

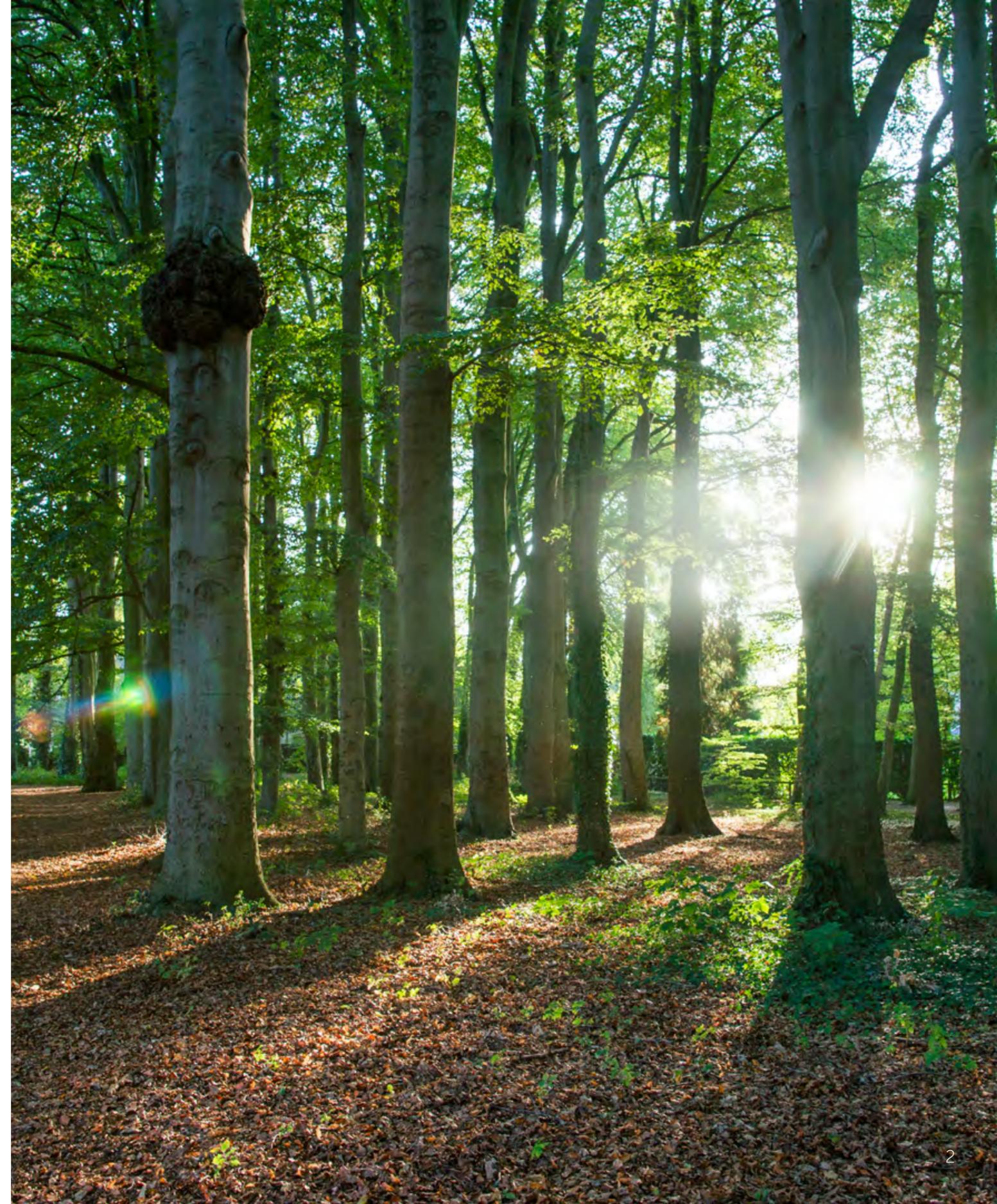


Sustainability Report 2020

Nouryon

Contents

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Message from our Chairman and CEO

Dear Reader,

In our first two years as a company, Nouryon is making substantial contributions to a sustainable future. 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.

Growing sustainably

The chemical industry is uniquely positioned to deliver solutions that can balance the needs of a growing population while preserving the environment. 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.

Nouryon will keep aiming high

Our sustainability achievements place Nouryon in the top 10% of companies rated by EcoVadis. As one of our values states, 'We aim high' as a company and therefore we have our sights set on further improving our sustainability performance and EcoVadis rating from our strong position. We are also proud of maintaining a top-quartile performance in people safety and our continued focus to build and maintain an inclusive, diverse and respectful work environment.

Thank you

Despite the challenges presented last year, we provided our customers with innovative, sustainable solutions and continuously improved our own operations. During such an extraordinary year, I am grateful to our customers for their ongoing trust and loyalty and to our employees for living our values of aiming high, owning it and doing it right.

I invite you to read more about our 2020 sustainability progress in this report. A summary of the highlights can be found on page [43](#). And a clear overview of our Environmental, Social and Governance (ESG) data is listed on pages [44-45](#).

Best regards,

Charlie Shaver
Chairman and CEO



1 Introduction





1. Introduction

Our purpose

**Your partner
in essential chemistry
for a sustainable future**

1.1. Reporting on our progress

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.

Top 10% is just the beginning

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

1.2. More about Nouryon

Nouryon is a global specialty chemicals leader. Consumers worldwide rely on our essential solutions in the manufacture of everyday products, such as cleaning goods, building materials, paints and coatings, food, pharmaceuticals, and personal care items.

We operate in over 80 countries around the world. Building on our nearly 400-year heritage, the dedication of our more than 9,700 employees and our shared commitment to business growth, strong financial

performance, safety, sustainability, and innovation, we have established a world-class business and built strong partnerships with our customers and our communities.

An extraordinary year

The COVID-19 pandemic has affected people and companies worldwide, but it has also underscored the resilience of Nouryon's business. Thanks to our strong focus on safety, Nouryon already had pandemic preparedness plans in place, allowing us to respond quickly to the effects of the accelerating pandemic. This helped us maintain our business continuity and continue to supply essential ingredients for life-saving products, including face masks, medicine, protective gear, hand sanitizer, disinfectants, and cleaning supplies. Our daily goal was to keep our employees safe, while also keeping our facilities operating, so that we could continue to provide essential solutions to our customers and society.

Contributing beyond current challenges

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.

Our strategy and vision statement

In 2020, Nouryon launched a growth strategy aimed at exceeding customer expectations, outperforming the competition, and increasing the strength of our specialties 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.

Our strategy:



Increase focus on **growth end markets:**

- Agriculture
- Buildings and infrastructure
- Cleaning goods
- Personal care



Transitioning from **ingredient supplier** to **solution provider** as **One Nouryon**



Expand profitably in **emerging markets**



Continue executing successfully on **cost and productivity initiatives**

Our vision statement: We will grow our leading position in specialty chemicals and exceed our customers' expectations by delivering innovative and sustainable solutions that answer society's needs – today and in the future.

Our values

Nouryon's values reflect who we are and how we continue to strengthen our performance-driven culture, deliver on our purpose and strategy, and contribute to a more sustainable future. Our values convey a strong commitment to sustainable business growth and living these values enables us to be an industry leader, trusted partner, respected employer, and responsible member of the communities in which we operate.



We aim high

We drive growth by collaborating with customers and colleagues to become more focused, faster, more efficient, and better every day.



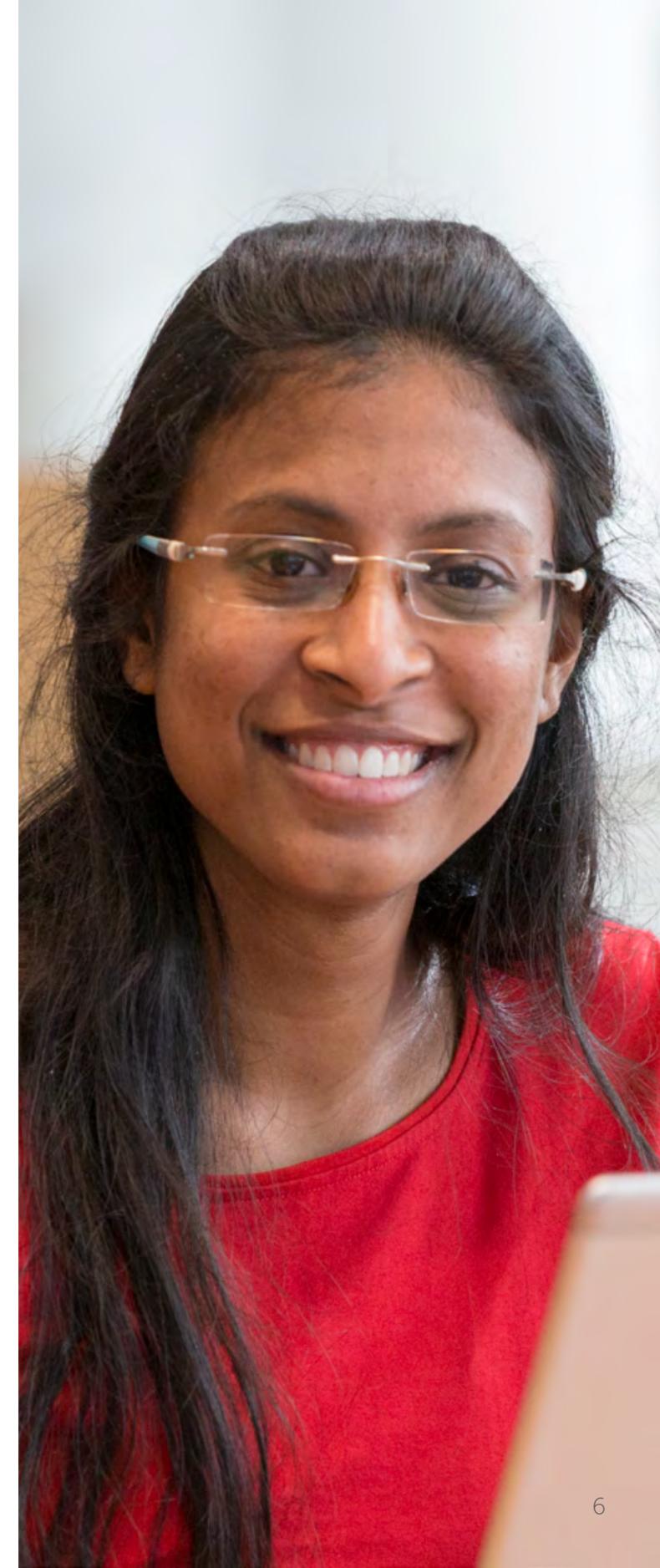
We own it

We are accountable and deliver on our commitments to customers, investors, and each other.



We do it right

We support our people, customers, and communities through strong ethics, and with safety, integrity, and sustainability in mind.



2

Nouryon's commitment to a sustainable future



2.1. Our sustainability approach and metrics

Nouryon developed and launched a new sustainability approach in 2020. This approach is based on three pillars:

- **IMPROVE** our environmental footprint and safety performance (Chapter 3)
- **GROW** our sales of sustainable solutions (Chapter 4)
- **ENGAGE** with our people and society to drive progress together (Chapter 5)

This new approach was developed following a materiality assessment (Chapter 2.2) and aims to support the objectives of the UN Paris Agreement on climate change and the [UN Sustainable Development Goals](#) (Chapter 2.3).

Nouryon has set two new ambitious goals: reduce absolute carbon emissions from our operations and energy use by 25% between 2020 and 2025 and increase our use of low-carbon and renewable energy to at least 60% by 2025.



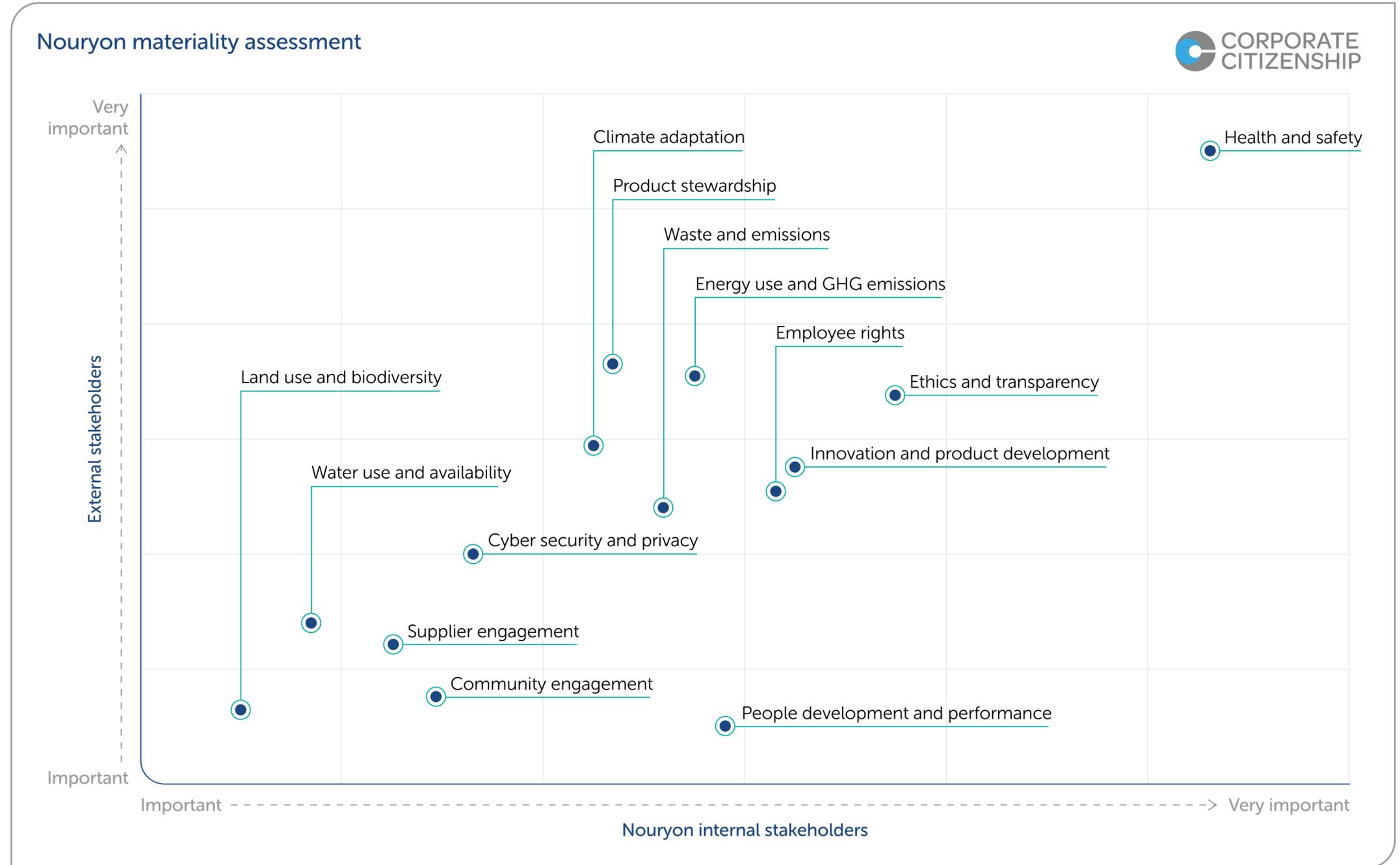
*Scope 1 and 2 (between 2020-2025)
**Targets being developed

2.2. Stakeholder input and materiality assessment

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. With the support of an independent and specialized sustainability consultancy, a list of topics was identified using research into sector issues, media reporting, NGO reports, and international CSR frameworks and standards, such as the UN Sustainable Development Goals, GRI and SASB reporting standards, and the Dow Jones Sustainability Index.

