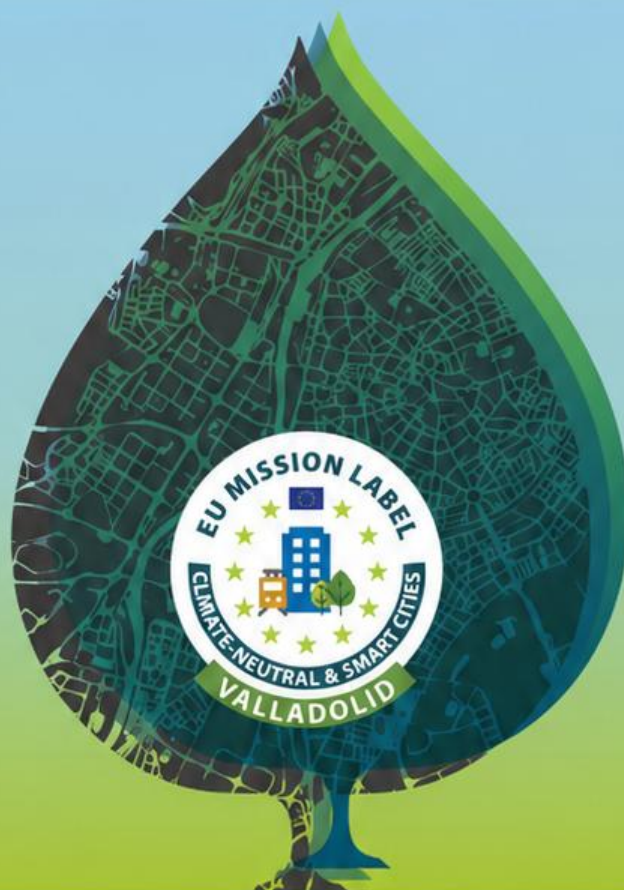


METHODOLOGICAL GUIDE FOR THE IMPLEMENTATION OF DECARBONISATION PLANS IN THE BUSINESS SECTOR



**VALLADOLID
ZERO
EMISSIONS**

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"This guide has been produced and funded through the ADAPT CLIMA CENCYL project as part of the
INTERREG-POCTEP Spain–Portugal programme"

1. – PURPOSE

The purpose of this project is to produce a methodological guide for the development of decarbonisation plans in the business sector. This project has been supported by the Valladolid City Council's Innovation and Economic Development Agency through the ADAPT Clima Project, which forms part of the CENCYL network within the INTERREG programme¹.

The ADAPT Clima CENCYL Project is the fourth urban adaptation initiative addressing the consequences of climate change undertaken by the CENCYL Network of Cities, whose area of cooperation covers Castilla León and central Portugal. Its main objective is to generate climate adaptation solutions in CENCYL cities within those functional areas where the highest levels of vulnerability are recorded, taking into account the physical, environmental and socio-economic characteristics of each territory. The development of climate adaptation solutions forms part of the green transition process that CENCYL cities have undertaken, which is based on the progressive decarbonisation of urban activities, with the aim of achieving climate neutrality in the medium term (2030) and long term (2050). ADAPT Clima CENCYL is co-financed by the European Regional Development Fund (ERDF), under the INTERREG VI-A Spain-Portugal 2021-2027 programme (POCTEP). INTERREG is an instrument established to promote European cross-border cooperation through programmes, projects and networks between national, regional and local actors. Territorial cooperation within INTERREG is based on four strands: INTERREG A, for cross-border cooperation between adjacent regions; INTERREG B, for transnational cooperation in larger transnational territories and around sea basins; INTERREG C, for interregional cooperation; and INTERREG D, for cooperation between outermost regions. POCTEP is the European Union's (EU) largest cross-border cooperation programme, and aims to promote cooperation and development along the border between Spain and Portugal, setting a series of objectives in areas related to economic, social and environmental development.



This guide aims to provide support and guidance to businesses interested in adopting measures to mitigate their environmental impact, reduce their energy consumption, and make sustainable use of resources, all with the aim of contributing to the achievement of climate objectives and fostering their resilience and competitiveness.

