Environmental Statement

Escombreras Combined Cycle Plant 2021

/March 2022

IBERDROLA

Environmental Statement

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Iberdrola’s contribution to the Sustainable Development Goals (SDGs)

As a result of the ongoing dialogue with its Stakeholders and aware of the undeniable economic, social and environmental repercussion of all its activities, **IBERDROLA** has a sustainable development strategy aligned with the group's implementation of a project to create sustainable value, taking its Purpose and Values, and respect for Human Rights as primary references. It therefore promotes initiatives that contribute to bringing about a fairer, more equitable and healthier society, and achieving the SDGs in particular, especially those related to affordable and clean energy (SDG 7) and fighting climate change (SDG 13), through specific lines of work focused on universal access (SDG 7.1), increasing the share of renewable energy (SDG 7.2) and developing means of improving energy efficiency (SDG 7.3). It does this by promoting innovation (SDG 9), developing education (SDG 4), protecting biodiversity (SDG 15), gender equality (SDG 5) in particular, and reducing inequalities (SDG 10) in general, mainly by protecting disadvantaged groups.

IBERDROLA defends the role of the SDGs and the 2030 Agenda as a global social contract, because to meet global challenges like climate change and pandemics, global agreements and solutions are needed.

Chronologically, **IBERDROLA** has linked its business and sustainability strategy to the Sustainable Development Goals (SDG) since they were defined in 2015. In 2018, it approved a reform to its corporate governance system with the main purpose of formalising Iberdrola group's commitment to the SDGs, highlighting the group's contribution to achieving them with the social dividend generated by its business activity.

The SDGs therefore inspire or are included as a fundamental element in the following areas:

- Corporate By-laws.
- Purpose and values of Iberdrola group and Code of ethics.
- Environmental Policies.
- Social commitment policies.
- Policies and regulations related to Corporate Governance.

It is important to note that the company's commitment to contributing toward the SDGs is overseen by governing bodies. Thus, the Sustainable Development Committee of the Board of Directors has powers which include "Monitoring the group's contribution to achieving the SDGs".

On the other hand, given the transversal nature of the SDGs within the group, IBERDROLA has a global SDG Advisory Committee, which is a multidisciplinary team that meets every three or four months to review the actions being taken by Iberdrola and to analyse their alignment with the SDGs, in addition to proposing and promoting new challenges and actions that can help achieve the targets set.

IBERDROLA focuses its efforts on the SDGs where its contribution is most relevant: on the supply of affordable and non-polluting energy (goal 7) and on climate action (goal 13).

Goal 7: Affordable and clean energy

Ensure access to affordable, reliable, sustainable and modern energy for all

- Target: Reach 16,000,000 beneficiaries in 2030. There were more than 9.6 million at the end of 2021.
- World leader in renewables: There was more than 38,000 MW of installed renewable capacity at the end of 2021.

Goal 13: Climate action

Take urgent action to combat climate change and its impacts

- **IBERDROLA** has set itself the following environmental objectives:
  - Be carbon-neutral before 2050 and reduce emission intensity to 50 gCO2/kWh worldwide in 2030 (scope 1).
  - Reduce greenhouse gas (GHG) emissions of absolute scope 1, 2 and 3, approved by the Science Based Target initiative.

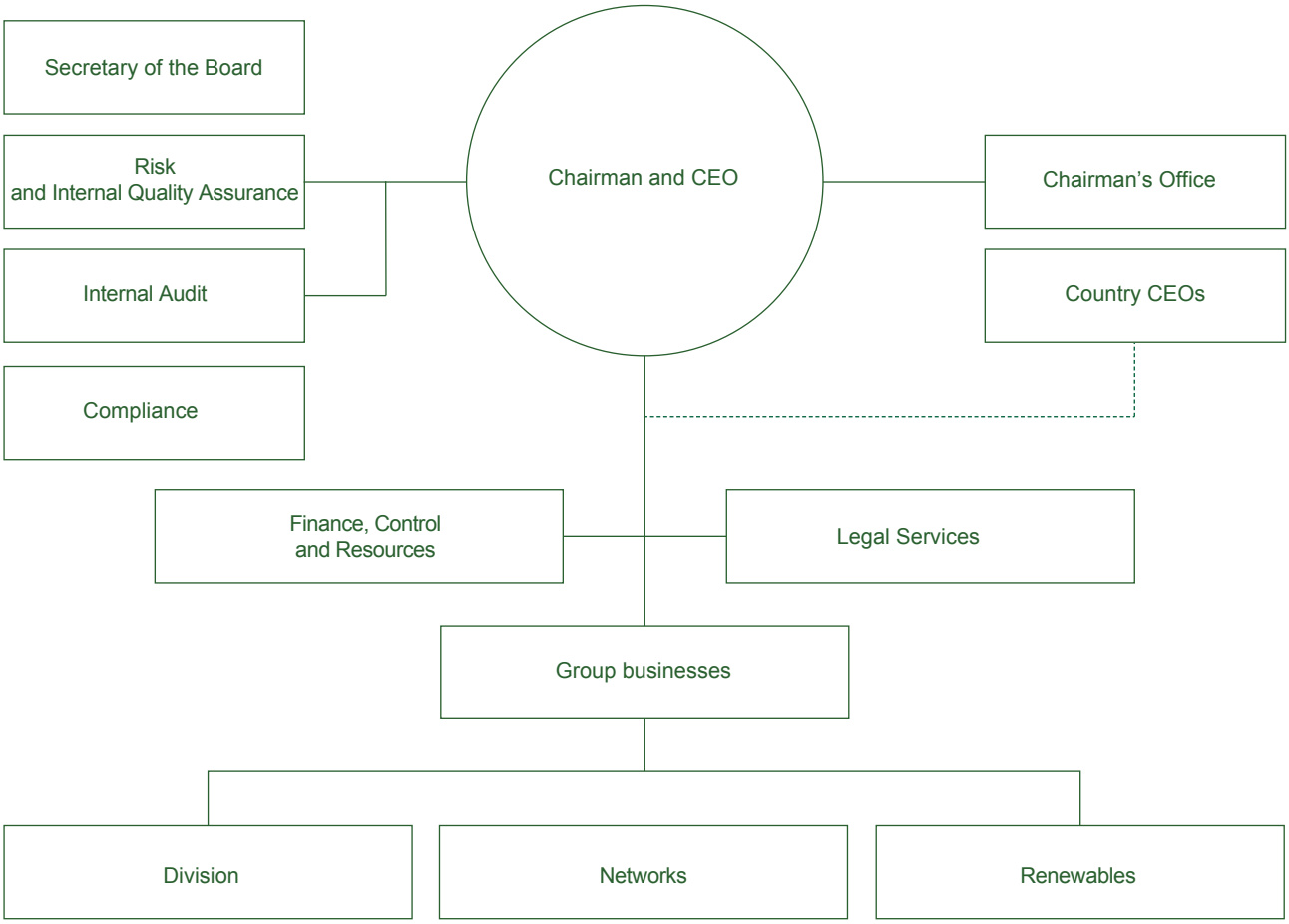
2

Iberdrola Generación Térmica, S.L.U.

IBERDROLA GENERACIÓN TÉRMICA S.L.U. is a company that is 100% owned by **IBERDROLA S.A.** and dedicated to generating electricity.
IBERDROLA S.A, its subsidiaries and affiliates do business in almost thirty countries.
The main product Iberdrola offers its customers is electricity, through a wide range of products, services and solutions in the fields of:

- Renewables, wind (terrestrial and marine), hydroelectric, photovoltaic, etc.
- Transport and distribution of electricity and gas.
- Storage, both grid-scale through reversible hydroelectric on mains and generation assets and for end users.
- New technologies, like Hydrogen from clean energy sources.
- Sale of electricity and gas.
- Energy services for our customers: with smart, innovative solutions in the following areas:
  - residential, with services such as energy storage, heat pumps, self-consumption, electric mobility, solar power, etc.
  - the industrial sector: offering integrated facility management and energy supply, such as Green H2, Industrial Heat, etc.
- Purchase and sale of electricity and gas on wholesale markets.
- Digitalisation: implementing this in its assets to improve the quality, efficiency and safety of the electricity supply.

The organisational structure of **IBERDROLA, S.A.** is as follows:



IBERDROLA S.A.'s installed capacity (in MW) in Spain is as follows:

Iberdrola, S.A.'s installed capacity in Spain

MW

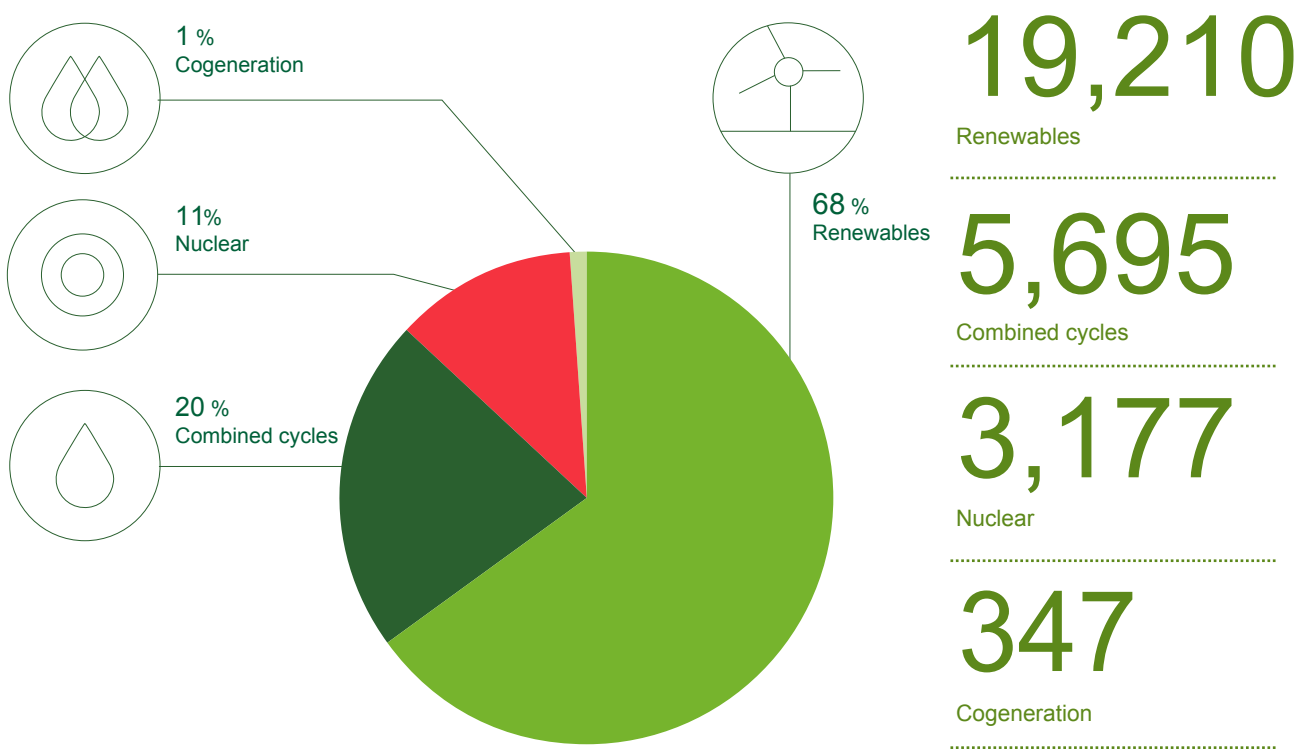


Figure 1: **IBERDROLA, S.A.** installed capacity.

IBERDROLA GENERACIÓN TÉRMICA S.L.U. has decided to register its **ESCOMBRERAS COMBINED CYCLE PLANT** (hereinafter,**ESCOMBRERAS CCP**) with the Eco-Management and Audit Scheme (EMAS) approved by Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation of organisations in a Community eco-management and audit scheme (EMAS), amended by Commission Regulation (EU) 2017/1505 of 28 August 2017 and Commission Regulation (EU) 2018/2026 of 19 December 2018.

In 2021, **IBERDROLA GENERACIÓN TÉRMICA S.L.U.** reiterated its commitment to the environment by keeping six Thermal Generation facilities registered with the EC Eco-Management and Audit Schemes (EMAS). The corresponding updates to the Environmental Statements for the Combined Cycle Power Plants of Castejón, Aceca, Arcos, Escombreras, Santurce and Castellón are available to the public on the website: www.iberdrola.com.

This statement is intended to serve as an instrument of communication, providing information about the Company to any client, entity or party interested in its services. Information is provided on all environmental parameters, as well as the company's situation with regard to current legislation. Suggestions and comments can also be emailed to medioambiente@iberdrola.es, or sent by post to: Dirección de Innovación, Sostenibilidad y Calidad de Iberdrola. Calle Tomás Redondo, 1. 28033, Madrid.

3

Escombreras Combined Cycle Plant

The **ESCOMBRERAS CCP**, owned by **IBERDROLA GENERACIÓN TERMICA, S.L.U.** is an electricity-generation plant located in the Escombreras Valley in the municipal district of Cartagena, Murcia. The **ESCOMBRERAS CCP** carries out the activity covered by NACE code 35.11 – "Electrical Energy Production."
This facility is operated and maintained by personnel of **IBERDROLA OPERACIÓN Y MANTENIMIENTO, S.A.U.** (hereinafter, **IOMSA**), a wholly-owned subsidiary of **IBERDROLA GENERACIÓN TÉRMICA S.L.U.**

Figure 2: **ESCOMBRERAS CCP** site.

To achieve this, staffing is organized through the following block structure:

- Operation: it is in charge for operating the production installations and controlling the production process.
- Maintenance: it is responsible for keeping the installations in good working order and resolving any anomalies that may arise.
- Plant Engineering: it is in charge of supporting the facility's maintenance planning and management processes.
- Chemicals and environment: responsible for ensuring legal compliance and minimized environmental impact, as well as ensuring that chemical parameters are maintained within the design levels.
- Safety, quality and training: responsible for coordinating workplace hazard prevention in the facilities, as well as assuring and maintaining quality systems (ISO 9001, ISO 14001, OSHAS 18001, EMAS, monitoring current legislation), and programming continual personnel training.

The **ESCOMBRERAS CCP** is configured in accordance with the so-called 2x1 model, which comprises two gas turbines and one steam turbine.

Unit 6, with a gross capacity of 830.89 MW, has been in commercial operation since November 2006. This unit uses natural gas combustion, with the possibility of using diesel oil as an alternative fuel if needed; to this end, there is a storage tank with a capacity of 4,500m^3, which is currently empty but is available for use if needed. This multi-shaft unit consists of two gas turbines (TG1 and TG2) with their respective heat recovery steam generators, connected to one common steam turbine.

The main components of each of the units of the combined cycle plant are listed below:

- Gas turbine (T.G.), which operates by the combustion of natural gas or diesel oil.
- Heat recovery steam generator (C.R.), which produces steam from the heat of the gas turbine exhaust gases.
- Steam turbine (T.V.), operated by the steam generated in the heat recovery generator.
- Alternator (A), where the energy generated in the turbines is turned into electricity.
- Condenser, where an exchange of heat takes place between the steam coming out of the turbine and the cooling water. Once the steam has condensed, it returns to the circuit via the condensate pumps.

The generation unit is part of a group that also includes the following processes:

- Fuels: receiving, regulation and measurement (ERM) and storage.

- Water/steam cycle.
- Demineralised water treatment system for supplying the water/steam cycle.
- Auxiliary steam generators.
- Condenser cooling system.
- Effluent treatment plant.
- Transformers for the electricity generated and connection to the electricity grid.

The electricity-generation process for the **ESCOMBRERAS CCP** is described in the process diagram below:

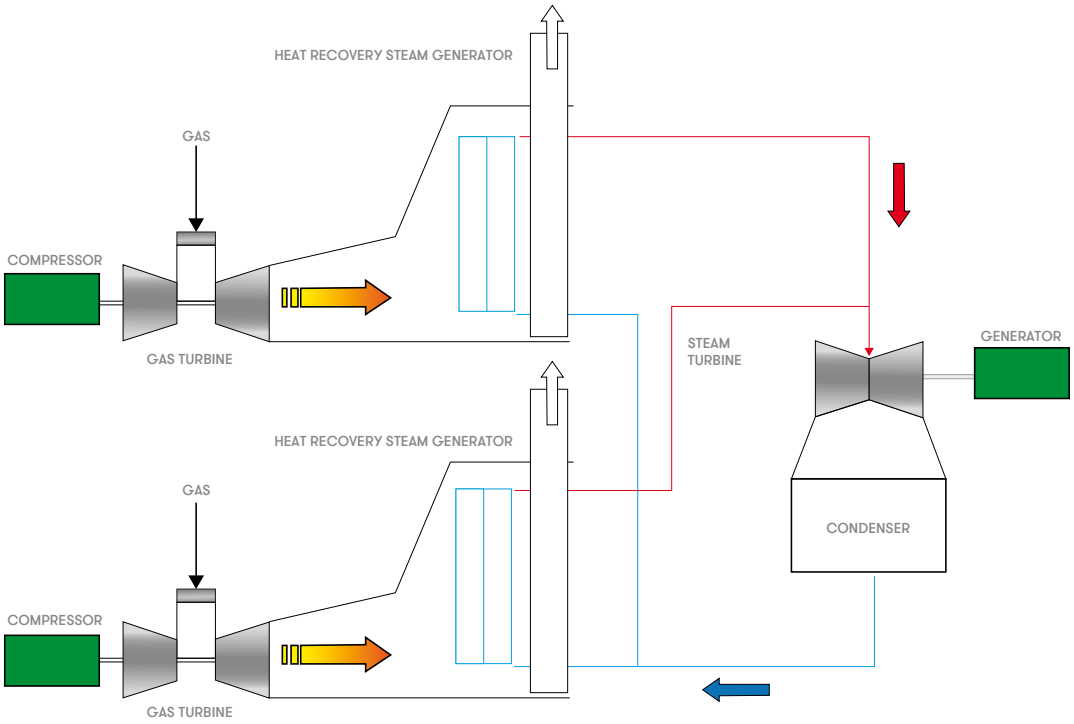


Figure 3: Electricity production process at the **ESCOMBRERAS CCP**.

The operation of the combined cycle plant unit 6 is based on the integration of two types of circuits at different temperatures: an open air-gas circuit and a closed water-steam circuit, for the generation of electric power by turning the thermo-dynamic energy of the fluids into mechanical energy (in the turbines), which is then transformed into electricity.

The generator has two gas turbines powered by the combustion of the fuel (mainly natural gas, but diesel oil in case of emergency). The expansion of the combustion gases operates the electricity generators coupled to each gas turbine.

In a second stage, steam is produced in the heat recovery steam generators from the residual heat from the gas-turbine exhaust gases, before it is sent into the atmosphere through the stacks. The steam is routed to the steam turbine, where the energy of the steam is converted into mechanical energy. Subsequently, the alternators convert the turbine rotation into electric power, which is converted into 400 kV in the transformers and sent to the electrical grid.

The steam from the last stage of the turbine condenses in the condenser and the water is re-circulated to the heat recovery steam generators, where the cycle begins again.

The cooling process takes place in an open circuit through the collection of water from the Mediterranean Sea (cooling by the transfer of the steam heat to the set of pipes located inside the condenser, through which the seawater flows).

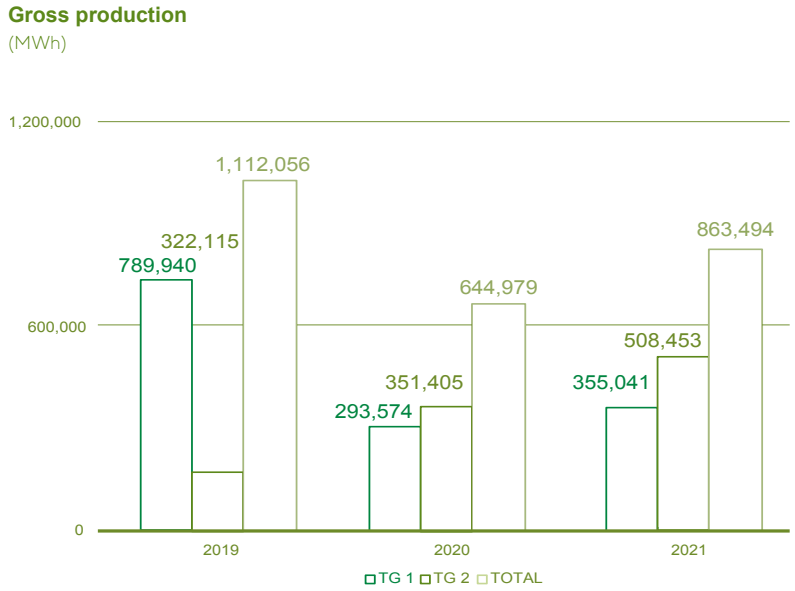
The following auxiliary facilities are also worth pointing out:

- Connection to the drinking water mains supply (Canales del Taibilla).
- Fire-fighting water supply installations.
- Workshops and warehouses.

