# This future has a future

Moeve Chemicals ISO 14064-1:2018
carbon
footprint
report **2025**

# Contents

# 01

# Strategy

# 01. Strategy

Moeve continues this year 2025 with its inventory verification plan at the organizational level of Greenhouse Gas (GHG) emissions under the framework of ISO 14064- 1:2018 in line with its Positive Motion. The verification includes the emissions of the following GHGs: carbon dioxide ($CO_2$), methane ($CH_4$) and nitrous oxide ($N_2O$), hydrofluorocarbons (HFC) and hydrochlorofluorocarbons (HCFC).
The process of inventory verification has been carried out in Sustainability & Energy Transition Area with the accreditation of AENOR with a limited level of assurance and a threshold of maximum relative importance of 5%.

With this report:

- Under our strategy and commitment to reduce our $CO_2$ emissions, we adopt rigorous monitoring and volunteer audit of these emissions to enhance our transparency and rigor in communication of emissions.
- Positive Motion Strategy is accompanied by Sustainability Plan in Moeve. Our Sustainability Plan is Moeve's roadmap to promote positive impact and sustainability through our actions linked to environmental, social, and good governance (ESG) criteria, which transversally involve all areas of the company.

Sustainability plan | Moeve

*Moeve has updated its policy framework, and a new climate action policy is available in www.moeveglobal.com*

This Policy aims to establish a framework to articulate the Company's strategy and business model in a manner consistent with its commitment to carry out the necessary climate actions, aligned with the energy transition and a low-carbon economy.

Strategy 2030, towards the energy transition - Moeve

**Our Commitments:**

- **Establish, monitor, and validate by a third-party $CO_2$ emissions and abatement plan targets.**
- **Integrate climate change in the company strategy and in all businesses decision-making processes.**
- **Design carbon mitigation and adaptation plan considering the entire value chain.**
- **Keep climate-related objectives as a monetary reward parameter.**

# 02

# Reporting top-ics

# 02. Reporting topics

## 2.1. Boundaries

### Following emissions are reported under this report

- This report groups **direct GHG emissions** ($CO_2$, $CH_4$, $N_2O$ and refrigerant gases) from the facilities, including combustion, process, fugitive emissions, and emissions from mobile sources. Emissions from facilities's wastewater treatment plants have also been included (Category 1).
- **Indirect emissions** by purchased steam and electricity of the facilities included in the scope of this verification (Category 2).
- Likewise, this 2025 report includes the **indirect emissions** of the **value chain** corresponding to scope 3 under the GHG Protocol Methodology and under ISO 14.064-1:2018 (Categories 3-6).

Greenhouse gas emissions sources have been identified and grouped in accordance with the ISO 14064-1:2018 standard. This standard lists six categories of emissions and differs somewhat from earlier categorization in line with the Greenhouse Gas Protocol's Scopes 1 through 3.

- **Category 1**: Direct GHG emissions and removals
- **Category 2:** Indirect GHG emissions from imported energy
- **Category 3:** Indirect GHG emissions from transportation
- **Category 4:** Indirect GHG emissions from products used by the organization
- **Category 5:** Indirect GHG emissions associated with the use of products from the organization
- **Category 6:** Indirect GHG emissions from other sources

This report, although drawn up in parallel, is developed within the framework of the principles established by Moeve regarding the quantification of GHG and the establishment of objectives to reduce GHG emissions.

### Significance and Materiality

It is necessary to define and explain our own pre-determined criteria for the significance of indirect emissions, considering the intended use of the inventory.

Factors for consideration in assessing significance and materiality include:

- Magnitude or Size of the emissions
- Level of Influence on the emission source
- Difficulty in obtaining data
- Poor validity in available estimation approaches

Whilst all of the above would be considered in materiality assessments, the criteria that would mandate disclosure of emissions sources as significant is:

**a)** Where there is a single source with estimated emissions likely to be at least 1% of its category. In this case, that emissions source must be included.
**b)** Where the total of 'insignificant' sources has estimated emissions likely to be at least 5% of total emissions. In this case, enough of the 'insignificant' emissions must be included until the estimate of excluded emissions is below 5%.