2. REGULATORY FRAMEWORK

The development of a guide to draw up decarbonisation plans in the business sector is essential within the context of the current and future regulatory framework, at both European and national levels, driven by the urgent need to address the effects of climate change and the energy crisis.

¹ Source: [Interreg: support for cross-border cooperation \(2021–2027\) | EUR-Lex. \(2022\)](#)

Within the European regulatory framework, the **Green Deal**, launched in 2019 with a long-term vision, sets out a clear commitment for the EU to become climate-neutral by 2050, with an interim target of reducing net greenhouse gas (GHG) emissions by at least 55% by 2030 compared to 1990 levels. In this way, Europe aligns itself with the **Paris Agreement**, an international agreement adopted in 2015 whose main objective is to limit the global temperature rise to less than 2 °C above pre-industrial levels and to pursue efforts to limit the temperature rise further to 1.5 °C.

The **European Climate Law**, approved in 2021, makes the carbon neutrality target set out in the Green Deal a legal obligation, establishing specific targets and mechanisms to monitor progress towards these objectives every five years.

To fulfil the commitment adopted through the Green Deal, the '**Target 55**' package was introduced in 2021, comprising a set of legislative proposals aimed at adapting existing policies on climate, energy and transport to meet the target of a 55% reduction in emissions by 2030.

These proposals include an update to **the Emissions Trading Scheme (ETS)**, which is currently in its fourth phase (2021–2030). The aim is to reduce GHG emissions by 62% compared with 2005 levels. To achieve this, the number of emission allowances in the EU will be reduced by 4.3% per year between 2024 and 2027, and by 4.4% from 2028 onwards.

Another proposal in the 'Target 55' package is the **Energy Performance of Buildings Directive (EPBD)**, adopted in 2024 and pending transposition, which stipulates that by 2030 all new buildings must be zero-emission buildings, meaning they must not emit GHGs during their operation. This requirement will be extended to all existing buildings by 2050, representing a complete transformation of the construction sector.

In response to the energy crisis triggered by the conflict between Russia and Ukraine, the **RePowerEU Strategy** was adopted in 2022, accelerating the transition to renewable energy and improving energy efficiency through a series of concrete measures that are aligned with the broader climate objectives set out in the Green Deal.

Furthermore, to ensure that organisations are aligned with all these climate objectives, and due to the growing demand for them to demonstrate greater transparency when reporting their environmental and social impact, the EU has established stricter criteria regarding the disclosure of non-financial information by companies. This is why the **Corporate Sustainability Reporting Directive (CSRD)** was adopted in 2022, enabling investors and the public to make more informed decisions. This directive requires organisations to which it applies to prepare and verify non-financial reports detailing how their business activities affect the planet and their staff, and how their sustainability objectives, measures and risks affect the financial health of the business.

To comply with the CSRD, affected organisations must follow the **European Sustainability Reporting Standards (ESRS)** developed by EFRAG (European Financial Reporting Advisory Group)², a set of standards providing specific guidelines for complying with the requirements established by the CSRD, which are divided into two cross-cutting standards, ESRS 1 and 2 (providing the principles and requirements for sustainability reporting and common to all companies) and ten thematic standards (divided into environmental (E), social (S) and governance (G) categories).

The figure below provides a simplified summary of the directive's implementation timetable, and which organisations will be affected.

Table 1. CSRD implementation timetable.

EU companies and large non-EU subsidiaries			Global companies
2025	2026	2027	2029
(based on the 2024 financial year)	(based on the 2025 financial year)	(based on the 2026 financial year)	(based on the 2028 financial year)
Already subject to NFRD. Large listed companies, banks and insurance companies (public-interest entities) with 500 or more employees.	Meet at least two of the following criteria: Companies with 250 or more employees, and/or net turnover of €50 million or more, and/or total assets of €25 million or more.	Small and non-complex credit institutions, captive insurers and listed SMEs. For the latter, there will be an opt-out option until 2028. Listed micro-enterprises are not included in the CSRD.	Non-EU companies with significant operations in the EU.

