

Reporting Principles

for the Nouryon Sustainability Report 2023

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1. Reporting Context

1.1 Organizational Boundaries and Changes

The reporting of our performance indicators is based on financial reporting: operations and activities, fully owned or with more than 50% ownership by Nouryon are 100% included in the reporting process. Operations and activities that are owned 50% or less by Nouryon are not included in this reporting.

Acquired operational activities are included in our performance reporting as of the month in which financial consolidation takes place. Divested activities cease reporting as of the month in which financial consolidation takes place. Exception: the Fort Amanda Joint Venture, does report only on Safety as the employees operating the production facility have a Nouryon contract while the Environmental indicators are part of facility owned by the Joint Venture which is 50% owned by Nouryon and not part of the reporting process.

Changes in Nouryon Metrics reporting entities 2022 – 2023 YTD

Health, Safety and Security (HSS) reporting entities:

L2	L3	L4	Change	as of
Americas	Projects Americas	L4 Project Americas Savanna	New	jan-23
Americas	Marietta Office	L4 Marietta Office TS Organization	Closed	aug-22
Asia	Singapore	L4 Singapore Alkoxylation PF Organization	Temporary	dec 22 - mar 23
Asia	Suzhou	L4 Suzhou TS Organization	Closed	mei-22
Asia	Tianjin Beichen	L4 Tianjin Beichen TS Organization	Closed	sep-22
EMEIA	Amersfoort Office	L4 Amersfoort Office COR Organization	New	jan-23
EMEIA	Bohus	L4 Bohus COR Office Organization	Closed	feb-23
EMEIA	Bohus	L4 Bohus TS Non-Manufacturing Organization	Closed	feb-23
EMEIA	Deventer RDI	L4 Deventer ISC COP Organization	Split off	jan-23
EMEIA	Milan Office	L4 Milan Office COR Organization	New	feb-23
EMEIA	Poznan	L4 Poznan PF Organization	New	jan-23
EMEIA	Wroclaw	L4 Wroclaw PF Organization	New	jan-23
EMEIA	Düren ELM	L4 Düren ELM Organization	Closed	feb-22
EMEIA	Novara	L4 Novara PF Organization	Closed	jan-23
EMEIA	Arnhem Office	L4 Arnhem Office COR Organization	Closed	jan-23
EMEIA	Arnhem Office	L4 Arnhem Office PF Organization	Closed	jan-23
EMEIA	Arnhem Office	L4 Arnhem Office TS Organization	Closed	jan-23

Specifics:

- The Arnhem offices was closed, and all personnel moved personnel to Amsterdam and new Amersfoort office.
- The transfer of office workers from the Bohus manufacturing site to the new Gothenburg office was completed.
- New HSS reporting entities were created for the two new Polish sites. For the first year following their acquisition, the sites were in the process of onboarding to Nouryon's internal HSE procedures

and controls. We began tracking data in 2023, and 2024 is the first year the newly acquired site safety data will be included in Nouryon reported safety metrics.

- A new HSS reporting entity for the new Savanna construction site (Grass Root) was created.

New and closed Energy and Environment reporting entities:

L2	L3	L4	Change	As of
Americas	Bahia	L4 Bahia Chlorate Plant Additional	Split off	Q1 23
Americas	Jundiai	L4 Jundiai Chlorate Plant Additional	Split off	Q1 23
Asia	Guangzhou	L4 Guangzhou Silica Plant Additional	Split off	Q1 23
Asia	Jiaxing	L4 Jiaxing MA Plant Additional	Split off	Q1 23
Asia	Ningbo Multisite	L4 Ningbo Site Services Additional	Split off	Q1 23
Asia	Singapore	L4 Singapore Alkoxylation Surfactants Plant	New	Q1 23
Asia	Tianjin Beichen	L4 Tianjin Beichen OP Plant	Closed	Q3 22
EMEIA	Poznan	L4 Poznan Chelates Plant	New	Q1 23
EMEIA	Poznan History	L4 Poznan History Plant	Rebaseline	Q1 19
EMEIA	Wroclaw	L4 Wroclaw Chelates Plant	New	Q1 23
EMEIA	Wroclaw	L4 Wroclaw Fertilizer Plant	New	Q1 23
EMEIA	Wroclaw History	L4 Wroclaw History Fertilizer	Rebaseline	Q1 19
EMEIA	Wroclaw History	L4 Wroclaw History Chelates	Rebaseline	Q1 19

Specifics:

- Additional reporting entities for Jundiai, Bahia, Ningbo, Jiaxing and Guangzhou sites were created to facilitate the reporting of two different electricity sources (e.g., electricity provided in renewable electricity contracts vs. from the grid).
- New reporting entities were created due the acquisitions in Singapore and Poland as of Q1 2023.
- Separate reporting entities for the Polish sites were created for the period Q1 2019 through Q4 2022 for historical data (when these sites where not owned by Nouryon)..
- The reporting entity for the Tianjin Beichen site was closed as now the new Tianjin Nangang site has taken over all activities from Beichen.

