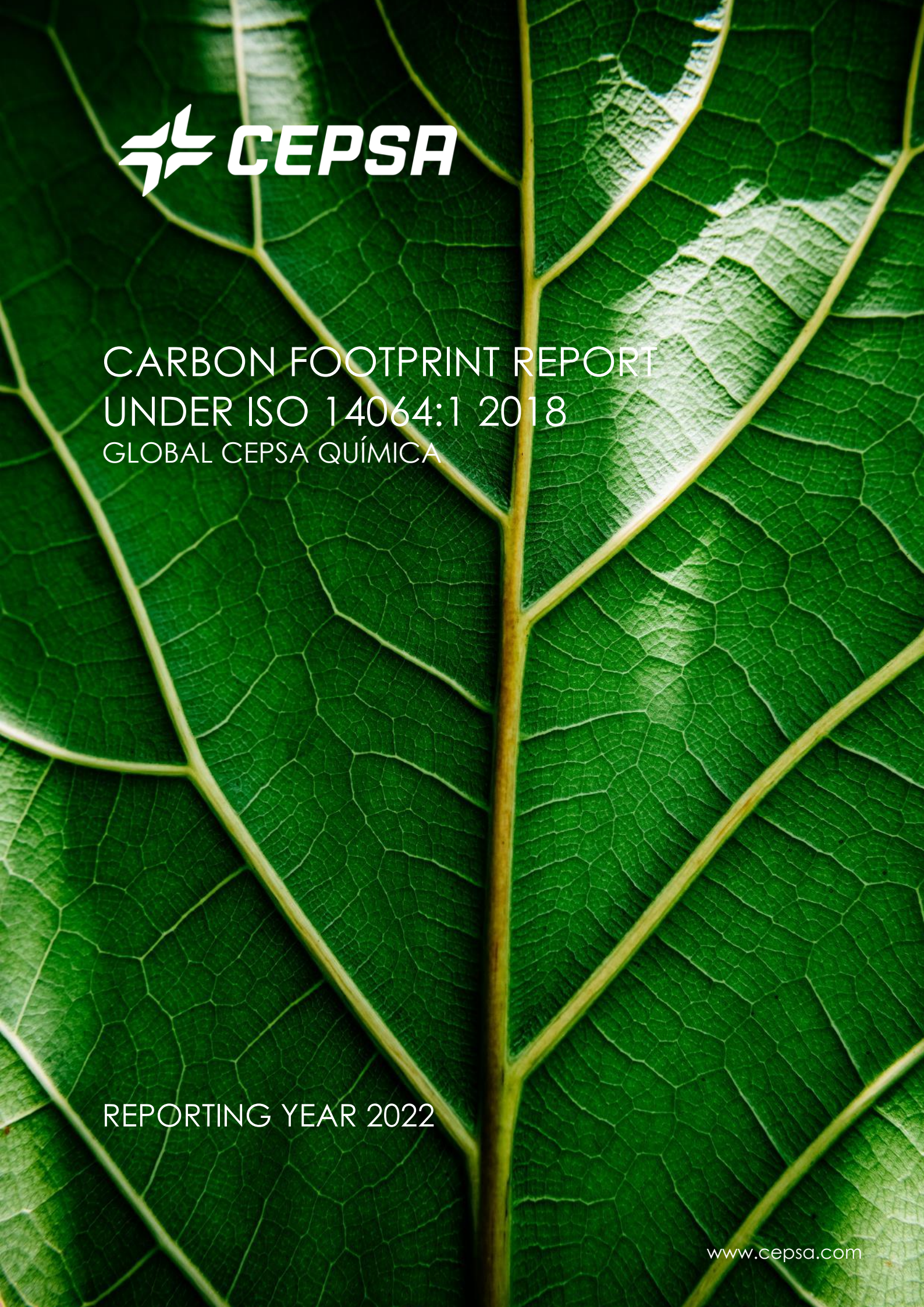


CARBON FOOTPRINT REPORT UNDER ISO 14064:1 2018

GLOBAL CEPSA QUÍMICA

REPORTING YEAR 2022

www.cepsa.com

INDEX

Carbon Footprint Report
ISO 14064-1:2018

2022

01.

GOAL

01. Goal

Cepsa continues this year 2022 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 Carbon Strategy. The verification includes the emissions of the following GHGs: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), as well as the fugitive emissions from transportation and fugitive emissions as of hydrofluorocarbons (HFCs) or others from the refills of refrigeration systems.