# 2.2. Scope

## Chemicals

Moeve's petrochemical activity is developed in a dynamic of maximum integration with Refining. In this way, products of high added value are manufactured, which are converted into raw materials for other industries and with multiple final applications: detergents, resins, electrical components, synthetic fibers, pharmaceutical products, among others.

The production of basic petrochemical products is carried out at the Gibraltar-San Roque and La Rábida Energy Parks, operated by Moeve. These industrial complexes, located in the provinces of Cádiz and Huelva respectively, have a combined capacity of over one million tonnes per year of petrochemical derivatives. After the distillation of crude oil, the refining units extract raw materials such as benzene, toluene, and xylene, which are used in various chemical processes. They also produce intermediate and final products, including solvents, propylene, and sulfur. Moeve Química, after processing these products, distributes and commercializes the final products worldwide.

- Moeve Chemicals Puente Mayorga

Puente Mayorga Plant, which is located in San Roque (Cádiz), produces linear alkylbenzene (LAB), sulphonic acid (LABSA) for the production of detergents, n-paraffin, dearomatized solvents and heavy alkylates as rolling oils in various industries.

- Moeve Chemicals Palos de la Frontera

Palos de la Frontera Plant is located in Palos de la Frontera (Huelva) and processes benzene and propylene to produce cumene, phenol, acetone and alphamethylstyrene. Phenol and acetone are used in the manufacture of resins, high-tech plastics, synthetic fibers, pharmaceuticals, and a long list of final applications.

- Moeve Chemicals Shanghai

Shanghai Plant is located in Lot C4 of Shanghai Chemical Industry Park (SCIP). It processes benzene and propylene to produce phenol, acetone and cumene. Phenol and acetone are used in the manufacture of resins, high-tech plastics, synthetic fibers, pharmaceuticals, and a long list of final applications.

- Moeve Chimie Bécancour

Bécancour Plant is located in the Bécancour Industrial and Port Park in southern Quebec. Linear alkylbenzene (LAB) is produced there, compound used in the manufacture of biodegradable detergents as well as other secondary products of commercial and industrial utility. The alkylation of benzene with olefins for the production of LAB also implies the production of heavy alkylate bottoms made up mainly of dialkylbenzenes, mainly used as refrigerant additives and for the production of highly hydrophobic surfactants.

- Moeve Química Brasil

Deten Química Plant is located in Polo Petroquímico de Camaçari (Bahía). Linear alkylbenzene (LAB) is produced there, compound used in the manufacture of biodegradable detergents as well as other secondary products of commercial and industrial utility. The sulphonation of the LAB leads to the formation of the corresponding LABSA.