The gas used is supplied to the plant by ENAGAS at a maximum pressure of 72 bar and a minimum pressure of 40 bar, at a maximum temperature of 40°C and a minimum temperature of 10°C. These specifications are adapted at the Regulation and Measurement Station, which has a capacity for 170,000 Nm^3/h, where the mains pressure is reduced to 36 bar.

Like any other industrial activity, the consequences of electricity generation have a potentially adverse impact on the environment. The **ESCOMBRERAS CCP** controls that impact and works towards minimising it by adopting both preventive and corrective measures and by optimising the production systems.

The electricity production figures for the gas turbines, each including the proportion that corresponds to the steam turbine production, as well as the total production of the **ESCOMBRERAS CCP** in MWh for the period 2019 to 2021, are given below:



Graph 1: Change in gross annual electricity production. 2019-2021.

During 2021, the gross output of **C.C. ESCOMBRERAS** has increased compared to the previous year, while still falling short of 2019 values. During this period, plant operation is characterized by a large number of short term start-ups, however, functional tests are still carried out during those long periods when the plant is stopped to guarantee that the critical systems are in good condition, avoiding plant unavailability in case of an untimely start-up.

4

Environmental Management System

IBERDROLA GENERACIÓN TERMICA S.L.U. holds the UNE EN ISO 14001 in all combined cycles. These certifications are periodically reviewed, by means of internal and external audits, to ensure continuous improvements in environmental management.

The **ESCOMBRERAS CCP** has an Integrated Quality, Environmental and Occupational Health and Safety Management System (SIGEC), which has been certified by various certification agencies.

In April 2009, it obtained environmental certification compliant with the ISO 14001:2004 standard (GA-2009/0193 Certificate), awarded by the Spanish Standardisation and Certification Association (AENOR). In 2018, the SIGEC was adapted to the ISO 14001:2015 standard. The certification under this standard was renewed on 30/09/19 and is valid for 3 years.

Since 26 April 2012, **ESCOMBRERAS CCP** has been entered in the registry of centres adhered to the Eco-Management and Audit Scheme (EMAS), with registration number ES-MU-000027.

The planning and operation of the Environmental Management System (SIGEC) of the **ESCOMBRERAS CCP** focuses mainly on the following points:

- **Identification and assessment of the environmental aspects** arising as a result of energy production. **Every significant environmental aspect has an associated operational control procedure** known to all company personnel and to everyone working on behalf of or for the company.
- **Identification of and response to emergency situations** through the establishment of an “Emergency Plan” and “Emergency Environmental Instructions (IMAE).”
- **Identification and evaluation of compliance with environmental legislation** applicable to combined cycle plants.
- **Identification of training needs** and completion of the actions required to satisfy them, in order to promote greater environmental awareness among personnel.
- **Establishment of environmental objectives and goals**, approving an Environmental Management Programme which defines deadlines, resources and people responsible for achieving them.
- **Establishment of a procedure for communication** across all levels and positions in the organisation, and with all external stakeholders.
- **Establishment of an internal audit programme** to verify that the SIGEC is kept up-to-date, is effective and complies with the regulations in place.

4.1 Employee involvement

In 2021, **IBERDROLA GENERACIÓN TÉRMICA S.L.U.**, at its **ESCOMBRERAS CCP**, has continued to encourage employee involvement at all levels through activities aimed at setting and achieving goals and targets, holding a “best idea” competition as a way of proposing improvements to prevent pollution, drafting review reports by the environmental management system division, holding Local Quality Committee (COCAL) meetings (attended by the heads of the different departments in the plant’s organisational structure, representing all employees), and providing environmental management training and employee information sessions.

5

Environmental Policy

IBERDROLA has established an Environmental Policy as the basis for its Environmental Management System. Management ensures that all of the members of the company understand and implement this policy, which is available to all interested parties at www.iberdrola.com. The version that was valid for the greater part of 2021 – in force from 19 April 2021 – is reproduced below.

Environmental Policy

19 April 2021

The Board of Directors of IBERDROLA, S.A. (the "**Company**") has the power to design, assess and continuously revise the Governance and Sustainability System, and specifically to approve and update the corporate policies, which contain the guidelines governing the conduct of the Company and of the companies belonging to the group of which the Company is the controlling entity, within the meaning established by law (the "**Group**").

In the exercise of these responsibilities, and aware that leadership in the development of sustainable energy and respect for the environment are the pillars of the Group's energy production model and some of the cornerstones of the *Purpose and Values of the Iberdrola group*, the Board of Directors hereby approves this *Environmental Policy* (the "***Policy***").

1. Purpose

The *Policy* is intended to establish a framework of reference for integrating the protection of nature and the environment within the Group's strategy, as well as its investments and operations, and define the principles of conduct for environmental management and the management of natural capital.

The Company considers respect for the environment to be one of the central elements of the concept of sustainability, and particularly one of the three pillars for reaching a sustainable energy model, together with competitiveness and the safety of supply. The Group is therefore committed to continue taking a leading position in the development of a sustainable energy model, based on the use of renewable energy sources and smart grids, electrification, efficiency, reduction in emissions and digital transformation, where respect for and the protection of the environment is integrated into all of its activities and processes. The Group is also committed to compliance with environmental regulations and international best practices in this area.

Through a business model and supported by a practice favouring transparent information and ongoing dialogue, the Group responds to the expectations of its Stakeholders with respect to the preservation of the environment, ever more stringent regulatory requirements, and constant scrutiny of management by analysts, assessors and various agents of society in general

The Group's commitment to leadership in the development of sustainable energy is aligned with the achievement of Sustainable Development Goals (SDGs) six, seven, twelve, thirteen, fourteen, fifteen and seventeen approved by the United Nations.

2. Scope of Application

This *Policy* applies to all companies of the Group, as well as to all investees not belonging to the Group over which the Company has effective control, within the limits established by law.

Without prejudice to the provisions of the preceding paragraph, listed country subholding companies and their subsidiaries, based on their own special framework of strengthened autonomy, may establish an equivalent policy, which must be in accord with the principles set forth in this *Policy* and in the other environmental, social and corporate governance and regulatory compliance policies of the Governance and Sustainability System.

At those companies in which the Company has an interest and to which this Policy does not apply, the Company will promote, through its representatives on the boards of directors of such companies, the alignment of their own policies with those of the Company.

This *Policy* shall also apply, to the extent relevant, to the joint ventures, temporary joint ventures (*uniones temporales de empresas*) and other equivalent associations, if the Company assumes the management thereof.

3. Main Principles of Conduct

To implement its commitment to the environment and boost environmental sustainability, the Group articulates the following main principles of conduct that apply to all of its activities and businesses and that shall be integrated within the internal decision-making processes:

a. develop a sustainable model that is respectful of nature, biodiversity and historical and artistic heritage;

b. comply with legal provisions and conform to applicable environmental standards.

c. apply the principle of mitigation hierarchy (avoid, minimise, restore and compensate as a last resort) in all activities;

d. promote innovation through research and support for the development of new technologies and best environmental practices;

e. use natural capital sustainably. In particular:

- to make rational and sustainable use of water, managing the risks relating to water scarcity and ensuring that water used is returned to the environment in the desired condition;
- improve the circularity of its business activities and those of its suppliers, through the sustainable use of natural resources, the implementation of life cycle analysis, the eco-design of its infrastructures, the application of the waste hierarchy, as well as the optimisation of waste management and the use of recycled materials; and
- integrate the protection and promotion of biodiversity into the Group's strategy and develop a business model that is sustainable and positive with nature;

f. conserve, protect and promote the development and growth of natural heritage;

g. implement Environmental Management Systems that apply precautionary and continuous improvement principles and place the environment at the centre of decision-making through:

- assessing the environmental risks of its activities, facilities, products and services on a regular basis, improving and updating the mechanisms designed to prevent, mitigate or eradicate them;
- ongoing identification, assessment and mitigation of the environmental impacts of the Group's activities, facilities, products and services;
- management of risks and impacts by establishing objectives, programmes and plans that promote the continuous improvement of the Group's environmental processes and practices, and establishment of monitoring, control and audit mechanisms; and
- environmental training of the Group's professionals;

h. reduce environmental impact and improve the Group's environmental performance from a life-cycle perspective;

i. encourage the engagement of the Stakeholders in Iberdrola's business enterprise pursuant to the provisions of the *Stakeholder Engagement Policy*, which contemplates, among other things, the strong involvement of the Group's companies in the communities in which they operate and the creation of shared sustainable value for all of them;

j. raise awareness, train and involve the Group's professionals, subcontractors, suppliers and other Stakeholders in the commitments and principles of this *Policy*; and

k. report transparently on environmental results and activities.

4. Priority Lines of Action

In order to achieve its commitment to nature and the environment and to promote environmental sustainability and respect for nature, the Group is working on three priority lines of action, in which the main principles of conduct set out in the preceding section shall be applied:

a. climate action;

b. protection of biodiversity; and

c. circular economy.

* * *

This *Policy* was initially approved by the Board of Directors on 18 December 2007 and was last amended on 19 April 2021.

Figure 4: Iberdrola environmental policy, valid since 19 April 2021.

6

Environmental Aspects

6.1 Identification of environmental aspects

The **ESCOMBRERAS CCP** has a related series of **environmental aspects**, defined as those elements of its activities, products or services that may affect the environment. The **environmental impacts** include any change to the environment – whether damaging or beneficial – caused totally or partially by the activities carried out at the **ESCOMBRERAS CCP. Significant aspects** are considered to be those that have or could have a **notable impact** on the environment.

The **ESCOMBRERAS CCP** has identified a series of **direct environmental impacts**, namely those that have a direct influence on management, under normal operating conditions and in emergency situations. On the other hand, **Indirect environmental aspects** are considered to be those aspects over which a reasonable degree of influence can be exercised but whose management cannot be completely controlled.

At the **ESCOMBRERAS CCP**, environmental aspects are identified and reviewed whenever any of the following circumstances arise:

- Introduction of new legal or regulatory requirements.
- Design changes or new operational methods.
- Implementation, modification, or shutdown of any activity, project or process.
- Change in the nature of raw materials.
- Occurrence of an environmental event or incident.

Similarly, environmental aspects are reviewed annually even if none of the preceding circumstances occur. The management review provides a record of the aspects that have been reassessed.

6.2 Evaluation of environmental aspects

The annual review of all environmental aspects will be carried out in 2022, based on the results obtained in 2021, by applying procedure 2000-CC1-PG-017 “Environmental Aspects” of the Thermal Generation SIGEC.

For each of the situations identified in the previous paragraph, different assessment methodologies have been established, **with a hierarchical system defined for classifying environmental aspects as significant or not significant**. Some of the objectives of the Environmental Management Programme are established according to this hierarchical classification.

6.2.1 Evaluation of environmental aspects under normal and emergency conditions

VALUE	10	5	2
CRITERIA HARMFULNESS	Air emissions of SO_2, NOx, particles, CO, heavy metals, VOCs, dioxins and furans, HCl and HF.	CO_2 air emissions.	Diffuse emissions from landfill.
	Fugitive emissions due to fire/ explosion.	-	-
	Discharges of processing water and water from hydrocarbon separators.	Discharges of closed-cycle cooling water, sanitary water and landfill leachates.	Open-cycle cooling discharges and coal storage yard runoff.
	The discharge of contaminants due to fire/explosion or from loading/unloading, transfer and storage.	Fire extinction water	-
	Hazardous waste	Non-hazardous waste	Domestic waste
	-	Waste generated due to fire/ explosion	-
	Consumption of fuel/materials and chemical products	Electricity consumption	Water consumption
	Chemical products consumption.	-	Water consumption
	-	Night-time noise emission	Daytime noise emission
	-	-	Noise emission due to fire/explosion
	Discharges of contaminants into groundwater	Land occupancy	-
	The discharge of contaminants due to fire or explosion, or from loading/unloading, transfer and storage.	-	-

VALUE	30	20	10	N/A (0)
CRITERIA QUANTITY	≥ 90% of the maximum amount	≥ 75% and <90% of the maximum amount	<75% of the maximum amount	No limits have been established for this aspect
	One or more incidents	-	No incidents	-

VALUE	10	6	4	2
CRITERIA DURATION	Daily or continuous	Monthly (once or more per month but less than daily)	Annual (once or more per year but less than monthly)	Indeterminate regularity

VALUE	-10	-5	-2	0
CRITERIA BARRIERS	There are technological, measurement and alarm barriers.	There are two of the three: technological, measurement and/or alarm barriers.	There is one of the three: technological, measurement and alarm barriers.	There are no technological, measurement or alarm barriers.

VALUE	10	5	2
CRITERIA MEASUREMENT SENSITIVITY	Air emissions and noise levels in an urban area or area of ecological interest ≤2 km away	Air emissions and noise levels in an urban area or area of ecological interest > 2 km and ≤ 10 km away	Air emissions and noise levels in an urban area or area of ecological interest >10 km away
	Discharges into rivers and reservoirs	Discharges into the sea	Discharges into a municipal sewer/treatment plant
	≥ 70% of the total waste supplied for elimination or deposit in a landfill	≥ 30% to < 70% of the total waste supplied for elimination or deposit in a landfill Waste generated by fire/ explosion	<30% of the total waste supplied for elimination or deposit in a landfill
	Consumption of fuel and materials, chemical products, groundwater and water from rivers and reservoirs	Consumption of electricity and sea water	Consumption of water from the municipal network
	Discharges of soil or gravel into the ground and groundwater in green areas	Discharges into the ground and groundwater in tarmac, concrete and waterproofed areas	Discharge into the ground and groundwater in tarmac and waterproofed areas.
	Landfill located ≤ 2 km from an area of ecological interest	Landfill located > 2 km and ≤ 10 km from an area of ecological interest	Landfill >10 km from an area of ecological interest

Table 1: Criteria for the assessment of environmental aspects under normal and emergency situations.

For each environmental aspect, the previously-mentioned criteria are assessed and added.

Significant aspects are deemed to be those that score 40 points or more, or those that have exceeded the limits established by the Integrated Environmental Authorisation (IEA) or any other current regulation. If there are no significant aspects, the first five for each type with the highest evaluation will be chosen, in normal and emergency situations, with a view to proposing action to decrease their score.

6.2.2 Evaluation of indirect environmental aspects

VALUE	3	1
HARMFULNESS	Smoke emission from vehicle fires, fuel emissions from transport	Dust emissions from transport, natural gas leakage
	Discharges into water of transported liquids	Discharges into water of transported solids
	-	Noise derived from transport
	Fuel consumption during transport	Transport container and packaging consumption
	Waste from overturned vehicles or vehicle fires	-
	Discharges to ground of transported liquids	Discharges to ground of transported solids

VALUE	8	4	2	1
FREQUENCY	Daily or continuous	Monthly (once or more per month)	Annual (once or more per year but less than monthly)	Indeterminate regularity

VALUE	4	1
PROBABILITY	High (very surely to occur)	Low (occurs occasionally)

VALUE	4	2	1
CONTRACTOR'S ENVIRONMENTAL TRAINING	The company offers no environmental training.	The company has confirmed it meets IBERDROLA environmental requirements.	The company holds the ISO 14001 certificate or is listed on the EMAS register.

Table 2: Criteria for the assessment of indirect environmental aspects.

For each indirect environmental aspect identified, the aforementioned criteria are assessed and added. When assessing aspects to which a number of values can be applied, the most restrictive should always be taken.

Significant aspects are deemed to be those that score 15 points or more. If none obtain this score, the first five with the highest score will be chosen.

6.3 Significant environmental aspects

6.3.1 Significant environmental aspects under normal conditions

During the first quarter of 2022, the aspects were reviewed under normal conditions as per procedure 2000-CC1-PG-017 “Environmental Aspects”. The table below includes the usual significant environmental aspects:

Aspect	Impact	∑	LIMITS EXCEEDED?	SIGNIFICANCE (Σ≥40)
Consumption of fuels and materials.	Decrease in natural resources	54	NO	SIGNIFICANT
Consumption of chemical products	Decrease in natural resources	51	NO	SIGNIFICANT
Night-time Noise (R.D. 1367/2007)	Increase in the noise level	49	NO	SIGNIFICANT
Electricity consumption	Decrease in natural resources	48	NO	SIGNIFICANT
Dumping of pollutants on the ground	Alteration to the physical-chemical quality of the ground and groundwater	42	YES	SIGNIFICANT
CO_2 air emissions	Alteration to the physical/chemical quality of the air and greenhouse gas generation	41	NO	SIGNIFICANT
Water emissions	Alteration of the physical-chemical quality of the water discharged (industrial effluent discharge).	21	YES	SIGNIFICANT
Water emissions	Alteration of the physical-chemical quality of the water discharged (cooling water discharge).	18	YES	SIGNIFICANT

Table 3: List of significant environmental aspects under normal conditions during 2021.

Shown below are the significant aspects obtained in the first quarter of 2021 with the 2020 data.

Aspect	Impact	∑	LIMITS EXCEEDED?	SIGNIFICANCE (Σ≥40)
Consumption of fuels and materials.	Decrease in natural resources	54	NO	SIGNIFICANT
Consumption of chemical products	Decrease in natural resources	51	NO	SIGNIFICANT
Night-time Noise (R.D. 1367/2007)	Increase in the noise level	49	NO	SIGNIFICANT
Electricity consumption	Decrease in natural resources	48	NO	SIGNIFICANT
Dumping of pollutants on the ground	Alteration to the physical-chemical quality of the ground and groundwater	42	YES	SIGNIFICANT
CO_2 air emissions	Alteration to the physical/chemical quality of the air and greenhouse gas generation	41	NO	SIGNIFICANT
Water emissions	Alteration of the physical-chemical quality of the water discharged (cooling water discharge).	18	YES	SIGNIFICANT

Table 4: List of significant environmental aspects under normal conditions during 2020.

The result of the last assessment changed slightly compared to the previous year; 8 of the aspects that changed are significant, versus the 7 found in 2020. The main conclusions are as follows:

- The consumption of fuel, energy and chemical products, primarily sodium hypochlorite, as well as CO_2 emissions, remained at levels similar to those of the previous years.

  If we relativise these data to the total production generated, we observe (table 5) that the specific indicators remain at similar values, or even lower, than the previous periods of operation.

Consumptions		2016	2017	2018	2019	2020	2021
Natural Gas	Nm^3	18,858,888.50	66,419,819.00	100,946,819.00	198,856,212.00	123,614,982.00	159,074,359.00
	(Nm^3/MWh)	0.1796	0.1856	0.1924	0.1788	0.1917	0.1842
Energy	MWh	9,878.00	20,326.00	29,169.00	35,557.84	27,514.00	33,146.00
	MWh/MWh	0.0941	0.0568	0.0556	0.0320	0.0427	0.0384
Water	m^3	23,044.00	52,425.00	88,212.00	90,000.00	59,476.00	70,040.00
	m^3/MWh	0.2194	0.1465	0.1681	0.0809	0.0922	0.0811
Chemical Products	t	44.69	46.47	97.46	273.13	245.00	312.61
	t/MWh	0.0004	0.0001	0.0002	0.0002	0.0004	0.0004
Emissions							
CO_2	t	41,101.00	142,919.00	214,850.00	419,669.00	258,940.00	341,559.00
	t/MWh	0.3914	0.3993	0.4094	0.3774	0.4015	0.3956

Table 5: Evolution of specific indicators concerning aspects related to consumption.

