

ENVIRONMENTAL STATEMENT 2023

Kao



KIREI

MAKING LIFE BEAUTIFUL

ENVIRONMENTAL STATEMENT OF KAO CORPORATION, S.A.U

HEALTH, SAFETY & ENVIRONMENT DEPARTMENT (HSE DPT.).

This Environmental Statement document is drafted based on Regulation (EC) No 1221/2009 of the European Parliament and of the Council, of 25 November 2009, whereby organisations are allowed to participate on a voluntary basis in a community eco-management and audit scheme (EMAS) and based on Commission Regulation (EU) 2018/2026, amending Annex IV to Regulation (EC) No 1221/2009. The publication of Commission Regulation (EU) 2018/2026 involved the adaptation of the content of this environmental statement to the requirements introduced by same. Regarding the 10 Sectorial Reference Documents (SRDs) that are available on the EMAS website¹ to date, none of them are applicable to Kao Corporation, S.A.U. However, the content of these documents is analysed to incorporate those aspects that may add value to our environmental statement and that make it possible to improve the environmental impacts of the activity. All the information provided in this Environmental Declaration is objective and based on the data

obtained from the internal and external control processes that are carried out by the Organisation and verified by the competent institutions. This Environmental Statement encompasses all the activities conducted by Kao Corporation, S.A.U. at the centres of Barberà del Vallès, Mollet del Vallès and Olesa de Montserrat. These activities are the design, production and sale of surfactant agents (anionic, non-ionic, cationic, and amphoteric, isolated or in mixtures), polymers, fatty amines, aromas, fragrances and toner. This document has been fully validated by AENOR (see verification date in paragraph 11) and refers to the update of the data for the year 2023. All rights reserved. No changes may be made to the content of this document, and it may not be used for purposes other than those for which it was intended, except with the express permission of Kao Corporation, S.A.U.

Environmental Declaration 2023
22 May 2024

¹ https://ec.europa.eu/environment/emas/emas_publications/sectoral_reference_documents_en.htm. Retail trade, tourism, food and beverage manufacturing, car manufacturing, electrical and electronic equipment manufacturing, public administration, agriculture, waste management, manufacture of fabricated metal products and telecommunications; as well as the best practice document related to construction.

MARIA JOSÉ BERMEJO

KCSA President

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1. INTRODUCTION AND PURPOSE OF THE ENVIRONMENTAL STATEMENT

DEAR READERS,

I am pleased to report the performance of Kao Corporation, S.A.U. (KCSA) in environmental matters throughout 2023.

The 2023 financial year has continued to be marked by an unstable environment, which has caused tensions in global supply chains and a slowdown in global trade. FY 2023 was marked by unstable conditions, prompting changes in global supply chains and a slowdown in world trade. Economically, the situation for chemical manufacturers was challenging overall, although some of our business areas recorded marginal growth. Once again, another difficult year, which we have managed to overcome successfully thanks to the efforts of all the people who make up our organization, and in close collaboration with our stakeholders. In the European framework, following the climate objectives established in the Paris Agreement, the European Union aims to make Europe the first climate-neutral continent by 2050. With this purpose, it established the European Green Deal (EGD), from which numerous and ambitious legislative changes with significant implications in all areas of society.

In this context, Kao continues to strengthen its environmental commitment,

in accordance with Kao's global vision "Sustainability as the only path."

At the company level, it is worth noting that in 2023 the deployment of the Conclusions document on the best available techniques (BAT) for common waste gas treatment and management systems in the chemical sector (WGC BREF) has begun, with numerous and more restrictive technical requirements for our facilities. The application of the Royal Decree on packaging and packaging waste and the Law on waste and contaminated soils for a circular economy has continued, which require significant involvement from most areas of the company.

I invite you to read this report on our progress in environmental matters in 2023². The essential aspects of this report focus on the management of each of the organization's environmental aspects, such as energy, water, materials used, emissions and biodiversity, among others.

² To continue progressing, active collaboration with many and diverse entities, companies, municipalities, universities, and other interested parties is essential, and for this reason we appreciate any idea or contribution through the email corpcom@kao.es, indicating as the subject "Environmental Declaration 2023."

**MARIA JOSÉ
BERMEJO**

KCSA President



2. CONTEXT OF THE ORGANIZATION

High Management maintains up-to-date knowledge of the context in which the company operates. To have the most complete vision possible, they involve the leaders of the different areas of the company and their respective teams in carrying out systematic analyses in which external and internal issues are analysed.

— Regarding external factors, the possible impact on the achievement of environmental objectives of the social, political, legal, regulatory, financial, technological and economic situation in which the company carries out its activity is analysed.

— Regarding internal factors, the possible impact of issues related to activities, products and services, strategic direction, culture and capabilities is analysed. Likewise, High Management identifies the company's interest groups and periodically analyses their needs and expectations. The results of both analyses facilitate the determination and subsequent evaluation of risks and opportunities, with the purpose of ensuring that the RMS (Risk Prevention Management System) can achieve its planned results, prevent or reduce unwanted effects and achieve the continuous improvement. They also constitute an input element for the overall risk management carried out by the Management, in the framework of Risk Management, and the subsequent planning of actions to reduce risk (RCM Activity).

2.1 WHO WE ARE

2.1.1 HISTORIC EVOLUTION

Kao Corporation is a Japanese multinational whose head offices are based in Japan and whose strategic units are distributed worldwide to ensure operational coverage. Most of the products manufactured by Kao worldwide are the so-called 'daily use consumer goods' for end consumers (personal hygiene products, cosmetics, detergents and food products). These products are manufactured at factories outside Spain, mainly in Asia, America and Europe (Germany). In Europe, more specifically in Spain, chemical products are developed and manufactured for industry, by supplying companies that use our end product to prepare their own product. In 2017 the group purchased Spanish

ink manufacturing company Chimigraf to become Kao Chimigraf.

The Kao Corporation is a member of the Japan Responsible Care Council (JRCC), in conjunction with another 109 companies that produce chemical substances. The Health, Safety and Environment Directives became particularly relevant for the Worldwide Corporation in 1995, when working targets were set for all operational units and the Safety and Environment strategies were financially strengthened.

Kao Corporation, S.A.U. works in parallel with the parent company and promotes its own strategies in the area of Safety and Environment, while considering Spain's situational framework (legislation, technology, etc.). It also works in line with the group, following the corporate strategies and policies

defined by Japan and actively committing itself to the protection and conservation of the environment through the Responsible Care program managed by Federation of the Spanish Chemical Industry (FEIQUE), of which the company has been a member since 1993.

Kao Corporation, S.A.U.

Kao Corporation S. A.U. was founded in Spain in 1970 through the acquisition of 50% of Sinorgan, S.A., a company in Mollet del Vallès engaged in the manufacture of fatty amines. In 1978, Kao Corporation purchased all of Molins i Puigarnau, S.A. (Olesa de Montserrat), engaged in the manufacture of industrial chemicals (surfactants), basically those used in the detergent, cosmetic, textile and fertiliser industries.

Considerable investments were made throughout this period, initially to increase production capacity (which doubled between 1980 and 1990) and later to improve safety at facilities and, finally, to improve the automation level of the Mollet del Vallès and Olesa de Montserrat factories. In 1987, Kao Corporation, S.A.U. launched a diversification plan to definitively consolidate its presence in Spain. In October 1988, the third production centre was opened in Barberà del Vallès, now the location

of the Company's European Headquarters, giving a new impetus to the research laboratories. The Floppy Disk and CD (Info-Systems) factory facilities were located in this centre, but subsequently closed in 1999 and were replaced by the current Toner production lines. In 2013 Kao purchased land from Hormigones Uniland, S.L. at Olesa de Montserrat, which allowed improving the security of the facility and in turn enabled upgrading the installations of this centre. In 2016 the hydrogenation installations were scrapped at the Mollet del Vallès plant for the purpose of housing the ink production warehouse of company Kao Chimigraf in 2017. While this activity is excluded from the EMAS scope, it influences the company's indicators due to being incorporated in the Integrated Environmental Authorisation of Kao Corporation, S.A.U. In 2019, a regenerative thermal oxidizer was installed in the Olesa de Montserrat centre for the treatment of waste gases from aroma processes to improve their treatment and reduce the environmental impact. On the other hand, at the Mollet del Vallès centre, aroma plant IV was built, where the fatty acid distillation, nitrilation and alkylation plant was previously located, whose facilities were previously

dismantled, to increase lactone production. In 2021, the nitrilation plants at the Mollet del Vallès centre were dismantled, and, in Olesa de Montserrat, a substantial change was presented to expand the production capacity of the MDJ aroma with the construction of a new plant. In 2022, the first photovoltaic panels were installed in the centre of Olesa de Montserrat. In 2023, the construction of the new MDJ aroma production plant (MDJ-2) has been completed at the Olesa de Montserrat centre and, in the last quarter, the manufacturing process begins. Likewise, the project to construct a biomass boiler by the company ENGIE has begun. The biomass project is excluded from EMAS since the facility is owned by ENGIE and has its own environmental license; Kao Corporation, S.A.U. has made a transfer of land so that said activity can be carried out. The project to install photovoltaic panels has begun at the Toner plant. In 2023, charging points for electric vehicles have also been installed in each of the three establishments.

2.1.2 KAO'S ESG STRATEGY: "KIREI LIFESTYLE PLAN"

In 2016, Kao adopted a long-term vision of what we sought to achieve by 2030. Together with this, it established the Kirei Lifestyle Plan,



an ambitious direction in ESG, with specific areas of focus. The plan includes Kao's ESG Vision and Kao's ESG Commitments and Actions, our strategy for realizing the Vision. Kao's ESG vision is based on the concept that our ESG activities are designed to help people around the world live more sustainably and designed to benefit society in general and the Earth. Our value of heading down the right path is presented as the basis of our ESG activities and represents one of founder Tomiro Nagase's core principles: *"Good fortune only comes to those who work diligently and behave with integrity."* The activities of the Kirei Lifestyle Plan present Kao's Commitments and Actions in ESG. It consists in three pillars related to people's lifestyles: — "Making my daily life more beautiful", — "Making well thought-out decisions for society" and — "Making the world healthier and cleaner". For each pillar, actions are established for the priority issues, as well as our 2030 Commitments: our ambitious objectives to be



achieved by 2030. Medium- and short-term objectives have also been established to facilitate the monitoring of effective and reliable activities.

Evolution of Kao's commitment to the environment.

Kao believes firmly in the need for its business to be managed in an ecologically responsible way, with a management style capable of tackling issues as important as global warming, scarcity of resources and the loss of biodiversity. Therefore, in June 2009, Kao introduced the "Eco together" programme, which focuses on the life cycle of Kao products, from the supply of materials and manufacturing to distribution, sales, use and final disposal. This programme is based on cooperation with suppliers, consumers and other stakeholders and its objectives are to decrease CO₂ emissions and water consumption, manage chemical substances and protect biodiversity.

These areas of action are maintained for the objectives defined in the Kirei Lifestyle Plan.

To achieve substantial reductions in emissions of CO₂ and in water consumption, the company has committed itself to eco-innovation and the development of new environmental technologies. In June 2011, at the headquarters located in Tokyo, a new research centre was opened for these purposes: the Eco-Technology Research Centre (ETRC).

As a result of its efforts in administering water resources, Kao was acknowledged as a global leader and was included in the CDP list in 2016.

CDP is an international, nonprofit organization that provides a global system for companies, cities, states and regions



to measure, disclose, administer and share vital information about their environmental performance. CDP is the first provider of climate research for investors, and it works to motivate companies to disclose their impacts on the environment and natural resources and to take measures that reduce them.



Thirsty business: Why water is vital to climate action
2016 Annual Report of Corporate Water Disclosure

Kao is one of the seven companies – among 250 that were evaluated – that obtained the maximum number of points in the Forest 500 list that is prepared by the Global Canopy Programme, which analyses which agents in the world have comprehensive policies for protecting tropical forests.

In 2015, Kao Corporation, S.A.U. was recognised by the European Commission for maintaining the EMAS record for ten consecutive years. This recognition is a testament of the company's commitment towards environmental issues.

In 2010, Kao Corporation, S.A.U. (Spain) began applying the “eco together” programme by adapting the plant's objectives, therefore setting a target of reducing energy consumption by 30%, water consumption by 30% and waste generated by 30% with respect to 2010. All these targets were intended to be met by 2020.

At the end of this 10-year period, a new 10-year period begins under the Kirei Lifestyle Plan, whose strategic lines are those initiated in the previous period with more demanding objectives.

2.1.3 LIFE CYCLE ASSESSMENT (LCA)

In 2021, a team was created to implement life cycle analysis and calculate the carbon footprint of KCE products; In 2022, the carbon footprint of 25 products was calculated and in 2023, continuing with the progression, the calculation methodology has been improved based on the European standards most accepted by the chemical industry. Likewise, external certification of said methodology has been obtained, which confirms its robustness based on current knowledge. The software used to calculate the carbon footprint allows you to calculate many other impact categories, such as the water footprint. In the future, the possibility of calculating impact categories beyond the carbon footprint will be addressed.



MOST NOTEWORTHY ACTIONS SINCE 1977

1977

1977 Introduction to clean fuels: replacing fuel oil with Natural gas

1983

Creation of the Safety and Environmental Service

1984

First study on the quality of groundwater

1985

Physical-Chemical treatment of wastewater at the Mollet del Vallès centre

1989

Physical-Chemical treatment of wastewater at the Olesa de Montserrat centre

1990

Biological treatment through percolation of wastewater in Olesa de Montserrat

1991

Installation of the first electric cogeneration plant in Mollet del Vallès

1992

First soil-quality analysis

1996

Implementation of the DuPont security system - STOP PROGRAMME

2001

Membrane-based biological treatment of HCA wastewater at Mollet del Vallès

2002

Environmental Authorization (Mollet del Vallès and Olesa de Montserrat) and Environmental License (Barberà del Vallès)

2003

ISO 14001 certification: Environmental management systems. Requirements with guidance for use.

2004

OHSAS 18001 certification: Occupational health and safety management system

2005

EMAS European Register

2010

Fitting of the percolator filter in the wastewater treatment process at the Mollet del Vallès centre

2011

Environmental Risks Analysis (ARMA) of the Mollet del Vallès and Olesa de Montserrat centres

2012

Environmental Risks Analysis (ARMA) of the Barberà del Vallès centre

Introduction and set-up of the KAIZEN philosophy in the productive structure

2013

Study to reuse wastewater at the Olesa de Montserrat centre

Drafting and implementation of the Crisis Communication Manual Establishing and activation of the Crisis Committee

Implementation of the Energy Management System in accordance with ISO 50001

2014

ISO 50001 certification: Energy management systems

Creation of Action Learning groups: Sustainability of the Central Building and waste reduction

2015

Basic soil report for Olesa de Montserrat for renewing the Environmental Authorization

Integrated environmental inspection (Mollet del Vallès and Olesa de Montserrat)

Acknowledgement certificate for being in the European EMAS registry for 10 years

2016

Environmental Risks Analysis Update (ERAU) of the Olesa de Montserrat centre

New edition of the Risk Prevention Management System to adapt it to the requirements of ISO 14001:2015.

Discontinuance of the cogeneration plant and the fatty acid and glycerine production activity at the Mollet del Vallès centre

2017

Building and commissioning of an ink manufacturing warehouse at Mollet del Vallès

Basic soil report for Mollet del Vallès resulting from a request for a substantial change and partial cancellation of the activity

Participation in the removal of American cane near the Llobregat river in the municipality of Abrera

Renewal (or review) of the Environmental Authorization of the Olesa de Montserrat Centre

2018

Inventory and evaluation of the conservation of biodiversity at the three establishments. Drafting of the first edition of the Biodiversity Policy.

Environmental Risks Analysis Update (ERAU) of the Barberà del Vallès centre

Certification of the Risk Prevention Management System in accordance with the requirements of ISO 14001:2015.

2019

Implementation of a regenerative thermal oxidizer (RTO) the Olesa de Montserrat centre

Construction of an aromas (lactone) production plant and installation at the Mollet del Vallès centre

2020

Certification of the Risk Prevention Management System in accordance with the requirements of ISO 45001:2018

Implementation of measures for the prevention of COVID-19 that have allowed the regular development of the activity

Replacement of the F-1301 boiler with a higher capacity and higher performance boiler (FB-1302) in Mollet del Vallès

2021

Dismantling of the nitrilation plants in Mollet del Vallès

Installation of photovoltaic panels at the Olesa de Montserrat centre (commissioning in February 2022)

2022

Processing of a substantial change for the expansion of MDJ manufacturing at the Olesa de Montserrat centre.

New edition of the Risk Prevention Management System to update it to the new legal requirements approved since the previous edition, to incorporate the ESG concept, integrate the principles of a healthy company and adapt the language to be inclusive.

2023

MDJ-2 plant in the centre of Olesa de Montserrat (recovery thermal oxidizer installation)

Stoppage of cogeneration in the centre of Olesa de Montserrat

Exit from the greenhouse gas regime in Olesa de Montserrat

2.2 WHAT SHOULD WE DO AND WHERE ARE WE

2.2.1 PRODUCTIVE ACTIVITIES (SPANISH NATIONAL CLASSIFICATION OF ECONOMIC ACTIVITIES - CNAE 20.41)

Chemical Division

as surfactants (anionic, non-ionic, cationic, and amphoteric), their blends and polymers, which are produced at the Olesa de Montserrat and Mollet del Vallès centres.

Aromas Division

Chemical Aromas: This business division markets chemical products manufactured at the Olesa de Montserrat and Mollet del Vallès production centres, and which are used in the formulation of flavours and fragrances for use in cosmetics, fine perfumery, detergents, household and industrial products.

Fragrances: This unit prepares the formulations and blends of fragrances for industrial use, cosmetics and household products.

Imaging Materials Division

This division manufactures and markets resins and electrostatic agents (Toner) for professional digital printers through particle mixing, milling and classifying processes. The Olesa de Montserrat centre performs one part of the process integrated at the Barberà del Vallès Centre.

In this same division, Kao Chimigraf produces inks at the Mollet del Vallès centre, which is not included in the scope of the EMAS certification.

The following is a list of product families manufactured at our installations, bearing in mind that other products are included under these generic titles.

OLESÀ DE MONTSERRAT CENTRE

URFACTANT AGENTS

- Anionic: EMAL
- Non-ionic:
 - FINDET family
 - AMIET family
 - AMIDET family
- Cationic:
 - TETRANYL families
- Amphoterics:
 - OXIDET family
 - BETADET family
- Blends:
 - DANOX families

POLYMERS

- Polyester resins for toner

CHEMICAL PRODUCTS FOR AROMAS AND FRAGRANCES

- Methyl Dihydro Jasmonate
- Ambroxan, Boisambrene Forte
- Composition of aromas

MOLLET DEL VALLÈS CENTRE

CATIONIC SURFACTANT AGENTS

- Softening agents
 - QUARTAMIN and TETRANYL families
 - AKYPO, ALFANOX, CELLESH, ASFIER, FOSFODET, GRIPPER families
- Flotation agents
 - DANOX FL family
- Agents for fertilisers
 - SK-FERT family

CHEMICAL PRODUCTS FOR AROMAS AND FRAGRANCES

- LACTONE family
- ALDEHYDE family

INKS³

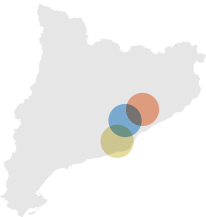
BARBERÀ DEL VALLÈS CENTRE

- Toner

³ Outside the scope of the EMAS certification.

PRODUCTION CENTRES IDENTIFICATION DETAILS

2.2.1.1 GEOGRAPHICAL SITUATION AND LOCATION



OLESA DE MONTSERRAT CENTRE

Polígono Industrial Can Vinyals
Ctra. de la Puda s/n
Olesa de Montserrat



23%
Surface busy

Surface area of the centre: 103,303 m²
Land occupation: 23,505 m²

The centre is close to two municipalities:

Olesa de Montserrat:

24,458 population

250 m distance

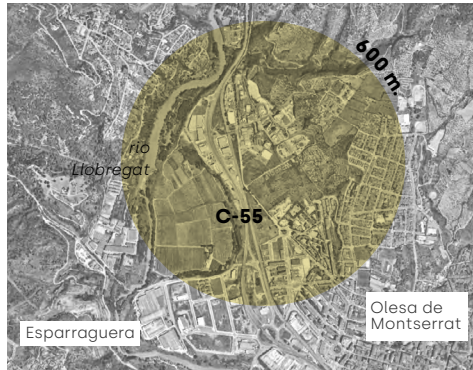
Esparraguera:

22,392 population

1,900 m distance

UTM Coordinates
X 406.650
Y 4.600.900

The height above sea level in the industrial estate varies between 108 m and 134 m.



The first houses belonging to the town of Olesa de Montserrat, to the South-east of the site, are located at a distance of approximately 600 m. There are a few scattered farmsteads in the surrounding area, such as El Mas, 300 m to the North, and Can Vinyals, between 500 and 700 m to the West.

Nearby natural elements

— The Llobregat River, which runs from North to South on the Western side of the installations.

— The Creu de Beca stream, to the North of the site. The protected aquifer of La Cubeta

de Abrera.

— PEIN (Area of Natural Interest) –Montserrat, 1 km away.

Neighbouring Infrastructures

— Barcelona-Martorell-Manresa railroad, running parallel, to the West of the facilities.

— The regional C-55 road from Abrera to Manresa, which runs parallel to the aforementioned railroad.

— B-120 Highway, from Terrassa to Olesa de Montserrat, bordering the South of the centre.

MOLLET DEL VALLÈS CENTRE

Polígono Industrial Can Prat
C/ Bilbao, 35-61
Mollet del Vallès



36%
Surface busy

Surface area of the centre: 38,918 m²
Land occupation: 13,847 m²

The centre is close to two municipalities:

Mollet del Vallès:

51,692 population

300 m distance

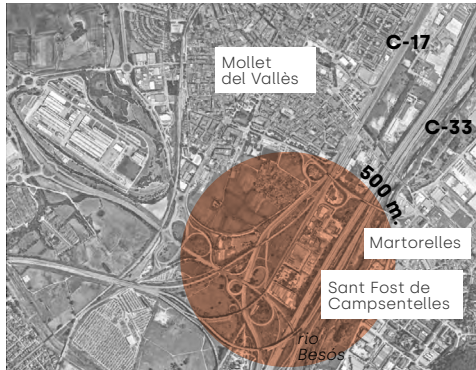
Sant Fost de Campsentelles:

9,175 population

500 m distance

UTM Coordinates
X 434.557
Y 4.597.905

The height above sea level in the industrial estate varies between 55 m and 60 m.



The first houses that belong to the town of Mollet del Vallès are located approximately 300 m to the North of the site. Various sports areas are located within the vicinity of the site. The closest, the Mollet Tennis Club, is within 240 m, with another one about 400 m to the North-east and another one to the South. The town of Martorelles is located to the East of the site, on the other side of the Besòs River, past Sant Fost de Campsentelles.

Nearby natural elements

— The Besòs River, approximately 200 m to the

South-east of the installations.

— The protected aquifer of El Baix Maresme.

— PEIN (Area of Natural Interest): Conreria-Sant Mateu-Cel·lecs, 3.3 km away.

Neighbouring Infrastructures

— C-33 motorway, to the South-east of the installations.

— Road from Martorelles to Mollet, to the North-east of the installations.

— Railway lines from Mollet del Vallès to El Papiol and Barcelona to Portbou, to the Northwest.

BARBERÀ DEL VALLÈS CENTRE

Polígono Industrial Santaiga
C/ Puig dels Tudons, 10
Barberà del Vallès



35%
Surface busy

Surface area of the centre: 43,899 m²
Land occupation: 15,200 m²

The centre is close to two municipalities:

Barberà del Vallès:

33,353 population

1,500 m distance

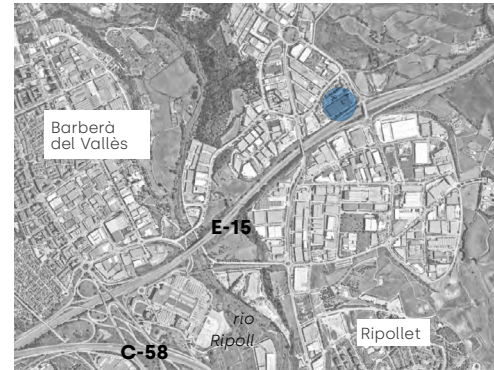
Santa Perpètua de la Mogoda:

25,863 population

2,000 m distance

UTM Coordinates
X 429.176
Y 4.596.997

The height above sea level in the industrial estate varies between 130 m and 134 m.



Nearby natural elements

— The production centre is located in a highly industrialised area, 4.8 km from the nearest Area of Natural Interest (Serra de Collserola).

Neighbouring Infrastructures

— AP-7 motorway, to the South-east of the installations.

Olesa de Montserrat Centre

The KAO industrial estate is approximately located between the following UTM coordinates: 406.675 < X < 406.875; 4.601.105 < Y < 4.601.140 (longitude West 1° 52' 52" and latitude North 41° 33' 23").

Mollet del Vallès Centre

The KAO industrial estate is approximately located between the following UTM coordinates: 434.400 < X < 434.800; 4.597.550 < Y < 4.598.150.

Barberà del Vallès Centre

The KAO industrial estate is approximately located between the following UTM coordinates: 429.150 < X < 429.400; 4.596.600 < Y < 4.597.200.

