



Environment

# Respecting one's nature.

Constantly moving, even upstream.  
At each step, at each new solution, one's  
thought goes to the future of the planet.  
A virtuous circle in which resources are  
responsibly used and emissions reduced,  
with increasingly lighter and less pollutant  
materials.

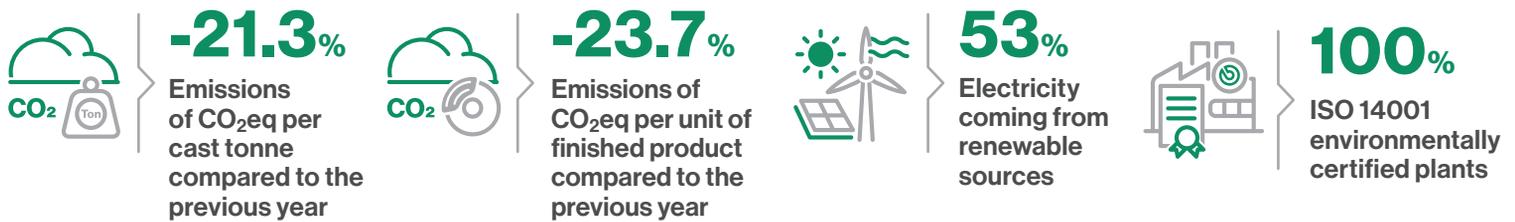




# 7. Environment

## 7.1 Efficiency and environmental protection in production processes

Climate change represents a threat to the entire planet: the inexorable increase in global temperature due to the increase in the concentration of greenhouse gases in the atmosphere causes the alteration of entire ecosystems with loss of biodiversity, acidification of the oceans, melting of ice, increased desertification, with the related impact on human activities.



Rising sea levels caused by melting ice can jeopardise the very existence of cities and coastal activities, just as the increased intensity and frequency of extreme weather events can cause unprecedented damage and devastation. In addition, an increase in migratory phenomena is expected, as entire populations will be forced to seek more favourable living conditions. Ultimately, all these effects of climate change in turn produce social and economic consequences, so much so that the World Economic Forum has for years now included climate change among the main risks worldwide.

To cope with this risk scenario, institutions, investors, companies and civil society are mobilising to mitigate its effects and study growth strategies based on social equity and environmental sustainability.

At global level, sustainability occupies an important place in the main international working groups: **COP26** is an example of this. The conference, held in Glasgow in November 2021, brought countries back to constructive dialogue: many bilateral and multilateral agreements marked a step forward. These

include the **US-China bilateral agreement**: in fact, two of the main contributors to global emissions of climate-altering substances have announced that they want to collaborate to keep the growth of global average temperatures below 1.5°C as established by the 2015 Paris Agreement. This is in addition to the **“Declaration on forests and land use”** which establishes the commitment of over 100 countries, including Brazil, Russia, Canada, Indonesia, the Democratic Republic of Congo and China, where more than 90% of the Earth’s forests are located, to stop deforestation by 2030, the **“Global Methane Pledge”**, which aims to reduce methane emissions by 30% compared to 2020 by 2030, and also, the **commitment**, of various countries and financial institutions, to **stop financing fossil fuels abroad**. Europe, in line with the other major world powers, has also committed, through the **European Green Deal**, to reduce its emissions, aiming for a **Net Zero economy by 2050**. As first step towards making Europe the first climate-neutral continent by 2050 was the proposal of a European climate regulation for the purpose of transforming this political commitment into legal obligation. The regulation is designed to identify the long-term



path to be followed in order to a) achieve the goal of zero climate impact by 2050 across all policies, in a manner that is socially equitable and cost-effective; b) create a progress monitoring system and, if necessary, taking additional action; c) ensure that the investors and other financial stakeholders know what to expect and guarantee that the transition towards climate neutrality is irreversible.

In order to support Member States in exiting from the socio-economic crisis triggered by the Covid-19 pandemic, the European Union issued the **Next generation EU Recovery Plan** in 2020. The programme shows that economic recovery cannot be separated from ecological and digital transition. In order to be beneficiaries of the huge support packages, Member States have been asked to present a set of investments and reforms in the name of environmental sustainability, social, territorial and gender inclusion and digitalisation. In Italy the programme has taken concrete shape in the **National Recovery and Resilience Plan (PNRR)** where 30% of the planned investments will be allocated to the “Green revolution and ecological transition” mission.

It is also interesting to note that at global level this focus on sustainability issues is being promoted more and more by stakeholders from the business world and investors. In fact, legislative engagement on environmental issues is increasingly accompanied, worldwide, by a strong push from the financial market. Sustainability investments have experienced steady growth over the past few years: sustainable investment activities have increased by 55% since 2016 and see the United States as the leading country in terms of sustainable investments made. In addition, during COP26, the Glasgow Financial Alliance for Net Zero (GFANZ) announced that over \$130 trillion of private capital has been committed to achieving Carbon Neutrality.

The strong financial drive encourages the private sector to align the information disclosed to investor expectations. Because of this, the Financial Stability Board (FSB), the body that promotes and monitors the world financial system, established the Task Force on Climate-related Financial Disclosures (TCFD) in 2015, assigning it the task of drawing up a series of recommendations on the reporting of risks linked to climate change.



## Climate: Brembo draws inspiration from the TCFD's recommendations

Brembo is strongly committed to responding to the challenges posed by climate change, to improve the Group's resilience and seize the opportunities arising from the transition to a low-carbon economy. A key element to achieve this objective is the active management of climate-related risks and opportunities and their impacts. In this context, with the help of an external consultant, Brembo conducted a Climate Change Risk Assessment (CCRA) on all relevant business activities and departments, in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).