Within this regulatory framework, and with the aim of strengthening the scientific and technological foundations, the EU launched the **Horizon Europe** programme in 2021, which allocates at least 35% of its budget to projects that contribute to climate objectives aligned with the Green Deal. Among its specific initiatives, the **Smart and Climate-Neutral Cities 2030 Mission**³ was established. This is the EU's largest innovation programme, and aims to strengthen the scientific and technological base, generating a significant impact in areas such as competitiveness, economic growth and environmental sustainability. The Mission seeks to transform 100 European cities, with the support of NetZeroCities, a platform that will help them to overcome the current structural, institutional and cultural barriers to achieving climate neutrality by 2030. **A total of seven Spanish cities have been selected to participate, including Valladolid**, which in October 2023 received the

Mission Seal from the European Commission – a recognition of the work carried out and which opens the door to public (regional, national and EU) and private funding. This project is coordinated in the city by the **Valladolid Agency for Innovation and Economic Development (IdeVa)**⁴. As part of the Mission, in early 2023 the Governing Board approved the **Valladolid Climate Agreement**, which sets out the implementation and monitoring of the actions needed to accelerate the energy transition and achieve climate neutrality by 2030 in key areas: buildings, transport, the industrial sector, and the circular economy. This Agreement sets out the commitments to achieve the city's climate neutrality and sets out three plans: **the Climate Action Plan, the Climate Investment Plan, and the Governance Plan**⁵. It is worth noting that more than 150 organisations in Valladolid have signed up to the Agreement with their own sustainability commitments.

In addition, **Valladolid City Council** is also involved in the **Climate Change Adaptation Mission**, another of the five missions under Horizon Europe, which complements the Green Deal with the aim of helping regions and communities to become resilient to the effects of climate change.

At national level, the current **Climate Change and Energy Transition Act**, passed in 2021, establishes the regulatory framework to ensure that Spain meets the objectives of the Paris Agreement, facilitating the decarbonisation of its economy and promoting sustainable development. This law sets out the **2023–2030 Integrated National Energy and Climate Plan (PNIEC)** as the planning instrument to address the energy transition, updated in September 2024, which raises Spain's emissions reduction target to 32% by 2030 compared to 1990 levels and stipulates that renewable energy must account for 48% of final energy consumption by that date. The law also incorporates the **Long-Term Decarbonisation Strategy (ELP 2050)**, which stipulates that Spain must reduce its GHG emissions by 90% compared to 1990 levels by 2050, offsetting the remaining 10% through carbon sinks.



To achieve these objectives, the Climate Change and Energy Transition Act makes it mandatory to calculate and publish a carbon footprint and to draw up an emissions reduction plan.

The companies to which this requirement applies, as indicated by the amendment to **Royal Decree (RD) 163/2014**, which establishes the register of carbon footprints, offsetting and carbon dioxide absorption projects, still at the project stage, are those affected by **Law 11/2018** on the preparation of the Non-Financial Information Statement (EINF).

² Source: [First Set of draft ESRS | EFRAG \(2022\)](#)

³ Source: [Missions – citiES 2030](#)

⁴ Source: [Ciudad Misión | IdeVa](#)

⁵ Source: [Valladolid Climate Agreement | IdeVa](#)

Law 11/2018 transposes the former **Non-Financial Reporting Directive (NFRD)**, which has been replaced by the aforementioned **CSRD**, the transposition of which into Spanish law is still pending. The CSRD does not require the preparation of a separate document detailing the organisation's decarbonisation plan; however, where deemed material, **it requires the calculation and reporting of the carbon footprint**, detailing the methodology used. Furthermore, it requires **reporting on reduction targets, strategies implemented and progress made, presenting key performance indicators**.

The draft Royal Decree establishes the obligation to calculate and record, as a minimum, direct GHG emissions (Scope 1) and indirect emissions associated with the generation of electricity purchased and consumed by the organisation (Scope 2). The remaining indirect emissions, known as Scope 3, will be progressively incorporated into the organisation's carbon footprint to be registered in the case of companies not classified as SMEs. For all other cases, the registration of Scope 3 emissions will be voluntary. The timetable and conditions for the incorporation of the Scope 3 carbon footprint will be provided by the **Spanish Office for Climate Change**.

Consequently, it is likely that drawing up a plan will, in many cases, no longer be merely a recommendation but will become a **regulatory requirement for many organisations**, serving as an essential process for achieving established climate targets by providing a clear roadmap.