2.2.1.2 DISTRIBUTION OF DIVISIONS
BY CENTRE

The company has the following plants and divisions:

OLESA DE MONTSERRAT CENTRE

- HTR plant
- Ethylene oxide and propylene oxide plants
- Aroma Compounding plant
- MDJ plant (aroma)
- C plant (aromas)
- OTB plant
- Blends division
- Services and Energies (Cogeneration)

MOLLET DEL VALLÈS CENTRE

- HTR plant
- Aromas I plant
- Aromas II-III plant
- Aromas IV plant
- Inks Warehouse
- Blends division
- Services and Energies

BARBERÀ DEL VALLÈS CENTRE

- Toner factory
- Research and development laboratories
- Pilot Plant
- Central office installations
- Developer division
- Services and Energies

⁴ Ink production (activity of Kao Chimigraf) was added in 2017 due to being included in the Integrated Environmental Authorisation of Kao Corporation, S.A.U. for Mollet del Vallès

⁵ Production index = $\frac{\text{Final production year } i}{\text{Final production 2005}} \times 100$

2.2.1.3 ANNUAL PRODUCTION

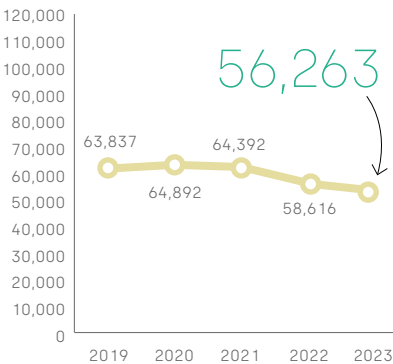
The annual production evolution for each centre is shown below.

ILLUSTRATION 1.
ANNUAL EVOLUTION OF PRODUCTION

Final production = Finished products produced at our facilities. Viz., not including intermediate products (products subject to several processing cycles before they can be considered an end product).

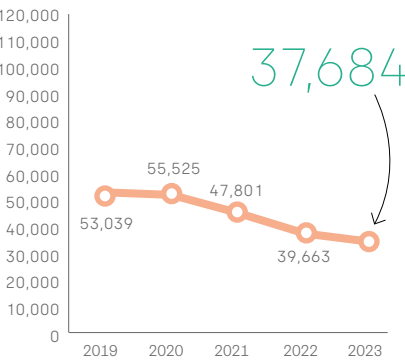
OLESA DE MONTSERRAT

Final production (t)



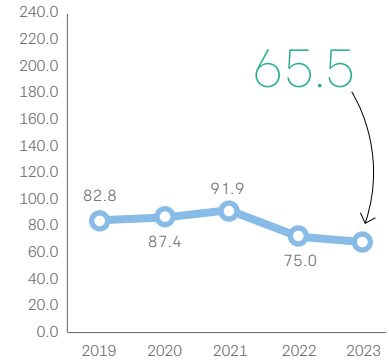
MOLLET DEL VALLÈS CENTRE

Final production (t)⁴



BARBERÀ DEL VALLÈS CENTRE

Production index (%)⁵





2.3 FOR WHOM AND WITH WHOM WE WORK

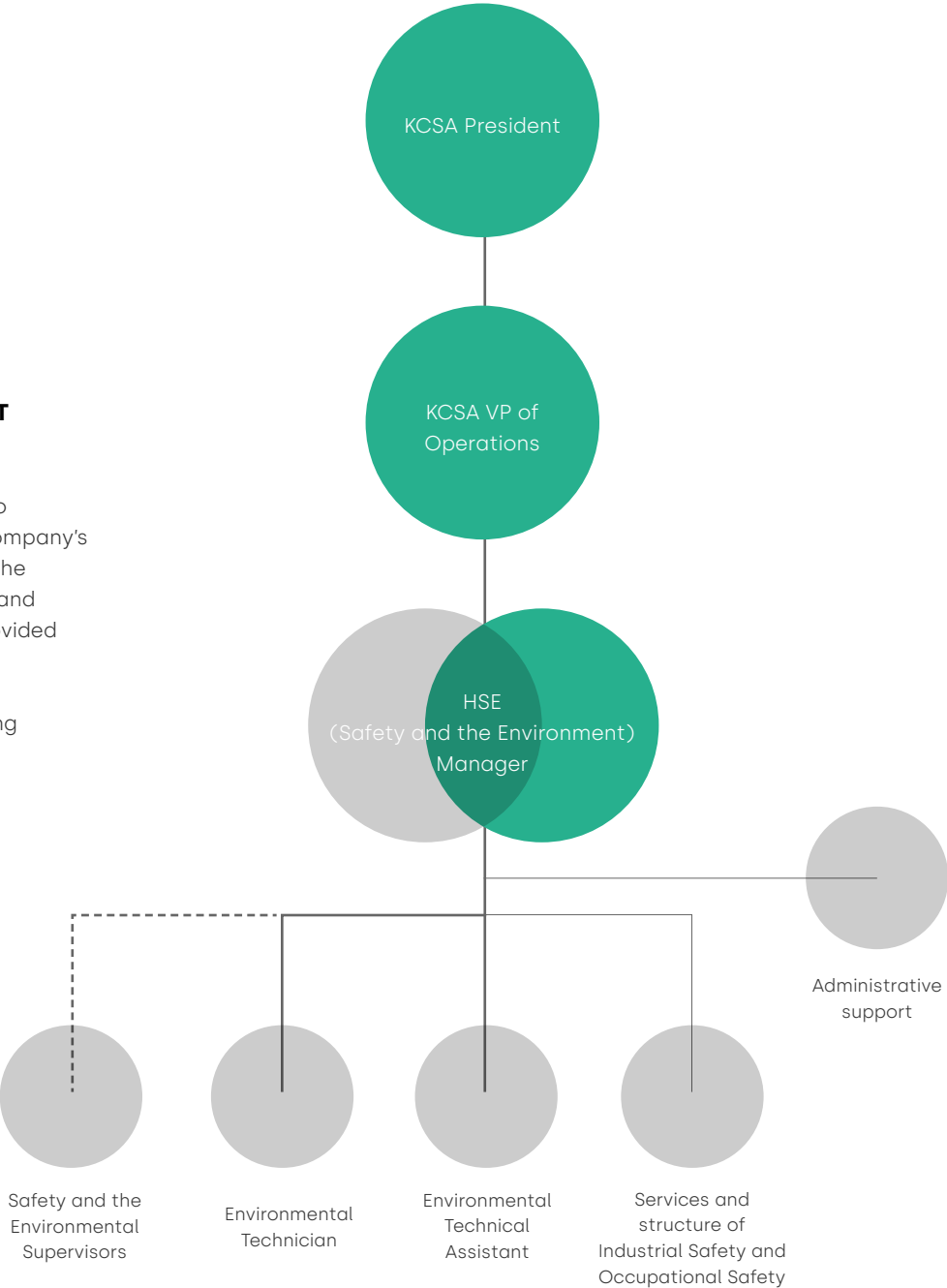
Since the company was established in 1887, Kao has been providing an unmistakable value to people around the world. Our consumer products promote cleanliness, beauty and health, while our chemical products contribute to developing different industries. As we transform ourselves to promote change, Kao remains attentive to the needs of people and strives to become a company that enjoys global support. As we can see, satisfying and enriching people's lives and remaining as close as possible to consumers and clients are our reason for being and the path to follow. This is only possible with the collaboration of our suppliers, contractors, collaborators and personnel that make up the organisation as well as our neighbours, regulating agencies, competitors, nongovernmental organisations, investors and pressure groups who drive us to continuously improve our activity. With all stakeholders in mind, Kao develops its policy on ESG activities and the Kirei Lifestyle Plan, which presents our ambitious intentions for the future, both opportunities and challenges, whereby we will make greater contributions to the sustainability of society.

2.4 WHAT WE DO THIS WITH: ENVIRONMENTAL MANAGEMENT

2.4.1 ENVIRONMENTAL ORGANISATIONAL STRUCTURE

The General Department of the Kao Corporation, S.A. deals with the Company's environmental requirements, with the support of the entire organisation and the technical advisory services provided by the HSE Dept. Below is a description of the organisational structure specialising in environmental issues:

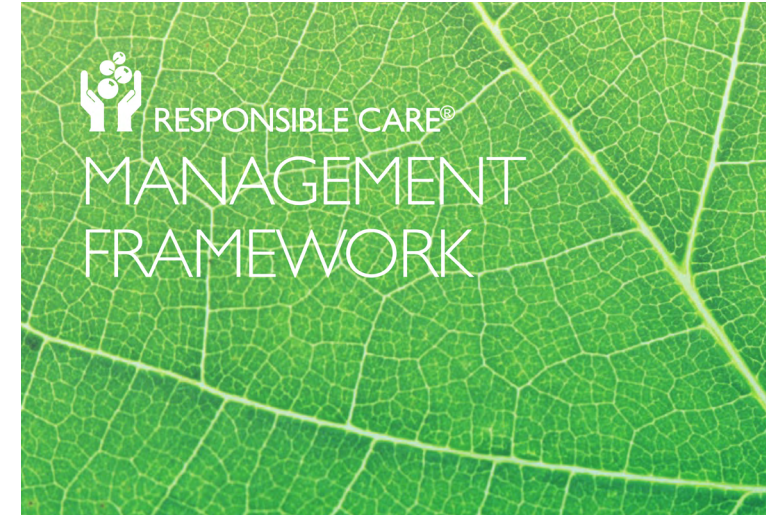
-  HSE Dept.: Staff with technical, administrative and environmental management and safety functions.
-  Members of the Corporate HSE Committee



2.4.2 RISK PREVENTION MANAGEMENT SYSTEM

As from the end of 2011, Kao Corporation, S.A.U. has had a management system that integrates the areas of safety and the environment. In 2013 the Safety and Environmental Service (currently the HSE Dept.), with the collaboration of the Engineering and Maintenance Department, conducted a review of the management system for the purpose of incorporating the requirements of standard ISO 50001: Energy Management Systems and subsequently certify the MS also based on this reference. The process concludes with a system designed and certified in accordance with the ISO 14001, EMAS and OHSAS 18001 and ISO 50001 benchmark standards, and also responds to certain legislative demands that require a management system such as the regulations governing prevention of occupational risks (Prevention Plan) or the norms concerning the prevention of serious accidents. In 2016 a new edition of the system was reviewed and published for the main purpose of adapting the documents to the version of standard 14001:2015 and the legal requirements approved since the previous edition. In 2018, the system was revised again to update the scope following the addition of a Kao Chimigraf plant at the Mollet facility and to begin incorporating the requirements of the ISO 45001 standard. The process ended with certification

based on this standard in May 2020. In 2022, a new edition of the Risk Prevention Management System is approved to incorporate the new legal requirements approved since the previous edition, the ESG concept is also incorporated, the principles of a healthy company are integrated, and the language is adapted to be inclusive. The systems integration process seeks greater management efficiency, through processes that are as simplified as possible and, in some cases, unified. It also facilitates understanding and use by users and less administrative burden. The risk prevention system is annually audited by a leading entity in system certification by specialists from each of the areas.



2.4.3 THE RESPONSIBLE CARE PROGRAMME

Kao Corporation, S.A.U. has subscribed to the Responsible Care programme since its introduction in Spain through FEIQUE (1993). "Responsible Care" is a global program that is applied in 52 countries. Cefic has developed a new European Responsible Care® management framework and a self-assessment tool. In 2019, Cefic (European Chemical Industry Council) developed a new European framework for Responsible Care Management so that more European manufacturers of chemical products would join it, thereby improving the reputation of and trust in the industry. Launched in the mid-80s in Canada, the Responsible Care® initiative is now being implemented by 62 chemical associations in nearly 70 economies around the world.



In Europe, about 30 countries and more than 4000 companies have joined the program. The new European Responsible Care management framework is accompanied by a self-assessment tool that is a valuable instrument for guiding national companies and associations to excellence. The tool allows benchmarking, and it provides recommendations and good industry practices of great interest. The updated system links Responsible Care to standards of the highest level, including ISO9001, ISO14001, ISO50001, ISO45001, ISO26000, EMAS, RC14001 and RCMS, together with Principles of Sustainability, such as the UN Sustainable Development Goals, the Cefic Sustainability Charter and the ChemistryCan initiative. As from March 2016, Kao Corporation, S.A.U., as a company adhered to the Responsible Care Programme, has been authorized to use the Responsible Enterprise RSE trademark of Responsible Care for a renewable period of two years, due to complying with all the

necessary requirements. This distinctive sign represents and guarantees to third parties, the company's commitment to Business Social Responsibility (RSE) under the Responsible Care trademark. The objective of this initiative, which was implemented in March 2015, is to give companies such as Kao Corporation, S.A.U. visible recognition that certifies their commitment with RSE policies, thereby highlighting the company's contribution in this area before public and private bodies, competent institutions and society as a whole. Application of the Responsible Care Programme at all companies of the group is also intensely driven from Kao's headquarters in Japan. Group management has designed its own audit programme based on the Responsible Care guidelines, which means that, annually, every subsidiary must answer a list of questions that are structured by different codes, very similar to those of the Spanish programme. Within the framework of the same program, the group organizes an annual event called "RC Meeting" in which knowledge, progress and experiences are shared between all the company's subsidiaries.

2.4.4 VOLUNTARY CERTIFICATIONS

Kao Corporation, S.A.U. has voluntary certifications related to various standards such as the following:

- EMAS Regulation
- ISO 14001:2015
- ISO 50001:2018
- ISO 45001:2018
- ISO 9001:2015





In addition, the Olesa and Mollet centres have EffCI GMP certification, following the guidelines of the European Federation of Manufacturers of Cosmetic Ingredients (EffCI), which applies to all products that Kao Corporation, S.A.U. uses in the cosmetics and detergent markets. In addition to these certifications, palm oil certified according to the Roundtable on Sustainable Palm Oil (RSPO) is purchased.

3. LEADERSHIP



The leadership and commitment on the part of Management and the line of command is evident in the different areas of the SGPR. In recent years, the need to reinforce HSE leadership has become more evident, especially in nonoperational areas, such as purchasing and sales, given that they constitute the link between the company and its suppliers and customers respectively, increasingly fundamental parts and as has recently become evident following the publication of Royal Decree 1055/2022 on packaging and packaging waste.

At a general level, the company promotes a management style consistent with the sustainability and risk prevention policy.

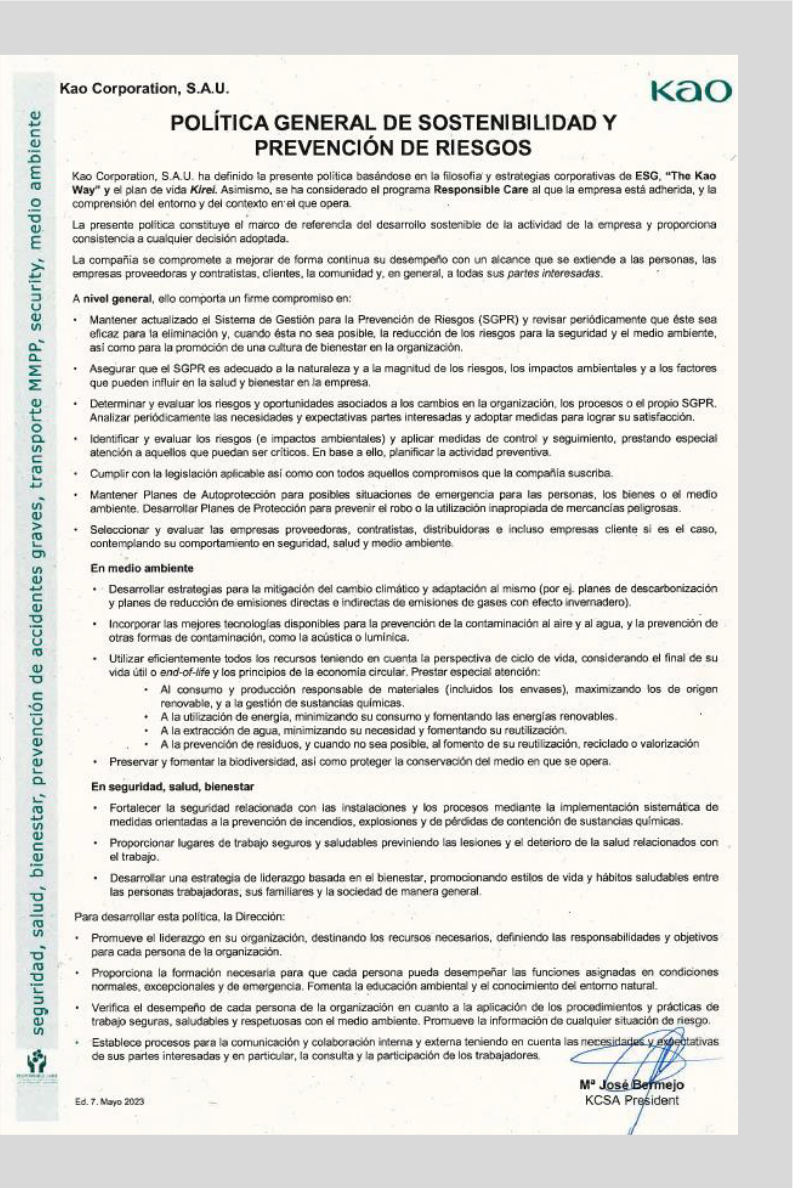
Within the framework of this policy, actions are carried out aimed at knowing and committing to the SDGs: training workers and managers, assuming corporate commitments towards the SDGs, and communicating them to stakeholders (for example, through this declaration), as well as carrying out awareness-raising actions throughout the supply chain.

This is why both the sustainability policy and the strategic line to follow are linked to the Sustainable Development Goals (SDGs) of the United Nations and the 10 Principles of the Global Compact.



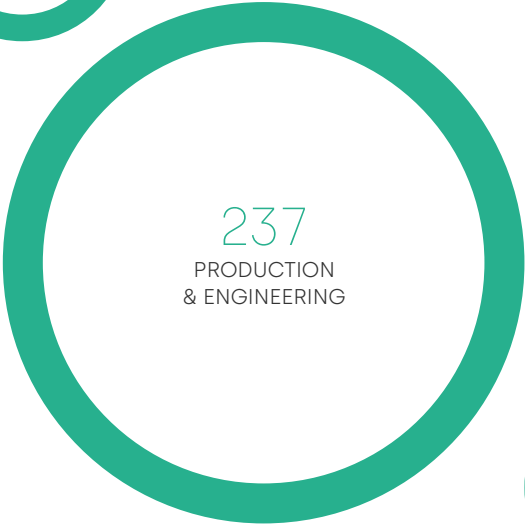
3.1 GENERAL POLICY ON SUSTAINABILITY AND RISK PREVENTION

The General Sustainability and Risk Prevention Policy is a document that is constantly updated and adapted to the company's context. Throughout 2022, a new edition of this was developed and subjected to the consultation and participation process, to finally approve it in May 2023. The new edition further enhances the area of the environment, with specific mentions of the commitments acquired in each of the vectors, and especially, the commitments acquired in relation to mitigation and adaptation to climate change. It also incorporates the Management's commitment to leadership based on the healthy business model.



3.2
ORGANISATION OF KAO
CORPORATION, S.A.U.

ILLUSTRATION 2.
GENERAL MANAGER
446



- Safety & Environment
- Quality Assurance
- Engineering & Maintenance
- Chemicals Plant Olesa
- Chemicals Plant Mollet
- Imaging Materials Plant
- Aromas Compounding Plant



- Accounting & Finances
- Local Help Desk (LHD)



- Business Unit Surfactants Consumer Application (SCA)
- Business Unit Surfactants Technical Application (STA)
- Business Unit Imaging Materials
- Business Unit Fragrances & Aromas
- Customer Service



- General
- Fragrances
- Product Safety & Regulations
- Intellectual Property



- Planning & Logistic Olesa
- Planning & Logistic Mollet
- Planning & Logistic Imaging Material
- Planning & Logistic Aromas Compounding
- Head Office Planning & Logistic
- Purchasing



- HHRR Development / Administration
- Auxiliar Services

4.1 ENVIRONMENTAL ASPECTS

4.1.1 ASSESSMENT METHODOLOGY

Environmental aspects are elements of an organisation's activities, products or services that may interact with the environment.

We include the following:

- Resources (material and energy)
- Atmospheric emissions
- Water
- Waste
- Soils
- Other environmental issues that affect the community (smells, noise, etc.)

Kao Corporation, S.A.U. conducts an annual evaluation of the environmental aspects identified in each centre and reviews the inventory of environmental aspects, reorganising them to ensure that the evaluation is more efficient and effective.

In 2002, Kao Corporation S.A.U. developed its own method for identifying and assessing environmental aspects to be able to quantify direct and indirect interactions with the environment.

4. PLANNING



The method is based on external criteria⁶ and, therefore, is considered to be an objective and acceptable method.

The criteria that enable the environmental impact to be assessed are:

- NATURE (previously referred to as Hazard): Characteristic property of the assessed environmental aspect.
- MAGNITUDE / TREND: Quantification or intensity of the environmental aspect assessed. If this criterion cannot be applied, specific supplementary magnitudes of the aspect are analysed.
- FREQUENCY: The frequency with which the environmental aspect occurs.
- APPROACHING THE LIMIT (previously referred to as Supplementary Magnitude): Expresses how close we are to levels that are considered acceptable, limits or references that are not to be exceeded.
- EVIDENCE OF THE DEGREE AFFECTED: Expresses the representative level of closeness to the accepted reference.

⁶Legal provisions and other environmental technical references. The methodology is described in the internal procedure PGDG-301.

The magnitude of the impact (mi) of each environmental aspect is the product of these factors, of the assessment of the technician who performs the assessment and of the Life Cycle Analysis criterion (hereinafter, ACV), which expresses opportunities for improvement according to that approach.

$$mi = \text{Nature} \times \text{Magnitude} \times \text{Frequency} \times \text{Approach} \times \text{Evidence} + \text{ACV} + \text{Technical assessment}$$

Based on this, we have determined what environmental aspects have an impact on (or affect) each one of the phases of the life cycle.

- The database for assessment of environmental aspects includes the reference of environmental aspects analysed for each area (*illustration 3*):

 - Microbiological agents: Prevention and control of legionnaires' disease in cooling towers
 - Waste water: Water quality parameters (pH, suspended matter, conductivity, etc.) at the dumping points
- Groundwater: Water quality parameters (hydrocarbons, solvents, etc.) considering each of the existing piezometers
 - Consumption of resources: water, electricity, fuel, raw and auxiliary materials
 - Atmospheric emissions: Sources of combustion and process, transport
 - Greenhouse gases: Coolants for air-conditioning units and refrigerating facilities
 - Waste: Each type of waste produced by the production centre
 - Noise: Noise immission level at each centre
- Accidents/emergencies: Leaks and spills of hazardous and non-hazardous substances, explosions, fires, mechanical/electrical faults, uncontrolled accidental discharges, transport accidents, floods, etc.
 - Others: Reuse of materials, biodiversity

ILLUSTRATION 3.
NUMBER OF ENVIRONMENTAL
ASPECTS ASSESSED IN 2023

	Microbiological agents	Waste water	Groundwater	Water consumption	Electricity consumption	Natural gas consumption	Raw material consumption	Atmospheric emissions	Greenhouse gases	Waste	Noise	Accidents/ Emergencies	Others	TOTAL
OLESA DE MONTSERRAT CENTRE	3	97	93	3	2	2	15	44	9	87	1	22	2	380
MOLLET DEL VALLÈS CENTRE	3	96	93	4	2	2	14	36	7	81	1	22	2	363
BARBERÀ DEL VALLÈS CENTRE	1	11	93	1	1	2	5	26	8	54	1	33	2	238
KAO CORPORATION, S.A.U.	7	204	279	8	5	6	34	106	24	222	3	77	8	983

Source: Aspects assessment database

4.1.2 DIRECT ENVIRONMENTAL ASPECTS

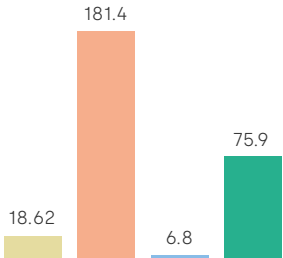
The number of aspects has increased slightly compared to the previous year (13 registrations, incorporation of atmospheric emissions in MDJ-2 (F-8302, FB-8002/B) in Olesa, *Legionella* in the MDJ-2 service area in Olesa and waste from the Olesa, Mollet and Toner centres; 2 aspects have been removed, which correspond to emissions from cogeneration at the Olesa centre.

4.1.2.1 IMPACT ASSESSMENT UNDER NORMAL OPERATING CONDITIONS

The following is a list of the average environmental impact corresponding to each production centre under normal operating conditions and in relation to the aspects being assessed.

ILLUSTRATION 4.
AGGREGATE OF THE AVERAGE
MAGNITUDE OF IMPACTS BY
VECTORS AND CENTRES.

ILLUSTRATION 5.
AVERAGE MAGNITUDE
OF IMPACT BY VECTOR
AND CENTRE.