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 (Chapter 2.3). Focus areas were then prioritized based on in-depth interviews with customers, suppliers, Nouryon's leaders, and employees at different levels of the organization.

The assessment underscored the importance of health and safety in all aspects of our operations, as well as our need to focus on climate change, including energy use and greenhouse gas emissions. This internal and external analysis also showed how important it is for us to innovate and develop new sustainable solutions and take a product stewardship approach that helps make our products and those of our customers better, safer, and more sustainable. Additional high priority focus areas include ethics, transparency, and employee rights.



2.3. Alignment with UN Sustainable Development Goals

We believe that our essential solutions, as well as our actions as a company, can contribute to the prosperity and well-being of a more sustainable society.

Nouryon supports all UN Sustainable Development Goals (SDGs), and these six are those where we believe our company and products can and do contribute the most.



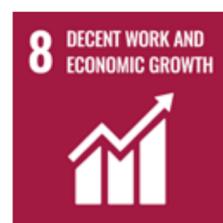
SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Agriculture is one of the key growth end markets of our company strategy. We have a solid portfolio that brings essential functionalities to our customers, including crop nutrients, sustainable adjuvants, and biodegradable, non-flammable solvents with safe toxicological profiles. For example, our solutions help plants grow by providing nutrients to safely increase agricultural productivity and yields using fewer resources. These solutions also improve overall soil health, resulting in a reduced need for plowing and less erosion over time.



SDG 3: Ensure healthy lives and promote well-being for all at all ages

Nouryon focuses on health and well-being in several ways. We prioritize health and safety in our operations and are an industry leader when it comes to people safety. We also provide a range of essential ingredients for cleaning, personal care, pharmaceuticals, and food. These include safer, bio-based cleaning and personal care products; products that contribute to the controlled release of active ingredients in pills, insulin production, and iron fortification in staple foods; and ingredients used in water treatment. We are also a founding member of Smarter Futures, which focuses on improving the health of women and children in Africa suffering from iron and folate deficiency.



SDG 8: Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all

We believe that business performance and sustainability go hand-in-hand. As part of our new strategy, we aim to create sustainable growth in emerging markets such as China and India. We also work to empower employees and create a high-performing, inclusive, and diverse workplace that reflects the global nature of our company and customers.



SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

A sustainable future will require new products and processes. At Nouryon, we develop new products which contribute to a more sustainable society, such as bio-based and biodegradable ingredients for cleaning products and ingredients that help infrastructure last longer and use less energy.



SDG 12: Ensure sustainable consumption and production patterns

As the "industry of industries," the chemicals sector plays a key role in enabling more sustainable and circular production. Improving the eco-efficiency of our factories is a key component of our approach to sustainability. We continuously innovate to create more sustainable and circular products, for example by using renewable feedstocks like cellulose instead of fossil based feedstocks, and circular production methods, such as co-locating with customers to minimize transport and create shared resource models.



SDG 13: Take urgent action to combat climate change and its impacts

Nouryon recognizes that climate change has a fundamental impact on the global environment, society, and business economics and we do our part to combat it by reducing greenhouse gas emissions along our value chain.

In support of the UN Paris Climate Agreement, we have reduced our absolute carbon footprint over the past decade. We are committed to reaching our target of an additional 25% carbon emission reduction between 2020 and 2025 by adopting new technologies and more efficient processes and sourcing more low-carbon energy. In addition to improving our own operational footprint, we make many products that help our customers become more sustainable. For example, our products increase light weighting and enhance durability and yield of products, helping customers significantly reduce their energy, fuel, and resource consumption.



2. Nouryon's commitment to a sustainable future

2.4. Governance

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 and supervising our risk management. The Board has ultimate responsibility for incorporating sustainability into the strategy and monitoring performance.

Nouryon's Leadership Team consists of our Chairman and Chief Executive Officer, Charlie Shaver, and Chief Financial Officer, Renier Vree, as well as leaders with business, operations, or functional responsibility. Sustainability is the collective responsibility of the Leadership Team, led by our Chairman and CEO. The Chief Sustainability & Communications Officer, Vivi Hollertt, develops and oversees Nouryon's global sustainability approach. All members of the Leadership Team have ownership of ESG topics and initiatives.

Operational and environmental sustainability is managed directly by the Integrated Supply Chain function, reporting to the Chief Integrated Supply Chain Officer. This includes overseeing our performance on safety, 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. Sustainable Sourcing, which also falls under Integrated Supply Chain, is the responsibility of the Chief

Procurement Officer. Responsibility for compliance lies with the General Counsel, supported by a dedicated Chief Compliance Officer who also leads Diversity & Inclusion. Human Resources, including the development and empowerment of our people, is overseen by the Chief Human Resources Officer.

To support our strategy and share information across the organization, we also have a global Sustainability Network that drives sustainability across our organization and steers the design and deployment of processes. The Network is chaired by the Sustainability Director and consists of representatives of all businesses and key functions across all regions.

2.5. Risk management

Effective risk management is a key success factor for realizing our strategic objectives. Nouryon has implemented an enterprise risk management approach to identify risks and opportunities that may impact us and to take appropriate mitigating actions.

Nouryon's approach to risk management and internal control is based on the COSO¹ reference model and includes financial, IT, compliance, legal, business continuity, and health, safety, environment, and security components. It is supported by transparency and accountability through our monthly business review cycle and internal control activities.

Through our risk management approach we identify and manage the strategic, operational, financial, legal, and compliance risks to which Nouryon is exposed. This approach guides how we work and helps us foster a clear, strong, and consistent culture of ethics that applies to all who work at Nouryon. It also enables us to improve effectiveness and efficiency in our operations, promote reliable financial reporting, and support compliance with applicable laws and regulations.

The Board of Directors is ultimately responsible for risk management and compliance. Our enterprise risk management and internal control activities are organized through three lines of defense:

- **First line of defense:** Business and operations management owns and manages risk, which includes identifying, assessing, controlling, and mitigating risks;
- **Second line of defense:** Oversight functions support business and operations management and help ensure that the risk and control procedures are operating as intended; and
- **Third line of defense:** Internal audit provides an independent, objective means to evaluate and improve the effectiveness of governance, risk management, and internal controls, including the way business and operations are led and the oversight functions manage and control risk.

¹ The Committee of Sponsoring Organizations of the Treadway Commission (COSO) is a joint initiative of organizations that provides comprehensive frameworks and guidance on enterprise risk management. For more information: <https://www.coso.org/Pages/default.aspx>

2. Nouryon's commitment to a sustainable future

The Audit Committee of the Board of Directors, as well as the Risk, Control, and Cyber Steering Committee comprised of senior management, conduct regular monitoring to 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.

In 2020, we identified the following main risks that could potentially impact achievement of our strategic objectives at a consolidated level: (i) Economic and/or end market slowdown, (ii) Execution of the transformation plan, (iii) Cyber security, (iv) Legal and regulatory compliance, and (v) Process safety and asset integrity.

Economic and/or end market slowdown

The world's geo-political situation remains unpredictable, COVID-19 continues to have a significant impact on the global economy, and our company operates in highly competitive markets. Failure to carefully manage and develop a good understanding of end-user segments could have a negative impact on financial performance.

Execution of the transformation plan

In 2020, Nouryon transitioned from being organized around five product units to three global businesses with a centralized Integrated Supply Chain (ISC)

function. These changes were designed to make Nouryon more competitive and provide greater clarity on our strategic objectives. Failure to carefully manage these changes, align processes between ISC and the businesses, and clearly explain expectations to employees could have a negative impact on financial and operational performance.

Cyber security

IT and cyber security are essential for operating our business. Failure to carefully manage and develop a good understanding of the internal and external IT environment could result in unauthorized access to personal and company confidential data and system/operational impacts from cyberattacks. This risk is mitigated by creating awareness among our employees, continuous monitoring, engaging key service providers, and through our business continuity plans.

Legal and regulatory compliance

Our global footprint exposes us to increasingly stringent laws and regulations as well as litigation on a broad range of subjects, such as safe use of hazardous compounds, environmental releases, soil contamination, product liability, human rights, economic sanctions, competition law, and anti-corruption. This risk is mitigated by monitoring compliance with laws and regulations through our internal subject matter experts, who provide guidance and training to the company and employees as necessary.

Process safety and asset integrity

Due to the nature of activities performed by Nouryon, there are numerous environmental, health, and safety-related risks. These risks are mitigated through our compulsory lifesaving rules, as well as our Process Safety Management system. For more information, see Chapter 3.1 on Health & Safety.

As required by law, we note that this is just a selection of material risks which cannot be relied upon as representing all material risks that the Nouryon Group may face and does not constitute a representation that no other risk is more significant than the risks listed above.

All internal control systems, no matter how well designed and implemented, have inherent limitations. Even systems determined to be effective may not prevent or detect misstatements or fraud and can only provide reasonable assurance with respect to disclosure and financial statement presentation and reporting. Additionally, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate due to changing conditions, or that employees may intentionally or unintentionally deviate from the established policies or procedures.



2.6. Compliance and ethics

Our Compliance program helps our employees understand and abide by Nouryon's high standards of ethical business conduct, comply with our legal and regulatory requirements, and embody our value 'We do it right.' Our Compliance program consists of training, policies and procedures, external party due diligence and monitoring, and investigating and remediating concerns of unethical, illegal, or inappropriate conduct. The commitment to compliance and ethics is supported by the top levels of the company, led by our Chairman and CEO. The Chief Financial Officer, General Counsel, and Chief Human Resources Officer provide executive oversight of our Compliance program through the Compliance committee, which is chaired by our Chief Compliance Officer. The Board of Directors and Audit Committee also receive regular updates from our Chief Compliance Officer and General Counsel.

Code of conduct and training

Nouryon's Code of Business Conduct & Ethics² requires employees to always act ethically and in compliance with anti-bribery/anti-corruption laws, antitrust/competition laws, data protection laws, and economic sanctions laws. This Code applies to all employees, and

each employee will complete at least one compliance training on ethical business conduct each year. 100% of assigned employees completed their trainings in 2020. The Compliance team also offers Ethical Moments opportunities, which are short, optional training vignettes that focus on important compliance topics. Nearly 1,000 leaders received tailored in-person or webinar training by a member of the Compliance team in 2020.

We understand that our commitment to ethical business conduct does not end with our employees. We require our business partners to adhere to Nouryon's Business Partner Code of Conduct³, which outlines mandatory compliance with laws, ethical business practices, and ethical treatment of people within their supply chains. We also require certain third parties to undergo a due diligence process, where they provide information on their ownership, compliance programs, and any past relevant legal/regulatory issues, including economic sanctions. We continually monitor these third parties through an online platform and receive daily updates of any sanctions, regulatory fines, or adverse media involving these partners. Business partners are also given access to our ethics reporting hotline, SpeakUp!.

Reporting concerns: SpeakUp!

Employees, suppliers, customers, and other business partners can report any suspected policy violations, inappropriate behavior, and illegal or unethical practices through SpeakUp!, our global reporting hotline. SpeakUp! is a direct channel to openly and anonymously report concerns and ensures that concerns are heard and addressed in a timely manner. To make certain that our employees and external parties are aware of SpeakUp!, we publicize contact information on our intranet and external website, as well as at every office and manufacturing site; highlight it in our Business Partner Code of Conduct; and teach employees how to use it and inform them of the protections provided by our Non-Retaliation Policy. SpeakUp! reports can be made anonymously, subject to certain legal limitations, in any of 30 languages.



² For more information: <https://www.nouryon.com/company/ethics-and-integrity/>

³ For more information: <https://www.nouryon.com/company/ethics-and-integrity/#code-of-conduct-business-partners>

3

Improving our safety performance and environmental footprint



IMPROVE

Health Safety and Environment programs	Increasing energy efficiency and sourcing low carbon energy
Safety Ambition: Zero injuries, waste and harm	Carbon emissions reduce by 25%* Low carbon energy increase to 60%

Key sustainable development goals:

3 GOOD HEALTH AND WELL-BEING

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

We continuously work to improve our safety performance and environmental footprint for the benefit of our employees, contractors, customers, neighbors, and the environment. We are a top-quartile performer in people safety⁴, and over the past decade we have significantly reduced our environmental footprint.

Relevant policies

- Policy statement on Health, Safety, Environment and Security (HSE&S)
- HSE&S Rules and Procedures
- Life Saving Rules

Key facts

- Top-quartile performer in people safety
- 50% reduction in Process Safety Events
- Recipient of numerous "Facility Safety Awards" from the American Chemistry Council

⁴ Based on annual OSHA recordable injury rates vs. chemical industry peers in the American Chemistry Council.

*Scope 1 and 2 (between 2020-2025)

3.1. People and process safety

At Nouryon, safety is at the heart of our value 'We do it right.' We strive to deliver leading performance in health, safety, environment, and security (HSE&S). Our goal is to continuously improve our performance, with the ambition to reach zero injuries, waste, and harm.

Improving safety performance is based on having robust processes in place and being consistent in applying and improving these processes at all our locations. For example, we use HSE software (Enablon) to track and report our safety performance on a monthly basis, including thorough checks to ensure data quality. Our core safety processes focus on people safety, process safety and product safety (see Chapter 3.2).

