials. Our internal stakeholders have identified potential fluctuations in raw material pricing and availability due to physical or transition impacts to our supply chain as a potential risk to our business going forward. To mitigate this risk, we work with multiple suppliers and build strong relationships with key suppliers as well as work to diversify our material supply through bio-based renewable materials, circular economy principles, and enhanced recycling practices. We consider potential supply and demand shifts in our raw materials and products continually in our market and production planning efforts as a part of our business activity.
Reputation	Relevant, always included	With increased scrutiny and focus on ESG and climate-related issues from the investor community as well as the inherent carbon intensity of the chemicals sector, we face the same risks as others in our industry due to increased stakeholder concern and the potential for negative feedback if we are not seen to be making the necessary progress toward our climate goals. We are working extensively to continue improving our ESG profile and providing improved disclosures to the investor community. As a relatively new company, this is the first year that Nouryon is responding to CDP to share our climate progress so far, and we are currently in the process of incorporating the recommendations of the TCFD within our business by improving disclosures and undertaking scenario analysis for both transition and physical risks. We plan to disclose the results of our scenario analysis in the future after the exercise has been completed. Social-cultural aspects, aspects that reflect the views and cultural values of a society, are getting more of importance. There are a significant number of societies where the "green thinking" is prevalent. This means that Nouryon can be in a situation where the expectation of society regarding green initiatives is almost mandatory or can affect it's license to operate in a very extreme example.
Acute physical	Relevant, always included	Nouryon is committed to evaluating the risk of each of our facilities from acute physical risks. The evaluation of this risk is included in the ERM annual risk assessment process. Physical risks, including acute risks, are also considered in our climate-related scenario analysis. We own and operate large-scale active ingredient manufacturing facilities with a wide geographic spread such as in the Gulf Coast area of the United States, Western Europe, Sweden China and India. We also have large operations at warehouses in the USA and Sweden and various global ports that are vital to the transport and storage of Nouryon's supplies and products; the three most profitable warehouses (by associated product revenue) and six most relevant global ports were included in ERM's risk assessment. Interruptions at these facilities may materially reduce their productivity, or the profitability of our business as a whole. Although we take precautions to enhance the safety of our operations and minimize the risk of disruptions, our operations and those of our contract manufacturers are subject to hazards inherent in chemical manufacturing and the related storage and transportation of raw materials, products and wastes. Example: Climate change can result in an increased frequency or severity of hurricanes, resulting in flooding or wind damage, causing costly production outages, downtime or damage to equipment. Specifically, our Pasadena, USA and Houston, USA sites have a historically high exposure to tropical storms and hurricanes. Mitigations for these risks have been implemented, resulting in increased capital expenditures but help to increase the resiliency of our operations. See 2.3a Risk 2 for more information. In another example, weather serves as one of the primary inputs of forward supply for raw materials used in our surfactants products – natural oils and fats (NOFA) - globally - and climate change is an important price driver. For acute physical climate risk, extreme weather, such as hurricanes or floods could negatively impact crop production. For planning, this risk is not currently deemed significant. It is mitigated in part by safety stock held by our preferred suppliers, and our standard sourcing strategy typically avoids spot (30 days forward) raw material price exposure.
Chronic physical	Relevant, always included	Climate-related chronic physical risks have the potential to impact both our direct operations as well as the customers and markets we serve. Given the susceptibility of the agriculture industry to physical risks, and because agriculture is a core market that we serve, these physical risks represent a material issue for us and therefore, the evaluation of this risk is included in the ERM annual risk assessment process. Example: Specifically, our markets are affected by climatic conditions, which could adversely impact crop pricing and pest infestations; for example, extreme heat was deemed relevant due to Nouryon's international presence with a number of facilities operating in equatorial temperature zones. In particular, an increase in extreme heat may lead to an increase in energy costs to cool indoor environments. Extreme heat also could impact the health and safety of staff, particularly those operating outside, through heat exhaustion. For example, Nouryon has multiple assets that face increased exposure to extreme heat intensity and duration, specifically assets located in Imperatriz, Brazil; Bahia, Brazil; Mahad, India, and several locations in Texas, USA. The effects of climate change such as rising sea levels, drought, flooding and general volatility in seasonal temperatures could also adversely affect our operations globally. Extreme weather events attributable to climate change may result in, among other things, physical damage to our property and equipment, and interruptions to our supply chain. Nouryon has emergency response and business continuity plans in place in order to mitigate the impact from such physical risks.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact
Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Access to water is essential for our manufacturing sites globally. Chronic physical climate risks –including changes in precipitation patterns or variability in weather patterns – could reduce water availability in certain areas and thus negatively impact our ability to run our manufacturing operations. Sustained higher temperatures or more frequent heat waves could increase droughts and water baseline risk. This issue has different impacts and likelihoods in different parts of the world. In general, looking at global water models, we see a higher risk of water stress and potential future lack of water in regions such as India and China that could affect our business. Fresh water availability is also seen as a risk for our suppliers and customers, in water scarce regions.

Time horizon
Long-term

Likelihood
Likely

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
120000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Lack of water availability could result in increased operating expenses due to increased utility cost for water at our sites - for example, if water is not available locally, sites may have to source water from further distances, requiring more expensive truck transport (vs. local ground or surface water sources in the immediate vicinity). In an extreme case, future production may have to be relocated. In this scenario, costs are estimated at EUR 30 - 50 million (present value) to transfer production, based on historical site relocation analysis. The most recent relocation of our Tianjin site (which is a large site) costed EUR 60 M including re-engineering, relocation of equipment, construction and start-up. Relocation was required by the government due to the city's urban expansion. Through our previous comprehensive water stress studies, we identified only 3 sites with potential water risk. The financial impact has been estimated using a mid-range of € 40 M (cost per site) for 3 sites, resulting in € 120 M total.

Cost of response to risk
10000000

Description of response and explanation of cost calculation
In 2018, we completed a comprehensive water risk assessment for all our manufacturing sites called SFWRA (Sustainable Fresh Water Risk Assessment). We evaluated several water parameters, including influent treatment cost, effluent capacity, water demand due to demographic changes, and effluent discharge treatment cost. Based on this review, we concluded that only three of our 62 manufacturing sites – Boxing and Ningbo in China and Singapore – were water stressed. For each of these sites, teams developed mitigation plans to address potential water risks. We will continue assessing our water usage and exploring ways to increase our resilience and improve the sustainability of our operations.

Comment

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact
Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Hurricanes and flooding could have serious impact on our production processes, ability to procure raw materials and physical assets, such as warehouses, inventory, equipment and buildings. Increases in the frequency or severity of storms and flooding can cause production outages, downtime or delays for shut-down and start-up, or damage to equipment – all of which can involve costs. For example, flooding in certain locations, such as Houston, have resulted in negative financial impacts for our production facilities there. In our Houston, USA (Almeda) site, we have taken steps to mitigate this risk - specifically: 1. installation of sump systems at the lowest laying areas to transfer water out of process areas to their collection sumps, and 2. relocation of critical electrical systems to avoid food damage. After Hurricane Harvey, our Pasadena, USA site built an elevated cold storage warehouse with electrical backup. These mitigations require increased capital expenditures but help to increase the resiliency of our operations. See also question C3.2b.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Direct financial implications are most related to risks for sea level rise and flooding. There were direct costs due to the flooding in Houston but an overall cost estimate has not been done for the whole company.

Cost of response to risk
0

Description of response and explanation of cost calculation
Experiences from actual flooding have been transferred within the company. All sites are required to carry out risk assessments which include risks from external events including earthquake, weather extremes (storm – wind/hail, flood, drought, etc), lightning strike, loss of utilities etc. High risk sites are subject to a mandatory insurance survey which also reviews these issues and the mitigation plans. Hurrican emergency response plans are in place and we have implemented measures to increase resiliency of facilities in Houston.

Comment

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Because Nouryon conducts international operations, we are exposed to a variety of risks of which many of them are beyond our control or which could adversely affect our business. For example, new potential carbon pricing mechanisms such as the carbon border adjustment mechanism in the EU or potential carbon tariffs in the US could impact some of our products negatively. Though neither potential regulation is currently aimed at our sector, some chemicals do have a relatively high GHG intensity, so it's possible some of our products could be covered by such carbon tariffs in the future. For example, our chlor-alkali, and bleaching chemical product lines represent larger portions of our scope 1 and 2 emissions relative to other product lines. We consistently monitor emerging regulations such as these carbon pricing examples that have the potential to impact our business.

Time horizon
Short-term

Likelihood
About as likely as not

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
150073994

Potential financial impact figure – maximum (currency)
286906165

Explanation of financial impact figure
This estimated range is based on carbon pricing values from the IEA's 2020 STEPS and SDS scenarios. The lower figure is based on the IEA STEPS 2025 carbon price for the European Union of $34. The higher figure is based on the IEA SDS 2025 carbon price for advanced economies of $63. We applied these figures to the sum of our Scope 1, Scope 2, and Scope 3 category 1 emissions to calculate our potential financial impact. The USD amounts were converted to EUR using the United States IRS average exchange rate for 2020 of €0.877/USD.