	Microbiological agents	Waste water	Groundwater	Water consumption	Electricity consumption	Natural gas consumption	Raw material consumption	Atmospheric emissions	Greenhouse gases	Waste	Noise	Accidents/ Emergencies	Others	TOTAL
OLESA DE MONTSERRAT	5.0	7.1	43.6	12.3	8.4	22.2	18.0	9.6	6.0	16.2	23.4	15.3	0.2	187.4
MOLLET DEL VALLÈS	5.0	7.0	671.4	22.8	9.5	16.4	16.3	10.0	5.0	23.4	5.0	19.5	0.1	811.4
BARBERÀ DEL VALLÈS	5.0	43.8	1.0	10.0	8.2	22.8	8.2	8.2	5.0	12.1	5.0	13.1	0.0	142.3
KAO CORPORATION, S.A.U.	5.0	9.0	238.7	17.3	8.8	20.5	15.8	9.4	5.4	17.8	11.1	16.0	0.1	374.9

4.1.2.2 ASSESSMENT OF THE IMPACT UNDER ATYPICAL CONDITIONS

Atypical conditions at Kao Corporation, S.A.U. are those due to abnormal conditions (such as industrial tests) as well as possible emergency situations. Possible emergency situations are those included in the respective Self-protection Plans of the centres. In the case of the Olesa de Montserrat and Mollet del Vallès centres, as they are both affected by the regulations about major accident hazards (*see paragraph 7.2*), the major environmental aspects are those resulting from accident scenarios shown in the 'Major Accidents Safety Report'.

4.1.2.3 ENVIRONMENTAL ASPECTS WITH A SIGNIFICANT IMPACT

Kao Corporation, S.A.U. considers an environmental aspect to be significant when the magnitude of impact is higher than fifty ($mi > 50$). A consideration of significant may represent the implementation of preventive and/or corrective actions, new operational checks or the definition of environmental improvement targets, as applicable. We therefore consider the level of adaptation, which expresses the Rate of approximation between the magnitude or value of the indicator of the aspects to be assessed, with regard to the levels considered acceptable, limits or references that are not to be exceeded. During the assessment of the aspects that was carried out in 2023 related with the actions that took place in 2022, no significant new impact was detected associated with atypical situations. Neither have any significant impacts been observed regarding indirect aspects.

ILLUSTRATION 6.
Significant aspects related with
the activities carried out in 2022 and assessed
in 2023

⁷ Rounded to the unit
(E.g. 10,2 ≈ 10; 10,5 ≈ 11).

⁸ $\text{Change VS acceptable level} = \frac{\text{Current value} - \text{Acceptable value}}{\text{Acceptable value}} \times 100$

OLESA DE
MONTSERRAT
CENTRE

IMPACT	ASPECT	POLLUTING SUBSTANCE/ PARAMETER	AREA	CODE	mi. ⁷	CHANGE VERSUS ACCEPTABLE LEVEL ⁸	OBSERVATION
Water pollution	Waste water	1,4 Dioxane	Waste water treatment plant (WWT)	AR-353	75	-44%	1
Water and soil contamination	Groundwater	Ethylbenzene	General	AS- 102	>200	-87%	2
		Naphthalene		AS- 104	131	-92%	
		Toluene		AS- 115	145	>200%	
		Total xylenes		AS- 116	148	-96%	
		Selenio		AS- 145	54	>200%	
		Vanadium		AS- 146	54	125%	
		1,2-cis Dichloroethylene		AS- 167	>200	>200%	
		Chlorobenzene		AS- 174	99	-99%	
		1,4 Dichlorobenzene		AS- 177	62	0%	
		Phenanthrene		AS- 252	54	>200%	
		Tetrahydrofuran		AS- 328	117	>200%	
		Bario		AS- 37	81	110%	
		TPH		AS- 400	171	>200%	
		Arsenic		AS- 45	81	-20%	
		PAHs		AS- 54	>200	-97%	
		Tetrachloroethylene		AS- 88	122	>200%	
		1,2,3 Trichlorobenzene		AS- 91	164	>200%	
		1,2,4 Trichlorobenzene		AS- 92	>200	>200%	
		Vinyl chloride		AS- 96	186	>200%	
Decrease of resources	Resources	Aldehydes	Production	CM-010	60	7%	3
Waste	Resources	Epichlor. container	Production	RE- 125	74	-11%	4
		General garbage		RE- 15	100		
		WWT plant sludge		RE- 162	101		
		Waste water		RE- 52	67		
		Contaminated glass		RE- 73	100		

1	The volume of water discharged has been much lower than the previous year (approximately 10,000 m ³ , hence the concentration has increased). Action: Maintain monitoring.				
2	The drought situation in the territory may have influenced a greater concentration. Barium, Selenium, Vanadium and Arsenic are detected for the first time. Action: Continue performing annual monitoring.				
3	Consumption lower than authorized, MDJ production has been 61 t higher than authorized. Pending authorization from the CS where an increase in production is requested. Action: Maintain monitoring.				
4	RE-125: Production is increasing and requires more consumption of this raw material and, consequently, waste. Action: Monitor and check that the containers are well drained. RE-15: The works at the MDJ-2 plant have led to an increase in this waste. Action: Keep track. RE-162: The aspect is significant because in mid-2021 the classification of waste will change from nonhazardous to hazardous. In 2022 all the waste will already be classified as dangerous. The average for previous years also does not include the normal cases. Action: Keep track. RE-52: The reduction in water consumption and, therefore, in the volume of water treated in the treatment plant means that this flow must be managed externally so as not to compromise the quality of the discharge. Action: Keep track. RE-73: The generation of this waste is directly related to the taking of samples in each of the production batches. The amount of waste generated has increased by 31% while production has decreased by 9%, which negatively affects the ratio. Action: Keep track.				

MOLLET DEL VALLÈS CENTRE

IMPACT	ASPECT	POLLUTING SUBSTANCE/ PARAMETER	AREA	CODE	mi: ⁷	CHANGE VERSUS ACCEPTABLE LEVEL ⁸	OBSERVATION
Water and soil contamination	Groundwater	Toluene	General	AS-115	>200	>200%	1
		Molybdenum		AS-144	152	-40%	
		1,2 dichloroethylene		AS-167	>200	>200%	
		Tetrachloroethene		AS-88	>200	127%	
		1,2,3 Trichlorobenzene		AS-91	81	>200%	
		1,2,4 Trichlorobenzene		AS-92	81	>200%	
		Trichloroethene		AS-94	62	-78%	
		Vinyl chloride		AS-96	>200	>200%	
Disminución de recursos	Residuos	Acrylic acid	Production	CM-014	62	6%	2
Recursos	Residuos	HTR Vaporized	Production	RE-126	>200	>200%	3
		WWT plant sludges		RE-162	124	69%	
		Contaminated glass		RE-73	>200	144%	

1 The drought situation in the territory may have influenced a greater concentration. 1,2,3 Trichlorobenzene	is detected for the first time. Action: Continue performing annual monitoring.	2 The average limit value (last 3 years) covers 2019 in which aroma plant 4 was not operating. Consumption	remains the same. Action: Keep track.	3 RE-126: Pending. Action: Maintain monitoring. RE-162: The aspect is significant because in 2020 the classification	of waste changed, from nonhazardous to hazardous. The average for previous years still does not include the normal cases.	Action: Maintain monitoring. RE-73: The generation of this waste is directly related to the taking of samples in each of the production	batches. The amount of waste generated has increased and production has decreased, which negatively affects the ratio. The sample	warehouse has also been cleaned. Action: Keep track.
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BARBERÀ DEL VALLÈS

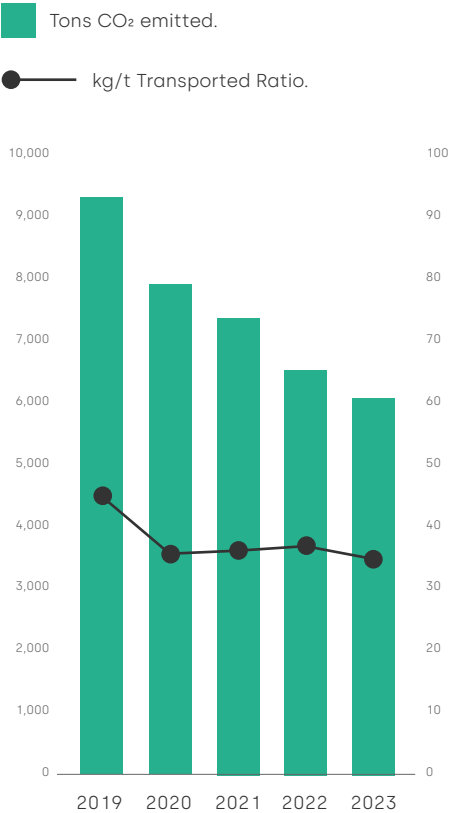
IMPACT	ASPECT	POLLUTING SUBSTANCE/ PARAMETER	AREA	CODE	mi: ⁷	CHANGE VERSUS ACCEPTABLE LEVEL ⁸	OBSERVATION
Water contamination	Waste water	COD	Waste water treatment	AR-127	183	-41%	1
		Nitrates		AR-128	103	-15%	
Resources	Waste	Cartridges	General	RE-135	89	>200%	2

1 AR-127: Without apparent cause. Action: Maintain annual monitoring. AR-128: Monitoring is being carried out since this aspect	was significant last year. The cause of the increased nitrate concentration has not yet been identified. Action: Continue with weekly	monitoring to determine progress.	2 RE-135: The removal of this waste last year was exceptionally low. Historical maximum. Action: Follow	up and check that the cartridge type has not been changed for a heavier one or that there has been an increase in impressions.				
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4.1.3 INDIRECT ENVIRONMENTAL ASPECTS

Indirect environmental aspects are those aspects that cannot be directly managed, despite their potentially negative impact on the environment. We can highlight the following:

ILLUSTRATION 7.
Evolution of CO₂ emissions in transport



Transportation of finished products
The transport of finished products to numerous national and international destinations generates gas emissions through the combustion of diesel, as well as particulates and other minority pollutants, such as the tropospheric ozone. In 2017, the group defined a common methodology for calculating CO₂ emissions due to transport, useful for both the finished product and the raw material. The method considers the tons transported and the distance travelled. The calculation allows comparing the annual evolution of emissions from transport and assessing the results that could stem from future changes. The assessment of this indirect environmental aspect concludes that it is not significant. Multimodal transport has been maximized and is taking place at many of the main destinations. In 2023, the ratio of emissions due to shipments by rail, ship and road decreases compared to the previous year. The air mode is the only one that gets worse (*illustration 7*).

Distribution of packaged products
The finished product is packaged in a range of recipients made from different materials (metals, plastic), often selected by the customers for product presentation purposes, and therefore considered to be an indirect aspect.

These enter the market through to the end of their service life, when they are recycled or removed as waste. The internal management and sales actions included in the Corporate Container Prevention Plan (PEPE) are targeted at decreasing the Kr/Kp rate, where:
— Kr: weight of container
— Kp: weight of product contained

In 2023, the sales team maintains close contact with customers to optimize material deliveries so that they are made in bulk whenever possible as well as in containers that improve the Kr/Kp ratio. In this area, the application of the Royal Decree on packaging and packaging waste (RD 1055/2022) is giving an impetus to actions aimed at optimizing this ratio. The implementation of the concept of Extended Producer Responsibility regarding the packaging in which we serve our products entails rethinking their design with an environmental perspective. In each case, the reduction, to the extent possible, of environmental impacts at the end of the product's life cycle is also considered. With this vision, packaging designed so that it is easy to dismantle and to recycle.



4.2 ENVIRONMENTAL OBJECTIVES

4.2.1 FORMULATION OF ENVIRONMENTAL TARGETS

Kao Corporation, S.A.U. has ratified the long-term objectives of the parent company and annually defines environmental objectives based on numerous elements, including:

- The Kirei Life Plan, which covers the period 2021 2030 and takes different reference years depending on the aspect in question.
- The risks and opportunities resulting from the analysis of the internal and external context of the company and the analysis of the needs and expectations of the company's interested parties, both internal and external.
- Improvement strategies and analysis of priorities, internal needs, external requirements, new legislation or legislation in development.

In any case, its development and execution are aimed at continuously improving the environmental performance of the organization and achieving long-term objectives. The objectives cover various areas: environmental decarbonization (increasing the rate of renewable energy from purchased electricity and reducing the absolute value of GHG emissions), waste reduction (zero waste in landfill and simple incineration), as well as preventing air and water pollution. In the case of decarbonization, the objectives have been established based on the Science Based Targets initiative (SBTi), led by CDP, the United Nations Global Compact, World Resources Institute (WRI), WWF and We Mean Business.

Regarding the objectives related to decarbonization, at the corporate level the reduction of scope 1 and 2 emissions is proposed. On the other hand, KJ is considering establishing carbon intensity reduction targets.

⁹ Goal to be achieved by 2025.
¹⁰ Target to be achieved in 2025.
¹¹ 3% compared to 2020.

TABLE 1.

The commitments acquired for 2030 to make the world a healthier and cleaner place, determined directly by KJ, are the following:

SCOPE	INDICATOR	OBJECTIVE VALUE	BASE YEAR
Decarbonization	Reduction of scopes 1 & 2 CO ₂ emissions, absolute	55%	2017
Energy	Purchased renewable electricity	100%	-
	Reduction of energy consumption	1%	Previous year
Zero waste	Reduction of the ratio of industrial waste to landfill and incineration	<1%	-
Water conservation	Reduction of water consumption	45%	2005
Biodiversity	Promoting the conservation of biodiversity		
Resources	Purchase of RSPO certified palm oil	100% ⁹	-

TABLE 2.

These long-term objectives are specified for 2023 in:

INDICATOR	OBJECTIVE VALUE 2023	BASE YEAR
Reduction of scopes 1 & 2 CO ₂ emissions, absolute	18%	2017
Purchased renewable electricity	100%	-
Reduction of energy consumption	1%	Previous year ¹⁰
Reduction of the ratio of industrial waste to landfill and incineration	<previous year	-
Reduction of the waste generation ratio	1%	Previous year ¹¹
Reduction of water consumption	42%	2005
Promote and conserve the biodiversity of KCSA work centres (Increase score vs. previous year)	>previous year	550 346 520
Purchase of RSPO certified palm oil	>previous year	-

4.2.2 IMPLEMENTED ENVIRONMENTAL IMPROVEMENT TARGETS

Below are the 2023 goals. The achieved objective¹² is calculated as the mean achievement reached by each one of the centres. An example is provided in the table below (table 3):

The table below¹³ (table 4) lists the value of the year used as a reference (2010) to calculate the degree in which the objectives are reached.

The value and rate for the year may be seen in the indicators table of the applicable vector.

The achievement reached by a centre in a year is calculated as: (Base year ratio - Year i ratio)/Base year ratio.

¹² 100%: Equal to or higher than the target value defined. 0%: No action performed or results below the starting value.

¹³ Barberà's production expressed as a production rate = $\frac{\text{Final production year i}}{\text{Final production 2005}}$ x100

¹⁴ Not considering construction waste or waste from KCHI's activity in Mollet.

TABLE 3.








	 CENTRE 1	 CENTRE 2	 CENTRE 3	TOTAL ACHIEVEMENT %
Objective	3% reduction			-
Reached objective	0%	1.2%	4.3%	-
% achieved	0	$\frac{1.2 \times 100}{3} = 40$	100	$\frac{0+40+100}{3} = 46.67$

TABLE 4.

	 OLESA DE MONTSERRAT	 MOLLET DEL VALLÈS	 BARBERÀ DEL VALLÈS	 KAO CORP., S.A.U.
Emissions of scopes 1 and 2 (t CO ₂ e) [EA-] in 2017	33,374	17,132	6,206	56,712
Water consumption (m ³) [CA-G]	258,091	492,939	23,075	774,105
Ratio (m ³ /t) in 2005	5.30	10.22	9.78	7.80
Energy consumption per ton sold (MWh) [Cx-G]	101,263	94,719	16,088	212,070
Ratio (MWh/t) in 2020	1.56	1.71	8.61	1.73
Generation of waste (t) [RE-] ¹⁴	3,748	4,436	282	8,466
Ratio (Kg/t) in 2020	57.75	82.03	150.92	70.92
Ratio of industrial waste to landfill and incineration (%)	47.37	21.86	10.88	31.78
RSPO certified palm oil (%) in 2020	-	-	-	23.51

Source: MAESTRO.xlsx

ILLUSTRATION 8.

Objectives developed in 2023

ASSOCIATED ASPECT: WATER CONSUMPTION [CA-G]

Reduction of 42% in water consumption as compared to 2005.

The decrease achieved by each centre is as follows:



OLESA
DE MONTSERRAT
53.4%



MOLLET
DEL VALLÈS
64.9%



BARBERÀ
DEL VALLÈS
61.9%

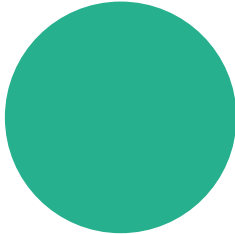


TOTAL KAO
CORPORATION, S.A.U.
62.4%

The achievement is due to the actions taken during previous years and to strict control and daily monitoring of the water consumption from different uses. At the corporate level, the contribution of ideas by technical personnel (TCR's) as well as by the people who work in each center is encouraged through the Kaizen program.

REFERENCE MA-08

ACHIEVED
100%



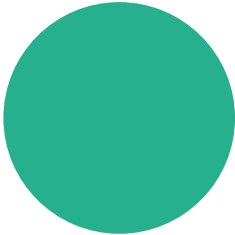
ASSOCIATED ASPECT: ELECTRICAL ENERGY [CE-G]
Purchase of 100% renewable electricity.



TOTAL KAO
CORPORATION, S.A.U.

KCSA has signed a contract for the supply of electricity exclusively from 100% renewable energy sources certified by the National Commission on Markets and Competition (CNMC).

ACHIEVED
100%



ASSOCIATED ASPECT: ENERGY SAVING [CX-G]

Decrease of energy consumption by 1% vs 2022 (3% vs 2020).

The decrease achieved by each centre is as follows:



OLES
A DE MONTSE
RRAT
4.1%

- Automation of MJD/OTB cooling tower fans (TCR-22019, implemented and reported)
- Change of the P-2501 pump motor (132kW) from IE2 to IE3 (TCR-22020, implemented and reported)
- Photovoltaic solar plant in ACO (TCR-22021, implemented and reported)
- Installation of new compressor and redesign of the compressed air generation system (TCR-23014, implemented and reporting)
- P-2360 pump motor change (TCR-23016, implemented and reported)



MOLLET
DEL VALLÈS
5.2%

- Adjustment of the burner pressure conditions of the FB-3300 steam boiler (TCR-23019, implemented and reported)
- Heat recovery from steam condensates to preheat the inlet water to the degasser (TCR-23020, implemented and reported)



BARBERÀ
DEL VALLÈS
0%

- Energy improvements in the adiabatic cooling tower (TCR-23017, implemented and reported)
- Energy improvements in the Toner plant: improved extrusion heating and cooling management, lighting and air conditioning improvements (TCR-23018, implemented and reported)



TOTAL KAO
CORPORATION, S.A.U.
4.3%

Although a program of actions is established annually and these actions are included in the Sustainability Plan, they have not been able to compensate for the energy ratio of the current production mix. The range of manufactured products requires a greater energy demand either because the required production cycle times are longer and/or due to greater thermal demand. In the case of toner manufacturing, a product with a finer particle size is increasingly

required.
However, if no action had been implemented, the ratio would have been more unfavorable.

REFERENCE MA-09

ACHIEVED
67% (0%)





ASSOCIATED ASPECT: CO₂ EMISSIONS [EA-24]

Annual reduction of 7% in CO₂ emissions (scopes 1 and 2) vs 2017.

The decrease achieved by each centre is as follows:

 OLESA
DE MONTSERRAT
42.1%

 MOLLET
DEL VALLÈS
36.1%

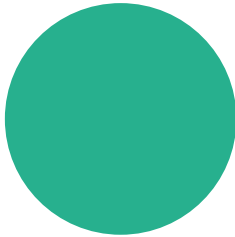
 BARBERÀ
DEL VALLÈS
99.6%

 TOTAL KAO
CORPORATION, S.A.U.
46.6%

- The annual objective has been achieved basically thanks to the green purchase of electrical energy and the shutdown of the cogeneration plant in the centre of Olesa in the middle of the year.
- Apart from this, the company has a roadmap for decarbonization, which among other aspects provides for the installation of a biomass boiler as well as the generation of biogas from wastewater.
- It is also planned to install photovoltaic panels in the centre of Barberà.

REFERENCE MA-10


ACHIEVED
100%




ASSOCIATED ASPECT: WASTE [RE-]


Reduction of 1% in waste generation as compared to 2022 (3% vs 2020).

The decrease achieved by each centre is as follows:

 OLESA
DE MONTSERRAT
3.5%

 MOLLET
DEL VALLÈS
26.1%

 BARBERÀ
DEL VALLÈS
15.3%

 TOTAL KAO
CORPORATION, S.A.U.
12.6%

The degree of achievement of the objective has improved significantly compared to the previous year and also in the accumulated period, except for the Olesa center. The great efforts made by the organization in previous years have borne fruit. This vector is also significantly influenced by the fact that the production mix increasingly incorporates greater production from the aroma business. In 2023, the production of aromas in Mollet has decreased by 33% and contributes favorably to the achievement.

REFERENCE MA-11

ACHIEVED 2023

100%

ACHIEVED 2020

67%

ASSOCIATED ASPECT: WASTE [RE-]

Reduction of the weight of industrial waste destined for a landfill or incineration vs 2021.

The percentage of waste destined for a landfill or incineration per centre was:



OLESA
DE MONTSERRAT

2021— 42%
2022— 21%
2023— 3%



MOLLET
DEL VALLÈS

2021— 14%
2022— 17%
2023— 11%



BARBERÀ
DEL VALLÈS

2021— 10.64%
2022— 10.78%
2023— 13%



TOTAL KAO
CORPORATION, S.A.U.

2021— 21%
2022— 19%
2022— 5%

The objective for 2023 has been met in two centres and at the KCSA level although alternatives must continue to be sought for the management of certain waste. Olesa's ratio decreases significantly when sewage sludge is excluded from said category because there is no other management option. Alternative management methods continue to be sought that enhance the recyclability/ recovery of chemical waste.

REFERENCE MA-09

ACHIEVED


67%



ASSOCIATED ASPECT: BIODIVERSITY [OA-]

Promote and conserve the biodiversity of KCSA workplaces.

The score achieved in the 2023 self-assessment is:

 OLESA DE MONTSERRAT
595

 MOLLET DEL VALLÈS
391

 BARBERÀ DEL VALLÈS
555

 TOTAL KAO CORPORATION, S.A.U.

This corporate objective has been modified. Initially, the matrix established that all companies of the group must equal or exceed 460 points in the assessment form prepared by Kao Japan¹⁵. These three years of experience have shown that, for some of the plants, it is impossible to achieve this score due to their construction characteristics and dimensions. That is why this objective has been reformulated, consequently emphasizing actions to promote and conserve local biodiversity. KCSA maintains the objective of improving

biodiversity, while in the case of Mollet del Vallès, adjusting the objective to the possibilities of this centre.

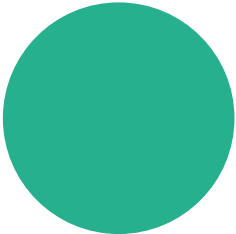
The actions carried out at the centres, in addition to those implemented annually, such as the biodiversity route and the planting of plants by the newly incorporated people, are:

- Monitoring of the existing nest boxes in the three centers and the existing insect hotel in Barberà del Vallès.
- Selection of the species of the year: Cortaderia. Actions have been taken to eradicate it from centers, especially from Barberà.

REFERENCE MA-13

¹⁵ Kao Japan has defined a methodology in which, depending on the different actions carried out and the urban characteristics of the establishment, each establishment should receive a biodiversity score (see the Biodiversity Management section in Results and Indicators).

ACHIEVED
100%



ASSOCIATED ASPECT: RESOURCES [CM-]

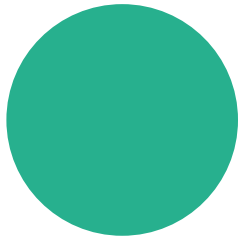
Purchase of RSPO certified palm oil higher than the purchase of the preceding year.



TOTAL KAO
CORPORATION, S.A.U.

This corporate scope objective is the commitment acquired by the Kao group to supply all products based on sustainable palm oil if the client requires it. The demand from the consumer, cosmetics and home hygiene markets represents a growing consumption of RSPO certified products and has allowed the percentage to increase from 30.89% to 31.91% of the previous year and thus be able to contribute to the transformation of the market towards more sustainable supply chains.

ACHIEVED
100%

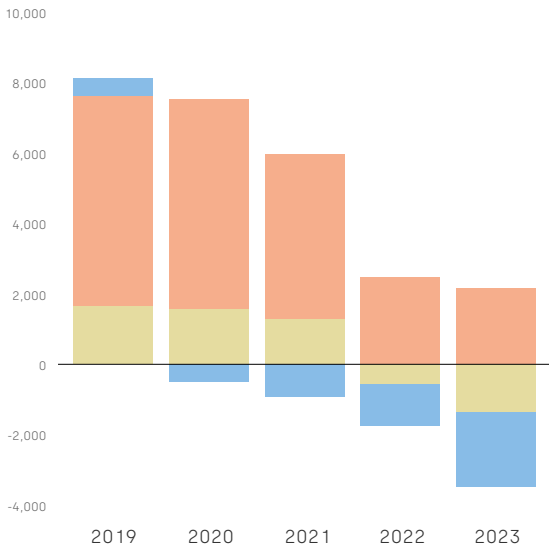
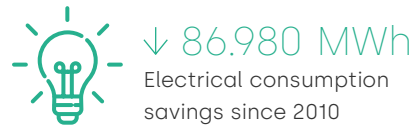


The following graphs show the results obtained over the past 5 years, as well as the contributions of each establishment to the actions undertaken since 2010 to reduce water consumption, electricity consumption and waste generation.