It is also worth mentioning the forthcoming adoption of the **Sustainable Mobility Act**, which is still at the draft stage and whose main aim is to establish a regulatory framework enabling public transport and mobility policies across Spain to better meet the real needs of citizens and the challenges of the 21st century. The Act is based on four key pillars:

- **Mobility as a social right:** a National Sustainable Mobility System will be created to coordinate transport policies in Spain. The definition of mobility is broadened to include alternative services such as on-demand public transport and shared mobility.
- **Clean and healthy mobility:** environmental and energy management in transport will be promoted, facilitating the reduction and offsetting of greenhouse gas (GHG) emissions, as well as the promotion of active mobility (cycling and walking) in urban environments.
- **Digital and innovative transport:** the digitisation and automation of transport will be promoted using open data, creating a sandbox for innovative projects and regulating the safe introduction of automated vehicles.
- **Investment for the benefit of citizens:** a stable funding system for urban public transport will be promoted, prioritising investments that generate the greatest social value.

In addition, transparency will be improved through an updated website for the MITMA (Ministry of Transport and Sustainable Mobility) and a biennial report on the state of the mobility ecosystem.

3.- STEPS FOR THE DEVELOPMENT OF DECARBONISATION PLANS

The following subsections outline the steps to be followed in drawing up a decarbonisation plan, which are summarised schematically in the diagram below.

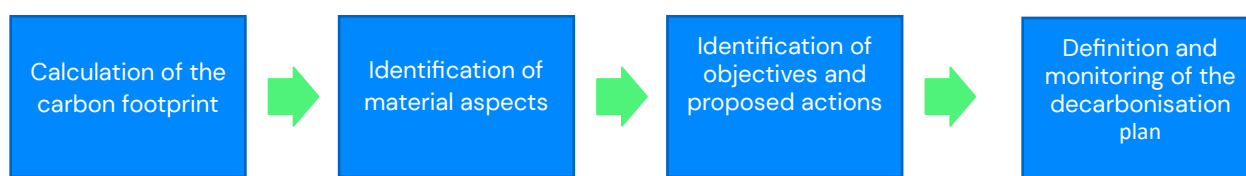


Figure 1. Diagram showing the steps to follow to draw up a decarbonisation plan.

3.1.- CALCULATION OF THE CARBON FOOTPRINT

According to the Ministry for Ecological Transition and Demographic Challenge (MITERD), an organisation's carbon footprint is the total amount of GHGs emitted directly or indirectly as a result of the activities carried out by that organisation. It is calculated as the product of an activity figure multiplied by its corresponding emission factor. This formula yields a quantity (grams, tonnes, kilograms, etc.) of CO₂ equivalent (CO₂ eq.), a standardised measure that allows the emissions of various gases to be expressed in terms of the amount of CO₂ that would have an equivalent effect in the atmosphere over a specific period.

$$\text{Carbon footprint (u of CO}_2\text{e)} = \text{activity data (u)} * \text{Emission factor (}^u\text{CO}_2\text{e /u)} \quad (1)$$

There are various methodologies for calculating the carbon footprint, notably the Greenhouse Gas Protocol Corporate Standard (GHG Protocol)⁶ and UNE-EN ISO 14064-1:2018. Greenhouse gases. Part 1: Specification with guidance, at the organisational level, for the quantification and reporting of greenhouse gas emissions and removals⁷, are among those with the greatest international recognition.

The UNE-EN ISO 14064-1 methodology forms part of the ISO 14064 series and specifies the principles and requirements, at organisational level, for the quantification and reporting of GHG emissions and removals. The quantification of direct and indirect emissions is carried out in accordance with the categories defined in the methodology itself, where 'direct emissions' are those arising from sources owned or controlled by the organisation, and 'indirect emissions' are those resulting from the organisation's activities but occurring

at sources that are neither owned nor controlled by the organisation. The categories are as follows:

- **Category 1:** direct GHG emissions and removals.
 - Combustion of any type of fuel consumed in stationary equipment and also in means of transport controlled by the organisation.
 - Direct emissions and removals from industrial processes.
 - Direct fugitive emissions caused by the release of GHGs from anthropogenic systems. These result from intentional or unintentional releases of refrigerant gases during the use of air conditioning equipment, for example.
 - Direct emissions and removals caused by land use, land-use change and forestry.
- **Category 2:** indirect GHG emissions caused by imported energy (electricity, heat, steam, etc.).
- **Category 3:** indirect GHG emissions caused by transport (of services, people, etc.).
- **Category 4:** indirect GHG emissions caused by products used by the organisation.
- **Category 5:** indirect GHG emissions associated with the use of the organisation's products.
- **Category 6:** indirect GHG emissions caused by other sources (this category includes any specific emissions not included in any other category).

For its part, the GHG Protocol is a standard developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) that quantifies emissions across three scopes:

- **Scope 1:** direct GHG emissions. This also includes stationary and mobile combustion from equipment controlled by the organisation, process emissions resulting from industrial processes, and fugitive emissions.
- **Scope 2:** indirect GHG emissions associated with electricity (arising from the consumption of purchased electricity, steam or heat).

⁶ Source: [Corporate Standard | GHG Protocol. \(2024\)](#)

⁷ Source: [UNE-EN ISO 14064-1:2018 \(2019\)](#)

- **Scope 3:** other indirect emissions. This is subdivided into fifteen categories, including emissions associated with the transport and distribution of products upstream and downstream, employees' daily commuting, and emissions related to purchased goods and services, amongst others.

The following figure, taken from the document “Corporate Value Chain (Scope 3) Accounting and Reporting Standard”, shows how emissions are classified across an organisation’s value chain according to this methodology.

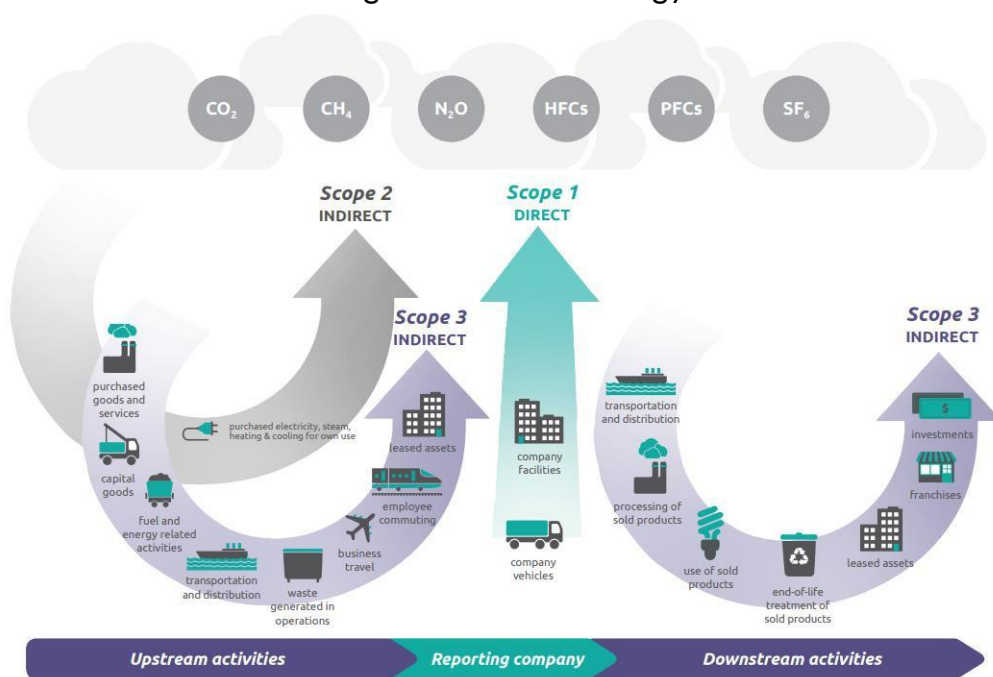


Figure 2. Summary of scopes and emissions across the value chain according to the GHG Protocol ⁸

The purpose of this guide is not to provide a detailed explanation of the calculation of Scope 3 emissions or their corresponding categories under ISO 14064-1 due to their high complexity. The GHG Protocol’s “Corporate Value Chain (Scope 3) Accounting and Reporting Standard” and the ISO 14064-1:2018 standard can be consulted for further information on this subject.

