



Sustainability Report 2019



Nouryon



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1. Nouryon in 2019

2019 Key facts



About **10,000** employees worldwide



Operating in over **80** countries



More than **5,000** patents



Approximately **€5 billion** in annual revenues



Almost **400** years of experience



€1.9 billion revenue from Eco-Premium Solutions

Your partner in essential chemistry for a sustainable future

Nouryon is a global specialty chemicals leader. We supply industries worldwide with essential chemicals for the manufacture of everyday products such as paper, plastics, building materials, food, pharmaceuticals, and cleaning and personal care items. Our unique product portfolio includes cellulosics, salt, organic peroxides, chlor-alkali, bleaching chemicals, expandable microspheres, and surfactants.

We are a world-class business, evidenced by our safety record, customer service ratings, and our resilient financial performance. Our dedicated employees, unique product lines, commitment to continuous improvement, and strong customer relationships have helped us achieve high profitability and leadership positions throughout our businesses. The company has proven to be a reliable partner, with most customer relationships lasting longer than 10 years and a 98 percent retention rate for the top 250 customers.

Representing a 400-year-old heritage, Nouryon was separated from its previous owner and launched as a stand-alone company in October 2018, allowing it to accelerate growth by increasing its focus on producing specialty chemicals that add value for society.

As part of this journey, the company will further assess how to best integrate sustainability in its strategy, touching on all aspects of business, including environmental and social. This report provides an overview of activities in the first full year of the new company and serves as a baseline for further development of our approach to a sustainable future.

The markets we serve



Paints, coatings and construction



Cleaning and personal care



Pulp and paper



Agriculture



Water treatment



Food



Oil and gas



Electronics



Polymer production and processing





and many more...


Values and Core Principles

We constantly strive to find innovative and sustainable ways to help our customers and partners progress, because when they grow, we grow. Achieving long-term growth in the chemicals industry requires a strong commitment in all aspects of our operations.

Our Core Principles - Safety, Integrity and Sustainability - define what we stand for as a company.


 **Safety**
We care about the safety of our colleagues and everyone we deal with, and focus on people, process, and product safety.


 **Integrity**
We care about conducting our business in a fair and honest way.

 **Sustainability**
We care about our environment, our colleagues, our business partners and the communities we operate in.



Our Values - leading the way, delivering on our commitments, and growing together - enable us to be not only an industry leader, but also a trusted partner, respected employer, and a responsible member of the communities in which we operate.

 **Leading the way**
We are industry leaders in terms of products as well as safety, sustainability, and reliability. Being proactive, adopting a 'can-do' attitude, doing the right thing, pushing ourselves to be experts in what we do, and continuously improving the way we work will enable us to remain leaders and deliver products and support our partners can rely on.

 **Delivering on commitments**
We have built a reputation for being reliable and trustworthy. This is based on more than just the quality of our products; it's also about following through. This means doing what we say we will for our customers, our partners, our colleagues, and for the communities in which we operate. We build and maintain strong, long-term relationships and deliver results that we can be proud of.

 **Growing together**
Long-lasting and productive relationships are the foundation of our success, and we believe collaboration will be key to our future success. We are all on the same team. Actively supporting and collaborating with colleagues, customers, and partners helps us to grow together and share success.

Organization and leadership

In 2019, Nouryon operated its portfolio through five Business Units, each with their own line of essential chemical building blocks and ingredients for products we use every day. As of January 1, 2020, Nouryon moved to a structure with three [market-focused Businesses](#) supported by a centralized Operations and Functional structure to accelerate growth and drive performance improvement.

Nouryon's Board of Directors oversees the Nouryon group and its executive management. The Board's responsibilities include setting and reviewing the strategy of the company and supervising our risk management, preparation of financial statements, and remuneration of our employees and executives. In addition, the Board has ultimate responsibility for incorporating sustainability in the company strategy and monitoring performance.





Led by our Chairman and Chief Executive Officer Charlie Shaver, Nouryon's [leadership team](#) consists of representatives with business, operations or functional responsibility.

Environmental sustainability is managed directly by the Integrated Supply Chain, reporting to the Chief Integrated Supply Chain Officer, to ensure its inclusion in every factory we operate around the globe. Responsibility for Compliance lies with the General Counsel and Corporate Secretary, who is supported by a dedicated Chief Compliance Officer. Human Resources, including the development and empowerment of our people, is overseen by the Chief Human Resources Officer.

A global Sustainability Steering Team, consisting of representatives of all businesses and the different regions of our Integrated Supply Chain, drives sustainability in the different parts of the organization and designs and deploys programs and central processes, embeds progress reviews, and provides governance.

We combine long-term focus with short-term performance by delegating business responsibility deep in the organization while managing core capabilities centrally.

Each Business draws its strength from:

-  **Leading market positions**
-  **Worldwide geographical presence**
-  **Centrally-driven continuous improvement program**
-  **Shared capabilities in innovation, sustainability, sales, and information management**

2. Our approach towards a sustainable future

As an established industry leader, we take pride in minimizing our environmental impact and maximizing our positive societal impact. We focus our efforts on three areas: economic, environmental, and social.

Economic: Sustainable growth

- Finding sustainable innovations to fit our customers' needs
- Creating value by driving sustainable business models

Environmental: Eco-efficiency

- Increasing energy efficiency and use of sustainable energy
- Increase use of bio-based raw materials

Social: Engaging with our people and partners

- Creating a diverse and inclusive workplace
- Partnering with societal stakeholders and the communities we operate in

Sustainable growth

Following our purpose to "partner in essential chemistry for a sustainable future," we see sustainability not just as the right thing to do, but as a true business opportunity that delivers value to everyone involved. We create value for our customers and society by developing new and leading solutions that have smaller footprints or enable our customers to deliver benefits in more sustainable ways. At the same time, we realize that striving for a sustainable future means we need to "future-proof" our operations.

Eco-efficiency

At Nouryon, we are committed to continuously reducing our impact on the environment. The focus of our operational eco-efficiency agenda is to increase raw material efficiency, reduce energy consumption, and decrease both emissions to air and water and the production of waste. More information on our environmental performance can be found in chapter 4.