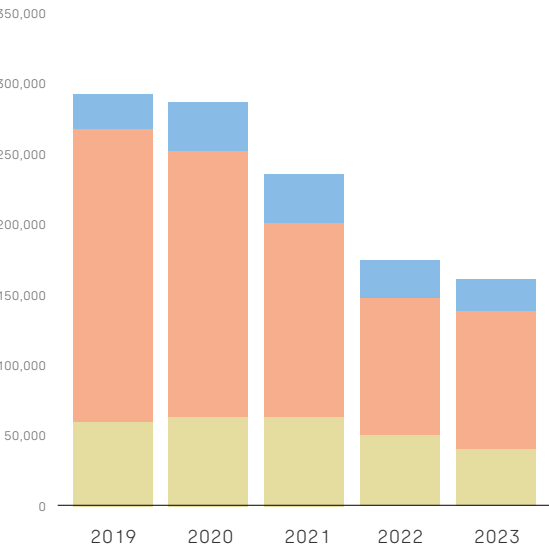
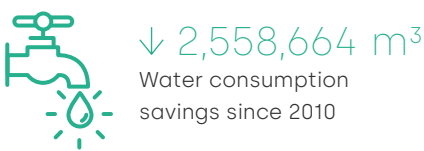
ILUSTRATION 9.
Progress of the achievements reached

- OLESA DE MONTSERRAT
- MOLLET DEL VALLÈS
- BARBERÀ DEL VALLÈS

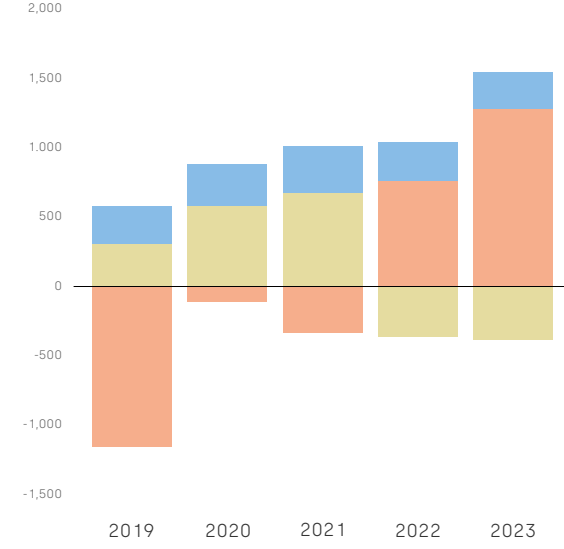
REDUCTION IN ELECTRICAL CONSUMPTION
Data in MWh



REDUCTION IN WATER CONSUMPTION
Data in m³



REDUCTION IN WASTE GENERATION
Data in t



4.2.3 PLANNING OF NEW TARGETS FOR 2024

The objectives for 2024 have been defined using the described methodology, and considering, among other aspects, actions related to the Kirei Lifestyle Plan, focused on making the world healthier and cleaner.
This Plan defines objectives that must be addressed annually to achieve the long-term objective.

On its own initiative, in 2023 Kao Corporation, S.A.U. has proposed an objective focused on scope 3, which as a first step consists of expanding the concepts incorporated in its calculation. Another line of work that involves programming actions outside the objectives themselves continues to be the promotion of the environmental aspect of Corporate Social Responsibility (see section 5.4.2).

TABLE 5.
The commitments acquired for 2024 to make the world a healthier and cleaner place are the following:

SCOPE	INDICATOR	OBJECTIVE VALUE	BASE YEAR
Decarbonization	Reduction of scopes 1 & 2 CO ₂ emissions, absolute	23%	2017
Decarbonization	Improve the calculation of scope 3 GHG emissions	Calculate CO ₂ emissions associated with the transportation of people	-
Energy	Purchased renewable electricity	100%	-
	Reduction of energy consumption	4%	2020
Zero waste	Reduction of the ratio of industrial waste to landfill and incineration	<previous year	2023
	Reduction of the waste generation ratio	4%	2020
Water conservation	Reduction of water consumption	42%	2005
Biodiversity	Improve the score achieved the preceding year	>previous year	2023



5. **SUPPORT**

For maintenance and continuously improving the environmental management system, Kao Corporation, S.A.U. has the support of the Kao group, which incorporates the necessary economic resources for making the necessary investments for improving existing technologies or implementing new technologies as well as the necessary human resources for sharing the experiences, concerns and initiatives of all the subsidiaries.

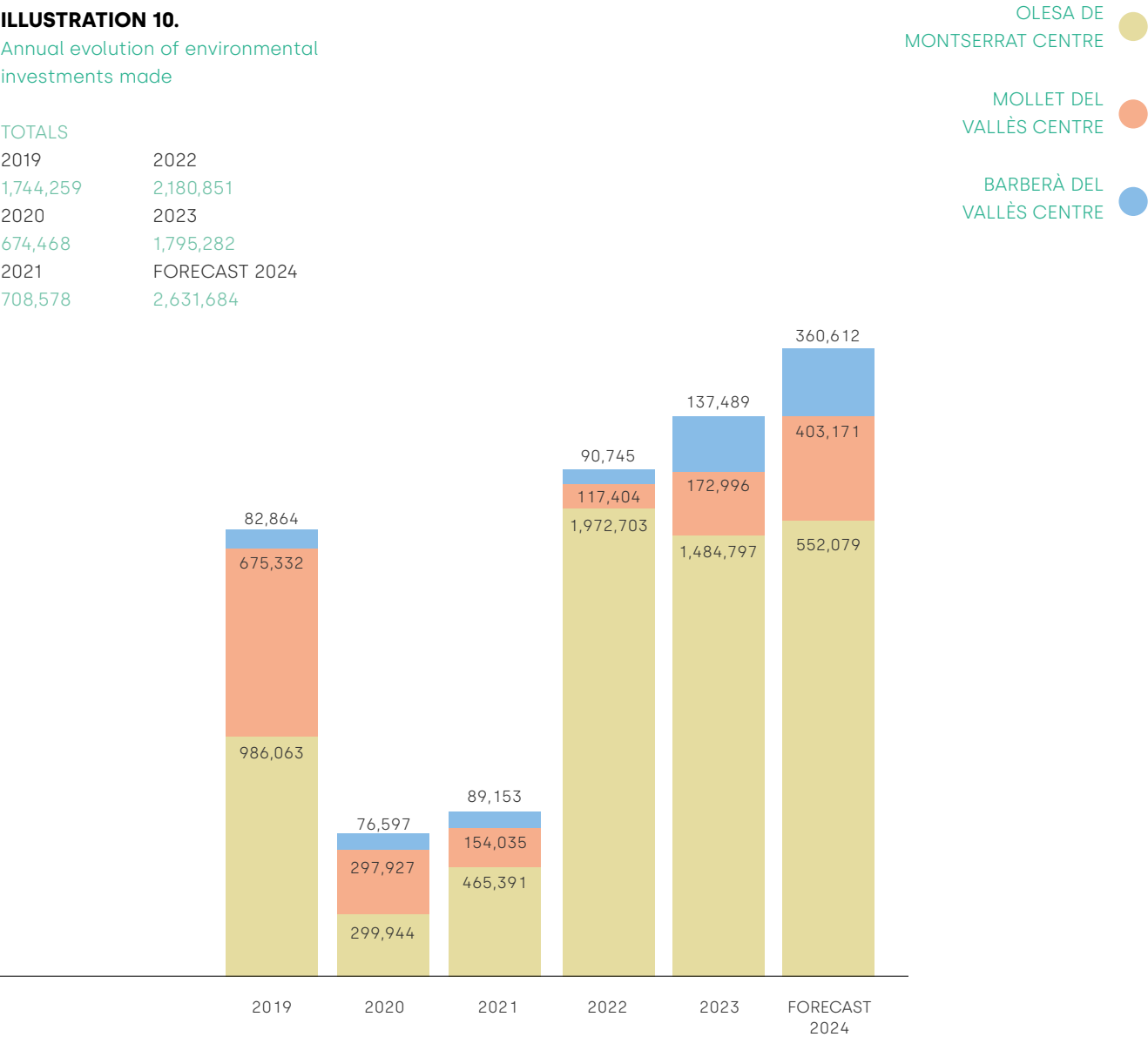


5.1 RECURSOS

The group's main resource is their employees, who every day, through their commitment and hard work, achieve and maintain the high standards that are set by the group. Kao Corporation, S.A.U. considers environmental investments to be an essential part of sustainable business development and gives such investments the same value and importance as other corporate areas. Since 2015 the company has implemented a method that allows carrying out a detailed quantification and analysis of the environmental costs and investments. This method can be used to determine the environmental costs associated with personnel, the operation of pollution mitigation facilities (wastewater treatment, gas washer or scrubbers, etc.), more energy-efficient equipment, investments or waste management among others. At the investment level, the following graphic shows the evolution of investments in environmental matters. Regarding investments in 2023, they have been distributed among the various environmental vectors, with the areas of atmospheric emissions, energy savings and waste receiving the most financial resources.

ILLUSTRATION 10.
Annual evolution of environmental investments made

TOTALS	
2019	2022
1,744,259	2,180,851
2020	2023
674,468	1,795,282
2021	FORECAST 2024
708,578	2,631,684



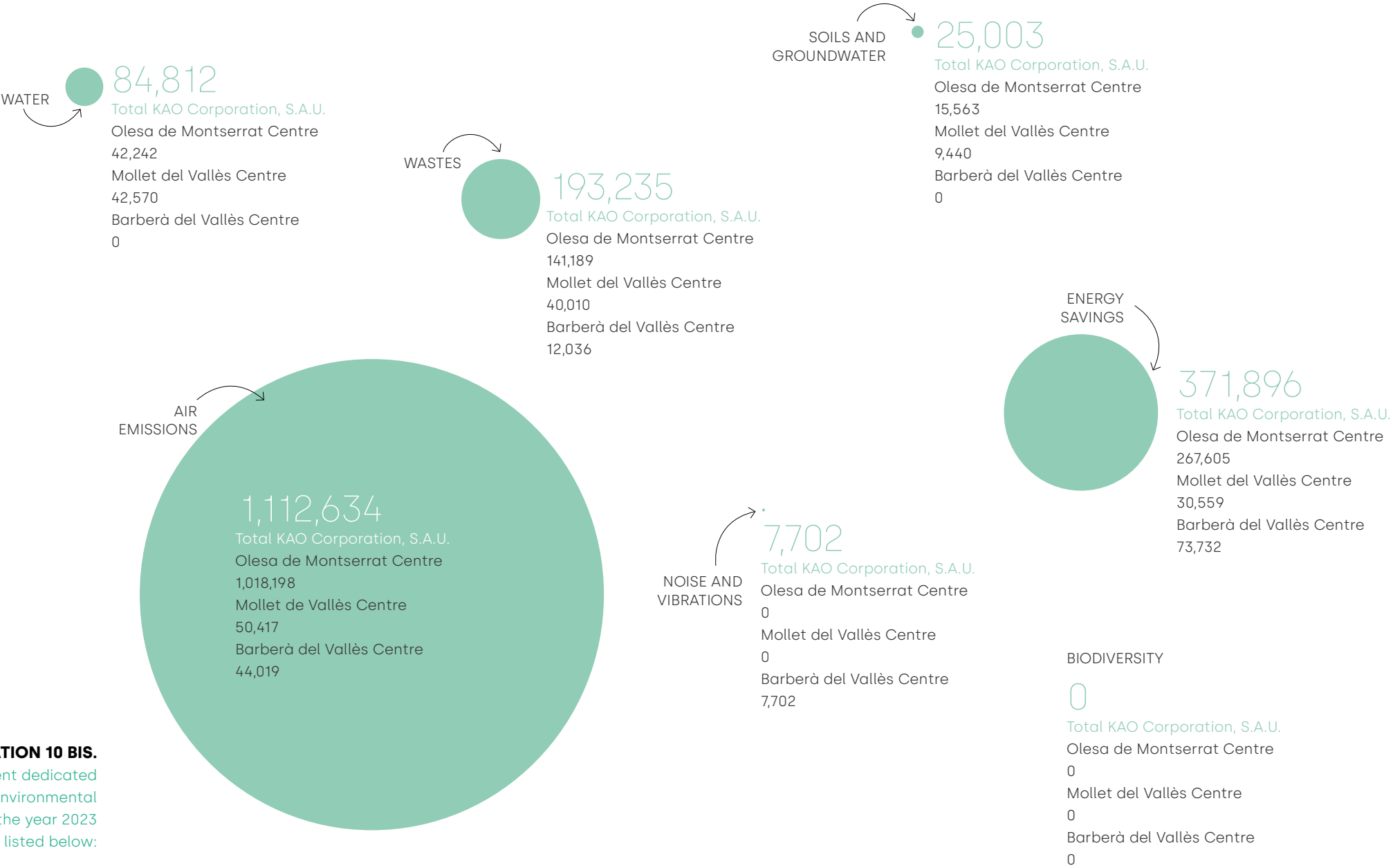


ILLUSTRATION 10 BIS.
The investment dedicated
to each environmental
vector for the year 2023
is listed below:



5.2 TRAINING IN SAFETY AND THE ENVIRONMENT

The training and instruction of employees continues to be an essential issue for the company. In 2023, the total number of training hours in the field of HSE is 2,266 hours. The main topics on which the training has focused are:

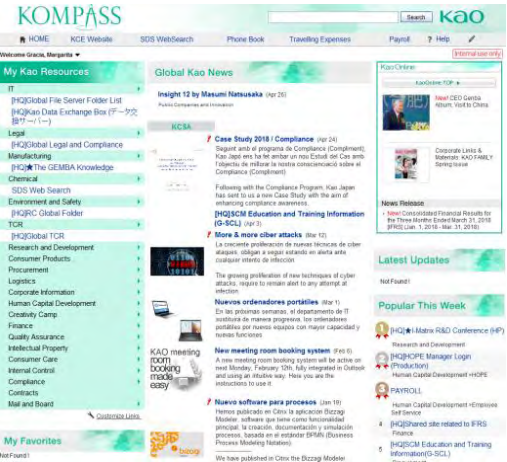
- In the area of safety, training in the safe management and handling of dangerous substances stands out, which is carried out through the operating procedures (OP) for each of the manual manipulations of dangerous substances.
- The training associated with the self-protection plans of each centre includes annual training for the different teams formed (second intervention teams, third intervention teams or company firefighters, etc.).
- In the area of the environment, an online course has been launched for members of the energy team, focused on energy management, the requirements of the ISO 50001 standard and the performance of energy audits.



5.3 INTERNAL COMMUNICATION AND PARTICIPATION

The management system for risks prevention includes a wide range of systems targeted at encouraging internal communication. These systems try to ensure that all company personnel receive health and environmental information and in turn can transmit this information. The systems available include multiple channels and groups, but they all share the fact that these are corporate purpose-built channels. There are many channels, ranging from the classic meetings or committees through to the use of new technologies such as intranets or interactive portals. The meetings that are systematically held by each work team are referred to as *cascade committees* (124 in 2023). These meetings have a prearranged agenda, with set items to be dealt with such as changes dealt with in the area, achievements in the areas of safety and environment and programmes and procedures. The first *cascade* is called the *Corporate HSE Committee*, and it receives the most relevant information from the company's waterfall committees and vice versa. This committee defines the policy, reviews the system every year and sets the company's targets. It also regularly visits the work centres, applying the Japanese principle of “*genba-ism*”, viz., proximity to the customer.

The Safety and Health Committees and the Self-protection Committees are also kept active in case issues arise related with the environment. Other communication systems are the *safety and environment intranet*, the employee portal (Kaonet HR) the QA web (Quality Assurance), the financial department and KOMPASS (corporate intranet shared by all the subsidiaries of the group). All these enable corporate information to be obtained without any kind of distortion and to interact with this information in multiple ways, from making suggestions to taking self-teaching courses. Internally the comprehensive *health promotion* project is worth mentioning, which is derived from a new line of action for the company that is focussed primarily on promoting health from a prevention perspective. It is organized in the form of triennia in which cardiovascular health, the musculoskeletal system and emotional well-being are addressed. One of the aspects that is intended to be promoted in the coming years is the internal communication of environmental achievements, such as the progress of the decarbonization project or the tons of CO₂ emissions emitted. On this line, charging stations for electric vehicles have been installed in each of the centres.





5.4 EXTERNAL COMMUNICATION

Management makes an explicit determination of the company's interested parties for the purposes of all areas of the SGPR. For each of the identified interested parties, their expectations and needs have been analysed and the extent to which the company satisfies them has been assessed. Below are some of the most consolidated tools for external communication regarding environmental aspects:

5.4.1 GRUPO KAO

The Kao Group uses three communication tools to report corporate activities to its stakeholders (<http://www.kao.com/>):

- Kao Overview that describes the corporate philosophy, the business performance and the specific initiatives to enable "unconditionally satisfying and enriching the lives of people around the world".
- Kao Integrated Report: presents the activities that create value with their financial and non-financial information.
- Kao Sustainability Data Book: This report introduces the different activities of the Kao Group in terms of "profitable growth" as well as "contributing to the sustainability of the world" by means of solving social problems.



5.4.2 KAO CORPORATION, S.A.U.

Moreover, Kao Corporation, S.A.U. publishes information about its non-financial information (policies, analyses, strategies, human resources management, etc.), as well as information about its products, events and indicators on the Kao Chemicals website (<http://www.kaochemicals-eu.com>) and through this Environmental Statement. Each year the organisation promotes a series of projects that are in line with the principles of the Sustainability and Risk Prevention Policy and aimed at improving the impact of the company on its surrounding environment as well as contributing to society. Among other activities, this aspect of CSR promotes the voluntary participation of personnel from Kao Corporation, S.A.U. in activities organised by the cities where it is present, for example, the annual planting of trees in Mollet del Vallès, in which the company has participated in for the ninth year in a row, while also making financial contributions for support.

- Other actions carried out in 2023 include:
- Food collection to ensure families in need have access to sufficient food that is also safe and healthy. In this area, collaboration took place with Red Cross (Cruz Roja), Parròquia de Santa de Barberà and Voluntaria Vicencià d'Olesa.
 - Toy collection campaign for Christmas.
 - Safety day, which includes the biodiversity route.





- Workshops to address different subjects: management and management of digital addictions, healthy smoothies, batch cooking, cardiovascular health.
- Nature and cardio route through the mountains of Olesa de Montserrat.
- Campaign about the benefits of chocolate and a sample of it for all working people.
- Collaboration with L'Obra Social de Sant Joan de Déu on the delivery of solidary detail for Christmas.
- Blood donation campaign.

On the other hand, Kao Corporation, S.A.U. replies to all requests for information or complaints from neighbours of the cities where it carry out its business.

5.4.3 SPECIALISED ASSOCIATIONS AND ENTERPRISES

Kao Corporation, S.A.U. actively participates with different organisations, enterprises and work groups within the sphere of safety and the environment. The main organisations of which it is an active member are:

- FEDEQUIM, Federation of Chemical Companies of Catalonia, which in turn is a direct member of FEIQUE, the employers' organisation of the chemical sector and which organises multiple specific commissions in the areas of safety and the environment.
- AEPSAT, Spanish Association of Producers of Substances for Surfactant Applications founded in 1993.
- Since 1985, it has been a member of COASHIQ, the Independent Commission for Health and Safety at Work in the Chemical Industry. As part of this organisation, Kao Corporation, S.A. forms part of the governing board and has been coordinating one of its Committee for 29 years now.

Furthermore, as a member of FEIQUE, Kao Corporation, S.A.U. has adhered to the Responsible Care programme since it was introduced in Spain in 1993.

5.4.4 SCHOOLS AND TRAINING CENTRES

Kao Corporation, S.A.U. provides grants to students in middle and higher education cycles in chemistry by providing scholarships that facilitate the continuation of their studies. Candidates are evaluated according to the criteria of income, academic record and personal evaluation. The students awarded scholarships through this program belong to the High Schools of Barberà del Vallès and Mollet del Vallès. Throughout the year, the company also organizes open-door days and visits to production plants for students in high school, professional training and university.

5.4.5 ADMINISTRATION

Kao Corporation, S.A.U., as member of the working group created in the environmental area of FEDEQUIM, has participated in drafting the documents sent to the *Direcció General de Qualitat Ambiental* with the aim of improving the environmental inspection efforts that are carried out in the wake of implementation of the comprehensive environmental inspection plan of Catalonia; in addition to participating in the regulatory proposal on waste management and atmospheric emissions instruction. When pertinent and especially in the case of new projects, different visits are made to the City Halls of the three municipalities in which the Kao group centres are located and meetings are held with the competent authorities on water, waste

and atmosphere to talk about issues of interest related to the activity of Kao Corporation, S.A.U. as well as with the *Oficina de Gestió Ambiental Unificada* and with *Acció: Catalonia Trade & Investment*.

5.4.6 THE MEDIA

In 2023 there have been no requests for information submitted by the media.

5.4.7 SUPPLIERS AND CLIENTS

Communicating with suppliers is an essential element to achieve the environmental objectives. Kao maintains different systems that facilitate a proper exchange of information and documents. At the corporate level, a supplier evaluation system that considers various scopes is being promoted, the main ones of which are respect for human rights, safety management, the environment and product safety. Therefore, software that has been extensively implemented in the chemical sector is used. Other activities are carried out, according to the Yoki-Monozukuri¹⁶ and the Genba-ism¹⁷ principles, which define the importance of observing things on site, at their real location and in their real environment. Suppliers are audited and visited annually. This is done to increase our understanding of commercial operations to the utmost and to optimize performance. For these purposes, the waste managers are providers. Annually, a visit/audit is carried out of at

least one of them and reported to the group. Although none have been carried out in 2022 and 2023 due to special circumstances, this activity is expected to restart in 2024. Regarding communications with customers, these are based on providing the Safety Data Sheets and technical information on each product prior to the first delivery and in the event of any updates. On the other hand, the Customer Service Department continues to receive numerous customer surveys, thereby requesting data on safety and the environment, among other data. It is worth mentioning that, just like Kao when it is acting in this capacity, clients are increasingly requesting information via structured software such as Sedex or Ecovadis, which determine the company's score based on their responses. In the case of Ecovadis, Kao Corporation, S.A.U. holds the "platinum recognition level", which places it among the best companies evaluated by this organisation.

¹⁶ Yoki means good/excellent while Monozukuri means development/manufacturing of products.

¹⁷ Genba means a real place.

6. OPERATION

6.1 OPERATIONAL CONTROL

Kao Corporation, S.A.U. uses management procedures, standard operational safety instructions, operating procedures, basic safety rules and other documents to define how the processes must be carried out, what must be controlled, how and with what frequency. This gives rise to certain records that are documented proof of how certain actions have been carried out or of their results. This documentation is used to meet the different requirements of the organisation such as this environmental declaration, which is drafted based on the indicators obtained from the records that are generated by the system.

6.2 EMERGENCY PREPARATION AND RESPONSE

Kao Corporation, S.A.U. has two facilities affected by the regulations governing the prevention of major accidents (Royal Decree 840/2015) at the highest level, more specifically the facilities at Olesa de Montserrat and Mollet del Vallès.



This entails extremely high levels of safety, already laid down in the policy, both regarding the organisation as well as the part that refers to installations and the entire sphere of human behaviour. As laid down in the regulations, each establishment must prepare the "Major Accidents Safety Report" (SR), which is submitted to Management together with the Assessment Report drawn up by the authorised organisation. These reports are submitted every five years, providing no substantial changes have taken place in the interim period. Kao Corporation, S.A.U. has satisfied the procedures in this area in the proper time and manner.

Crisis communication

Kao Corporation, S.A.U. has a manual for communicating in a crisis, which has been updated based on the lessons learned during drills as well as real events. Once a crisis situation is under control, we must always conduct an assessment to determine ways to improve our actions in future situations.



Collaboration with other companies of the group: SHEEP group

Since 2014, the Kao group has been encouraging companies that are part of Kao Chemicals Europe to meet periodically for the purpose of exchanging experiences and knowledge related with safety and the environment.

Executives and technicians from Kao Chimigraph (located in Spain), Kao Chemicals Germany (located in Germany) and Quimikao (located in Mexico) as well representatives from Kao Japan and Kao Corporation, S.A.U. participate in this forum.

Acronym SHEEP stands for "safety, health, environment, engineering & production" and its purpose is to register all the subjects that are discussed at the different meetings.

The circular economy, energy efficiency, innovation and harmonization of the environmental indicators are currently being promoted.

Action in the case of an emergency

Kao Corporation, S.A.U. has a Self protection Plan for each of its centres (3); these are kept up-to-date and reviewed every three years.

In accordance with Decree 30/2015 d'Autoprotecció (rescinded by previous D 82/2010), the Selfprotection Plans of the Olesa de Montserrat and Mollet del Vallès centres must be submitted to the Civil Protection Agency for certification through the Hermes platform. Both have been submitted and certified by the aforementioned administration.

In order to check that the different plans are appropriate and the degree of training for those in charge of carrying out actions,

the company conducts 16 drills every year.

In 2023 these were based on the following accident scenarios and hypotheses:

Kao Corporation, S.A.U. has a crew of Company Fire Fighters, some of them with an advanced level of qualification, and personnel trained in administering first aid, ensuring a minimum of two qualified personnel are present on each shift.