Update of base year data: Environmental metrics have been updated to include data from the new Polish sites, including historical data back to 2019. This provides a consistent basis for comparing performance on our targets (carbon, water, waste) vs. the base year. In our internal reporting procedures, we recalculate base year data in cases where the change is material (5% or more).

1.2 Reporting Criteria

We assess our carbon footprint annually with the aim to align as much as possible with the Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting standard¹. Our footprint is measured across our value chain – including Scopes 1, 2 and Scope 3.

¹ The following standards: GHG Protocol. A Corporate Accounting and Reporting Standard Revised edition. WRI and WBCSD 2004., GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard. WRI and WBCSD 2015., GHG Protocol. Technical Guidance for Calculating Scope 3 Emissions Supplement to the Corporate Value Chain (Scope 3) Accounting & Reporting Standard, 2013.

Where relevant, we align metrics with the Sustainability Accounting Standards Board (SASB) Chemical sector reporting requirements. In addition, we report for select metrics with reference to the Global Reporting Initiative (GRI).

1.3 Healthy, Safety and Environmental (HSE) performance indicators

For tracking and reporting health, safety, and environmental related performance indicators we use a software system, Enablon. This system includes several integrated modules. Performance indicators used for external reporting are tracked in the Metrics Module.

Our organization is reflected in the Enablon structure in a layered number of reporting entities where consolidated manufacturing, logistics, research, and office activities are represented. The Metrics reporting is done on a selected number of reporting entities on the L4 and L5 levels. Health Safety and Security reporting is done on a monthly basis. Energy and Environment reporting is done on a quarterly basis.

Offices and research facilities (with the exception of our Deventer Innovation Center) are excluded from reporting in Energy and Environment as their contribution to the company total is considered immaterial.

With the mentioned frequencies, questionnaires (datasheets) are generated and sent to representatives of the selected reporting entities. These questionnaires are partly prefilled with data extracted from other Enablon modules, and site representatives enter the remaining data. Automatic calculations are done within the system. The Enablon system can generate reports in different forms, periods, and cross sections of the company.

HSE data are entered at the reporting entity level data by a designated contributor who sends the completed questionnaire on to a validator (usually the site manager). After completion of the Q3 reporting campaigns an extended data integrity check is executed involving Regional and Corporate HSE experts. This exercise is repeated after the closing of the Q4 reporting campaigns for year end.

1.4 Suppliers acknowledging our Business Partner Code of Conduct

The progress on signed Business Partner Code of Conduct declarations across Nouryon is reported on a yearly basis using our Ariba Purchase Order system. Nouryon's Business Partner Code of Conduct is embedded in our General Terms and Conditions as well as all Contract Templates. Supplier acknowledgement is executed via Purchase Order acceptance or signed contract agreement as standard practice.

Data on suppliers covered by the Business Partner Code of Conduct are consolidated at corporate level with the percentage of spend covered extracted from our Ariba Purchase Order system and reviewed annually.

1.5 Site certifications

Nouryon tracks ISO, OSHAS, and related certificates for all manufacturing sites. Many of the certificates are combined regional certificates (e.g., we have an ISO14001 management system standard for sites in South America). Certificates are available on our public Nouryon.com site.

ISO information per site such as certificate type and expiration date are collected yearly and consolidated at the corporate level. Our ISO certification percentage metric includes sites that

have been in our portfolio for one year or more. This is to allow sufficient time required for activities reviewed by the certification process (e.g., pre-start up safety reviews, management reviews, production, and/or internal audits if relevant). Any exceptions will be identified.

1.6 Human Resources (HR) Data

Nouryon uses SuccessFactors as a global HR system for managing employee data, including talent and performance management, recruitment and learning data. The system stores a range of personal and job information, including reporting line, salary, job history, etc. SuccessFactors is a real time system running Nouryon's processes and forms the basis of monthly or quarterly internal reporting as well as HR reporting in the sustainability report. Data is entered and authorized at defined levels in country and business organizations.