Engaging with people and partners

We strive to have a positive impact on people's lives through our products every day. Furthermore, we develop, listen to, and empower our employees, partners, and local communities to make our industry safer and more sustainable in all dimensions. Read more about our approach to people and partners in chapter 6.



"We have made good progress in reducing waste and emissions in recent years. As we move forward, we will increase our focus on products that deliver value and help to solve the sustainability challenges that society faces today."

—
Charlie Shaver, CEO

Responsible Care

Nouryon remains committed to Responsible Care, the commitment by the global chemical industry to drive continuous improvement and achieve excellence in environmental, health and safety and security performance. In May 2019, the company was awarded the [Responsible Care Merit Award](#) by the Association of International Chemical Manufacturers (AICM) in China, recognizing our performance and contribution to the development of a responsible chemical industry in the country.

Standards and benchmarks

As part of our journey as a stand-alone company, Nouryon is currently assessing which commitments to endorse and what standards and benchmarks to use as guidance and validation for its sustainability approach.

Case study

Bio-based polymers for improved personal care products

Proving that sustainable products can also offer better quality, Nouryon launched two new bio-based polymers in 2019 for better personal care products.

[“Amaze SP”](#), launched in cooperation with Itaconix, is a plant-based hairstyling product which is superior to synthetic polymers when it comes to humidity-resistant style retention, volume and anti-frizz, giving you both a better and more sustainable look.

A second innovation, [Amaze™ Nordic Barley](#), uses a natural starch derived from barley to replace products made from petrochemicals. The product can be used in both hair and skincare products and addresses the fast-growing consumer demand for natural, biodegradable, and clean label ingredients.

3. Risk management

Effective risk management is a key success factor for realizing our strategic objectives. Nouryon has implemented an enterprise risk management and internal control framework to identify risks and opportunities and to take appropriate mitigating actions.

Nouryon’s approach is based on the COSO reference model and aims to provide a clear, strong, and consistent culture of ethics that apply to all who work at Nouryon. Nouryon’s policies and regulatory framework guide how we work. Key components are our financial, IT, HSE&S, compliance, legal and business continuity frameworks, which are supported by transparency and accountability through our monthly business review cycle and internal control framework.

The objective is to identify and manage the strategic, operational, financial, and compliance risks to which Nouryon is exposed. In addition, the framework enables us to improve effectiveness and efficiency in our operations and ensure reliable financial reporting and support compliance with applicable laws and regulations.

Our enterprise risk management and internal control activities are organized through three lines of defense; the Board of Directors is ultimately responsible for risk management and compliance, and is supported by:

- **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 to ensure that the risk and control procedures are operating as intended; and
- **Third line of defense:** Internal Audit provides independent objective assurance on the effectiveness of governance, risk management, and internal controls, including the manner in which business and operations management and the oversight functions manage and control risk. Internal Audit brings a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.



Quarterly monitoring is done via the Risk Committee and Audit Committee to ensure follow-up on actions, having oversight on risks and actions, be informed on the latest developments and changes and being able to step in when necessary. We also have a Compliance Committee, an executive body that oversees Nouryon's compliance with anti-bribery, antitrust, trade compliance, economic sanctions, and data privacy laws. The committee also supports Nouryon's commitment to a culture, which is further strengthened by various company policies such as the Code of Business Conduct & Ethics, the Nouryon SpeakUp! and Non-Retaliation Policies and the Business Partner Code of Conduct.

In 2019, we identified the following risks that could potentially impact achievement of our strategic objectives: Economic and/or end-market slowdown, execution of the transformation plan, legal and regulatory compliance, cybersecurity, process safety, and asset integrity.

Economic and/or end market slowdown

The world's geopolitical situation remains unpredictable and, as a company, we operate in highly competitive markets. Failure to carefully manage and develop a good understanding of end-user segments could have an immediate impact on financial performance, resulting in the company not achieving its financial guidance.

Execution of the transformation plan

As of January 1, 2020, Nouryon moved to a structure with three focused businesses with a centralized Integrated Supply Chain function. Failure to carefully manage these changes, have process alignment between Integrated

Supply Chain and business, and clearly explain expectations to employees and business could have an impact on financial and operational performance.

Legal and regulatory compliance

Our global footprint exposes us to increasingly stringent laws and regulations as well as litigation on an increasing 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).

The monitoring of compliance with laws and regulations is achieved through an internal control framework, including our internal Code of Business Conduct & Ethics. Adhering to this code is required for all employees as part of their employment with Nouryon. Relevant employees are provided with training on our internal control framework, the Code of Business Conduct & Ethics and other associated policies, and on new and emerging risks, through mandatory e-learnings and in-person trainings.

Cybersecurity

The world is becoming more dependent on IT and that is not different for Nouryon. This means that IT and cybersecurity 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 of personal and company confidential data, and system/operational impacts from cyber-attacks. This risk is mitigated by creating awareness with our employees, continuously monitoring, having agreements with service providers and our business continuity plans.

Process safety and asset integrity

Due to the nature of activities performed by Nouryon there are environmental and health and safety related risks. These risks are mitigated through our process safety management approach. More details can be found in chapter 5, Health and Safety.

It is noted that, as required by law, this is just a selection of material risks which cannot be relied upon as representing all material risks that Nouryon may be facing and does not constitute a representation that no risk is bigger 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.



4. Environment

Relevant policies

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

Key facts

- 
€1.9 billion revenue from Eco-Premium Solutions
- 
29% reduction in carbon emissions per ton of product since 2009
- 
20% of revenue originated from Eco-Premium Solutions with a direct customer benefit

At Nouryon, we are committed to continuously reducing our impact on the environment. The focus of our operational eco-efficiency program is to increase raw material efficiency, reduce energy consumption, and decrease both emissions to air and water and the production of waste. By using renewable energy and increasing the energy efficiency of our operations we can reduce risks in our supply chains, improve our environmental footprint, and help our customers deliver on their sustainability targets. It also opens up new business opportunities in the transition to more sustainable industry, such as green hydrogen produced from renewable power, or with new forms of circular chemistry.