Cost of response to risk
0

Description of response and explanation of cost calculation
Anticipating awareness among stakeholders by driving our Eco-premium Solutions (EPS) program. We believe that our drive to develop eco-premium solutions and reduce our carbon footprint will turn this risk into an opportunity. In 2020, we committed to driving our EPS program to support our growth strategy by having more sustainable solutions in place. By focusing on the climate impacts of our products, we will potentially be less susceptible to the impacts of these emerging carbon pricing mechanisms than our competitors. We do not separate costs of managing individual risks. Generally, eco-premium solutions demonstrate higher growth and margins contributing to our growth strategy and financial performance.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Shift in consumer preferences

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Following international agreements (e.g. COP21) many countries have set energy targets which are an opportunity for a range of chemicals. Nouryon produce several products which contribute to customer solutions with the aim to reduce energy consumption e.g. LED lightning and asphalt additives which reduce fuel consumption. Using the avoided emissions guidelines we developed together with the International Council of Chemical Associations and the World Business Council for Sustainable Development, we have started to evaluate the amount of carbon emissions society avoids by using the solutions we have developed, compared with mainstream solutions. First results show these avoided emissions add up to nine million tons of CO2 .

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
25000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
During 2020, sales of Eco-premium solutions with customer benefits totalled 21% of our revenue (20% in 2019) being approximately EUR 1.0 billion. Our Eco-Premium Solutions are products that offer significant sustainability benefits over mainstream alternatives in the market while providing the same or better functionality. These benefits can apply to several specific criteria (e.g. toxicity, energy use, use of natural resources, emissions and waste, land use, risks, health). When making comparisons, we ensure that our solution does not have adverse effects on any of the other criteria. Two of our many product lines that deliver such benefits are bio based polymers and Dissolvine®, readily biodegradable Chelating agents for more sustainable detergents. We aim to maintain Eco Premium Solutions at a sustainable 20% of revenue through 2020 by constantly innovating. An increase of 0.5% of our revenue from such solutions per year, means an increase of approximately EUR 25 million per year. The Eco-premium portfolio is dynamic, as some solutions have stopped being classified as eco-premium due to competitive offerings having caught up. At the same time, new solutions have been introduced to the portfolio.

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
Eco-premium solutions (EPS) help to create value for our businesses and customers. They provide top line growth opportunities. These solutions demonstrate improvements in our own operations and across the entire value chains in which we operate. We seek to offer solutions that allow our customers, their customers, or the end-users, to minimize their environmental and climate impacts. Activities to increase these sales are among others: 1. Customer visits to identify improvement programs 2. Integration in new commercial excellence processes to ensure sustainability is an integral element of the product propositions 3. Training and marketing materials explaining our strategy for marketing and sales. EPS is a fundamental driver of our growth strategy set targets at company level, monitored by the NLT. We now focus on downstream benefits that our products and services deliver to customers. This includes improving their resource efficiencies, as well as the environmental impact of their manufacturing processes and products or services in use and end-of-life. We have implemented criteria linked to EPS in our R&D innovation process. Eco-premium solutions is a strong driver in R&D projects and stage gate processes – so this is the product development direction and not an add-on activity. Costs to develop new products and solutions with customer benefit are integrated in R&D costs (no additional costs). Climate change related opportunities are one of several beneficiary properties.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development of new products or services through R&D and innovation

Primary potential financial impact
Increased revenues through access to new and emerging markets

Company-specific description
With the increased focus on improving the energy efficiency of buildings in various markets, Nouryon has a major opportunity in the housing and buildings sector. One example of a Nouryon technology solutions for buildings is our cool roof coatings. We combined our Expancel and Levasil technologies to create a concept for cool roof coatings. This combination makes it possible for customer to produce coatings that resist dirt and are highly reflective. The higher reflectivity reduces absorption of heat into buildings, which means less need for cooling, increased energy efficiency, and lower greenhouse gas emissions. These coatings can reduce heat absorption by 80% and decrease roof temperatures by roughly 30 degrees Celsius vs traditional dark roofs.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
20000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
During 2020, sales of eco-premium solutions with customer benefits totaled 21% of our revenue (20% in 2019). Two of our many product lines that deliver such benefits are bio based polymers and Dissolvine®, readily biodegradable Chelating agents for more sustainable detergents. We aim to maintain Eco Premium Solutions at a sustainable 20% of revenue through 2020 by constantly innovating. An increase of 0.5% of our revenue from such solutions per year, means an increase of approximately EUR 20 million per year. The eco-premium portfolio is dynamic, as some solutions have stopped being classified as eco-premium due to competitive offerings having caught up. At the same time, new solutions have been introduced to the portfolio.

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
Eco-premium solutions (EPS) help to create value for our businesses and customers. They provide top line growth opportunities. These solutions demonstrate improvements in our own operations and across the entire value chains in which we operate. We seek to offer solutions that allow our customers, their customers, or the end-users, to minimize their environmental and climate impacts. Activities to increase these sales are among others: 1. Customer visits to identify improvement programs 2. Integration in new commercial excellence processes to ensure sustainability is an integral element of the product propositions 3. Training and marketing materials explaining our strategy for marketing and sales. EPS is a fundamental driver of our growth strategy set targets at company level, monitored by the NLT. We now focus on downstream benefits that our products and services deliver to customers. This includes improving their resource efficiencies, as well as the environmental impact of their manufacturing processes and products or services in use and end-of-life. We have implemented criteria linked to EPS in our R&D innovation process. Eco-premium solutions is a strong driver in R&D projects and stage gate processes – so this is the product development direction and not an add-on activity. Costs to develop new products and solutions with customer benefit are integrated in R&D costs (no additional costs). Climate change related opportunities are one of several beneficiary properties.

Comment

Identifier
Opp3

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Resource efficiency

Primary climate-related opportunity driver
Use of more efficient production and distribution processes

Primary potential financial impact
Reduced indirect (operating) costs

Company-specific description
Our Technology Solutions business contributes positively to sustainability through both product and process innovations. Our process innovations reduce waste, wastewater, and emissions to air. We continually strive to increase yields and reduce energy consumption. As an example of a process improvement, we have reduced our salt emissions for several processes by 50% to 90% and the use of catalysts by 80%. We are using alternative process routes, acid recycle technology, and salt recovery technology to limit the salt production of our processes, and we are working towards a zero liquid discharge concept.

Time horizon

Short-term

Likelihood
Very likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Increasing yields will lead to energy consumption reduction in our processes. At this time, this impact has not been quantified financially.

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
Nouryon is committed to reducing our carbon footprint and energy use. We do this by increasing operational efficiency to reduce our energy consumption and expanding the sourcing of renewable energy. We aim to further reduce our carbon footprint by 25% between 2020 and 2025 through a wide range of actions, with a focus on energy efficiency measures and increasing our renewable energy usage. Nouryon has a strong drive to embed continuous improvement in manufacturing, energy efficiency, and consumption across the supply chain. We track and report our performance on a quarterly and annual basis using Enablon's EHS software package. This input is checked twice a year. We have successfully decreased our energy intensity while also supporting customers' sustainability ambitions.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?
Yes

C3.1b

(C3.1b) Does your organization intend to publish a low-carbon transition plan in the next two years?

	Intention to publish a low-carbon transition plan	Intention to include the transition plan as a scheduled resolution item at Annual General Meetings (AGMs)	Comment
Row 1	Yes, in the next two years	No, we do not hold AGMs	Nouryon will continue to invest in solutions that bring sustainable benefits to our customers and society which, in turn, will help fuel our continued growth. In support of the objectives of the UN's Paris Agreement on climate change, we have set ambitious targets to reduce our emissions by 25% between 2020 – 2025 and increase our use of low carbon energy to 60%. At the end of 2019, Nouryon conducted a materiality assessment to identify the sustainability issues most important to our company and where we can make a difference in our operations or through our products. The assessment helped us define the top focus areas of our sustainability approach, including target setting, partnerships, and UN Sustainable Development Goals to which Nouryon contributes. Focus areas were then prioritized based on in-depth interviews with customers, suppliers, Nouryon's leaders, and employees at different levels of the organization.

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?
No, but we anticipate using qualitative and/or quantitative analysis in the next two years

C3.2b

(C3.2b) Why does your organization not use climate-related scenario analysis to inform its strategy?

Nouryon is a young company with a history of just under three years and is making substantial contributions to a sustainable future. While we did not yet use climate-related scenario analysis in 2020, we are actively engaged in a process of TCFD analysis in 2021, using leading climate models and scenarios. We are conducting this with senior leaders, and planning to integrate this into our ongoing enterprise risk management process in collaboration with our internal audit teams. Our 2020 sustainability progress included an unyielding focus on customers, productivity and safety, which resulted in new, innovative solutions for our end-markets and solid financial performance for Nouryon.

Transition Scenario: Nouryon is in the process of conducting its first qualitative transition scenario analysis. Following the guidance of the TCFD, the company is assessing different scenarios, including a 2°C scenario, to identify potential risks and opportunities to the company. We plan to use the scenarios to assess risks over all time horizons, short, medium, and long term. The analysis is covering all areas of our value chain, upstream, downstream, and direct operations. We plan to publicly report the results of our scenario analysis work after the project is concluded.

We are also assessing the physical climate risk of the most critical sites in our direct operations and supply chain.

Physical Scenario: Nouryon conducted a climate-related scenario analysis by drawing upon publicly available data from the IPCC's peer reviewed climate models to extract indicators for future climate exposure across a range of site locations. SSP3-RCP7 is the scenario that Nouryon considered for this analysis, which represents a pessimistic outlook of both a 4°C warming by 2100 as well as global demographic projections that are unfavorable for climate mitigation and adaptation efforts. Nouryon used geographic system modeling to extract climate indicators for each site, warehouse or port.