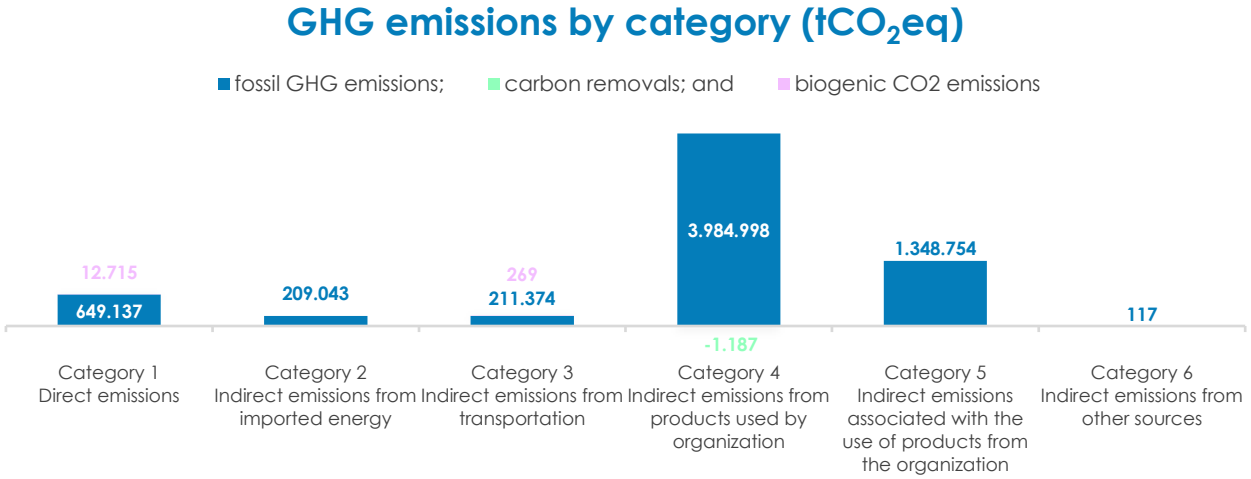
# 03

# Data and methodology

# 03. Data and methodology

## 3.1. Emission data

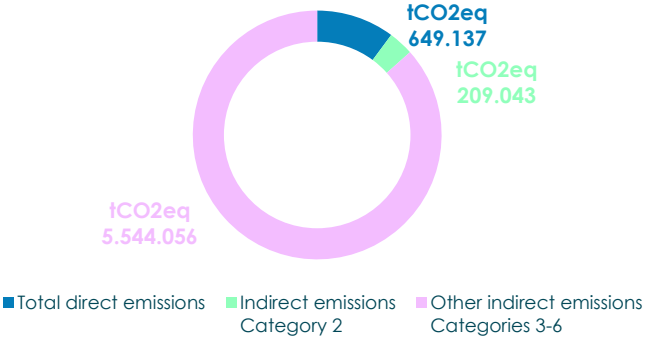
The general distribution of emissions among the above mentioned ISO 14064-1:2018 for the year 2025 categories is shown in the following graph, according to the materiality criteria.




**Where,**

- **Total fossil GHG emissions account to 6,402,237 tonnes of $CO_{2eq}$.** This sum of emissions includes 1,187 tonnes of $CO_2$ due to carbon removals and excludes the biogenic emissions which account to 12,984 tonnes of $CO_{2eq}$.
- It is seen that **Category 4 contributes to the most emissions**, specifically the emissions from purchased products. This is followed by Category 10 and 1.
- Indirect emissions corresponding to Category 2, emissions from purchased energy is shown in the graph as **market-approach calculation**. This category accounts for 270,697 tonnes of $CO_{2eq}$ under location-approach calculation.

Now, the percentage distribution graphs for carbon footprint by scope show that **indirect emissions account for the largest percentage** of emissions calculated.



The breakdown of **direct emissions** is shown in the following table:

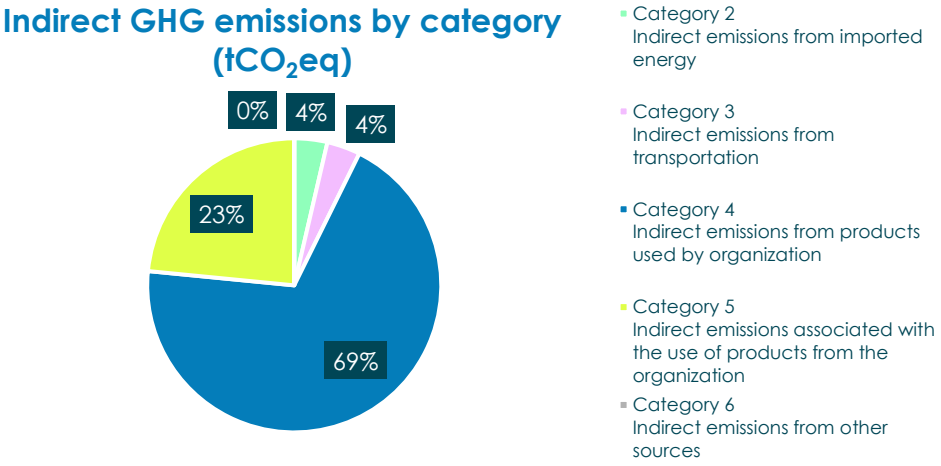
| Direct emissions per source, GHG tonnes | Total $CO_2e$ emissions | $CO_2$ | $CH_4$ as $CO_2e$ | $N_2O$ as $CO_2e$ | Refrigerant gases as $CO_2e$ |
|---|---|---|---|---|---|
| Combustion stationary sources | 609.644 | 605.849 | 364 | 3.431 | |
| Flaring | 4.755 | 4.753 | 1 | 1 | |
| Process emissions | 2.326 | 2.326 | 0 | 0 | |
| Combustion mobile sources | 95 | 62 | 32 | 1 | |
| Wastewater treatment facilities | 826 | 0 | 693 | 132 | |
| Gas post-meter leakage | 43.328 | 16 | 43.313 | 0 | |
| Fugitive refrigerant | 878 | | | | 878 |
| **Where, total fossil GHG emissions; and** | **649.137** | **600.292** | **44.403** | **3.565** | **878** |
| **biogenic $CO_2$ emissions** | **12.715** | **12.715** | | | |