People safety

It is Nouryon's ambition to have zero injuries and we believe that every employee should go home injury free each day. During 2020, we continued our years-long trend of reducing the number of incidents, and we had no fatal incidents involving our employees or contractors and 15 lost time injuries.

In early 2020, at the onset of the global pandemic, we set up global and regional response teams that took measures to protect employees and prepare for potential impacts on our operations. We established global guidelines and took regional and site-specific measures adapted to local regulations and needs,

including rotating shift schedules, enforcing strict social distancing protocols, and providing additional protective equipment for busy areas such as central control rooms.

Nouryon has an HSE&S management system that applies to all functions, locations, and businesses. The management system is consistent with global standards (including RC14001, ISO14001, OHSAS18001, and others) and aims to protect the health and safety of all employees, temporary workers, and contractors. The system includes the definition and measurement of safety and health performance through metrics and obtains third-party verification of compliance with relevant safety standards when appropriate.

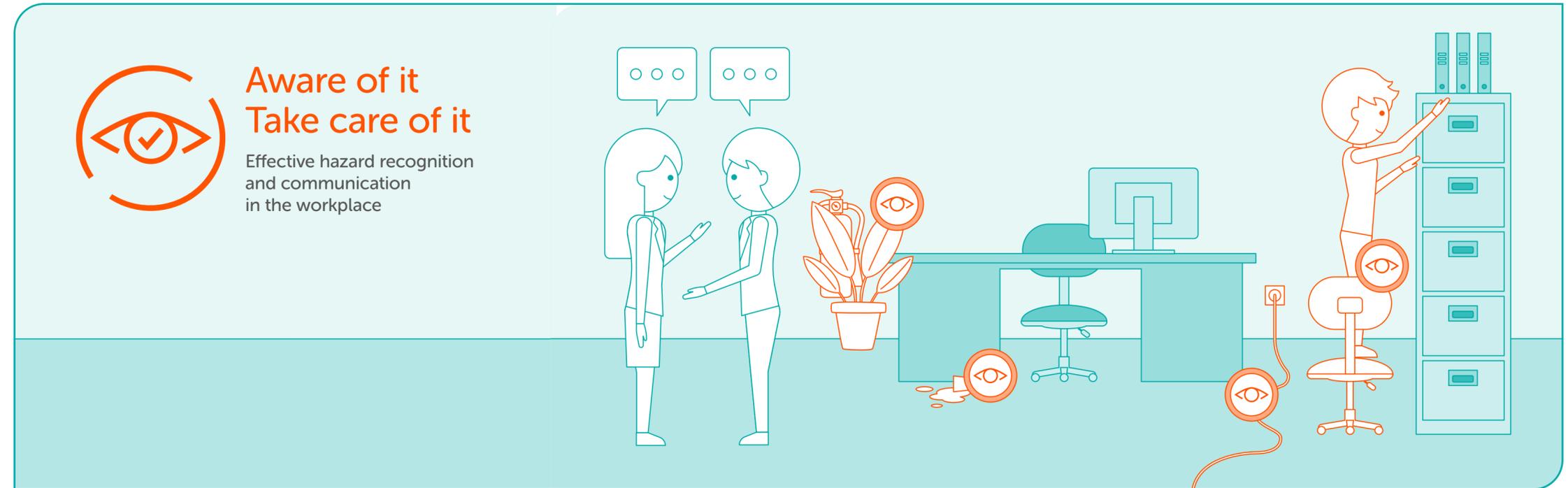
The main lagging KPIs for people safety are OSHA Incident Rate (OIR) and Lost Time Injury Rate (LTIR) for employees, temporary workers, and contractors. When analyzing safety data, we look at contractors, employees, and temporary workers combined. See page 19 for data related to the development of injury rates for employees plus temporary workers and contractors.

2020 resulted in our best contractor safety performance to date, with an OIR for contractors of 0.2 per 200,000 hours worked. The OIR for employees and temporary workers was 0.23 per 200,000 hours worked.

Safety Day

Every year Nouryon celebrates Safety Day. This company-wide event aims to increase safety awareness and engagement, share safety expertise, and spur global action on hazard recognition. It is also an opportunity to recognize our safety achievements and reaffirm our promise to do whatever it takes to send everyone home safely, every day.

Our 2020 Safety Day was themed “Aware of it, take care of it” and focused on communicating and being mindful about the hazards around us in order to prevent injuries and illness in the workplace.



**Aware of it
Take care of it**

Effective hazard recognition and communication in the workplace

“Safety sits at the heart of Nouryon’s success and it is essential for every one of us to take ownership of our own and others’ safety. Our annual Safety Days remind us of the responsibility we have to ourselves and to one another and empower all of us to work safely every day.”

Charlie Shaver
Chairman and CEO

Our Life-Saving Rules

The purpose of the Life-Saving Rules is to prevent a fatality or serious injury to employees, contractors who work for the company, and visitors by ensuring a safe work environment and safe behavior.



**Golden principle:
Stop work if conditions or behaviors are unsafe.**



Work with a valid work permit when required



Use fall protection when working at height



Obtain a permit for entry into a confined space



Make sure moving machinery is guarded



Check equipment is isolated before work begins



Obtain authorization before disabling safety equipment



Wear a seatbelt in motor vehicles when provided



Do not use alcohol or drugs at work



Case study

Safety performance recognition

Our safety performance has been recognized several times in recent years by external entities. For example, many of our US facilities have received the “Facility Safety Awards” from the American Chemistry Council.

In June of 2020, Nouryon also received the prestigious Safe Handling Award from Canadian National Railway and won the Gold Award for 2019. The award recognized Nouryon for its safe rail loadings in North America and for sending over 150 shipments with zero spills or product releases from a rail car.

Nouryon was also honored with six Texas Chemical Council (TCC)/Association of Chemical Industry of Texas Awards for safety in 2020. Our sites in Fort Worth, Houston, and Battleground received TCC Caring for Texas Awards, which recognize these sites’ exemplary achievements in plant operation as well as their commitment to employees and their local communities.

3. Improving our environmental footprint

People safety: Worker health

At Nouryon we are committed to ensuring and protecting the health and safety of all employees, temporary workers, and contractors. We have developed a procedure⁵ which outlines Nouryon's mandatory requirement to establish systems and tools to do this.

The health management section of this procedure provides guidance⁶ for implementing site-specific health management systems which reduce the risk of exposure to occupational health hazards for individuals working on site.

Some activities performed by individuals working for, and on behalf of, Nouryon pose different health risks depending on the type of work. Typical health hazards are categorized as physical⁷, chemical or substance⁸, biological, ergonomic, and organizational⁹.

Nouryon manufacturing sites are expected to perform a Nouryon Health Risk Assessment or meet local regulatory standards, whichever is greater, for employee exposure monitoring. By the end of 2021, 85% of the sites will have completed the Nouryon assessment.

Based on the outcome of this assessment, sites develop improvement plans to address any health concerns and implement Exposure Control Measures, where necessary. These improvements may include phase-outs of certain substances or substituting with alternative materials, implementation of technology to control worker exposure, risk assessments as part of long-term health studies, the use of personal protective equipment, and the evaluation of alternate materials or processes.

Nouryon monitors the effectiveness of implemented exposure control measures through industrial hygiene monitoring programs at the site level. Sampling and testing strategies are determined and planned by qualified professionals and third-party experts are hired when necessary. In 2020, we started implementing a global software system to improve the planning and tracking of our industrial hygiene programs and implementation continues in 2021.

In addition, Nouryon uses a Behavior-Based Safety (BBS) program at all manufacturing locations to identify unsafe behaviors and spark behavioral change of employees and

contractors to reduce potential hazards in the workplace. These observations are performed regularly and in a structured way based on the location's observation strategy.

Personal health and well-being are also a focus for Nouryon. All employees are provided safe and comfortable working conditions and access to medical services. Procedures are in place to respond to medical emergencies, as described in the Nouryon Emergency and Community Awareness procedure.

Beyond this, all sites are encouraged to promote and support health and wellness. Support we offer employees includes:

- Assessment of health risks associated with one's living environment and lifestyle (e.g. infectious diseases, nutrition, use of tobacco or alcohol, physical fitness, stress)
- Employee information, awareness, and assistance programs

⁵ Nouryon procedure 12.01.2. SP01, Health and Safety of Employees and Contractors

⁶ Our corporate procedure details the requirements of a health management system. Sites then create local procedures which meet the requirements of the corporate procedure.

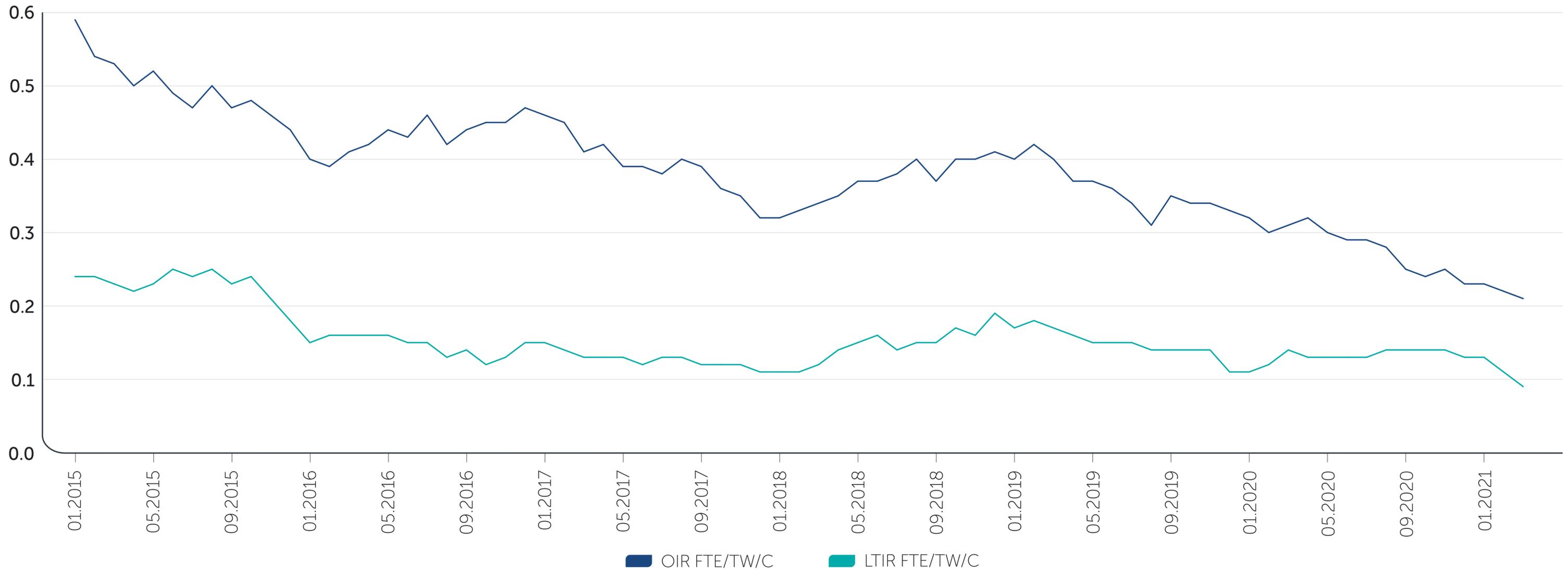
⁷ Including noise, vibration, temperature, weather conditions, and others

⁸ Including Corrosives, Hepatotoxins, Nephrotoxins, Carcinogens, Sensitizers, and others

⁹ Including distractions or other stress factors that may lead to illness or injury



Safety statistics: Employees, temporary workers and contractors



OIR and LTIR of employees, temporary workers and contractors. The total reportable rate (TRR) is the number of injuries, including fatalities, resulting in a lost time case, restricted work, or requiring medical treatment by a competent medical practitioner per 200,000 hours worked. The lost time injury rate (LTIR) is the number of injuries resulting in a lost time case per 200,000 hours worked according to OSHA.



3. Improving our environmental footprint

Process safety

We established a Process Safety Management (PSM) approach for all operations in 2015, following industry standards and best practices. In line with our ambition to reach zero injuries, waste, and harm, the main goal of our PSM program is to reduce Process Safety Events¹⁰ (PSE) which could result in injury, environmental impact, asset damage, or a negative impact on our neighbors and communities. Preventing a PSE also supports our business strategy by ensuring reliability of supply for our customers.

In 2020, we continued to raise awareness and improve reporting of process safety indicators. As our performance in process safety has improved, we have shifted our focus to leading indicators, i.e. low impact events and systems which could lead to more serious events. We review all incidents and near misses on a weekly basis.

In the past two years, the total number of incidents involving a PSE (Level 1 and 2) decreased more than 50%, from 65 in 2019 to 30 in 2020.

	Unit	2018	2019	2020	Absolute change 2019-2020
People safety					
Total OSHA incident rate (OIR) for employees, temporary workers and contractors	Per 200,000 hours worked	0.41	0.33	0.23	-0.10
Lost time injury rate (LTIR) for employees, temporary workers and contractors	Per 200,000 hours worked	0.18	0.11	0.13	0.02
Total OSHA incident rate (OIR) for employees, temporary workers	Per 200,000 hours worked	0.28	0.29	0.23	-0.06
Total OSHA incident rate (OIR) for contractors	Per 200,000 hours worked	0.75	0.45	0.20	-0.25
Lost time injury rate (LTIR) for employees, temporary workers	Per 200,000 hours worked	0.15	0.10	0.15	0.05
Lost time injury rate (LTIR) for contractors	Per 200,000 hours worked	0.28	0.16	0.07	-0.09
Process safety					
Process Safety Incident Count (PSIC)	# incidents PSE1	24	23	7	-16
	# incidents PSE2	68	45	23	-22
	# incidents combined (PSE1+PSE2)	92	68	30	-38
Process Safety Total Incident Rate (PSTIR) combined	Per 200,00 hours worked	0.71	0.56	0.26	-0.30
Process Safety Total Incident Rate (PSTIR) PSE1	Per 200,00 hours worked	0.18	0.19	0.06	-0.13
Process Safety Incident Severity Rate (PSISR)	Per 200,00 hours worked	0.18	0.19	0.06	-0.13

¹⁰ A Process Safety Event is the main process safety indicator at manufacturing sites, with two levels of severity. As a leading indicator, we also measure lower level process safety events, which are minor leaks or occurrences that could lead to more severe PSEs and activations of Safety Instrumented Systems. All PSEs are categorized according to impact, aligned with the API754 global standard, where Level 1 indicates the highest impact.