Time Horizon: This analysis extracted data and identified trends to 2050. This time horizon was chosen to provide a sufficiently long time horizon to incorporate all potential risks and opportunities into Nouryon's risk management strategy.

Area of Organization: The chosen locations were deemed as both critical to Nouryon's key enterprise while additional sites were included that represented the three most profitable outplant warehouses. Also included in the analysis were six global ports that are vital to the transport and storage of Nouryon's products. The scenario analysis covered all parts of Nouryon's business including products and services, operations, and the value chain.

Results

- Nouryon has multiple assets that have a history of impact from tropical storms and hurricanes, including Pasadena, USA and Ningbo, China. The acute risk of hurricane exposure is also the main risk for the ports considered as part of this analysis, including Charleston, USA and Shanghai, China.
- Nouryon has multiple assets that face increased exposure to extreme heat intensity and duration, including assets located in Imperatriz, Brazil and several locations in Texas, USA.
- Nouryon's site in Mahad, India is projected to be impacted by an outsized increase in heavy rainfall. While a nearby river is not projected to present a flooding risk, heavy rain may still adversely affect business operations. Tianjin, China also has projections for a meaningful increase in rainfall.

Details of how these particular hazards may have an adverse financial impact on these specific assets are highlighted in Nouryon's response to Question 2.2A. As this analysis has only recently been undertaken and is ongoing, we have not yet integrated the findings into our business strategy.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	We began integrating climate risks and opportunities into our strategy at our inception. We built a strong foundation for sustainability recognized by obtaining the Ecovadis Silver rating for 2020, bringing us in 91st percentile of best companies. In 2020 we have launched our growth strategy for which we will take advantage of sustainability opportunities and we must accelerate the pace of our commitments to Sustainability. Our goal is to deliver not just the desired functionality but improved sustainability performance as well and to contribute to mitigate the climate change risks. We work together with customers, suppliers, universities, and other partners to develop innovative and sustainable solutions (our Eco-premium Solutions) that have smaller footprints or enable our customers to be more sustainable. These include a growing share of bio-based and biodegradable products and circular raw materials. For example, our polymer catalysts contributed to creating over 20 million standard solar panels (ca. 8.600 MW) based on 2020 sales and creating roughly 70.000 km of high voltage power cable (almost twice around the world) –supporting low carbon energy transitions in electrical power grids and renewable energy growth. Our piperazine amine products also enable our customers to capture significant amounts of carbon. Our Eco-Premium Solutions are products that offer significant sustainability benefits over mainstream alternatives in the market while providing the same or better functionality. These benefits can apply to several specific criteria (e.g. toxicity, energy use, use of natural resources, emissions and waste, land use, risks, health). When making comparisons, we ensure that our solution does not have adverse effects on any of the other criteria. When developing these solutions, we put special focus on delivering environmental benefits like lowering our customers GHG emissions, as well as direct benefits to our customers' operations. Two of our many product lines that deliver such benefits are biobased polymers and Dissolvine®, readily biodegradable chelating agents for more sustainable detergents. In 2020, €1.6 billion (33%) of our revenue came from the sale of Eco-Premium Solutions and 21% of our revenue came from Eco-Premium Solutions with a direct customer benefit.
Supply chain and/or value chain	Yes	We see sustainability not only as the right thing to do, but also as a true business opportunity to deliver value for our customers and society by providing new solutions that have smaller footprints or deliver other benefits in order to mitigate our climate change. We believe that striving for a sustainable future also means being a safe and reliable partner for customers, employees, business partners, and communities, and we ask all our suppliers to work with us on this topic. Nouryon only does business with suppliers sharing and supporting our standards. Our suppliers are required to comply with our Business Partner Code of Conduct. This requirement is included in all new contracts and in all purchase order terms and conditions. In 2021, we did a risk assessment for 95% of our suppliers (compared to 90% in 2020) in terms of spend on raw materials, energy, and logistics using the IQ EcoVadis CSR platform. We measure and track the sustainability performance of these suppliers based on their policies, actions, and results. The EcoVadis assessment covers topics related to environmental, ethics, labor practices, and human rights, as well as sustainable procurement. EcoVadis assessments include checks on supplier actions related to energy efficiency, GHGs, renewable energy, offsets, waste heat recovery/CHP, fuel switching, CCS, response to CDP - and employee training on these topics. Suppliers scoring 45 or lower may be required to provide improvement plans to demonstrate continuous improvement. Suppliers declining to make a self-assessment will be informed that such refusal will be considered as part of supplier selection decisions. Suppliers scoring 45 or lower or with no score who are assessed as high risk and either critical or strategic in IQ will be required to improve within 12 months. Such suppliers failing to show improvement will be placed in the 'Phase Out' segment of Nouryon's supplier segmentation and Nouryon will reduce business as far as is consistent with business objectives including where possible exit from the supplier. In another example, for logistic suppliers in Europe, we only do business with transporters using low emissions diesel engines or companies using low emissions ships. As part of our strategic planning in the near-term, we are currently considering scope 3 targets supply chain, in collaboration with suppliers.
Investment in R&D	Yes	A number of societal trends are driving demand and presenting opportunities for Nouryon's sustainable solutions. These include a growing and aging population, a rising and increasingly health conscious middle class, climate change, and natural resource preservation. For example, our solutions help increase crop yields and improve crop quality; make products more biodegradable and easier to recycle; make buildings and vehicles more energy efficient; and increase the durability of bridges and wind turbines. Our businesses, Performance Formulations, Technology Solutions and Nobian, use their expertise and collaboration with customers and other partners to develop sustainable, innovative, and high performing new products that meet the needs of our customers and society in an increasingly sustainable way. Within Performance Formulations, we base our sustainable innovations on a range of biodegradable and bio-based products, including chelating agents, surfactants, and polymers based on natural materials. We constantly work on extending our product platforms through partnerships, acquisitions, and technology innovation. For example, acquiring JM Huber's CMC business in 2020 enhanced our portfolio and technical capabilities in the field of cellulosic derivatives. Our Technology Solutions business contributes positively to sustainability through both product and process innovations. Our new product innovations promote benefits for our customers and the environment. Our process innovations reduce waste, wastewater, and emissions to air, and we continually strive to increase yields and reduce energy consumption. The Nobian business focuses heavily on improving energy efficiency in production of essential base chemicals and increasing the share of renewable energy in order to mitigate the climate risks. We also take a leading role in supporting the transition to a more sustainable economy by helping to balance our energy system. Examples of sustainable innovations in 2020 are investing in the Circular chemistry by making raw materials from CO2 in order to lower the GHG emissions, making Green hydrogen using green electricity and Renewable energy storage.
Operations	Yes	Nouryon is committed to reducing our carbon footprint and energy use. We do this by increasing operational efficiency to reduce our energy consumption and expanding the sourcing of renewable energy. Thanks to ongoing improvement and innovation efforts, we reduced our carbon footprint between 2009 and 2019. Since 2009, we also improved our environmental footprint related to air emissions, waste, and water quality. In support of the objectives of the UN's Paris Agreement on climate change, we have set the goal to further reduce carbon emissions from our operations and energy use by 25% between 2020 and 2025 and to increase the share of our purchased low carbon and renewable energy to at least 60% by 2025. We aim to achieve our emissions reduction target through a wide range of actions, with a focus on energy efficiency measures and increasing our renewable energy usage. Nouryon has a strong drive to embed continuous improvement in manufacturing, energy efficiency and consumption across the supply chain. We track and report our eco-efficiency performance on a quarterly and annual basis. The input is checked and validated twice a year. Since 2009, we have incrementally decreased our energy intensity while also supporting customers' sustainability ambitions. To strengthen our sustainable energy sourcing capabilities, in 2020 we established the Nouryon Energy Team (NET) with cross-functional expertise in Energy, Procurement, Finance, and Sustainability and this group is developing strategic plans for low-carbon energy solutions globally. In addition to our ambitious carbon and energy reduction targets, Nouryon's site HSE&S improvement plans include eco-efficiency parameters and aim to decrease other emissions and waste and increase our efficiency in raw materials and water usage. These efforts benefit the environment and the community, as well as our business performance, by simultaneously reducing operational costs, ensuring our license to operate, and lowering our environmental impact. For physical acute risks, we have incorporated mitigations into our strategic planning, including capital improvements to improve resiliency. See 2.3a for specific examples at our Houston and Pasadena sites. As we progress our TCFD analysis, we will continue to incorporate climate-related risks and opportunities into our strategy to increase the resiliency of our operations.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues	We consider climate risks and opportunities as we build our strategy around new market opportunities – including aligning investments in products that serve markets that will expand to meet the transition to a low carbon economy. These include: sales into renewable energy markets (wind turbines, crop solutions to improve yields to battle potential soil depletion). One example is sales of our amine related products such as piperazine used in carbon capture. Piperazine / MDEA formulations are recognized as a preferred gas treatment solution for capturing CO2 in industrial applications. Thus, capture carbon to mitigate climate change, presents a business opportunity. For our financial planning, we work with our customers and align future production to the estimated growing demand for piperazine and amine related products that is foreseen for the coming years. Piperazine helps our customers capture several million metric tonnes of carbon annually. The time horizon for this planning is short and medium term. We actively plan investments around these products both in product development as well as facility investments and production capability to meet market demand, including consideration of low carbon and emission reduction policies impacting our customers and affecting potential market demand. We also consider raw material sourcing plans as part of these market strategies.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Year target was set
2020

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Base year
2019

Covered emissions in base year (metric tons CO2e)
2957000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2025

Targeted reduction from base year (%)
25

Covered emissions in target year (metric tons CO2e) [auto-calculated]
2217750

Covered emissions in reporting year (metric tons CO2e)
2921000

% of target achieved [auto-calculated]
4.86980047345282

Target status in reporting year
New

Is this a science-based target?
Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition
1.5°C aligned

Please explain (including target coverage)
The base year number includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam. Nouryon is investigating a long term directional goal of 'carbon neutral' by 2050. Our current carbon reduction target for 2025 is part of this wider carbon neutrality goal.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Target(s) to increase low-carbon energy consumption or production

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number
Low 1

Year target was set
2020

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: energy carrier
All energy carriers

Target type: activity
Consumption

Target type: energy source
Low-carbon energy source(s)

Metric (target numerator if reporting an intensity target)
Percentage

Target denominator (intensity targets only)
<Not Applicable>

Base year
2019

Figure or percentage in base year
56

Target year
2025

Figure or percentage in target year
60

Figure or percentage in reporting year
56

% of target achieved [auto-calculated]
0

Target status in reporting year
New

Is this target part of an emissions target?
Yes, our target on % low carbon and renewable energy will contribute to lower scope 1 and scope 2 CO2 emissions (25% reduction) in 2025 compared to the base year 2019.