The project, launched at the end of 2020 and completed in 2021, provided the scenario analysis and the qualitative-quantitative assessment of the main risks and opportunities related to climate change.

Companies that adhere to the TCFD are required to communicate in a clear, comparable and consistent way the information that investors and stakeholders need to know to correctly assess climate-related risks and opportunities and how this can impact companies such as Brembo.

The project, which saw the involvement of the COO - Chief Operating Officer of all GBUs and GCFs including the Purchasing and CSR and the Risk Management area, as well as increasing corporate awareness on the subject, gave the possibility to rely on assessments on the potential financial impacts of climate-related risks and opportunities, representing a valid starting point for the orientation of corporate strategies and disclosure initiatives on climate change.

In particular, the definition of the CCRA methodology and its application have allowed Brembo to:

- ▶ raise awareness among Brembo's main internal stakeholders on the potential climate change-related risks and opportunities;
- ▶ integrate climate change into Brembo's internal risk management framework;
- ▶ identify the main climate change-related risks and opportunities and assess their impacts on the business.





In this context of reference, as a global company leading in the sector in which it operates and consistent with the principles of responsible and sustainable business, Brembo is engaged in constantly transforming its operating model to be increasingly more focused on countering climate change, using water resources rationally and protecting the environment in all its forms. To give tangible form to its commitment to the environment, in recent years Brembo has developed an operating model based on increasingly strict, innovative requirements capable of anticipating future legislation, with the goal of continuing to create value for its stakeholders, by adopting solutions that minimise the environmental impact of its processes, thus ensuring industrial development balanced against respect for the environment everywhere the Group operates.

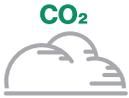
Thanks to the steps it has taken, Brembo is certain that it will be able to ensure operating efficiency together with containment of emissions of climate-altering substances, while positively heeding the “call to action” from the international scientific community to fight against climate change, having embarked on a process of gradual transition to an increasingly “carbon-neutral” model.

The energy use required for the functioning of the Group’s production facilities represents the main source of its greenhouse gas emissions. It is for this reason that Brembo actions in the environmental area are aimed at reducing polluting atmospheric emissions through a gradual transition to more efficient production processes, featuring reduced CO<sub>2</sub>eq emissions and an ever-increasing use of energy from renewable sources. The CO<sub>2</sub>eq emission reduction and energy efficiency objectives have been defined precisely based on these elements, which, as of 2018, form part of the performance assessment scheme for each of the Group’s managers.

This process is founded on creating a solid culture of sustainability within the Brembo community, as a fundamental tool for stimulating the creation of innovative ideas aimed at constantly reducing energy consumption, atmospheric emissions and use of water resources. In this way all employees are hence asked to make a daily contribution to achieving the business objectives defined by the Group for environmental protection.

Brembo’s commitment also translates into an in-depth knowledge of the emissions generated by company’s operations. The identification and quantification of all the direct and indirect

emission sources means that it is possible to identify the priority action areas for which specific objectives and improvement measures have to be defined. For this reason, Brembo has drawn up an internal procedure that describes the process of building the emissions inventory in all the Group’s factories and the data collection and processing process.

 **Slightly over 1,394,000 t of CO<sub>2</sub>eq greenhouse gas emissions into the atmosphere**

 **Since 2018** every site has maintained an **environmental identity card**, containing all the environmental information necessary to understand the environmental impact of Brembo's site in qualitative terms.

The environmental protection process embarked on by Brembo also includes rational use of water.

In this area the propensity for technological innovation and awareness of the water resource’s value has led the Group to identify and gradually introduce new production processes requiring a more sustainable water use aiming at limiting its use, eliminating waste and avoiding any possible form of contamination. Brembo’s commitment is most evident at the plants located in areas with significant water strain due to local climate and hydrogeological conditions.

The year 2021 was characterised by the constant increase in requests from all stakeholders for information on environmental impacts. These stakeholders include customers, with many of whom joint activities have been launched to identify solutions that can reduce environmental impact, first and foremost the impact of climate change. The areas of discussion and collaboration with customers concern many other areas including energy efficiency, renewable energy supply, circular economy and more generally all those aimed at achieving a reduction in the environmental impact of products from a *life cycle perspective*. The Brembo Group has proven to be ready and prepared to respond in a concrete manner to the growing demands in the ESG field, with particular regard to environmental issues, which have become fundamental and essential elements of the business, and for which the development and implementation of the roadmap aimed at pursuing “Environmental and Energy



Excellence” is underway, the ultimate goal being to achieve the lowest technologically achievable environmental impact.

Brembo’s environmental strategy, in terms of values, vision and mission, is described and made available in its Environment and Energy Policy, where the Group states its commitment to full endorsement of sustainable development principles in order to minimise the use of non-renewable resources, and keep the use of renewable ones within the limits of their regeneration capability. Brembo intends to contribute to ensuring that the use of the environmental resources required to meet its current needs is managed responsibly, so as not to harm and deplete availability for future generations.

In order to ensure transparency and provide customers and investors with accurate information about these aspects, Brembo has voluntarily adhered to CDP initiatives since 2011. This independent organisation promotes synergies between the financial community and the business world, monitoring and advocating for commitment to limiting climate change and ensuring responsible and sustainable use of water resources. It should also be recalled that requests by the main external stakeholders are managed in coordination with the GCF CSR, which provides an immediate, precise response where needs arise.

Brembo has progressively extended this monitoring and reporting activity over the years, making it possible to include all

Group sites as of 2015. This commitment has allowed not only to paint a full mapping of greenhouse gas emissions deriving from both energy and fuel consumption during production processes and from the Group’s purchasing and logistic activities, but also to identify the main mitigation actions implemented to reduce the environmental impact.