2. Metrics

2.1 Production Quantity

The Production Quantity of a reporting entity is the number of metric tons of commercial products produced and leaving the reporting entity on "as is basis". This means that solvents which are added to the reactive components are included in this amount. If a commercial product from one reporting entity is used as a raw material for another reporting entity this quantity is still included. This is not the case with non-commercial intermediates: these are not included in the production quantity.

Intensity-based metrics are based per unit of production.

2.2 Health and Safety

2.2.1 People Safety

OIR

All injuries are reported following OSHA² guidelines. Recordable injuries are reported as Medical Treatment, Restrictive Work, Lost Time Injuries or Fatalities. The OSHA Incident Rate (OIR) is the total number of recordable injuries per 200,000 hours worked. This is reported as the OIR for (1) Nouryon employees and temporary workers, and (2) for contractors.

LTIR

The Lost Time Injury Rate (LTIR) is the number of Lost Time Injuries per 200,000 hours worked. This is reported as the LTIR for (1) Nouryon employees and temporary workers, and (2) for contractors.

2.2.2 Process Safety

Process Safety Events

Process Safety Events are reported according to the API RP 754 guidelines. The incident investigations of PSE level 1 and level 2 incidents are supported by the Process Safety

² US Occupational Safety and Health Administration

Management (PSM) expert team.

PSTIR

The Process Safety Total Incident Rate (PSTIR) is the number of Process Safety Incidents per 200,000 hours worked. It is reported as (1) a PSTIR for PSE1 incidents and (2) as a PSTIR for the combined number of PSE1 and PSE2 incidents.

2.3 Environmental

Environmental indicators are obtained in many ways using different measurements: weight, volume, flow, concentration, process information systems and Nouryon calculations. Where possible, internal measurements are aligned with external measurements: invoices from utility suppliers (electricity, steam, water) and service providers (waste handling, wastewater treatment facilities). Sites define how indicators are obtained (governed by our HSE procedures). In many cases, reporting overlaps with reporting required for regulatory authorities.

2.3.1 Direct CO₂ (Scope 1)

Direct CO₂ from Fuels

We defined the following standard fuels: natural gas, LPG, fuel oil, and coal. The consumed quantities are multiplied by a Lower Heating Value (standards provided but sites are to enter site specific factors if available). The resulting Fuel Energy is multiplied by a Fuel Emission Factor (from public sources) to calculate the Direct CO₂ from Fuels. In case a non-standard fuel is consumed sites need to provide the related Lower Heating Value and Fuel Emission Factor for the energy and Direct CO₂ calculations.

Direct Process CO₂

For processes where CO₂ is generated because of a chemical reaction (different from combustion) the resulting CO₂ quantities are calculated by the reporting entities and entered in the Enablon Environmental Questionnaire under Direct Emissions.

Direct Process emissions from other greenhouse gases (GHGs)

We have not historically included process emissions from other greenhouse gases (GHGs) CH₄, N₂O, HFCs, and PFCs in our emissions inventory. In 2023, we assessed emissions from these gases and their CO₂ equivalents. For Scope 1, this was estimated to be less than 2%. We do not include these in our Scope 1 emissions.

2.3.2 Indirect CO₂ (Scope 2)

Indirect CO₂ related to Electricity Purchase

Indirect CO₂ related to electricity is calculated from the quantity of purchased electricity and a carbon emission factor. Aligned with the GHG Protocol, we report market and location-based emissions and apply the GHG Protocol's emission factor hierarchies.

For market-based scope 2 emission factors, in cases where energy attribute certificates, renewable contracts or supplier-based emissions factors are not available, we use eGrid for grid average emission factors in the US for 2021 (created January 30, 2023) and for Europe, we use the residual grid factors from the Association of Issuing Bodies (published June 1, 2023). Where residual grid factors are not available and in other regions, we use national electricity emission factors from the International Energy Agency (IEA). For 2023 data, this was based on IEA 2021 final data published and purchased in September 2023 (see the table below showing which yearly data we used per year).

	Reporting year				
	2019	2020	2021	2022	2023
IEA data source, from 2022	IEA data year 2017 final	IEA data year 2018 final	IEA data year 2019 final	IEA data year 2020 estimate	
IEA data source from 2023					IEA data year 2021 final

Indirect CO₂ related to Steam Purchase

The Indirect CO₂ related to Steam is calculated from the energy content of the purchased steam and a steam emission factor. This steam emission factor depends on the type of fuel used to generate the steam and how it is generated (for example: steam boiler or Combined Heat Power unit).