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Please explain (including target coverage)
The base year number includes energy consumption. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam. Nouryon is investigating a long term directional goal of 'carbon neutral' by 2050. Our current carbon Low-carbon target for 2025 is part of this wider carbon neutrality goal.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	11	16470
To be implemented*	41	47268
Implementation commenced*	50	15703
Implemented*	35	17747
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
17747

Scope(s)
Scope 1
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
6981

Investment required (unit currency – as specified in C0.4)
7150

Payback period
1-3 years

Estimated lifetime of the initiative
11-15 years

Comment
We have an overview of all our projects being implemented in 2020 with CO2 savings, CAPEX and yearly savings.

Initiative category & Initiative type

Other, please specify	Other, please specify (Equipment replacement - to use high efficiency electrical motors)

Estimated annual CO2e savings (metric tonnes CO2e)
290

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
24000

Investment required (unit currency – as specified in C0.4)
32000

Payback period
1-3 years

Estimated lifetime of the initiative
6-10 years

Comment
We often explore for opportunities to improve efficiency, including with replacing equipment, such as motors, with higher efficiency units. This example shows the benefits to equip three chillers in our Ningbo site with high efficiency electrical motors resulting in a quick pay back period. Chillers typically run continually so optimizing them presents cost-savings opportunities.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Internal price on carbon	Within Nouryon a price of EUR 50 per ton CO2e is considered with all investment projects over 5 M Euro. Next to a base case internal rate of return without carbon, an IRR including carbon pricing is included in the appropriation requests to assess sensitivity of the investment to potential carbon pricing and enhance awareness of the future economic impact of carbon pricing in investment decisions. This assessment is used by those providing project data based on historic practice, and we are looking to further integrate this into the investment decision process in the future. The assessment covers Scope 1, 2 and 3 upstream. Nouryon does not include scope 3 downstream in this portion currently, because we want the carbon pricing model to align with the investment. We look at our costs; e.g. our raw material use, our energy use etc. and therefore we cover our CO2 impact within the same system boundaries. When Nouryon discusses carbon pricing in investment decisions, we usually have a time frame of around 15 years before the equipment of a new plant has to be replaced, and a likely 40 years of operation.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?
Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation
Group of products

Description of product/Group of products
Many of our products enable GHG emissions to be avoided. Some examples are chemicals used in LED lighting or asphalt additives to work on lower temperatures. 25% of our revenue was from these leading Eco-premium solutions (EPS) which avoid GHG emissions for our customers compared to the mainstream solution. In addition to these products which provide customer benefits ahead of the competition, mainly of our products avoid emissions to the same extend as competitive products.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Life Cycle Assessments)

% revenue from low carbon product(s) in the reporting year
25

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
25% of our total revenue are sales of low carbon products to our customers being 1,166 EUR mln out of 4,700 EUR mln.

Level of aggregation
Group of products

Description of product/Group of products
We have used the main drivers for our carbon footprint reduction as indicators for low carbon products like renewable energy, renewable raw materials or energy efficient production processes. Examples of low carbon products are chemicals produced with renewable energy, chemicals produced from renewable raw materials or products produced in more energy-efficient production processes compared to mainstream.

Are these low-carbon product(s) or do they enable avoided emissions?
Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Main Carbon footprint reduction drivers and Life Cycle Assessments)

% revenue from low carbon product(s) in the reporting year
24

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
"Low carbon " (indicators used to measure low carbon) is a strong driver in R&D projects and stage gate processes – so this is the product development direction and not an add-on activity. Costs are integrated in R&D costs. "Low carbon" related opportunities are one of several beneficiary properties. Costs due to this cannot be separated from total R&D costs. 24% of our total revenue are sales of low carbon products to our customers being EUR1,105 mln out of EUR 4,700 mln.

Level of aggregation
Group of products

Description of product/Group of products
Combination of Low-Carbon products and products avoiding emissions.

Are these low-carbon product(s) or do they enable avoided emissions?
Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Main Carbon footprint reduction drivers and Life Cycle Assessments)

% revenue from low carbon product(s) in the reporting year
19

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
Many product groups within Nouryon are Low Carbon and avoiding emissions as well.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
1185000

Comment
The base year number includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam.

Scope 2 (location-based)

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)

Comment
No location based scope 2 emissions.

Scope 2 (market-based)

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
1772000

Comment
The base year number includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Scope 2 Guidance

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
1182000

Start date
January 1 2020

End date
December 31 2020

Comment
The base year number includes emissions from our own operations.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)
1185000

Start date
January 1 2019

End date
December 31 2019

Comment
The base year number includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam.

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)
1408000

Start date
January 1 2018

End date
December 31 2018

Comment
2018 includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are not reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
All scope 2 emissions are based on the local electricity grid which is mostly known per site location. Possible purchased RECs or OGs are included in the final CO2 reporting. The base year number includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
<Not Applicable>

Scope 2, market-based (if applicable)
1739000

Start date
January 1 2020

End date
December 31 2020

Comment
The base year number includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam.

Past year 1

Scope 2, location-based
<Not Applicable>

Scope 2, market-based (if applicable)
1772000

Start date
January 1 2019

End date
December 31 2019

Comment
The base year number includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam.

Past year 2

Scope 2, location-based
<Not Applicable>

Scope 2, market-based (if applicable)
1581000

Start date
January 1 2018

End date
December 31 2018

Comment
2018 includes emissions from our own operations. In 2020, the Elotex business belonging to Performance Formulations was divested as of Q3 2020, the Huber CMC site Änäkoski in Finland was acquired as of Q3 2020 as well as and the inclusion of MCA Delfzijl and DME Rotterdam.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
2112000

Emissions calculation methodology
Emissions related to the purchase of raw materials are calculated based on total raw material volumes purchased ('Invoiced Quantity') from 3d parties coming from SAP Atlas BW and specific product carbon footprint data for the raw materials coming from our LCA software Sphera GaBi containing primary environmental impact data for each raw material. Extraction and production of raw materials are included, not transport. Data from SAP Atlas BW is evaluated and validated to make sure it only covers raw materials and that apparent errors are corrected. The raw material specific product carbon footprints that are used to calculate 'scope 3 up raw material emissions' either come from relevant standard datasets from LCA databases like Ecoinvent (in our Sphera GaBi sofware), are based on supplier specific data or are based on own models. For the top 20 raw materials (in total carbon footprint impact) an evaluation was performed to judge whether information from databases was accurate enough. For several of these raw materials more specific models were developed to take into account i.e. production technology, region/energy mix or raw material source. In data sets taken from external databases all six Kyoto gases are included. Some supplier specific data or own developed models may only cover the emissions of CO2.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
25

Please explain
A couple of raw material data sets are primary data from our suppliers and we estimate that these data sets cover 25% of all our raw material data sets in our Master database used for year end reporting. We are and have been in contact with suppliers to exchange LCA data for raw materials during more than 15 years including the period we were owned by AkzoNobel. We have several on-going discussions about data exchange with suppliers.

Capital goods

Evaluation status
Relevant, not yet calculated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We need to calculate this using default factors from WBCSD Chemical Sector Working Group guidelines are combined with monetary spending in Nouryon.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Metric tonnes CO2e
190000

Emissions calculation methodology
Suppliers´ energy-related activities are included in Scope 3 upstream. From the last three years, we know that the % fuel and energy related part of scope 3 upstream is 9%. The average number is based on LCAs we made for our Key Value Chains comprising 90% of our product volume. A Key Value Chain represents a group of products made via a similar technology and contains regional aspect like the local energy sources like electricity grid. The scope 3 upstream part of the Cradle to Grave footprints contains information about fuel and energy related activities needed to manufacture the raw materials we use. The raw material specific product carbon footprints that are used to calculate 'scope 3 up raw material emissions' either come from relevant standard datasets from LCA databases like Ecoinvent (in our Sphera GaBi sofware), are based on supplier specific data or are based on own models.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
9

Please explain
Nouryon Carbon reporting standard. Primary data is used for transportation of some key raw materials, estimated to 9%.