Every quarter, all manufacturing sites, Research and Development (R&D) centers and office locations report on the defined environmental Key Performance Indicators (KPIs) in our global, company-wide reporting system, Enablon. Twice a year, the consolidated dashboard is discussed in our Sustainability Steering Team.

Eco-Premium Solutions

Nouryon provides ingredients that are essential in applications ranging from pharmaceuticals and farming to electric cars and building isolation. We believe that the best contribution we can make to our customers and society is to provide those solutions in a more sustainable way.

Our Eco-Premium Solutions are products that have a significant sustainability benefit over the most common alternative in the market in at least one specific criteria, while providing the same or better functionality. We include several criteria in this comparison (toxicity, energy use, use of natural resources/ raw materials, emissions and waste, land use, risks, health and well-being) and make sure our solution does not have adverse effects in one of the other criteria. Bio-based polymers and our Dissolvine® biodegradable chelating agents are just two of the many examples. Special focus is put on Eco-Premium Solutions with direct customer benefits. This benefit

can be experienced by our customers (e.g. increasing their energy efficiency), but also further down the value chain, such as the end-user (e.g. healthier salt) or at end of life (e.g. a readily biodegradable chelating agent used in a detergent).

In 2019, 37 percent of our revenue came from Eco-Premium Solutions. Around 20 percent of our revenue originated from sales of Eco-Premium Solutions with a direct customer benefit.

Carbon footprint

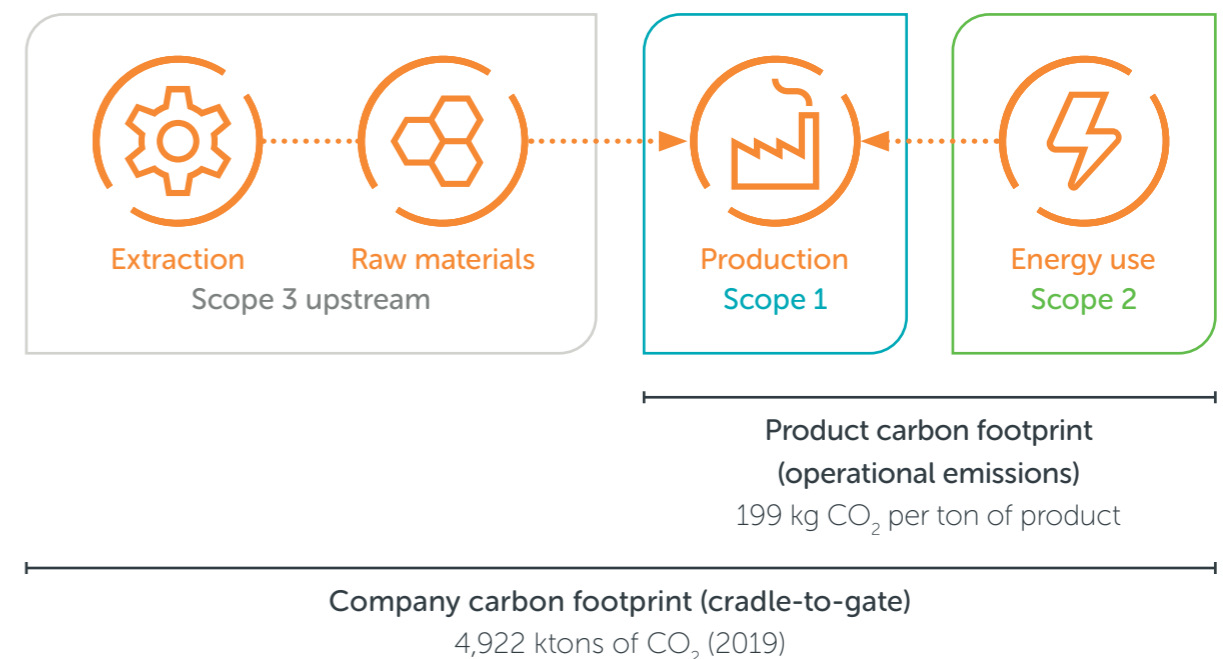
Nouryon recognizes that climate change has a fundamental impact on the global environment, society and business economics and we aim to reduce greenhouse gas emissions along our value chain. We use carbon footprint as a measure of our resource efficiency.

We measure and report our carbon emissions in two ways:

- Our cradle-to-gate company carbon footprint, which includes not only emissions of our own activities, but also those linked to the energy and raw materials we purchase. It is expressed in kilotons of CO₂-equivalent.
- Our product carbon footprint, which is based on our operational emissions and is expressed in kg of CO₂ per ton of production.

In 2019, our cradle-to-gate company carbon footprint was 4,922 kilotons. About 40 percent originates from the supply of raw materials, whereas about 95 percent of emissions due to our own operations are linked to energy consumption. Our product carbon footprint based on our operational emissions was 199 kg CO₂ per ton of product – a reduction of 29% since 2009.

The product life cycle



Operational eco-efficiency

Operational eco-efficiency is our program to increase efficiency in the use of raw materials, energy and water and to decrease emissions and waste in our own operations. By simultaneously reducing operational costs, ensuring our license to operate and lowering our environmental footprint, these efforts benefit our business performance, the planet and the communities we operate in.

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

In 2019, NOx emissions (nitrogen oxides), and chemical oxygen demand (COD) released to surface water decreased compared to 2018, while waste generation remained relatively flat in the last three years.