3. Improving our environmental footprint

3.2. Product stewardship

We recognize we have a role to play in the drive towards a greener and more sustainable society that goes beyond simply manufacturing greener products. Nouryon has a product stewardship approach at the company and site level that considers product safety and sustainability throughout the value chain. This not only supports regulatory compliance but also helps us to develop safer and more sustainable solutions for our customers.

We support the aims of the European Green Deal, the EU Chemical Strategy for Sustainability¹¹, the developing US Toxic Substances Control Act¹² legislation and the further development of chemicals management legislation around the world.

Risk assessment and hazard communication

We handle 4,000 substances, including raw materials in our production and R&D samples. Of these, 2,200 are sold and used throughout the world and have gone through a hazard assessment. In 2020, 77% of Nouryon's net revenue came from products containing substances which are Globally Harmonized System (GHS) category 1 and 2 Health and Environmental Hazards¹³.

Our core competencies are in complex chemistries and the safe handling of highly reactive chemicals. All substances are carefully managed to ensure they are used safely at our production sites and by our customers in alignment with GHS chemical classification

and labeling requirements as well as other applicable national and regional regulations.

To ensure new substances in Nouryon products can be used safely, they undergo a risk assessment. This process includes assessment of potential exposure to workers,

consumers, or the environment. Recommendations for measures to manage the risks are then communicated to suppliers and customers throughout the value chain aligned with local and regional requirements. The methodology for risk assessment varies depending upon the region.



Genetically modified organisms

Nouryon does not manufacture genetically modified organisms (GMOs). We do not sell products that use GMOs to provide any specific functionality, nor do we use GMOs in manufacturing processes to impart any specific variability. Certain raw materials we use are derived from crops that have been produced from GMOs prior to our use. Examples include soybean oil and cotton cellulose linters. These materials are used in products that make up roughly 3% of our products by revenue. We are continuously monitoring the on-going debate around GMO usage and will act upon any new findings as appropriate.

EU-REACH

At Nouryon we continuously work to ensure that our products can be safely used in line with the REACH¹⁴ regulation, which aims to improve the protection of human health and the environment from the risks posed by chemicals. REACH stands for Registration, Evaluation, Authorization, and Restriction of Chemicals, and it has established procedures for collecting and assessing information on the properties and hazards of substances.

Nouryon actively maintains its 570 REACH registrations and is continuously implementing other REACH developments to ensure continued compliance. In 2019, we joined CEFIC's REACH Dossier Improvement Action Plan. As part of this, we are actively taking steps to review the quality of our REACH registration dossiers and are providing further information, where appropriate.

¹¹ For more information: https://ec.europa.eu/environment/strategy/chemicals-strategy_en

¹² For more information: <https://www.epa.gov/tsca-inventory>

¹³ GHS category 1.1 health hazards include the following criteria: Acute Toxicity, Skin Corrosion/Irritation, Serious Eye Damage/Eye Irritation, Respiratory or Skin Sensitization, Germ Cell Mutagenicity, Carcinogenicity, Reproductive Toxicology, Target Organ Systemic Toxicity – Single Exposure, Target Organ Systemic Toxicity, or Repeated Exposure Aspiration Toxicity. GHS category 1.2 environmental hazards include the following criteria: Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Bioaccumulation Potential, or Rapid Degradability.

¹⁴ Regulation (EC) No 1907/2006

3. Improving our environmental footprint

Managing substances of concern

Nouryon proactively monitors new and future substances of concern (SoCs) through our Priority Substance Program to ensure that no new SoCs are introduced in our products. This is a global systematic program that uses REACH methodology for risk assessments and promotes substitution of harmful substances in our raw materials and products with more sustainable alternatives.

The basic process for all Nouryon innovation projects is a stage-gate methodology. Questions we ask in the process include:

- Does the product contain any SoCs?
- Are there any substances which are prohibited, restricted, or under review in our products or raw materials?
- Have all identified substances been risk evaluated?

In 2020, 3% of Nouryon's net revenue came from products containing SoCs (>0.1% by weight). These substances are carefully managed through the Priority Substance Program to ensure they can be manufactured and used safely. All of these have undergone a risk assessment according to REACH methodology, 13% of these substances are on the REACH Annex XIV (Authorization) list, and 25% are on the REACH Annex XVII (Restriction) list.

Developing alternatives through innovation: Product substitution examples



Dissolvine GL is used in products such as dishwasher powders, cleaning products, bath products, cosmetics, hair care, and body treatments. It is a low toxicity, non-sensitizing, and biodegradable chelate that is natural and renewable and does not contain phosphates or phosphonates. Dissolvine GL is recognized as a "safer chemical" within the US Environmental Protection Agency (US-EPA) Design for the Environment program.



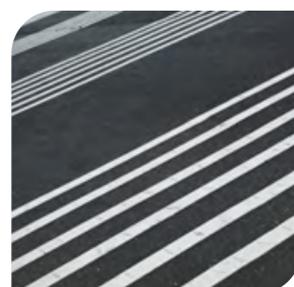
Berol 260 is used in metal cleaners for aircraft and vehicles, as well as cleaning in industrial and home settings. It is a recognized safer chemical by several bodies, including US-EPA Safer Choice and CleanGredients. We have also introduced a next generation product, Berol 360, which is based on natural vegetable-based hydrophobes and has enhanced sustainability credentials and an EU Ecolabel.



Elfan AT84 is a sulfate-free surfactant that gently cleanses skin, providing a rich creamy foam even in hard water. It is used in a wide range of personal care products. Based on renewable vegetable fatty acids, it is biodegradable and approved by US-EPA Safer Choice and CleanGredients.



Wetting agent AG 6206 is a product for home applications such as dishwashing. It is a low hazard material, readily biodegradable, and recognized as safer chemical by US-EPA Safer Choice and CleanGredients.



A safer alternative to Di-cyclo hexyl phthalate (DCHP) was developed for our organic peroxide curing agents used in composites and coatings. The DCHP-free products bring additional benefits, allowing our customers to make clearer coatings and composites and switch to DCHP-free products in advance of legislation.



Redicote E-47 NPF is a safer alternative to Nonyl Phenol-ethoxylates (NPE), which have been successfully phased out in the EU. Our asphalt business has successfully replaced NPE with Redicote worldwide.

3. Improving our environmental footprint

3.3. Greenhouse gas emission mitigation, energy management, and climate change

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. In addition, our sustainable solutions help us develop new innovations, create new partnerships and business opportunities, and assist our customers to deliver on their own sustainability goals.

Thanks to ongoing improvement and innovation efforts, we reduced our carbon footprint between 2009 and 2019¹⁵. 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.

Greenhouse gas emissions mitigation strategy

Nouryon reports greenhouse gas emissions in CO₂-equivalents at three levels: emissions from our own operations (Scope 1), emissions from purchased electricity and steam (Scope 2), and emissions associated with the raw materials we purchase (Scope 3: Upstream).

Between 2009 and 2020, our business reduced its absolute carbon footprint by 9% while growing sales and reduced emissions per ton of product by 28%.

Going forward, our focus is on further reducing carbon emissions from our own operations and energy use (Scope 1 and 2) while growing revenues. We aim to

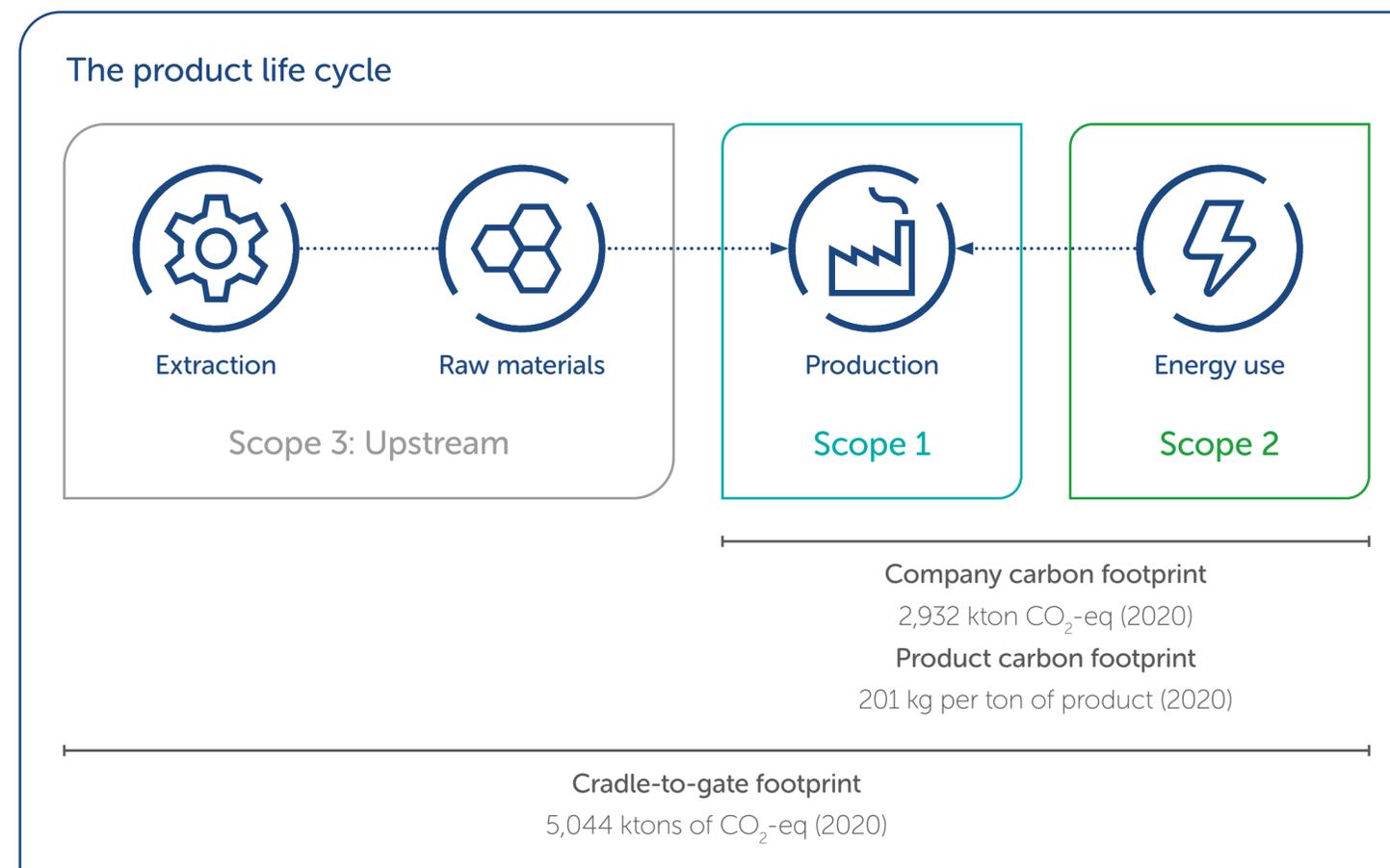
further reduce our carbon footprint by 25% between 2020 and 2025 (Scope 1 and 2; relative to 2019 levels).

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.

Improving energy consumption and operational eco-efficiency

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 using Enablon's EHS software package. The input is checked and validated twice a year. Since 2009, we have incrementally decreased our energy intensity while also supporting customers' sustainability ambitions.

For example, our Integrated Manufacturing Model in Brazil provides pulp mill customers with a cost-effective solution to produce bleaching chemicals and creates sustainability benefits. Our facility is powered by renewable energy from biomass generated as a by-product in the pulp mills, and proximity to the customer reduces the need to transport products, reducing our carbon footprint, improving safety, and creating a more circular model.



¹⁵ Prior to the launch of Nouryon as a standalone company in October 2018, we operated as AkzoNobel Specialty Chemicals.

3. Improving our environmental footprint

Sourcing low-carbon energy

In 2020, 56% of our energy came from low-carbon and renewable sources, such as hydro, wind, solar, biomass for power, and steam from bio-waste. This was a slight increase from the year prior. We have set the goal to further increase the share of our purchased low-carbon and renewable energy to more than 60% by 2025.

At Nouryon, we source renewable energy using trusted approaches, such as assets owned by Nouryon, Power Purchase Agreements (PPA) with third parties, or energy attribute certificates¹⁶ backed by recognized industry standards and documentation.

To strengthen our sustainable energy sourcing capabilities, in 2020 we established the Nouryon Energy Team (NET). The NET brings together cross-functional expertise in Energy, Procurement, Operations, and Sustainability to further optimize and develop a comprehensive Energy Management Plan of sustainable and low-carbon energy solutions across the company.

¹⁶ Also known as Renewable Energy Credits (RECs) in the US, Guarantees of Origin (GOs) in Europe, and i-REC in China



Case study

Adding sources of low-carbon energy

To help us reach our 60% target by 2025, we are constantly looking for ways to increase our share of renewable energy. For example, in 2020 we worked with a local supplier to install solar panels at our organic peroxide site in Mahad, India. The panels will generate approximately 30% of the site's power needs in a sustainable way, regardless of the local power supply mix. The project will help save around 250,000 tons of CO₂ per year.

Meanwhile, at our plants in Delfzijl and Hengelo in the Netherlands, we have increased our sourcing of steam produced from waste and renewable biomass. The transition from fossil fuels to sustainably produced steam at these sites has helped us reduce emissions by over 100,000 tons of CO₂ per year since 2018.

We are also working with industry partners to develop large scale projects that support the transition to a low-carbon economy. For example, Nouryon joined forces with three other companies to support the development of 35 wind turbines in Finland. The consortium agreed to contract renewable electricity from the wind farm through a virtual PPA (VPPA). This arrangement combines the best of both worlds: the renewable energy project earns stable income while the companies are guaranteed clean energy benefits. Compared to typical European electricity generation, the additional renewable electricity will help avoid over 230,000 tons of CO₂ emissions per year starting in July 2023 (VPPA).

3.4. Other eco-efficiency parameters

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.

Our approach to reducing our environmental impact is based on assessing the contribution that changes at each site could make. We specifically target those locations that have a significant contribution to our overall impact and where we can achieve material reductions.