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
42240

Emissions calculation methodology
Transportation of raw materials to our production sites are not included in our current Scope 3 upstream. From the last three years, we know that the % fuel and energy related part of scope 3 upstream is 2%. The average number is based on LCAs we made for our Key Value Chains comprising 90% of our product volume. A Key Value Chain represents a group of products made via a similar technology and contains regional aspect like the local energy sources like electricity grid. The scope 3 upstream part of the Cradle to Grave footprints contains information about transport related activities needed to manufacture the raw materials we use. The raw material specific product carbon footprints that are used to calculate 'scope 3 up raw material emissions' either come from relevant standard datasets from LCA databases like Ecoinvent (in our Sphera GaBi sofware), are based on supplier specific data or are based on own models.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
2

Please explain
Nouryon Carbon reporting standard. Primary data is used for transportation of some key raw materials, estimated to 2% of our Scope 3 upstream.

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
211200

Emissions calculation methodology
Reported per manufacturing site in Nouron HSE Accounting System Enablon and included in the models in GaBi. This data is included in our scope 3 up carbon footprint as assumed that these emissions are at our suppliers. The average number is based on LCAs we made for our Key Value Chains comprising 90% of our product volume. A Key Value Chain represents a group of products made via a similar technology and contains regional aspect like the local energy sources like electricity grid. The scope 1 and 2 part of the Cradle to Grave footprints contains information about processing of generated waste like waste water treatment needed to manufacture the raw materials we use. The raw material specific product carbon footprints that are used to calculate 'scope 1 and 2' either come from relevant standard datasets from LCA databases like Ecoinvent (in our Sphera GaBi sofware) and are based on our CO2 reporting in our Enablon system.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
10

Please explain
Nouryon Carbon reporting standard. Primary data is used for some waste treatment facilities, estimated to 10% of scope 3 up.

Business travel

Evaluation status
Relevant, not yet calculated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
During this COVID-19 year, business travel was much lower compared to 2019. Not enough information available for the calculation.

Employee commuting

Evaluation status
Relevant, not yet calculated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
During this COVID-19 year, business travel was much lower compared to 2019. Not enough information available for the calculation.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We are not aware of any leased production facilities. Emissions from leased company cars could be reported in the category Business travel. Warehouses or machinery are expected to cause only minor emissions, which is why this category was estimated to be approx. 0.01 million tonnes CO2e.

Downstream transportation and distribution

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
42240

Emissions calculation methodology
Transportation of products to our customers. From from the last three years, we know that this component is about 2% of scope 3 up (although belonging to scope 3 down). Not in our scope 3 emissions. The average number is based on LCAs we made for our Key Value Chains comprising 90% of our product volume. A Key Value Chain represents a group of products made via a similar technology and contains regional aspect like the local energy sources like electricity grid. The scope 3 downstream part of the Cradle to Grave footprints contains information about transport related activities needed to manufacture the raw materials we use. The raw material specific product carbon footprints that are used to calculate 'scope 3 up raw material emissions' either come from relevant standard datasets from LCA databases like Ecoinvent (in our Sphera GaBi sofware), are based on supplier specific data or are based on own models.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
2

Please explain
Nouryon carbon reporting standard. Primary data is used for transportation of some products, estimated to 2% of scope 3 up.

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
GHG emissions due to processing of sold products is not part of our scope. Many of our products are avoiding carbon emissions if applied by our customers.

Use of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
By use of sold products we mean the carbon footprint of the activities, which take place at our customers, which are directly related to Nouryon's products. In other words process steps which are required to apply the Nouryon products at our customers. Most chemical products are intermediates and can be directly applied in the process of our customers without any additional process steps.

End of life treatment of sold products

Evaluation status
Relevant, not yet calculated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
The waste treatment of the used products, e.g. incineration and the fossil carbon in the products will be emitted as CO2, thus contributing to the end-of-life impact. The biogenic carbon in the products will be reported separately as CO2 biogenic emissions. For intermediates without a downstream scenario, end-of-life is calculated based on carbon content in the molecules and a worst case scenario that all fossil carbon will be emitted as carbon dioxide within 100 years. We have the information available per product group but is not disclosed in 2020. End of life footprints "scope 3 down" footprints come from relevant standard datasets from LCA databases like Ecoinvent (in our Sphera GaBi sofware), are based on supplier specific data or are based on own models.

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We need to identify whether Nouryon as downstream leased assets which could be warehouses. Nouryon has no leased assets like retail stores. Therefore, we estimate these emissions to be zero (0).

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Nouryon has no franchises like retail stores or using franchise systems. Therefore, we estimate these emissions to be zero (0).

Investments

Evaluation status
Relevant, not yet calculated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Non-consolidated joint ventures were assessed based on their expected Scope 1 and 2 emissions but are not reported in case of 50% JVs or lower.

Other (upstream)

Evaluation status

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

Other (downstream)

Evaluation status

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.00062

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
2921000

Metric denominator
unit total revenue

Metric denominator: Unit total
4700000000

Scope 2 figure used
Market-based

% change from previous year
7

Direction of change
Decreased

Reason for change
The intensity number for 2019 was 0.00058 based on 5,082 billion EUR and 2,957 kton CO2 scope 1 and 2. The intensity number for 2020 was 0.00062 based on 4,700 billion EUR and 2,921,000 ton CO2 scope 1 and 2. The emissions in 2020 were slightly lower compared to 2019 (minus 1.2%) as a result of combined effects of implemented process efficiency improvements, portfolio effects and changes in production volume. Our revenue was 13% lower. Our emission reduction activities is included in C4.3b.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
No

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	152788
Brazil	13302
Mexico	3967
Canada	28
Argentina	20100
Japan	718
China	52435
Singapore	540
Taiwan, Greater China	971
Finland	0
Italy	1779
Sweden	148025
Netherlands	678044
Germany	47133
India	100
Belgium	19628
Norway	0
Switzerland	1115
Denmark	44608
Spain	0

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.
By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Nobian (Industrial Chemicals)	713368
Performance Formulations Business	306911
Technology Solutions Business	165002

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	1182000	<Not Applicable>	All production activities world wide.
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United States of America	0	395714	1334000	740000
Brazil	0	767	1737800	1735500
Mexico	0	11709	23400	4400
Canada	0	873	591000	590600
Argentina	0	6076	16100	5700
Japan	0	1969	4700	2100
China	0	324950	567000	21600
Singapore	0	852	1533	0
Taiwan, Greater China	0	1420	2250	550
Finland	0	6588	345700	338800
Italy	0	4906	8800	3580
Sweden	0	740	1034000	1033800
France	0	7510	275360	264000
Netherlands	0	309818	2508000	1770000
Germany	0	671323	851000	95000
India	0	1730	2300	450
Belgium	0	0	27000	27000
Norway	0	0	57400	57400
Switzerland	0	0	1250	1250
Denmark	0	0	27400	27400
Spain	0	114	360	200

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.
By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Nobian (Industrial Chemicals)	0	943006
Performance Formulations Business	0	348374
Technology Solutions Business	0	455679

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	0	1739000	For all production activities.
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Ammonia	7.97	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.
Aromatics extraction	1.79	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.
Ethanol	1.09	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.
High Value Chemicals (Steam cracking)	19.89	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.
Methanol	5.34	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.
Other base chemicals	43.24	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.
Polymers	0.55	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.
Solid biomass	0.36	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.
Specialty chemicals	12.12	Emission factors for raw materials were derived from GaBi (a life cycle inventory database that was used to generate emissions factors (e.g. kg CO2e / kg material)). Material quantities were then multiplied by these factors to generate CO2e. The percentage was derived by analyzing each feedstock's impact to the total calculated CO2e.

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	14000	Sales in 2020 to a third party from our Ethylene Oxide plants.
Methane (CH4)	0	
Nitrous oxide (N2O)	0	
Hydrofluorocarbons (HFC)	0	
Perfluorocarbons (PFC)	0	
Sulphur hexafluoride (SF6)	0	
Nitrogen trifluoride (NF3)	0	

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	All manufacturing units report their fuel and electricity consumption in our Enablon HSE system quarterly. Data on use and purchase of renewable energy is available. In 2017 the total share of low-carbon and renewable energy did not increase and stayed on 56% in 2020 compared to 2019. So, zero change compared to 2019 makes 0 divided by scope 1+2 2019 being 2,957,000 ton is 0%.
Other emissions reduction activities	17747	Decreased	0.6	This number includes the effects from all energy efficiency projects at our sites. Also mentioned at chapter 4.3a. So 17,747 ton change compared to 2019 makes 17,747 ton divided by scope 1+2 2019 being 2,957,000 ton is 0.6%.
Divestment	6030	Decreased	0.2	As of Q2 2020 our Elotex business was divested. Elotex consists of 4 production locations and a R&D center. So, 6,030 ton change compared to 2019 makes 6,030 ton divided by scope 1+2 2019 being 2,957,000 ton is 0.2%.
Acquisitions	5757	Increased	0.2	As of Q3 2020 the former Huber CMC plant in Äänekoski was acquired. So, 5,757 ton change compared to 2019 makes 5,757 ton divided by scope 1+2 2019 being 2,957,000 ton is 0.2%.
Mergers	0	No change	0	Nouryon did not have any mergers in 2020. So, zero change compared to 2019 makes 0 divided by scope 1+2 2019 being 2,957,000 ton is 0%
Change in output	41900	Decreased	1.4	All manufacturing units in Nouryon report in the corporate Enablon HSE system quarterly. This allows us to do detailed analysis. Although overall production decreased, there was no significant change in production of the energy intensive units, which is confirmed by a stable overall energy use. The 2020 expected CO2 emission due to production change was determined by calculating the specific CO2 emission per ton of products in 2019 multiplied by the production in 2020. The difference between the 2020 emission due to growth and 2019 emissions gives the CO2 change due to change in output. So, 2,957,000 tons CO2 in 2019 divided by 13,834,000 tons of product in 2019 times 13,638,000 tons CO2 in 2020 gives 2,915,105 tons CO2 in 2020 due to growth. The change in output is the 2020 tons CO2 being 2,915,105 mins the CO2 emissions in 2019 is 41,900 ton decrease. Divided 41,900 tons decrease by the CO2 emissions in 2019 so 41,900 tons CO2 divided by 2,957,00 tons gives a decrease of 1.4%.
Change in methodology	0	No change	0	No change in methodology
Change in boundary	0	No change	0	No change in boundary
Change in physical operating conditions	0	No change	0	No change in physical operation conditions
Unidentified	0	No change	0	No unidentified effects
Other	23920	Increased	0	This is the effect of production portfolio changes compared to 2019. We made more carbon intensive products. This is calculated by subtracting the decrease of 36 kton in 2020 compared to 2019 by all other effects: Portfolio effects is -36 kton minus effect of mergers and acquisitions, production delta, improvements: -36 + 6.03 - 5.757 + 41.9 + 17.747 = 23.9 kton .