Furthermore, the measures will also help to support the ambition to achieve climate-changing emissions neutrality. Finally, since 2016 Brembo has extended its reporting to water resources as well, identifying improvement measures with particular regard to the plants located in geographical areas where there is a greater water risk.



In recognising this commitment, in 2021 as well CDP named Brembo, for the fourth year running, as one of the world’s leading companies in terms of commitment both against climate change and to guarantee water security. At the global level, there are only 55 companies that, together with Brembo, are on both the “Climate Change” and “Water Security” A Lists, while in Italy, it remains the only company to achieve this prestigious twofold environmental recognition. Looking instead at each individual reporting, only 205 companies have been included globally in the A list for Climate Change, in addition to Brembo, and 117 have been included in the Water Security A list.

## 7.2 System for the effective management of environmental (ISO 14001) and energy (ISO 50001) impact

Brembo has developed and maintains an up-to-date Environmental Management System compliant with the ISO 14001 standard in order to meet the constant evolution of regulatory requirements, the commitment to minimising its environmental impact, and, lastly, the growing attention from stakeholders — communities, governments, customers, investors — towards the environmental and sustainability-related performance, by reducing any environmental risk. Since 2019, the Management System has also incorporated the requirements of standard ISO 50001 relating to energy management. This Management System undergoes a voluntary annual audit by independent third parties to ensure its full compliance with international standards ISO 14001 and ISO 50001.

Brembo once again maintained 100% of its ISO 14001-certified plants in 2021.

After the slowdown suffered in 2020 as a result of the Covid-19 pandemic, the plan to extend the ISO 50001 certification regarding energy management to all Group sites was fully resumed. During 2021, the plants in Sellero (Italy) and the cast iron foundries in Homer (USA) and Escobedo (Mexico) were certified. In 2021, the Group acquired two companies for a total of five plants for which work began on integrating the Group Management System. While the J.Juan Company’s four plants are already ISO 14001-certified, the SBS Friction plant is expected to obtain certification by 2022. As of 2021 both certifications, ISO 14001 and ISO 50001, are in line with



Brembo's "Corporate" scheme: these are certifications that see all the plants included linked by common operating methods and control systems, and accordingly a single certificate is issued for the Group accompanied by the various individual "satellite" certificates relating to the plants. In spite of the Covid-19 pandemic, which has made physical site visits difficult, all the planned audit activities — including third-party activities — have been met also through activities carried out remotely.

The management system is based on legislative compliance and the risk-oriented approach, going beyond the traditional approach limited to the assessment of environmental impacts. To encourage plants in the application of these principles, in 2021 all plants began using the ORME IT platform (Obligation and RISK Management for Environment and energy), developed by E&E during 2020. Integrated in the same B-Sustainable platform, O.R.M.E supports sites in the management of "Obligation and Risk Management for Environment and Energy" processes, namely the set of activities to ensure compliance with all mandatory, voluntary and Risk Management requirements, for the identification and estimation of environmental risks and opportunities generated by the impacts of production activities, with the consequent planning and implementation of mitigation and improvement activities.

Again during 2021, an IT application was released for the collection of environmental and energy performance data, also integrated into the same B-Sustainable platform, to which it is connected. This tool allows the effective collection of all the information useful for preparing the Annual Sustainability Report (NFI, Disclosure of Non-Financial Information) and monitoring the environmental performance of each Group plant.

As from April 2021, Environment & Energy has integrated the regulatory issues related to the chemicals used in the company, both as raw materials (substances and mixtures),

and as substances present in the products. The purpose of the function is to ensure compliance with all regulations dealing with chemicals in all the geographical areas in which Brembo operates or which represent a market for the Group, ensuring a uniformity of approach integrated within the Environmental Management System.

Lastly, in addition to investments in technology and services to protect the environment, the human factor is a decisive element for ensuring the effective protection of the environment in everyday corporate activities. Accordingly, within the framework of its Management System, Brembo invests in training activities designed to provide information on how to handle the main environmental aspects, including specific technical training for those affected on the front lines, participation in webinars, conventions and seminars promoted by the various national and international organisations (such as the CDP) and specific induction programmes designed for newly hired employees. In 2021, as well as standard training, more than 7,500 hours of training on environmental issues were provided across the Group's sites.

In particular, during 2021 four training modules were developed in e-learning mode concerning the requirements defined by Brembo procedures for the management of water, atmospheric emissions, waste and emissions of climate-altering gases. The delivery of these modules, scheduled for the beginning of 2022, will involve all Brembo Group technical staff who in various ways may have an impact on these issues.



**over 7,500**  
**hours of training provided to personnel**  
**on environmental management**



## 7.3 Energy consumption

In line with the indications of the global scientific community, Brembo's policy is to maximise efficiency in the use of energy while keeping CO<sub>2</sub>eq and other pollutant emissions to a minimum. This policy is aimed at minimising the environmental impact and continuously improving energy performance, reducing energy intensity and CO<sub>2</sub>eq emissions due to production processes and at the same time ensuring economically sustainable operations. The improvement in energy performance is also intended to maintain and maximise the Group's global competitiveness. Energy efficiency is therefore an integral part of Brembo's production system as it has an impact on the performance of production activities.

In line with what has been expressed through the Environment and Energy Policy, Brembo has defined a strategy aimed at the progressive reduction of energy consumption, designed both to cut processing costs and reduce the Group's contribution to the emission of climate-altering substances. In order to reach these objectives, and in keeping with that has been set out in its Environment and Energy Policy, the Group has provided itself with an Energy Management System compliant with ISO 50001:2018, extending it gradually to an increasing number of sites.