**Indirect emissions** associated with Categories 2-6 are summarized in the following table, differentiating between location- based and market-based methods

| Category | | GHG emissions ($tCO_2eq$) | |
|---|---|---|---|
| | | Market approach | Location approach |
| Category 2<br>Indirect emissions from imported energy | fossil GHG emissions; | 209.043 | 270.697 |
| | carbon removals; and | | |
| | biogenic $CO_2$ emissions | | |
| | **Total** | **209.043** | **270.697** |
| Category 3<br>Indirect emissions from transportation | fossil GHG emissions; | 211.374 | 211.374 |
| | carbon removals; and | | |
| | biogenic $CO_2$ emissions | 269 | 269 |
| | **Total** | **211.374** | **211.374** |
| Category 4<br>Indirect emissions from products used by organization | fossil GHG emissions; | 3.984.998 | 3.984.998 |
| | carbon removals; and | -1.187 | -1.187 |
| | biogenic $CO_2$ emissions | | |
| | **Total** | **3.983.811** | **3.983.811** |
| Category 5<br>Indirect emissions associated with the use of products from the organization | fossil GHG emissions; | 1.348.754 | 1.348.754 |
| | carbon removals; and | | |
| | biogenic $CO_2$ emissions | | |
| | **Total** | **1.348.754** | **1.348.754** |
| Category 6<br>Indirect emissions from other sources | fossil GHG emissions; | 117 | 62 |
| | carbon removals; and | | |
| | biogenic $CO_2$ emissions | | |
| | **Total** | **117** | **62** |
| **Total** | **fossil GHG emissions and carbon removals** | **5.753.099** | **5.814.698** |
| | **biogenic $CO_2$ emissions** | **269** | **269** |

1. Total GHG emissions consider fossil GHG emissions and carbon removals

Within the section of **indirect emissions**, the following graph shows the distribution of indirect emissions from Category 2 to Category 6. As previously indicated, the results of emissions associated with electricity have been carried out according to the market-approach methodology



## 3.2. Methodology

### Category 1. Direct emissions

- Combustion emissions in stationary sources; GHG emissions according to:
  For Spanish facilities, the reporting methodology is aligned with the EU ETS (European Emission Trading Scheme) and national inventory emission factors. The Shanghai Plant follows a Carbon Market through Shanghai's Emissions Trading Scheme for its reporting methodology.
  In Bécancour, the Cap-and-Trade emissions allowances system prescribes a Reporting Methodology that accounts for equivalent $CO_2$.
  The EU-PRTR Concawe Methodology is applied for the Deten Plant.

  Emissions of $CH_4$ and $N_2O$ in stationary sources are also calculated in accordance with the EU-PRTR Concawe Methodology. GWP of $CH_4$ and $N_2O$ GHG according to IPPC AR6 Global Warming Potentials.

- Flaring emissions in facilities; GHG emissions reported according to the same methodologies as those described for combustion emissions at stationary sources.

- Process emissions in facilities; $CO_2$ according to Methodology European Reporting under EU ETS. Activity data are reported following the EU Methodology regulation.

- Combustion emissions in mobile sources: activity data coming from internal registers or from supplier service, and national inventory emission factors for considered GHG.

- Wastewater treatment plant emissions. Methane produced in the anaerobic reactor and nitrous oxide as intermediate in the nitrification-denitrification process. The quantification methodology is based on own discharge parameters and IPCC Guidelines for wastewater treatment and discharge default factor.

- Gas post-meter leakage. Activity data reported according to the same methodologies as those described for combustion emissions at stationary sources and gas leakage at industrial plants emission factors from 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

- Fugitive emissions of refrigerant gases. GHG according to IPPC AR6 GWPs (100-years). Activity data reported under refill and maintenance evidence.

### Category 2. Indirect emissions from imported energy

Associated emissions to purchased electricity and steam in facilities under scope. Activity data are reported under carbon markets verified data or invoices. Emission factor of indirect emissions due to steam come from operational data.