There was a slight increase in SOx emissions (sulphur oxides), but the overall impact remains

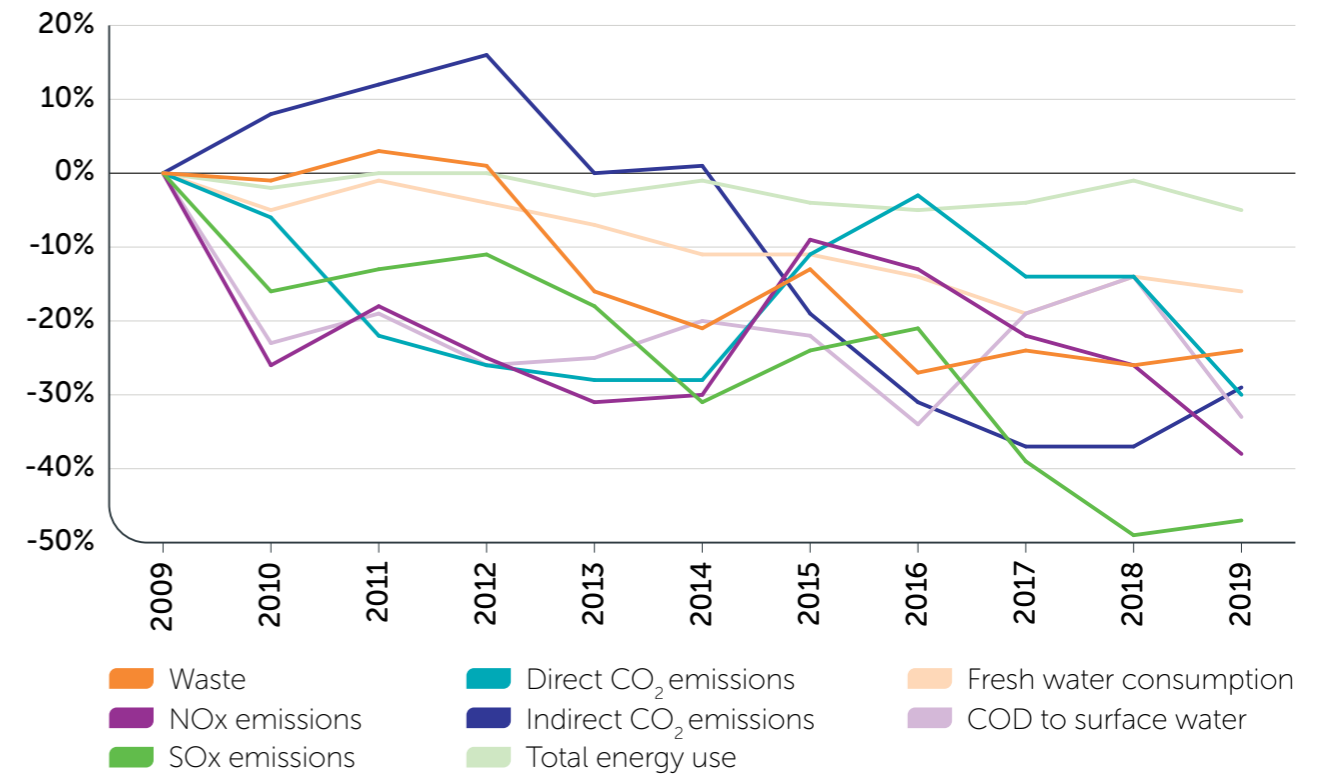
limited as SOx emissions are almost entirely restricted to just three of our 70+ manufacturing sites. Moreover, this result follows a large decrease in emissions in 2018, following an investment in a new SOx extraction unit at our site in LeMoyne (US) in 2018, and the overall trend remains downward.

Energy is important for all our operations, especially in our chlor-alkali and chlorate business lines, which rely heavily on electricity in their production processes. The share of renewable energy decreased slightly to 44 percent in 2019, resulting in higher indirect CO₂ emissions, which was partly offset by higher energy efficiency. Direct CO₂ emissions reduced significantly, mainly because of more external steam supply substituting our own generation.

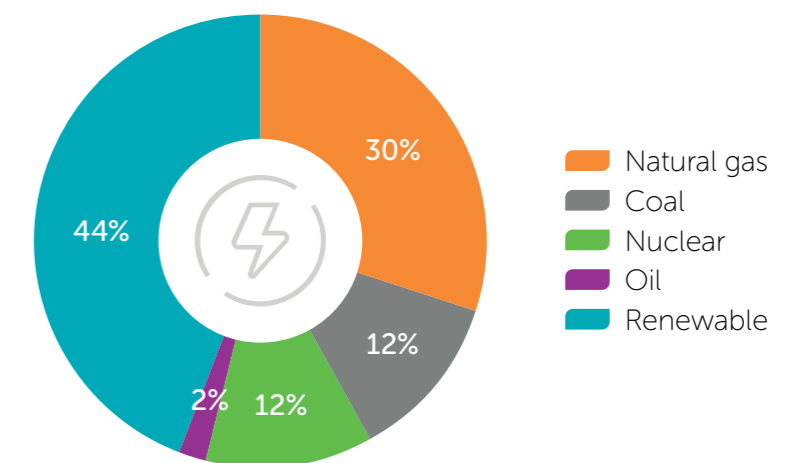
In 2018, we introduced a new tool for sustainable water management to all our manufacturing sites and follow-up plans were agreed for all sites in water-sensitive areas. This approach was continued in 2019 with the aim to reach 100 percent sustainable use of fresh water for all our operations.