The key points of the Management System are represented by:

- ▶ measurement and reporting of site energy uses and CO<sub>2</sub> equivalent emissions;
- ▶ audit and review of the performance of the Energy Management System;
- ▶ setting of targets for reducing energy intensity and CO<sub>2</sub> equivalent emissions;
- ▶ identification and implementation of energy efficiency improvement projects;
- ▶ intelligent system planning aimed at minimising energy waste;
- ▶ constant research and evaluation of new solutions for efficient energy self-production;
- ▶ constant commitment to in-house research into new production processes and optimisation of existing ones;
- ▶ constant search for opportunities for heat recovery and other forms of energy output from the processes.

When choosing energy sources, Brembo favours renewable energy sources over fossil fuels, by also increasing its self-production capacity, including through the installation of photovoltaic panels.

As a result, the Group's commitment to purchase renewable energy also continued in 2021. In particular, the energy quota from renewable sources which the Group procured rose from 43% in 2020 to 53% in 2021. This result was achieved thanks to the purchase of renewable energy certificates (Guarantee of Origin and I-RECs), PPAs (Power Purchasing Agreements) and other contractual agreements.

100% renewable electricity has been maintained at the Italian and Mexican sites, acquired through the Guarantees of Origin and contractual agreements with suppliers.

Starting from this year, the purchase of renewable energy certificates (I-RECs) was also begun in Brazil (100%), Czech Republic (26%) and China (7%).

Worthy of mention is the result obtained in Poland where, thanks to the adoption of a renewed purchasing strategy, 2021 saw the signing of PPA (Power Purchasing Agreement) contracts and contracts for the purchase of GO, through which the renewable energy component was increased up to 77%.

Self-production is also a further area of intervention: in addition to the recent photovoltaic systems installed in Italy, in Curno and Stezzano, in 2021 work began that will lead to the installation of additional photovoltaic systems on the Mapello and Curno production hubs for a self-generation capacity of 3,500 kWp. The total power generation will reach more than 3.5% of the energy needs of the two hubs.

During 2021, new photovoltaic systems were also installed on the roofs of the Indian site in Pune (900 kWp), reaching a total generation of energy such as to cover more than 16% of its energy needs.

With regard to energy efficiency, the actions taken to achieve these goals include, for example, adopting advanced monitoring systems, interconnected with the factory's main utilities according to a smart factory approach, replacing obsolete systems with others using more efficient technologies, reducing waste, and automatically shutting down systems or parts of systems during unproductive periods.





To further strengthen the collection, monitoring and sharing of energy efficiency projects at the different Group's sites, in 2021 a specific tool for digitalise these activities started to be developed.

The promotion of energy saving, which is reflected in the rational use of energy and hence in reduced consumption, is a topic that involves all the Group's operating units, which were asked to help achieve, each with a specific target, Brembo's energy efficiency objective set for 2021 at 2.77% (calculated as contribution from improvement actions achieved thanks to energy efficiency projects compared to previous year's consumption).

This objective has been largely exceeded, with an about **3.14%** result especially thanks to the activities aimed at optimising the foundries' production processes.

The cast iron foundries, the processes of which make up about **65%** of total consumption, have implemented energy efficiency projects that have helped achieve about 48% the goal achieved by the Group.

The energy consumption optimisation measures have produced major savings and reduced costs significantly, both in the Group's older plants built with previous-generation technology, and in the more recently constructed plants which, built with high energy efficiency, cutting-edge technologies, have focused on the management procedures connected with electricity use in both general technical and processing systems. Overall the measures implemented in 2021 in the various production sites reduced energy consumption by **105,581 GJ**, equivalent to **16,062** tonnes of emissions of CO<sub>2</sub>eq.



**3.14%**  
**energy consumption reduction**  
compared to 2020 thanks to energy  
efficiency initiatives



**About 67%**  
**the contribution** of cast iron and  
aluminium foundries to **the Group's**  
**energy efficiency** in 2021



## The Brembo Energy Platform

In 2018, Brembo launched a project to permanently monitor the energy consumption of every facility, of every department and, where consumption levels are significant, of production machinery as well, whether general or auxiliary to process.

After experiencing a slowdown in 2020 due to the Covid-19 pandemic, the goal of completing the installation of the platform at all the Group's production sites was achieved during 2021.

Detailed data on electricity consumption continued to be available to an increasing number of technical staff in each factory who, thanks to a dedicated training programme, are increasingly involved in data processing and analysis activities to identify possible opportunities for improvement and reduction.

In addition to electricity consumption data, the platform is designed to monitor the consumption of other carriers, such as natural gas, compressed air and water. In this sense, the process of installing and connecting the meters began according to centrally defined criteria and in line with an implementation plan agreed with the plants. An additional benefit provided by this tool is the support offered to the ISO 50001-compliant energy management system, implemented and incorporated within the Group's Environmental Management System as of 2019.



### Analysis of main measures to reduce energy consumption at global level

Area of intervention	Energy consumption reduction (GJ)	Estimate of Co <sub>2</sub> eq tonnes avoided
Lighting system optimisation (installation of LED lamps in offices and production departments)	2,358	360
Compressed air system optimisation (replacement of compressors, leak detection and repair, optimised use during production processes)	14,921	2,196
Replacement of processing systems with more efficient technology*	9,785	1,675
General production process optimisation*	75,390	11,377
Optimisation of general technical equipment management	2,008	247
Installation of photovoltaic plant	1,119	207
<b>TOTAL</b>	<b>105,581</b>	<b>16,062</b>

\* Category of intervention including the reduction of both electricity and natural gas.