2.3.3 Emissions related to biomass

Up to and including the 2023 sustainability report, we have not reported emissions from purchased electricity and steam generated from biomass (for example, CO₂ emissions as a separate category or CO₂ equivalent emissions from CH₄ and N₂O in Scope 2). Scope 2 emissions do not include CO₂ equivalent emissions from CH₄ and N₂O. We are evaluating this for future reporting.

2.3.4 Energy and Electricity

Total Energy Consumption

The Total Energy Consumption is the sum of Energy Fuels, Energy Electricity, Energy Steam and Energy Hot Water (condensate).

Renewable Electricity %

The Renewable Electricity % is the ratio of external electricity from renewable (wind, solar, hydro and biomass) sources divided by total electricity consumption. For sites that have a zero or near zero emission factor from a mix of low carbon electricity sources (e.g., renewable and nuclear), we include the portion that is from renewable sources, excluding nuclear).

Renewable Energy %

The renewable Energy % is the sum of external electricity from renewable (wind, solar, hydro and biomass) sources as stated in the renewable electricity % definition, and external steam supply from renewable (biomass) sources and renewable fuel (biomass) relative to the Total Energy Consumption.

2.2.5 Air Emissions

NO_x

The Total NO_x emission is the sum of Direct NO_x emission and Fuel Related NO_x.

For chemical processes that generate NO_x, the resulting NO_x quantities are calculated by reporting entities and entered under Direct. Direct NO_x emission is a manual input provided by reporting entities based on measurements or calculations.

NO_x related to fuels is calculated based on a defined emission factor ratio specific to each fuel type. If a site has primary data (for example based on stack measurements), sites are requested to use these measured values.

SO_x

The Total SO_x emission is the sum of Direct SO_x emission and Fuel Related SO_x.

For chemical processes that generate SO_x, the resulting SO_x quantities are calculated by reporting entities (based on measurements or calculations) and entered under Direct Emissions.

Fuel related SO_x, is calculated based on the sulfur content of the fuel. Reporting entities enter the mass % of sulfur within the quantities of fuel oil and/or coal from which the SO_x emission is calculated in Enablon on a mass balance basis.

VOC / HAP

VOC (Volatile Organic Compounds) and HAP (Hazardous Air Pollutants) emissions to air are calculated by the reporting entities based on either spot measurements, modelling, or mass balance.

2.3.6 Waste

Reported waste is waste related to normal operations and shipped off site during the reporting period. Project waste such as construction demolition or soil remediation projects is not included. The reported waste is grouped in 8 different categories related to hazardous and non-hazardous classifications, reusable and non-reusable destinations, and the way of processing. Hazard classification follows local regulations. In many cases, our sites utilize certified external waste handling contractors that manage waste, aligned with local and regional regulations.

2.3.7 Water

Fresh water intake

Fresh water intake is reported as intake from Ground water, Surface water or provided by a supplier (Potable and Process). Total Fresh Water Intake is the sum of these indicators.

Fresh water use

Fresh water use is reported as Use Cooling, Use Process and Use Other.

- Use Cooling is specifically for open (once through) cooling systems where cooling water is returned to the same water body from where it was taken – the only difference being an increase in temperature.
- Use Process includes water usage for cleaning, rinsing, extraction, reaction dilution and water contained in products. Use process also includes water evaporation from cooling towers.
- Use Other is a calculated indicator. It is calculated from the difference between the Total Fresh Water Use and the sum of the use of Cooling and Process water.

Fresh water consumption

The Fresh Water Consumption is the sum of the Fresh Water Use Process and the Fresh Water Use Other.

Wastewater

Most Nouryon sites have wastewater treatment facilities. In cases where facilities do not have wastewater treatment facilities, wastewater is sent to an off-site wastewater treatment facility. Reporting entities report the COD in water sent to surface water and COD sent to off- site wastewater treatment facility. In the latter case, if COD measurements are not available, the reporting entity estimates the COD quantity for example by means of a mass balance approach.

2.3.8 COD

COD (Chemical Oxygen Demand) emissions to water are calculated by the reporting entities based on either spot measurements or mass balance combined with flow measurements. We are disclosing COD absolute emissions to surface water as well as to external waste water treatment facilities.

2.3.9 Scope 3 Calculations

For scope 3, we strive to utilize data sources that are temporally relevant and geographically representative. Where possible, we prioritized physical quantities (mass of purchased raw materials and generated waste, miles traveled) vs. spend-based data.