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?
More than 10% but less than or equal to 15%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	141700	5563400	5705000
Consumption of purchased or acquired electricity	<Not Applicable>	4261000	2725500	6987000
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	1384100	216800	1601000
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	3702500	<Not Applicable>	3702500
Total energy consumption	<Not Applicable>	9500000	8500000	18100000

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	5705000
Consumption of purchased or acquired electricity	<Not Applicable>	6987000
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	1601000
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	3702500
Total energy consumption	<Not Applicable>	14292500

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Natural Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
5427000

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
3460900

MWh fuel consumed for self-generation of steam
108500

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
1858000

Emission factor
0.18

Unit
kg CO2 per MWh

Emissions factor source
GHG Protocol - Emission Factors from Cross-Sector Tools 1.0 (2009); http://www.ghgprotocol.org/calculation-tools/all-tools

Comment

Fuels (excluding feedstocks)
Solid Biomass Waste

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
141700

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
141700

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
0

Unit
kg CO2 per MWh

Emissions factor source
GHG Protocol - Emission Factors from Cross-Sector Tools 1.0 (2009); http://www.ghgprotocol.org/calculation-tools/all-tools

Comment

Fuels (excluding feedstocks)
Fuel Oil Number 1

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
55200

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
55200

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
0.25

Unit
kg CO2 per MWh

Emissions factor source
GHG Protocol - Emission Factors from Cross-Sector Tools 1.0 (2009); http://www.ghgprotocol.org/calculation-tools/all-tools

Comment

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
81100

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
81100

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
0.21

Unit
kg CO2 per MWh

Emissions factor source
GHG Protocol - Emission Factors from Cross-Sector Tools 1.0 (2009); http://www.ghgprotocol.org/calculation-tools/all-tools

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	898900	898900	0	0
Heat	2039200	2039200	0	0
Steam	1941600	764400	127500	127500
Cooling	0	0	0	0

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity	898900	898900
Heat	2039200	2039200
Steam	1941600	764400
Cooling	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
United States of America

MWh consumed accounted for at a zero emission factor
570

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Nuclear

Country/area of consumption of low-carbon electricity, heat, steam or cooling
United States of America

MWh consumed accounted for at a zero emission factor
381600

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
United States of America

MWh consumed accounted for at a zero emission factor
357950

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Brazil

MWh consumed accounted for at a zero emission factor
1372000

Comment

Sourcing method
Heat/steam/cooling supply agreement

Low-carbon technology type
Other, please specify (Steam supplied by residential waste incineration plants)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Netherlands

MWh consumed accounted for at a zero emission factor
766200

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Canada

MWh consumed accounted for at a zero emission factor
584055

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
China

MWh consumed accounted for at a zero emission factor
17860

Comment

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Finland

MWh consumed accounted for at a zero emission factor
210100

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Sweden

MWh consumed accounted for at a zero emission factor
946500

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Netherlands

MWh consumed accounted for at a zero emission factor
392000

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Norway

MWh consumed accounted for at a zero emission factor
57400

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Denmark

MWh consumed accounted for at a zero emission factor
27500

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Nuclear

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Finland

MWh consumed accounted for at a zero emission factor
9800

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Nuclear

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Sweden

MWh consumed accounted for at a zero emission factor
24200

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Nuclear

Country/area of consumption of low-carbon electricity, heat, steam or cooling
France

MWh consumed accounted for at a zero emission factor
184000

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Nuclear

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Germany

MWh consumed accounted for at a zero emission factor
84000

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Mexico

MWh consumed accounted for at a zero emission factor
5300

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Finland

MWh consumed accounted for at a zero emission factor
4200

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Netherlands

MWh consumed accounted for at a zero emission factor
138200

Comment

Sourcing method
Heat/steam/cooling supply agreement

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Finland

MWh consumed accounted for at a zero emission factor

115000

Comment

Sourcing method
Heat/steam/cooling supply agreement

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Sweden

MWh consumed accounted for at a zero emission factor
63000

Comment

Sourcing method
Heat/steam/cooling supply agreement

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Netherlands

MWh consumed accounted for at a zero emission factor
473000

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Belgium

MWh consumed accounted for at a zero emission factor
27000

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Combined renewable: Solar / Wind / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
France

MWh consumed accounted for at a zero emission factor
80400

Comment

Sourcing method
Heat/steam/cooling supply agreement

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Brazil

MWh consumed accounted for at a zero emission factor
349000

Comment

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?
Yes

C-CH8.3a

(C-CH8.3a) Disclose details on your organization's consumption of fuels as feedstocks for chemical production activities.

Fuels used as feedstocks
Natural gas

Total consumption
47618

Total consumption unit
thousand cubic metres

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit
1.89

Heating value of feedstock, MWh per consumption unit
9.3

Heating value
LHV

Comment
Natural gas is used as feed stock for manufacturing of CS2 and HCN as well as Hydrogen by steam reforming.

C-CH8.3b

(C-CH8.3b) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

	Percentage of total chemical feedstock (%)
Oil	0
Natural Gas	100
Coal	0
Biomass	0
Waste (non-biomass)	0
Fossil fuel (where coal, gas, oil cannot be distinguished)	0
Unknown source or unable to disaggregate	0

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product
Specialty chemicals

Production (metric tons)
13638450

Capacity (metric tons)
14400000

Direct emissions intensity (metric tons CO2e per metric ton of product)
0.0869

Electricity intensity (MWh per metric ton of product)
0.513

Steam intensity (MWh per metric ton of product)
0.117

Steam/ heat recovered (MWh per metric ton of product)
0

Comment
On average our plants are operating on 95% of their capacity. This was the basis for calculation the overall capacity of the company. So the capacity is 13,638,450 divided by 95% gives 14,400,000 tons of capacity.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	No	

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Nouryon_Independent Assurance Statement_SIGNED.pdf

Page/ section reference
Attached is Nouryon's ERM Assurance report which is an independent audit company. Please refer to Pages 1 – 2 of the attached Assurance Statement. Additionally, Nouryon's Sustainability Report has been attached which identifies our Environmental data sheet and metrics. Please reference Page 44.

Relevant standard
ERM GHG Performance Data Assurance Methodology

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Nouryon_Independent Assurance Statement_SIGNED.pdf

Page/ section reference
Attached is Nouryon's ERM Assurance report which is an independent audit company. Please refer to Pages 1 – 2 of the attached Assurance Statement. Additionally, Nouryon's Sustainability Report has been attached which identifies our Environmental data sheet and metrics. Please reference Page 44.

Relevant standard
ERM GHG Performance Data Assurance Methodology

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3 (upstream)

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Nouryon_Independent Assurance Statement_SIGNED.pdf

Page/section reference
Attached is Nouryon's ERM Assurance report which is an independent audit company. Please refer to Pages 1 – 2 of the attached Assurance Statement. Additionally, Nouryon's Sustainability Report has been attached which identifies our Environmental data sheet and metrics. Please reference Page 44.

Relevant standard
ERM GHG Performance Data Assurance Methodology

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Energy consumption	ERM CVS' assurance methodology, based on the International Standard on Assurance Engagements ISAE 3000 (Revised)	Next to GHG emission, also energy consumption in GJ and energy intensity in GJ/ton of production was checked. Nouryon_Independent Assurance Statement_SIGNED.pdf
C8. Energy	Renewable energy products	ERM CVS' assurance methodology, based on the International Standard on Assurance Engagements ISAE 3000 (Revised)	Low-Carbon and Renewable energy (as % of total energy use) were checked. Nouryon_Independent Assurance Statement_SIGNED.pdf
C7. Emissions breakdown	Other, please specify (Reported emission per production facility)	ERM CVS' assurance methodology, based on the International Standard on Assurance Engagements ISAE 3000 (Revised)	Virtual site visits to Rotterdam (the Netherlands), Ningbo (China), Stenungsund (Sweden), and Jundiai (Brazil) to review local reporting processes and consistency of reported annual data with selected underlying source data for each indicator. Relevant staff was interviewed, site data reporting methods were reviewed, calculations were checked and the local internal quality and assurance processes were assessed; • An analytical review of the data from all sites and a check on the completeness and accuracy of the corporate data consolidation; and • Year-end assurance activities at corporate level including the results of internal review procedures and the accuracy of the consolidation of the data for the selected indicators. Nouryon_Independent Assurance Statement_SIGNED.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?
Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.
EU ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS
69

% of Scope 2 emissions covered by the ETS
0

Period start date
January 1 2020

Period end date
December 31 2020

Allowances allocated
1050787

Allowances purchased
1413

Verified Scope 1 emissions in metric tons CO2e
819471

Verified Scope 2 emissions in metric tons CO2e
0

Details of ownership
Facilities we own and operate

Comment
Scope 1 emissions covered by Emission Trading Schemes or carbon taxes are related to energy generation. Allowances allocated and purchased in tons CO2.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

The EU ETS is an important level of the EU's policy to combat climate change and its key tool for cost efficiently reducing of greenhouse gas emissions.