Overall, in 2021 Brembo's energy consumption amounted to 4.7 million GJ, with a 13% increase compared to 2020 (4% compared to 2019), as a result of a balance of resumption and growth of production activities — previously affected by production stoppages due to the pandemic — and energy efficiency projects.

This consumption is predominantly in the form of electrical

energy (which continued to account for approx. 71% of total energy consumption) equivalent to more than 3,000,000 GJ, primarily used by the cast iron melting furnaces and secondarily by the mechanical processing systems and compressed air production systems used in the production processes. Natural gas consumption, primarily used in the aluminium melting processes, is equivalent to more than 1,000,000 GJ.

### Annual energy consumption broken down by source (GJ)\*

	2019	2020	2021
<b>DIRECT CONSUMPTION</b>	<b>1,300,475</b>	<b>1,169,096</b>	<b>1,359,479</b>
Natural Gas	990,104	909,787	1,066,140
Other fossil fuels**	308,768	257,533	292,042
Sources (photovoltaic, thermal solar, etc.)	1,603	1,776	1,297
<b>INDIRECT CONSUMPTION</b>	<b>3,258,755</b>	<b>3,029,482</b>	<b>3,388,026</b>
Electrical energy	3,232,565	3,007,889	3,353,182
from non-renewable sources	2,247,507	1,705,544	1,565,949
from renewable sources	985,058	1,302,345	1,787,233
District heating	26,190	21,593	34,844

\* The self-produced energy quota and sent to network is not material.

\*\* "Other fossil fuels" include: diesel, petrol, LPG and other.





## 7.4 Greenhouse gas emissions

Brembo has been active in the fight against climate change since 2011, when it began to build its own emission inventory and gradually expand its monitoring and reporting scope to include all its plants in 2015. In its sustainability journey, Brembo has significantly reduced its absolute emissions, while growing in its industrial and business activities. Brembo’s policy on climate change has included, since 2015, increasingly challenging objectives consistent with the commitments set by the United Nations during the COP21 in Paris in order to combat climate change effects; to win this challenge Brembo implemented a strategy structured into a series of actions aimed at achieving short-, medium- and long-term objectives to cut its greenhouse gas emissions.

In detail, the Group set an annual sustainability goal defined as a percentage of emissions avoided due to improvements, including efficient use of any form of energy and the use of renewable energy, compared with the previous year’s emission. In 2021, the target of reducing CO<sub>2</sub>eq emissions thanks to the improvement actions, compared to the previous year’s emissions, set at 19%, was reached and exceeded with a result of about 25%, achieved thanks to the energy efficiency projects implemented in all the Group’s plants and the increase in the share of renewable energy used in Mexico, Brazil, Poland, Czech Republic and China.

Compared to the 2020 reporting, in 2021 the Group reviewed its medium- and long-term objectives, relating to all factories, with a commitment to a year-on-year reduction of Scope 1+2+3 emissions by at least 4.2%, with the ultimate goal of reaching Net Zero emissions by 2040. Objectives are inspired by the SBTi (Science-Based Targets initiative) criteria for keeping the global temperature increase well below 1.5°C. Brembo intends to submit its targets for validation to the SBTi.

<b>By 2030</b>	<p>Reducing absolute (Scope 2) indirect emissions by <b>100%</b></p> <p><b>100%</b> use of electricity coming from renewable sources</p> <p>Reducing absolute Scope 1+2+3 emissions by <b>42%</b> compared to 2020</p>
<b>By 2040</b>	<p>Reducing absolute Scope 1+2+3 emissions by <b>90%</b> compared to 2020</p> <p>Setting off absolute emissions by a maximum of <b>10%</b> compared to 2020 through the financing of neutralisation projects</p>

**Reduction of Scope 1 & 2 emissions achieved through improvement actions**

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**Previous year’s Scope 1 & 2 emissions** **≥19%**

 **-21.3%** reduction of CO<sub>2</sub>eq emissions per cast tonne compared to the previous year.

 **-23.7%** reduction of CO<sub>2</sub>eq emissions per unit of finished product compared to the previous year.





## Road Map to Net Zero

To achieve Net-Zero emissions, Brembo has defined a Road Map that is subject to continuous refinement in accordance with technical, technological and market developments. The Road Map includes, among other things, the supply of renewable energy, both self-produced and purchased, to reach a share of 70% of consumption in 2025 and 100% in 2030.

Further areas of action are represented by the increase in the use of secondary raw materials within products, transport optimisation, energy efficiency and technological innovation.

Great commitment is expected in the involvement of the supply chain so that each supplier reduces its Scope 1 and Scope 2 emissions.

To ensure that the defined strategy is implemented and consistent with the objectives set, the CSR GCF coordinates a working group that involves all the company functions concerned and which in different ways collaborate and carry out the improvement initiatives aimed at reducing CO<sub>2</sub>eq emissions.

Scope 1, 2 and 3 emissions generated by Brembo's production activities in 2021 amounted to slightly more than 1,394,000 tonnes CO<sub>2</sub>eq. In a like-for-like comparison with 2020, when Scope 1 + 2 emissions amounted to about 367,000 tonnes of CO<sub>2</sub>eq, Brembo's factories reported emissions totalling 342,000 tonnes of CO<sub>2</sub>eq, marking a reduction of almost 7%. This result

was achieved thanks to energy efficiency projects totalling 16,062 tonnes of CO<sub>2</sub>eq and to the purchase of renewable energy solutions equal to 303,000 tonnes of CO<sub>2</sub>eq.

Like every year, the emissions inventory and calculation methodology underwent assurance certification by an accredited third-party body in accordance with the ISO 14064 standard.

### Scope 1

Climate-changing emissions generated directly by Brembo come from plants, assets and vehicles operated directly by Brembo. This scope includes emissions from the combustion of fossil fuels in melting furnaces, leakage of coolants in air conditioning systems or use of fossil fuels in the company fleet.