The process of inventory verification has been carried out in Carbon Cycle 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.
- With the aim of meeting the targets set in the United Nations' Sustainable Development Goals for 2030, Cepsa has identified four priority objectives that it can maximize with its contribution as a global energy company. Climate Action is one of them, aware of climate change, aim to minimize the carbon footprint.

Cepsa has updated its policy framework and new climate action policy is available in www.cepsa.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. https://www.cepsa.com/en/the-company/strategy

Our Commitments

- Establish, monitor, and validate by a third-party CO_2 emissions and abatement plan targets as well as in terms of the carbon intensity of its product portfolio.
- Integrate climate change in the company strategy and in all businesses decision-making processes. Analyze risk and opportunity management and climate financial reporting under different climate scenarios.
- Design carbon mitigation and adaptation plan considering the entire value chain and low carbon products growing demand.
- Keep climate-related objectives as monetary reward parameter.

Carbon Footprint Report
ISO 14064-1:2018

2022

02.

REPORTING BOUNDARIES

03.

SCOPE

02. Reporting 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, (Category 1)

- Other emissions from their wastewater treatment plants have been assessed as significant under the materiality criteria (Category 1)

- And **indirect emissions** by purchased energy of the facilities included in the scope of this verification. (Category 2)

- Likewise, this 2022 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 Cepsa regarding the quantification of GHG and the establishment of objectives to reduce GHG emissions.

Significance and Materiality

It is necessary to define and explain 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 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 'not-significant' sources has estimated emissions likely to be at least 5% of total emissions. In this case, enough of the 'not-significant' emissions must be included until the estimate of excluded emissions is below 5%.

03. Scope

Chemical Operation

Cepsa'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, synthetic fibers, pharmaceutical products, among others.

The manufacture of basic petrochemical products is carried out at the Gibraltar - San Roque and La Rábida Energy Parks in Cepsa, which can produce more than 1 million tons per year of these derivatives. After the distillation of crude oil, the processing units of the refineries obtain raw materials (benzene, toluene, and xylene) for other processes, as well as intermediate and final products, such as solvents, propylene and sulfur. Cepsa Química, after the processing of these products, distributes and commercializes the final products worldwide.

- Cepsa Química 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.

- Cepsa Química 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.

- Cepsa Chemical Shanghai

Shanghai Plant is located in Lot C4 of Shanghai Chemical Industry Park (SCIP). It processes benzene and propylene to produce cumene, 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.

- Cepsa Chemical 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.

- Cepsa Química Deten

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 sulphonic acid (LABSA).

Chemical Distribution & Comercialization

Commercialization of chemical products is included in the scope of this report. These chemical products included ones produced in the included facilities and chemical ones produced in Energy Parks facilities in Cepsa.

Carbon Footprint Report
ISO 14064-1:2018

2022

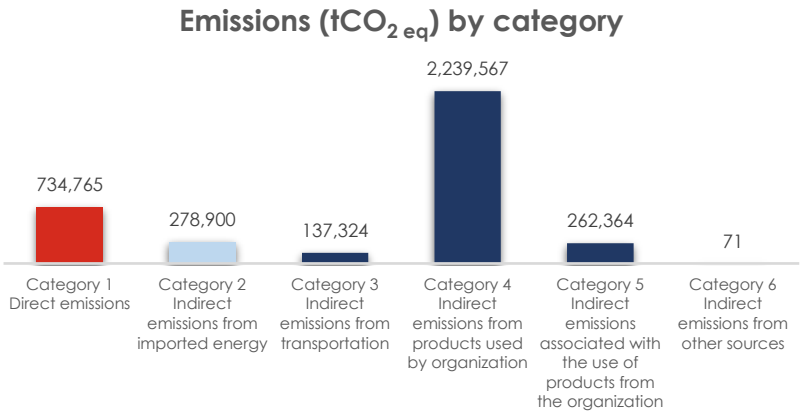
04.

EMISSIONS DATA AND METHODOLOGY

04. Emissions Data and Methodology

4.1. Emisssions Data

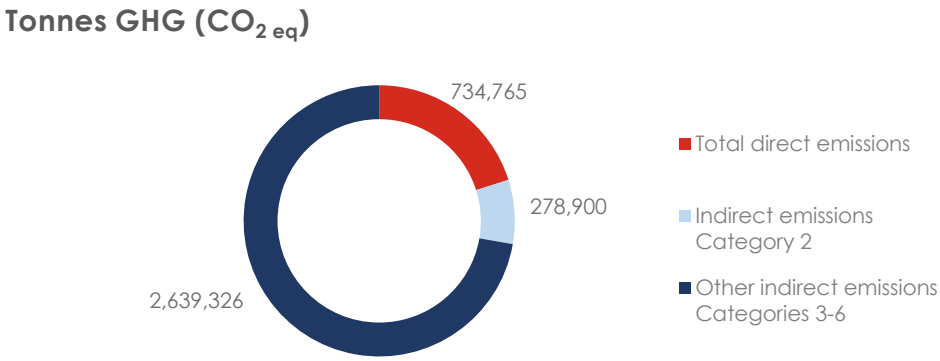
The general distribution of emissions among he above mentioned ISO 14064-1:2018 for the year 2022 categories is shown in the following graph:



It is seen that Category 4 contributes to the most emissions, specifically the acquired goods and energy, followed by direct emissions. **Total emissions account to 3,652,991 tonnes of CO_{2eq}.** This sum of emissions does not consider the biogenic emissions.

Indirect emissions corresponding to Categories 2 and 6, are shown in the graph as market-approach calculation.

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 where, in addition to the contributions from combustion, flare, mobile, fugitive and refrigerants, the equivalent tons of CO_2 are broken down.

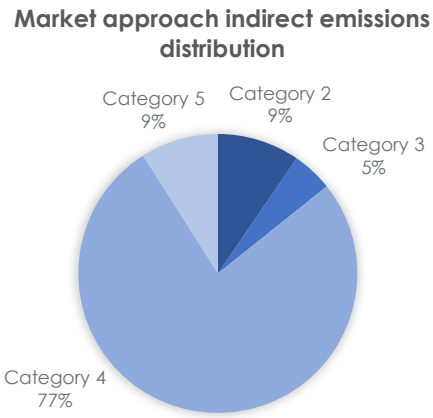
Emission source	CO_2 tonnes	CH_4 as $CO_{2\,eq}$ tonnes	N_2O as $CO_{2\,eq}$ tonnes
Chemical Facilities			
Direct emissions			
Combustion	677,587	386	3,388
Flaring	7,191	1	1
Process emissions	2,086	0	0
Wastewater treatment facilities	0	32,381	486
Gas distribution	15	9,504	0
Fugitive refrigerant (1)	1,721		
Mobile sources	10	3	3
Biogenic from mobile sources	1		
TOTAL with biogenic, t $CO_{2\,eq}$		**734,765**	
TOTAL without biogenic, t $CO_{2\,eq}$		**734,765**	

(1) Fugitive gas refrigerant emission expressed as tonnes of $CO_{2\,eq}$.

Although the mobile sources emissions are not significant, **16 tonnes CO_{2eq}**, they have been included in order to have a more complete vision and encourage the use of hybrids and electric vehicles.

Finally, the contribution of each category of indirect emissions is shown below:

Indirect emission category	market approach $CO_{2\,eq}$, tonnes	location approach $CO_{2\,eq}$, tonnes
Chemical Facilities		
Indirect emissions		
Category 2 (purchased energy)	278,900	270,870
Category 3 (transport)	137,324	137,324
Category 4 (products used)	2,239,567	2,239,567
Category 5 (use of products)	262,364	262,364
Category 6 (others)	71	104
TOTAL, t $CO_{2\,eq}$	**2,918,226**	**2,910,229**



4.2. Methodology

Category 1: Direct emissions.

- Combustion emissions in stationary sources; CO_2 according to:

For Spanish facilities, Reporting Methodology under EU ETS (European Emission Trading Scheme) and national inventory emission factors.
Reporting Methodology for Shanghai Plant is also based on a Carbon Market through Shanghai's Emissions Trading Scheme.
In Bécancour, the Cap-and-Trade emissions allowances system establishes a Reporting Methodology, where equivalent CO_2 is considered.
EU-PRTR Concawe Methodology for Deten Plant.

- Flaring emissions in facilities; CO_2 according to:

For Spanish facilities, Reporting Methodology under EU ETS. Activity data is reported following the EU Methodology regulation.
Reporting Methodology for Shanghai Plant is also based on a Carbon Market through Shanghai's ETS.
In Bécancour, Ministry of the Environment establishes a Reporting Methodology, where equivalent CO_2 is considered.
EU-PRTR Concawe Methodology for Deten Plant.

- CH_4 and N_2O in stationary sources: according to EU-PRTR Concawe methodology.

Activity data are reported following the EU Methodology regulation and when not applied, invoices and/or internal registers are validated. GWP of CH_4 and N_2O GHG according to IPPC AR6 data.

- 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.

CH_4 produced in the anaerobic reactor and N_2O 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.