- With regard to night-time noise, the significance of this aspect is primarily due to the fact that the mean values are close to the limit established, but at no time have they exceeded the value of 55 dβ (+5 dβ taking into account the correction for tonal, impulsive or low-frequency components).

- In terms of the significant environmental aspect “discharge of hazardous substances in the soil” as a result of the soil characterisation carried out at the site. Both the activity carried out historically in it and the mining activity carried out in the area have had a great influence, since high concentrations of heavy metals are obtained naturally. The different studies conclude that the natural terrain in the area has suffered significant anthropogenic modifications over the years. The results of the measurements carried out every six months on the control and monitoring parameters in the piezometric network set up on the site indicate the existence of substances with values above the reference values, for some heavy metals, VOCs and petroleum hydrocarbons.

  With the values obtained and the hypotheses considered, there is no inadmissible risk in any of the scenarios considered for each of the sources, and therefore **IBERDROLA**'s proposal is to continue with the established controls and to keep analysing the evolution of the parameters measured.
- The industrial effluent discharge aspect was significant given that its value was occasionally 30 mg/l in the DBO5 parameter, compared to the limit set for this discharge of 25 mg/l. The problem was due to organic matter having grown while these effluents were being stored in the homogenisation tank of the effluent treatment plant.
- The cooling water discharge aspect was significant given that its value was occasionally 11.58ºC, compared to the limit set for this discharge of 11ºC. This problem was due to the blockage of the condenser tubes due to deposits of organic matter (biofouling), which lowered the cooling flow in this circuit.

6.3.2 Significant indirect environmental aspects

None of the aspects identified and applicable during the period have been found to be significant. The highest scoring aspects are shown in the following table.

Aspect	Impact	∑	SIGNIFICANCE (YES where Σ≥15))
Transport fuel emissions	Physical-chemical alteration and greenhouse gas generation	13	NOT SIGNIFICANT
Transport fuel consumption	Depletion of natural resources	13	NOT SIGNIFICANT
Natural gas leak emissions	Generation of greenhouse gases	12	NOT SIGNIFICANT
Dust emissions from transport	Alteration to the physical-chemical quality of the air	11	NOT SIGNIFICANT
Container and packaging consumption	Depletion of natural resources	11	NOT SIGNIFICANT
Emission of noise generated by vehicles and transport	Increase in the noise level	11	NOT SIGNIFICANT

Table 6: List of highest-scoring indirect environmental aspects during 2020 and 2021.

In the case of indirect environmental aspects, no changes have occurred when compared with the assessment carried out in the preceding period.

The actions established during 2018 to help maintain the value of significance of the indirect environmental aspects are maintained, including:

- Coordination between the **ESCOMBRERAS CCP** and the Authorised Hazardous Waste Manager to ensure that the truck bodies can be filled, carrying out two management processes per year (always ensuring the stipulation of six months' storage of hazardous waste is not breached).
- Capacity-building of suppliers/contractors, enabling direct action to be taken in regard to the valuation of aspects. These aspects were reassessed when ISO 14001 certifications were obtained from the current chemical product providers.

6.3.3 Significant environmental aspects under emergency conditions

As with the above case, none of the aspects identified and current during the period have been found to be significant. The highest scoring aspects are shown in the following table:

Aspect	Impact	∑	SIGNIFICANCE (Yes where Σ≥40)
Fugitive emissions due to fire/explosion	Physical-chemical alteration and greenhouse gas generation	32	NOT SIGNIFICANT
Consumption of fire-extinguishing chemical products	Depletion of natural resources	32	NOT SIGNIFICANT
Ground discharge of contaminating substances due to fire/explosion	Alteration of the physical-chemical quality of the soil and groundwater	27	NOT SIGNIFICANT
Noise emission due to fire/explosion	Increase in the noise level	24	NOT SIGNIFICANT
Discharges of contaminated substances into water due to fire/explosion	Alteration of the physical-chemical quality of the water	22	NOT SIGNIFICANT
Discharge into water of contaminants during loading/unloading/transfer/storage	Alteration of the physical-chemical quality of the water	22	NOT SIGNIFICANT
Discharges of contaminants to the ground during loading/unloading/transfer/storage	Alteration of the physical-chemical quality of the soil and groundwater	22	NOT SIGNIFICANT

Table 7: List of highest-scoring environmental aspects in emergency situations during 2020 and 2021.

It should be pointed out that no significant changes have been observed when compared to the assessment carried out in the preceding period.

7

Environmental Management Programme

Annually, and based on the general objectives set by the Thermal Generation Department, **ESCOMBRERAS CCP,** through the Local Quality Assurance Committee (COCAL) – which involves the heads of the various departments of the plant's organisational structure and where all employees are represented, draws up an Environmental Management Programme that includes specific goals and targets for the facility, the schedule of activities to be carried out and the people responsible for performing the planned actions.

In a complex facility such as this, with multiple systems, the improvement objectives program is included in the Environmental Action Plan (PAM) whose aim is firstly, to prevent environmental events with external impact resulting from the plant's operation and secondly, to improve environmental behaviour. In 2021, 100% of all planned actions were executed, reaching 98% attainment of the goal.

The last follow-up performed in 2021, which covers the actions carried out throughout the year for Combined Cycle Unit 6, is shown below:

OBJECTIVE	INDICATOR	INITIAL SITUATION	ANTICIPATED FINAL SITUATION	ACTUAL FINAL SITUATION	RESOURCES		RELATED ENVIRONMENTAL ASPECT
					ECO-NOMIC	HUMAN	
Continue applying the continuous improvement to the systems minimising potential environmental impact	0 environmental events / % of compliance with the EAP	0 events / 0% implementation of PAM 2021	0 environmental events / 95% implementation of PAM 2021	Objective met: 0 environmental events / 98% implementation of PAM 2021	€48,570	1,095 man-hours	Aspects under normal and emergency discharge conditions, production of waste, atmospheric emissions and consumption.

GOAL	INDICATOR	INITIAL SITUATION	ANTICIPATED FINAL SITUATION	ACTUAL FINAL SITUATION	RESOURCES		RELATED ENVIRONMENTAL ASPECT
					ECO-NOMIC	HUMAN	
Implementation of 95% of the actions identified in the 2021 PAM	% actions executed	0% performed	95 % actions executed	Target achieved: 98 %	€48,570	1,095 man-hours	Reduction impact derived from discharge: Actions no. 2304 -2020-MA-01, 2304-2021-MA-01, 02, 03, 05 and 06. Reduction of chemicals and discharge parameters: Action no. 2304-2021-MA-04, 07 and 08.

Table 8: Environmental objective for 2021.

Below are details of the Environmental Action Plan implemented during 2021, indicating the progress made with each action that has contributed to the reduction in the significance of the aspects listed in the OBJECTIVE.

DATA - DESCRIPTION			
Nº	**Action**	**Source**	**Directive**
2304-2020-MA-05	Study to lower purges in boilers by adding a new product, CETAMINE G852, to guarantee the attachment of a protective layer around the metal of the boiler tubes to prevent their accelerated corrosion due to the cycles of the Combined Cycle.	PAM 2020	Ensure Sustainable Production and Consumption Modes
2304-2021-MA-01	Carry out at least 1 practical drill, independent of the Corporate Safety drill, for an environmental emergency at the facility, seeking to improve the Environmental Management process and its associated procedures, improve teamwork and integration in PEOPLE organisations.	PAM 2021 COMMON	Protect the environment and halt the loss of biodiversity
2304-2021-MA-02	Carry out at least 2 environmental training sessions promoting the use and knowledge of environmental management systems.	PAM 2021 COMMON	Protect the environment and halt the loss of biodiversity
2304-2021-MA-03	Validation test of the chlorine dioxide dosing system using NALCO technology called PURATE.	CHEMICAL GROUP	Ensure sustainable production and consumption modes
2304-2021-MA-04	Automation of data collection on chemical products loaded / unloaded to be reported to the Security Advisor in preparing the annual reports, as well as monitoring EMAS indicators	PRODUCTION GROUP	Revitalise alliances with sustainable development stakeholder groups
2304-2021-MA-05	Automation of purges for steam generators 1 and 2 based on measurements obtained by particle counters	PAM 2021	Ensure sustainable production and consumption modes
2304-2021-MA-06	Update of the ground and groundwater control plan, optimisation of sampling points and parameters	PAM 2021	Protect the environment and halt the loss of biodiversity
2304-2021-MA-07	Installation of residual phosphates analyser at water treatment plant	PAM 2021	Ensure sustainable production and consumption modes
2304-2021-MA-08	Installation of cation resin regenerator	PAM 2021	Ensure sustainable production and consumption modes

Table 9: Actions of the 2021 Environmental Action Plan.

		ACTUAL		
MA / Q	Environmental Aspect	Actual Investment (k€)	Estimate at closure (k€)	Share Progress (%)
MA	ASN - Volume of discharged industrial effluents	30.07	0.00	100%
MA	*Aspects in emergency situations.	0.00	0.00	100%
MA	*Aspects under normal conditions for Waste. *Aspects in emergency situations.	0.00	0.00	100%
MA	ASN - Discharge of contaminating substances. Discharge with limits authorised for parameters	400.05	0.00	90%
MA	*Aspects in emergency situations.	0.00	0.00	90%
MA	Reduction of discharges (Water consumption)	0.00	0.00	100%
MA	ASN - Discharge of contaminating substances.	15.50	0.00	100%
MA	Aspects under normal conditions reducing consumption of chemicals.	1.50	0.00	100%
	Aspects under normal conditions reducing consumption of chemicals and water consumption	1.50	0.00	100%

8

Environmental Indicators

The environmental performance of the **ESCOMBRERAS CCP** is reviewed in order to assess compliance with current applicable legislation, as well as with its Environmental Management Programme.

The general circumstances and status of the **ESCOMBRERAS CCP** for 2019 to 2021 are summarised in the following sections. All indicators that are significant to the organisation are monitored in them, making it possible to quantify and notify its environmental behaviour and perform annual comparisons of the data. In order to calculate the basic indicators included in Annex IV to Regulation (EC) No. 1221/2009, as amended by Commission Regulation (EU) 2018/2026 of 19 December 2018, total gross electricity production, expressed in MWh, has been used as figure B.

Existing Sectoral Reference Documents have been reviewed, none of which apply to the **ESCOMBRERAS CCP**.

8.1 Emissions into the atmosphere

Contribution to the SDGs of the performance described by the indicators in this section:

Under the guideline '*Combating climate change and its effects*'. The objectives of this guideline to tackle climate change are promoting renewable energies and the use in thermal production of fossil fuels with a lower carbon content, as well as improving efficiency in the generation, transport and final use of energy.

The **ESCOMBRERAS CCP** has identified as an environmental aspect the emission of gases resulting from the use of fuels. Emissions of nitrogen oxides and carbon monoxide (CO) are continuously controlled. In addition, semi-annual measurements are taken manually to verify sulphur dioxide (SO_2) emissions and particulates in the chimneys. The limits defined by current legislation and in the Integrated Environmental Authorisation are applied to these, and are monitored for compliance in accordance with the general procedure and the quality plan for emissions control of the Environmental Management System.

The parameters that are measured on an on-going basis are monitored using analysers that send a signal to the plant control room. This data is available in real time for Automatic Administration. These gauges are checked and calibrated regularly in order to ensure that they work properly. The monthly emission reports, as well as the calibration certificates for the metering equipment, are sent to the authorities in charge of emissions into the atmosphere.

Likewise, the continuous measuring systems in place for controlling emissions into the atmosphere comply with the provisions of Order ITC/321/2017 regarding compliance with the requirements and verifications of the various analysers (Quality Assurance Levels NGC1, NGC_2, EAS and NGC_3), the monitoring of the parameters that are measured and observance of the limits, the preparation of reports, document control and the recording of the information, the certification of compliance with the applicable UNE-EN-ISO standards, and the taking of manual measurements with the periodicity established in the environmental authorisation.

As mentioned above, in 2021, as in past years, the operation of Unit 6 was low. As a result, during this year it was possible to perform all annual tests called for in the legislation in force.

The following regulatory measurements were taken in 2021 at the main sources:

- Regulatory inspection TG1 and TG2 Unit 6 - sources 4 and 5 (May 2021)
- Measurements 2nd half of the year TG1 and TG2 Unit 6 - sources 4 and 5 (September 2021)

In addition to taking the aforementioned regulatory limits-compliance measurements at the sources, in 2021 measurements were taken at sources 4 and 5 in accordance with the UNE-EN ISO 14181 standard (AFT) for the pollutants CO, NOx and O_2.

The regulatory measurements were also taken at the Regulation and Measurement Station (ERM), as scheduled every 5 years. In this case, the NOx, SO_2 and particulate emissions relative to these sources 7 and 8 are considered negligible compared to the emissions produced by the main gas turbine sources 4 and 5. The emissions produced by the auxiliary steam turbine (source 6) were also not counted.

With regard to CO_2, emissions are calculated monthly on the basis of the fuel (gas/diesel oil) consumed by the units and the auxiliary facilities (auxiliary steam generator, ERM steam generators, emergency diesel oil pumps and firefighting pump) and in keeping with the general procedure and the quality assurance plan for the "Monitoring and Notification of Greenhouse Gas Emissions". They are subsequently verified by an accredited organisation and sent to the Service for the Promotion of Environmental and Climate-Change Issues at the Department for the Environment for the Region of Murcia.

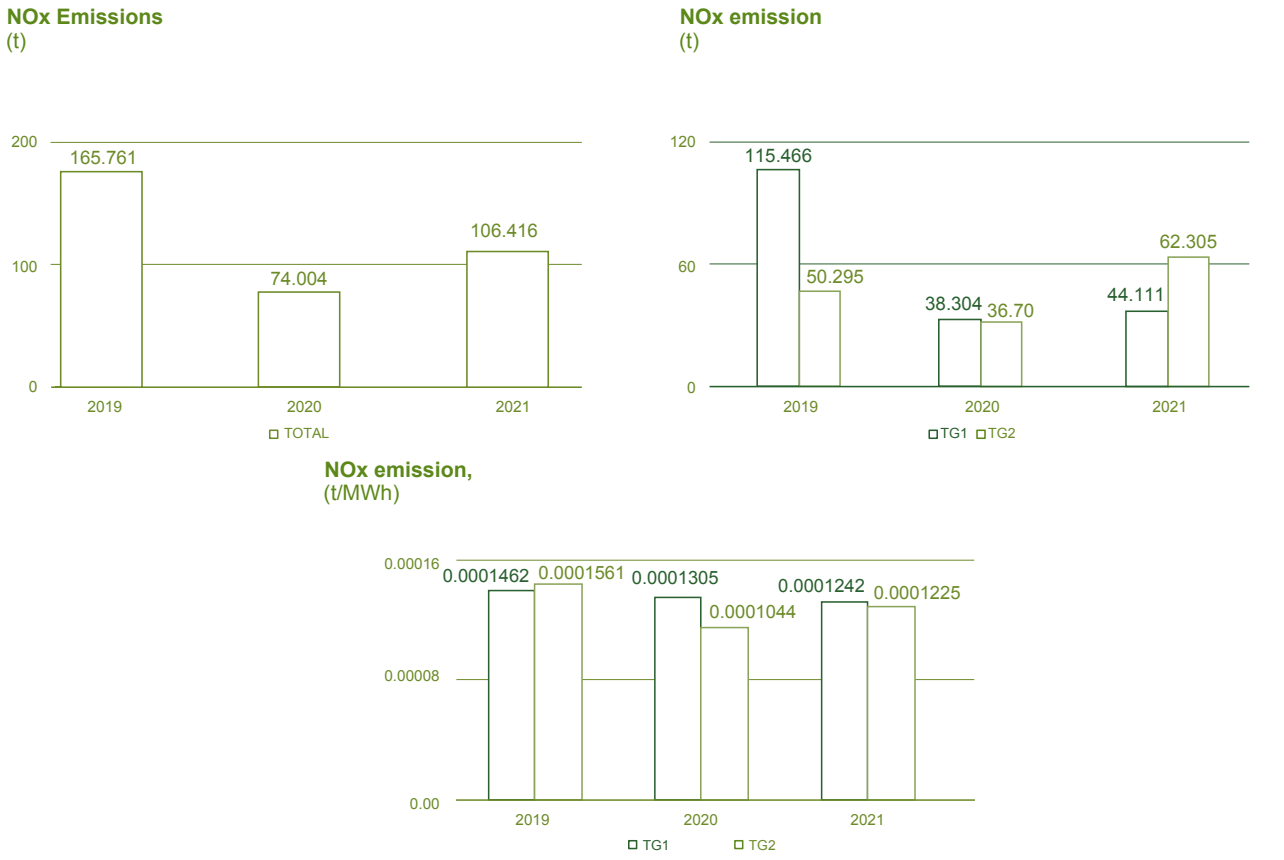
ESCOMBRERAS CCP also calculates the CH_4 and N_2O emissions, which turned out to be negligible compared to the CO_2 emissions indicated in Section 8.1.2 of this Statement. During the 2021 operating period, CH_4 and N_2O emissions, expressed in equivalent tonnes of CO2, accounted for 0.04% and 0.05% of the facility's total greenhouse gas emissions, respectively.

ESCOMBRERAS CCP has some cooling units, switches and fire protection (FP) systems that use HFCs, PFCs and SF_6 and are thus governed by Regulation (EU) No 517/2014 and the like. They are subjected to checks for leaks, for which maintenance plans have been devised to ensure compliance with the provisions of all applicable regulations. The amount of fluorinated gases emitted was 2.67 kg, which is equivalent to 4.3 equivalent tonnes of CO_2[1]; this is negligible compared to the facility's CO2 emissions from the combustion of natural gas during the start-ups of the gas turbines produced in 2021.

With regard to NF_3, it should be noted that this type of gas does not exist at the facility.

8.1.1 NOx Emissions

For the 2019-2021 period, details are given of the total tonnes of NOx emitted from the turbines of Unit 6, together with the indicator in t/MWh that expresses the specific emission per unit of energy produced by each one, including the proportional part of the corresponding steam turbine production. The data are as declared in the periods to report (PAI) corresponding to the data measured continuously by the analysers, with the exception of those periods when the equipment was unavailable, as these emissions are estimated on the basis of the data measured by OCA:



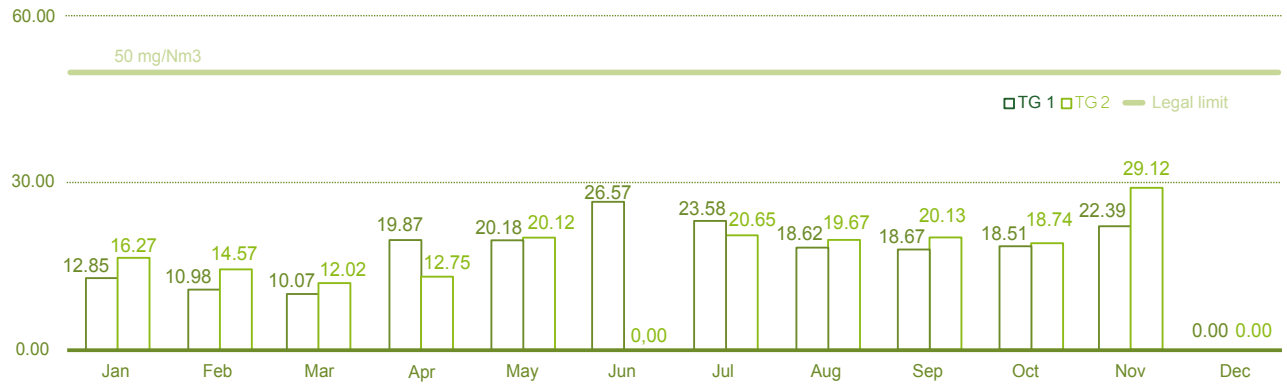
Graph 2: Annual change of NOx emissions from Unit 6. 2019-2021.

1 Warming potential (CO_2-eq) Source: IPCC Fourth Assessment Report: Climate Change 2007 (AR4). http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html#table-2-14

NOx emissions vary due to, amongst other things, the external temperature and the load at which the unit is operating – which continued to be low despite having increased in the last few years. Most of the time, the turbines operated at a technical minimum, which is the minimum load at which the plant can operate stably.