Emissions

We regularly make process and equipment improvements to reduce nitrogen oxide (NOx) and sulfur oxide (SOx) emissions from our operations. We saw a slight decrease in SOx emissions in 2020. Most of our SOx emissions come from just three of our 62 manufacturing sites. This follows a slight increase in emissions in 2019 and a large decrease in emissions in 2018, resulting from the installation of a new SOx extraction unit at our site in LeMoyne, US in 2018, and the overall trend remains downward. Chemical oxygen demand (COD) released to surface water decreased compared to 2019, while waste generation remained relatively flat.

Water risk assessment

In 2018, we completed a comprehensive water risk assessment for all our manufacturing sites. 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 finding ways to increase our resilience and improve the sustainability of our operations.



Case study

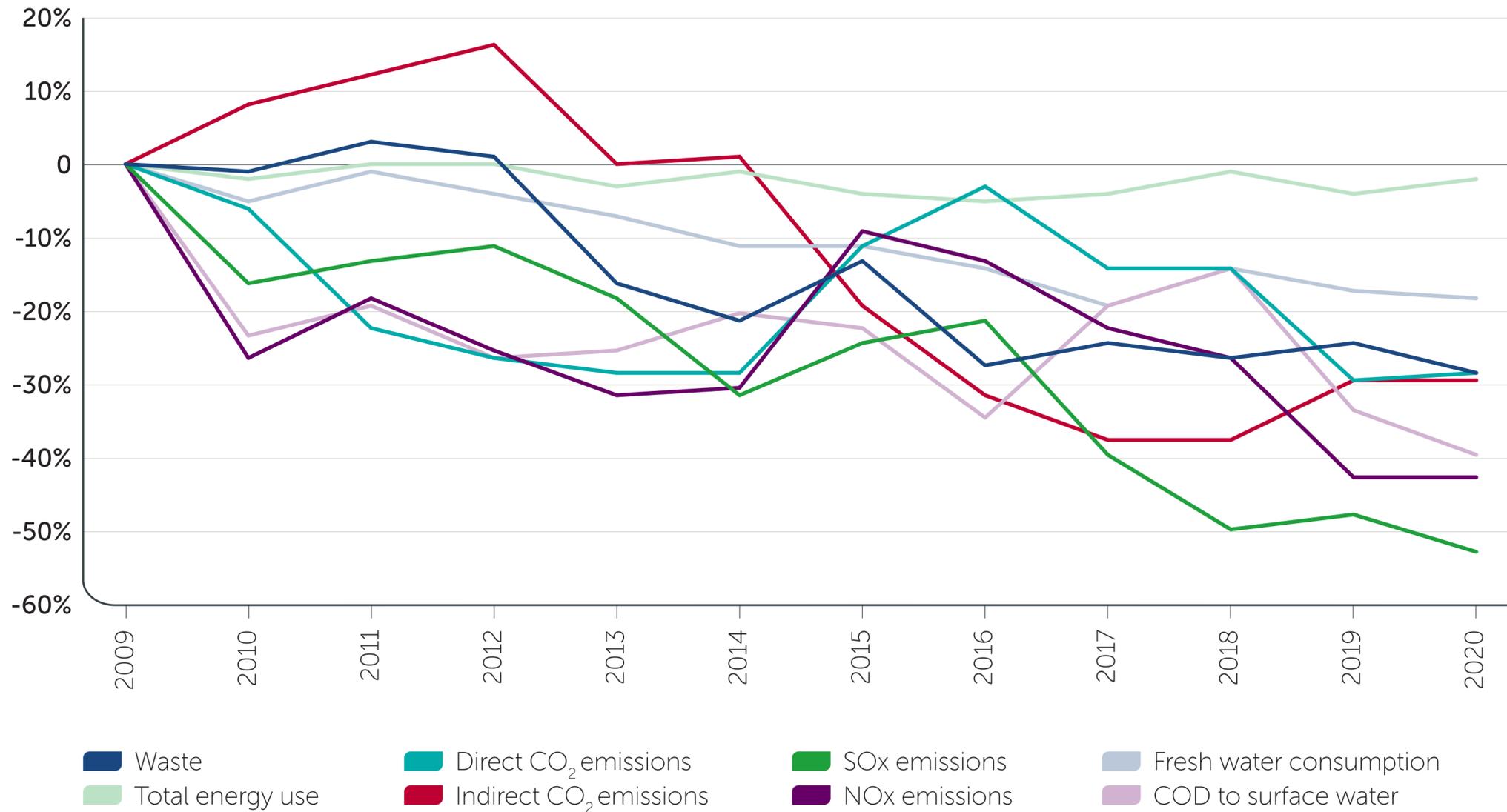
Ibbenbüren wastewater reduction

In June 2020, the Ibbenbüren chlorine plant, a joint venture of Nouryon and Evonik, won a regional Responsible Care Award from VCI, the German chemical industry association¹⁷. The project, entitled "A wastewater-free chemical plant – no more utopia!," was selected from over 30 entries nationwide.

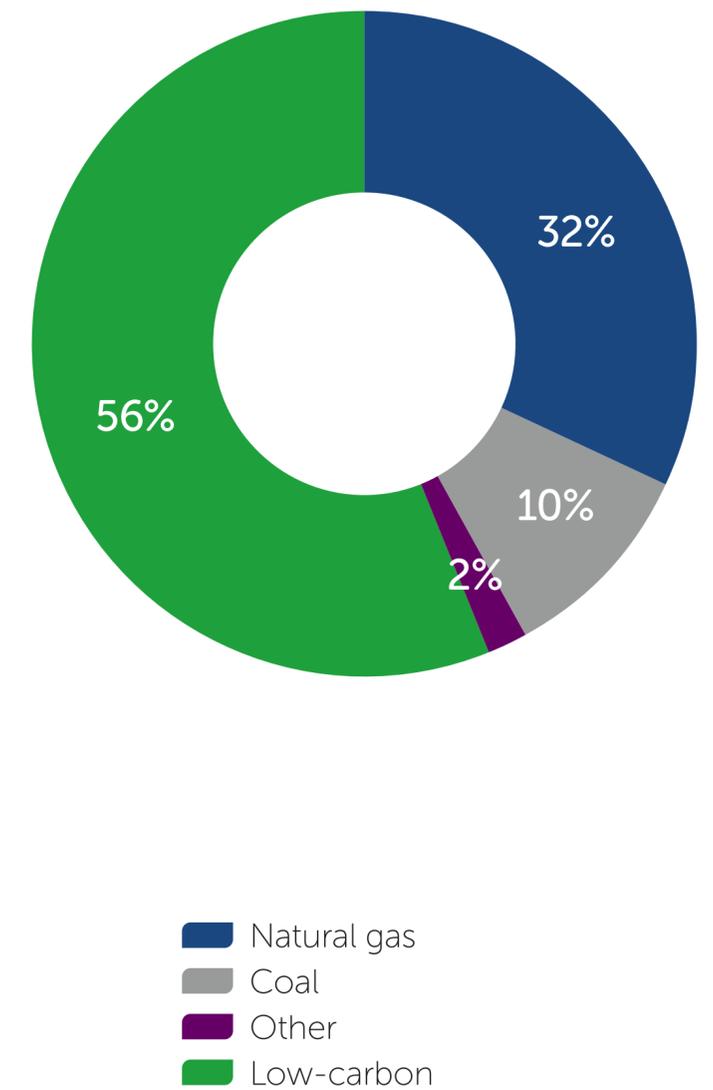
In line with Nouryon's aim to continuously improve its eco-efficiency and reduce emissions, the Ibbenbüren site developed a plan to reduce all wastewater from the plant by 84% by 2023. Furthermore, it developed a vision for a completely wastewater-free site. Ten optimization projects are underway which will reduce the amount of wastewater from 175,000 m³ per year (2001 level) to 28,000 m³ per year in 2023, and the site believes that a completely wastewater-free factory could be within reach as early as 2035.

¹⁷ For more information: <https://www.nouryon.com/news-and-events/features-overview/nouryon-recognized-for-responsible-care-in-germany/>

Development of eco-efficiency parameters
Reduction vs. 2009 in use/emissions per ton



Energy use in our operations
Percentage per source



Note: Our specific energy consumption is corrected for energy we deliver to third parties and is expressed as fuel equivalent energy, e.g. electricity from the grid is expressed as fuel needed to generate it at power plants.

3. Improving our environmental footprint

3.5. Environmental Data Sheet*

	Unit	2009	2018	2019	2020	% change 2009-2020
Company carbon footprint: Cradle-to-gate						
Direct emissions	kton CO ₂ -eq	1,167	1,408	1,185	1,182	+2%
Indirect emissions	kton CO ₂ -eq	2,069	1,581	1,772	1,739	-16%
Scope 3 upstream emissions ¹⁸	kton CO ₂ -eq			1,989	2,112	
Total				4,946	5,044	
Direct emissions, covered by emissions-limiting regulations	% of Direct emissions		71%	67%	69%	
Product carbon footprint: Operational emissions						
Direct emissions	kton CO ₂ -eq	1,167	1,217	1,001	1,001	-14%
Indirect emissions	kton CO ₂ -eq	2,069	1,581	1,772	1,747	-16%
Product carbon footprint	kg CO ₂ -eq/ton	281	200	199	201	-28%
Energy management						
Total energy consumption	mIn GJ	76.8	92.2	87.8	88.6	+16%
Energy intensity	GJ/ton of production	6.67	6.59	6.38	6.49	-2%
Percentage renewable ¹⁹	%		47	44	49	
Percentage low carbon and renewable ²⁰	%		58	56	56	
Percentage grid electricity	%		70%	70%	71%	
Total self-generated electricity	mIn GJ		8.73	6.85	6.69	
Air quality						
NOx absolute emissions	Ton	1,458	1,312	1,012	1,000	-31%
NOx emission intensity	Kg/ton of production	0.13	0.09	0.07	0.07	-42%
SOx absolute emissions	Ton	5,323	3,275	3,412	3,003	-44%
SOx emission intensity	Kg/ton of production	0.46	0.23	0.25	0.22	-52%
VOC absolute emissions ²¹	Ton	737	790	653	1,213	+65%
VOC emission intensity	Kg/ton of production	0.06	0.06	0.05	0.09	+39%

	Unit	2009	2018	2019	2020	% change 2009-2020
Emission to water (COD²²)						
COD absolute emissions	Ton	1,202	1,257	961	871	-28%
COD emission intensity	Kg/ton of production	0.10	0.09	0.07	0.06	-39%
Water management						
Total fresh water intake	1000 m ³	253,816	189,182	177,948	177,030	-30%
Per ton of production	m ³ /ton	22.0	13.5	12.9	13.0	-41%
Percentage in regions with high water stress	%	0.2%	1.3%	1.4%	1.6%	
Fresh water consumption						
Total	1000 m ³	27,469	28,747	27,724	26,716	-3%
Per ton of production	m ³ /ton of production	2.39	2.05	1.98	1.96	-18%
Percentage in regions with high water stress	%	1.1%	5.7%	6.9%	8.8%	
Waste management						
Total waste	Ton	62,705	56,629	57,222	53,658	-14%
Per ton of production	Kg/ton of production	5.45	4.05	4.14	3.93	-28%
Hazardous waste	Ton	19,184	20,187	20,240	20,015	+5%
Of which to landfill	Ton	2,970	338	437	485	-84%
Percentage recycled	%	37%	33%	38%	36%	
Production quantity						
Nobian	kton		10,796	10,514	10,411	
Performance Formulations	kton		1,422	1,655	1,602	
Technology Solutions	kton		1,771	1,665	1,625	

* Note: For all figures, minor corrections to historical data may be made to improve accuracy or based on methodology updates.

¹⁸ In 2019, we updated our methodology for calculating Scope 3 upstream emissions. In prior years, we estimated emissions from raw materials based on the bill of materials for products. In 2019 and 2020, we use actual raw material data. Raw materials exclude intra-company transfers, trading, tolling, and utilities.

¹⁹ Including renewable grid electricity

²⁰ Including low carbon and renewable grid electricity

²¹ The increase in the 2020 volatile organic components (VOC) emissions compared to 2019 is due to the acquisition of the CMC Äänekoski site.

²² Chemical oxygen demand

4

Growing sales of our sustainable solutions





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 and circular raw materials.

Relevant policies

- Policy statement on Health, Safety, Environment and Security (HSE&S)
- HSE&S Rules and Procedures

Key facts

-  33% of revenue from Eco-Premium Solutions
-  21% of revenue from Eco-Premium Solutions with a direct customer benefit
-  Acquired JM Huber's CMC business, increasing our portfolio of sustainable products

4.1. Eco-Premium Solutions

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, as well as direct benefits to our customers' operations. Two of our many product lines that deliver such benefits are bio-based 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.



**Targets being developed

4.2. Innovating sustainable solutions

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 three businesses – Performance Formulations, Technology Solutions, and Nobian (formerly Industrial Chemicals) – 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.

Performance Formulations

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.

Sustainable innovations in 2020

Adsee AMP 40

A salt-free, biodegradable, all-in-one adjuvant that offers a more cost-efficient solution to customers in the global agricultural market.

Agrilan 1015

A biodegradable and multifunctional dispersant that can replace less sustainable products in water-based crop protection and seed treatment formulations

Arquad GS

An antimicrobial agent that enables the formulation of anti-viral, environmentally friendly paints (see Case study on this page)

Ethylan EF-60

A volatile organic carbon (VOC)-free additive for premium waterborne paint products which delivers freeze thaw stability; enables low-odor, safe formulations; and enhances appearance without compromising performance or finish

SolAmaze

A bio-based, biodegradable film-forming product for use in high sun protection factor emulsion sunscreens which addresses the fast-growing demand for natural and clean label ingredients in personal care products and helps prevent skin cancer from harmful UV rays



Case study

Anti-viral and environmentally friendly paint²³

Anti-microbial agents in paints and other materials can play a key role in helping to keep surfaces clean and safe, for example in hospitals. The challenge is to ensure that these antimicrobial agents are not harmful to the environment.