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



Energy use in our operations
Percentage by source



Environmental data sheet

	Unit	2009	2017	2018	2019	% change 2009-2019
Company carbon footprint – cradle-to-gate						
Direct emissions	kton CO ₂ equivalent	1,167	1,417	1,408	1,161	
Indirect emissions ¹	kton CO ₂ equivalent	2,069	1,623	1,581	1,772	
Scope 3 upstream emissions ²	kton CO ₂ equivalent				1,989	
Total					4,922	
Product carbon footprint – operational emissions						
Direct emissions ³	kton CO ₂ equivalent	1,167	1,240	1,217	977	
Indirect emissions ¹	kton CO ₂ equivalent	2,069	1,623	1,581	1,772	
Product carbon footprint	kg CO ₂ equivalent/ton	281	200	200	199	-29%
Energy consumption						
Total energy consumption	TJ	76,839	91,601	92,155	87,805	
Energy intensity	GJ/ton of production	6.67	6.41	6.59	6.35	-5%
NOx emissions						
NOx absolute emissions	Ton	1,458	1,403	1,312	1,087	
NOx emission intensity	Kg/ton of production	0.13	0.10	0.09	0.08	-38%
SOx emissions						
SOx absolute emissions	Ton	5,323	4,022	3,275	3,412	
SOx emission intensity	Kg/ton of production	0.46	0.28	0.23	0.25	-47%
Emission to water (COD)⁴						
COD absolute emissions	Ton	1,202	1,210	1,257	961	
COD emission intensity	Kg/ton of production	0.10	0.08	0.09	0.07	-33%
Fresh water use (excl. cooling water)						
Total	1000 m ³	27,469	27,540	28,747	27,742	
Per ton of production	m ³	2.39	1.93	2.05	2.01	-16%
Waste⁵						
Total waste	Ton	62,705	58,834	56,629	57,222	
Per ton of production	Kg	5.45	4.12	4.05	4.14	-24%
Hazardous waste	Ton		20,141	20,187	20,240	

¹ Indirect emissions are calculated based on the market-based approach

² Includes only emissions due to purchase of raw materials. Because of change of methodology and scope, data for prior years are not comparable anymore and are hence left out

³ Direct emissions are corrected for emissions due to generation and sale of energy to third parties

⁴ Chemical Oxygen Demand directly discharged to surface water

⁵ Waste means any substance or object arising from our routine operations which we discard or intend to discard, or we are required to discard. Hazardous waste is waste that is classified and regulated as such according to the national, state or local legislation in place

Case study

Reduced emissions through increased use of sustainable steam

In the past 10 years, Nouryon considerably reduced its use of natural gas in the Netherlands by using more steam from waste and biomass. In 2019, the company once again increased the use of bio-steam at Delfzijl and Hengelo, the Netherlands, used chiefly in the production of salt.

Thanks to the smart use of steam and green energy, annual CO₂ emissions in Delfzijl are now 300,000 tons lower than in 2013 – a saving equivalent to the emissions of some 35,000 European households.

In Hengelo, the supply of sustainable steam from waste processing company Twence in 2019 enabled additional savings of up to 50,000 tons of CO₂ per year. The residual heat from the factory is made available for heating nearby houses and businesses.







5. Health and safety

Relevant policies

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

Key facts

-  Nouryon was a top-quartile safety performer in 2019
-  Total reportable injury rate (TRR) stayed below 1.5 per 1 million hours worked
-  Industrial hygiene plans rolled out to 70% of sites
-  0 occupational illness cases

Nouryon strives to deliver leading performance in health, safety, environment and security (HSE&S) with a vision to reach zero injuries, waste and harm. Our programs and activities on environmental impact reduction is presented in the Environment section; this chapter addresses the health and safety activities.

We are committed to providing a healthy and safe workplace using sound occupational health and hygiene principles to anticipate, recognize, control and eliminate those hazards which may pose a risk to our employees or contractors and to proactively protect and promote the health, safety and well-being of our employees at work and in their communities.

Nouryon has a leading HSE&S management system driving continuous improvement through operational excellence including procedures, training, self-assessments, annual improvement planning and independent internal audit, as well as promoting learning across the organization. Our common processes require each site to develop their own safety improvement plan annually supported by the central HSE&S organization.

To increase awareness and strengthen our safety culture, we proactively report on leading parameters such as:

- **Near misses** - an event which had no impact but had the potential to result in injury, ill-health, or damage to assets or the environment.
- **Hazards** - any condition or situation that could potentially harm people, product, or the environment.

In addition, Nouryon uses a Behavior-Based Safety (BBS) program at all locations to identify critical behaviors and inducing changes in behavior of employees and contractors to reduce exposures to hazards. These observations are done regularly and in a structured way based on the location's observation strategy. Once a year, Nouryon also organizes a company-wide Safety Day to strengthen general safety culture in the entire organization.



Health

As well as ensuring a safe working environment, healthy working conditions and managing illness-related absenteeism, Nouryon also fosters employee health and well-being as part of the company occupational health program. Examples include industrial hygiene programs at site level and the promotion and use of the wellness program as well as health profile assessments offered at sites.

In 2018, we started systematic implementation of Industrial Hygiene plans for our manufacturing sites. Over 70 percent of our sites had industrial hygiene plans in place in 2019 and the roll out will be continued in 2020 with an eye on covering all our sites around the globe. No occupational illness cases were reported in 2019.

Safety

Safety is a Core Principle of Nouryon and our goal is to continuously improve our performance for the benefit of our people, contractors, customers, neighbors and the environment. The improvement in safety performance is based on having robust processes in place and consistently applying and improving these at all our locations. We specifically look at people safety, process safety and product safety.

People safety

It is Nouryon's aim to have zero injuries and it is our belief that every injury is preventable. We have succeeded in reducing the number of incidents considerably over the years.

The main KPIs for people safety are Total Reportable Injury Rate (TRR) and Lost Time Injury Rate (LTIR) for employees & temporary workers and contractors. The graphs below show the development of injury rates for employees and contractors over time.

Our TRR for own employees ranks in the top quartile of American Chemistry Council members. In 2019, Nouryon paid specific attention to contractor safety, as performance here was lagging compared to our own employees and had not improved in the last four years. Contractor Safety was made the theme of the company's annual Safety Day in 2019 and additional emphasis was put on this area in internal reports and processes to further improve.