As one of the world's major carbon market, it is based on a 'cap and trade' principle. A cap is set on the total amount of certain greenhouse gases that can be emitted by the installations covered by the system and is is reduced over time. Within the cap, installations buy or receive emissions allowances, which they can trade with one another as needed. The limit on the total number of allowances available ensures that they have a value.

After each year, an installation must surrender enough allowances to cover fully its emissions. If an installation reduces its emissions, it can keep the spare allowances to cover its future needs or sell them to another installation that is short of allowances.

Trading brings flexibility and encourages low-cost emission reductions. A robust carbon price also promotes investment in innovative, low-carbon technologies.

Nouryon complies with the EU ETS through multiple ways. We focus on improving energy efficiency in our production processes, take CO2 costs into account in our dispatch decisions and actively participate in the EU ETS market. Our European energy intensive sites are all on ETS - Delfzijl, Hengelo, Rotterdam, Mariager, Stenungsund, Stockvik, Mons and Cologne. We use a robust HSE reporting software system Enablon in reporting CO2 emissions per quarter based on fuel and electricity. Reporting is validated and reviewed by members of the corporate sustainability and HSE governance teams. Reporting CO2 is a formal part of our HSE management system and for internal compliance, internal audits are conducted on every site at least once every 3 years. These audits include emissions data and reporting. Internal audit provides an independent, objective means to evaluate and improve the effectiveness of governance, risk management, and internal controls. We also completed an external limited assurance of our energy and emissions data that assessed the reporting of 2020 data in accordance with the principles of completeness, comparability (across the organisation) and accuracy (including calculations, use of appropriate conversion factors and consolidation). See Chapter 10 for more information.

Through our European trade association CEFIC, we engage in policy development, for example with the revision of the EUR Directive for 'phase 4 EU ETS'. We are also closely monitoring the developments on carbon tax and emission trading schemes (ETS) in China, i.e. through participation in the national associations AICM and CPCIF. In 2016 Nouryon (former Chemical Specialties part of AkzoNobel) made an analysis of how a Chinese emission trading scheme (ETS) could impact the Specialty Chemicals businesses and sites. The sites that are located in provinces that participate in the formal test period do already monitor and report their emissions.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Stress test investments

GHG Scope

Scope 1
Scope 2
Scope 3

Application

We aim to achieve our emissions reduction target through a wide range of actions, with a focus on energy efficiency measures and increasing our renewable energy usage. Within Nouryon a price of EUR 50 per ton CO2e is considered with all investment projects over 5 M Euro. Next to a base case internal rate of return without carbon, an IRR including carbon pricing is included in the appropriation requests to assess sensitivity of the investment to potential carbon pricing and enhance awareness of the future economic impact of carbon pricing in investment decisions. This assessment is used by those providing project data based on historic practice, and we are looking to further integrate this into the investment decision process.

Actual price(s) used (Currency /metric ton)

50

Variance of price(s) used

Nouryon is a new company and have adapted using carbon price model from their parental company AkzoNobel for all investments above EUR 5 million using an initial carbon price of EUR 50 per ton. The result of an Internal Rate of Return including a carbon cost is included in the Application Request. Next to a base case internal rate of return, an IRR including carbon pricing is included in the appropriation requests to assess sensitivity of the investment to potential carbon pricing.

Type of internal carbon price

Shadow price

Impact & implication

Nouryon is using a carbon price models for investments. We implemented a carbon pricing procedure of 50 EUR/ton CO2e. For all investments above 5 MEuro, Carbon pricing is applied for sensitivity analysis and decision making. The result of an Internal Rate of Return including a carbon cost is included in the Application Request. Next to a base case internal rate of return, an IRR including carbon pricing is included in the appropriation requests to assess sensitivity of the investment to potential carbon pricing.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Run an engagement campaign to educate suppliers about climate change

% of suppliers by number
23

% total procurement spend (direct and indirect)
95

% of supplier-related Scope 3 emissions as reported in C6.5
0

Rationale for the coverage of your engagement
Our key supplier management process focuses on suppliers with whom we have: - Contractual relationships - Opportunities for meaningful value creation - Partnerships or joint innovation projects or who have a material impact on our upstream carbon footprint. In 2021, the number of suppliers in this group increased from 80% to 95% of our spend covering 3,600 suppliers out of our total of 16,000.

Impact of engagement, including measures of success
We engage with Key suppliers via the Ecovadis platform to perform sustainability assessments and also via IQ Ecovadis in order conduct risk assessments of our suppliers. One of the high-priority areas Ecovadis evaluates is company policies having objectives and targets, including for example climate. Suppliers scoring 45 or lower may be required to provide improvement plans to demonstrate continuous improvement. Suppliers declining to make a self-assessment will be informed that such refusal will be considered as part of supplier selection decisions. Suppliers scoring 45 or lower or with no score who are assessed as high risk and either critical or strategic in IQ will be required to improve within 12 months. Such suppliers failing to show improvement will be placed in the 'Phase Out' segment of Nouryon's supplier segmentation and Nouryon will reduce business as far as is consistent with business objectives including where possible exit from the supplier. In another example, for logistic suppliers in Europe, we only do business with transporters using low emissions diesel engines or companies using low emissions ships.

Comment
We work with our suppliers to create a sustainable supply base and deliver customer benefits. Our Sustainable Supply program continues to evolve. Sustainable procurement is not only about managing risks but also to reduce costs and increase revenue. We have a Supplier Sustainability Framework via Ecovadis and IQ Ecovadis in place. We also use a Business Partner Code of Conduct which informs our business partners what we expect of them with regard to our Core Principles and Values. We will start with engaging with our suppliers on supplier related Scope 3 emissions.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Nouryon provides solutions that are essential in applications ranging from pharmaceuticals and farming to electric cars and building insulation. Our goal is to deliver not just the desired functionality but improved sustainability performance as well. We work together with customers, suppliers, universities, and other partners to develop innovative and sustainable solutions that have smaller footprints or enable our customers to be more sustainable. These include a growing share of bio-based and biodegradable products. Our solutions help increase crop yields and improve crop quality; make products more biodegradable and easier to recycle; make buildings and vehicles more energy efficient; and increase the durability of bridges and wind turbines. Our Eco-Premium Solutions are products that offer significant sustainability benefits over mainstream alternatives in the market while providing the same or better functionality. These benefits can apply to several specific criteria (e.g. toxicity, energy use, use of natural resources, emissions and waste, land use, risks, health). When making comparisons, we ensure that our solution does not have adverse effects on any of the other criteria. We believe that a sustainable future also means being a safe and reliable partner for customers, employees, business partners, and communities, and we ask all our suppliers to work with us on this topic.

For example, in 2021, we were excited to have our partner announce our industrial scaling plans of the SPINNOVA® fibre, together with the world's largest pulp producer Suzano. The SPINNOVA® fibre – created out of wood and waste results in considerably less water use and CO2 emissions than the cotton alternative and is planned to available to global textile brands in 2022.

Suppliers play a critical role in the sustainable and safe delivery of Nouryon's high-quality products and services, and supplier engagement has been identified as a key sustainability topic in our materiality assessment. We have defined our way on how we will source responsibility at Nouryon, and how we will measure and improve the sustainability of suppliers to continue to achieve our sustainability objectives and deliver value to our customers. All externally sourced goods and services and all external suppliers within the scope of procurement.

Nouryon only does business with suppliers sharing and supporting our standards. Our suppliers are required to comply with our Business Partner Code of Conduct, which sets out expectations for suppliers regarding:

• Compliance with laws and regulations

• Safety

• Standards for ethical and responsible business conduct

• Treatment of people and fundamental human rights

• Exclusion of conflict minerals

• Fraud prevention

This requirement is included in all new contracts and in all purchases order terms and conditions.

We assess the top 34% of our suppliers (compared to 26% in 2019) in terms of spend on raw materials, energy, and logistics using the EcoVadis CSR platform on their sustainability performance of these suppliers based on their policies, actions, and

results. The EcoVadis assessment covers topics related to environmental, ethics, labor practices, and human rights, as well as sustainable procurement.

CSR risk is assessed using the EcoVadis IQ tool. Suppliers comprising 95% of our external spend are assessed for criticality to Nouryon's business, country risk, industry risk and segment EcoVadis scores. The criticality and risk assessment is used to prioritize our supplier assessments and our dialog with suppliers for improvement of CSR performance.

The scope of supplier sustainability assessment is all external suppliers within the scope of procurement, including all supplier segments and spend areas. Actions are prioritized based on criticality and risk measured in the EcoVadis IQ tool.

Nouryon will measure and track the Sustainability performance of suppliers by means of the EcoVadis assessment with the goal to measure the quality of the supplier's sustainability system through its policies, actions, and results.

All suppliers having an EcoVadis score are invited to share the result and all other suppliers are invited to make a self-assessment to obtain a score. All results will be tracked in the EcoVadis dashboard.