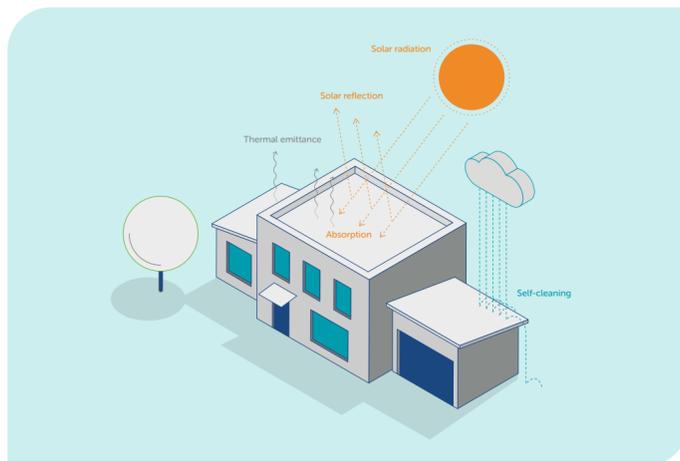
In 2020, Nouryon introduced Arquad GS, an antimicrobial agent that helps make paint that is both anti-viral and better for the environment. Arquad GS inhibits microbial growth, deactivates influenza and other viruses, and has anti-fungal efficacy. At the same time, it is free of sensitizers, can be used to make paint that is low in VOCs, and can fully replace existing biocides.

²³ For more information: <https://www.nouryon.com/news-and-events/news-overview/2020/launching-ingredient-to-improve-anti-viral-paint/>

4. Growing sales of our sustainable solutions

Technology Solutions

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.



Sustainable innovations in 2020

Assessing hydrogen peroxide production

The life cycle assessment of our hydrogen peroxide production process, conducted in 2020, shows that we have superior performance compared to the industry. Heat is recovered through integration with other units, hydrogen is used from other processes where it is generated as a by-product, solvents used in the process are recycled and reused, and our new electrolyzer technology reduces carbon emissions.

Cool roof coatings

We combined our Expancel (expandable microspheres) and Levasil (colloidal silica) technologies to create a concept for cool roof coatings. This combination makes it possible for customers 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.

Improved processes

We 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.

Plastic recycling

We discovered that our polymer catalysts can adjust the properties of mechanically recycled polymers, allowing them to be upscaled and used in applications now reserved for new virgin polymer streams. Our products also help retain high quality in finished products made from recycled plastics.

Nobian

The Nobian business²⁴ (formerly Industrial Chemicals) primarily produces salt using a mining process and chlorine and caustic soda through the electrolysis of brine. We focus heavily on improving energy efficiency in production of essential base chemicals and increasing the share of renewable energy. We also take a leading role in supporting the transition to a more sustainable economy by helping to balance our energy system.



NOBIAN
A Nouryon company

Sustainable innovations in 2020

Circular chemistry

We work with a wide range of partners to accelerate the development of new forms of circular chemistry. Examples include our participation in Carbon2Chem, a project focused on making methanol from CO₂ and other off gases from steel production, and our support for Photanol, an organization making new chemicals from CO₂ and sunlight.

Green hydrogen

We are also involved in several studies with partners to use green electricity to produce green hydrogen from water. This green hydrogen can be used to make renewable methanol, sustainable aviation fuel, or to decarbonize industrial processes such as steel production.

Renewable energy storage

We support the use of our salt caverns to safely store hydrogen or other forms of energy, which will play a key role in providing a stable supply of renewable energy.

Stable, cost-effective renewable energy

Using an automated algorithm called 'e-flex', we automatically adjust production in our energy-intensive electrolysis facilities to be in line with changes in electricity supplies. This not only reduces cost, but also helps energy providers to balance large swings in supply from renewable sources such as wind power.

²⁴ For more information about Nobian's sustainability approach: <https://www.nobian.com/about-us/sustainability>

5

Engaging our people,
partners, and society





ENGAGE

Inclusion and diversity

Learning and development

Community engagement

People development**

Key sustainable development goals:



**Targets being developed

At Nouryon, we aim to achieve sustainable business growth and have a positive impact on people’s everyday lives through our essential solutions as well as our actions.

To achieve these goals, we support, develop, listen to, and empower our employees and local communities. We engage and collaborate with customers, partner companies, universities, industry peers, and governments. Through these interactions, we can drive growth while at the same time become a safer, more sustainable, and more innovative company.

Relevant policies

- Code of Business Conduct & Ethics
- SpeakUp! and Non-Retaliation Policy
- Performance & Development Dialogue
- Business Partner Code of Conduct

Key facts

-  95% participation in full annual performance management cycle
-  We conduct regular checks to measure culture and engagement
-  100% of our assigned employees completed their training

5.1. Our people

We believe that in order to stay competitive, innovative, and successful, we need engaged and empowered employees. We invest in training and development for our employees and are committed to creating a diverse and inclusive work environment where our people feel valued. We are also highly committed to promoting the health, safety, and well-being of all our employees at work and beyond (see Chapter 3.1). Our values - ‘We aim high’, ‘We own it’, and ‘We do it right’ – form the backbone of the performance-driven culture we strive to create and empower our people to successfully deliver on our company purpose and strategy (see Chapter 1).

Inclusion and diversity

A diverse, respectful, and inclusive work environment is critical to unlocking the full potential of our global workforce, driving collaboration and innovation, and understanding the unique needs of our customers. Nouryon’s commitment to inclusion and diversity is codified in our Code of Business Conduct & Ethics, which clearly states that we respect and value all employees, irrespective of age, gender, race, religion, or sexual orientation. Our employees receive trainings on our Code, how to maintain a respectful and inclusive workplace, and how to identify and report potential harassment and discrimination. In 2020, we offered four separate trainings on this topic, many in local languages, to our global workforce. 100% of assigned employees completed their training.²⁵

²⁵ Training is not required for all employee functions



5. Engaging our people, partners, and society

Improving and supporting diversity in our workforce is an ongoing process. In 2020 we began analyzing the diversity of our employees, including age, gender, race²⁶, and nationality.

Gender:

- 23% of workforce is female
- 24% of mid-level managers and above²⁷ are female
- 15% of leadership²⁸ is female
- 27% of our joiners and 30% of our leavers were female

Race/Ethnicity (US Only)

- 67% White
- 12% Hispanic or Latino
- 10% Black or African American
- 4% Asian
- 0.8% Multi-ethnic
- 0.3% American Indian or Alaskan Native
- 0.1% Native Hawaiian or Other Pacific Islander
- 5.8% Declined to self-identify

Age

- The average age of our employees is 45
- 10% are younger than 30
- 38% are older than 50

We will continue to assess the diversity of our workforce and, in the future, gather and analyze additional data, such as the racial diversity of our non-US offices (where allowed by law) and the percentage of racially diverse employees in our mid-level management and leadership. We are also committed to reviewing all aspects of our employee lifecycle to ensure that our hiring, engagement, rewards, and promotion processes build and support the needs of our diverse workforce; considering diversity when recruiting directors; actively monitoring our progress; and continually challenging ourselves to make improvements.

Measuring our internal culture and engagement

An organizational survey was rolled out in nine languages at the end of 2019. The aim was to measure and manage our organizational health with the same rigor as performance. The survey proved to be a great source of inspiration for continuous improvement for our organization. Four focus areas emerged from the survey: 1) focus and strategic clarity, 2) using insights for innovation, 3) open and trusting leadership, and 4) recognizing and rewarding employees.

As a result, we identified about 150 initiatives to improve our organizational health. Examples include our global "Pay for Performance" rewards approach (related to recognizing and rewarding employees) and the launch of our new values (related to focus and strategic clarity). Besides these larger initiatives, multiple bottom-up initiatives were put in place within daily operations.

We also conducted pulse surveys on two focus areas (recognizing and rewarding employees and open and trusting leadership) to a random sample of 30% of our employees in May and September 2020.

Employees' performance, development, and leadership

To sustain the performance and growth of both our employees and the company, we introduced our Continuous Performance Management process in 2020. By setting dynamic objectives, holding regular performance dialogues (check-ins), receiving feedback, and achieving objectives throughout the year, we help our employees and leaders stay engaged and deliver higher performance. So far, 95% of our population has participated in the full annual performance management cycle. We also introduced our Pay for Performance approach, in which outstanding results are rewarded.

To further sustain our performance and growth, we encourage our employees to gain new knowledge and skills which will help them perform at their best every day and contribute to our success. Our Learning and Development offerings support both short- and long-term capability building and help our employees to live our values.

Leadership development

One of the key elements of our people development strategy is to continuously develop our leaders. In 2020, two new digital programs designed to help our new and experienced leaders to strengthen their leadership

skills were successfully launched despite the COVID-19 pandemic. These leadership programs, called LEAP, are delivered fully digitally during an 18-week period. LEAP addresses themes that leaders need in each phase of their professional career. All topics are linked to the Nouryon values, strategy, and OHI focus areas to help our leaders apply their learnings in their daily work.

We also provide a broad range of other learning activities, such as on-the-job experiences, blended programs, online learning, (virtual) classroom training, and mandatory compliance courses. Our global digital learning environment helps employees find relevant trainings more easily and enroll for scheduled offerings and provides 24/7 access to online trainings, enabling at-home learning and offering flexibility for employees.



²⁶ Where allowed by applicable law

²⁷ Defined as the top 20% of Nouryon

²⁸ Defined as the Extended Nouryon Leadership Team



5.2. Engaging with our communities

Nouryon operates factories around the world and we value our relationships with our local communities. Our approach to community engagement starts with the relations with neighboring stakeholders in our HSE Rules on Emergency Response and Community Awareness. Each site is audited to ensure that they have informed and involved the communities in which they operate.

For example, for our salt mining operations in the Netherlands, which largely take place outside the perimeter of the production site itself, extra effort has been made to maintain a continuous dialogue with the communities near the towns of Delfzijl and Hengelo. A special website has been created where local stakeholders can find background information and regular news updates on activities that are directly relevant to them²⁹. In addition, our local site holds regular meetings with the municipality and local interest groups and hosts an information evening for residents at least once every year.

In the US, our sites in Battleground and Pasadena attend the La Porte Citizen Advisory Council meeting and local emergency planning meetings and are active members in the East Harris County Manufacturers Association and Texas Chemical Council. Both sites have also held emergency drills involving notifications to Community Awareness Emergency Response to ensure that proper community notifications would occur in the event of an actual incident. We attend similar events in our sites in LeMoyne, Augusta, Salisbury, Morris, Moses Lake, Magog, Columbus, and Lima. Chattanooga and Houston also participate in community advisory panels. During two events in 2020, our Bridgewater facility collected 1,480 empty skin care, hair care, and cosmetic bottles and packaging and shipped them Terra Cycle to be recycled rather than sent to a landfill.

While most meetings in 2020 were online, six sites in China were able to host safety-themed Open Days in the second half of 2020, once the local COVID-19 situation had improved. During these days, members of the public were invited to our sites to tour our production facilities

and learn more about safety. Nouryon also supports various initiatives to give back to the community. For example, in 2020 we partnered with American Corporate Partners to provide mentorships to veterans transitioning from active military duty to civilian careers³⁰ (see Case study on page 36). In Mahad, India, we partnered with local manufacturers to help in the battle against COVID-19 by opening a new community healthcare center (see Case study on page 36). We also partnered with TreeNation to plant 7,400 trees as recognition for companies taking part in our customer survey³¹.

While our core focus remains the safe and responsible supply of essential chemistry and maintaining a constructive dialogue with our stakeholders, these initiatives help remind our people and partners of our commitment to society at large.

—
“Contributing to sustainability beyond our direct operations is a key element of Nouryon’s sustainability approach. We are taking a more holistic view which includes the well-being and development of employees and how we engage with the communities in which we operate.”
—

Vivi Hollertt
Chief Sustainability and Communications Officer

²⁹ You can visit the website here (in Dutch):

<https://zoutwinning.nouryon.com/>

³⁰ For more information: <https://www.nouryon.com/news-and-events/news-overview/2020/collaboration-american-corporate-partners/>

³¹ For more information: <https://tree-nation.com/profile/nouryon>



Case study

Partnering to improve public health in India

The government of India declared a nationwide lockdown in March 2020 to prevent the spread of COVID-19. As the world's second-most-populous country with a growing number of positive cases, India was faced with the immense challenge of rapidly responding to the pandemic with limited healthcare infrastructure.

Nouryon, alongside the Mahad Manufacturers Association and other industrial members, responded to the government's appeal by volunteering and donating to help build a community healthcare center³². Located near Nouryon's Mahad manufacturing site, the new "COVID Health Care Centre" opened in May 2020, equipped with a COVID-19 test facility, 84 beds with oxygen supply, 100 beds for isolation, consulting rooms, isolation wards, supply storage, and new medical equipment such as ventilators. To date, the facility has treated more than 760 infected patients in the local community, free of charge.

³² For more information: <https://www.nouryon.com/news-and-events/features-overview/mahad-medical-center/>



Case study

Helping veterans transition to thriving civilian careers

The US Department of Defense estimates that approximately 200,000 members of the armed services exit active duty each year and transition to civilian life. Highly skilled and educated, these new veterans are not always accustomed to working in the private sector.

That is why Nouryon partnered with New York-based American Corporate Partners (ACP)³³ in 2020 to provide mentorships that assist veterans transitioning from active military duty to civilian careers. ACP and its partners, such as Nouryon, provide one-on-one mentoring, networking, and online career advice to help returning veterans and active-duty spouses find their next careers.

Working with veterans who are poised to enter civilian life supports the development of Nouryon's high-performance culture and makes for a collaboration that benefits both parties, especially in the areas of science, technology, engineering, and mathematics.

³³ For more information: <https://www.acp-usa.org/>

5.3. Sustainable sourcing

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. 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.

Business Partner Code of Conduct

All of our business partners, including our suppliers and customers, need to adhere to our Business Partner Code of Conduct³⁴, which sets out expectations for suppliers regarding:

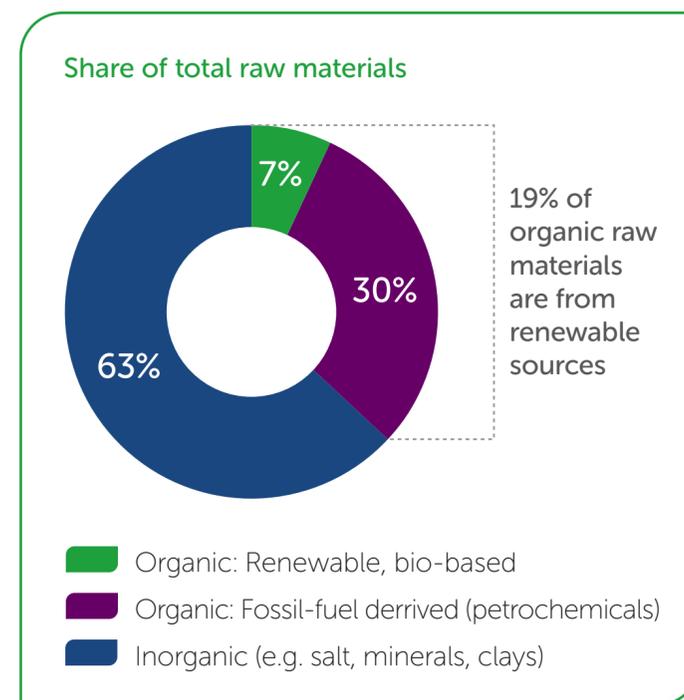
- Compliance with laws and regulations
- Safety
- Standards for ethical and responsible business conduct
- Treatment of people and fundamental human rights
- Exclusion of conflict minerals
- Fraud prevention

Support for Nouryon’s efforts to operate sustainably

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 conditions³⁵.