In 2021, the Annual Follow-up Tests were carried out, and the loaded calibration functions were valid after conducting the NGC2 in 2019.

Below is a list of the average monthly NOx emissions measured continuously in mg/Nm^3, referring to 15% oxygen, for the year 2021. The legal limit of NOx emissions for each source in Unit 6 is 50 mg/Nm^3, according to the Resolution dated 12 May 2016 of the Directorate General for the Environment in the Region of Murcia, amending the Integrated Environmental Authorisation. The legal limit for NO_x emissions was not exceeded at any time during this period.



Graph 3: Comparison of the monthly averages of NOx emissions in Unit 6 against the legal limit 2021.

8.1.2 SO_2 and particulate emissions

As mentioned above, the plant is not required to continuously measure sulphur oxides and particles in the main stacks, however, measurements must be taken by an authorised inspection body every six months to verify compliance with limits.

The following table shows the total tonnes of SO_2 and particles emitted during the 2019-2021 period, as well as the indicator that expresses the specific emission per unit of energy produced in t/MWh

SO_2	2019		2020		2021	
	Emissions (t)	Emissions (t/MWhe)	Emissions (t)	Emissions (t/MWhe)	Emissions (t)	Emissions (t/MWhe)
TG1	1.887	0.0000024	0.732	0.0000025	1.193	0.0000034
TG2	0.872	0.0000027	1.004	0.0000029	2.273	0.0000045

Table 10: Changes in SO_2 emissions from TG1 and TG2 Units. 2019-2021.

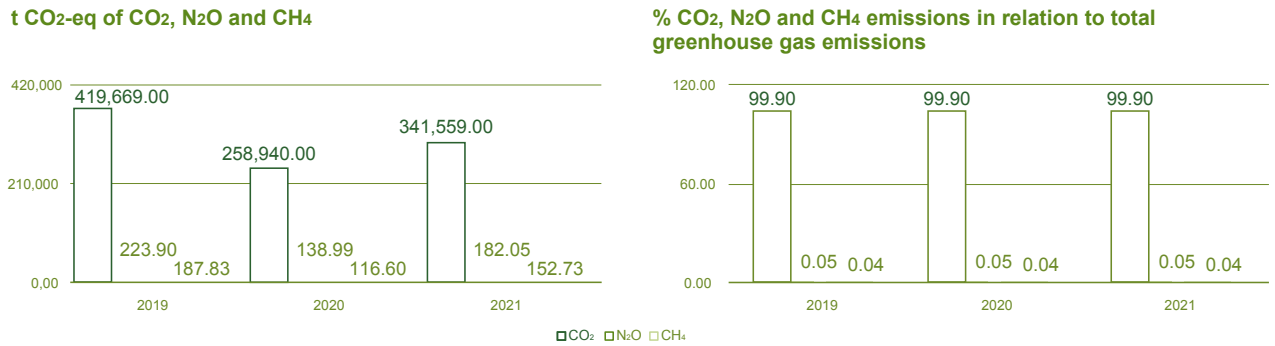
Particulate	2019		2020		2021	
	Emissions (t)	Emissions (t/MWhe)	Emissions (t)	Emissions (t/MWhe)	Emissions (t)	Emissions (t/MWhe)
TG1	6.916	0.0000088	0.387	0.0000013	0.63	0.0000018
TG2	1.381	0.0000043	1	0.0000028	0.939	0.0000018

Table 11: Changes in particulate emissions from TG1 and TG2 Units. 2019-2021.

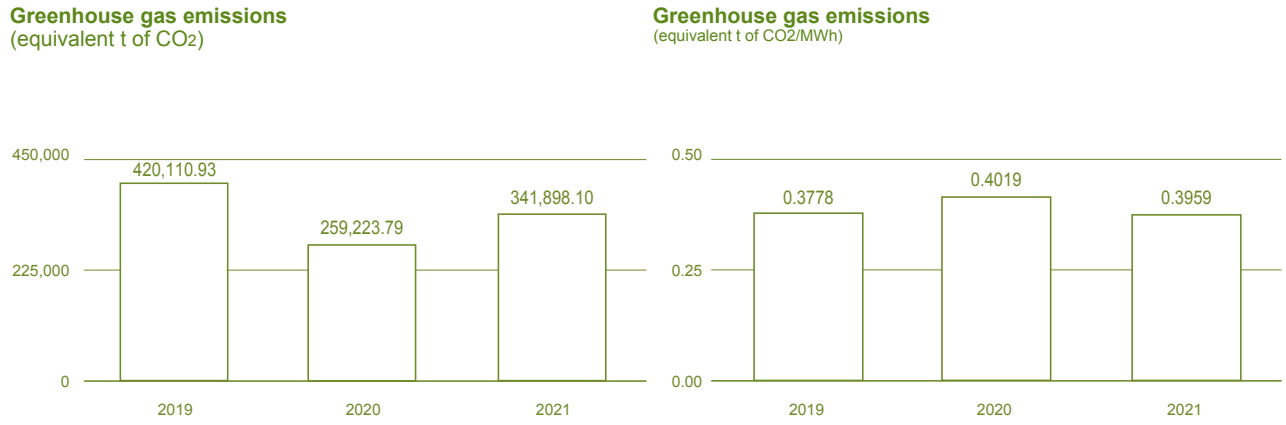
The tonnes of SO_2 and particulate emissions from the plant are calculated based on the result of the regulatory inspection reports and semi-annual measurements carried out by an accredited body in the period in question, and are extrapolated to the PAI periods. The variation in these depends on the operation of the facility, as well as the detection limit used by the inspection body.

8.1.3 Greenhouse gas emissions

The total emissions of greenhouse gases from Unit 6 – which include CO_2, N_2O and CH_4 emissions – in equivalent tonnes of CO_2, for the 2019-2021 period, as well as the indicator that measures the specific emissions per unit of energy produced in tonnes of CO_2 equivalent/MWh, are shown in the following graphs:



Graph 4: Annual evolution of CO_2, N_2O and CH_4 emissions. 2019-2021.



Graph 5: Annual evolution in tonnes of CO_2[2]. 2019-2021.

As can be seen, a rise in total CO_2 emissions occurred last year, linked to the increase in Unit 6 output compared to the year before. An analysis of the specific emission shows that, despite there being more start-ups than the previous year, and with fewer operating hours per start-up, the temporary consumptions of fuel with no energy generated were lower thanks to the optimisation of the start-up process. The main data for assessing the reason behind this reduction in total specific emissions are given below:

Escombreras CCP operation	2019	2020	2021
Unit operating hours	3,073	2,450	2,711
Gross production (MWh)	1,112,056	644,979	863,494
Net Production (MWh)	1,086,303	628,265	841,927
No. of unit start-ups	37	54	81
Ratio no. of operating hours per start-up	83.04	45.37	33.47

Table 12: Changes in operational parameters for the 2019-2021 period.

With regard to the N_2O and CH_4 emissions, they remained at values similar to those of previous years because the emission factors in the national inventory of emissions into the atmosphere used to calculate the tonnes emitted have not changed.

2 The equivalent tonnes of CO_2 due to the fluorinated gases from the maintenance of the cooling equipment have been calculated.

8.2 Discharge

Contribution to the SDGs of the performance described by the indicators in this section:

Under the guideline '*Protect the environment and stop the loss of Biodiversity*'. The aim of this guideline is to conserve and restore the ecosystems associated with our activities, coordinating the biodiversity plans of businesses in the affected environments. To improve the compatibility of Iberdrola's infrastructures with the environment, avoiding spillages and water and soil contamination, all in line with Iberdrola's Biodiversity and Environmental Policy.

The **ESCOMBRERAS CCP** periodically monitors its discharge to ensure that the limits set in its IEA of 28 April 2008 are not exceeded at any time.

For said purpose, it has an effluent treatment plant which guarantees the correct physical-chemical quality of the process waters (feed water demineralisation rejects, steam generator purges and drainage without oil content from different parts of the plant). There are also two meters for the control of effluent discharge, and the daily volume discharged is recorded in the control room.

Furthermore, due to the Unit 6 cooling process, using sea water in an open circuit, thermal discharge of this water is also generated, which is returned to the sea via a discharge structure after travelling its course as a cooling source for the plant. This water is continuously monitored for an increase in discharge temperature and the presence of free chlorine.

It also has hydrocarbon separators for treating effluent that might contain oily remains, including rain water potentially contaminated with hydrocarbons, before it is sent to the effluent homogenisation reservoirs; it is subsequently subjected to a physical-chemical treatment together with all other process effluent. Finally, is has a biological purifier for treating sewage before it is sent to the effluent homogenisation reservoirs.

The treated water is reused whenever possible by the facility itself and sent to a 5000 m^3 tank. The treated industrial effluent surplus, which cannot be reused, is discharged into the sea at the authorised discharge point together with the cooling water.

ESCOMBRERAS CCP has a single authorised discharge point, identified at the outlet of the discharge channel to the open sea, through which cooling water and the effluent from the treatment plant are discharged. Figure 5 shows the location of this point.

Figure 5: **ESCOMBRERAS CCCP** discharge point.

The cooling discharge volume is not measured, it is obtained from the nominal flow rates of the collection pumps and their operating hours.

The table below indicates the discharge volume for each one of the identified currents, along with the applicable limits according to the Integrated Environmental Authorisation:

	Discharges (m³)			
TYPE OF DISCHARGE	2019	2020	2021	Legal limit
THERMAL DISCHARGE: Cooling seawater	188,480,697.16	156,001,447.49	177,977,091.75	473,000,000
PHYSICAL/CHEMICAL DISCHARGE Industrial effluent	56,185.46	49,983.92	52,733.96	128,165
TOTAL	188,536,882.62	156,051,431.41	178,029,825.71	

Table 13: Discharge volume. 2019-2021.

Below is the evolution of the indicators that relate total water discharge and the specific figures for energy production m³/MWh discharged by **ESCOMBRERAS CCP** during 2019-2021:

Graph 6: Annual change in discharge. 2019-2021.

We can see that the total discharge volume increased from the previous year, mainly due to the operating scheme described in this Statement, a higher number of start-ups and fewer operating hours for each one. However, if we relativise these data to the gross output generated, we get lower specific values, so this reduction is linked to the optimisation of the start-up and stoppage process for the water circulation system in the case of cooling discharge, while for industrial effluent discharge it is linked to the automation of the purge control for the heat recovery steam generators.

In order to check that the discharge parameters are within the conditions specified in the applicable legislation and the corresponding IEA, the **ESCOMBRERAS CCP** continuously measures the parameters for pH level, suspended solids and discharge volume, taking representative samples of the industrial effluents over a period of 24 hours before they enter the cooling water pipe.

The figures recorded by the continuous analysers are as given in the following table:

THERMAL DISCHARGE: Cooling water (planned data)

	LIMIT		2021											
PARAMETER	UNIT	ELV	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Free chlorine	mg HClO/l	1.5	0	0	0	0.281	0.253	0.122	0.211	0.162	0.211	0.2	0.151	0.275
Discharge flow rate	m³/s	> 3.4 - < 30	9.42	9.10	9.09	13.83	13.87	11.08	14.79	15.97	13.72	5.22	9.08	5.67
ΔTemperature	°C	<11	1.13	1.34	1.20	5.25	5.44	0.32	4.23	6.59	4.63	1.00	0.85	-0.02
Max. Chlorine	mg HClO/l	1.5	0	0	0	0.862	1.034	0.427	0.748	0.91	1.02	1.06	0.79	0.951
Min. Chlorine	mg HClO/l	1.5	0	0	0	0	0	0	0	0	0	0	0	0

Table 14: Monitoring of cooling water discharge parameters for 2021 (monthly average).

The maximum recorded values in discharge flows were on the order of 20.02 m^3/s in July, while the minimum recorded values were 2.61 m^3/s on 2 August 2021. There were no industrial effluent discharges during that period, in compliance with the requirement established in the IEA "*there must be a minimum flow of 3.4 m^3/s of cooling water when discharging treated waste water into the sea*".

On the other hand, the maximum recorded temperature value came on 7 January 2021, with the discharge attaining a thermal jump of 11.58ºC, compared to 11ºC. It was found that the deposits of organic matter (biofouling) in the condenser tubes fostered the attachment of other types of organisms like barnacles, bivalves and tubularia, leading to considerable pressure drops which lead to a temperature increase. In this context, in 2020 **IBERDROLA** conducted tests to change the treatment system of this cooling circuit by replacing the biocide used — sodium hypochlorite — with chlorine dioxide, a more effective and environmentally friendly treatment which helps clean the tubes with its dispersing effect, as well as occasionally cleaning them to remove the remains deposited on the condenser. In November of 2020, the intake tubes and piping of the condenser were given a preventive cleaning because high pressures were already being observed in the condenser and the temperature of the thermal gradient had increased; a total of 12.86 t of waste was removed. Later, after the values obtained in December 2020 and January 2021, cleaning was carried out in January 2021 and a total of 19.72 t of waste was removed. Additionally, preventive cleaning continued during the stoppages in June and October of 2021, managing a total of 48.9 t and 6.2 t, respectively. Since then, the values have not gone back over 11ºC.

The maximum recorded value of chlorine came in June 2021, reaching 1.06 ppm.

Based on the analysis of the data for the continuous measurement of the free chlorine parameters and the flow of cooling discharge, **ESCOMBRERAS CCP** has remained within the limit on the thermal gradient associated with the limitation of the operation of the turbines at 20 GWh of gas per day until a more thorough cleaning of the condenser and impulsion tubes of the water cooling system could be done.

Every two months, **ESCOMBRERAS CCP** analyses the parameters indicated in point 4.7.1. of the IEA dated 28 April 2008. During this period, samples of discharges into the sea were taken for each period, with the exception of the second half of January, the second half of June, the first and second halves of October, and the second half of December, when the facility was not operating and not enough samples were collected to be sent to the laboratory. These effluents are discharged, together with the cooling water discharge, complying with condition 4.3 of the IEA whereby there must be a minimum flow of 3.4m ^{3}/s of cooling water when this waste water is discharged into the sea. In 2021, (19) samples were taken to analyse the twelve (12) parameters set in the integrated environmental authorisation (IEA) of the discharge from the industrial effluent treatment plant. Of all the samples analysed, on 12/02/2021 we got a value of 30 mg/l with an uncertainty of ± 25% for the DBO5 parameter, where the ELV in IEA is 25 mg/l. This was because the industrial effluents were stored in a homogenisation tank while the combined cycle was non-operational for one month, which was favourable

for organic growth. It was treated with sodium hypochlorite and samples were taken on 18/02/2021, at which point all the parameters were within the range established in the IEA. The value of this parameter for the year remains below the detection limit. The results obtained by the laboratory can be checked in the following table:

PARAMETROS	LIMITE		EFLUENTES INDUSTRIALES TRATADOS 2021																	
	UNIDAD	VALOR	ENE	FEB		MAR		ABRIL		MAY		JUN	JUL		AGOS		SEPT		NOV	DIC
			14-ene	12-feb	18-feb	12-mar	29-mar	14-abr	28-abr	14-may	28-may	01-jun	14-jul	28-jul	11-ago	26-ago	15-sep	29-sep	15-nov	28-nov	15-dic
pH	U. de pH	6-9	8	8,2	8,4	8,1	7,7	7,8	7,8	8,1	7	7,5	8,2	8,1	7,5	7,4	7,2	7,1	7,4	7,4	8,2
Cloro Libre	mg/l	1,5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sólidos en Suspensión	mg/l	35	3	19	4	0,5	1	2	2	10	4	3	8	6	5	5	2	4	0,5	13	0,5
DBO_5	mg/l	25	<5	30	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<5	<5	<5	<5	<5
DQO	mg/l	125	<10	84	<10	<10	<10	<10	<10	<10	<10	<10	18	11	<10	<10	<10	<10	<10	13	<10
Fosfatos	mg/l	10	0,8	0,3	1	0,7	0,6	0,8	0,7	0,7	0,6	0,69	2,4	1,4	0,9	1,42	<0,3	<0,3	1,16	<0,92	<0,3
Amoniaco	mg/l	40	0,8	2,4	3,3	<0,5	<0,5	1,1	1,8	0,8	<0,5	<0,5	8,4	7	<0,5	4,36	<0,5	4,3	<0,5	3,4	<0,5
Hierro	mg/l	1,5	0,04	0,19	0,06	<0,02	0,02	0,0403	0,05	0,04	<0,02	0,21	0,05	0,02	0,05	0,0412	0,03	0,03	<0,02	0,03	0,04
Cobre	mg/l	0,5	<0,02	0,03	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	0,03	0,03	0,02	0,0144	<0,02	<0,02	<0,02	<0,02	<0,02
Cromo	mg/l	1,5	<0,02	0,03	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,001	<0,02	<0,02	<0,02	<0,02	<0,02
Níquel	mg/l	2	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	<0,02	0,0047	<0,02	<0,02	<0,02	<0,02	<0,02
Hidrocarburos	mg/l	15	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,01	<0,5	<0,5	<0,5	<0,5	<0,5
Grasas y Aceites	mg/l	1	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	0,78	<0,5	<0,01	<0,5	<0,5	<0,5	<0,5	<0,5

Table 15: Bimonthly analyses of the physical-chemical process water discharge. 2021.

Every half-year **ESCOMBRERAS CCP** uses the accredited body in the Region of Murcia to check the characteristics and quality of the water in the cooling system in the intake and the final discharge with the incorporation of industrial effluents, in order to comply with the Vigilance Plan and discharge controls. The parameter results analysed are the following:

PARAMETROS	LIMITE		CANAL TOMA AGUA CAPTACIÓN				EFLUENTE FINAL			
			2021				2021			
	UNIDAD	VALOR	1º Trimestre 23/04/2021	2º Trimestre 18/06/2021	3º Trimestre 15/09/2021	4º Trimestre - 21/12/2021	1º Trimestre 23/04/2021	2º Trimestre 18/06/2021	3º Trimestre 15/09/2021	4º Trimestre - 21/12/2021
Temperatura	ºC	< 12	14,7	23,7	29,5	17,5	15	25	35,4	17,5
Salinidad total	g/l		38,1	36,3	38,1	37,9	37,9	36,1	38	38
Densidad	g/cm3		1,1	1,1	1,044	1,1	1,1	1	1,1	1
pH	Ud. pH	6-9	7,7	8,1	8	8,1	7,7	8,1	8	8,1
Oxigeno disuelto	% sat.	> 70	65,1	59,8	71,8	56	74,4	70,6	79,2	62,2
Turbidez	UNF		0,4	0,88	0,72	0,47	0,29	0,67	0,74	0,51
Nitratos	mg NO_3^-/l	1	<0,2	0,2	0,3	0,6	<0,2	<0,2	<0,2	0,5
Nitritos	mg NO_2^-/l	0,6	<0,01	0,01	0,01	<0,01	<0,01	0,01	<0,01	<0,01
Fosfatos (Ortofosfato)	mg PO_4^{3-}/l		<0,05	<0,05	<0,05	<0,05	<0,05	0,06	<0,05	<0,05
Fluoruros	mg F^-/l	1,7	0,917	0,792	0,75	0,85	0,926	0,811	0,763	0,85
Carbono orgánico total (TOC)	mg C/l	5	0,6	1,3	1	<0,5	0,6	1	1,1	1
Aceites y grasas	mg/l	1	<0,01	<0,01	<0,01	0,15	<0,01	<0,01	<0,01	<0,05
Amonio	mg NH_4^+/l	1	<0,05	<0,05	<0,05	0,09	<0,05	<0,05	0,07	<0,05
Fosforo total	mg P/l	0,8	<0,099	<0,099	<0,099	<0,099	<0,099	<0,099	<0,099	<0,099
Agentes tensioactivos anionicos	mg/l	0,2	<0,1*	<0,1*	<0,1*	<0,1*	<0,1*	<0,1*	<0,1*	<0,1*
Agentes tensioactivos catiónicos	mg/l	0,2								
Plomo	µg/l	10	<1	2,5	2,8	2,1	<1	2,3	2,8	1,9
Cadmio	µg/l	2,5	<0,05	<0,05	0,077	0,06	<0,05	<0,05	0,07	<0,05
Mercurio	µg Hg/l	0,3	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01
Cobre	µg/l	25	4,2	<1	1,1	1	1,5	<1	1,1	<1
Arsénico	µg As/l	25	1,4	2,7	5,5	4	1,5	2,6	5,7	3,9
Níquel	µg Ni/l	25	<1	<1	4,3	<1	<1	<1	2,5	<1
Zinc	µg Zn/l	60	1,5	4	3	6,1	1,1	5,3	3,4	8,1
Cromo	µg Cr/l	10	<1	<1	<1	<1	<1	<1	<1	<1
Estaño	µg Sn/l	50	<2	<2	<2	<2	<2	<2	<2	<2
Selenio	µg Se/l	5	4,6	3,5	0,8	1,1	2,5	3,4	<0,5	0,7
Titanio	µg Ti/l	20	<2	<2	<2	<2	<2	<2	<2	<2
Cromo VI	µg Cr^{6+}/l	5	<2	<2	<2	<2	<2	<2	<2	<2
* Medido como Alquilbencensulfonatos lineales (LAS)										

Table 16: Quarterly analyses of the final effluent and seawater intake canal. 2021.