Both methodologies have their own specific features, and the selection of the most appropriate methodology for the calculation will depend on the specific needs of each organisation. The table below outlines the main differences.

⁸ Source: [Corporate Value Chain \(Scope 3\) Standard | GHG Protocol \(2024\)](#)

Table 2. Differences between the GHG Protocol and ISO 14064-1.

Aspect	GHG Protocol	ISO 14064-1
Nature	Non-binding guidance	Formal standard with
Scope	Focuses on an organisation's corporate emissions	Covers both organisations and specific GHG reduction
Categories	Three scopes, with scope 3	Six defined categories

The steps leading up to the calculation of the carbon footprint, described below, are those set out in the GHG Protocol standard and incorporated by MITERD in its *“Guide to calculating a carbon footprint and drawing up an organisation's improvement plan”* ⁹.

- 1- **Establishing organisational and operational boundaries.** Operational boundaries serve to identify the activities and sources that the organisation decides to include in its GHG inventory; in other words, which categories or scopes are to be included and excluded and why, and within these, which sources have been included or excluded and the reason for this. To establish the organisational boundaries, two approaches can be used: the equity approach, in which GHG emissions are accounted for in accordance with the organisation's shareholding proportion, and the control approach, where the organisation accounts for 100% of the emissions from operations over which it exercises control. In turn, control can be of two types:
 - a. **Financial control:** the company has the power to direct its financial and operational policies with the aim of deriving economic benefits from its activities.
 - b. **Operational control:** the company has full authority to introduce and implement its operational policies within the operation.
- 2- **Selection of the calculation period.** This may be the calendar or financial year preceding the year in which the calculation is made.
- 3- **Compilation of operational activity data.** It will be necessary to have at least the data on fossil fuel and electricity consumption for a specified period, as well as additional information that enables the calculation of indirect emissions other than those from electricity. At this stage, it is advisable to implement a data collection system that will facilitate this task in subsequent years following an initial effort.

Source: [Guide to calculating a carbon footprint and drawing up an organisation's improvement plan \(2024\)](#)

- **4- Identification of appropriate emission factors.** Factors from recognised sources must be used, such as those provided by MITERD¹⁰ for Scopes 1 and 2, which are updated annually. For Scope 3, information on its calculation is available from MITERD, but emission factors are not provided. Official sources can be consulted, such as the Catalan Office for Climate Change (GENCAT)¹¹, which publishes regional emission factors applicable to the national territory; or the Department for Environment, Food and Rural Affairs (DEFRA)¹², which publishes UK emission factors, which may be used in the absence of more geographically precise data.

With the aim of quantifying the efforts made by Spanish organisations to calculate and reduce the GHG emissions generated by their activities, Royal Decree 163/2014 of 14 March was approved, establishing the register of carbon footprints, offsetting and carbon dioxide absorption projects. Organisations may register their carbon footprint in the register provided that they are accompanied by a mandatory emissions reduction plan and meet a series of minimum requirements, set out by MITERD in its *“Support document for the registration of an organisation’s carbon footprint in the register of carbon footprints, offsetting and carbon dioxide absorption projects”*¹³. The list of organisations that have registered their carbon footprint can be found in the document *“Registered Carbon Footprints – List”*¹⁴. Registration is not mandatory; it is a voluntary process.

For SMEs, associations, foundations, cooperatives or organisations that are not part of the Public Administration, the minimum requirements for registration are as follows:

- The type of carbon footprint refers to the **organisation’s carbon footprint**; in other words, it measures the GHG emissions resulting directly or indirectly from the organisation’s activities. A product’s carbon footprint, which measures GHG emissions throughout its entire life cycle, is not covered by this register.
- The **minimum** required **scope** corresponds to **Scope 1 and 2** GHG emissions as defined by the GHG Protocol, i.e. direct emissions and indirect emissions associated with electricity. This corresponds to categories 1 and 2 as defined by ISO 14064-1.
- **Significant** Scope 1 and 2 emission sources from the organisation’s sites that have been included in the carbon footprint calculations must be considered. The register drawn up by MITERD considers an emission source to be significant if it accounts for more than 5% of the organisation’s total Scope 1 and 2 emissions.