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

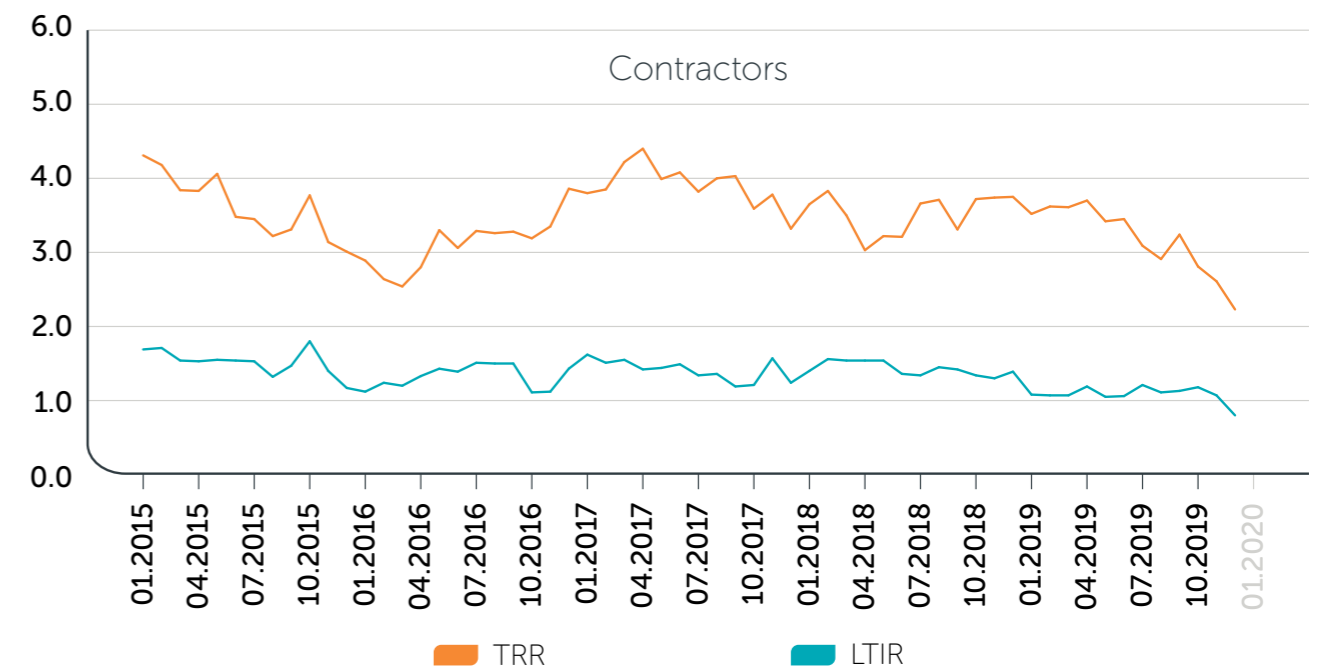
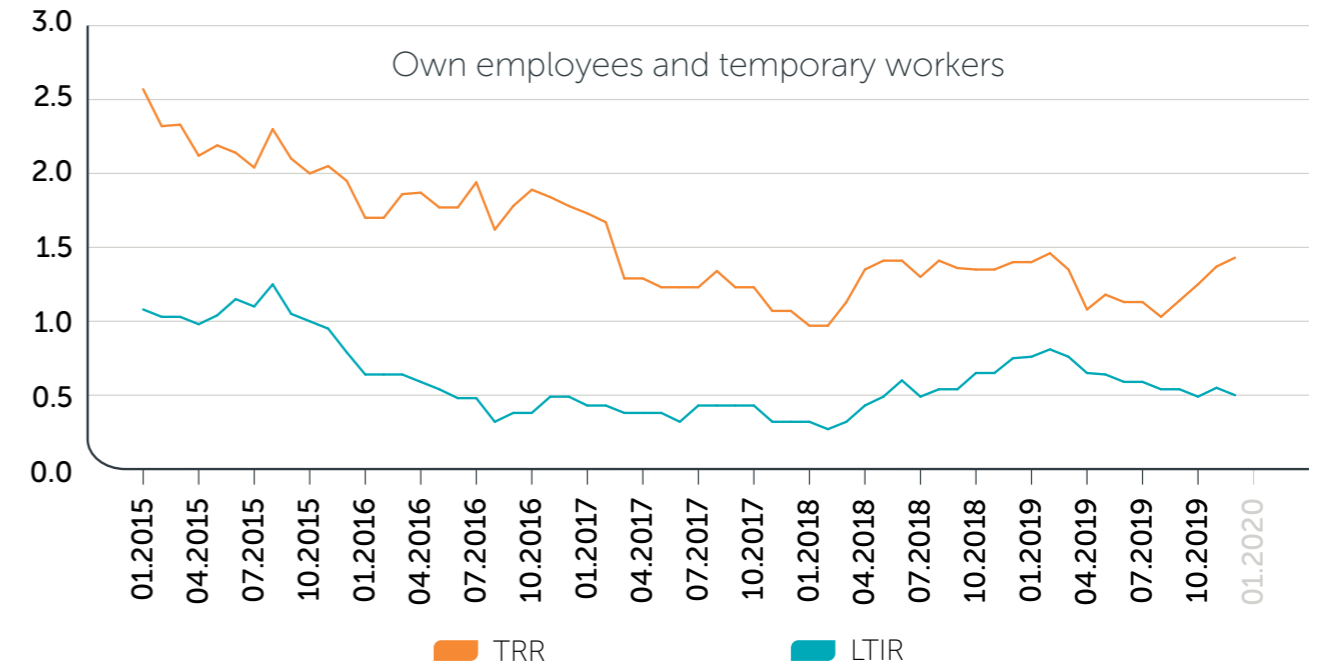


Wear a seatbelt in motor vehicles when provided



Do not use alcohol or drugs at work

Injury rates



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 1 000 000 hours worked. The lost time injury rate (LTIR) is the number of injuries resulting in a lost time case per 1 000 000 hours worked. Temporary workers are reported together with employees since day-to-day management is by Nouryon.

Process safety

Nouryon has developed a Process Safety Management (PSM) framework for all operations, following industry standards and best practices. Implementation of the framework at site level is phased according to the risk rating of the site.

Process safety performance indicators are aligned with international best practices. A loss of primary containment (LoPC) is the main process safety indicator at manufacturing sites, with two levels of severity. As a leading indicator, we also measure process safety events (PSEs), which are minor leaks or occurrences that could lead to more severe LoPCs and activations of Safety Instrumented Systems, which are automatically initiated process control actions in production, triggered by certain parameters such as pressure or temperature.

All LoPCs are categorized according to impact, aligned with the API754 global standard, where Level 1 indicates the highest impact. All incidents are investigated to determine potential trends and to implement preventive controls.