In 2021, (4) samples were taken to analyse the parameters set in the integrated environmental authorisation (IEA) for the final discharge (cooling water and industrial effluents), compared to the intake parameters, with all the values falling within the limits established in the Integrated Environmental Authorisation.

Quarterly temperature controls are carried out both in the collection area and in the discharge area, to find out the influence of our discharge on the receiving environment and to comply with the requirements established in the IEA. The results of these temperature controls against the established limits are as follows:

Fecha	Tª Captación (T16)	Tª Captación (T200-16)	Tª vertido (T13)	Tª vertido (T14)	Tª vertido (T200-13)	Tª vertido (T200-14)	? Tª 200 m vertido - captación	? Tª 200 m vertido - pto. vertido	Limite AAI *	Observaciones
1º Trimestre	15,1	15,13	15,14	15,26	15,21	15,21	0,25	-0,05	< 3 ºC	Central operación normal Sistema refrigeración en marcha, vertiendo efluente industrial 17/02/2021
	14,56	14,62	15,03	15,06	15	15				
			14,94	15,01	14,85	14,85				
					14,62	14,62				
2º trimestre	20,61	20,62	20,25	20,32	20,31	20,31	-0,26	-0,05	< 3 ºC	Central operación normal Sistema refrigeración en marcha, vertiendo efluente industrial 01/06/2021
	19,63	19,93	19,72	19,66	19,56	19,56				
				17,28	16,99	16,99				
				15,94	15,88	15,88				
3º Trimestre	27,11	27,44	27,45	27,37	26,76	26,76	-0,59	-0,57	< 3 ºC	Central operación normal Sistema refrigeración en marcha, vertiendo efluente industrial 27/08/2021
	26,88	26,9	27	26,46	26,23	26,23				
				25,94	26,16	26,16				
				16,86						
4º Trimestre	17,58	17,51	18,6	18,49	18,23	18,23	0,45	-0,20	< 3 ºC	Central operación normal Sistema refrigeración en marcha, vertiendo efluente industrial 30/11/2021
	17,59	17,56	17,85	17,92	17,8	17,8				
					17,85	17,85				
					17,86	17,86				

* Límite establecido por Autorización Ambiental Integrada en un radio de 200 m alrededor del punto de vertido.

Table 17: Tracking control thermal gradient in a radius of 200 m around the point of discharge. 2021.

The temperature values of the water collected in the Escombreras Basin and discharged into the La Manceba-Punta Aguilones water body have not increased by more than 3ºC, the limit value established by the IEA, within a radius of 200 m around the point of discharge authorised for the **ESCOMBRERAS CCP**.

Fecha	Tª vertido (T13)	Tª vertido (T14)	Tª ENGIE (T18)	Tª ENGIE (T200-18)	? Tª captación Engine - Punto vertido	LIMITE AAI *	Observaciones
1º Trimestre	15,14	15,26	15,17	15,1	-0,25	< 0,5 ºC	Central operación normal Sistema refrigeración en marcha, vertiendo efluente industrial 17/02/2021
	15,03	15,06	14,79	14,75			
	14,94	15,01	14,53	14,58			
				14,53			
				14,47			
2º Trimestre	20,25	20,32	20,3	20,18	0,11	< 0,5 ºC	Central operación normal Sistema refrigeración en marcha, vertiendo efluente industrial 01/06/2021
	19,72	19,66	20,09	19,8			
		17,28	18,13	17,4			
		15,94		15,52			
				14,47			
3º Trimestre	27,45	27,37	26,87	27,12	-0,37	< 0,5 ºC	Central operación normal Sistema refrigeración en marcha, vertiendo efluente industrial 27/08/2021
	27	26,46	26,59	26,22			
		25,94	25,88	25,76			
				16,37			
				14,69			
4º Trimestre	18,6	18,49	17,99	17,86	-0,33	< 0,5 ºC	Central operación normal Sistema refrigeración en marcha, vertiendo efluente industrial 30/11/2021
	17,85	17,92	17,86	17,85			
				17,85			
				17,85			
				17,85			

* Límite establecido por Autorización Ambiental Integrada en punto toma ENGIE (antiguo AES).
T18: Punto Intermedio entre puntos vertidos autorizados para IBERDROLA y ENGIE (antiguo AES)

Table 18: Tracking control thermal gradient in the vicinity of the Engie intake. 2021.

The water temperature values collected in the Escombreras Dock and discharged on the La Manceba-Punta Aguilones water body have not produced an increase greater than that permitted by the IEA, in the vicinity of the ENGIE intake point (formerly AES). However, it is important to bear in mind that the measurements carried out do not show the operating conditions of Engie's (formerly AES) combined cycle and therefore the influence that its own thermal discharge, whose discharge point is approximately 150 m from the intake, may have on the temperature increase in the intake.

In terms of **control and monitoring of the marine environment**, in accordance with the Resolution dated 16 January 2013,[3] approving the programme of monitoring and integrated control of the quality of receiving waters, sediments and biological organisms in the coastal waters of “La Manceba-Punta Aguilones”, as well as the IEA dated 28 April 2008, **ESCOMBRERAS CCP**outsourced the surveillance services of the receiving environment to LABAQUA, S.A. to control and monitor:

3 Resolution changed through Directorate General for the Environment for the Murcia Region’s Environmental Assessment and Planning Service technical reports on 30 January 2014, 1 July 2015, and 10 February 2016 after RD 817/2015 came into effect on 11 September which establishes the criteria for monitoring and assessing the condition of surface water and environmental quality standards.

8.2.1 Receiving water control

Samples are taken on a quarterly basis at each of the 11 sampling stations as shown in Figure 6:

Figure 6: The “La Manceba-Punta Aguilones” water mass sampling stations.

Below are details of the operational conditions of the **ESCOMBRERAS CCP** during the quarterly sampling campaigns, as well as the results obtained for each of the parameters analysed:

- 1st quarter 2021 – Carried out by Labaqua, S.A. on 17/02/2021.
  Combined cycle plant in normal operation with the cooling water pumping system in operation, industrial effluents were discharged into the receiving environment during this sampling campaign.
  Remarks: The results obtained comply with the Quality Objectives established in the Integrated Environmental Authorisation AU/AI/590/05.
- 2nd quarter 2021 – Carried out by Labaqua, S.A. on 01/06/2021.
  Combined cycle plant in normal operation with the cooling water pumping system in operation, industrial effluents were discharged into the receiving environment during this sampling campaign.
  Remarks: The results obtained comply with the Quality Objectives established in the Integrated Environmental Authorisation AU/AI/590/05.
- 3rd quarter of 2021 - Carried out by Labaqua, S.A. on 27/08/2021.
  Combined cycle plant in normal operation with the cooling water pumping system in operation, industrial effluents were discharged into the receiving environment during this sampling campaign.
  Remarks: The results obtained comply with the Quality Objectives established in the Integrated Environmental Authorisation AU/AI/590/05.
- 4th quarter 2021 – Carried out by Labaqua, S.A. on 30/11/2021.
  Combined cycle plant in normal operation with the cooling water pumping system in operation, industrial effluents were discharged into the receiving environment during this sampling campaign.
  Remarks: The results obtained comply with the Quality Objectives established in the Integrated Environmental Authorisation AU/AI/590/05.

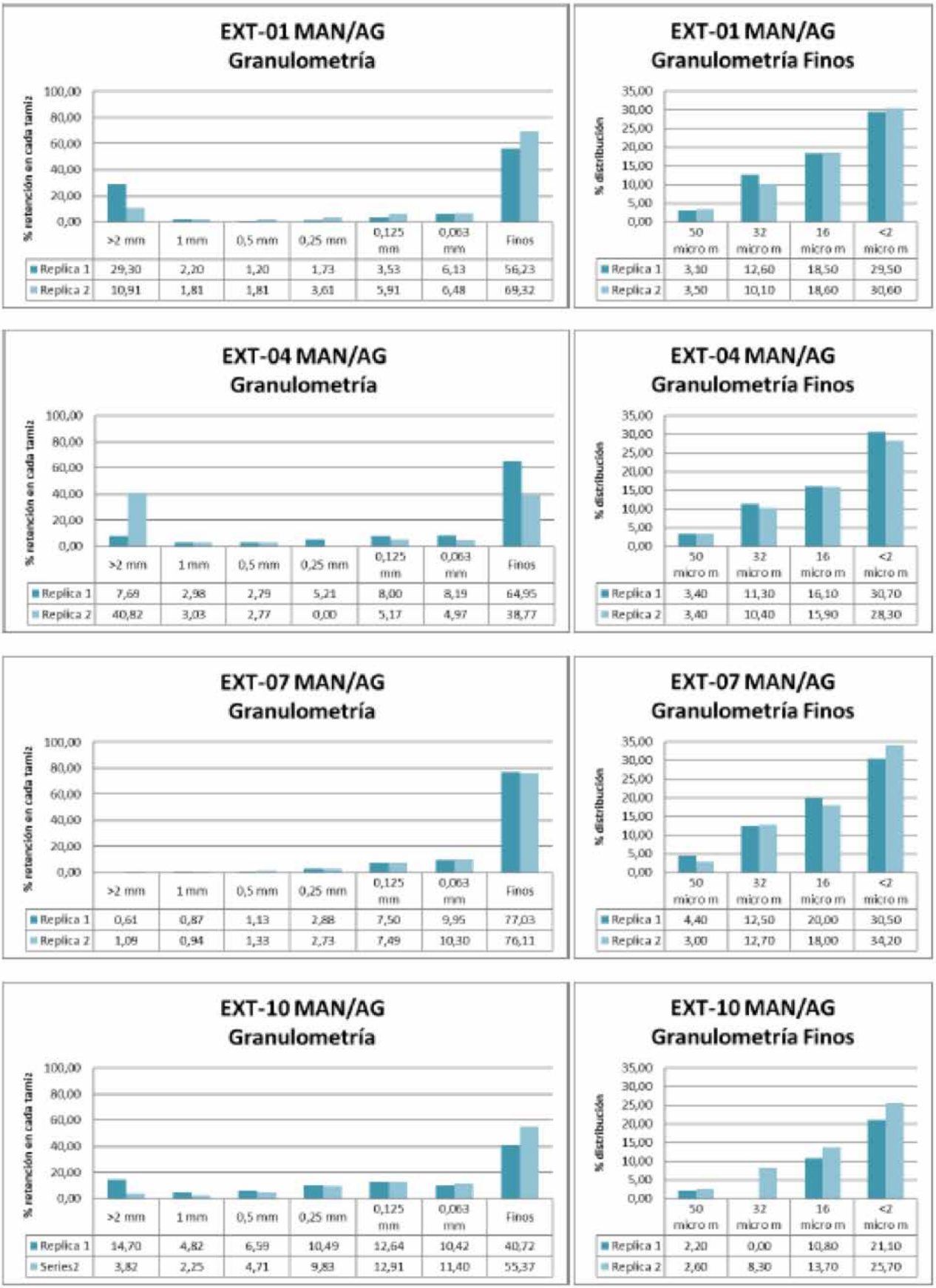
The results of the controls on continuous profiles of temperature, density, turbidity, salinity, transparency, and oxygen dissolved as well as data from the analysis of physical-chemical parameters (pH, suspended solids, oils and grease, detergents, phenols, free residual chlorine), nutrients (nitrates, phosphates, ammonium, nitre), chlorophyll a, sulphates, and heavy metals (arsenic, iron, copper, nickel, zinc, chrome VI, mercury, cadmium, lead) show that all of the values obtained in the receiving waters meet the quality objectives set by the legislation in force. These data have been reported to the competent body through the Annual Report on Monitoring and Control of the receiving environment on 16 February 2022, to comply with the provisions of the IEA, the Resolution of 16 January 2013, and its subsequent amendments, which establishes the Programme of Monitoring and Integrated Control of the quality of receiving waters, sediments and biological organisms in coastal water bodies “La Manceba - Punta Aguilones” and “Punta Aguilones - La Podadera”.

8.2.2 Sediment control

Annually, at each of the 4 sampling stations, as shown in Figure 7, the characteristics and condition of the bottoms are analysed, as well as substances such as polycyclic hydrocarbons, aromatics, heavy metals (arsenic, zinc, cadmium, copper, chrome VI, mercury, nickel and lead), carbonates, total organic carbon, redox potential, and sulphates.

Figure 7: The “La Manceba-Punta Aguilones” water mass sediment sampling stations.

Carried out by Labaqua, S.A. on 01/06/2021, resulting in silty-sandy bottoms with moderate presence of clays; specifically, a greater presence was found at the EXT-07 MANG/AG station than at the other stations. Gravel is also present at all of the points, but scarcely. In particular, the presence of gravel is practically zero at the EXT-10 MAM/AG station.



Graph 7: Sediment results according to fractions and texture of the receiving medium, 2021.

As for the results obtained after the analysis of the different substances is obtained:

- Reduced general conditions of the analysed sediments in view of the Redox results
- Sulphates have a concentration that varies between 0.59 and 1.24 g/Kg m.s., similar values to those of the previous year.
- With regard to the HPA results, they revealed the absence of pollution from these hydrocarbons.
- Absence of Chrome VI at all points.
- Cadmium, copper and nickel, present in all cases in concentrations lower than the action levels established by CEDEX.
- In view of the results of metals in sediments, we found that the control stations that have heavy metals (arsenic, mercury, lead and zinc) have concentrations far from the level of dangerous sediment. The results obtained for Arsenic and Mercury are at Action Level A, except one of the stations which is at Action Level B (SD-EXT-04 MANC/AG station, in both cases). With regard to the lead and zinc parameters, concentrations at Action Level B were recorded at some points .

8.2.3 Control of biological organisms

Carried out by Labaqua, S.A. on 01/06/2021.

The conclusions drawn after analysing and processing the data were:

- The specific richness is considered high in all samples with values above 50.
- The abundance is considered moderate with values between 1,760 and 2,380 ind/m^2.
- The equality is high in all samples (values above 0.9).
- The diversity is high in all samples (values above 5 bit/ind).
- These results indicate a sound environmental state.
- Based on the data analysed by LABAQUA, the most likely classification of the biological community was established (infralittoral and circalittoral sands and muddy sands); however, the results are not conclusive.

Taking into account the taxonomic analysis of the macrofauna, their abundances, the type of substrate, as well as the bathymetric range of each of the samples studied, the biological communities have been determined based on two criteria:

- Classification of Marine Habitats of the Mediterranean Action Plan of the Barcelona Convention (PNUA-PAM-CAR/ASP, 2007).
- Resolution dated 22 March 2013, of the Directorate General for Sustainability of the Coast and the Sea, which establishes the first two elements of the Spanish Inventory of Marine Habitats (IEHM): the master list of the types of marine habitats present in Spain and their hierarchical classification (Templado et al., 2012).

The MEDOCC index has been applied (Royal Decree 817/2015) to the list of animal life obtained from the taxonomic analysis and abundance of each of the species identified by the authorised laboratory, in order to establish the environmental situation of the benthic community in the samples studied, obtaining the following results.

Sample	MEDOCC index	RCE value	Classification	Percentage of ecological groups (%)			
				I	II	III	IV
EC-EXT-01	2.28	0.64	**Good**	29.1	35.1	28.4	7.5
EC-EXT-04	2.42	0.62	**Good**	25.2	42.3	18.7	13.8
EC-EXT-07	2.52	0.60	**Good**	27.6	35.1	21.1	16.2
EC-EXT-10	2.63	0.58	**Good**	22.1	43.6	14.8	19.5

Table 19. Results MEDOCC index.

- **Control of benthic organisms in rocky bottoms:**

The CARLIT index was applied to control hard substratum benthic communities based on the study of the main macro-algae communities present in the upper lower end with different degrees of sensitivity (Ballesteros et al., 2007, Royal Decree 817/2015).

Four different coast typologies were identified in the area the CARLIT index is applied. Figure 8 shows the location of each of the typologies identified:

Figure 8: The “La Manceba-Punta Aguilones” water mass coast typology. Areas of study.

The inspected coastal section presents values of the CARLIT index considered as very good, with the presence of macro-algae of the Cystoseira genus, except for the one constituted by natural metric blocks (zone 4). The presence of green algae (nitrophilic algae) in zone 4, together with the absence of sensitive species of the genus Cystoseira, means that the CARLIT classification for this zone is considered deficient.

Area	Type of coast	Community	Coast length (m)	EQR	Classification
1	Artificial Metric Blocks	Mediterranean Cystoseira 2	180	0.99	**Very good**
2	Natural low wall	Mediterranean Cystoseira 3	110	0.90	**Very good**
3	Artificial Metric Blocks	Mediterranean Cystoseira 2	23	0.99	**Very good**
4	Natural metric blocks	Chlorophyceae (nitrophilous green algae)	381	0.25	**Deficient**
5	Natural high wall	Mediterranean Cystoseira 4	1103	0.78	**Very good**

Table 20: Results Large Scale CARLIT (Coastal Cartography).

- **Control of the species of interest**:

The following can be concluded from the data obtained during coastal inspections to characterise micro-algae and from the sediment samples from the taxonomic analysis of macroinvertebrates:

- With regard to the protected species described in Royal Decree 139/2011 and Order AAA/75/2012 (List of Wild Species under Special Protection and the Spanish Catalogue of Threatened Species), the presence of the Cystoseira sp and Dendropoma petraeum genus is noteworthy. No other species from this list have been detected, although the presence of other species such as Lithophaga lithophaga and Pinna nobilis has not been ruled out in the area.
- Regarding the presence of exotic species included in Royal Decree 630/2013, of 2 August, which regulates the Spanish catalogue of invasive exotic species, detecting the presence of invasive macroalgae Asparagopsis armata should be highlighted in the external seawall's artificial metric blocks.
- The absence of the Caulerpa racemosa species at all studied points should be highlighted.

On 01/06/2021, samples were taken at the discharge point authorised for IBERDROLA, for later identification and counting of the marine phytoplankton. The report concludes that there is no potential risk of harmful effects on either health or the environment caused by the abundance of particular species.

8.2.4 Discharge pipes

Performed on 17 September 2021 by Labaqua, S.A. with the following results:

- The two discharge towers (diffusers) show no structural damage or flaws that compromise their proper operation.
- No obstructions were found in the grilles of the diffusers due to the massive growth of fouling organisms.
- We detected the loss of screws in the diffuser lying the furthest from the coastline (diffuser 2), specifically losses of 3 screws, nuts and locking nuts. The loss of screws “a priori” does not compromise the correct functioning of the diffusers.
- No effluent leaks or structural damage detected on the discharge line as far as the seawall that might cause environmental damage.

8.2.5 Monitoring of fishing resources

Performed on 1 and 2 June 2021 by LABAQUA, S.A., obtaining the following results:

- No live or dead specimens were found trapped in the grills of the discharge diffusers.
- The fish community associated with the discharge diffusers is considered normal for this time of year and very similar at both towers in terms of abundance and specific composition.
- The predominant species was Chromis chromis, or damselfish. Other species of wrasse and sea bream were also found in lower amounts.