Primary and Secondary Data Definitions

Per the GHG Protocol³:

Primary Data: Data from activities within a company's value chain, including data provided by suppliers or other value chain partners. Primary activity data may be usage or spend, or

emissions data calculated by suppliers specific to suppliers' activities.

Secondary Data: Data that is not from specific activities within a company's value chain. This includes industry-average data (e.g., from published databases, government statistics, literature studies, and industry associations), or financial data. In certain cases, companies may use specific data from one activity in the value chain to estimate emissions for another activity in the value chain. This type of data (i.e., proxy data) is considered secondary data, since it is not specific to the activity whose emissions are being calculated.

Category 1 – Purchased Goods and Services

Category definition: *This category includes upstream emissions from the production of products purchased by Nouryon as raw materials in the reporting year as well as packaging and services. The upstream emissions are related to the extraction, production, and transportation of goods and services purchased by Nouryon in the reporting year, not otherwise included in Categories 2– 8:*

Primary data:

- Raw materials – Average-data Method – Mass of purchases
- Packaging – Spend-based Method – Spend on purchases
- Services – Spend-based Method – Spend on purchases
- Expenses - Spend on company credit cards (P-cards)

³ GHG Protocol. Technical Guidance for Calculating Scope 3 Emissions Supplement to the Corporate Value Chain (Scope 3) Accounting & Reporting Standard.

Secondary data:

- Raw materials – Average-data Method – Mass-based ecoinvent and Sphera Emission Factors (Global focused, ecoinvent 3.9.1, GaBi 2022.1)
- Packaging – Spend-based Method – US EPA EIO factors v1.2, 2019 dataset (2021 USD). Released April 20, 2023.
- Services – Spend-based Method – US EPA EIO factors v1.2, 2019 dataset (2021 USD). Released April 20, 2023.

Nouryon's Category 1 footprint is calculated as the total of raw materials, packaging and services. Raw materials emissions are estimated by multiplying the mass of raw material purchases by material-specific emission factors. Packaging and services emissions are estimated by and multiplying packaging and services spend by sector-specific emission factors.

There is some overlap in data (for example hotel stays) provided for P-card spend and data provided for category 6. Spend categories from the P-card data that are accounted for in category 6 are excluded from the category 1 calculations. As such, there is no overlap in the calculated emissions between category 1 and category 6.

Category 2 – Capital Goods

Category definition: *This category includes upstream emissions from the production of capital goods (for example, plant equipment used in manufacturing) purchased by Nouryon in the reporting year. Emissions from the use of capital goods by the reporting company are accounted*

for in either Scope 1 (e.g., for fuel use) or Scope 2 (e.g., for electricity use), rather than in Scope 3.

Primary data:

- Spend-based Method – Spend on capital projects

Secondary data:

- Spend-based Method – U.S. EPA Supply Chain GHG Emission Factors v1.2 (2019) [2021 USD]. Released April 20, 2023 (this EPA emission factor dataset is the latest available as of November 2023).

Nouryon’s Category 2 footprint is calculated by multiplying Fixed-assets spend by sector-specific emission factors.

Category 3 – Fuel- and energy-related activities, not included in Scope 1 or Scope 2

Category definition: *This category includes emissions related to the production of fuels and energy purchased and consumed by Nouryon in the reporting year that are not included in Scope 1 or Scope 2. Activities include:*

- Upstream emissions of purchased fuels – Extraction, production, and transportation of fuels consumed by the reporting company.
- Upstream emissions of purchased electricity – Extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating, and cooling that is consumed by the reporting company.
- Transmission and distribution (T&D) losses – Generation (upstream activities and combustion) of electricity, steam, heating, and cooling that is consumed (*i.e.*, lost) in a T&D system.

⁴ GHG Protocol. Technical Guidance for Calculating Scope 3 Emissions Supplement to the Corporate Value Chain (Scope 3) Accounting & Reporting Standard.

Primary data:

- Quantity of purchased fuels, steam, and electricity used

Secondary data:

- T&D Losses for Electricity – Average-data Method – Country specific Emission Factors from IEA 2023 dataset, T&D Loss factor (2021)
- Well to tank (WTT) for Fuel – Average-data Method – DEFRA Emission Factors by fuel type, 2023, WTT-Fuels
- WTT for Electricity – Average-data Method – DEFRA Emission Factors by country and grid loss from IEA 2023 dataset, T&D Loss factor (2021)
- WTT, steam generation – Average-data Method – DEFRA 2023, WTT-heat and steam
- T&D, purchased steam – Average-data Method – DEFRA 2023, WTT-heat and steam

Nouryon's Category 3 footprint is calculated by multiplying fuel, electricity, and steam use by emission factors for upstream fuel extraction and transmission & distribution losses.