- Fugitive emissions of transport and distribution of natural gas.

For Spanish facilities, Activity data reported under ETS methodology.
For Shanghai Plant, Activity data is also reported under Shanghai's ETS.
In Bécancour Plant, Activity data reported under Ministry of the Environment.
Activity data according to EU-PRTR Concawe Methodology in Deten Plant.
Emission factors from IPCC Guidelines transport & ERM (natural gas) fugitive emissions are used.

- Fugitive emissions of refrigerant gases.

GWPs according to IPCC AR6 emission factors. Activity data reported under maintenance evidence.

Total direct emissions account to **734,765 tonnes of CO_{2eq}**, not accounting for biogenic emissions.

Category 2: Indirect emissions from energy

Associated emissions to purchased electricity and steam in facilities under scope. Activity data is reported under invoices. The emission factors of indirect emissions due to steam come from operational data. The emission factors for power are reported under market-based and location-based criteria. Total emissions accounts to **278,900 tonnes of CO_{2eq}** and **270,870 tonnes of CO_{2eq}**, respectively.

Indirect emissions from value chain.

Following subcategories as downstream transportation and distribution (category 3), energy and purchased fuels (category 4), processing of sold products (category 5) have consistent activity data for their calculation.

Category 3: GHG from transportation

Subcategory Indirect emissions by transport and distribution upstream.

The quantification methodology used for calculating emissions is based on the activity data (raw materials for facilities) and emission factors by Ecoinvent and Directive 2018/2001 for bios. It accounts for **41,496 tCO_{2eq}.**

Subcategory Indirect emissions caused by employees commuting to work*

The emissions associated with trips made by employees between their homes and their worksites using different means of transport. The results of various surveys conducted in 2023 among the employees have been used for the emission calculation and 2022 active workforce data. It accounts for **858 tCO_{2eq}.**

Subcategory Indirect emissions caused by business travel*

The emissions associated with the business trips made by employees using different means of transport (car, aircraft, or train), for which the distances travelled, and hotel nights, are multiplied by DEFRA 2022 emission factors. It accounts for **377 tCO_{2eq}.**

Subcategory Indirect emissions by transport and distribution downstream.

The quantification methodology used for calculating emissions is based on the activity data (sold chemical products, distances traveled and type of transport) and Ecoinvent emission factors. It accounts for **95,828 tCO_{2eq}.**

Category 4: GHG from products used

Subcategory Indirect emissions from purchased products as raw materials.

The quantification methodology used for calculating emissions is based on the activity data (raw materials for facilities) and emission factors by Ecoinvent and Directive 2018/2001 for bios. It accounts for **2,006,348 tCO_{2eq}.**

Subcategory Indirect emissions from business services as office consulting.

The emissions associated with the contracting of consulting services by the business unit in the plants. Activity data is cost of the service and emission factor of consultancy coming from Ecoinvent. It accounts for **3,842 tCO_{2eq}.**

Subcategory Indirect emissions from purchased fuels and electricity and transmission and distribution losses.

The quantification methodology used for calculating emissions is based on the activity data (electricity, natural gas and steam)

and the emission factors published by DEFRA 2022. In the case of electricity, it involves losses by generation transmission and distribution. It accounts for **177,272 tCO_{2eq}.**

Subcategory Indirect emissions caused by wastes generated in operations.

The quantification methodology used for calculating emissions is based on the activity data (solid wastes and wastewater) and emission factors by DEFRA 2022. Shanghai's ETS emission factor is used for its solid wastes. It accounts for **52,105 tCO_{2eq}.**

Category 5: GHG from use of products

Subcategory Emissions from the processing of sold products.

The quantification methodology used for calculating emissions is based on specific data from clients and the quantity sold to them for their processing. The emission reported only corresponds to those clients that have provided Cepsa its processing ratio. It accounts for **262,364 tCO_{2eq}.**

Category 6: GHG from other sources

Subcategory Emissions from the use of upstream leased assets

This subcategory has been calculated this year as the first time, improving our scope and knowledge for our operations. The quantification methodology used for calculating emissions is based on the activity data from energy invoices and national inventory emission factors. Under market-approach, it accounts for **71 tones CO_{2eq}**, while under location-approach it accounts for **104 tones CO_{2eq}.**

*Emissions from these subcategories described have been calculated based on the above description and found not to meet the materiality requirements. The sum of these subcategories also meets the requirement that exclusions should account for less than 5% of the total emissions, so that they are not included in the graphs.