In 2019, we continued to raise awareness and improved reporting of the process safety indicators. The total number of incidents involving a Loss of Primary Containment (Level 1 and 2) decreased by 29 percent from 2018 to 2019.

Product safety

We use a product stewardship approach to ensure that product safety is considered throughout the value chain – from raw material extraction, R&D, manufacturing, transport, marketing and application all the way through to end-of-life and/or recycling. We aim to deliver value to Nouryon and our customers by ensuring regulatory compliance in every region where we operate, and to continually develop safer and more sustainable solutions for the market.

Our industry-leading and multiple award-winning Priority Substance Program has a track-record of allowing Nouryon to promote the use of safer and more sustainable products and to manage potentially harmful substances in advance of legislation, future-proofing our products against changes in regulations.

The program reached a milestone in 2018 when we completed our review of all substances identified in our risk assessment. We screened approximately 2,500 unique substances used for our products as part of the program, resulting in detailed analyses of more than 70 substances and various changes to our products and formulations. The program is now considered to be fully embedded in the company, forming part of normal operational activities in the key functions that control raw materials used in our formulations.

	Unit	2017	2018	2019	% change 2018-2019
People safety					
Total reportable injury rate (TRR) employees and temporary workers	Per 1,000,000 hours worked	1.1	1.4	1.4	+2%
Lost time injury rate (LTIR) employees and temporary workers	Per 1,000,000 hours worked	0.3	0.8	0.5	-34%
Total reportable injury rate (TRR) contractors	Per 1,000,000 hours worked	3.3	3.8	2.2	-41%
Lost time injury rate (LTIR) contractors	Per 1,000,000 hours worked	1.2	1.4	0.8	-43%
Process safety					
Loss of Primary Containment (LoPC), Level 1 and 2	Total	81	92	65	-29%



Case study

Safer sites with Industry 4.0

In addition to a rigorous Process Safety Management framework and Behavior-Based Safety program, we are increasingly focused on using new technologies from outside the chemical industry to improve the safety of our factories.

For example, the use of robots allows us to perform inspections in tanks, preventing people from having to work in confined spaces, which is known to pose additional risks. In 2019, Nouryon partnered with Invert Robotics and successfully used their technology to remotely inspect the inside of tanks at one of our factories in the Netherlands. Another example is the use of sensors to predict when equipment may fail so it can be replaced in time. In 2018, Nouryon partnered with startup firm Semiotic Labs after it won our [Imagine Chemistry innovation challenge](#). We ran a pilot program in 2019 at our site in Ibbenbüren, Germany, which showed promising results. In 2020, we plan to roll out predictive maintenance technology to eight more sites in Europe.



6. Our people and partners

Relevant policies

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

Key facts

-  60 key suppliers assessed on sustainability in 2019
-  20% women in leadership positions
-  62% of employees participated in the "Organizational Health Index" survey
-  60% of our employees also participated in "Turning Values into Leading Performance" sessions

At Nouryon we aim to create a high-performing and diverse workplace. Our employees' engagement and dedication are essential for our competitive edge. We support inclusive behaviors by our people, our partners, and the communities in which we operate.

We find that working collaboratively with a wide range of stakeholders, such as customers, partner companies, universities, and start-ups is helping us drive growth, whilst at the same time becoming more sustainable and more innovative.

Our people

We believe that our employees are crucial to the success of our company. We therefore protect and respect employee rights, offer positive working conditions and create an inclusive workplace where our people feel valued and are engaged to perform at their best. Nouryon is also highly committed to promoting the health, safety and well-being of our employees at work and in their communities. More about this can be found in chapter 5, Health & Safety. As we guide employees through the transformation of

the company, we have introduced new ways of measuring engagement and obtaining employee feedback. This includes live engagement sessions with employees, regular surveys with sample groups and the launch of an all-employee Organizational Health Index survey at the end of 2019. This survey was rolled out in nine languages and answered by 62% of our global workforce, providing valuable input on how employees feel about the work environment, company leadership and strategy. The results of this survey will be analyzed for actions and improvements in 2020.

Employee rights and working conditions

We take the responsibility to protect and respect employee rights. This means ensuring an inclusive culture regardless of race, ethnicity, gender, sexual orientation, socio-economic status, age, physical ability, religious or political beliefs, etc. It also encompasses employee rights such as freedom of association, the right to fair and just working conditions, a safe working environment and adequate wages to afford a decent quality of life.

At Nouryon, we strive for a working environment where people feel they are trusted and treated fairly and with dignity and respect, free of any kind of harassment or discrimination, both in our own operations and at our business partners.

The basic conditions for this follow from our Code of Business Conduct & Ethics, which strictly prohibits any form of discrimination or harassment (see also section 7).

In addition, good working conditions include fair working hours, competitive salaries or wages and appropriate office, bathroom and restaurant facilities and compliance with local legal and contractual requirements. Moreover, we respect individual rights to freedom of opinion and association, and we respect the right to collective bargaining and co-determination.

Key facts

Our workforce consists of 73 different nationalities, 24% of our workforce is female and 10% is 60 years of age or older, the average age is 45 years. Of the approximately 1,200 new hires in 2019, 32% are female, 40% are below 30 and 12% are 50 or older.

Employee engagement and inclusion

Nouryon aims to actively embrace diversity of thought and empower people to challenge each other to be more innovative and deliver better results. The skills, knowledge and engagement of our employees are vital to ensure that we develop innovative and sustainable solutions that help our customers and partners to grow and by that, drive our company's growth and profitability. We believe it is important that our leadership reflects the diversity of our overall workforce, because inclusive and diverse teams are better able to understand customer needs and innovate to meet their requirements. Diversity is encouraged through a process of active workforce planning and local recruitment strategies.



Performance and development

Our functional faculties and digital learning environment support both short- and long-term capability building. We provide access to on-the-job learning experiences for all employees and offer a range of trainings to our employees, classroom learning, online learning, and company required courses.