### Scope 2

Indirect emissions of greenhouse gases resulting from the generation of electricity purchased by Brembo, as well as the heating of water/steam procured by the Group through district heating systems. With these purchases, Brembo indirectly contributes to the emissions generated by electricity or heat suppliers.

### Scope 3

Emissions that are not included in the previous scopes but linked to Brembo's value chain. This scope includes emissions from Brembo product distribution and handling among plants and towards customers, personnel's commuting from home to workplace or business trips, the purchase of hardware, machinery and equipment, and emissions generated by suppliers for materials and/or services purchased by Brembo.

**Greenhouse gas emission by scope (t CO<sub>2</sub>eq)\***

	2019	2020	2021
<b>Scope 1</b>	<b>80,707</b>	<b>72,954</b>	<b>89,406</b>
Emissions from foundries	30,576	26,560	33,754
Emissions from production plants and heating systems	45,579	42,142	50,366
Coolants for air-conditioning systems**	990	1,104	1,512
Emissions from company vehicles and other fuels	3,562	3,148	3774
<b>Scope 2***</b>	<b>404,531</b>	<b>294,512</b>	<b>253,094</b>
Indirect emissions due to power consumption and district heating			
Market based	404,531	294,512	253,094
Location based	509,850	475,071	477,130
<b>Scope 3</b>	<b>990,493</b>	<b>876,500</b>	<b>1052143</b>
Emissions due to product distribution logistics and waste transport	250,885	164,689	113,736
Emissions due to employees commuting between home and workplace	34,743	31,291	36,483
Emissions due to business trips	2,878	561	577
Emissions due to product transport within the Group	18,862	18,027	31,962
Emissions due to the energy lost through power distribution and transmission	40,794	37,436	37,946
Emissions generated by the purchase of hardware, machinery and equipment	91,842	107,976	143,672
Emissions generated by suppliers to produce materials and/or services for Brembo	550,489	516,520	687,767
<b>Total</b>	<b>1,475,731</b>	<b>1,243,966</b>	<b>1,394,643</b>

\* The calculation of the CO<sub>2</sub>eq (which includes CH<sub>4</sub>, NO<sub>2</sub>, HFC, PFC, SF<sub>6</sub> and NF<sub>3</sub> emissions when present), was carried out in accordance with the indications of the GHG Protocol.

The calculation of CO<sub>2</sub>eq emissions was carried out using the emission factors published by:

- AIB (Association of Issuing Bodies)
- IEA (International Energy Agency)
- EPA (Environmental Protection Agency)
- UK Department for Environment Food & Rural Affairs and Department for Business, Energy & Industrial Strategy
- GHG Protocol

\*\* The figure includes the quantities of refrigerant gases dispersed into the atmosphere and reported in the special registers when air conditioning systems are refilled periodically. In the absence of such a record or other evidence of gas refills carried out during the year, all the gas contained in the air conditioning systems is considered to be dispersed into the atmosphere – as a precautionary measure.

\*\*\* The overall Scope 2 emissions takes into account the total emissions valued using the Market Based method.



## 7.5 Atmospheric polluting emissions

The Environment and Energy Management System that Brembo has implemented introduces a series of requirements common to all the Group's plants aimed at containing the environmental risk well below the emission limits imposed by the legislation in which the Group operates. The control of quality parameters for atmospheric emissions is required by all legislations in force in the countries where Brembo plants reside, although with different limits from country to country, and each plant has established appropriate monitoring plans for its emissions with the ultimate aim of limiting the emissions generated by its production processes to the technological limit, including odorous ones, an aspect not normally covered by legislative requirements.

The typical parameters subject to sampling and analysis are those emitted by melting processes (such as powders, NOx and SOx) and those generated by mechanical processing and painting processes (powders and VOCs). Although each plant provides for a periodic control of emissions, it is very difficult to

carry out assessments on each parameter's emission trends because these are extremely influenced by the variability of the production mixes. The requirements defined by Brembo therefore specify the need to ensure that each emission point is adequately equipped with abatement systems capable of amply ensuring the limit defined by local legislation.

In the same way it monitors pollutants, Brembo also monitors the quantity of coolants (HFC and HCFC) released into the atmosphere, calculating the relevant CO<sub>2</sub>eq impact. In 2021, 0.77 tonnes of ozone-depleting gases and 0.04 tonnes of Freon 22 gas (R-22), were dispersed into the atmosphere. The figure includes the quantities of coolants dispersed into the atmosphere and reported in the special registers when air conditioning systems are refilled periodically. In the absence of such a record or other evidence of gas refills carried out during the year, all the gas contained in the air conditioning systems is considered to be dispersed into the atmosphere — as a precautionary measure.

### Emissions of harmful substances (t)\*

	2019	2020	2021
Nitrogen oxides (NOx)	122.31	68.22	66.32
Sulphur oxides (SOx)	122.69	83.49	100.04
Persistent organic pollutants (POP)	0.00	1.10	0.003
Volatile organic compounds (VOC)	171.52	84.96	108.32
Hazardous pollutants	7.15	3.83	1.37
Fine particulates (PM)	117.46	114.10	177.64
Carbon monoxide (CO)	282,25	235.62	246.59

\* The values shown are based on precise measurements made in plants that are subject to regular or ongoing spot checks. Each plant's emissions is calculated based on these precise measurements, since the concentration of harmful substances, the mass flow and the operating time of the plant are already known.





## 7.6 Management and use of water resources

Water is an invaluable commodity due to the countless uses that are made of it in everyday life, for example, in the irrigation of agricultural crops, in industry and in domestic uses.