Emission factors for power are chosen under market-based and location-based criteria.

### Categories 3-6. Indirect emissions from value chain

Following subcategories as energy and purchased fuels, raw materials and services (category 4), upstream transportation of raw material and downstream transportation and distribution (category 3), use of sold products and waste management (category 5), upstream leased asset (category 6) have consistent activity data for their calculation as they are verified in other categories to carry out emission calculations.

## Category 3. Indirect GHG emissions from transportation

### 3.1. Subcategory Indirect emissions by transport and distribution upstream

The quantification methodology used for calculating emissions is based on raw materials activity data and emission factors from Ecoinvent database.

It accounts for **41,269 tonnes of $CO_{2eq}$**.

### 3.2. Subcategory Indirect emissions by transport and distribution downstream

The quantification methodology used for calculating emissions is based on the sold products activity data and emission factors from Ecoinvent database.

Fossil GHG emissions in this subcategory accounts for **168,334 tonnes of $CO_{2eq}$**. Biogenic GHG emissions in this subcategory accounts for **209 tonnes of $CO_{2eq}$**.

### 3.3. Subcategory Indirect emissions caused by employees commuting to work

The quantification methodology used for calculating emissions is based on activity data from commuting survey (2022) and emission factors from DEFRA database.

Fossil GHG emissions in this subcategory accounts for **1,090 tonnes of $CO_{2eq}$**, but due to the materiality criteria it has been considered **non-significant**. Biogenic GHG emissions in this subcategory accounts for **59 tonnes of $CO_{2eq}$**.

### 3.4. Subcategory Indirect emissions caused by business travel

The quantification methodology used for calculating emissions is based on activity data from travel agencies reports and emission factors from DEFRA database.

It accounts for **681 tonnes of $CO_{2eq}$**, but due to the materiality criteria it has been considered **non-significant**.

## Category 4. Indirect GHG emissions from products used

### 4.1. Subcategory Indirect emissions from purchased products

The quantification methodology is based on the same basis as the upstream transport subcategory, with chemical products and renewable raw materials being purchased products. Additionally, for intermediate products transferred from both Energy Parks to Spanish chemicals plants, we have used emission factors calculated and verified by ISO 14067.

It accounts for **3,774,807 tonnes of $CO_{2eq}$**.

### 4.2. Subcategory Indirect emissions from purchased consulting services

The quantification methodology used for calculating emissions is based on consulting services cost activity data and emission factors of business services.

It accounts for **1,389 tonnes of $CO_{2eq}$**.

### 4.3. Subcategory Indirect emissions from purchased energy

As upstream emissions of purchased fuels and electricity and transmissions and distribution losses

The quantification methodology used for calculating emissions is based on diesel, electricity and steam consumption activity data and emission factors from DEFRA database.

It accounts for **160,202 tonnes of $CO_{2eq}$**.

### 4.4. Subcategory Indirect emissions from third-party disposal and treatment of waste generated in operations

The quantification methodology used for calculating emissions is based on official declaration of managed wastes, internal register or/and water discharged to third party treatment plant as activity data and emission factors from DEFRA database.

It accounts for **47,412 tonnes of $CO_{2eq}$**.

## Category 5. Indirect GHG emissions from use of products

### 5.1. Subcategory Indirect emissions from the processing of sold products

The quantification methodology used for calculating emissions is based on chemical sold products as activity data. For the processing of those chemicals, the emission factors used are the actual processing ratios provided by our clients which represents 8% of total sales.

Due to this limitation and to the lack of access to these data in databases, this year we improved our calculation methodology as a result of an implemented action plan, which involves collaboration of product stewardship and commercial departments, we have been able to allocate processing emission factors to LAB and phenol sales, based on literature and public LCA data.

After this improvement in methodology, it is estimated that 62% of total processible chemicals sales are represented, which reflects an increase in emissions report transparency.

It accounts for **1,348,754 tonnes of $CO_{2eq}$**.

## Category 6. Indirect GHG emissions from other sources

### 6.1. Subcategory Indirect emissions from the upstream leased assets.

Involving emissions in Moeve's headquarters in Madrid.

The quantification methodology used for calculating emissions is based on natural gas and electricity invoices as activity data and national emissions inventory and electricity labeling for emission factors.