For fuel related calculations, the most commonly used fuels (natural gas, LPG, fuel oil, coal) and other fuels (fuel gas) are included. Calculations for biomass fuel and other smaller use fuels (gasoline for fork lift trucks) are excluded as their contributions are very minor.

Category 4 – Upstream Transport

Category definition: *This category includes emissions related to the transportation and distribution of products purchased in the reporting year, between Nouryon's tier 1 suppliers and its own operations in vehicles not owned or operated by Nouryon (including multi-modal shipping where multiple carriers are involved in the delivery of a product but excluding fuel and energy products).*

Category 4 also includes emissions from third-party transportation and distribution services purchased by Nouryon in the reporting year (either directly or through an intermediary), including inbound logistics, outbound logistics (e.g., of sold products), and third-party transportation and distribution between Nouryon's own facilities.

Outbound logistics services purchased by Nouryon are categorized as upstream because they are a purchased service.

Primary data:

- Spend-based Method – Spend on transportation, distribution, and logistics (with a breakdown by mode of transportation), including:
 - Spend on inbound transportation, logistics and warehousing.
 - Spend on outbound transportation, logistics and warehousing.
 - Spend on combined customer deliveries ('milk runs')
 - Spend on transportation between Nouryon sites.
 - Spend on leased iso tanks and rail cars.
 - Spend on leased storage tanks.

Secondary data:

- Spend-based Method – US EPA EIO factors v1.2, 2019 dataset (2021 USD). Released April 20, 2023 (Latest dataset as of January 11, 2024).

Nouryon's Category 4 footprint is calculated by multiplying spend by mode-specific emission factors for truck, rail, air, sea, and warehousing.

Category 5 – Waste Generated in Operations

Category definition: *This category includes emissions from third-party disposal and treatment of waste generated in Nouryon's owned or controlled operations in the reporting year. This category includes emissions from disposal of both solid waste and wastewater.*

Primary data:

- Waste-type Specific Method – Mass, region, and type of waste generated

Secondary data:

- Ecoinvent 3.9.1 EFs
- US EPA EIO factors v1.2, 2019 dataset (2021 USD). Released April 20, 2023

A Waste-type Specific Method is used: Mass, region, and waste stream of waste generated. Nouryon's Category 5 footprint is calculated by multiplying mass of waste generated by treatment-route-specific emission factors.

Category 6 – Business Travel

Category definition: *This category includes emissions from the transportation of employees for business related activities in vehicles owned or operated by third parties, such as aircraft, trains, buses, and passenger cars. Estimated emissions from hotel stays are also included.*

Primary data:

- Spend-based Method – Spend broken down by travel category – Public transit and food.
- Distance-based Method – Mileage broken down by flights, personal car, and rental car.
- Hotel broken down by nights.
- Travel Expenses – Spend on company credit cards (P-cards)

Secondary data:

- Spend-based Method – US EPA EIO factors v1.2, 2019 dataset (2021 USD) for spend-based category (US EPA EIO Released April 20, 2023).

Nouryon's Category 6 footprint is calculated by the sum of the following:

- Spend-based Method - Spend broken down by travel category – Public transit Average-data Method - Mileage broken down by flights, personal car, and rental car; Hotel broken down by nights
- Depend-based activity data multiplied by sector-specific emission factors.

Category 7 – Employee Commuting

Category definition: *This category includes emissions from the transportation of employees from their homes to place of work. Estimated emissions from remote employees are also included in Nouryon's inventory.*

Primary data:

- Headcount of full-time employees by country and commute breakdown by modes of transportation
- Average employee commute distance
- Number of remote full-time employees.
- Estimated percentage of shuttle traveling per country

Secondary data:

- For full time employees - Average-based Method – DEFRA 2023, Passenger Vehicles, average car (by size), unknown fuel source
- For remote full-time employees - Average method for IEA Factors for electricity, DEFRA for WTT electricity

Numbeo.com traffic data is used as a source for average commute distances where more accurate study data is not available. The distances used are Overall Average Travel Distance to Work by country.