However, they have been included in the current report, not in the graphs, with the aim of report all associated emissions with traceable activity data as well as to incorporate new categories. For categories not included in this report due to the difficulty of accessing the data, action plans are being developed.

Carbon Footprint Report
ISO 14064-1:2018

2022

05.

EMISSIONS REDUCTION ACTIONS

05. Emissions Reduction Actions

5.1. Direct emissions

In 2022, Cepsa has not certified energy efficiency actions in the Spanish facilities. The certified energy efficiency projects are included in the Energy Management System audited under the international standard ISO 50001 and are included in the Efficiency Plans of the business unit.

In this report 2022 actions implemented during 2021 and 2022 are reported limiting the reduction emissions reported to the months of 2022 till one year.

Cepsa Química Puente Mayorga

- *Improving the efficiency of the H-E1 J/H/D/D/E/F/G by replacing their conventional tube bundles with Twisted Tubes technology*. This will considerably reduce the energy consumed in the reaction furnace (H-H1).
  Project implementation date was Febrary 2021. CO_2 time reduction for this period: 2 months.

  Direct emissions reduction accounts to **629 tCO_{2eq}.**

Total **direct emissions** reduction accounts to **629 tCO_{2eq}.**

5.2. Indirect emissions

Cepsa Química Palos de la Frontera

This targeted action is associated with indirect emissions from purchased energy category 2.

- *BFW preheating with Cumene alkylate 1.*

  Project implementation date was March 2021. CO_2 time reduction for this period: 2 months.

  Indirect emissions reduction accounts to ***129 tCO_{2eq}.***

On the other hand, indirect emissions resulting from the initiative to **introduce renewable and recycled raw materials in the feedstock** of the two chemical plants have been considered.

These reduction in emissions, or avoided emissions, have been calculated including the production & transport emissions associated to renewable raw material vs emissions for same amount of fossil raw material. The emissions associated to renewable raw material consider the absorption during the entire production of the raw material.

Cepsa Química Puente Mayorga

Indirect emissions reduction accounts to ***2,148 tCO_{2eq}.***

Cepsa Química Palos de la Frontera

Indirect emissions reduction accounts to ***792 tCO_{2eq}.***

Carbon Footprint Report
ISO 14064-1:2018

2022

06.

EXCLUSIONS AND UNCERTAINTY

06. Exclusions and Uncertainty

6.1. Exclusions

No exclusions.

6.2. Uncertainty

Uncertainty in the emissions inventory is a combination of the uncertainties in the emission factors and in the corresponding activity data.

Emission Factors

As for the emission factors used, they come from contrasted and specific sources, so their level of uncertainty is known and controlled. For scope 1 the emission factors calculated internally are based on measurements of calibrated and externally verified analytical equipment and according to ETS regulation so that the uncertainty is minimum. Direct emission factors for Bécancour and Deten also come from contrasted sources so that the uncertainty is low. For all the plants, Scope 2 emission factor are based on market approach so that uncertainty is zero.

For scope 3, the selection of these emission factors is intended to minimize uncertainty as much as possible by updating the database.

Activity Data

The uncertainty of the activity data used for creating the Inventory is assured by the local regulations of countries participating in the EU and Shanghai ETS (Emission Trading System).

Data for Scope 1 and 2 is obtained from verification emissions report and commercial invoices so uncertainty is minimized.
Other indirect emissions (Scope 3): Uncertainties in the accounting of the Scope 3 emissions are related to generic assumptions made. Uncertainty is minimized by the internal procedure which tries to improve the methodology annually.

During this year 2022 a specific methodology to evaluate the uncertainty associated to activity data and emission factors has set. It consists on evaluating the uncertainty based on a scale from 1 to 3, 1 for higher uncertainty and 3 for lower uncertainty, and versus the weight of each type of emissions in the global. This methodology will let us to monitor the reliability of our emissions and set a plan to improve.

The application of these considerations makes it possible to minimize as far as possible the uncertainty of the data provided in this Carbon Footprint.

Carbon Footprint Report
ISO 14064-1:2018

2022

07.

BASE YEAR

07. Base Year

This 2023, Cepsa, under its strategy and commitment to reduce CO_2 emissions, decided to include its international chemical facilities for the first time.

The criteria described in the carbon footprint procedure establish that it is necessary to redefine the base year at that moment in which a change in the methodology or scope implies a variation of more than 3-5% of the gross emissions of the base year.

In this specific case, the inclusion of international chemical facilities has led to a 50% increase in total emissions, in such a way that it is necessary to establish the **year 2022** as the new base year for the certification of Global Cepsa Química organizational carbon footprint.