It accounts for **117 tonnes of $CO_{2eq}$**, under market-based approach.

## 3.3. Exclusions and uncertainty

### Exclusions

In the 2025 exercise there are no exclusions in emissions reporting.

### Uncertainty

The uncertainty in emissions stems from inaccuracy in activity data, inconsistencies in the primary data used for different emission types, and variations in emission factors. The data for elementary flows is then qualitatively evaluated, considering criteria such as precision, integrity, representativeness, and coherence, among others. A scale from A to D is used for this evaluation, where A represents verified data and D corresponds to estimates.

**Where,**

**Grade A – Score 100 (Best available data)**

**Activity data** classified as Grade A corresponds to **verified and highly reliable data**, including:

- Data collected under a **regulatory framework**, applicable to flows measured using **regulated metering devices**.
- Activity data derived from **invoices**, where billing is based on regulated or verified measurements.

**Emission factors** classified as Grade A include:

- Emission factors derived from **analyses conducted by accredited laboratories**.
- **Third-party–specific emission factors**, such as those provided by electricity retailers or suppliers, including factors derived from **Life Cycle Assessments (LCA)** or supplier-specific electricity mix emission factors.

This category represents the highest level of data quality and is considered to reflect the **best available data**.

**Grade B – Score 75 (High-quality data)**

**Activity data** classified as Grade B includes:

- Flow data not subject to a formal regulatory scheme but measured using **calibrated metering systems**.
- **Supplier-provided primary data**, where the service provider or supplier directly reports activity data based on operational records.

**Emission factors** classified as Grade B include:

- **Activity-specific emission factors** sourced from recognized and **official databases** (e.g. Defra, Ecoinvent, MITERD), which are regularly updated.

- Emission factors derived from **ISO 14067-compliant sources**.

This category represents **high-quality data** with a strong level of technical robustness, although not fully regulated.

**Grade C – Score 50 (Medium-quality / estimated data)**

**Activity data** classified as Grade C corresponds to:

- **Estimated consumption data**, supported by partial records, technical assumptions or auxiliary documentation.

**Emission factors** classified as Grade C include:

- **Non-activity-specific emission factors** obtained from recognized databases (e.g. Defra, Ecoinvent, MITERD), even if officially updated and validated.
- Emission factors based on **annual or project-level data**, not subject to periodic analytical verification.
- Emission factors derived from **monetary input-output models** or expenditure-based approaches.

This category reflects a **reasonable but less precise level of data quality**, used when higher-quality data is not available.

**Grade D – Score 25 (Low-quality data)**

**Activity data** classified as Grade D includes:

- **Estimated data without supporting documentation**, assumptions or verifiable evidence.

**Emission factors**:

- Not applicable (N/A), as emission factors of this quality level are not considered suitable for robust GHG quantification.

This category represents the **lowest data quality level** and is only used when no alternative data sources are available.

| | Emission Source | Grade | Data | Category Grade |
|---|---|---|---|---|
| **Category 1. Direct emissions** | Combustion stationary sources, Flaring and process emissions | 97 | Invoices and specific EF | **96** |
| | Fleet Vehicles | 75 | Supplier-provided primary data and specific EF | |
| | Site Vehicles | 75 | Site monitoring data and specific EF | |
| | Fugitive: Wastewater treatment facilities | 88 | Verified E-PRTR data and specific EF | |
| | Gas distribution fugitive emissions | 88 | Invoices and specific EF | |
| | Fugitive refrigerant | 88 | Invoices and specific EF | |
| **Category 2. Indirect emissions from imported energy** | Electricity (market approach) | 98 | Invoices and electricity labelling EF | **97** |
| | Steam net imported | 97 | Invoices, specific EF and enthalpy | |
| **Category 3. Indirect emissions from transportation** | Raw Materials | 88 | Invoices and specific EF | **87** |
| | Downstream Transportation and Distribution | 88 | Invoices and specific EF | |
| | Business Travel | 75 | Supplier-provided primary data and specific EF | |
| | Employee Commuting | 50 | Supplier-provided primary data and specific EF | |
| **Category 4. Indirect emissions from products used by organization** | Natural gas (distribution) | 88 | Invoices and specific EF | **87** |
| | Steam (distribution) | 75 | Invoices and no specific EF | |
| | Electricity (distribution) | 88 | Invoices and specific EF | |
| | Waste Generated in Operations | 80 | Verified annual waste declaration and no specific EF | |
| | Raw Materials | 88 | Invoices and specific EF | |
| | Consulting services | 63 | Expenditure-based activity data and monetary input output EF | |
| **Category 5. Indirect emissions associated with the use of products from the organization** | Processing of sold products (clients data) | 88 | Sales data and specific EF clients data | **77** |
| | Processing of sold products | 75 | Sales data and specific EF but estimated % of allocation to each process | |
| **Category 6. Indirect emissions from other sources** | Upstream Leased Assets | 88 | Invoices and specific EF | **88** |