During the monitoring undertaken during maintenance work throughout 2021 by IBERDROLA, personnel did not detect any fish remains that could be attributed to entrapment in the intake pipelines. Only the presence of bivalve-shell remains was documented. Consequently, we can affirm that the intake process has no negative impact on local fishing resources, since the seawater intake on the inside of the Escombreras dock.

8.2.6 Marine Dynamics

On 22 December 2021, LABAQUA, S.A. carried out a draughts control campaign as part of the Integrated Control and Surveillance Plan for the Receiving Medium of Cartagena Bay. This campaign included a bathymetric survey to control draughts in the area close to the discharge by the IBERDROLA emissary in Escombreras. The main goal of the work is to analyse and assess the possible effect of discharging sea water on the variations in the active sedimentation profile.

The following can be concluded from the bathymetric survey in the area under study, which covers IBERDROLA's effluent diffusers:

- From north to south, the area of study shows a moderate profile with an average slope of approximately -16.28º.
- The study area shows a depth range between -9,864 m and -52,863 m. In its southernmost area, the profile is more rugged, which enables considerable depths to be reached quickly.

Based on the data obtained from the bathymetric survey, and the immersions by professional divers and scientists for structural surveys of the discharge diffusers, it may be concluded that no accumulation of sediment near the effluent discharge point has been detected. No substantial variations in the area’s bathymetry were observed as a consequence of the physical presence of the discharge towers.

8.3 Waste generation

Contribution to the SDGs of the performance described by the indicators in this section:

Under the guideline '*Ensuring Sustainable Production and Consumption Modalities*'. This requires continuous improvement in operational performance, the implementation of actions to increase energy efficiency, the reduction of natural resource consumption, the inclusion of the environmental variable in the design of infrastructures and improvements in the control and management of waste generated. All of this is done by promoting use of resources that respect the environment.

As a result of its activities, the **ESCOMBRERAS CCP** generates a variety of hazardous and non-hazardous waste, which is identified, stored and processed in accordance with current legislation and the Environmental Management System.

The following table outlines the tonnes of hazardous waste produced during the 2019-2021 period:

	Hazardous waste (tonnes)			Hazardous Waste (t/MWh)		
TYPE	2019	2020	2021	2019	2020	2021
Used oil not specified under another category	1.620	1.955	0.434	0.000001	0.000003	0.000001
Paint and varnish residue	0.000	0.000	0.000	0.000000	0.000000	0.000000
Rags contaminated with hydrocarbons	0.220	0.388	0.594	0.000000	0.000001	0.000001
Water contaminated with hydrocarbons	0.622	0.000	0.000	0.000001	0.000000	0.000000
Materials contaminated with hydrocarbons	0.255	0.235	0.393	0.000000	0.000000	0.000000
Mixtures (containers of chemical substances)	0.131	0.435	0.088	0.000000	0.000001	0.000000
Water-oil emulsions	0.000	0.000	4.478	0.000000	0.000000	0.000005
Aqueous liquid waste containing hazardous substances (waste water from washing the compressors)	23.820	0.000	0.000	0.000021	0.000000	0.000000
Solvents and mixtures of non-halogenated solvents	0.000	0.000	0.260	0.000000	0.000000	0.000000
Waste chemical products (solids)	0.000	0.000	0.126	0.000000	0.000000	0.000000
Ni-Cd batteries	0.000	0.000	0.000	0.000000	0.000000	0.000000
Aerosols	0.026	0.000	0.000	0.000000	0.000000	0.000000
Cartridge filters. Water treatment	0.000	0.000	0.058	0.000000	0.000000	0.000000
Lead batteries	0.000	0.661	0.000	0.000000	0.000001	0.000000
Fuel oil and diesel	1.825	0.732	0.000	0.000002	0.000001	0.000000
Metal containers (HC)	0.487	0.075	0.028	0.000000	0.000000	0.000000
Plastic containers (HC)	0.067	0.000	0.000	0.000000	0.000000	0.000000
Fluorescent	0.348	0.000	0.000	0.000000	0.000000	0.000000
Materials contaminated with paints and varnishes	0.030	0.076	0.000	0.000000	0.000000	0.000000
Degreasing waste containing hazardous substances	0.060	0.000	0.000	0.000000	0.000000	0.000000
Discarded electrical and electronic equipment containing hazardous components that differ from those specified in the 200121 and 200123 codes.	0.000	0.005	0.000	0.000000	0.000000	0.000000
Discarded organic chemical products that consist of dangerous substances	0.000	0.045	0.014	0.000000	0.000000	0.000000
Aqueous cleaning solutions (residues from cleaning pieces safety kleen)	0.000	0.300	0.450	0.000000	0.000000	0.000001
Materials contaminated with chrome VI	0.000	0.033	0.085	0.000000	0.000000	0.000000
Waste chemical products (Merck kit)	0.000	0.000	0.066	0.000000	0.000000	0.000000
TOTAL	29.51	4.99	7.07	0.000027	0.000008	0.000008

Table 21: Hazardous waste generation. 2019-2021.

The production of hazardous waste increased over the previous year, primarily due to generating waste in “water-oil emulsions” from cleaning the hydraulic oil storage tank and lubricating gas turbine 1, as a result of the breakage of a cooling oil/water exchanger.

On 29 June 2021, the **ESCOMBRERAS CCP** submitted the Hazardous Waste Minimisation Plan, applicable to the entire site, for the 2021–2024 period. The plan proposes waste reduction measures that have been identified and quantifies the annual reduction targets. Below are the objectives set for the aforementioned period, along with the monitoring of said objectives based on the real data produced in 2021.

Residuo	Envases contaminados con productos químicos (mezclas envases)							
OBJETIVO: Reducción en un 5% el valor medio de producción del residuo de los últimos 4 años								
Ultimos 4 años (2017-2020)		Producción media (kg):		Producción específica (kg/GWh):		Producción específica (kg/h.f.):		
		344,00		0,67		0,23		
AÑO	Producción estimada (kg)	Producción real (kg)	Producción específica estimada (kg/GWh)	Producción específica real (kg/GWh)	Producción específica estimada (kg/h.f.)	Producción específica real (kg/h.f.)	% Estimación reducción respecto media de los últimos 4 años (2017-2020)	% Reducción real respecto media de los últimos 4 años (2017-2020)
2021	339,70	88,00	0,39	0,10	0,13	0,03	1,25	74,42
2022	335,40						2,5	100,00
2023	331,10						3,75	100,00
2024	326,80						5	100,00
Residuo	Aceites usados no especificados en otra categoría							
OBJETIVO: Reducción en un 5% el valor medio de producción del residuo de los últimos 4 años								
Ultimos 4 años (2017-2020)		Producción total (kg):		Producción específica (kg/GWh):		Producción específica (kg/h.f.):		
		1.168		1,77		0,57		
AÑO	Producción estimada (kg)	Producción real (kg)	Producción específica estimada (kg/GWh)	Producción específica real (kg/GWh)	Producción específica estimada (kg/h.f.)	Producción específica real (kg/h.f.)	% Estimación reducción respecto media de los últimos 4 años (2017-2020)	% Reducción respecto media de los últimos 4 años (2017-2020)
2021	1.153	434	1,34	0,50	0,43	0,16	1,25	62,84
2022	1.139						2,5	100,00
2023	1.124						3,75	100,00
2024	1.110						5	100,00
Residuo	Trapos contaminados con hidrocarburos (absorbentes y textiles)							
OBJETIVO: Reducción en un 5% el valor medio de producción del residuo de los últimos 4 años								
Ultimos 4 años (2017-2020)		Producción media (kg):		Producción específica (kg/GWh):		Producción específica (kg/h.f.):		
		309		0,56		0,19		
AÑO	Producción estimada (kg)	Producción real (kg)	Producción específica estimada (kg/GWh)	Producción específica real (kg/GWh)	Producción específica estimada (kg/h.f.)	Producción específica real (kg/h.f.)	% Estimación reducción respecto media de los últimos 4 años (2017-2020)	% Reducción respecto media de los últimos 4 años (2017-2020)
2021	305,14	594,00	0,35	0,69	0,11	0,22	100	-92,23
2022	301,28						100	100,00
2023	297,41						100	100,00
2024	293,55						100	100,00

Table 22: Monitoring the Hazardous-Waste Minimisation Plan, 2021-2024.

During 2021, two of the three proposed objectives were met. In terms of the objective of reducing the average waste production value by 5% for “Rags contaminated with hydrocarbons”, despite there being other absorbents for soaking up possible discharges, the increase is primarily due to the personnel involved in the scheduled stoppages this year, and the type of work done (disassembly of valves and exchanger in the cooling system modules of the gas turbines, disassembly of the turbine rotor and stator, etc.).

Similarly, the **ESCOMBRERAS CCP** generates non-hazardous waste, which is separated properly to ensure suitable subsequent processing. The most significant are listed below:

	Non-hazardous waste (tonnes)			Non-Hazardous Waste (t/MWh)		
TYPE	2019	2020	2021	2019	2020	2021
Fibreglass material and waste	2.90	6.44	0.62	0.000003	0.000010	0.000001
Paper and cardboard	0.65	1.12	0.62	0.000001	0.000002	0.000001
Wood other than that specified in code 200137	2.42	1.50	1.38	0.000002	0.000002	0.000002
Scrap (metals)	6.32	18.59	1.10	0.000006	0.000029	0.000001
Municipal waste (organic, food leftovers)	14.31	13.15	12.53	0.000013	0.000020	0.000015
Mussel waste (condenser cleaning)	12.76	14.66	74.82	0.000011	0.000023	0.000087
Plant pruning and cutting remains	1.12	0.50	3.88	0.000001	0.000001	0.000004
Mixed construction and demolition waste other than that specified in codes 170901, 170902 and 170903.	4.66	41.10	3.16	0.000004	0.000064	0.000004
Septic tank sludge	0.00	0.00	0.00	0.000000	0.000000	0.000000
Effluent treatment plant slurry	0.00	0.00	0.00	0.000000	0.000000	0.000000
Plastic (containers similar to those of domestic waste, packaging, etc.)	0.12	0.14	0.14	0.000000	0.000000	0.000000
Air filters free from toxic and hazardous products, classifiable as iron and steel	0.00	0.00	0.00	0.000000	0.000000	0.000000
Inorganic waste other than that specified in code 160303	0.00	0.00	0.00	0.000000	0.000000	0.000000
Alkaline batteries	0.00	0.00	0.00	0.000000	0.000000	0.000000
Plastic (PVC tubes, etc.)	0.00	0.27	0.16	0.000000	0.000000	0.000000
Air filters free from toxic and hazardous products, classifiable as iron and steel	0.00	8.86	0.00	0.000000	0.000014	0.000000
Waste water from washing the gas turbine compressors	0.00	33.88	17.16	0.000000	0.000053	0.000020
Electrical and electronic equipment	0.00	1.65	0.00	0.000000	0.000003	0.000000
Waste from printer toner	0.00	0.08	0.00	0.000000	0.000000	0.000000
Organic waste other than that specified in code 160305	0.00	0.00	0.16	0.000000	0.000000	0.000000
Aluminium	0.00	0.00	0.10	0.000000	0.000000	0.000000
Other wastes (including mixed materials) from the mechanical treatment of waste, other than those specified in code 19 12 11	0.00	0.00	6.86	0.000000	0.000000	0.000008
Glass	0.00	0.00	0.11	0.000000	0.000000	0.000000
TOTAL	45.27	141.94	122.80	0.000041	0.000220	0.000142

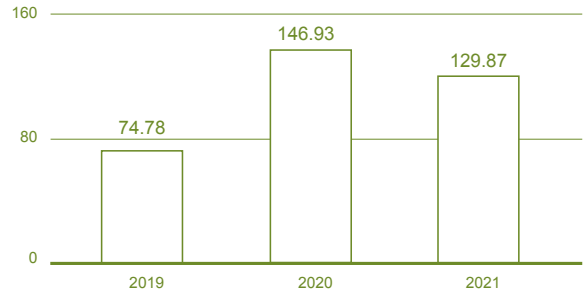
Table 22: Non-hazardous waste generation. 2019-2021.

Non-hazardous waste decreased from the previous year, mainly due to reductions in construction waste, however we can see an increase in the production of “mussel waste” as a result of cleaning the condenser and the piping of its cooling system, keeping the levels of this type of waste high.

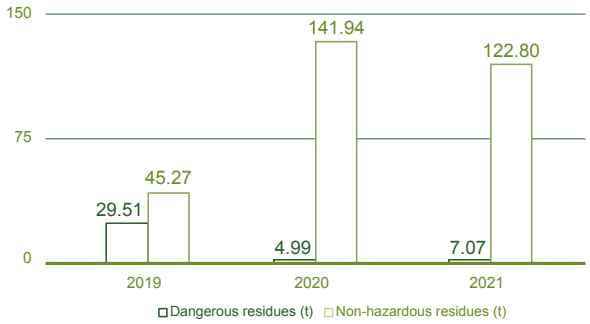
Growth of mussel larvae has been observed since 2019, which has forced an increase in the consumption of sodium hypochlorite to prevent its growth in the suction channels. This is expected to continue throughout 2022, which will mean an increase in this waste in the coming years.

The indicators related to total production, and specific hazardous and non-hazardous waste production, are shown below. Furthermore, the indicator is provided in t/MWh and expresses the specific emission per unit of energy produced during the operating periods.

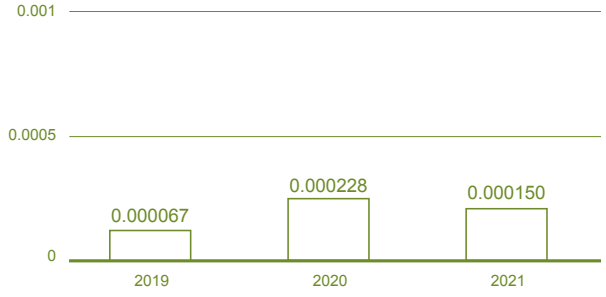
Total Waste Production
(t)



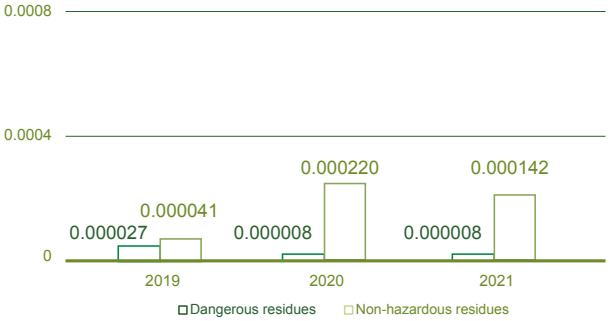
Annual waste production
(t)



Total Waste Production
(t/MWh)



Annual waste production
(t/MWh)



Graph 8: Annual change in volume of waste produced. 2019-2021.

We can see a reduction in the total amount of waste produced, though the non-hazardous waste value remains high due to occasional cleaning work on the condenser and cooling system, as mentioned above. In 2022, a new biocide dosing system that uses chlorine dioxide will be coming online, so these wastes can be expected to increase in the upcoming period due to the biodispersant action of the product used. The situation will return to normal once all surfaces have been cleaned.

Due to the reduction in waste production, the evolution of the indicator relating the waste generated with energy production has declined compared to previous years. We should highlight that, generally speaking, the total amount generated is not proportional to the electrical energy generated or to the operating hours. It is, however, related to the maintenance operations (oil changes, equipment cleaning, cleaning of the water intake tubes, repairs. etc.).

Management of all waste generated in the facilities and transport waste associated with management was undertaken by an intermediary duly authorised by the Autonomous Community of the Murcia Region.

8.4 Resource consumption

Contribution to the SDGs of the performance described by the indicators in this section:

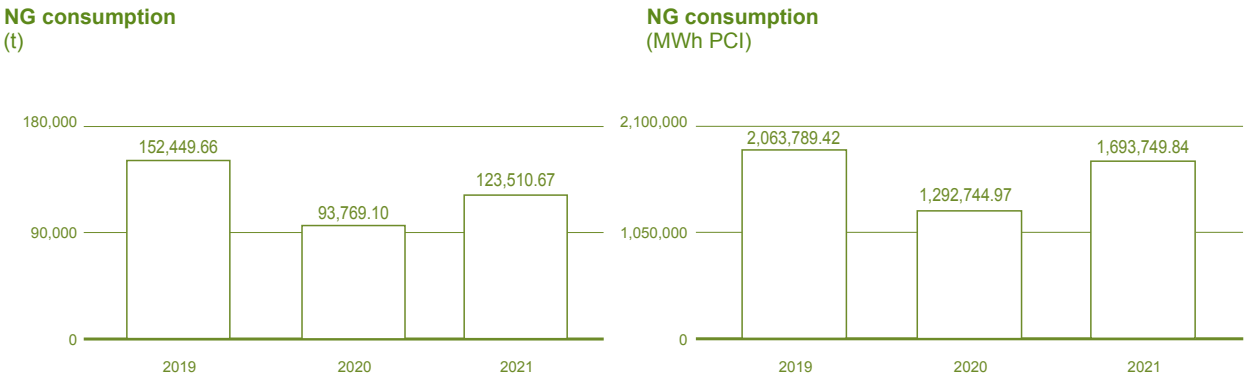
Under the guideline '*Ensuring Sustainable Production and Consumption Modalities*'. This requires continuous improvement in operational performance, the implementation of actions to increase energy efficiency, the reduction of natural resource consumption, the inclusion of the environmental variable in the design of infrastructures and improvements in the control and management of waste generated. All of this is done by promoting use of resources that respect the environment.

8.4.1 Energy Efficiency

ESCOMBRERAS CCP uses natural gas as its main fuel and diesel oil as an alternative fuel (although since 2015 it has not been used as a fuel for energy production at the facility because the diesel storage system is empty). Fuel consumption is directly related to the plant's electricity production.

The consumption of energy is broken down into: gas consumption, diesel oil consumption in auxiliary systems, and consumption of external electricity when it is not producing.

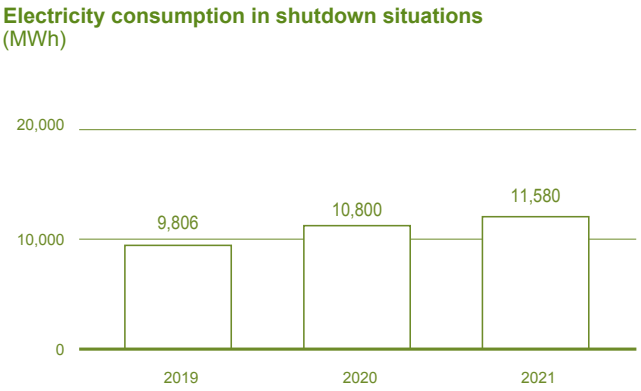
The consumption of fuel and energy in MWh over the 2019-2021 period is shown in the following graphs together with the total energy consumption obtained by adding them together:



Graph 9: Change in fuel consumption. 2019-2021.

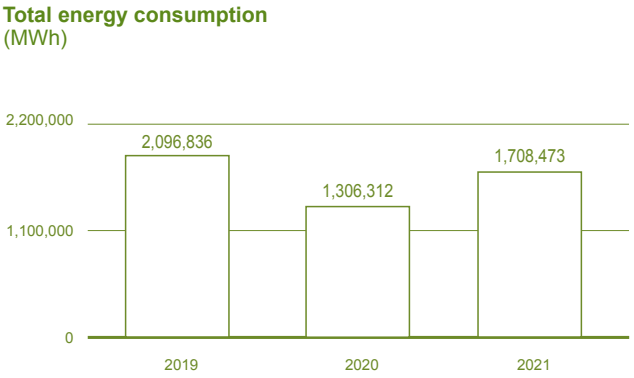
The annual consumption of natural gas is proportional to the production of the cycle's power at normal operation except for periods when operation is zero, when natural gas was only consumed to operate auxiliary equipment (station heating and natural gas regulation measurement boilers and auxiliary boilers). We found an increase in fuel consumption due the decrease in the number of start-ups of the **ESCOMBRERAS CCP** gas turbines compared to 2020. There was a 33.88% jump in production compared the previous year.