Each facility has an AED unit.

7. EVALUATION OF PERFORMANCE



7.1 ENVIRONMENTAL BEHAVIOUR

7.1.1 ENVIRONMENTAL INDICATORS

Beginning in 2017, all indicators related with the Mollet del Vallès centre include the activity carried out by Kao Chimigraf at the facilities of said centre, given that this activity has been added to the Integrated Environmental Authorisation of Kao Corporation, S.A.U.

7.1.1.1 ENERGY EFFICIENT INDICATORS

All the energy consumed is purchased, although the cogeneration plant has been operational in the Olesa de Montserrat centre until June 2023. Since 2019, electricity purchases come from 100% renewable energy that is certified by the National Commission on Markets and Competition (CNMC).

In table 6 (next page) shows consumption of energy at the three production centres, where:

- **Total consumption:** It is the sum of electricity consumption, heat consumption and diesel consumption.
- **Natural gas consumption:** It is the overall consumption of gas, meaning the amount consumed in the steam and thermal oil boilers, as well as the amount consumed in cogeneration for electricity production and by the thermal oxidizer. Since 2017, all the electricity produced is sold and the necessary electricity is purchased. The Olesa de Montserrat centre is the only centre with a cogeneration plant and a thermal oxidizer.
- **Diesel consumption:** It is used for fire-fighting pumps at each of the centres and for forklifts at the Olesa de Montserrat and Mollet del Vallès centres. In the case of Olesa, also for a tractor unit for internal use and in Barberà for an air heater.
- **Heat consumption:** This is the consumption of Natural gas used in the steam and thermal oil boilers.





TABLE 6.
Basic energy efficiency indicators

	2019	2020	2021	2022	2023
● OLESA DE MONTSERRAT CENTRE					
Total consumption (MWh)	99,844	101,263	100,916	99,906	95,045
Total consumption / Final production (MWh/t)	1.56	1.56	1.57	1.70	1.69
Renewable energy consumption (%)	16.39	16.52	16.76	17.26	18.18
Electricity consumption (MWh)	16,364	16,731	16,916	17,245	17,279
Consumption of purchased electricity (%)	100	100	100	99,34	99,29
Electricity consumption / Final production (MWh/t)	0.26	0.26	0.26	0.29	0.31
Natural gas consumption (GJ)	474,160	480,429	469,714	459,918	324,938
Natural gas consumption / Final production (GJ/t)	7.43	7.40	7.29	7.85	5.78
Diesel consumption (GJ)	889	1,201	1,084	1,241	989
Diesel consumption / Final production (GJ/t)	0.01	0.02	0.02	0.02	0.02
Thermal consumption (MWh)	83,234	84,198	83,700	82,316	77,490
Thermal consumption / Final production (MWh/t)	1.30	1.30	1.30	1.40	1.38

	2019	2020	2021	2022	2023
● MOLLET DEL VALLÈS CENTRE					
Total consumption (MWh)	84,334	94,719	91,980	85,447	76,938
Total consumption / Final production (MWh/t)	1.59	1.71	1.92	2.15	2.04
Electricity consumption (MWh)	13.29	12.77	12.72	12.92	13.88
Electricity consumption (MWh)	11,208	12,091	11,696	11,037	10,681
Consumption of purchased electricity (%)	100	100	100	100	100
Electricity consumption / Final production (MWh/t)	0.21	0.22	0.24	0.28	0.28
Natural gas consumption (GJ)	214,480	244,502	232,633	217,309	192,368
Natural gas consumption / Final production (GJ/t)	4.04	4.40	4.87	5.48	5.10
Diesel consumption (GJ)	469	499	618	546	459
Diesel consumption / Final production (GJ/t)	0.01	0.01	0.01	0.01	0.01
Thermal consumption (MWh)	72,995	82,489	80,113	74,258	66,129
Thermal consumption / Final production (MWh/t)	1.38	1.49	1.68	1.87	1.75

NOTES FOR INTERPRETING THE EVOLUTION OF INDICATORS:

In general, in the three production centres, production and employment levels have been lower than the previous year. The lack of some raw materials has forced some plants to stop in some cases.

Therefore, the energy consumption of the three production centres, including natural gas, electricity and diesel, decreases compared to the previous year due to less manufacturing of products for sale.

In reference to the Olesa de Montserrat centre, the most notable thing is the stoppage of the cogeneration plant that leads to a decrease in natural gas consumption and the installation of a recuperative thermal oxidizer that consumes natural gas.

The ratio experienced a slight decrease compared to the previous year. This is due to the decrease in thermal consumption.

In relation to the Mollet del Vallès centre, the energy ratio of MWh per ton of product has decreased compared to the previous year. This is mainly due to the decrease in the production of products with higher specific consumption. That is, the Aromas business division has a specific consumption in kWh per ton of product higher than the Surfactants division and, in 2023, its production has been reduced by 33%.

In relation to Kao Chimigraf, the electricity consumption of the activity has been 3.8% compared to the centre's consumption. It has been lower than the previous year, both in consumption and in the ratio.

This activity does not require the supply of natural gas, nor thermal energy to produce its products, except to ensure air conditioning conditions in the warehouse.

Regarding the Barberà del Vallès centre, this year the production and distribution of products has continued to increase among the lines that consume the most energy for their production.

At the company level, both total energy consumption and the ratio have decreased, although the ratio does not reach the optimal values of previous years. This is largely since the products that the market demands have a worse specific consumption; However, if the improvement actions had not been carried out, consumption would have been higher and, consequently, so would the ratio.

If we compare energy consumption in relative terms with respect to the sector¹⁸ (companies that are members of Responsible Care), our consumption is higher (7 compared to 3.5 GJ/tonne produced). It is worth highlighting the heterogeneity of the chemical sector, which ranges from large-volume companies to small companies, that is, it includes highly complex industrial facilities, with different processes and products, subject to constant changes of growth and adaptation; we are a clear example, with three establishments in the same sector that are not fully comparable. The section on environmental objectives (5.2.2) lists the actions taken at each centre.

	2019	2020	2021	2022	2023
● BARBERÀ DEL VALLÈS CENTRE					
Total consumption (MWh)	14,809	16,088	17,328	14,817	13,982
Total consumption total / Final production (MWh/t)	8.36	8.61	8.81	9.24	9.97
Renewable energy consumption (%)	99.08	99.49	99.48	99.58	99.34
Electricity consumption (MWh)	14,673	16,005	17,238	14,755	13,890
Consumption of purchased electricity (%)	100	100	100	100	100
Electricity consumption / Final production (MWh/t)	8.29	8.56	8.76	9.20	9.91
Natural gas consumption (GJ)	282	206	206	193	140
Natural gas consumption/Final production (GJ/t)	0.16	0.11	0.10	0.12	0.10
Diesel consumption (GJ)	206.74	91.64	96.01	164.55	190.06
Diesel consumption/final production (GJ/t)	0.12	0.05	0.05	0.10	0.14
Thermal consumption (MWh)	86.46	62.58	63.92	59.49	43.32
Thermal consumption / Final production (MWh/t)	0.05	0.03	0.03	0.04	0.03

	2019	2020	2021	2022	2023
● TOTAL KAO CORPORATION, S.A.U.					
Total consumption (MWh)	198,987	212,070	210,225	200,170	185,964
Total consumption total / Final production (MWh/t)	1.68	1.73	1.84	2.00	1.95
Renewable energy consumption (%)	21.23	21.14	21.81	21.50	22.50
Electricity consumption (MWh)	42,245	44,828	45,849	43,037	41,851
Consumption of purchased electricity (%)	100	100	100	99.74	99.71
Electricity consumption / Final production (MWh/t)	0.36	0.37	0.40	0.43	0.44
Natural gas consumption (GJ)	688,921	725,137	702,553	677,420	517,446
Natural gas consumption/Final production (GJ/t)	5.81	5.93	6.15	6.78	5.43
Diesel consumption (GJ)	1,565	1,792	1,798	1,952	1,638
Diesel consumption/final production (GJ/t)	0.01	0.01	0.02	0.02	0.02
Thermal consumption (MWh)	156,229	166,687	163,876	156,634	143,663
Thermal consumption / Final production (MWh/t)	1.32	1.36	1.44	1.57	1.51

Source: Invoices EE-Gas Invoices-Cogeneration Centre

¹⁸ Source: FEIQUE. Responsible Care Performance Indicators (2022 Data), October 30, 2023.

7.1.1.2 MATERIALS
CONSUMPTION INDICATORS

This indicator has been calculated considering both the purchases of raw materials as well as auxiliary and materials representative of each production process, excluding energy products and water. Of the purchases of representative materials, the three most representative of each centre are specified, except for the Barberà del Vallès Centre, where grounds of confidentiality preclude such disclosure.

It is worth mentioning that the consumption of the Mollet del Vallès centre incorporates the raw materials used by Kao Chimigraf, which represent 4.6% of the total raw material consumption.

TABLE 7.
Basic materials consumption indicators

	2019	2020	2021	2022	2023
● OLESA DE MONTSERRAT CENTRE					
Fatty acids (t)	15,993	17,055	16,436	13,321	8,499
Alcohols (t)	4,165	4,046	3,867	3,186	3,244
Ethlene/propylene oxide (t)	5,847	5,352	6,285	6,279	4,476
Materials (t)	50,462	51,530	51,640	45,628	37,806
Materials / Final Production (t/t)	0.79	0.79	0.80	0.78	0.67
● MOLLET DEL VALLÈS CENTRE					
Alcohols (t)	5,970	6,384	5,414	4,107	3,813
Aldehydes (t)	1,106	1,076	959	280	412
Fats (t)	18,490	19,471	16,392	14,087	13,897
Materials (t)	46,438	52,457	43,771	35,517	33,645
Materials / Final Production (t/t)	0.88	0.94	0.92	0.90	0.89
● BARBERÀ DEL VALLÈS CENTRE					
Materials (t)	1,700	1,758	1,867	1,500	1,319
Materials / Final Production (t/t)	0.96	0.94	0.95	0.94	0.94
● TOTAL KAO CORPORATION, S.A.U.					
Materials (t)	98,599	105,745	97,278	82,645	72,770
Materials / Final Production (t/t)	0.83	0.86	0.85	0.83	0.76

Source: Annual waste statement. Purchasing Result (GR basis)

7.1.1.3 WATER INDICATORS



TABLE 8.
Basic indicators on water consumption

	2019	2020	2021	2022	2023
● OLESA DE MONTSERRAT CENTRE					
Consumption (m³)	145,705	146,669	148,213	137,153	138,913
Consumption / Final production (m³/t)	2.28	2.26	2.30	2.34	2.47
Network supply (%)	90.26	87.38	89.04	90.40	92.33
● MOLLET DEL VALLÈS CENTRE					
Consumption (m³)	133,298	157,636	156,768	146,874	135,170
Consumption / Final production (m³/t)	2.51	2.84	3.28	3.70	3.59
Network supply (%)	1.77	1.16	1.42	1.82	1.51
● BARBERÀ DEL VALLÈS CENTRE					
Consumption (m³)	9,135	7,124	8,182	11,064	5,232
Consumption / Final production (m³/t)	5.16	3.81	4.16	6.90	3.73
Network supply (%)	100.00	100.00	100.00	100.00	100.00
● TOTAL KAO CORPORATION, S.A.U.					
Consumption (m³)	288,138	311,429	313,163	295,091	279,315
Consumption / Final production (m³/t)	2.43	2.55	2.74	2.95	2.93
Network supply (%)	49.63	44.03	45.47	46.67	48.52

Source: PRTR Statement – ACA Quarterly Statement (B6)

TABLE 9.
Indicators on the impact of dumping

	2019	2020	2021	2022	2023
● CENTRO DE OLESA DE MONTSERRAT					
Wastewater discharge (m³)	70,162	71,577	70,540	60,900	62,161
Discharged wastewater / Final production (m³/t)	1.10	1.10	1.10	1.04	1.10
TOC: Total Organic Carbon = COD/3 (kg)	6,108	6,812	5,585	4,715	5,018
TOC / Final production (kg/t)	0.10	0.10	0.09	0.08	0.09
TSS: Total Suspended Solid (kg)	4,153	3,969	2,500	1,882	3,141
TSS / Final production (kg/t)	0.07	0.06	0.04	0.03	0.06
N: Total nitrogen (kg)	1,253	939	694	771	932
N / Final production (kg/t)	0.02	0.01	0.01	0.01	0.02
P: Total phosphorous (kg)	168	127	187	28	68
P / Final production (kg/t)	2.64	1.96	2.90	0.47	1.22
● CENTRO DE MOLLET DEL VALLÈS					
Wastewater discharge (m³)	85,523	119,890	111,033	108,199	108,708
Discharged wastewater / Final production (m³/t)	1.61	2.16	2.32	2.73	2.88
TOC: Total Organic Carbon = COD/3 (kg)	9,877	16,158	7,791	7,043	9,165
TOC / Final production (kg/t)	0.19	0.29	0.16	0.18	0.24
TSS: Total Suspended Solid (kg)	3,881	3,744	3,985	5,362	6,712
TSS / Final production (kg/t)	0.07	0.07	0.08	0.14	0.18
N: Total nitrogen (kg)	5,510	3,115	2,215	1,846	2,554
N / Final production (kg/t)	0.10	0.06	0.05	0.05	0.07
P: Total phosphorous (kg)	1,667	926	1,007	637	655
P / Final production (kg/t)	31.43	16.68	21.06	16.05	17.39

NOTES FOR INTERPRETING THE EVOLUTION OF INDICATORS:

In 2023 the consumption ratio has decreased, but not the global discharge ratio, which has increased even though the total quantities consumed and discharged have decreased. As in the case of energy, there are uses of water that do not directly depend on production (baseline), for example, steam generation, certain cleaning or sanitary use. At the Olesa de Montserrat and Mollet del Vallès centres, which are intensive in the consumption and discharge of water, multiple actions have been carried out for years to reduce water consumption, such as better production planning to avoid cleaning due to product change or reuse of condensates. The increases obtained in this vector at the Olesa de Montserrat centre are due to the construction and start-up works of the MDJ-2 plant. It should be noted that the consumption and discharge of Barberà del Vallès is little related to production (it only uses water for an adiabatic cooling tower that practically only works in summer and whose consumption is less than 7%), which is why the

¹⁹ Source: FEIQUE. Responsible Care Performance Indicators (2022 Data), October 30, 2023.

	2019	2020	2021	2022	2023
● CENTRO DE BARBERÀ DEL VALLÈS					
Wastewater discharge (m³)	5,538	5,137	4,763	7,205	5,205
Discharged wastewater / Final production (m³/t)	3.13	2.75	2.42	4.49	3.71
TOC: Total Organic Carbon = COD/3 (kg)	188	180	196	487	247
TOC / Final production (kg/t)	0.11	0.10	0.10	0.30	0.18
TSS: Total Suspended Solid (kg)	321	333	676	462	245
TSS / Final production (kg/t)	0.18	0.18	0.34	0.29	0.17
N: Total nitrogen (kg)	111	153	215	109	172
N / Final production (kg/t)	0.06	0.08	0.11	0.07	0.12
P: Total phosphorous (kg)	29	27	24	28	32
P / Final production (kg/t)	16.37	14.62	12.36	17.24	22.99
● TOTAL KAO CORPORATION, S.A.U.					
Wastewater discharge (m³)	161,223	196,605	186,336	176,305	176,074
Discharged wastewater / Final production (m³/t)	1.36	1.61	1.63	1.77	1.85
TOC: Total Organic Carbon = COD/3 (kg)	6,174	23,150	13,573	12,244	14,430
TOC / Final production (kg/t)	0.14	0.19	0.12	0.12	0.15
TSS: Total Suspended Solid (kg)	8,355	8,047	7,161	7,706	10,097
TSS / Final production (kg/t)	0.07	0.07	0.06	0.08	0.11
N: Total nitrogen (kg)	6,874	4,207	3,124	2,726	3,658
N / Final production (kg/t)	0.06	0.03	0.03	0.03	0.04
P: Total phosphorous (kg)	1,864	1,080	1,218	629	756
P / Final production (kg/t)	15.71	8.84	10.67	6.93	7.93

Source: PRTR statement - Monthly report [centre]

evolution of the ratio with Regarding production, it is not very representative since other factors, such as the number of people present in the establishment, influence the ratio. Due to the drought situation in Catalonia in 2023, irrigation has been suspended as well as the use of water in emergency drills. Regarding the quality of the discharge, this is not compromised by the decrease in the discharge volume. If we compare water consumption in relative terms with respect to the sector¹⁹ (companies that are members of Responsible Care), our consumption is higher (2.93 versus 2.79 m³/t), and if we compare the emissions of COD, our emissions are higher (0.45 compared to 0.15 kg/ton produced). In this case, in addition to the applicability of the comments made regarding the indicators, we must consider that the treatments carried out by the different facilities depend on the destination of the wastewater (sea, river, external treatment plant, etc.), which entails great variability. At the Mollet del Vallès centre, the water consumption generated by the business activity of Kao Chimigraf is negligible (<0.5%).



7.1.1.4 WASTE MANAGEMENT

The data on waste production have been adjusted over time due to the introduction of legal provisions governing the classification and coding of waste (Regional, National and European codes).
Waste from all activities is generated at the Kao Corporation, S.A.U. centres:

- “Assimilable to municipal” waste: Paper, cardboard, plastic, batteries, fluorescent tubes, toner cartridges, beakers, drink cans and common waste.
- Industrial waste, characteristic of the industrial process, including the following: Sludge from the treatment of wastewater, liquid waste from the aroma production plant, solid waste from the surfactant plants, toner and resins.

TABLE 10.
Basic indicators on waste

	2019	2020	2021	2022	2023
● CENTRO DE OLESA DE MONTSERRAT					
Generated (t)	3,808	3,748	3,562	4,300	4,138
Generated / Final production (t/t)	59.65	57.75	55.32	73.36	73.54
Non-hazardous (t)	1,049	1,095	696	701	846
Generated Non-hazardous / Final production (t/t)	16.43	16.88	10.81	11.97	15.04
Hazardous (t)	2,759	2,652	2,866	3,599	3,292
Generated Hazardous / Final production (t/t)	43.21	40.87	44.50	61.39	58.51
Generated Hazardous / Generated total (%)	72.4	70.8	80.5	83.7	79.6
● CENTRO DE MOLLET DEL VALLÈS					
Generated (t)	5,523	4,643	4,366	2,493	1,750
Generated / Final production (t/t)	104.12	83.62	91.33	62.86	46.44
Non-hazardous (t)	2,012	207	454	81	90
Generated Non-hazardous / Final production (t/t)	37.93	3.73	9.49	2.05	2.40
Hazardous (t)	3,511	4,436	3,912	2,412	1,660
Generated Hazardous / Final production (t/t)	66.19	79.89	81.84	60.82	44.04
Generated Hazardous / Generated total (%)	63.5	95.5	89.6	96.7	94.8

	2019	2020	2021	2022	2023
● CENTRO DE BARBERÀ DEL VALLÈS					
Generated (t)	295	282	276	226	167
Generated / Final production (t/t)	166.64	150.92	140.44	140.84	119.27
Non-hazardous (t)	278	262	253	209	150
Generated Non-hazardous / Final production (t/t)	156.91	140.41	128.51	130.48	106.64
Hazardous (t)	17	20	23	17	18
Generated Hazardous / Final production (t/t)	9.73	10.52	11.94	10.36	12.62
Generated Hazardous / Generated total (%)	5.8	7.0	8.5	7.4	10.6
● TOTAL KAO CORPORATION, S.A.U.					
Generated (t)	9,625	8,673	8,204	7,019	6,055
Generated / Final production (t/t)	81.13	70.92	71.86	70.28	63.50
Non-hazardous (t)	3,339	1,565	1,403	992	1,086
Generated Non-hazardous / Final production (t/t)	28.14	12.80	12.29	9.93	11.39
Hazardous (t)	6,287	7,108	6,801	6,028	4,969
Generated Hazardous / Final production (t/t)	52.99	58.13	59.57	60.35	52.12
Generated Hazardous / Generated total (%)	65.3	82.0	82.9	85.9	82.1

Source: Annual waste statement [centre]. SIMA Database

TABLE 11.
Basic indicators on waste type

	2019	2020	2021	2022	2023
● OLESA DE MONTSERRAT CENTRE					
Non-hazardous waste (t)					
07 From organic chemical processes	875.27	869.20	514.16	13.31	3.54
Rate (kg/t)	13.71	13.39	7.98	0.23	0.06
16 Catalysers	7.14	28.04	18.76	20.81	19.40
Rate (kg/t)	0.11	0.43	0.29	0.35	0.34
17 From construction and demolition	0.00	0.00	0.00	478.10	589.62
Rate (kg/t)	0.00	0.00	0.00	8.16	10.48
20 Assimilable to municipal waste	166.32	197.74	162.86	101.03	161.03
Rate (kg/t)	2.61	3.05	2.53	1.72	2.86
Hazardous waste (t)					
07 From organic chemical processes	2,480.61	2,358.56	2,578.96	3,354.70	3,063.55
Rate (kg/t)	38.86	36.35	40.05	57.23	54.45
13 From oils and liquid fuels	1.04	0.30	0.75	0.00	0.00
Rate (kg/t)	0.02	0.00	0.01	0.00	0.00
14 From solvents	0.00	0.00	0.00	0.00	0.00
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
15 From containers, absorbent material and cleaning cloths	272.68	292.36	282.10	240.96	226.88
Rate (kg/t)	4.26	4.51	4.38	4.11	4.03
16 From chemical products	4.84	0.85	3.59	0.28	0.15
Rate (kg/t)	0.08	0.01	0.06	0.00	0.00
17 From construction and demolition	0.24	0.00	0.00	2.78	0.00
Rate (kg/t)	0.00	0.00	0.00	0.05	0.00
20 Assimilable to municipal waste	0.14	0.26	0.31	0.00	1.24
Rate (kg/t)	0.00	0.00	0.00	0.00	0.02

	2019	2020	2021	2022	2023
● MOLLET DEL VALLÈS CENTRE					
Non-hazardous waste (t)					
06 From inorganic chemical processes	0.00	0.00	0.00	0.00	0.00
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
07 From organic chemical processes	129.60	0.00	0.00	0.00	0.00
Rate (kg/t)	2.44	0.00	0.00	0.00	0.00
16 Catalysers	0.00	0.00	0.00	0.00	0.04
Rate (kg/t)	0.00	0.02	0.00	0.00	0.00
17 Insulating material	1,677.93	66.36	317.37	0.00	0.00
Rate (kg/t)	31.62	1.20	6.64	0.00	0.00
19 Exchange resins and active carbon	0.00	0.00	0.00	0.00	0.00
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
20 Assimilable to municipal waste	204.98	139.23	135.71	54.16	59.83
Rate (kg/t)	3.86	2.51	2.84	1.37	1.59
Hazardous waste (t)					
06 From inorganic chemical processes	0.00	0.00	0.00	0.00	0.00
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
07 From organic chemical processes	3,341.77	4,241.61	3,725.03	2,258.50	1,527.37
Rate (kg/t)	63.01	76.39	77.93	56.94	40.53
08 Inks	69.42	55.40	65.32	45.32	45.82
Rate (kg/t)	1.31	1.00	1.37	1.14	1.22
13 From oils and liquid fuels	0.68	3.45	0.00	0.00	1.08
Rate (kg/t)	0.01	0.06	0.00	0.00	0.03
14 From solvents	0.30	0.38	0.30	0.30	0.38
Rate (kg/t)	0.01	0.01	0.01	0.01	0.01
15 From containers, absorbent material and cleaning cloths	98.31	135.08	121.05	108.04	84.81
Rate (kg/t)	1.85	2.43	2.53	2.72	2.25
16 From chemical products	0.26	0.00	0.00	0.00	0.08
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
17 From construction and demolition	0.00	0.00	0.00	0.00	0.00
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
20 Assimilable to municipal waste	0.02	0.11	0.14	0.00	0.08
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00

	2019	2020	2021	2022	2023
● BARBERÀ DEL VALLÈS CENTRE					
Non-hazardous waste (t)					
08 From processes	99.34	97.75	83.58	54.23	46.24
Rate (kg/t)	56.10	52.29	42.49	33.80	32.97
15 From containers	3.41	1.92	1.31	0.94	1.30
Rate (kg/t)	1.93	1.03	0.67	0.59	0.93
17 From construction and demolition	0.32	0.00	0.00	0.00	0.34
Rate (kg/t)	0.18	0.00	0.00	0.00	0.24
20 Assimilable to municipal waste	174.80	162.81	167.86	154.05	101.56
Rate (kg/t)	98.70	87.09	85.35	96.04	72.43
Hazardous waste (t)					
07 From organic chemical processes	0.00	7.36	7.04	5.06	3.16
Rate (kg/t)	0.00	3.94	3.58	3.15	2.25
08 Inks	0.00	0.00	0.00	0.00	0.10
Rate (kg/t)	0.00	0.00	0.00	0.00	0.07
12 From degreasing processes with water	0.00	0.00	0.00	0.00	1.20
Rate (kg/t)	0.00	0.00	0.00	0.00	0.86
13 From oils and liquid fuels	0.50	0.48	0.00	0.54	0.27
Rate (kg/t)	0.28	0.26	0.00	0.34	0.19
14 From solvents	0.48	0.30	0.35	0.55	0.12
Rate (kg/t)	0.27	0.16	0.18	0.35	0.08
15 From containers, absorbent material and cleaning cloths	2.40	2.77	3.93	2.97	3.14
Rate (kg/t)	1.36	1.48	2.00	1.85	2.24
16 From chemical products	12.78	8.65	11.83	7.41	9.31
Rate (kg/t)	7.22	4.63	6.02	4.62	6.64
18 From the Medical Service	0.01	0.00	0.00	0.00	0.00
Rate (kg/t)	0.01	0.00	0.00	0.00	0.00
20 Assimilable to municipal waste	1.07	0.10	0.32	0.09	0.40
Rate (kg/t)	0.60	0.05	0.16	0.06	0.29