Although water is present for 70% on our planet, fresh water available to man represents only 1% of the total and the change in demand, in the future, could increase competition between the various uses (livestock rearing, agriculture, industry) and aggravate water stress both due to the lack of water availability and in terms of worsening the quality of the resource itself.

Climate change and in particular the increase in extreme weather phenomena, such as floods and droughts, increase and distort this precarious relationship, creating more irregular and uncertain water availability, thus aggravating problems in areas that already have high water stress and potentially generating new ones in places where water stress is currently not a problem. In addition, the quality of fresh water is increasingly deteriorating due to pollution, with detrimental effects for human health and ecosystems.

Therefore, protecting and conserving water is of vital importance and water supply is considered one of the main environmental aspects. For this reason, the 2030 Agenda for Sustainable Development recognises the importance of water, mainly in its Goal 6 and Goal 14 but also in all the other Goals, linked to water directly or indirectly.

Brembo, which requires for its production processes water resources quantifiable as just under 1,500 MI, has defined a strategy aimed at promoting the rational use of water, both by gradually reducing its use in its production processes and minimising the presence of possible pollutants that could have a negative impact on the environment.

Due to its commitment, since 2017 CDP has recognised Brembo as one of the world's leading companies for its capability in water resource management and safety.

With regard to water performance, in 2021 a total of about 1,440 megalitres of water were taken, an increase compared to the trend of recent years. The overall figure reflects, in addition to the inclusion in the reporting scope of the plant acquired in Denmark and the expansion of the plant in the Czech Republic, a major fault that caused a significant increase

in water withdrawal estimated at about 150 MI at the Homer foundry (USA).

The public water mains still constitutes the main source of supply (approximately 67%) which not only ensures suitable quality levels, but also a reliably constant supply over time.

With reference to waste water, nearly all of it is destined for the local water consortium sewers to which the sites are linked. Only a tiny fraction (about 2%) of waste water is destined to other types of release (e.g., released into surface water bodies or in the subsoil), after ensuring that the relevant local legal specifications on acceptability are met.

To enable increasingly accurate water reporting, and identify and reduce every source of waste, the Group completed at all production plants the installation of flowmeters at the site's entry and exit points. In addition, the installation of measuring equipment of the most significant uses has been gradually extended and is expected to be completed in 2022, thus in advance compared to the originally 2025 target. A further development of the project is the inclusion of water measurements within the BEP monitoring platform which — similarly to energy — will enable a constant monitoring of consumption, which will be useful to identify priority areas for intervention in order to optimise water needs.

Simultaneously a programme aimed at increasing the involvement of the supply chain in order to better know and understand the impact on water generated by Brembo outside its factories continued. Similarly to what happened with gas emissions, a specific questionnaire sent to suppliers also documented water consumption along the entire value chain. It should also be noted that 2021 saw a number of episodes of accidental spillages of material recorded that did not generate any negative impact on the environment having all been properly controlled and managed. It should be noted that a scheme has been launched at the Escobedo cast iron foundry to collect “environmental near misses” which includes the reporting of accidental spillages of material. The scheme encourages all employees to report any anomaly found to ensure the timely intervention of specially trained personnel to restore normal operating conditions, avoiding any type of water contamination.



**WATER WITHDRAWAL (MI= megalitres)**

	2019		2020		2021	
	All areas	Water stressed areas	All areas	Water stressed areas	All areas	Water stressed areas
Groundwater	317.44	107.31	296.93	0	481.51	0
Fresh water	317.17	107.31	279.15	0	481.51	0
Other types of water	0.27	0	17.78	0	0	0
Third-party water resources	942.88	263.94	854.89	326.66	967.29	360.20
Fresh water	942.88	263.94	854.89	326.66	967.29	360.20
Other types of water	0	0	0	0	0	0
<b>Total</b>	<b>1,260.32</b>	<b>371.25</b>	<b>1,151.81</b>	<b>326.66</b>	<b>1,448.80</b>	<b>360.20</b>

**Total third-party water withdrawal for water stressed areas by source**

Surface water	-	252.71	-	256.23	-	274.75
Groundwater	-	11.23	-	70.42	-	85.14
Produced water	-	-	-	-	-	0.31
<b>Total</b>	<b>-</b>	<b>263.94</b>	<b>-</b>	<b>326.66</b>	<b>-</b>	<b>360.20</b>

**WATER DISCHARGE (MI= megalitres)**

	2019		2020		2021	
	All areas	Water stressed areas	All areas	Water stressed areas	All areas	Water stressed areas
Surface water	11.91	-	8.50	8.50	0	0
Fresh water	11.91	-	8.50	8.50	0	0
Other types of water	-	-	0	0	0	0
Groundwater	13	13	12.83	0	8.33	0.01
Fresh water	-	-	11.81	0	8.33	0.01
Other types of water	13	13	1.02	0	0	0
Third-party water resources	519.25	87.65	473.13	149.17	510.51	173.57
Fresh water	311.23	63.56	235.76	60.97	380.72	105.34
Other types of water	208.02	24.09	237.37	88.2	129.79	68.23
<b>Total</b>	<b>544.16</b>	<b>100.65</b>	<b>494.45</b>	<b>157.66</b>	<b>518.84</b>	<b>173.58</b>

**Water discharge by level of treatment\***

Any processing	124.08	150.97	175.49
Level of processing 1	14.44	23.82	15.67
Level of processing 2	277.95	257.32	53.49
Level of processing 3	76.06	62.34	287.50**
<b>Total</b>	<b>492.53</b>	<b>494.45</b>	<b>532.16</b>

\* Treatment level 1: aims at removing the solid substances which either deposit or float on top of the water

Treatment level 2: aims at removing the substances and materials which remain suspended or are dissolved in the water

Treatment level 3: aims at improving water quality before its disposal. This treatment also includes removal processes for substances such as heavy metals, nitrogen and phosphorous.