Sustainability assessment through Ecovadis

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 platform³⁶. 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.



³⁴ Required for all purchase orders and contracts. For more information: <https://www.nouryon.com/company/ethics-and-integrity/>

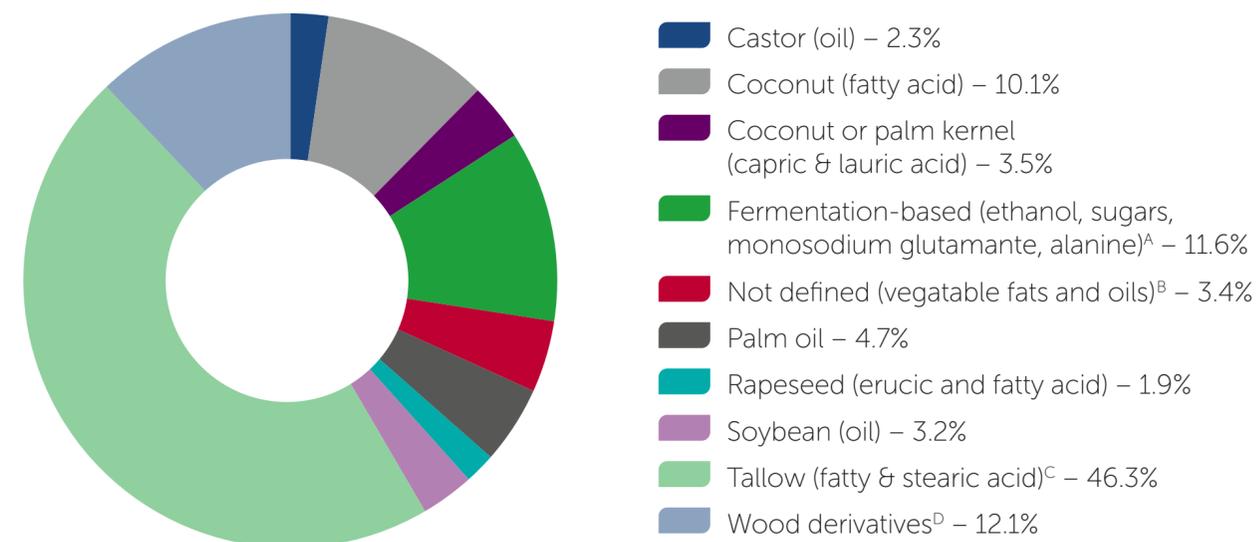
³⁵ For more information: <https://www.nouryon.com/globalassets/nouryon/4.-company/7.-procurement/purchase-order-terms-and-conditions-en.pdf>

³⁶ For more information: <https://ecovadis.com/>

Bio-based raw materials purchased by Nouryon

To help meet the growing demands of our customers for more sustainable products, we develop products using bio-based raw materials partly or fully derived from nature. Bio-based³⁷ sources enable a more circular economy and can also have lower carbon footprints vs. alternatives across their lifecycle, reducing greenhouse gas emissions. Examples of renewable sources we use include plants, trees, animals, algae, marine organisms, and microorganisms. We also use waste materials as inputs for higher value products, including used cooking oil, cotton linters, and others.

In 2020, 19% of Nouryon’s organic raw materials came from bio-based sources. This is 7% of the total volume of raw materials purchased, which also included inorganic raw materials like salt, minerals, and clays.



^A Ethanol (crop depends on region, but ~70% of world production is derived from sugar cane, sugar beets, and molasses); monosodium glutamate; alanine (from sugar beets, sugar cane, tapioca, molasses, and corn); sugars (glucose and others, from corn, rice, wheat, cassava, corn husk, and sago); acids (dimer, gluconic, citric, sebacic, tartaric, etc., from various sources)

^B Other fatty acids (e.g. in surfactants, from coconut, cotton seed, soybean, sunflower, dehydrated castor, linseed, tung, palm, tall oil (TOFA), and other sources); glycerin (mainly a by-product from bio-diesel; biodiesel can be made from a variety of vegetable oils and animal fats, including soybean, rapeseed, palm, jatropha, sunflower, algae, used cooking oil, tallow, etc.); fatty alcohols (from plant sources such as palm and coconut trees)

^C Stearic acid is predominately produced from tallow; however, it can originate from other fats and oils.

^D Cellulose, tall oil, gum rosin, etc.

³⁷ Excluding fossil fuel-based, peat, and natural forest (non-managed, with native ecosystem) sources

Roundtable on sustainable palm oil

Palm oil is a key bio-based feedstock in Nouryon's operations. We use processed palm oil products, which means we do not have direct contact with palm mills or plantations. However, we endeavor to use palm oil that comes from sources that do not contribute to further deforestation or infringe on the rights of workers and local communities through ongoing interaction with our supply base. We welcome a world in which palm oil can be cultivated in a responsible way and will continue to focus on the use of responsible palm oil not linked to environmental or social issues in the supply chain.

Nouryon endorses the industry standard for palm oil sustainability, the Roundtable on Sustainable Palm Oil (RSPO³⁸), and four of our Nouryon sites hold RSPO Mass Balance (MB) certification. To learn more, download the Sustainable Palm Oil Sourcing statement on our website³⁹.



5.4. Policy engagement and memberships

Nouryon engages with legislative and regulatory bodies, industry and trade associations, and non-government organizations in our key markets and participates in policy discussions relevant to sustainability within our industry. We bring our expertise and solutions to the table on topics such as energy, carbon reduction, water, waste, product and process safety, and circular chemistry. These activities help further our sustainability objectives and ensure public policy decisions are grounded in principles of sound data and science.

Our engagements involve a diverse set of stakeholders focused on chemicals-related issues and climate mitigation and adaptation issues, such as product design for energy efficiency, material safety, energy management in business and manufacturing operations, and industry collaboration to influence climate policy.

Managing engagement on policy

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.

Advocacy actions related to sustainability

We seek to engage constructively with governments, regulators, and legislators on the development of proposed policy that is relevant to our business. These policies can be relevant to us in a wide range of areas, from tax and employment issues to safety and chemicals management policy. We seek to support policy that is sufficient, clear, stable, predictable, comprehensive, economically efficient, and well-designed to deliver society's goals at least cost. We also seek to support policy that aligns with and supports our position, such as on our sustainability ambitions.

In the US, as a member of the American Chemistry Council (ACC), we have contributed to the development of ACC's sustainability metrics and are engaged in the pilot phase to implement these metrics.

In Europe, we have actively engaged within industry and trade associations to take a constructive and proactive approach to the EU Green Deal and the EU Chemicals Strategy for Sustainability. We not only focus on the risks and challenges these new proposals have for our industry; we also focus on opportunities via new business models and innovation and have been an active driver of a value chain approach. Through our engagement in several associations in the EU and the Netherlands, we have also actively engaged with policy makers on creating the right conditions and policy approach for green hydrogen, for example implementing legislation for the EU Renewable Energy Directive (RED II) and the EU Energy Efficiency Directive (EED).

In China, we are actively engaged in the advocacy efforts of industry and trade associations related to the ongoing development of Chinese legislation on chemicals management and a cap-and-trade system for carbon emissions.

³⁸ Created in 2004, the RSPO seeks to bring a secure and renewable supply chain for palm oil derivatives via a network of growers, mills, refiners, and end users committed to its principles and criteria.

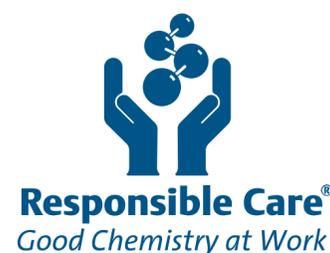
³⁹ Download here: <https://www.nouryon.com/globalassets/nouryon/4.-company/4.-sustainability/downloads/nouryon---rspo-statement-2021.pdf>

Membership in industry and trade associations

Nouryon is a member of trade and industry associations around the world at international, national, regional, and local levels.

Responsible Care

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 principles⁴⁰.



Our memberships

Americas

American Chemistry Council (ACC); American Cleaning Institute (ACI); Council of Producers & Distributors of Agrotechnology (CPDA); American Coatings Association (ACA); Texas Chemistry Council (TCC); Association of Water Treaters (AWT); American Composites Manufacturing Organization (ACMA); Chemistry Industry Association of Canada (CIAC); Brazilian Association of the Chemical Industry (ABIQUIM)

Asia

China Petroleum & Chemical Industry Federation (CPCIF); Association for International Chemical Manufacturers in China (AICM); EU Chamber of Commerce in China (EUCCC); American Chamber of Commerce in Shanghai (AmCham); China cleaning industry association; Ningbo Petrochemical and Chemical Industry Association; Association for the Environment of Suzhou Province; Taizhou Energy Saving Technology Development Association; Singapore Chemical Industry Council (SCIC)

Europe

European Federation of the Chemical Industry (CEFIC); European Chlorine Producers' Association (Eurochlor); European Committee of Organic Surfactants and their Intermediates (CESIO); European Biocidal Products Forum (EBPF); European Salt Producers' Association (EU Salt); Hydrogen Europe; Association for the

German Chemical Industry (VCI); Association of the Dutch Chemical Industry (VNCI); Confederation of Netherlands Industry and Employers (VNO-NCW); Dutch Association for Energy, Environment and Water (VEMW); Dutch H2 Platform; Samenwerkende Bedrijven Eemmond (SBE); Association for Innovation and Chemical Industries in Sweden (IKEM)

Nouryon executives holding board member positions on trade associations:

- **Larry Ryan**
Executive Vice President and President, Performance Formulations and Americas: Board member of the American Chemistry Council
- **Johan Landfors**
President, Technology Solutions: Board member and member of the executive committee of the European Federation of the Chemical Industry (CEFIC) and Board member of the Association for Innovation and Chemical Industries in Sweden (IKEM)
- **Egbert Henstra**
Senior Vice President, Transformation and Strategy Performance Formulations: Board member of the Association of the Dutch Chemical Industry (VNCI)

⁴⁰ For more information: <https://www.americanchemistry.com/>



SASB Index



Topic	Metric	Code	Page
Greenhouse gas emissions	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	RT-CH-110a.1	27
	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	RT-CH-110a.2	23
Air quality	Air emissions of the following pollutants: (1) NO _x (excluding N ₂ O), (2) SO _x , (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs) ⁴¹	RT-CH-120a.1	27
Energy management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, and (4) total self-generated energy	RT-CH-130a.1	27
Water management	1) Total water withdrawn and (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	RT-CH-140a.1	27
	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	RT-CH-140a.2	zero
	Description of water management risks and discussion of strategies and practices to mitigate those risks	RT-CH-140a.3	25
Hazardous waste management	Amount of hazardous waste generated; percentage recycled	RT-CH-150a.1	27
Community relations	Discussion of engagement processes to manage risks and opportunities associated with community interests	RT-CH-210a.1	35
Workforce health and safety	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees	RT-CH-320a.1	20
	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	RT-CH-320a.2	18
Product design for use-phase efficiency	Revenue from products designed for use-phase resource efficiency	RT-CH-410a.1	29
Safety and environmental stewardship of chemicals	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment	RT-CH-410b.1	21
	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	RT-CH-410b.2	22
Genetically modified organisms	Percentage of products by revenue that contain genetically modified organisms (GMOs)	RT-CH-410c.1	21
Management of the legal and regulatory environment	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	RT-CH-530a.1	38
Operational safety, emergency preparedness, and response	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)	RT-CH-540a.1	20
	Number of transport incidents	RT-CH-540a.2	Not reported ⁴²
Production by reportable segment		RT-CH-000.A	27

⁴¹ Hazardous air pollutants are not currently tracked and reported internally

⁴² Transport incident metrics are not yet tracked according to SASB definitions

ESG fact sheet



2020 highlights

- **Sustainability further integrated in company strategy and values:** Launched a new company strategy and values which integrate sustainability. This complements our existing company purpose, 'Your partner in essential chemistry for a sustainable future.'
- **Top-quartile safety performance¹:** In 2020 our recordable injury rates reached a record low. We have eight lifesaving rules and host an annual Safety Day to increase awareness and share expertise.
- **Aligning with global goals:** Based on our first materiality assessment², completed in 2019, we developed our strategic framework³, aligned with the UN SDGs. We support the objectives of the UN's Paris Agreement on climate change.
- **Introduced greenhouse gas mitigation strategy:** Launched global targets to reduce absolute carbon emissions by 25%⁴ and to increase the share of our low carbon energy to 60% by 2025.
- **Meeting customer needs:** Achieved an EcoVadis Silver rating, putting us in top 10% of companies rated by Ecovadis and in a good position to meet the growing expectations of our customers. In addition, the top 34% of our suppliers⁵ in terms of spend, on raw materials, energy, and logistics, are using the EcoVadis CSR platform (compared to 26% in 2019).
- **Driving sustainable innovation:** 33% of our 2020 revenue came from Eco-Premium Solutions. These solutions deliver a significant sustainability benefit to our customers over the most mainstream market alternative. Launched new sustainable products⁶ in 2020, including: anti-viral paint coatings, bio-based products that replace synthetic polymers, products that reduce air emissions, bio-degradable crop protection ingredients, and products for cool roof coatings which save energy by reducing the need for air conditioning.
- **We do it right:** 100% of assigned employees completed compliance trainings. All supplier contracts and purchase order standard terms and conditions require adherence to our Business Partner Code of Conduct. We conduct a comprehensive Enterprise Risk Management process throughout the year, and 85% of our sites have certified environmental management systems (ISO-14001).