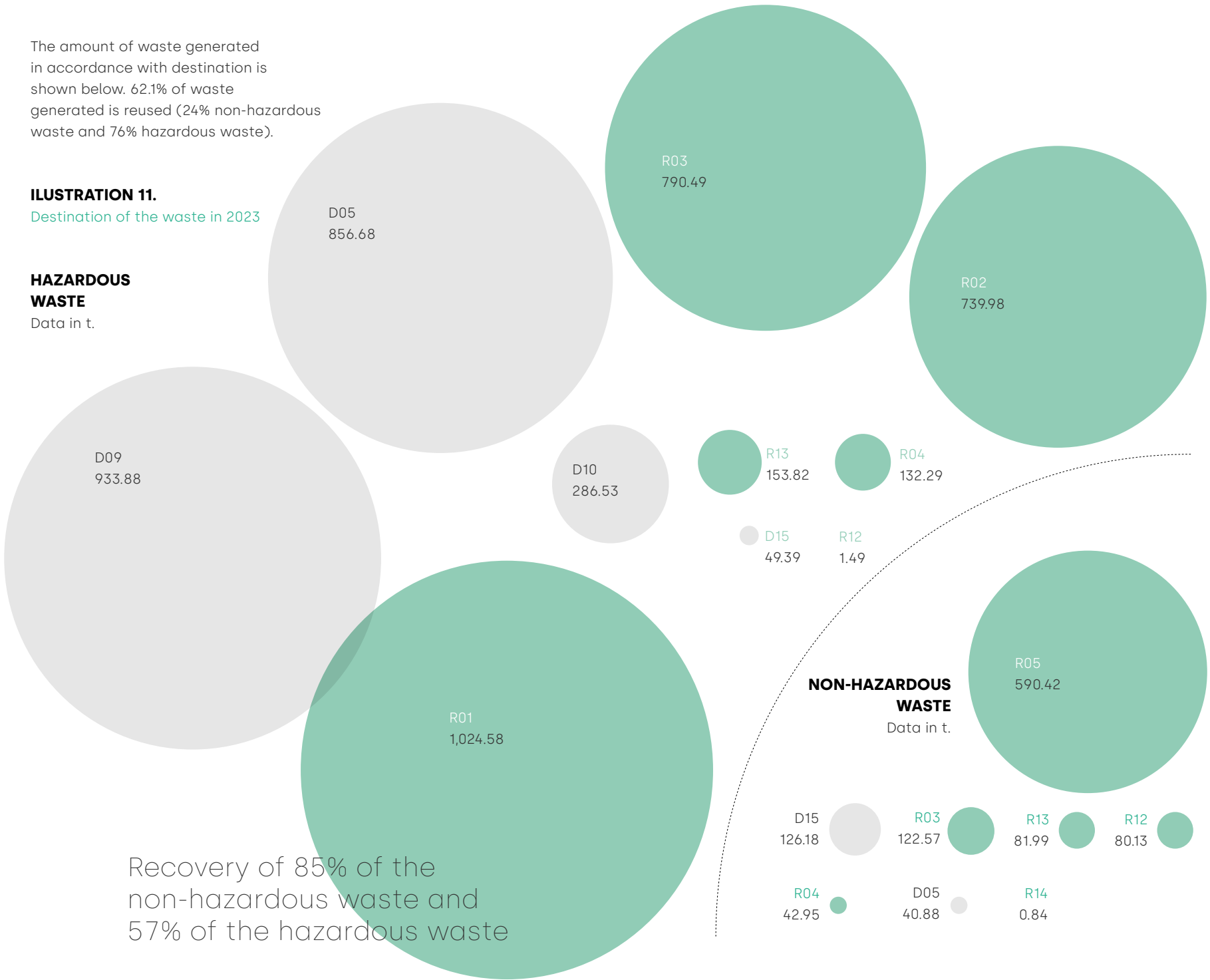
	2019	2020	2021	2022	2023
● TOTAL KAO CORPORATION, S.A.U.					
Non-hazardous waste (t)					
06 From inorganic chemical processes	0.00	0.00	0.00	0.00	0.00
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
07 From organic chemical processes	1,005.87	869.20	514.16	13.31	3.54
Rate (kg/t)	8.47	7.11	4.50	0.13	0.04
08 From processes	99.40	97.79	83.62	54.25	46.24
Rate (kg/t)	0.84	0.80	0.73	0.54	0.48
15 From containers	3.98	2.85	2.21	116.15	104.27
Rate (kg/t)	0.03	0.02	0.02	1.16	1.09
16 Catalysers	7.14	29.13	18.99	20.89	19.54
Rate (kg/t)	0.06	0.24	0.17	0.21	0.20
17 Insulating material	1,677.25	66.36	317.37	478.10	589.96
Rate (kg/t)	14.14	0.54	2.78	4.79	6.19
19 Exchange resins and active carbon	0.00	0.00	0.00	0.00	0.00
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
20 Assimilable to municipal waste	546.10	499.78	466.44	309.24	322.42
Rate (kg/t)	4.60	4.09	4.09	3.10	3.38
Hazardous waste (t)					
07 From organic chemical processes	5,822.38	6,607.53	6,311.03	5,618.26	4,594.08
Rate (kg/t)	49.07	54.03	55.28	56.25	48.18
08 Inks	69.42	55.40	65.32	45.32	45.92
Rate (kg/t)	0.59	0.45	0.57	0.45	0.48
12 From degreasing processes with water	0.00	0.00	0.00	0.00	1.20
Rate (kg/t)	0.59	0.45	0.57	0.45	0.01
13 From oils and liquid fuels	2.22	4.23	0.75	0.54	1.35
Rate (kg/t)	0.02	0.03	0.01	0.01	0.01
14 From solvents	0.78	0.68	0.65	0.85	0.49
Rate (kg/t)	0.01	0.01	0.01	0.01	0.01
15 From containers, absorbent material and cleaning cloths	372.39	430.21	407.07	351.97	314.83
Rate (kg/t)	3.14	3.52	3.57	3.52	3.30
16 From chemical products	17.88	9.50	15.43	7.69	9.54
Rate (kg/t)	0.15	0.08	0.14	0.08	0.10
17 From construction and demolition	0.24	0.00	0.00	2.78	0.00
Rate (kg/t)	0.00	0.00	0.00	0.03	0.00
18 From the Medical Service	0.01	0.00	0.00	0.00	0.00
Rate (kg/t)	0.00	0.00	0.00	0.00	0.00
20 Assimilable to municipal waste	1.22	0.47	0.78	0.09	1.72
Rate (kg/t)	0.01	0.00	0.01	0.00	0.02

Source: Annual waste statement [centre]. SIMA Database

The amount of waste generated in accordance with destination is shown below. 62.1% of waste generated is reused (24% non-hazardous waste and 76% hazardous waste).

ILUSTRATION 11.
Destination of the waste in 2023

HAZARDOUS WASTE
Data in t.



Recovery of 85% of the non-hazardous waste and 57% of the hazardous waste

- Ref. Use
- R01 Primary use as fuel or other method of producing energy
 - R02 Recovery or regeneration of solvents
 - R03 Recycling or recovery of organic substances that are not used as solvents (including compost and other biological transformation processes)
 - R04 Recycling and recovery of metals and metallic compounds
 - R05 Recycling and recovery of other inorganic matter
 - R12 Exchange of waste to subject it to any of the operations between R1 and R11
 - R13 Storage of waste that is waiting to be subjected to any of the operations from R1 to R12 (excluding temporary storage, awaiting collection, at the location where the waste was generated)
 - R14 Preparation for reuse
 - D05 Controlled depositing at specially designed locations (for example, placing in separate cells that are watertight, covered and isolated from each other and the environment)
 - D09 Physical-chemical treatment not specified in any other section of this annex and which as a result, produces compounds or mixtures that are eliminated using one of the procedures from D1 to D12 (for example, evaporation, drying, calcination, etc.)
 - D10 Incineration in soil
 - D15 Storage of waste that is waiting to be subjected to any of the operations from D1 to D14 (excluding temporary storage, awaiting collection, at the location where the waste was generated)

TABLE 12.
Indicators on hazardous waste (special)

	2019	2020	2021	2022	2023
<div>● OLESA DE MONTSERRAT CENTRE</div>					
Recycled (t)	1,973	1,820	1,939	2,111	1,647
Recycled / End production (t/t)	30.90	28.04	30.12	36.02	29.27
Eliminated (t)	786	833	926	1,487	1,645
Eliminated / End production (t/t)	12.31	12.83	14.39	25.37	29.24
<div>● MOLLET DEL VALLÈS CENTRE</div>					
Recycled (t)	2,991	2,394	2,034	1,736	1,195
Recycled / End production (t/t)	56.39	43.11	42.54	43.78	31.70
Eliminated (t)	520	2,042	1,878	676	465
Eliminated / End production (t/t)	9.80	36.78	39.29	17.04	12.34

NOTES FOR INTERPRETING THE EVOLUTION OF INDICATORS:

The amount of waste has decreased significantly in all centres.

In the Olesa de Monserrat centre it is mainly due to the reduction in waste generated at the MDJ aroma production plant. It should be noted that the amount of waste from this centre increases in 2022 and 2023 due to the construction of the new aroma plant (MDJ-2) in which, respectively, 491 and 610 tons of construction waste were generated.

The Olesa de Montserrat centre is the centre with the highest production, so any deviation has a representative impact on the company's indicators.

At the Mollet del Vallès centre, the continuity of projects to improve performance in the aroma plants has led to the prevention of the generation of a large amount of waste. On the other hand, the commercial sale of some flows that had previously had to be managed as waste has also contributed favourably to these indicators.

	2019	2020	2021	2022	2023
<div>● BARBERÀ DEL VALLÈS CENTRE</div>					
Recycled (t)	3	2	1	2	1
Recycled / End production (t/t)	1.64	1.14	0.75	1.14	0.88
Eliminated (t)	14	18	22	15	16
Eliminated / End production (t/t)	8.10	9.38	11.19	9.23	11.74
<div>● TOTAL KAO CORPORATION, S.A.U.</div>					
Recycled (t)	4,966	4,216	3,974	3,850	2,843
Recycled / End production (t/t)	41.86	34.47	34.81	38.54	29.81
Eliminated (t)	1,320	2,892	2,827	2,178	2,126
Eliminated / End production (t/t)	11.13	23.65	24.76	21.80	22.30

Source: Annual waste statement [centre]. SIMA Database

In the Mollet del Vallès centre, the waste generated by the activity of Kao Chimigraf represents 7.2% of the centre's total.

If we compare waste generation in relative terms with respect to the sector²⁰ (companies that are members of Responsible Care), we generate a greater quantity (63.5 (57.1 without considering construction waste) versus 14.3 kg/t), and with respect to hazardous waste as well (52.12 versus 5.46 kg/ton produced). In this case, in addition to the applicability of the comments made regarding the indicators, it must be taken into consideration that the classification of waste is conditioned by the products produced.

²⁰ Source: FEIQUE. Responsible Care Performance Indicators (2022 Data), October 30, 2023.



7.1.1.5 INDICATORS ON BIODIVERSITY

TABLE 13.
Basic indicators on biodiversity

	TOTAL SOLAR	LAND OCCUPATION	TOTAL SEALED	TOTAL NATURE ORIENTED	
				AT THE CENTRE	OUTSIDE OF THE CENTRE
<div><div></div><div>OLESA DE MONTSERRAT CENTRE</div></div> <div>Surface area (m²)</div>	103,303	23,505 (23%)	64,799 (63%)	38,504 (37%)	0
<div><div></div><div>MOLLET DEL VALLÈS CENTRE</div></div> <div>Surface area (m²)</div>	38,918	13,847 (36%)	36,178 (93%)	2,788 (7%)	24,874
<div><div></div><div>BARBERÀ DEL VALLÈS CENTRE</div></div> <div>Surface area (m²)</div>	43,899	15,200 (35%)	31,257 (71%)	12,642 (29%)	0

Source: Environmental authorisation/licence



7.1.1.6 INDICATORS ON ATMOSPHERIC EMISSIONS

At the centre, greenhouse gas emissions (hereinafter GHG) are regularly generated: CO₂, CH₄ and N₂O. HFC or SF₆ emissions can occur sporadically due to leaks in air conditioning equipment or transformers, respectively. PFCs and NF₃ are not used at the facilities. The organization's GHG emissions are classified as direct emissions (scope 1) and indirect emissions (scopes 2 and 3):

- **Scope 1**, direct emissions resulting from the combustion of fuels in fixed sources, such as boilers, turbines and pumps; those relating to physical or chemical processes; those corresponding to the transport of vehicles owned or controlled by Kao Corporation, S.A.U., such as rental vehicles or coaches; as well as fugitives emissions caused by equipment leaks, especially those from air conditioning and/or cooling equipment.
- **Scope 2**, indirect emissions associated with the purchase and consumption of energy, in our case, emissions related to the purchase of electrical energy.

— **Scope 3**, indirect emissions that include all other emissions resulting from the activity, which are located outside the facilities specific to the activity and are associated with the value or supply chain of goods and services. This group includes emissions related to the transport of raw materials and finished products. Now, work is being done on the calculation of emissions related to commercial trips and commuting by employees in their own vehicle, which is expected to be reported into the next Environmental Statement. The indicative calculations carried out in 2022 amount to around 27% of CO₂ originating from travel to clients, the majority corresponding to the air environment. Finally, it should be noted that the company has an inventory of greenhouse gas emissions in accordance with the GHG protocol, which is updated annually. In this inventory, we monitor the most relevant emissions from our entire scope. The CO₂ emissions in *table 16* correspond to those regulated by the GHG emission rights trading regime and the transportation of the fleet controlled by the activity.

TABLE 14.
Basic indicators on GHG emission^{21, 22}

	2019	2020	2021	2021	2023
● OLESA DE MONTSERRAT CENTRE					
Natural gas CO ₂ Emission (t)	26,643	26,894	26,365	25,774	18,255
Diesel CO ₂ Emission (t)	57	77	69	80	64
Process CO ₂ Emission (t)	637	718	666	737	888
CO ₂ Emission (t)	27,337	27,689	27,100	26,591	19,206
CH ₄ Emission (t CO _{2e})	19	19	18	18	13
N ₂ O Emission (t CO _{2e})	126	127	124	122	86
HFCs Emission (t CO _{2e})	6	15	3	16	7
SF ₆ Emission (t CO _{2e})	0	0	0	0	0
Direct (Scope 1) GHG emissions (t CO _{2e})	27,487	27,850	27,246	26,747	19,312
Scope 1 emissions / Final production (t CO _{2e} /t)	0.43	0.43	0.42	0.46	0.34
Energy indirect (Scope 2) GHG emissions (t CO _{2e})	0	0	0	0	0
Scope 2 emissions / Final production (t CO _{2e} /t)	0.00	0.00	0.00	0.00	0.00
Other indirect (Scope 3) GHG emissions (t CO _{2e})	4,425	4,413	3,927	3,267	3,266
Scope 3 emissions / Final production (kg CO _{2e} /t)	0.07	0.07	0.06	0.06	0.06
● MOLLET DEL VALLÈS CENTRE					
Natural gas CO ₂ Emission (t)	12,052	13,687	13,058	12,178	10,807
Diesel CO ₂ Emission (t)	30	32	39	35	30
CO ₂ Emission (t)	12,082	13,719	13,097	12,213	10,837
CH ₄ Emission (t CO _{2e})	8	10	9	9	8
N ₂ O Emission (t CO _{2e})	57	65	62	58	51
HFCs Emission (t CO _{2e})	410	97	21	0	62
SF ₆ Emission (t CO _{2e})	0	0	0	0	0
Direct (Scope 1) GHG emissions (t CO _{2e})	12,557	13,891	13,189	12,279	10,957
Scope 1 emissions / Final production (t CO _{2e} /t)	0.24	0.25	0.28	0.31	0.29
Energy indirect (Scope 2) GHG emissions (t CO _{2e})	0	0	0	0	0
Scope 2 emissions / Final production (t CO _{2e} /t)	0.00	0.00	0.00	0.00	0.00
Other indirect (Scope 3) GHG emissions (t CO _{2e})	3,812	2,028	1,766	1,676	1,499
Scope 3 emissions / Final production (kg CO _{2e} /t)	0.06	0.03	0.03	0.03	0.03

	2019	2020	2021	2021	2023
● BARBERÀ DEL VALLÈS CENTRE					
Natural gas CO ₂ Emission (t)	16	12	12	11	8
Diesel CO ₂ Emission (t)	13	6	6	11	12
CO ₂ Emission (t)	29	17	18	21	20
CH ₄ Emission (t CO _{2e})	0.0	0.0	0.0	0.0	0.0
N ₂ O Emission (t CO _{2e})	0.1	0.1	0.1	0.1	0.0
HFCs Emission (t CO _{2e})	70	214	63	0	8
SF ₆ Emission (t CO _{2e})	0	0	0	0	0
Direct (Scope 1) GHG emissions (t CO _{2e})	99	231	81	21	28
Scope 1 emissions / Final production (t CO _{2e} /t)	0.06	0.12	0.04	0.01	0.02
Energy indirect (Scope 2) GHG emissions (t CO _{2e})	0	0	0	0	0
Scope 2 emissions / Final production (t CO _{2e} /t)	0.00	0.00	0.00	0.00	0.00
Other indirect (Scope 3) GHG emissions (t CO _{2e})	1,621	1,534	1,691	1,550	1,259
Scope 3 emissions / Final production (kg CO _{2e} /t)	0.03	0.02	0.03	0.03	0.02
● TOTAL KAO CORPORATION, S.A.U.					
Natural gas CO ₂ Emission (t)	38,710	40,593	39,434	37,963	29,070
Diesel CO ₂ Emission (t)	100	114	115	125	105
Process CO ₂ Emission (t)	637	718	666	737	888
CO ₂ Emission of renting cars	28	20	28	27	0
CO ₂ Emission (t)	39,476	41,445	40,243	38,853	30,063
CH ₄ Emission (t CO _{2e})	27	28	28	27	20
N ₂ O Emission (t CO _{2e})	183	192	186	180	137
HFCs Emission (t CO _{2e})	485	327	88	16	76
SF ₆ Emission (t CO _{2e})	0	0	0	0	0
Direct (Scope 1) GHG emissions (t CO _{2e})	40,170	41,992	40,544	39,075	30,297
Scope 1 emissions / Final production (t CO _{2e} /t)	0.34	0.34	0.36	0.39	0.32
Energy indirect (Scope 2) GHG emissions (t CO _{2e})	0	0	0	0	0
Scope 2 emissions / Final production (t CO _{2e} /t)	0.00	0.00	0.00	0.00	0.00
Other indirect (Scope 3) GHG emissions (t CO _{2e})	15,775	14,420	14,692	12,242	10,896
Scope 3 emissions / Final production (kg CO _{2e} /t)	0.13	0.12	0.13	0.12	0.11

Source: Verified GHG Report - MITECO Calculator

²¹ Includes emissions of CO₂, CH₄, N₂O, HFCs, PFCs, NF₃ and SF₆. MITECO calculator version 28.

²² Values in italics and green have been modified from the previous statement. Incorporation of emissions from the decarboxylation of MDJ.

TABLE 15.
The following table details the scope 3 emissions considered in the calculation.

	2019	2020	2021	2021	2023
● TOTAL KAO CORPORATION, S.A.U.					
Raw material transport emissions (t)	5,917	6,446	7,307	5,749	4,872
Finished product transport emissions (t)	9,858	7,974	7,385	6,493	5,910
Waste transport emissions (t)	-	-	-	-	114
In itinere emissions (t)	-	-	-	-	853
In mission emissions (t)	-	-	-	-	291
Total Scope 3 GHG emissions (t CO _{2e})	15,775	14,420	14,692	12,242	12,040

Indicate that the data on scope 3 emissions related to the fleet of personal vehicles is only available for the year 2023 onwards.

In 2016 the Mollet del Vallès centre received a resolution revoking the greenhouse gas emissions authorisation because of the stoppage of the cogeneration plant and the fatty acids process. For this reason, emissions are no longer assigned for the remaining 2013-2020 period.

At the beginning of June 2023, the Olesa de Montserrat centre ends the activity of the cogeneration plant. In January 2024, it receives the resolution to terminate the authorization of greenhouse gas emissions, which is why it no longer has emissions assigned for the rest of the 2020-2030 period.

TABLE 16.
Basic indicators on CO₂ emissions subject to the GHG emissions trading system

	2019	2020	2021	2022	2023
● OLESA DE MONTSERRAT CENTRE					
Emissions assigned (t)	7,012	6,233	4,937	5,250	5,111
Emission (t)	26,671	27,018	27,031	26,512	18,934
Emission / Final production (t CO ₂ /t)	0.42	0.42	0.42	0.45	0.34
● MOLLET DEL VALLÈS CENTRE					
Emission (t)	12,055	13,690	13,060	12,182	10,809
Emission / Final production (t CO ₂ /t)	0.23	0.25	0.27	0.31	0.29
● BARBERÀ DEL VALLÈS CENTRE					
Emission (t)	16	12	12	11	8
Emission / Final production (t CO ₂ /t)	0.01	0.01	0.01	0.01	0.01
● TOTAL KAO CORPORATION, S.A.U.					
Emissions assigned (t)	7,012	6,233	4,937	5,250	5,111
Emission (t)	38,741	40,719	40,103	38,704	29,751
Emission / Final production (t CO ₂ /t)	0.33	0.33	0.35	0.39	0.31

Source: Verified GHG Report - PRTR Statement

TABLE 17.
Basic indicators on emissions of CO

	2019	2020	2021	2022	2023
● OLESA DE MONTSERRAT CENTRE					
Emission (kg)	4,742	4,804	4,697	4,599	3,249
Emission / Final production (kg CO/t)	0.07	0.07	0.07	0.08	0.06
● MOLLET DEL VALLÈS CENTRE					
Emission (kg)	2,145	2,445	2,326	2,173	1,924
Emission / Final production (kg CO/t)	0.04	0.04	0.05	0.05	0.05
● BARBERÀ DEL VALLÈS CENTRE					
Emission (kg)	3	2	2	2	1
Emission / Final production (kg CO/t)	0.00	0.00	0.00	0.00	0.00
● TOTAL KAO CORPORATION, S.A.U.					
Emission (kg)	6,889	7,251	7,026	6,774	5,174
Emission / Final production (kg CO/t)	0.06	0.06	0.06	0.07	0.05

Source: Verified GHG Report - PRTR Statement

TABLE 18.
Basic indicators on emissions of NOx

	2019	2020	2021	2022	2023
● CENTRO DE OLESA DE MONTSERRAT					
Emission (kg)	29,398	29,787	29,122	28,515	20,146
Emission / Final production (kg NOx/t)	0.46	0.46	0.45	0.49	0.36
● CENTRO DE MOLLET DEL VALLÈS					
Emission (kg)	13,298	15,159	14,423	13,473	11,927
Emission / Final production (kg NOx/t)	0.25	0.27	0.30	0.34	0.32
● CENTRO DE BARBERÀ DEL VALLÈS					
Emission (kg)	17	13	13	12	9
Emission / Final production (kg NOx/t)	0.01	0.01	0.01	0.01	0.01
● TOTAL KAO CORPORATION, S.A.U.					
Emission (kg)	42,713	44,958	43,558	42,000	32,082
Emission / Final production (kg NOx/t)	0.36	0.37	0.38	0.42	0.34

Source: Verified GHG Report - PRTR Statement


TABLE 19.
Basic indicators on other emissions

	2019	2020	2021	2022	2023
● OLESA DE MONTSERRAT CENTRE					
Emission VOCs as TOC (kgC)	15,561	10,073	5,556	4,246	1,495
TOC Emission (kgC/ 1000 t Final production)	243.76	155.23	86.28	72.44	26.57
TPM Emission (kg)	20	8.34	8.81	8.60	6.68
TPM Emission (kgC/ 1000 t Final production)	0.32	0.13	0.14	0.15	0.12
Dioxins and furans (kg)	1.4E-08	7.9E-08	3.2E-07	3.4E-07	9.1E-07
SO ₂ Emission as SOx (kg)	82.03	110.87	100.03	114.60	91.30
SOx (kg SOx/ 1000 t Final production)	1.29	1.71	1.55	1.96	1.62
● MOLLET DEL VALLÈS CENTRE					
Emission VOCs as TOC (kgC)	3,423	3,508	2,325	2,087	1,881
TOC Emission (kgC/ 1000 t Final production)	64.53	63.17	48.64	52.61	49.92
TPM Emission (kg)	8	8	4	4	4
TPM Emission (kgC/ 1000 t Final production)	0.15	0.14	0.09	0.10	0.11
SO ₂ Emission as SOx (kg)	43.32	46.07	57.09	50.40	42.40
SOx (kg SOx/ 1000 t Final production)	0.82	0.83	1.19	1.27	1.13
● BARBERÀ DEL VALLÈS CENTRE					
TPM Emission (kg)	580	719	778	657	568
TPM Emission (kgC/ 1000 t Final production)	327.72	384.42	395.33	409.77	405.20
SO ₂ Emission as SOx (kg)	19.08	8.46	8.86	15.19	17.54
SOx (kg SOx/ 1000 t Final production)	10.78	4.53	4.51	9.47	12.51
● TOTAL KAO CORPORATION, S.A.U.					
Emission VOCs as TOC (kgC)	18,984	13,581	7,881	6,333	3,376
TOC Emission (kgC/ 1000 t Final production)	308	218	135	125	76
TPM Emission (kg)	608.39	734.74	790.82	669.87	578.88
TPM Emission (kgC/ 1000 t Final production)	5.13	6.01	6.93	6.71	6.07
Dioxins and furans (kg)	1.4E-08	7.9E-08	3.2E-07	3.4E-07	9.1E-07
SO ₂ Emission as SOx (kg)	144.43	165.40	165.98	180.19	151.24
SOx (kg SOx/ 1000 t Final production)	1.22	1.35	1.45	1.80	1.59

Source: PRTR Statement - Aspects assessment database

Channelled emissions to air have been separated from diffuse emissions, since the former are expressed as total organic carbon, while diffuse emissions are calculated as VOC emissions and are basically due to the activity of Kao Chimigraf, subject to solvent regulations.