\*\* The figure includes the quantity of water recovered by the Pune (India) processing plant and entirely reused within the plant.



**WATER CONSUMPTION (MI= megaliters)**

	2019		2020		2021	
	<i>All areas</i>	<i>Water stressed areas</i>	<i>All areas</i>	<i>Water stressed areas</i>	<i>All areas</i>	<i>Water stressed areas</i>
Total water consumption	716.16	270.59	657.37	169	929.96	186.62

## 7.7 Waste reduction

In nature, something discarded by an organism becomes a resource for other living beings. Therefore, there is no concept of “waste”, far less a concept of “profligate waste”, but only of matter that is transformed, within the evolutionary cycle of natural systems. The economic system, unlike the ecological one, is, through human activities, interacting with and altering the natural regenerative flow of matter more and more, consuming raw materials and producing waste that interferes with the circularity of nature.

The linear “take-make-dispose” economic model based on having access to only seemingly unlimited resources is increasingly ill-adapted to Brembo’s environment, especially given the need to access high quality raw materials with sustainable costs, whilst being mindful of the environment. The very nature of some of the production processes, such as cast iron foundries, means that they are suitable as a model for applying the “take-make-reuse” concept on which the circular economy is based. The raw materials procured by a foundry are for the most part of secondary origin, resulting from machining process waste rather than from the product of the ferrous scrap salvage chain. The progressive extension of circularity to all production processes is an opportunity that Brembo intends to seize in order to ensure a steady business growth that is in balance with the environment.

Brembo intends to act in accordance with the circular economy principle, promoting a reduced use of primary raw materials, namely virgin raw materials, encouraging and enhancing secondary raw materials, in other words those deriving from processing waste or from salvage or recycling processes. This reduces the need to extract raw materials from the Earth, significantly reducing the overall environmental impact. Brembo is working on the subject with various projects concerning both the production process and the product. With regard to the production process, the areas of intervention aim to reduce the amount of waste generated and to reuse scrap materials as waste in the process.

One virtuous example is the project on which Brembo is working to offer its customers calipers made of secondary aluminium alloys in order to help reduce the impact on climate change in full compliance with the performance, quality and aesthetic criteria that distinguish the Group’s products.

Although the Group has not identified any targets for the management of this issue, each plant has defined its own objectives with regard to waste management, such as those relating to the reduction of waste per product unit, rather than those connected to the reduction of hazardous waste.

During 2021, Brembo generated a total of just under 400,000 tonnes of waste, an increase on the amount generated in 2020, and a return to the pre-COVID-19 pandemic values since it was no longer affected by plant shutdowns caused by the pandemic, while hazardous waste continued to account for 5% of total waste, while non-hazardous waste for 95%.

It is worth mentioning the significant decrease in waste bound for disposal in landfills, which fell to 15% of the total compared to 38% in 2019, a result that testifies to Brembo’s commitment and willingness to identify disposal chains able to reinject its production process waste materials into the market in keeping with the circular economy. In this regard, special mention can be made of the experience of the Dabrowa plant (Poland), home of the Brembo Group’s largest foundry, which has reached the ambitious goal of zero landfill waste thanks to the collaboration with waste disposal providers, with whom contracts have been defined to ensure the recycling of all the waste produced by the factory.

The increase in the percentage of waste for recycling has also been achieved thanks to an increasingly precise classification of waste, as required in every Brembo plant in line with the requirements of Group procedures that define the criteria to be followed for correct waste management. In this regard, starting from 2021, the reporting is improved with quantitative data for waste typically produced in Brembo production processes.



**WASTE BY TYPE AND PERCENTAGE ON TOTAL (t)**

	2021	%
Iron chip and filings	135,801	34.28%
Foundry sands	80,772	20.39%
Scrap moulds and cores	61,735	15.58%
Dust from abatement plants	44,362	11.20%
Foundry slag	22,860	5.77%
Waste emulsions	10,822	2.73%
Packaging materials	3,290	0.83%
Wood	2,675	0.67%
Aluminium foams	2,444	0.62%
Acid/basic waste solutions	2,248	0.57%
Sludge	1,890	0.48%
Waste filter materials	125	0.03%
Waste not classified differently	27,128	6.85%
<b>Total</b>	<b>396,152</b>	

**WASTE GENERATED (t)**

	2019	2020	2021
<b>Hazardous waste</b>	<b>20,406</b>	<b>16,424</b>	<b>20,213</b>
of which: discharged	12,427	2,617	3,675
of which: reused	7,979	13,807	16,538
<b>Non-hazardous waste</b>	<b>364,119</b>	<b>328,320</b>	<b>375,939</b>
of which: discharged	133,838	43,353	55,043
of which: reused	230,281	284,967	320,896
<b>Total</b>	<b>384,525</b>	<b>344,744</b>	<b>396,152</b>
of which: discharged	146,265	45,970	58,718
of which: reused	238,260	298,774	337,434

**From primary to secondary aluminium**

Producing a brake caliper using secondary aluminium to replace, in whole or partly, the primary one while ensuring equal performance, quality and aesthetic criteria is one of key goals in the field of sustainability.

The development of the calipers of tomorrow, fully made of recycled aluminium, will allow to reduce CO<sub>2</sub>e emissions by about 80% in the next decade compared to the current levels. The expected result will be achieved through a series of subsequent steps including:

- the gradual increase of aluminium produced with renewable energy;
- purchase of “hybrid” alloys made of a growing amount of renewable aluminium;
- the production of calipers made entirely from recycled aluminium.