Economic

€ millions	2018 ⁷	2019 ⁸	2020 ⁹
Revenues	5,064	5,082	4,700
Adjusted EBITDA	1,071	1,128	1,162
Total assets	12,853	12,263	11,521

¹ Based on annual OSHA recordable injury rates vs. chemical industry peers in the American Chemistry Council

² Based on research into sector issues, media reporting, NGO reports, and a review of international CSR frameworks and standards such as the UN Sustainable Development Goals, GRI, SASB, and DJSI

³ 'Nouryon's Commitment to a Sustainable Future'
– visit <https://www.nouryon.com/company/sustainability/>

⁴ In aggregate for Scope 1 and Scope 2

⁵ Based on the percentage of 2020 spend in raw materials, packaging, and energy (including Nobian)

⁶ New sustainable product launches and partnerships in 2020:
<https://www.nouryon.com/news-and-events/news-overview/2020/launching-ingredient-to-improve-anti-viral-paint/>
<https://www.nouryon.com/news-and-events/news-overview/2020/releasing-all-in-one-sustainable-adjuvant/>
<https://www.nouryon.com/news-and-events/news-overview/2020/nouryon-launches-new-expancel-line-for-specialty-thin-coatings-applications/>
<https://www.nouryon.com/news-and-events/news-overview/2020/collaboration-american-corporate-partners/>

⁷ Reflects combined financial results of the Specialty Chemicals Business, prepared on a carve-out basis, and Nouryon Holding B.V.

⁸ Reflects financial results of Nouryon Holding B.V.

⁹ Reflects financial results of Nouryon Holding B.V.



Environment

	Unit	2009	2018	2019	2020	% change 2009-2020
Company carbon footprint: cradle-to-gate						
Direct emissions (Scope 1)	kton ¹⁰ CO ₂ -eq	1,167	1,408	1,185	1,182	+2%
Direct emissions (Scope 1) intensity	Ton CO ₂ -eq /ton of production	101	87	71	73	-27%
Indirect emissions (Scope 2)	kton CO ₂ -eq	2,069	1,581	1,772	1,739	-16%
Indirect emissions (Scope 2) intensity	Ton CO ₂ -eq /ton of production	180	113	128	128	-29%
Total Scope 1 and 2 emissions	kton CO ₂ -eq	3,226	2,989	2,957	2,932	-9%
Scope 3 upstream emissions ¹¹	kton CO ₂ -eq	n/a	n/a	1,989	2,112	
Emissions covered under emissions-limiting regulations	% of direct emissions		71%	67%	69%	
Product carbon footprint: operational emissions						
Direct emissions	kton CO ₂ -eq	1,167	1,217	1,001	1,001	-14%
Indirect emissions	kton CO ₂ -eq	2,069	1,581	1,772	1,747	-16%
Product carbon footprint	kg CO ₂ -eq/ton	281	200	199	201	-28%
Energy management						
Total energy consumption	mIn GJ	76,8	92,2	87,8	88.6	+16%
Energy intensity	GJ/ton of production	6.67	6.59	6.38	6.49	-2%
Percentage renewable ¹²	%		47	44	49	
Percentage low carbon and renewable ¹³	%		58	56	56	
Percentage grid electricity	%		70%	70%	71%	
Total self-generated electricity	TJ		8,730	6,852	6,689	
Air quality						
NOx absolute emissions	Ton	1,458	1,312	1,012	1,000	-31%
NOx emission intensity	Kg/ton of production	0.13	0.09	0.07	0.07	-42%
SOx absolute emissions	Ton	5,323	3,275	3,412	3,003	-44%
SOx emission intensity	Kg/ton of production	0.46	0.23	0.25	0.22	-52%
Volatile Organic Carbon (VOC) absolute emissions	Ton	737	790	653	1,213	+65%
VOC emission intensity	Kg/ton of production	0.06	0.06	0.05	0.09	+39%

	Unit	2009	2018	2019	2020	% change 2009-2020
Emission to water (COD)						
COD absolute emissions	Ton	1,202	1,257	961	871	-28%
COD emission intensity	Kg/ton of production	0.10	0.09	0.07	0.06	-39%
Water management						
Fresh water intake	1000 m ³	253,816	189,182	177,948	177,030	-30%
Fresh water intake intensity	m ³ /ton	22.0	13.5	12.9	13.0	-41%
Percentage in water stressed regions	%	0.2%	1.3%	1.4%	1.6%	
Fresh water consumption						
Total	1000 m ³	27,469	28,747	27,724	26,716	-3%
Per ton of production	m ³ /ton of production	2.39	2.05	1.98	1.96	-18%
Percentage in regions with high water stress	%	1.1%	5.7%	6.9%	8.8%	
Waste management						
Total waste	Ton	62,705	56,629	57,222	53,658	-13%
Per ton of production	Kg/ton of production	5.45	4.05	4.14	3.93	-26%
Hazardous waste	Ton	19,184	20,187	20,240	20,015	+5%
Of which to landfill	Ton	2,970	338	437	485	-84%
Percentage recycled	%	37%	33%	38%	36%	
Production						
Performance Formulations	kton		1,422	1,655	1,602	
Technology Solutions	kton		1,771	1,665	1,625	
Nobian	kton		10,796	10,514	10,411	
Sustainable sourcing						
Suppliers assessed on sustainability ¹⁴	#			57	97	
% of bio-based raw materials (portion of organic materials)			18	17	19	
Management systems						
% of manufacturing sites with ISO-14001/RC-14001 certifications	%				85%	

¹⁰ Measured in thousand metric tonnes

¹¹ In 2019, we updated our methodology for calculating Scope 3 upstream emissions. In prior years, we estimated emissions from raw materials based on the bill of materials for products. In 2019 and 2020, we use actual raw material data. Raw materials exclude intra-company transfers, trading, tolling, and utilities.

¹² Including renewable grid electricity

¹³ Including low carbon and renewable grid electricity

¹⁴ Suppliers assessed using EcoVadis. The EcoVadis assessment covers topics related to environmental, ethics, labor practices, and human rights, as well as sustainable procurement

Social

	Unit	2018	2019	2020
Workforce data				
Global headcount Nouryon employees	#	10,395	10,389	9,730
% female in workforce	%	23%	24%	23%
% female in senior positions	%	26%	25%	24%
Employee turnover rate (voluntary and involuntary)	%	12%	17%	14%
Safety				
Total Recordable Incident Rate (TRIR)– Nouryon Employees and temporary workers ¹⁵	Per 200,000 hours worked	0.28	0.29	0.23
Lost Time Incident Rate (LTIR) – Nouryon Employees and temporary workers ¹⁵	Per 200,000 hours worked	0.15	0.10	0.15
Management systems				
% of manufacturing sites with OHSAS-18001/RC-18001 certifications	%			36%

¹⁵ TRR and LTIR of employees and temporary workers. The total reportable rate (TRR) is the number of injuries, including fatalities, resulting in a lost time case, restricted work or requiring medical treatment by a competent medical practitioner per 200 000 hours worked. The lost time injury rate (LTIR) is the number of injuries resulting in a lost time case per 200 000 hours worked according to OSHA. Temporary workers are reported together with employees since day-to-day management is by Nouryon.

Governance

	2018	2019	2020
Board			
Directors	8	9	10
Average director tenure (years)	0	1	2
Independent directors	0	0	1
Independent directors (%)	0%	0%	10%
Board diversity			
Women on the Board	0	0	1
Women on the Board (%)	0%	0%	10%
Board coverage of ESG issues			
Frequency of Board updates on ESG issues	quarterly	quarterly	quarterly
Board oversight of climate strategy? (Y/N)	Y	Y	Y
Policies			
Code of Conduct, anti-discrimination, anti-harassment ¹⁶	N	Y	Y
Anti-corruption, anti-bribery ¹⁷	N	Y	Y
Business Partner Code of Conduct, including suppliers	N	Y	Y
Health, Safety, Environment and Security (HSE&S), including product stewardship	N	N	Y
Palm oil statement	N	N	Y
Sensitive Country Policy ¹⁸	N	N	Y

¹⁶ Also including anti-money laundering, non-retaliation

¹⁷ Including availability of SpeakUp! Reporting Website or Hotline, available 24/7 and with local language support

¹⁸ For trade compliance

Independent Assurance Statement



Nouryon Specialty Chemicals BV (Nouryon) engaged ERM Certification and Verification Services (ERM CVS) to provide limited assurance in relation to specified 2020 data as set out below and attached as an Appendix to this statement.

Engagement summary	
	Whether the 2020 data (1 January 2020 to 31 December 2020) for the following selected indicators are fairly presented, in all material respects, with the reporting criteria
Scope of our assurance engagement	Environment <ul style="list-style-type: none"> Total Scope 1 (direct) GHG emissions [kton CO₂e] Total Scope 2 (indirect) GHG emissions [kton tons of CO₂e] – market-based method Scope 3 upstream emissions (emissions of purchased raw materials only) [kton CO₂e] Total energy consumption [mln GJ] Energy intensity [GJ/ton of production] Renewable energy (as % of total energy use) NOx absolute emissions [Ton] NOx emissions intensity [Kg/Ton of production] SOx absolute emissions [Ton] SOx emissions intensity [Kg/Ton of production] Total freshwater use (excl. cooling water) [1000m³] Total freshwater use intensity (excl. cooling water) [1000m³/Ton production] Total waste [Ton] Total waste intensity [kg/Ton of production] Hazardous waste [Ton]
	Safety <ul style="list-style-type: none"> Total OSHA incident rate (OIR) for employees and temporary workers [Per 200,000 hours worked] Total OSHA incident rate (OIR) for contractors [Per 200,000 hours worked] Lost time injury rate (LTIR) employees and temporary workers [Per 200,000 hours worked] Lost time injury rate (LTIR) contractors [Per 200,000 hours worked]
	Other <ul style="list-style-type: none"> Sites certified to ISO 14001 [%] Suppliers acknowledging our Business Partner Code of Conduct [%] Female workers (global employees) [%]
Reporting criteria	Nouryon's internal reporting criteria and definitions
Assurance standard	ERM CVS' assurance methodology, based on the International Standard on Assurance Engagements ISAE 3000 (Revised)
Assurance level	Limited assurance
Respective responsibilities	Nouryon is responsible for preparing the specified information and for its correct presentation in reporting to third parties, including disclosure of the reporting criteria and boundary. ERM CVS's responsibility is to provide conclusions on the agreed scope based on the assurance activities performed and exercising our professional judgement.

Our conclusions

Based on our activities, nothing has come to our attention to indicate that the 2020 data for the selected indicators, as listed on the left and stated in Appendix 1, are not fairly presented, in all material respects, with the reporting criteria.

Our assurance activities

Our objective was to assess whether the reporting of the 2020 data is in accordance with the principles of completeness, comparability (across the organisation) and accuracy (including calculations, use of appropriate conversion factors and consolidation).

We planned and performed our work to obtain all the information and explanations that we believe were necessary to provide a basis for our assurance conclusions.

A multi-disciplinary team of sustainability and assurance specialists performed the following activities:

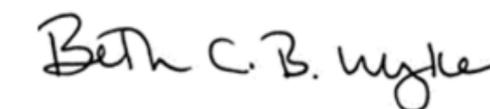
- Interviews with relevant staff at Nouryon corporate offices to understand and evaluate the data management systems and processes (including IT systems and internal review processes) used for collecting and reporting the selected data;
- A review of the internal reporting criteria, definitions and conversion factors used;
- 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. We interviewed relevant staff, reviewed site data reporting methods, checked calculations and assessed the local internal quality and assurance processes;

- 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

The limitations of our engagement

The reliability of the assured data is subject to inherent uncertainties, given both the available methods for determining, calculating or estimating the underlying information. It is important to understand our assurance conclusions in this context. We do not provide any assurance on future performance or the achievability of any Nouryon goals and targets.



Beth Wyke

Partner, Head of Corporate Assurance

July 8, 2021

ERM Certification and Verification Services, London

www.ermcvs.com; email: post@ermcvs.com



ERM CVS is a member of the ERM Group. The work that ERM CVS conducts for clients is solely related to independent assurance activities and auditor training. Our processes are designed and implemented to ensure that the work we undertake with clients is free from bias and conflict of interest. ERM CVS employees that have undertaken this engagement have provided no consultancy related services to Nouryon Specialty Chemicals BV in any respect.

Appendix 1

Indicator	2020 data (1 January 2020 to 31 December 2020)
Environment	
Total Scope 1 (direct) GHG emissions [kton CO ₂ e]	1,182
Total Scope 2 (indirect) GHG emissions [kton tons of CO ₂ e] – market-based method	1,739
Scope 3 upstream emissions (Emissions of purchase of raw materials only) [kton CO ₂ e]*	2,112
Total energy consumption [mln GJ]	88.6
Energy intensity [GJ/ton of production]	6.49
Renewable energy (as % of total energy use)	49
NOx absolute emissions [Ton]	1,000
NOx emissions intensity [Kg/Ton of production]	0.07
SOx absolute emissions [Ton]	3,003
SOx emissions intensity [Kg/Ton of production]	0.22
Total freshwater use (excl. cooling water) [1000m ³]	26,716
Total freshwater use (excl. cooling water) intensity [m ³ /Ton production]	1.96
Total waste [Ton]	53,658
Total waste intensity [kg/Ton of production]	3.93
Hazardous waste [Ton]	20,015
Safety	
Total OSHA incident rate (OIR) for employees and temporary workers [Per 200,000 hours worked]	0.23
Total OSHA incident rate (OIR) for contractors [Per 200,000 hours worked]	0.20
Lost time injury rate (LTIR) employees and temporary workers [Per 200,000 hours worked]	0.15
Lost time injury rate (LTIR) contractors [Per 200,000 hours worked]	0.07
Other	
Sites certified to ISO 14001 [%]	85
Suppliers acknowledging our Business Partner Code of Conduct* [% by spend]	99
Female workers (global employees) [%]	23

* Packaging materials for end products and transport of raw materials to our manufacturing sites are not included, as is the production and transport of fuels used to produce energy on our sites

** Tracked by acceptance of a Nouryon Purchase Order or a signed Nouryon contract

About Nouryon

Nouryon is a global, [specialty chemicals leader](#). Markets and consumers worldwide rely on our essential solutions to manufacture everyday products, such as personal care, cleaning goods, paints and coatings, agriculture and food, pharmaceuticals, and building products. Furthermore, the dedication of more than 9,700 employees with a shared commitment to our customers, [business growth](#), safety, [sustainability](#) and innovation has resulted in a consistently strong financial performance. We operate in over 80 countries around the world with a portfolio of industry-leading brands. Visit our [website](#) and follow us [@Nouryon](#) and on [LinkedIn](#).

Nouryon