TABLE 20.
Diffuse emission

	2019	2020	2021	2022	2023
 MOLLET DEL VALLÈS CENTRE					
VOCs emission (kg)	4,301	7,114	1,233	1,294	1,376
VOCs emission (kg COVs/1000 t Final production)	81.09	128.13	25.79	32.62	36.51

NOTES FOR INTERPRETING THE EVOLUTION OF INDICATORS:

The main contributor of scope 1 emissions are the facilities subject to the GHG emission rights trading regime, this is the Olesa de Montserrat establishment, as it has a cogeneration plant, where the ratio decreases due to the cessation of the cogeneration in June 2023. Scope 2 emissions are zero thanks to the total purchase of electrical energy from renewable sources.




The atmospheric emissions of all combustion units are below the legal limit. They are below 100 mg/Nm³ for CO and below 450 mg/Nm³ for NOx. At the Olesa de Montserrat centre, the reduction in emissions in 2022 and 2023 is due to the existence of the RTO, which we expect to decrease even more when the rest of the process emission sources are connected. In the centre of Mollet del Vallès, we must highlight the actions started in 2018 by the ink manufacturing activity carried out by the Kao Chimigraf company.

If we compare NOx emissions in relative terms with respect to the sector²³ (companies that are members of Responsible Care), our emission is higher (0.34 compared to 0.21 kg/ton produced). In the case of VOCs, our emission is lower (0.076 compared to 0.152 kg/ton produced). As it was previously mentioned, the heterogeneity of the chemical sector should be noted, which ranges from large volume companies to small businesses, meaning that it comprises highly complex industrial facilities that, with different processes and products, are subject to constant changes in growth and adaptation; we are a clear example, with three establishments in the same sector that are not fully comparable.

²³ Source: FEIQUE. Responsible Care Performance Indicators (2022 Data), October 30, 2023.

7.1.1.7 ACOUSTIC EMISSION IMPACT INDICATORS

TABLE 21.
Indicator on the level of noise emitted to the outside²⁴

	2019	2020	2021	2022	2023
 OLESA DE MONTSERRAT CENTRE					
Immission (dBA)	45	45	41	42	-
 MOLLET DEL VALLÈS CENTRE					
Immission (dBA)	47	37	46	-	44
 BARBERÀ DEL VALLÈS CENTRE					
Immission (dBA)	66	62	65	-	54

Source: Periodic checks of environmental authorizations/licenses – Outsourced report

NOTES FOR INTERPRETING THE EVOLUTION OF INDICATORS:

The values shown in the table correspond to the measuring point with the highest level of immission, applying the most restrictive correction factors as per Law 16/2002. In 2023, official measurements were carried out in the centre of Mollet and Barberà del Vallès, which were found to follow the limit values of the municipality.

²⁴ Measurements made at nighttime.



7.1.2 ENVIRONMENTAL
PERFORMANCE INDICATORS

The environmental performance indicators are the reference values that provide an overall view of the organisation's environmental behaviour with regard to a reference period. Modifications to the facilities, the products, processes and/or associated activities demonstrate the high level of productive dynamism and adaptation to market requirements and legislation, which cause annual fluctuations in these indicators. All rates are calculated using end production, which does not consider the production of intermediate products. The indicators for 2023 are provided below, together with a comparison with the values obtained the previous year.

TABLE 22.
Performance indicators

		2022	↑↓	2023
● OLESA DE MONTSERRAT CENTRE				
Electricity consumption	Consumption/ Final production (kWh/t)	0.29	↑	0.31
Gas consumption	Consumption / Final production (GJ/t)	7.85	↓	5.78
Water consumption	Consumption / Final production (m³/t)	2.34	↑	2.47
Discharge of Total Organic Carbon (TOC)	TOC / Final production (kg/t)	0.08	↑	0.09
Discharge of Matter in Suspension (MIS)	MIS / Final production (kg/t)	0.03	↑	0.06
Non-hazardous waste	Generated / Final production (t/t)	11.97	↑	15.04
Hazardous waste	Generated / Final production (t/t)	61.39	↓	58.51
Emission of CO₂	Emission / Final production (kg CO₂/t)	0.45	↓	0.34
● MOLLET DEL VALLÈS CENTRE				
Electricity consumption	Consumption/ Final production (kWh/t)	0.28	↔	0.28
Gas consumption	Consumption / Final production (GJ/t)	5.48	↓	5.10
Water consumption	Consumption / Final production (m³/t)	3.70	↓	3.59
Discharge of Total Organic Carbon (TOC)	TOC / Final production (kg/t)	0.18	↑	0.24
Discharge of Matter in Suspension (MIS)	MIS / Final production (kg/t)	0.14	↑	0.18
Non-hazardous waste	Generated / Final production (t/t)	2.05	↑	2.40
Hazardous waste	Generated / Final production (t/t)	60.82	↓	44.04
Emission of CO₂	Emission / Final production (kg CO₂/t)	0.31	↓	0.29
● BARBERÀ DEL VALLÈS CENTRE				
Electricity consumption	Consumption/ Final production (kWh/t)	9.20	↑	9.91
Gas consumption	Consumption / Final production (GJ/t)	0.12	↓	0.10
Water consumption	Consumption / Final production (m³/t)	6.90	↓	3.73
Discharge of Total Organic Carbon (TOC)	TOC / Final production (kg/t)	0.30	↓	0.18
Discharge of Matter in Suspension (MIS)	MIS / Final production (kg/t)	0.29	↓	0.17
Non-hazardous waste	Generated / Final production (t/t)	130.48	↓	106.64
Hazardous waste	Generated / Final production (t/t)	10.36	↑	12.62
Emission of CO₂	Emission / Final production (kg CO₂/t)	0.01	↔	0.01
● TOTAL KAO CORPORATION, S.A.U.				
Electricity consumption	Consumption/ Final production (kWh/t)	0.43	↑	0.44
Gas consumption	Consumption / Final production (GJ/t)	6.78	↓	5.43
Water consumption	Consumption / Final production (m³/t)	2.95	↓	2.93
Discharge of Total Organic Carbon (TOC)	TOC / Final production (kg/t)	0.12	↑	0.15
Discharge of Matter in Suspension (MIS)	MIS / Final production (kg/t)	0.08	↑	0.11
Non-hazardous waste	Generated / Final production (t/t)	9.93	↑	11.39
Hazardous waste	Generated / Final production (t/t)	60.35	↓	52.12
Emission of CO₂	Emission / Final production (kg CO₂/t)	0.39	↓	0.31

7.2 EVALUATION OF
LEGAL COMPLIANCE

Kao Corporation, S.A.U. regularly analyses all legal provisions and published regulations, which it accesses through a variety of means. The Infosald application is the main source. Based on this, the company makes a summary of all new legal provisions and publishes the appropriate legal requirements sheet on the Intranet of HSE Dpt. Communication is also made through the committee's structure, especially on the Corporate HSE Committee. This application also enables monitoring and assessment of the degree of compliance with applicable legal requirements. The facilities of Kao Corporation, S.A.U. have been legalised in accordance with industrial safety regulations (high and low voltage, storage of hazardous chemical products, pressurised equipment, refrigerating facilities, etc.) and the periodic mandatory inspections are conducted.

7.2.1 ENVIRONMENTAL AUTHORISATIONS

Kao Corporation, S.A.U. holds all the necessary environmental authorisations and licences for its three work centres and, since 2002, has adapted to Law 3/1998 on Integrated Pollution Prevention and Control (IPPC), currently repealed by Law 20/2009, governing Prevention and Environmental Control of Activities. Under the control of Official Environmental Agencies, our organisation demonstrates its adaptation to the environmental prevention, control and authorisation requirements at local, regional, state and European levels. The following table (*table 23*) shows the status of environmental authorisations and licences, substantial changes and renewals submitted. Based on the changes to the regulations of 2013, the facilities of Mollet del Vallès and Olesa de Montserrat are subjected to initial and periodic biannual checks and are subject to the comprehensive environmental inspection plan of Catalonia. Therefore, beginning in March 2014, the periodic inspections are carried out based on the annual programme that is drafted by the DGQACC, which establishes the dates when these inspections must be performed. The resulting reports are public and are posted on the Territory and Sustainability Department's Website.

TABLE 23.
Environmental authorisation/licences

	APPLICATION NO.	DATE OF RULING
● OLESA DE MONTSERRAT CENTRE		
Initial	BA20010008	17/06/2002
Substantial change: MDJ and OTB Plant	BA20030121	18/01/2005
Substantial change: HTR and C plant	BA20070072	23/10/2007
Renewal	B1RP140700	31/03/2017
Substantial change: MDJ-2 plant	B1CS210116	22/09/2026
● MOLLET DEL VALLÈS CENTRE		
Initial	BA20000018	3/04/2002
Renewal	BA20090126	9/12/2010
Substantial change: Lactones 4	B1CS170639	10/03/2020
● BARBERÀ DEL VALLÈS CENTRE		
Initial	UAL A000005	
Substantial change: Line 4 and gas washer pilot plant	UAL A050002	17/01/2007

7.2.2 ANALYSIS OF LEGAL COMPLIANCE

The assessment, from different operational spheres, of legal requirements that apply to Kao Corporation S.A.U. has been performed by the company's own specialists as well as by the competent authorities. Kao Corporation S.A.U. complies with all legal and other applicable requirements. In this period there have been no disciplinary proceedings, and no situation has arisen that constitutes risks to public health or the environment. All commitments acquired by Kao Corporation, S.A.U. have also been responded to, as well as all required declarations have been made and presented in all areas (water, emissions, waste, soils, etc.). Regarding environmental authorisations and licences, they are kept updated in the three centres, and the corresponding changes have been implemented. In 2023, the periodic control of the Barberà del Vallès Environmental License was carried out, with the result being favourable.

WATER

Kao Corporation, S.A.U. has permits to capture its own sources of water both for the Mollet del Vallès centre as well as the Olesa de Montserrat centre (Decision of 16 November 2006 and Decision of 29 October 2004, respectively). The water extraction that takes place does not exceed the authorized limits. As a result of the application of the different scenarios included in the Special Drought Plan (PES for its acronym in Catalan), it has meant exceeding water consumption in the last quarter of 2023 in the Olesa de Montserrat and Mollet del Vallès; For this reason, the company is preparing the corresponding Water Saving Plans (PEA for its acronym in Catalan). As far as consumption of tap water is concerned, this is below the levels granted in the respective environmental authorisations and licences.

Kao Corporation, S.A.U. It also has the corresponding discharge permits for each centre:

- In the centre of **OLESA DE MONTSERRAT** it is renewed with the Resolution of the integrated environmental authorization.
- The **MOLLET DEL VALLÈS** centre submits a request to renew the discharge permit in February 2018 and the resolution is finally published by which it is renewed in April 2022.
- The **BARBERÀ DEL VALLÈS** centre submits a request to renew the discharge permit in July 2021, and in November 2022 it receives a request for additional information from the City Council. After responding in a timely manner, the company is waiting for the Resolution.

Quality of discharged water
(Decree 130/2003)

The analytical parameters of discharged waters comply with the limits laid down in each environmental authorisation and licence, although the following situations have been occasionally detected where the established limits have been exceeded:

— MOLLET DEL VALLÈS CENTRE

- Two specific exceedances of the total nitrogen parameter were detected: 55 and 62 mg/l, with 50 mg/l being the maximum authorized value. The situation is quickly restored.

— BARBERÀ DEL VALLÈS CENTRE

- In January, October and November, nitrate concentrations higher than the limit value (100 mg/l) defined by the Residual Metropolitan Regulations are detected. Given the detected exceedances, several actions are carried out, first, aimed at ruling out some possible causes, such as the contribution of toner washing

water, emptying and cleaning the tank or a possible failure in its aeration system.

The possible influence of the number of employees in the centre, the ambient temperature and any uncontrolled contribution of the substance in question in the establishment is also analysed.

In this stage, internal sampling is intensified in frequency and measurement points.

After the analysis period, it is concluded that the nitrification reaction takes place inside the homogenization tank, so a new stage begins in which its inlet and outlet flows, and other variables, are analysed.

Finally, and as of the date of this Declaration, the retention time of residual water has been reduced, by modifying the tank consisting of the placement of interchangeable levels, at 3, 5 and 7 m, leaving the 3m position in service. With this, it has finally been possible to consolidate the correct value of nitrates in the centre's wastewater.

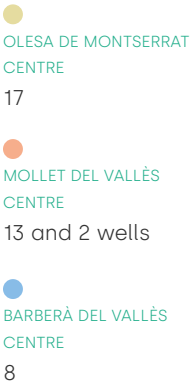
The rest of parameters have all been below the legal limit. The declaration given in the Pollutant Release and Transfer Register (PRTR) (Royal Decree 508/2007) concerning emissions of wastewater pollutants of the Olesa de Montserrat and Mollet del Vallès centres reveals that both centres are below the established thresholds in both centre except for nonylphenol and nonylphenol ethoxylates in the Olesa de Monserrat centre.

		<div><div></div>OLESA DE MONTSERRAT CENTRE</div>	<div><div></div>MOLLET DEL VALLÈS CENTRE</div>	<div><div></div>BARBERÀ DEL VALLÈS CENTRE</div>
pH	Legal limit	6–10	6–10	6–10
	Value	7.9 / 8.6	7.4 / 8.8	7 / 7.2
COD: Chemical Oxygen Demand (mg/l)	Legal limit	1,500	1,500	1,500
	Value	242 / 982	253 / 1,126	142 / 513
TSS: Suspended Matter (mg/l)	Legal limit	500	750	750
	Value	51 / 450	62 / 292	47 / 357
N: Total nitrogen (mg/l)	Legal limit	90	90*	90
	Value	19 / 45	27 / 48.7	19 / 37
IM: Inhibitory Materials (Equitox/m³)	Legal limit	25	50	25
	Value	0 / 0	0 / 0	0 / 0
Chlorides (mg/l)	Legal limit	2,500	2,000	2,500
	Value	1,231 / 1,647	813 / 1,861	57 / 256
Conductivity (µS/cm)	Legal limit	6,000	5,000	6,000
	Value	5,138 / 6,000	3,189 / 4,950	1,001 / 1,255
P: Phosphorus (mg/l)	Legal limit	50	50	50
	Value	1.1 / 3.2	6 / 25	6.2 / 13
Anionic surfactants (mg/l LSS)	Legal limit	6	5	6
	Value	0.12 / 4	0.9 / 3.62	0.1 / 0.16
Nonylphenol(mg/l)	Legal limit	1	-	1
	Value	0	0	0

Source: Aspect evaluation database. Monthly report [center]

²⁵ Value: Average value / Maximum value.
Legal limits: Olesa de Montserrat: *Reglament dels serveis públics de sanejament Decret 130/2003*, Mollet del Vallès: *Reglament regulador d'abocaments d'aigües residuals del Consorci per a la defensa del riu Besòs y Barberà del Vallès: Reglament Metropolità d'abocaments d'aigües residuals*.
• *El Reglament regulador d'abocaments d'aigües residuals del Consorci per a la defensa del riu Besòs* does not stipulate a limit value for organic and ammoniacal nitrogen. Therefore the value stipulated in Decree 130/2003 is applicable.

ILLUSTRATION 12.
Number of
piezometers



Groundwater
(Royal Decree 1514/2009)
Each centre has a series of piezometers, strategically located, which enable us to assess the degree of pollution of groundwater and, therefore, detect whether the subsoil is affected. The following Illustration 12 lists the existing piezometers at each establishment.

In 2006, we set up the Groundwater Control and Monitoring Plan associated with the subsoil being affected. The frequency is annual, and the plan remains in force. In 2020, the Groundwater Monitoring and Control Plan (PSC) was carried out at the Olesa de Montserrat and Mollet del Vallès centres in accordance with the requirements of the environmental authorization. Each of the establishments has its corresponding Quantitative Risk Analysis (ACR). In 2023, the Monitoring and Control Plan (PSC) for groundwater in the Olesa de Montserrat and Mollet del Vallès centres has been carried out in accordance with the requirements of the environmental authorization. All the values of the analysed parameters are lower than the generic reference values.

WASTE
Kao Corporation, S.A.U. is registered as a producer of waste at each centre and uses authorised managers to handle its waste in accordance with Decree 93/1999, Decree 152/2017, Decree 553/2020 and Law 7/2022.

TABLE 25.
No. of sources / CAPCA Group

	<div><div></div>Olesa de Montserrat Centre**</div>	<div><div></div>Mollet del Vallès Centre*</div>	<div><div></div>Barberà del Vallès Centre</div>
Industrial processes	29/12A, 3B, 7C and 7-	15/10A, 5-	19 / 19-
Combustion installations	7/3B, 2C and 2-	7/2B, 3C and 2-	2/2-
TOTAL	34/12A, 5B, 8C and 9-	22/10A, 2B, 3C and 7-	21/21-




* Including the sources of Kao Chimigraf's business activity.
** The source applicable to the DMS tank (scrubber CV-454), even though it belongs to the CAPCA group "-", measurements must be carried out every 5 years as required by the renewal resolution provided by the AAI. There are two tank vents that have the alternative registration (ITAT-004).

Regarding the Atmospheric Activity Control (CAE), mandatory every 2 years in Olesa de Montserrat and in Mollet del Vallès centres, in 2023 it was performed in Mollet del Vallès centre in which a noncompliance was detected: clarifying the lime silo that did not is identified, it must be registered as an emission source assimilable to process. The lime silo has a capacity of 29 m³ so, based on Law 34/2007 and its amendments, its classification is group “-” and code 04 04 15 02, so it is not a focus that can be assimilated to a process and is does not requires registration. In 2023, the CAE was carried out in Barberà del Vallès with favourable results.

NOISE EMISSIONS

Every year, we conduct a noise check inside the facility to verify that sound levels are within the legal limit and to be able to detect an increase in environmental noise and consequently adopt preventive or corrective measures in the shortest possible time. The level of noise emitted by each centre is below the level required in the Municipal By-law corresponding to the municipality in which the centre is located, and the level given in Law 16/2002 (refer to paragraph 8.1.1.7).

TABLE 26.
Immission limit (LAr in dBA) day / night in residential area

	LAW 16/2002	MUNICIPAL BY-LAW
 OLESA DE MONTSERRAT CENTRE ²⁶	55 / 45	70 / 60
 MOLLET DEL VALLÈS CENTRE	55 / 45	60 / 50
 BARBERÀ DEL VALLÈS CENTRE	65 / 55	65 / 60

²⁶ The limits stipulated in the Municipal By-law of Esparraguera are: 60 dBA during the day and 50 dBA at night.

SOILS

In 2004, Kao Corporation, S.A.U. evaluated the level of industrial soil contamination at its three centres. The limit concentrations obtained were correct, in accordance with the provisional soil quality criteria applicable in Catalonia for industrial soils. Likewise, the "Soil Status Report" is available in accordance with the Royal Decree 9/2005 and with the requirements of the *Agència de Residus de Catalunya*. There are regular actions to prevent soil contamination, such as re asphaltting of roads, renewing tanks and ensuring that the production plants are properly paved. The "Basic Soil Report" for the Olesa de Montserrat centre was submitted in 2015 in accordance with Law 5/2013 and the one for the Mollet del Vallès centre was submitted in 2017. The soils Periodic Situation Report (PSR) for the Olesa de Montserrat centre was submitted in 2016 and the one for the Mollet del Vallès centre was submitted in 2017. In 2020, the Soil Monitoring and Control Plan (PSC) was carried out, prescribed by the environmental authorization of the Olesa de Montserrat centre and the Mollet del Vallès centre. Both centres concluded that the calculated mobilization rates do not exceed the values established in the ARC methodological guidelines, so no additional measures must be taken, and they can continue with the existing PSC.

7.3 INTERNAL AUDITS

During this financial year, an Environmental internal audit was performed in different areas and centres in accordance with the 2023 Annual Audit Plan. The main aim of this audit was to check the adaptation of the Risk Prevention Management System (RPMS) to the Responsible Care Environmental Management Module. In the energy area, an external company has been hired to perform the internal audit. During the audit process, the great effort carried out by all personnel associated with the audited departments and areas is worth mentioning.

Kao Corporation, S.A.U. has developed indicators associated to environmental aspects in order to define specific improvement plans. The result of this action has included the reduction of hundreds of tonnes of waste and major reductions in the pollutant loads discharged into water which, in the absence of said plans, would have meant an environmental impact far in excess of that currently under consideration. The following are some examples of preventive actions that have allowed our organisation to reduce its environmental impact.

8. IMPROVEMENT



CLIMATE CHANGE

Kao Corporation, S.A.U. establishes its objectives and commitments based on topics relevant to the company and its stakeholders and analyses environmental trends that can have a significant impact on the company's activities. One of these trends is the increase in social awareness in relation to the conservation and protection of the environment and the effects of climate change. Climate change caused by global warming in recent decades affects people's lives and natural ecosystems in various ways. The melting of glaciers, rising sea levels, floods and droughts and other extreme climatic phenomena have begun to be observed, which have consequences on marine and terrestrial ecosystems, and affect food production and people's health. Our main environmental commitments are directly linked to the mitigation of climate change, given that the activity carried out involves the emission of greenhouse gases, either due to the activity itself (direct emissions) or because of it (indirect emissions). Along these lines, since 2006 the group has implemented a system aimed at prioritizing investments in more efficient technologies with low CO₂ emissions, as well as in climate-resilient activities, Internal Carbon Pricing (ICP). The group and therefore Kao Corporation, S.A.U. has committed to the goal of zero CO₂ emissions by 2040 and to be carbon negative by 2050.

For this reason, actions are intensified to reduce direct emissions and, regarding indirect emissions, actions are also carried out such as expanding the reporting of scope 3 emissions and monitoring them and based on the results, defining strategies that allow their reduction.

Mitigation actions

Kao Corporation, S.A.U. implements different initiatives to guarantee the reduction of its greenhouse gas emissions to contribute to the mitigation of climate change:

- In the acquisition of raw materials and packaging, green purchasing concepts are incorporated.
- In the product development process, it is verified that they comply with the environmental standards described by the design guidelines for the environment.
- In the manufacturing process, initiatives are included to reduce energy consumption through the introduction of more efficient equipment and eliminating points of energy loss, use of cleaner energy, use of more environmentally friendly refrigerants, maintenance of equipment to prevent leaks of refrigerants and other greenhouse gases.
- The selection of air conditioning and refrigeration equipment is carried out according to the criteria defined by the group, which consider the environmental

impact of the refrigerant. In addition, we have a defined plan for the progressive replacement of equipment that uses refrigerant gases with greater impact, in line with the Kigali Amendment to the Montreal Protocol.

- In the distribution process, through increasing the volumes shipped per shipment, the use of cleaner methods and improving loading ratios.

At the facility level, a roadmap for decarbonization has been created, which includes, among other milestones:

- **2017:** Purchase of energy from renewable sources, therefore zero scope 2 GHG emissions.
- **2022:** Installation of photovoltaic panels in the Olesa de Montserrat centre.
- **2023:** Stoppage of the cogeneration plant at the Olesa de Montserrat centre, which leads to a reduction in scope 1 GHG emissions. The installation of electric vehicle charging points in the three centres. The internal energy recovery of waste in the installed recuperative thermal oxidizer was also planned. This action reduces CO₂ emissions from waste transportation (scope 3) as well as the consumption of natural gas (non-renewable fuel coming from abroad). It is postponed until these types of actions can be undertaken by regulation.

- **2024:** Installation of a biomass boiler in the Olesa de Montserrat centre, this will mean a reduction in scope 1 emissions, to the detriment of scope 2 emissions, as it is owned by a third party. Installation of photovoltaic panels in the centre of Barberà del Vallès.
- **2025:** Use of biogas generated in the wastewater treatment facilities in the centre of Mollet del Vallès. Expansion of the installation of photovoltaic panels in the centre of Barberà el Vallès
- **2026-2030:** Energy recovery of waste in the Olesa de Montserrat thermal oxidizer as well as the one planned to be installed in the Mollet del Vallès centre. Use of biogas generated in the wastewater treatment facilities in the Olesa de Montserrat centre. Cogeneration based on renewable sources at the Olesa de Montserrat and Mollet del Vallès centres.