## 3.4. Base year

Last year Moeve established 2024 as the new base year.

As can be seen in ***section 5.1***, fossil emissions from subcategory Indirect emissions from the processing of sold products have increased significantly due to improvements in methodology of calculation.

Regarding the recalculation of category 5 in the base year 2024, the variation is shown in the following table:

| Category | | GHG emissions ($tCO_2eq$) | | variation compared to base year | 2024 base year GHG emissions | variation compared to recalculated 2024 base year | 2024 base year recalculated GHG emissions |
|---|---|---|---|---|---|---|---|
| | | 2025 market approach | 2025 location approach | | | | |
| Category 5 Indirect emissions associated with the use of products from the organization | fossil GHG emissions; | 1.348.754 | 1.348.754 | -450% | 245.346 | 13% | 1.548.940 |
| | carbon removals; and | | | | | | |
| | biogenic $CO_2$ emissions | | | | | | |
| | **Total** | **1.348.754** | **1.348.754** | **-450%** | **245.346** | **13%** | **1.548.940** |
| **Total** | **fossil GHG emissions and carbon removals** | **6.402.237** | **6.463.835** | **-13%** | **5.686.055** | **8%** | **6.989.648** |
| | **biogenic $CO_2$ emissions** | **12.984** | **12.984** | **-25%** | **10.420** | **-25%** | **10.420** |

# 04

# Reduction and removal

# 04. Reduction and removal

## 4.1. Emissions reduction action

In 2025, we have made significant progress in reducing emissions, particularly through the consumption of biomethane at our facilities in Bécancour, Puente Mayorga and Palos de la Frontera. Additionally, the transition to energy transition has accelerated, with most of our Chemicals plant in Shanghai consuming 60% renewable electricity, along with our facilities in Spain.

Moeve Chemicals has also participated in decarbonization initiatives to reduce its scope 3 emissions by signing agreements so that the supply transportation of chemical products from Moeve will be carried out using 100% renewable diesel (HVO) for some clients.

The impacts of these actions can be observed both in terms of biogenic emissions and zero emissions (market approach) in ***Data and methodology*** section.

In addition, we have implemented a number of energy efficiency actions to further improve sustainability and emissions reduction. The emissions abatement potential of these projects is according to the documentation submitted for investment approval.

**Moeve Chemicals Puente Mayorga**

| | Action | Abatement potential ($tCO_2/yr$) | COD | Reduction 2025 ($tCO_2/yr$) |
|---|---|---|---|---|
| 01 | Packinox in Pacol | 32200 | August | 12075 |
| 02 | Iceberg Pacol PA-H3 | 750 | August | 281 |
| 03 | Furnace Y-H2002 & Y-H1 Improvement | 8299 | August | 3112 |
| 04 | LAB/Solvent Online analyzers | 1020 | August | 383 |
| 05 | APC en Y-H2 y MO-V2030 | 290 | August | 109 |

## 4.2. Emissions removal actions

During 2025-year Moeve implemented some removal actions affecting indirect emissions in value chain.

### 4.2.1. Renewable raw material carbon absorption

The absorption of carbon by renewable materials during their growth phase is accounted for when these materials are utilized for chemical production without any associated combustion. During this year, renewable vegetable oils (CPKO) have been processed in Chemical facilities to produce sustainable linear alkylbenzenes (NextLab portfolio).

**1,187 tonnes of $CO_2$** have been removed due to the renewable raw materials processed in 2025, helping our clients to achieve their challenging targets dedicated to reducing climate change impact. These emissions have been considered **carbon removals in Category 4** Indirect GHG from products used, and subcategory purchased products.