Suppliers scoring 45 or lower may be required to provide improvement plans to demonstrate continuous improvement. Suppliers declining to make a self-assessment will be informed that such refusal will be considered as part of supplier selection decisions. If they are assessed as high risk and either critical or strategic in IQ improvement is required within 12 months. Suppliers failing to show improvement will be placed in the 'Phase Out' segment of Nouryon's supplier segmentation and business will be reduced as far as is consistent with business objectives including where possible exit from the supplier.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations
Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Clean energy generation	Support	Directly and through our engagement in several associations in the EU, the Netherlands and Sweden, we have engaged with policy makers on creating the right conditions and policy approach for green hydrogen and on implementing legislation for the EU Renewable Energy Directive (RED II).	Proposed language to reinforce the position of green hydrogen over blue hydrogen, on certificates of origin, and on grid access.
Clean energy generation	Support	Directly and through our engagement in several associations in the EU and the Netherlands, we have also engaged with policy makers on creating the right conditions and policy approach, for example with implementing legislation for the EU Energy Efficiency Directive (EED) and on innovation funding for more efficient technologies.	Proposed language on improved energy-efficiency performance of buildings. Non-legislative advocacy to make more EU innovation funding available for breakthrough technologies.
Cap and trade	Support	In China, we are actively engaged in the advocacy efforts of industry and trade associations related to the ongoing development of Chinese legislation on a cap-and-trade system for carbon emissions.	We have shared with the Chinese policy makers our insights and experience with cap and trade schemes elsewhere in the world (in particular in Europe) in reducing CO2 emissions.
Other, please specify (Carbon reduction)	Support	In Sweden we are actively engaging with authorities to seek financial support to replace our current gas installation by hydrogen electrolyzers in two of our plants. In the Netherlands we have engaged in the lobby of a consortium to have the first inland ship fueled by hydrogen power, as part of greening our logistics chain.	Non-legislative.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association
The Association of the Dutch Chemical Industry VNCI

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
VNCI is an active participant in the negotiations Dutch Climate Agreement to reduce carbon emission with 49% by 2030, promoting carbon reduction, low carbon hydrogen, energy efficiency, carbon capture and storage, while maintaining industrial competitiveness (e.g. a level playing field for energy cost). Nouryon actively participated in this.

How have you influenced, or are you attempting to influence their position?
Yes, by participating in working groups an via our membership of the board. Our Senior Vice President, Transformation and Strategy Performance Formulations is board member of the VNCI. By participating in working groups and via the board, Nouryon has actively advocated for and achieved a more pro-active approach of VNCI on energy-efficiency as well as renewable energy like bio-steam. We also led efforts to make better use of residual heat of industry for heating the buildings in neighboring residential areas.

Trade association
European Federation of the Chemical Industry Cefic.

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
The European chemical industry federation (Cefic) and its members supports the Paris Climate Agreement and a strong action on climate change in line with the scientific advice provided by the Intergovernmental Panel on Climate Change (IPCC). Cefic also supports the European Green Deal and Europe's ambition to become climate neutral by 2050. Reaching this goal will only be possible with the help of climate-neutral and circular economy solutions developed by our industry. We want to see Europe become a global innovation hub and a hotspot for investments into breakthrough climate-neutral and circular technologies Our President, Technology Solutions (Board member) is member of the executive committee of Cefic.

How have you influenced, or are you attempting to influence their position?
We actively participate in Cefic bodies to influence their position, in particular on energy & climate (energy-efficiency, green hydrogen), and on the EU Chemicals Strategy for Sustainability, by bringing in our views and experiences and promoting a pro-active focus of Cefic on innovation as a key means to drive climate change while remaining competitive. We also stepped up our engagement by taking over the Chairman position of the Cefic Advocacy Forum.

Trade association
American Chemistry Council (ACC)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
The American Chemistry Council (ACC) and its members believe chemistry plays an integral role in solving our world's sustainability challenges. ACC is therefore committed to advancing safe, innovative, effective, and economically viable chemical products and technologies that are key to unlocking sustainability solutions. Our executive Vice President and President of Performance Formulations and Americas acts as Board member of the American Chemistry Council.

How have you influenced, or are you attempting to influence their position?
We have been involved and have been actively stimulating ACC's efforts to develop key metrics on sustainability over the last two years, and are participating in the pilot phase. We also have been strong supporters of the development of the ACC sustainability principles. As a member of the American Chemistry Council (ACC), we are committed to upholding the highest standards of protecting health, safety, and the environment. We support ACC's commitment to improved environmental, health, and safety performance through the globally recognized Responsible Care® initiative and ACC's sustainability principles.

Trade association
European Chlorine Producers' Association Euro Chlor

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
Euro Chlor is the association of chlor alkali plant operators in Europe, its members representing 97% of European chlorine and sodium hydroxide production capacity. Its main activities are lobbying for the industry and collaboration with respect to production methods, safety and environmental protection. Euro Chlor is a sector group of European Chemical Industry Council (CEFIC) and a member of World Chlorine Council. As of 2020 Euro Chlor represents 39 producers which operate at 58 manufacturing locations in 19 European countries. Four product groups are part of Euro Chlor: European Chlorinated Solvents Association (ECSA), Chlorinated Alkane Product Group (CAPG), Potassium Product Group and Sodium Chlorate Product Group (SCPG).

How have you influenced, or are you attempting to influence their position?
Active promoting to improve manufacturing technology, workplace safety and environmental protection.

Trade association
ChlorChemical & Petro-Chemical Industry Federation (CPCIF)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
CPCIF, as the representation of the leading international chemical players in China, aims to contribute to the development of a harmonious society and the sustainable growth of China's chemical industry AICM commits to promote Responsible Care and other globally recognized chemical management principles among all Stakeholders, and to advocate cost-effective, science- and risk-based policies to policy makers.

How have you influenced, or are you attempting to influence their position?
In CPCIF we have stepped up our engagement over the last year, actively promoting to improve manufacturing technology, workplace safety and environmental protection. We also joined a core group of companies to develop industry positions and sharing best practice with Chinese government officials on the introduction of a carbon cap-and-trade system (similar to EU ETS) for the chemical industry in China.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Nouryon actively engages on the topics of sustainability and climate change on a regular basis with a wide range of stakeholders. In addition to regular contacts with government officials most of our efforts are aimed at engaging in policy making through trade organizations such as the VNCI, CEFIC, and ACC. We believe that joint activity will create a bigger impact than doing it as an individual company.

In the Netherlands Nouryon has actively engaged in a business dialogue with the Ministry of Economic Affairs on the energy intensive industry with a view to promote more sustainable industry and create the right conditions for low carbon technologies and a biobased economy. As part of the 'Dutch Energy & Climate Agreement', a pact between the Dutch government and over 40 public and private groups which aims to reduce energy consumption, increase the share of renewable energy and create jobs.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

We maintain a formal process to manage all direct and indirect engagement with policy makers and related organizations. This process covers the scope and business impact of specific policy issues and is integrated into annual business review meetings and the risk management assessment process. This ensures that any activities that influence public policy are consistent with our business strategy. If activities are inconsistent, they are promptly flagged for action by the Government Affairs team to the relevant businesses and functions within Nouryon.

In line with the Nouryon Code of Conduct and our company policies, Nouryon does not provide financial contributions or endorsements to political parties or politicians. Nouryon does not have a political action committee (PAC) in the US nor do we contribute to the PACs of industry and trade associations of which we are a member.

Our Vice President Government Affairs facilitates review sessions with cross-functional teams, including Business Presidents to review topics prior to board meetings of trade associations (typically quarterly) and to review letters and comments on major policies from our trade associations including on climate and energy policy, where we discuss alignment with Nouryon’s sustainability and climate strategy.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In voluntary sustainability report

Status
Complete

Attach the document
20-007_Sustainability Report 2020_9July2021.pdf

Page/Section reference
Whole document including assurance statement and reporting according SASB.

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics
Other, please specify

Comment
Nouryon became a standalone company in October 2018, and from the beginning, our company purpose has included our commitment to a sustainable future. We dedicate ourselves to strengthening this commitment in our own company and operations, in our R&D and solutions for customers, and in being a responsible partner to the communities in which we operate. This annual sustainability report is an opportunity to share progress with regards to this commitment. In 2020, Nouryon strengthened our foundation and made further progress following our first sustainability report in 2019. Based on insights from internal and external stakeholders, we developed and rolled out our sustainability approach, which includes clear priorities and tangible sustainability targets. Our continuing efforts to improve on key sustainability metrics is reflected in our 2020 EcoVadis Silver rating, which places us in the top 10% of companies scored by Ecovadis. This report includes information related to our strong performance and programs which helped us achieve this rating. It also includes more information about Nouryon, our sustainability approach and its pillars and metrics, and key innovations and improvements we made in 2020. It also illustrates how we will continue to make progress and further improve from this strong starting position. We report metrics in accordance with the Sustainability Accounting Standards Board (SASB). A full overview of Environmental, Social, and Governance (ESG) data for investors and auditors, as well as an SASB index, can be found at the end of this report. For more information, please visit www.nouryon.com/company/sustainability.

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Our Chief Integrated Supply Chain Officer. This role has oversight of all manufacturing operations, procurement, logistics, and energy purchasing.	Chief Operating Officer (COO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

Submit your response

In which language are you submitting your response?
English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain questions?
I am submitting my response	Customers	Public	<Not Applicable>

Please confirm below
I have read and accept the applicable Terms