We engage employees in a high-performance culture where outstanding results are being rewarded and where there is room for open and continuous dialogue to perform at your best. The purpose of our performance review process is to sustain the performance and growth of both our employees and Nouryon.

In 2020, the company will move to a more continuous performance management process with more frequent check-ins to guide employees in their performance on a more continuous basis.

In 2019, 60 percent of our employees also participated in "Turning Values into Leading Performance" sessions. These sessions give teams a focused opportunity to understand our Values, gain exposure to the "high-performance behaviors" and commit to team actions to achieve the team's most challenging objective for 2019.



Our partners

Our commitment to fair and ethical business practices goes beyond our employees, but also touches upon our supply chain and includes engagement with a wide range of stakeholders, such as customers, partner companies, universities, labor unions, and the communities in which we operate.

Community

Nouryon operates factories at over 70 sites around the world and our relations with those local communities are key to our social license to operate. As part of the assessment process and audit used in our HSE&S management system, we assess the relationship with our neighbors and communities surrounding our production sites. This includes efforts made to identify and address any community concerns and maintain a dialogue with the surrounding community.

Further activities to inform and involve the community include organization of open days at site for the public and maintaining a regular dialogue by means of information evenings, participation in local events, or individual meetings in case there are any concerns. In addition, Nouryon encourages employees around the world to support their communities in addressing local societal and environmental issues (see the case study "Coming together against local pollution").

Suppliers

Our commitment to human rights, health & safety and protection of the environment does not begin or stop at our factory gates. We require all of our business partners to adhere to our Business Partner Code of Conduct, which requires:

- **Respect for all people.**
Business partners must provide a workplace free of discrimination and harassment and treat employees and job applicants fairly.
- **Respect fundamental human rights.**
Business partners must ensure that the products and materials they sell to Nouryon are not created with child labor, forced labor or through the victims of human trafficking and must take reasonable steps to eliminate such practices in their supply chains.
- **A safe working environment.**
Business partners must provide a safe, clean and healthy working environment that complies with all relevant laws, rules, and regulations and must strive to prevent occupational injuries and safety incidents.

In addition, in 2019 we launched a sustainable procurement initiative to monitor social and environmental performance in our supply chain. Using the EcoVadis CSR platform we have reached out to our raw material, energy and logistics suppliers. In the first campaign, we targeted our top 80 suppliers, together representing about half of our total spend. By the end of 2019 we had assessed about 60 suppliers. As we define our new sustainability approach in 2020, this assessment will serve as the basis for identifying further actions and measures with regards to supplier engagement.



Case study

Coming together against local pollution

Nouryon encourages employees to come together to support the community in addressing local societal and environmental issues. At our Bahia plant in Brazil, employees partnered with our customer Veracel to support the local Association Gota de Óleo (AGO), which helps collect and recycle 10,000 PET bottles and 1,000 liters of used cooking oil each month. Rather than ending up in the sea, the items are turned into soap, rope or other useful products.

The employees volunteered to help with the recycling and shared best practices from the chemical industry to make the recycling process safer for all volunteers of the association. The local community was also invited in order to raise awareness and encourage selective collection of raw materials, making this a 'win-win' for the association, the community, and our employees.

7. Compliance and business ethics

Relevant policies

- Code of Business Conduct and Ethics
- SpeakUp! and Non-Retaliation Policy
- Business Partner Code of Conduct

Key facts



Over 95% of our employees completed at least one training related to ethical business conduct in 2019.

In early 2019, we launched our key ethical principles of Integrity, Responsibility and Respect. We also unveiled a new Code of Business Conduct & Ethics, which is based on our ethical principles and provides guidance to our employees for their interactions with our customers, vendors and each other. Our company's Compliance program and initiatives are overseen by our Chief Compliance Officer, who meets quarterly and as-needed with our corporate Compliance Committee, which is composed of the Chief Financial Officer, the Executive Vice President & General Counsel, and the Chief Human Resources Officer. Our Chief Compliance Officer also provides quarterly updates to the Audit Committee of our Board of Directors.

Code of Business Conduct & Ethics

Nouryon's commitment to ethical business conduct is encapsulated in our Code of Business Conduct & Ethics (the Code), which was approved by our Board of Directors in April 2019. Our employees are required to adhere to this Code at all times and they receive online training on it annually. Depending on their positions within the company, employees may also receive online or in-person training on ethical business conduct related to anti-bribery/anti-corruption, antitrust/competition law compliance, data protection and economic sanctions. Over 95 percent of our employees completed at least one training related to ethical business conduct in 2019.

We understand that our commitment to ethical business conduct does not end with our employees. We also request our business partners to adhere to our Business Partner Code of Conduct, which was also approved by the Board of Directors in April 2019 and outlines our expectations with regards to compliance with laws, ethical business practices and treatment of people. We conduct due diligence on certain business partners to ensure that they have not engaged in illegal activities or other conduct that does not meet our high ethical standards and commitment to complying with applicable laws at all times. Our due diligence process includes business partner questionnaires to gauge awareness of key compliance issues and

screening of certain business partners and their key employees against government watchlists/economic sanctions lists, lists of past litigation or government enforcement actions, and adverse media focused on potential ethics or human rights abuses. Business partners are also given access to our ethics reporting hotline, SpeakUp! discussed below.

Reporting concerns

Employees are provided with several channels to raise concerns about illegal or unethical conduct or policy violations, including our human resources, legal or compliance departments or via SpeakUp!, our ethics reporting hotline and website. SpeakUp! allows

employees and business partners to report concerns anonymously, to the extent allowed by local law, 24-hours a day, seven days a week in any of 32 languages. Employees who raise concerns are protected by Nouryon's Non-Retaliation Policy.



Nouryon

We are a global specialty chemicals leader. Industries worldwide rely on our essential chemistry in the manufacture of everyday products such as paper, plastics, building materials, food, pharmaceuticals, and personal care items. Building on our nearly 400-year history, the dedication of our 10,000 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. We operate in over 80 countries around the world and our portfolio of industry-leading brands includes Eka, Dissolvine, Trigonox, and Berol.

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