Nouryon's Category 7 footprint is calculated by multiplying average commute distance traveled (country data) by an activity-based emission factor (DEFRA). Countries with less than 10 employees are grouped under rest of world which uses average commute distance from other countries. Select shuttle information for various countries is used where available.

For 2023, we assume all commuting (except for commuting per shuttle) is done via car.

Category 8 – Leased Assets (Nouryon estimate)

Category definition: *This category includes emissions from the operation of assets that are leased by Nouryon in the reporting year and not already included in Nouryon's scope 1 or scope 2 inventories.*

This category is not included in our scope 3 calculations:

Reason for exclusion:

- Nouryon does not have any upstream leased assets which we operate.
- Nouryon does not operate the warehouses that are storing their products.
- Warehousing costs that Nouryon purchases but does not operate are included in Category 4.

Category 9 – Downstream Transport

Category definition: *This category includes the transportation and distribution of sold products in vehicles not owned or leased by Nouryon, after the point of sale of the product, where the transport cost is not paid for by Nouryon.*

This category is not included in our scope 3 calculations.

Reasons for exclusion:

- Disaggregated data is not readily available to determine the amount in the selling price of a product that applies to transportation and distribution (customers typically pay for transportation). Warehousing costs are included in Category 4.
- Outbound transportation and distribution services that are purchased by Nouryon are excluded from category 9 and included in category 4 (upstream transportation and distribution) because Nouryon purchases the service.

Category 10 – Processing of Sold Products

Category definition: *This category includes emissions from processing of Nouryon's*

intermediate products by third parties. Intermediate products are products that require further processing, transformation, or inclusion in another product before use, and therefore may result in emissions from processing following Nouryon's sale but before use by the end consumer.

This category is not included in our scope 3 calculations.

Reasons for exclusion:

- Nouryon sells intermediate chemical products. Given the wide variety of intermediate products sold by Nouryon and myriad of uses and applications, obtaining data for this category is prohibitive.
- The depth of data required cannot be reasonably collected with confidence. Estimates would be based on broad assumptions, lack accuracy and lead to a potential misrepresentation of Nouryon's Scope 3 footprint.

Category 11 – Use of Sold Products

Category definition: This category includes emissions from the use of goods and services sold by Nouryon in the reporting year. This includes the Scope 1 and Scope 2 emissions of end users – including for example consumers or business customers that use final products.

Primary data:

- Direct use-phase emissions – Sales volume by region and description of product end uses.

Secondary data:

- Direct use-phase emissions – IPCC AR6 (2021) global warming potentials

A product line is considered to contribute to category 11 if it is emitted, combusted, or otherwise released to the atmosphere during normal product use. Products that are emitted to the atmosphere and are considered GHGs with a GWP assigned by the IPCC AR6 report contribute to the category 11 footprint.

Considering potential end-use applications of our product lines, we consider that no sold products are combusted, nor are used as blowing agents or otherwise emitted during use.

There are two exceptions:

- Our product Dimethyl ether (DME) is used as an aerosol propellant but does not have a global warming potential (GWP) according to IPCC AR6 (2021). Thus, we assume no emissions from direct use-phase.
- Our product Carbon Dioxide (a high-purity byproduct from the manufacturing of Ethylene Oxide in Stenungsund) is used in the beverage industry. We assume that this product is released to air during the use-phase and emissions are included.

Category 12 – End-of-Life Treatment of Sold Products

Category definition: This category includes emissions from the waste disposal and treatment of products sold by Nouryon at the end of their life.

Primary data:

- Waste-type specific method – Sales volume by region and description of product end use

Secondary data:

- Waste fate by region - What a Waste 2.0
- ecoinvent 3.9.1 and Sphera MLC (formerly GaBi) emission factors (EF's) 2022.1 (with Global focus) for treatment of waste, wastewater and recycling.
- (WWT) pathways added for EOL.

Nouryon's Category 12 footprint is calculated by multiplying product sales volumes by waste fate by region and by treatment-route-specific emission factors. In case of dilutions in water, the product volumes have been revised to reflect the volume of active content. The water content of the products is determined by subtracting the active content of each product from the total product mass. It is assumed that the water contained in each product ends up in the wastewater stream. The water contained in each product is treated as part of the wastewater stream and an emission factor for wastewater treatment is applied to account for GHG emissions for this portion of the product. GHG emissions from wastewater treatment for product water are calculated separately from GHG emissions from the active portion of the product.