Actions for adaptation

The development of a line of work promoted by the matrix aimed at adaptation to climate change has also begun, first identifying those facilities located in areas at risk of water scarcity or with a high probability of suffering certain extreme natural phenomena.

²⁷ The main fuel is, by far, natural gas, followed by diesel used in the establishments' own vehicles and gasoline/diesel in rented vehicles.

CONTAMINATION PREVENTION

Kao Corporation, S.A.U. acts to prevent air, soil and water pollution in the areas in which it operates, in addition to reducing the polluting load of the wastewater it generates. To achieve this, multiple initiatives are carried out, such as the reduction at source of the generation of pollutants, good practices in the operation of facilities and the use of the best available techniques to combat pollution. Another line of action being worked on is sustainable purchasing management.

Prevention of air pollution

The main commitments assumed are aimed at strict compliance with specific laws and regulations and the development of the principle of pollution prevention. This entails, among other actions, the gradual introduction of best available techniques, the modification of processes in favour of a reduction in emissions and their exhaustive monitoring. The main pollutants generated by the activity in this area are those related to combustion gases²⁷ (NOx and CO) and process pollutants: VOCs and particles. Specific activities such as the construction or dismantling of facilities also involve the generation of dust, noise and odours that are minimized through the application of good operating practices such as, for example, spraying demolition operations with water or controlling the loading of trucks with powdery material and cover the load with a tarp. Since the beginning, Kao Corporation, S.A.U. has been adopting measures to minimize the impact of these pollutants, from the replacement of diesel oil with natural gas in the boilers to the installation of condensers and post-condensers to recover volatile materials, installation of bag filters and/or absolute filters in those facilities. which involves powdery material, scrubbers to reduce VOCs and more recently the installation of thermal oxidizers. Currently the Olesa de Montserrat centre is the only one that has oxidizers (2); the most recent installed in 2023. Currently the scrubbers of the aroma plants are connected to the oxidizer and actions have been undertaken to progressively connect the rest of the scrubbers of the centre to the regenerative thermal oxidizer as it has a higher

performance and emission concentrations of less than 20 mg/Nm³ are obtained. Other actions performed are the design of high integrity facilities, with limitation of emission sources and maximum confinement, construction in accordance with standards and verification and commissioning procedures. Many of the processes operate under vacuum and/or pressure that require perfect tightness to prevent the entry of oxygen in the operation phases that demand high levels of vacuum. In this sense, all equipment and accessories are specified to minimize the risk of leaks, which could cause the introduction of oxygen into the process, including tongue-and-groove flanges, Teflon gaskets, magnetic pumps, double-sealed agitators, etc. On the other hand, there are control and detection systems for possible leaks, as well as experienced operation and maintenance personnel who, through inspection rounds in each shift and periodic inspection and maintenance, ensure the tightness of the installation. Thus, the prevention of air pollution is addressed through numerous actions, which are in continuous adaptation and improvement. This entails, among other actions, the gradual introduction of best available techniques, the modification of processes in favour of a reduction in emissions and their exhaustive monitoring. Improvements are also introduced in work processes and technologies to mitigate particle emissions, in

cases where they are generated. On the other hand, production engineering departments optimize processes as far as possible, seeking optimal operating conditions also from the point of view of atmospheric emissions, controlling variables such as temperature, pressure and the corresponding variation ramps. Additionally, the control of diffuse emissions from the facilities has begun a few years ago. To this end, a first inventory has been prepared as exhaustive as possible, and the pertinent calculations have been made. Pilot tests have also been carried out using different quantitative and qualitative methodologies to determine the one that best characterizes our facilities. Even so, and due to the application of the available technical improvements, progress must be made in this area until we have an LDAR or consolidated program for the detection and repair of leaks (Leak Detection and Repair). Actions are also taken to prevent other environmental impacts, such as noise, odours and light pollution. Specifically, to mitigate the noise emitted, the actions applied are adjusted to the needs of each situation: from the installation of acoustic barrier panels in certain plants, placement of silencers in certain equipment (for example, cogeneration), other facilities are acoustically isolated or Acoustic encapsulations of certain equipment such as compressors have also been carried out. Periodic

measurements are also carried out both inside the facility and outside and a preventive maintenance program is applied. Regarding vibrations, the equipment is installed according to the instructions given by the manufacturers; Anti-vibration elements are installed as well as the necessary insulators to prevent vibrations from being transmitted to the structural elements of the building. In the three centres, monitoring is carried out, which includes analytical control, of the sources of emission into the air in accordance with the legal requirements in this regard, through Inspection and Control Entities.

Prevention of water pollution

Most of the wastewater generated in the processes of the chemical plants (Olesa de Montserrat and Mollet del Vallès) is previously treated at the company's own treatment plants, which include physicochemical and biological treatment technologies, before being sent to municipal treatment plants. In the centre of Barberà del Vallès there is a homogenization tank. The quality of the wastewater is monitored several times a day to ensure that it meets the application limit values. The pollutant loads present in wastewater have varied in recent years depending on the modifications in the activities of the production plants, and there are several actions undertaken to reduce their polluting load. It should be noted that the renovation of the treatment plant at the Mollet del Vallès centre is still in the study process. Finally, it should be emphasized that actions are carried out annually aimed at preventing groundwater contamination, such as maintaining the pavement in good condition and analytical control of the piezometric network.

USE OF RESOURCES AND CIRCULAR ECONOMY

"Our mission is to fight for the satisfaction and sincere enrichment of people's lives worldwide and to contribute to the sustainability of the world..." The concept of sustainability, so widely spread, is interrelated with the circular economy, whose objective is that the value of resources (water, energy, etc.), materials and products should be maintained in the economy for as long as possible, thereby reducing waste generation as much as possible.

The principles on which the circular economy is based are:

- 1.— Preserving and improving natural capital; meaning, controlling stocks and balancing the flows of renewable resources.
- 2.— Optimizing resource performance by circulating the products, components and materials in use to their maximum utility always, in both technical and biological cycles.
- 3.— Promoting efficiency of the system by revealing and discarding negative externalities as waste.

At Kao Corporation, S.A.U we advance in the development of an increasingly circular production model. To achieve this, we apply improvements in processes that directly impact the reduction of waste and the consumption of raw materials.

Likewise, we are advancing in the design of more environmentally friendly products thanks to the consumption of less dangerous or recycled raw materials, the reuse of packaging and eco-design. Some new product developments are shown in the innovation chapter (2.4), among which it is worth highlighting the creative reuse of waste (upcycling), which provides better properties and/or additional advantages. In 2021, a team was created to implement life cycle analysis and calculate the carbon footprint of KCE products. In 2022, the carbon footprint of 25 products was calculated and in 2023, continuing with the progression, the methodology was improved according to the European standards most accepted by the chemical industry. External certification of the methodology was obtained, which guarantees its robustness based on current knowledge.

Responsible consumption and production of materials

There are various actions that have been applied in this area, such as the modification of processes to recover certain materials and reintroduce them to the production cycle, such as, for example, the recovery of Methanol in the aroma process, or the study of possible industrial applications for current residues, such as some aroma residues as fluidizing agents. The annual TCR program usually incorporates numerous projects to improve reaction performance, which

entails an automatic reduction of the material consumed. One of the most notable examples was the optimization of Mollet's aroma plants in 2022. On a smaller scale, it should be noted that in the kitchen-dining room service, the use of reusable glass bottles is consolidated as well as the segregation of organic, plastic and banal fractions. Finally, we must highlight the beginning of a new stage in the way packaging is managed in the company. The new legal requirements introduced by Royal Decree 1055/2022 constitute an opportunity to improve their eco-design, ensure that they are designed to be easily dismantled and recycled and, ultimately, to reduce environmental impacts at the end of their useful life. At Kao Corporation, S.A.U., a working group has been set up to implement the new legal requirements and is currently working on setting up a process, among other aspects.

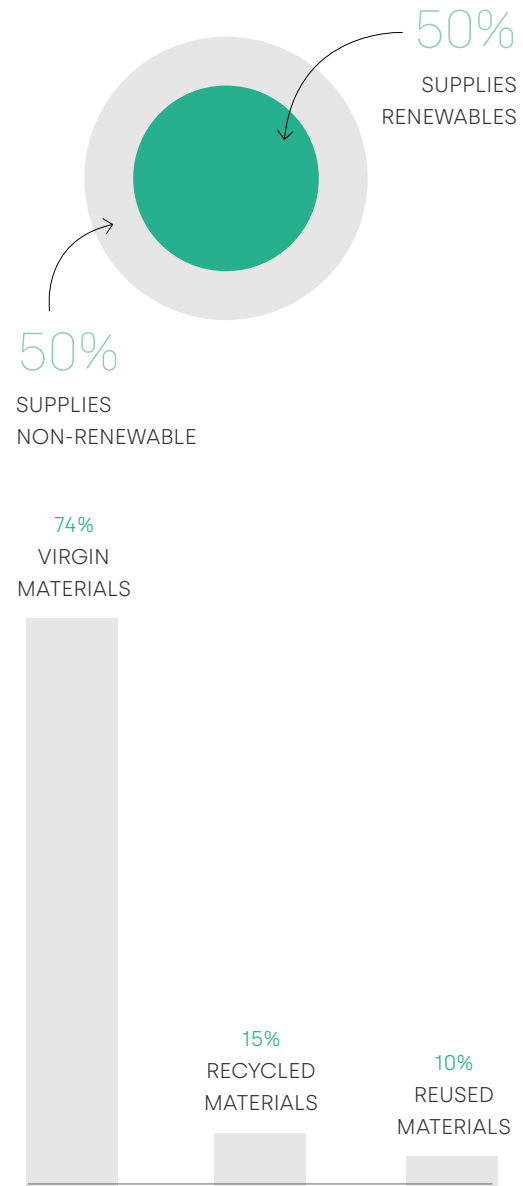
Transition to improve the use of resources and circular economy

The activity that Kao Corporation, S.A.U. develops involves a use of resources that, to a greater or lesser extent, impacts or may impact biodiversity and ecosystems, positively or negatively.

To reduce the environmental impact of our use of resources, Kao Corporation, S.A.U. aims to develop a transition plan to improve the use of resources and contribute to a circular economy. Thanks to this, we will be able to gradually minimize the extraction of non-renewable resources and further enhance the prevention of waste generation and the reduction of pollution.

In 2023, a process of identifying the inflows considered material and their classification began, to learn more about the dependencies of biodiversity and to be able to begin an analysis of risks and opportunities as the next step.

As a result, 80% of the inputs of Kao Corporation, S.A.U. have been classified. Of these, it has been found that 50% of them are renewable and 50% are non-renewable. It has also been confirmed that 74% of the materials used are virgin, 15% recycled and 10% reused. Packaging materials have not been considered in this analysis. The table at the end of the document details the reference data more precisely.



Energy

The chemical industry, especially the grassroots industry, is one of the largest consumers of energy.

Energy is one of the main resources of Kao Corporation, S.A.U., without which the development of the activity is impossible and which, for the moment, is highly related to GHG emissions. It is for this reason that the company has implemented an energy management system, certified in accordance with ISO 50001, which promotes the improvement of energy efficiency through technological or equipment updates.

For years, various actions have been carried out to be more efficient and be able to respond to the established objective. Other lines of action are the use of energies that generate a lower environmental impact and energy self-sufficiency.

Natural gas is the main energy resource used by Kao Corporation, S.A.U. It is a clean fuel that allows to efficiently generate electricity and produce steam. Until June 2023, when the cogeneration plant stops, electrical energy has been generated and feed this into the public power distribution grid.

The energy efficiency is also thanks to the use of high performance turbines, the optimisation of resources and the appropriate maintenance of the installations (recovery of condensates, improved thermal insulation, economizers, etc.).

As part of its commitment to the environment, and in line with the objectives of the Kirei Lifestyle Plan, the line of work at Kao Corporation, S.A.U. is emphasised, which is focused on improving energy efficiency.

The proposed actions for improvement are included in the Sustainability Plan of each centre.

Also in 2023, the MDJ-2 plant has been built in the centre of Olesa de Montserrat; in which energy efficiency criteria have been considered and applied from the design phase to its operation. It has also involved the installation of a recuperative thermal oxidizer that allows, on the one hand, to reduce VOC emissions and, on the other, the maximum recovery of the energy released in the oxidation, using this for the generation of steam.

Water

Each plant has a map with the different water uses, which in the coming years is intended to be improved by increasing the level of detail of the information contained therein, all based on the Best Available Techniques indicated in the WGC BREF. There are meters strategically installed to be able to track different consumption. These are monitored daily and reported at the daily production meeting. Improvements are applied, or are being studied, for each of the different water uses. Due to the drought situation in Catalonia, irrigation has been suppressed in all centres. For example, the actions to reduce consumption carried out in production areas stand out, in which washing procedures are optimized, condensate water is recovered and cooling systems with reduced water consumption are adopted, among others. other actions such as the installation of osmosis plants to treat the reject water from other units and thus reduce the volume discharged. On behalf of the KJ parent company, a study is being carried out to identify the exposure of each centre to water-related risks (drought, floods, etc.).

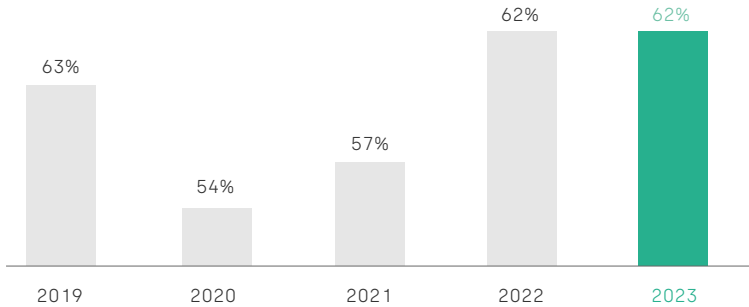
Waste

One of the company's permanent targets focuses on the continuous improvement of its waste management, not only from the point of view of preventing its generation or its proper treatment, but also by researching new forms of management. To do this, the company is finishing configuring maps of each process with the identification of the different waste flows generated, and the destination of each of them. The progressive development of minimisation plans is one of the most important challenges (see "circular economy" section) with regards to both environmental and economic impacts. New strategies, such as the reduction of sludge treatment and the reuse of waters, will significantly minimise the volume of waste generated. The internal use of waste with high calorific value as an alternative to conventional fuels has also been studied, and a request for a change has been submitted to practice such management at the Olesa de Montserrat centre. However, the company modified the project to use a product instead of the waste initially proposed, but finally presented a dissent regarding the use of alternative fuels to facilitate obtaining the resolution of the related substantial change pending the government's position in relation to with the plan to close and dismantle incinerators in Catalonia that defines the second additional provision of Law 2/2021.

Waste recovery

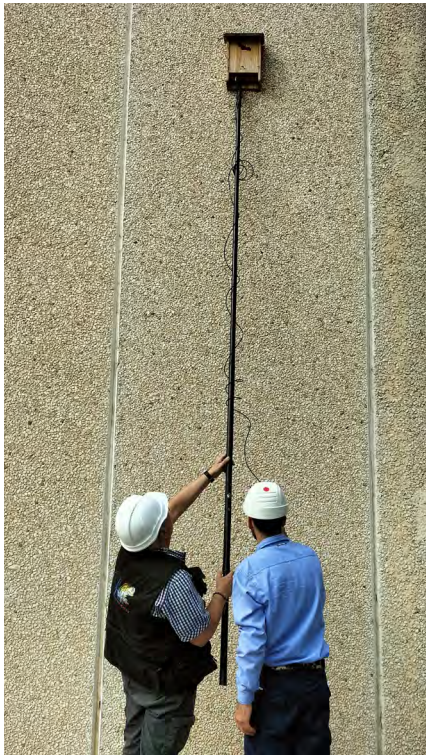
The effort made by Kao Corporation, S.A.U. to search for other companies that can use our waste as raw materials or energy in their processes, i.e. to obtain value from a waste product, is evident in the increased percentage of recovered waste, exceeding 50% since 2005, except for 2009. Part of the fluctuations in the amounts of recovered waste is due to treatment capacity of managers that offer this management route.

ILLUSTRATION 13.
Evolution of the waste recovery percentage



BIODIVERSITY

Greater knowledge, awareness and sensitivity regarding environmental aspects involves expanding the scope of the environmental actions that are taken, including conservation and the promotion of biodiversity. In this regard, the Kao Group has developed a methodology based on standard of use of the earth developed by JBIB²⁸ to understand the situation of biodiversity and evaluate the progress of conservation at each facility in the world. In this way, in 2017 the group provided all the subsidiaries with a form for evaluating progress on the conservation of biodiversity. In 2018, an inventory of both animal and plant species was done at each facility, informative material was prepared, and the form was completed so that it could serve as the starting point for being able to assess advances in this area. To improve this area, Kao Corporation, S.A.U., drew up and published its first biodiversity policy, published in May 2019, which entailed the definition of short, medium and long-term objectives. The Safety Day held in each centre serves to publicize and promote these objectives so that they can be achieved. In 2023, trees have been planted in the garden areas of Barberà del Vallès, jasmines have been planted in the centre of Mollet del Vallès, and aromatic plants and shrubs have been planted in the centre of Olesa de Montserrat. The nest boxes of the



²⁸ JBIB (Japan Business Initiative for Biodiversity) is an organization of numerous businesses from various types of industries, which are committed to the conservation of biodiversity. Kao has participated in JBIB since its founding in 2008.



three centres and the Barberà del Vallès insect hotel have been monitored.
To expand our knowledge in this matter, each year "the species of the year" is selected. In 2023, the Cortaderia was maintained, developing more informative material to publicize this invasive species so close to us, while actions have been taken to eradicate its presence in the centres.

OTHERS

KAIZEN

The Kaizen philosophy is fully aligned with the Kirei Lifestyle Plan. This term is of Japanese origin and means "change for the better" or "improvement", however, it is commonly translated as "continuous improvement". It is a quality management method that is highly known around the industrial world that develops culture and enables all workers to participate and which intention is for the company and their employees to always seek to achieve better results by optimising the processes and identifying activities that can be carried out more efficiently; its focus is on eliminating waste and misuse in production systems.

The phrase: *short steps to travel a long distance*, sums up the meaning of Kaizen.

All we must do is go to the work locations (genba), observe what is happening there, recognise and take the necessary actions. Time can also be managed to ensure it is optimised just like any of the organisation's tangible assets. With all of the above, the company's effort to continually improve the adequacy and effectiveness of the SGPR to improve safety and environmental performance is evident.

9. REFERENCES

- EC Regulation 1221/2009 of the European Parliament and of the Council of 25 November 2009, whereby organisations are allowed to participate on a voluntary basis in a Community Environmental Management and Audit System (EMAS).
- Responsible Care®.
- ISO 14031 (2013). Environmental management: Environmental performance assessment. General guidelines.
- ISO 14001 (2015). Environmental management systems. Requirements with guidance for use.
- Directives on the Environmental Declarations of the EMAS. Ministry of the Environment. Official Publications Office of the European Communities (ISBN 92-894-1603).
- National Institute of Statistics (INE): Population census.
- Department of the Environment of Generalitat de Catalunya: Distances to aquifers and PEIN areas (remote cartography).

GLOSSARY

ACA: Agència Catalana de l'Aigua
ACR: Quantitative Risk Analysis
BPM: Business Process Management
CAPCA: Catalogue of Potentially Contaminating Activities of the Atmosphere
CEO: Chief Executive Officer
CO: Carbon monoxide
CO ₂ : Carbon dioxide
TOC: Total Organic Carbon
EE: Electrical Energy
ESG: Environmental, Social and Governance
FEIQUE: Federation of the Spanish Chemical Industry
GHG: Greenhouse gases
GIL: Generic Intervention Level
GNRL: Generic No-Risk Level
HSE Dept.: Health, Safety & Environment department
BSR: Basic Soil report
SR: Safety Report (Serious Accidents)
SM: Suspended Matter
IM: Inhibitor Matter
mi: Magnitude of the impact
NOx: Nitrogen oxide
PLASEQCAT: Pla d'Emergència Exterior del Sector Químic de Catalunya
PM10: Particulates up to the size of 10 µ
PRTR: Pollutant Release and Transfer Register
RC: Responsible Care
RCMS: Responsible Care Management System
RTO: Regenerative Thermal Oxidizer
SGPR: Risk Prevention Management System
TSS: Total Solid Suspended

10. PUBLICATION OF THE DECLARATION

This Environmental Declaration has been prepared by the HSE Dept. of Kao Corporation, S.A.U., to publish the environmental management results for 2023 and monitor the favourable evolution of the historically obtained figures, indicators and improvements. It also provides clear and concise information that is useful for the external audit and verification of the environmental management carried out by the Organisation in accordance with EC Regulation 1221/2009 (EMAS). The information given in this Declaration is extracted from other official documents, developed broadly and specifically for each area of action:

Annual waste declarations submitted to:
— Agència de Residus de Catalunya.
Departament de Territori i Sostenibilitat. Generalitat de Catalunya.

Declaracions de l'ús i la contaminació de l'aigua (water use and pollution declarations), presented to:
— Agència Catalana de l'Aigua (daily analysis data for factories and external laboratories approved by the ACA). Departament de Territori i Sostenibilitat. Generalitat de Catalunya.

Official pollutant emission controls submitted to:
— Direcció General de Qualitat Ambiental i Canvi Climàtic.
Departament de Territori i Sostenibilitat. Generalitat de Catalunya.

Kao Corporation S.A.U. has been making this Environmental Declaration since 2003 as an essential part of its internal and external communication with stakeholders and other interested parties, seeking ongoing improvements based on the indicators and targets provided herein.

This Environmental Declaration can be consulted at:
http://mediambient.gencat.cat/ca/05_ambits_dactuacio/empresa_i_produccio_sostenible/sistemes_de_gestio/sistemes_de_gestio_ambiental_iso_14001_i_emas/emas/Organitzacions-registrades-i-declaracions-ambientals/index.html

<https://www.kaochemicals-eu.com/publications>

11. SEAL OF APPROVAL FROM THE VERIFICATION AGENCY

This document has been drawn up and approved by:

Mª José Bermejo
KCSA President

The system has been verified and this Environmental Statement hasbeen validated by AENOR.



Generalitat de Catalunya
Departament de Territori
i Sostenibilitat



Declaració del verificador ambiental sobre les activitats de verificació i validació

Annex VII del Reglament 1221/2009, de 25 de novembre, del Parlament europeu i del Consell, relatiu a la participació voluntària d'organitzacions en un sistema comunitari de gestió i auditoria ambiental (EMAS)

L'entitat de verificació **AENOR INTERNACIONAL, S.A.U.**, amb el número d'acreditació **ES-V-0001** i el número d'habilitació de la Direcció General de Qualitat Ambiental **014-V-EMAS-R** acreditat per a l'àmbit 20.11, 20.12, 20.13, 20.14, 20.15, 20.16 y 20.17 (Grup NACE), declara haver verificat que l'organització (*), segons indica la declaració ambiental de l'organització **KAO CORPORATION, S.A.**, en possessió del número de registre ES-CAT-000177,, compleix tots els requisits del Reglament (CE) 1221/2009, relatiu a la participació voluntària d'organitzacions en un sistema comunitari de gestió i auditoria ambiental EMAS, modificat d'acord amb el Reglament (UE) 2017/1505 i Reglament (UE) 2018/2026.

Amb la signatura d'aquesta declaració, declaro que:

- La verificació i validació s'han dut a terme respectant escrupolosament els requisits del Reglament (CE) 1221/2009, modificat d'acord amb el Reglament (UE) 2017/1505 i Reglament (UE) 2018/2026;
- El resultat de la verificació i validació confirma que no hi ha indicis d'incompliment dels requisits legals aplicables en matèria de medi ambient;
- Les dades i la informació de la declaració ambiental/la declaració ambiental actualitzada (*) de l'organització/el centre (*) reflecteix una imatge fiable, convincent i correcta sobre totes les activitats de l'organització/el centre (*), en l'àmbit esmentat a la declaració ambiental.

Aquest document no equival al registre EMAS. El registre en EMAS només pot ser atorgat per un organisme competent en virtut del Reglament (CE) 1221/2009. Aquest document no servirà per si mateix per a la comunicació pública independent.

Fet a .Madrid, 26 juliol de 2024

Signatura i segell de l'entitat de verificació
(*) Guixeu el que no escau

Direcció General
de Qualitat Ambiental
Av. Diagonal, 523-525
08029 Barcelona
Tel. 93 444 50 00
Fax 93 419 76 30

Kao





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L'entitat de verificació **AENOR CONFÍA, S.A.U.**, amb el número d'acreditació **ES-V-0001** i el número d'habilitació de la Direcció General de Qualitat Ambiental **014-V-EMAS-R** acreditat per a l'àmbit 20.11, 20.12, 20.13, 20.14, 20.15, 20.16 y 20.17 (Grup NACE), declara haver verificat que l'organització (*), segons indica la declaració ambiental de l'organització **KAO CORPORATION, S.A.U.** en possessió del número de registre ES-CAT-000187 (pendent d'assignació per l'Organisme Competent), compleix tots els requisits del Reglament (CE) 1221/2009, relatiu a la participació voluntària d'organitzacions en un sistema comunitari de gestió i auditoria ambiental EMAS, modificat d'acord amb el Reglament (UE) 2017/1505 i Reglament (UE) 2018/2026.

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Fet a Madrid, 26 de juliol de 2024

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(*) Guixeu el que no escau