During 2019-2021, diesel oil consumption was minimal, and it was only used to maintain back-up equipment, like emergency diesel pumping equipment (fire prevention system) and the plant's emergency diesel generator. The amount consumed in 2021 was on the order of 1.41 tonnes/year.



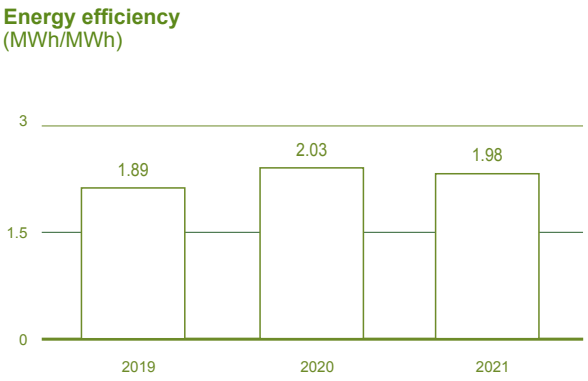
Graph 10: Electricity consumption in shutdown situations 2019-2021.

With regards to the indicator for the consumption of energy from renewable sources, it is not possible to determine its proportion with respect to the total absorbed from the network by **ESCOMBRERAS CCP**.



Graph 11: Annual change in total energy consumption. 2019-2021.

The following sets out the change in the energy efficiency indicator that compares the total consumption of energy resources with the **ESCOMBRERAS CCP** electrical energy production over the 2019–2021 period:



Graph 12: Annual evolution of the energy efficiency for 2019-2021.

As shown, the indicator has declined compared to the figures from the previous period. Despite the operating scheme mentioned in previous sections – characterised by more start-ups and reduced operating time for each one, going from 45.37 h/start-up in 2020 to 33.47 h/start-up in 2021 – we can see that the indicator performed better due to the optimisation of start-up and stoppage hours compared to previous years.

8.4.2 Chemicals Consumption

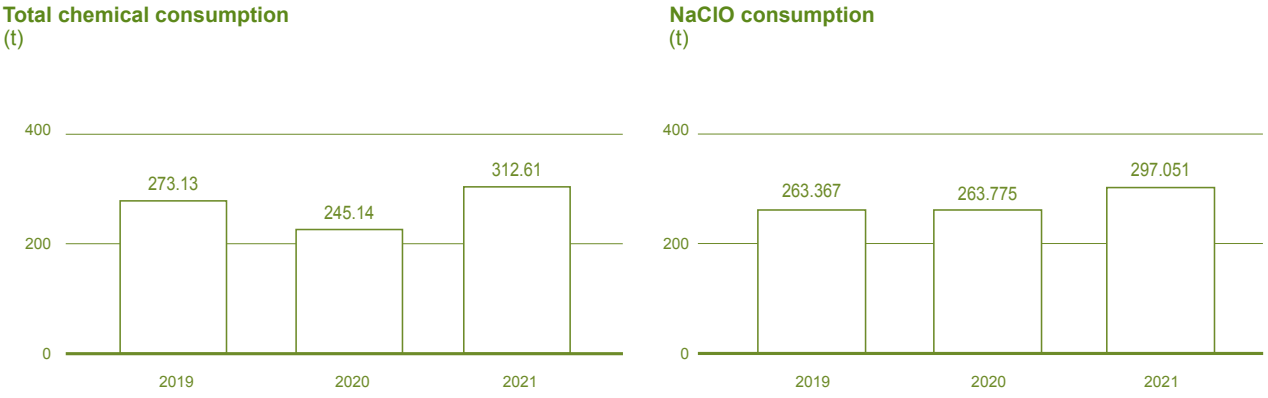
The chemicals consumed in tonnes by the **ESCOMBRERAS CCP**, mainly in condenser cooling water treatment, demineralised water production, and to a lesser extent purification of effluent and equipment maintenance, during 2019-2021 are shown in the following table:

	2019		2020		2021	
CHEMICAL PRODUCTS	Consumption (t)	Consumption (t/MWh)	Consumption (t)	Consumption (t/MWh)	Consumption (t)	Consumption (t/MWh)
Sulphuric acid	0.240	0.000000	0.199	0.000000	0.000	0.000000
Sodium hydroxide (caustic soda)	0.051	0.000000	0.000	0.000000	0.030	0.000000
Sodium hypochlorite	263.367	0.000237	236.775	0.000367	297.051	0.000344
Ammonia	3.576	0.000003	2.917	0.000005	6.103	0.000007
Trisodium phosphate	3.178	0.000003	1.798	0.000003	1.534	0.000002
Scale inhibitor	0.501	0.000000	0.301	0.000000	0.467	0.000001
Polyelectrolyte	0.000	0.000000	0.000	0.000000	0.000	0.000000
PGB/ERM anticorrosive	0.909	0.000001	0.760	0.000001	0.950	0.000001
PTA sodium bisulphite	1.108	0.000001	1.258	0.000002	1.462	0.000002
PTA / PGB / PCI biocide	0.202	0.000000	1.129	0.000002	1.396	0.000002
Steam turbine corrosion inhibitor	-	-	-	-	3.620	0.000004

Table 23: Chemical products consumption. 2019-2021.

During 2021, the consumption of chemical products has increased, mainly due to the increase in water consumption in the auxiliary processes related to the operation of the **ESCOMBRERAS CCP**. Consequently, a greater consumption of chemical products dosed for the treatment and conditioning of these systems (demineralised water system for closed cooling processes, conditioning of demineralised water in boilers, waste water treatment, etc.). However, the amounts consumed in these treatments can be considered negligible compared to sodium hypochlorite consumption in the cooling water treatment system.

On the other hand, during 2021, a new chemical product was added to steam generators, consisting of a corrosion inhibitor, in order to reduce water consumption from purges. The valve system was automated and a particle counter was installed on the line which makes it possible to anticipate the closure of said purges. This product sticks to the iron on surfaces and prevents it from becoming dislodged during the many start-ups of discontinuous operation.

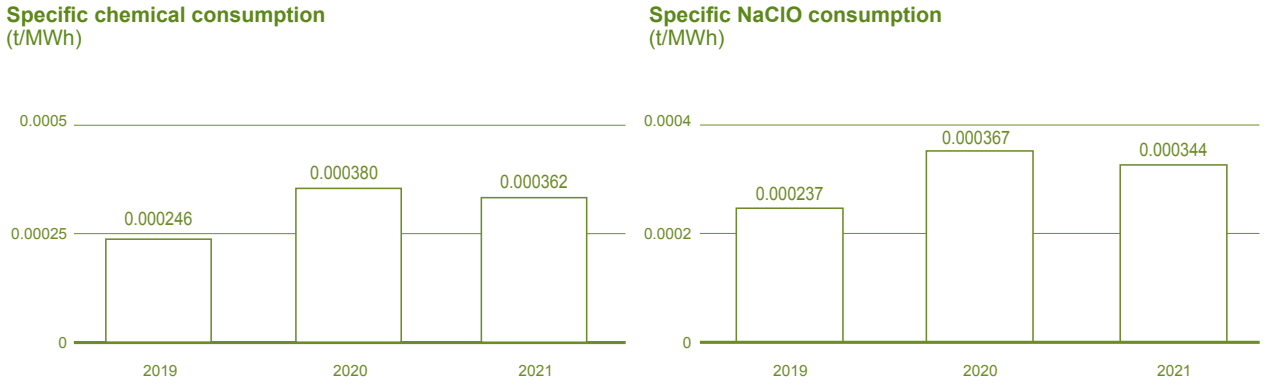


Graph 13: Evolution consumption chemical products and sodium hypochlorite. 2019-2021.

As we can see, sodium hypochlorite consumption has increased due to the fact that the mussel spawning periods have been prolonged for more than 4 months. The increased larval life requires a greater number of sodium hypochlorite treatments to prevent them from attaching to sections of intake and condenser water piping. The evolution of larval growth in these past years can be seen below.

Graph 14: Evolution of larval control monitoring of the condenser cooling water system.

If we compare the values for the specific consumption of all of the chemical products and specifically sodium hypochlorite during this period to previous periods, we obtain the following data:



Graph 15: Evolution of consumption of specific chemical products and sodium hypochlorite. 2019-2021.

We find a moderate reduction in the specific consumption of chemical substances compared to the previous year, although they remain in the same order of magnitude, primarily due to increased electrical energy production.

It is essential to keep up the inspections of the water boxes of the condenser due to the noticeable attachment of bivalves at joints in its water intake and outlet tubes. Corrective treatments will be needed to remove all of them, which may increase the amount of sodium hypochlorite consumption for 2022 if treatments with other more effective biocide products like chlorine dioxide are not implemented. Analysis of larval growth in the intake water must continue to establish an appropriate strategy against the possible incrustation of bivalves in the walls of the water supply pipes to the condenser, and in the condenser itself. In 2020, the procedures got under way to launch a new treatment system in the circulating water tubes, replacing the biocide currently used with chlorine dioxide, a much more effective treatment which will prevent the formation of biofouling on the tube walls and thus the proliferation of the macrofouling associated with bivalves and other species. We can expect this system to go online in the first half of 2022.

Although the plant has sulphuric acid and sodium hydroxide storage tanks, neither of these substances was used during the period under study due to the high quality of both the make-up water and the treated effluent-discharge water, making the use of these chemicals completely unnecessary.

The consumption of ammonia and trisodium phosphate is associated with the conditioning in the water-steam cycle and, hence, their consumption varies depending on water quality and the production regime. The same applies to the biocide and the scale inhibitor used for water demineralisation, the consumption of which is also proportional to the amount of treated water and the plant's production requirements.

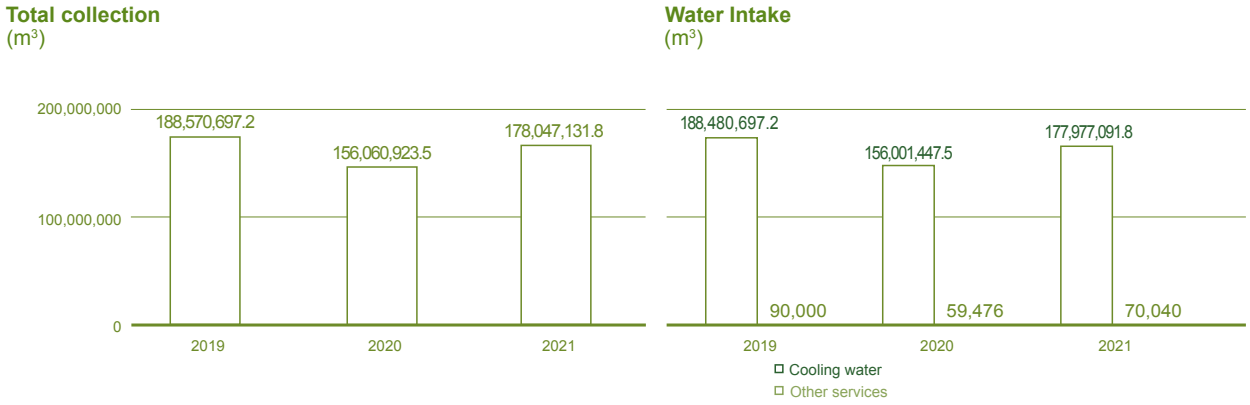
8.4.3 Water Intake

The seawater used in the cooling circuits and the intake water used in other processes that are necessary for the **ESCOMBRERAS CCP** activity, such as the production of demineralised water for the water-steam cycle, are shown in m^3, along with the indicator linking them to the total power output in m^3/MWh. The water supply is provided by the municipal network supplied by HIDROGEA.

Water is supplied for the plant's entire site as a whole. Consumption depends on the operation of the combined cycle plant. In the case of Unit 6, with its characteristic high number of stoppages and start-ups, consumption is generally higher than if the plant were in constant operation.

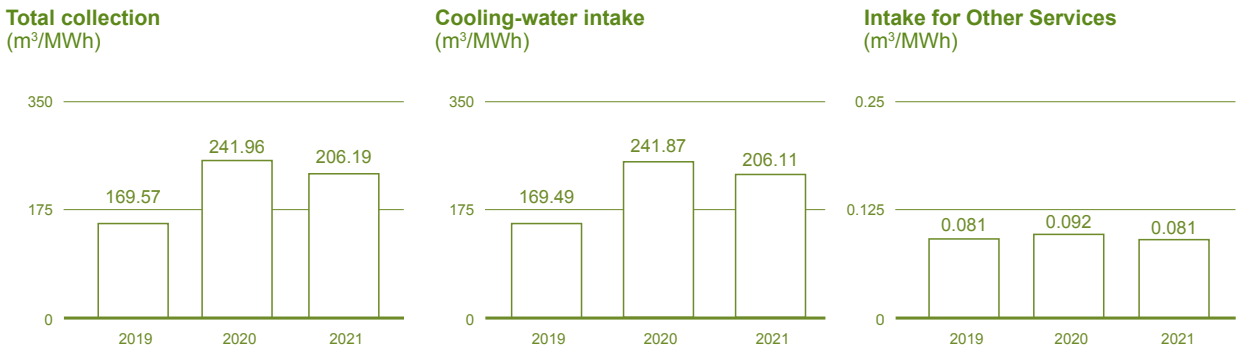
All indicators mentioned in this point are influenced by the aforementioned operating regime, which often involves it being in operation for just a few hours a day to cover demand peaks and to maintain network voltage, given that during the start-up and stoppage periods, the provision of cooling water for systems continues to be necessary, while no energy is produced, and the consumption of water during start-up is greater due to purging and draining lines.

Shown below are the total annual water make-up volumes and their breakdown into the different processes that take place at the plant:



Graph 16: Change in water intake. 2019-2021.

The increase in the volume of intake water during 2021 is due to the increase in the number of hours spent in operation by the cooling water pumping equipment. This increase is associated with the increase in energy production in this period. It should be noted at this point that the cooling intake water is the same water as the water used in thermal discharge since this water is discharged after passing through the condenser and being used as the plant's cooling source.



Graph 17: Change in specific water intake. 2019-2021

The specific consumption of cooling water in 2021 decreased from the previous year, due to having optimised operating time during start-ups and stoppages of this pumping system. Thus, the indicator has improved, despite more start-ups than the previous year.

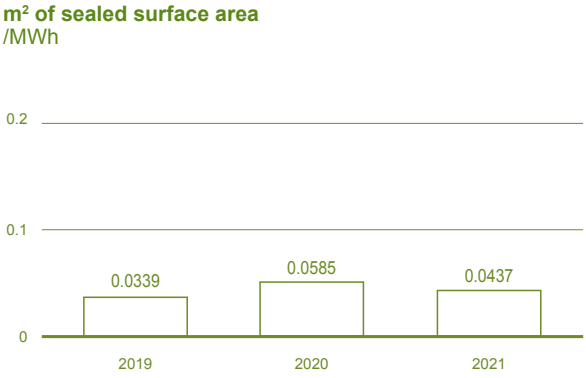
8.5 Biodiversity

Contribution to the SDGs of the performance described by the indicators in this section:

Under the guideline '*Protect the environment and stop the loss of Biodiversity*'. The aim of this guideline is to conserve and restore the ecosystems associated with our activities, coordinating the biodiversity plans of businesses in the affected environments. To improve the compatibility of Iberdrola's infrastructures with the environment, avoiding spillages and water and soil contamination, all in line with Iberdrola's Biodiversity and Environmental Policy.

The surface area occupied by **ESCOMBRERAS CCP** has not changed since it began operation. It is located on the site of the old thermal plant. The total surface area is 174,158 m², of which approximately 23,222 m² correspond to the surface area occupied by Unit 6 and 20,975 m² correspond to the necessary systems such as the water treatment plant, effluent treatment plant, water collection pump building, waste storage and fire protection system storage.

ESCOMBRERAS CCP keeps the sealed surface constant, understanding sealed surfaces to be concrete, asphalt and/or paved, of 37,732m² during the 2019-2021 period.



Graph 18: Changes in the biodiversity indicator. 2019-2021

YEAR	2019	2020	2021
m² total land use	174,158	174,158	174,158
m² asphalted and/or paved surface	37,732	37,732	37,732
m² of sealed surface area/MWh	0.0339	0.0585	0.0437

Table 25: Changes in built area 2019-2021.

There are no total areas facing nature either inside or outside the plant.

8.6 Noise

Contribution to the SDGs of the performance described by the indicators in this section:

Under the guideline '*Ensuring Sustainable Production and Consumption Modalities*'. This requires continuous improvement in operational performance, the implementation of actions to increase energy efficiency, the reduction of natural resource consumption, the inclusion of the environmental variable in the design of infrastructures and improvements in the control and management of waste generated. All of this is done by promoting use of resources that respect the environment.

The **ESCOMBRERAS CCP** for compliance with the Environmental Surveillance Program has set up controls every three years from the third year of operation, being 2007 the year of beginning.

In 2019, after the consultation from the Directorate General of the Environment of the Region of Murcia to the City Council of Cartagena, as the authorised body on noise matters, to determine whether the excessive noise stemming from the measurements taken by ACRE AMBIENTAL in 2017 may have repercussions on the maintenance of the EMAS Register, the City Council of Cartagena asked us for a new noise assessment report on 18 December 2018 taking the following considerations into account:

"*The assessment points should be selected with a view to avoiding the influence of non-activity noise sources such as the CT-34 road, adjacent industries and port activity. They shall be located outside the activity area, at least 5 metres from the perimeter fence and shall try to avoid shielding and reflections that could interfere with measurement results. Efforts should also be made to locate such points according to the location of the sound sources to be assessed and the preferred sound propagation paths. The report shall justify the location of each of the assessment points taking into account these criteria and shall identify the type of acoustic area in which they are located. In addition, it shall include a plan or orthophoto identifying all existing noise sources in the activity and, if technically possible, the emission levels of each of them.*"

Finally, a review of the historically collected data is carried out, and new measurement points are established, in compliance with the previous conditions. Below, you can see the location of the new measuring points, as opposed to any previously established:

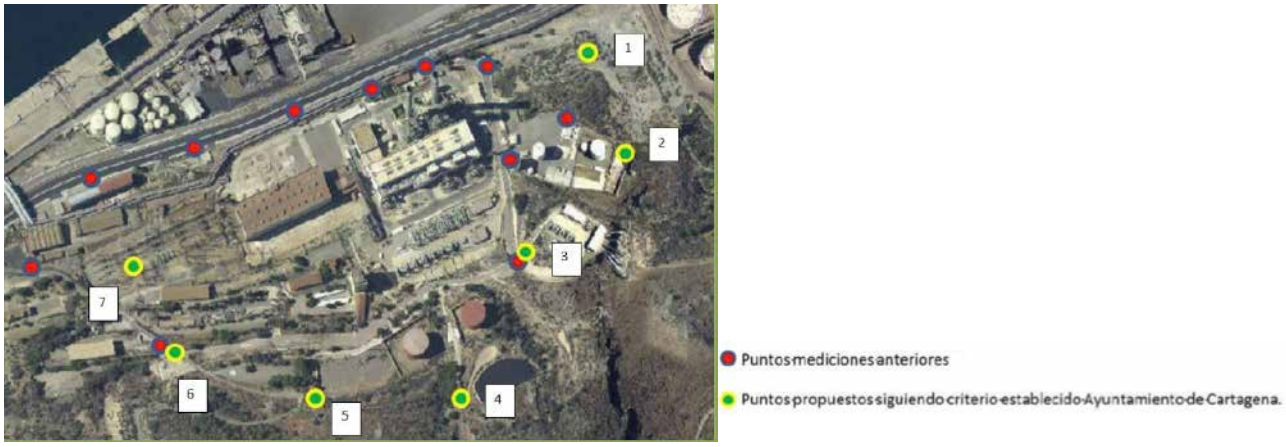
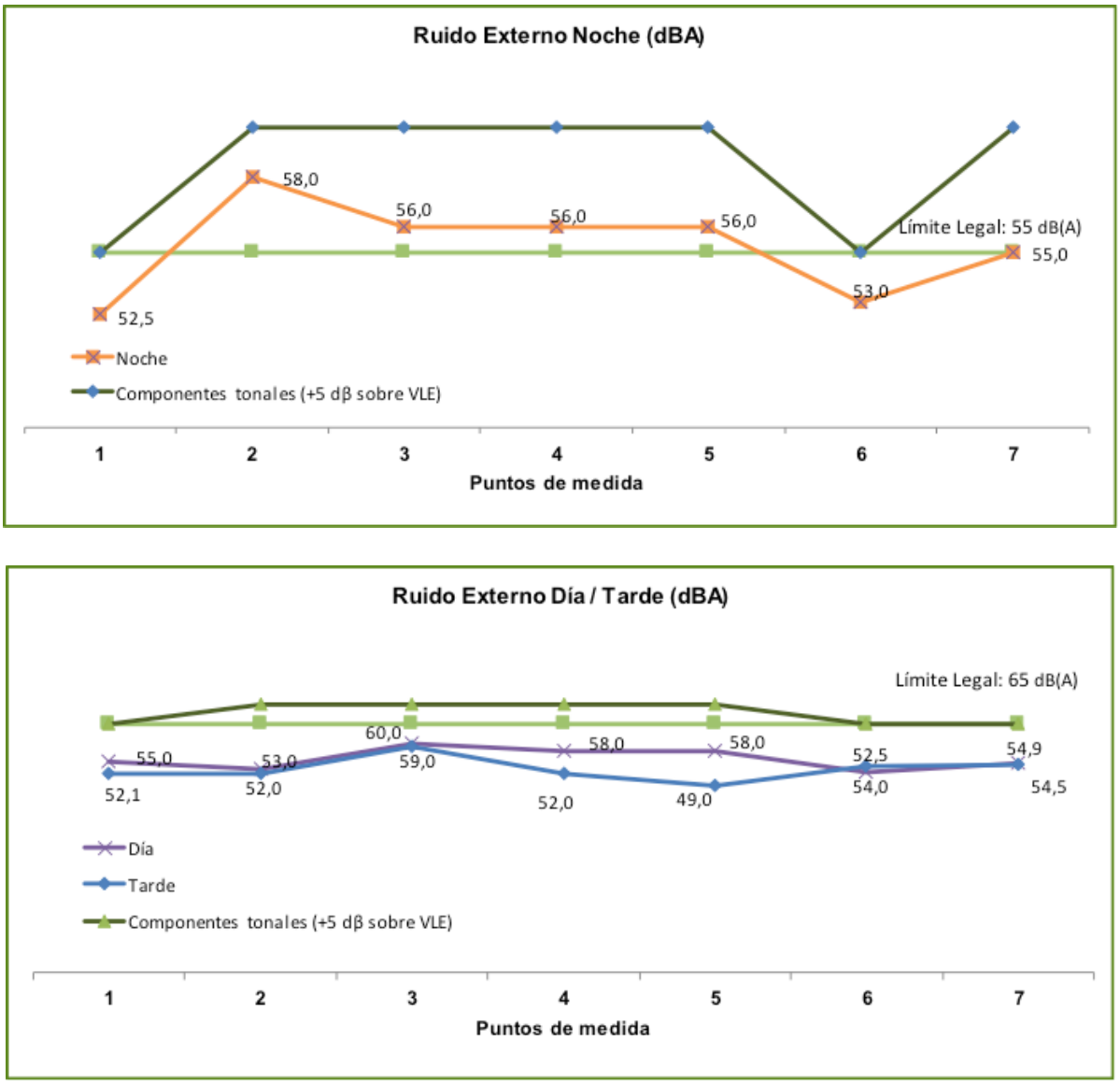


Figure 9: Location of new perimeter noise measurement points for the 2019 - 2020 campaign.

The results of the measurements carried out during the 2019 - 2020 campaign are given below in the points indicated in Figure 9.



Graph 19: Measurement of external noise during the day, evening and night 2020 compared to the limit set by RD 1367/2007.

With reference to the immission limits set out in Table B1 of Annex III "Acoustic Emitters Immission Limit Values" of Royal Decree 1367/2007, we can conclude the following:

- All points assessed are below the maximum levels allowed.
- The points evaluated make it possible to verify that the ZEPA zone of the Sierra de la Fausilla is noise-free, which, although it does not directly border the installations, is the closest protected area in existence.
- We also note the impossibility, given the sound levels obtained in the measurements made, of any effect on the residential areas closest to the facilities, in this case Alumbres County Council.

As a conclusion, we can say that the noise levels measured in the surroundings of the **ESCOMBRERAS CCP** comply with the current legislation.

The next campaign for ambient noise measurements will be performed in 2022.

9

Legislation

The **ESCOMBRERAS CCP** has the authorisations, licenses and permits required for its activity. The most relevant are listed below:

LEGAL REQUIREMENT	PROVISION	DATE
Environmental impact statement	Ruling of 9 March 2001 handed down by the General Secretary's Office for the Environment providing an environmental impact statement for a construction project of two combined-cycle units using natural gas, of 800 MW power, at the Escombreras thermal power station in the municipal district of Cartagena (Murcia), developed by "Iberdrola, S.A.".	09/03/2001
	Ruling of 10 March 2004 handed down by the General Secretary's Office for the Environment amending an environmental impact statement for a construction project of two combined-cycle units using natural gas, of 800 MW power, at the Escombreras thermal power station in the municipal district of Cartagena (Murcia), developed by "Iberdrola, S.A.".	10/03/2004
Commissioning certificate	Final commissioning certificate of the Escombreras 800 MW Thermoelectric Combined Cycle Power Plant.	30/10/2006
Electricity production facilities register	Ruling handed down by the Directorate General of Energy Policies and Mines to definitively register the Escombreras combined-cycle power plant (Murcia), owned by the company IBERDROLA GENERACIÓN TÉRMICA S.L.U., under Section 1 (Ordinary System Facilities) of the Administrative Electricity Production Facilities Register and to provisionally provide the net installed power of said power station, as well as the availability coefficient to be applied during the first year of operation.	07/09/2006
Building and business licence	Ruling handed down by the City Council of Cartagena on 17 November 2004, awarding a building and business licence to the trading company IBERDROLA GENERACIÓN TÉRMICA S.L.U. to install a Thermal Combined-Cycle Power Station with a total power of 800 MW in Escombreras in the municipal district of Cartagena.	17/11/2004
Integrated Environmental Authorisation	Ruling handed down by the Directorate General for Environmental Quality, awarding an integrated environmental authorisation to the trading company IBERDROLA GENERACIÓN, S.A.U. for the operation of a thermal power station and combined cycle plant at Escombreras in the municipal district of Cartagena (Murcia).	28/04/2008
Record of the granting of the Business Licence	Resolution passed by Cartagena Council on 24.10.12.	24/10/2011
EMAS Register	Resolution handed down by the General Department of the Environment to register the Community Environmental Management and Audit System (EMAS) for IBERDROLA GENERACIÓN, S.A.U. for its centre called "Escombreras Combined Cycle Plant" in Cartagena (Murcia).	26/04/2012
Archaeological site	Resolution handed down by the General Department of Cultural Sites on 20 June 2012 to declare the archaeological site of the town of Escombreras, TM Cartagena, as a listed site.	22/06/2012
Greenhouse gas emissions monitoring plan	Resolution handed down by the General Department of the Environment to approve the update of the Greenhouse Gas Emissions Monitoring Plan for IBERDROLA GENERACIÓN, S.A.U. to install an electricity generation plant in Escombreras in the municipal district of Cartagena (Murcia)	26/10/2012
Authorization to emit greenhouse effect gases	Resolution of 28 December 2012, of the Department for the Environment of the Ministry of Presidency, that grants the Authorisation for the Emission of Greenhouse Effect Gases for the electric power production plant through Combined Cycle of 830.89 MW of electrical power capacity, of the company IBERDROLA GENERACIÓN, S.A.U., for the 2013-2020 business period.	28/12/2012
Appendix Integrated Environmental Authorisation	Resolution handed down by the General Department of the Environment to approve the integrated control and surveillance programme for the quality of receiving water, the biological organisms and sediments in the coastal water mass of "La Manceba-Punta Aguilones" and "Punta Aguilones-La Podadera".	16/01/2013
Update of the Integrated Environmental Authorisation	Resolution handed down by the General Department of the Environment to update the Integrated Environmental Authorisation awarded to IBERDROLA GENERACIÓN, S.A.U. under record number 590/05 AAI, to adapt it to Directive 2010/75/UE of 24 November on industrial emissions.	18/12/2013
Environmental Impact Statement	Resolution of the Secretary of State for the Environment pursuant to the Modification of the Environmental Statement, affecting some of the conditions originally established in the Environmental Monitoring Programme implemented by means of the Resolution of 9 March 2001.	20/11/2014
Update of the Integrated Environmental Authorisation	Sending of the soil and ground water monitoring and control plan for the whole Escombreras site, with the aim of responding to the conditions of the DGMA Resolution of 18 December 2013, for the update of the integrated environmental authorisation granted to IBERDROLA GENERACIÓN, S.A.U., with file no 590/05 AAI, for its adaptation to Directive 2010/75/EU, of 24 November, on industrial emissions.	07/01/2015
Greenhouse gas emissions monitoring plan	Resolution of the General Directorate for the Environment approving the updating of the new Monitoring Plan (version 2) for the facilities of IBERDROLA GENERACIÓN S.A.U, with AU/GEI 13/13.	30/01/2015
Archaeological site	Report on the need for archaeological action due to the possible discovery of an archaeological site next to the culturally relevant "Poblado de Escombreras archaeological site." Dossier No. ARQ 91/2015	14/12/2015
Update of the Integrated Environmental Authorisation	Favourable report from the General Directorate for the Environment's Environmental Assessment and Planning Service of 2 November 2015 which approves the measures taken and corresponding proposals for voluntary work on soil decontamination.	05/01/2016

LEGAL REQUIREMENT	PROVISION	DATE
Update Integrated Environmental Modification	Resolution Proposal of the General Directorate for Quality and the Environment, for the changing of the AAI with file no 0590/05 IEA, for its adaptation to the conditions established in the single transitional provision, point 3, of R.D. 815/2013, of 18 October, approving the Regulation on industrial emissions and implementation of Law 16/2002.	01/02/2016
Update Integrated Environmental Modification	Notification of agreement to begin the update of Integrated Environmental Modification	29/02/2016
Works license	Concession of extension deadline work permit approved by Decree on 18 August 2014 to refill excavated areas with earth loaned from quarries. Dossier UBMA2014/00278 from the Cartagena City Council.	11/02/2016
Update Integrated Environmental Modification	Statement to the Resolution Proposal of the General Directorate for Quality and the Environment to change the IEA on 1 February 2016 on the limits set for SO2 operating with natural gas and the limits applied when operating with diesel.	15/02/2016
Contaminated soils statement	Requirement by the Murcia Region's Environmental Assessment and Planning Service of report on current status of soil quality, regarding RD 9/2005 of 14 January. Dossier AU/SC/217/2007.	13/06/2016
Update Integrated Environmental Modification	Resolution of the General Directorate for Quality and the Environment, for the changing of the IEA with dossier no 0590/05 IEA, for its adaptation to the conditions established in the single transitional provision, point 3, of R.D. 815/2013, of 18 October, approving the Regulation on industrial emissions and implementation of Law 16/2002.	25/07/2016
Contaminated soils statement	Sending report on current status of soil quality throughout the Escombreras site to respond to the requirement of Murcia Region's Environmental Assessment and Planning Service on 13 June 2016.	12/08/2016
Greenhouse gas emissions monitoring plan	Notification of change of greenhouse gas emission monitoring plan for 2013-2020.	04/10/2016
Appendix Integrated Environmental Authorisation	Resolution proposal handed down by the General Department of the Environment to modify the integrated control and surveillance programme for the quality of receiving water, the biological organisms and sediments in the coastal water mass of “La Manceba-Punta Aguilones” and “Punta Aguilones-La Podadera,” approved by the Resolution of 16 January 2013. Dossier INF/AR/310/12	04/11/2016
Building permits	Request work permit recovered water channelling. Dossier UBMA 2016/000281 from the Cartagena City Council	28/11/2016
Appendix Integrated Environmental Authorisation	Comments on Dossier INF/AR/310/12 within the framework of the group of companies that make up the Asociación de Empresas del Valle (AEVE or Valley Companies’ Association)	01/12/2016
Greenhouse gas emissions monitoring plan	Resolution for the Environmental Socio-economic Promotion Office which approves the updated monitoring plan (version 3).	27/03/2017
Immission	Resolution of the Directorate General for Environmental Quality and Evaluation of economic contribution to the maintenance of the regional system of prevention and monitoring of air pollution corresponding to the year 2016.	24/05/2017
Contaminated soils statement	Report referral on the current Soil Quality situation, providing initial characterization of the soil and groundwater of the Combined Cycle plant, quantitative risk analysis and proposals for action.	20/09/2017
EMAS Register	Application to renew the inscription in the registry of the Community Environmental Management and Audit System (EMAS) for IBERDROLA GENERACIÓN, S.A.U. for its centre called “Escombreras Combined Cycle Plant” in Cartagena (Murcia).	11/10/2017
Greenhouse gas emissions monitoring plan	Notification of change of greenhouse gas emission monitoring plan for 2013-2020.	09/02/2018
Greenhouse gas emissions monitoring plan	Resolution for approval of the Monitoring Plan (Version 4) of the IBERDROLA GENERACIÓN, S.A.U. installation with AU/GEI 13/13	09/03/2018
Integrated Environmental Authorisation	Modification of the load threshold of focal points 4 and 5 of the Escombreras Combined Cycle Plant	14/03/2018
Integrated Environmental Authorisation	Application for the declassification of hazardous waste "Waste water from washing the compressors".	14/03/2018
Integrated Environmental Authorisation	Office of the Autonomous Community of the Region of Murcia where they transfer a report from the Segura Hydrographic Confederation regarding the "Control and monitoring plan of the state of the soil" and the "Decontamination work carried out, ACR and Proposal for the restoration of the excavated areas of units 4 and 5", where they urge six-monthly controls and cleaning with submersible pumps in certain piezometers	27/03/2018
Greenhouse gas emissions monitoring plan	Presentation of the Improvement Report for the Greenhouse Gas Monitoring Plan 2013 - 2020.	29/06/2018
Port Concessions	Change of ownership of those concessions granted by the Port Authority of Cartagena to IBERDROLA GENERACIÓN, S.A.U in the name of IBERDROLA GENERACIÓN TÉRMICA, S.L.U.	31/07/2018
Integrated Environmental Authorisation / Greenhouse Gases / EMAS Registration	Change of ownership of those Authorisations granted to IBERDROLA GENERACIÓN, S.A.U. in the name of IBERDROLA GENERACIÓN TÉRMICA, S.L.U.	01/08/2018
Greenhouse Gas Authorisation	Resolution of the Directorate General for the Natural Environment by which the change of ownership in the Greenhouse Gas Emission Authorisation is carried out on 28 December 2012, for the third trading period 2013 - 2020.	13/12/2018
Greenhouse gas emissions monitoring plan	Resolution Directorate General of the Natural Environment for the approval of the Improvement Report.	27/12/2018
EMAS registration (Noise)	Suspension report request EMAS registration, dossier follow up PLAM 2019/000034 by the City of Cartagena requesting a new acoustic assessment report.	18/12/2019
Integrated Environmental Authorisation	Confirmation received from the Technician of the Directorate General for the Environment for the management of waste water from washing the compressors as NON-HAZARDOUS waste	22/07/2019

LEGAL REQUIREMENT	PROVISION	DATE
Soil control and tracking	Response to the Directorate General for the Environment and to the Hydrographic Confederation of Segura updating ACR and proposal for natural attenuation in the area affected by chlorinated substances.	11/09/2020
Integrated Environmental Authorisation	Response to the injunction to initiate an evaluation process of the adaptation of the operating conditions of Unit 6 once the conclusions on the Available Technical Improvements are approved.	18/11/2020
Integrated Environmental Authorisation	Notification of a substantial change due to the change in the biocide in the circulating water treatment system for chlorine dioxide (PURATE).	18/12/2020
Greenhouse Gas Authorisation	Resolution on Greenhouse Gas Authorisation for the commercial period 2021 - 2030.	07/01/2021
Greenhouse Gas Authorisation	Resolution approving the improvement report submitted on 25/06/2020.	15/02/2021
Integrated Environmental Authorisation	Response to the Directorate General for the Environment, copying both the City Council of Cartagena (26/02/21) and the Hydrographic Confederation of Segura (04/03/21), to the documentation requirement included in the Reports issued by the Organismo de Cuenca (CHS) and the City Council of Cartagena, within the ex-officio review process of the Integrated Environmental Authorisation to adapt it to Implementation Decision (EU) 2017/1442 of the Commission of 31 July, which draws conclusions on the best available techniques for large fuel installations.	25/02/2021
Greenhouse Gas Emissions monitoring plan	The new template of the Monitoring Plan (version 1) is presented	23/03/2021
Environmental Impact Statement / Integrated Environmental Authorisation	Inquiry to the Directorate General for Energy and Mines Policy of MITECO, on the substantiality of the change to the condenser's cooling water dosing system, in terms of the Environmental Impact Assessment. The MITECO response is sent on 28 May 2021 (received 20 May 2021) to the Directorate General for the Environment regarding the request for a non-substantial modification to the IEA already made in the scope of the aforementioned project.	25/03/2021
Greenhouse Gases	A Improvement Report is submitted to remedy the minor irregularity contained in the verification report for 2020, which consisted of a delay in the calibration frequency of the natural gas meter on line 3 of auxiliary steam generators. On 26 December 2021, a resolution from the Directorate General for the Environment of the Region of Murcia was received, approving said Improvement Report for 2020.	28/06/2021

The evaluation of legal compliance made on the basis of the "Monitoring, measurement, analysis and assessment" procedure shows that the **ESCOMBRERAS CCP** meets the applicable legal requirements for controlling the environmental parameters associated with its aspects, as shown in Section 8 of this statement, which justifies, where applicable, possible deviations, such as the inspection and maintenance of equipment, the storage and processing of waste and notification to the competent environmental bodies of the documentation required for said aspects.

In accordance with the "Legal requirements and other requirements" procedure, the **ESCOMBRERAS CCP** requirements include the new laws governing the environment that are applicable to it.

For 2021, the following are noteworthy:

- Spanish ROYAL DECREE 27/2021 of 19 January, amends Spanish Royal Decree 106/2008 of 1 February, on batteries and accumulators and the environmental management of their waste, and Royal Decree 110/2015, of 20 February, on electrical and electronic waste.

  This Royal Decree aims to improve the management of battery and accumulators waste and electrical and electronic waste.

  Both regulations are modified in terms of the aspects related to the authorisation of waste management installations and adapting individual systems of extended producer responsibility.

  It introduces new LER codes for identifying battery, accumulator and hazardous battery waste. It is a state-level coding system aimed at preventing waste that, due to the peculiarity and characteristics of its collection, storage, transport and treatment, should be distinguished, from being put into the generic category of "Other batteries and accumulators". These LER codes are added to Annex V.
- IMPLEMENTATION DECISION (EU) 2021/2326 OF THE COMMISSION of 30 November 2021, which draws conclusions on the best available techniques (BAT) in accordance with Directive 210/75/EU of the European Parliament and the Council, for large fuel installations.

  Following the declaration of invalidity of the General Court of Implementation Decision (EU) 2017/1442, the effects of the Decision were upheld until a new act intended to replace it entered into force, within the following twelve months.

  Its publication led to minor changes to Decision 2017/1442.

In general, the new regulations have not led to any substantial changes to environmental management of activities carried out at the plant. The requirements established in the indicated regulations have been included in the technical specifications of the services requested by the **ESCOMBRERAS CCP**.

On the other hand, identification and evaluation of the environmental aspects have not undergone any quantitative changes, except for aspects that have seen an increase in the value of the quantity criterion due to the increase in production for the **ESCOMBRERAS CCP**, during 2021, and which have been explained in section 6.3 of this report.

10

Deadline for the next validation

The Environmental Statement for 2022 will be validated in 2023 in accordance with Regulation (EC) No 1221/2009, amended by Commission Regulation (EU) 2017/1505 and Commission Regulation (EU) 2018/2026.


IBERDROLA