Products which are emitted directly to the atmosphere (DME, high purity Carbon Dioxide sold to the beverage industry) during use do not require end-of-life treatment and are excluded from the end-of-life model. Dimethyl ether (DME) is sold as an aerosol propellant and is emitted directly to the atmosphere during use. Carbon dioxide is sold to the food & beverage industry and is also emitted to the atmosphere during use.

Category 13 – Leased Assets

Category definition: *This category includes emissions from the operation of assets that are owned by Nouryon (acting as lessor) and leased to other entities in the reporting year that are not already included in Scope 1 or Scope 2*

This category is excluded as Nouryon does not have downstream leased assets.

Category 14 – Franchises

Category definition: *This category includes emissions from the operation of franchises not included in Scope 1 or Scope 2. A franchise is a business operating under a license to sell or distribute another company's goods or services within a certain location.*

This category is excluded as Nouryon does not own or operate any franchises.

Category 15 – Investments

Category definition: *This category includes scope 3 emissions associated with investments, not included in Scope 1 or Scope 2.*

This category is excluded as Nouryon's only investments are with other companies through joint ventures. However, data is not available due to competitive reasons.

2.4 Other metrics

2.4.1 Suppliers acknowledging our Business Partner Code of Conduct (% by spend)

Defined as % Product Related (PR) and Non-Product Related (NPR) spend (measured by value in USD) with suppliers who have acknowledged our Business Partner Code of Conduct over total spend. This excludes vendors providing NPR services such as pension funds, tax consultants, or local authorities, and spend without a related PO.

2.4.2 ISO 14001 percentage

Defined as the % of our sites having a valid ISO/RC14001 certificate at a defined point in time (for the 2023 Sustainability report this was December 31 2023. This is calculated by dividing the number of sites with valid certificates by the total number of sites in our portfolio. This is based on sites that have been in our portfolio for at least one year.

2.4.3 Female workers percentage

Percentage of total Female employees at all levels divided by total Nouryon employees as of year-end (December 31) in the reporting period. Data includes regular employees, expatriates, and interns derived from data, extracted from the SuccessFactors system.

2.4.4 Eco-Solutions

Defined as the % of our R&D NPI projects delivering Eco-solutions.

This is calculated by dividing the total number R&D NPI projects classified as Eco-Solutions by the total number of R&D NPI projects.

Criteria: The metric starts by assessing product safety and regulatory criteria – solutions are not expected to be regulated in a way that restricts their intended application over the next five years – then checks sustainability drivers. Eco-Solutions either:

- I) have a Sustainable Feedstock Index (SFI)³ greater than 50%,
- II) are biodegradable⁴, or
- III) bring a significant sustainability advancement over the full life cycle⁵.

For evaluating environmental footprint performance, we focus on emissions (including climate related GHGs and other air emissions), resource consumption, energy efficiency, and toxicity.

If products meet more strict criteria, they may be considered circular⁶.

³ The sustainable feedstock index is calculated based on the content of the final Nouryon product and is an assessment of what share of the product is derived from either bio-based organic materials, abundant inorganic materials, and/or recycled materials.

⁴ The biodegradability criteria apply to all intentionally added components in the product and is applied only for solutions that will be used in applications which have been assessed to be relevant such as home and personal care applications and agricultural applications. It does not apply for example to certain applications in which our products are used as intermediates.

⁵ Sustainability advancement is the improved environmental impact of the solution as compared with the incumbent solution along the full life cycle. The improvement must be significant meaning greater than 10% when comparing the Nouryon product's cradle-to-grave impact vs. the incumbent solution.

⁶ The circularity criteria are that products must have a Sustainable Feedstock Index of 100% and will be either biodegrade (i.e. mineralize), and feed into the biogeochemical cycles, or do not contain substances that inhibit the possibilities for recycling in their respective application..

Scope: The scope of the Eco-Solutions metric includes all active NPI projects in the following stages:

- Stage 3: Creation
- Stage 4: Scale-up and pre-launch)

Stages 1 (Screening), 2 (Feasibility), and 5 (Launch and Monitor) are excluded. The metric is measured as the average percentage of projects per month over the past 12 months, providing an accurate representation of the NPI portfolio during that period.

The R&D projects in scope are all active/running projects in Accolade (the R&D project management system) that have passed gate 1 (Scoping) and are part of the innovation pipeline being NPI type 1, 2, and 3:

- Type 1: New product, line extension
- Type 2: New product, existing market
- Type 3: New product, new market

Only projects that have been assessed and validated are included (if assessments done after reporting deadlines, re-statements will be done for historical data). Projects that were stopped or put on hold are excluded.