Source: [MITERD emission factors \(2024\)](#)

⁹ Source: [Guidelines for the calculation of GHG emissions. Climate change. \(2024\)](#)

¹⁰ Source: [DEFRA 2024 emission factors](#)

¹¹ Source: [Support document for registering an organisation’s carbon footprint in the carbon footprint, offset and carbon dioxide absorption projects register \(2024\)](#)

¹⁴ Source: [Organisations and projects](#)

- The carbon footprint must be calculated for a **consecutive 12-month period**. If the carbon footprint covers a period spanning two different years, the emission factors for each year must be used.

Meanwhile, for organisations that meet **one or more of the following criteria**: They are not SMEs, associations, foundations or cooperatives, nor are they part of the public administration; or those whose footprint calculation includes Scope 3 in accordance with the GHG Protocol or the relevant categories of ISO 14064-1:2018; or where, due to their activities, process emissions are included in the footprint calculation; in addition to meeting all the above minimum requirements, they must **have their footprint verified by an accredited independent body**.

There are no restrictions on which methodology must be used to calculate the footprint, provided it is an internationally recognised methodology. MITERD provides *Scope 1+2 carbon footprint calculators*¹⁵, depending on the organisation's activity, which may be useful and are based on the GHG Protocol. They are primarily intended for small and medium-sized enterprises that do not have process emissions, although their use is not mandatory for registration in the registry, and they do not include the calculation of Scope.

3. These calculators already include the emission factors to be used, and only the activity data collected for the selected period need to be entered. They also offer the possibility of quantifying the emissions reduction that the implementation of a decarbonisation plan might entail, as well as comparing the footprint across different years. User guides for each calculator are available on the MITERD website.

The CSRD stipulates that organisations must carry out an **assessment of financial and ESG impacts, risks and opportunities**, identifying the **issues** that are **material** to them. In other words, they must identify the issues that are relevant and significant to the company, taking into account both their impact on the environment and the way in which these issues affect its financial health. Organisations will be required to **calculate, verify and report their** direct and indirect **carbon footprint** (in line with the three scopes of the GHG Protocol) in their reports if this is identified as a material aspect. It is also worth noting that, even if identified as a material aspect, organisations that do not exceed an average of **750 employees** during the financial year as at the balance sheet date may **omit reporting on Scope 3 emissions** and total GHG emissions for **the first year** of preparing their sustainability report. As explained in section 2, the obligation to calculate and report the carbon footprint in Spain is subject to **Law 7/2021 of 20 May on climate change and energy transition**, and the **amendment to Royal Decree 163/2014**. **The amendment is still at the draft Royal Decree stage** and establishes the obligation to calculate carbon footprints for all companies affected by Law 11/2018 for the preparation of the Non-Financial Information Statement (EINF). The EINF is the transposition of the former Non-Financial Reporting Directive (NFRD), replaced by the CSRD. **It is expected that the transposition of the CSRD into Spanish law will align with the criteria of Law 7/2021 and the amendment to the Royal Decree.**

3.2.- IDENTIFICATION OF MATERIAL ASPECTS



Material aspects are the emission sources that contribute significantly to an organisation's carbon footprint, and on which attention must be focused when drawing up a decarbonisation plan.

Calculating an organisation's carbon footprint is important because it provides insight into the GHG emissions generated by a specific activity and the type of GHG emitted. Furthermore, **it helps to identify the organisation's key areas in terms of emissions generated, which depend largely on the nature of the organisation's activities.** During the calculation, it may be advisable not only to determine the organisation's absolute emissions, expressed in tonnes of CO₂ equivalent and broken down by category or scope, but also **to obtain the percentage contribution of each category or scope to the total, which facilitates subsequent analysis.** It is worth noting here that, as explained in section 3.1, in addition to an organisation's carbon footprint, it is also possible to calculate the carbon footprint of a product, in the case of organisations that manufacture products. This footprint provides an overview of all GHGs emitted throughout its life cycle, from the extraction of raw materials, through processing, manufacturing and distribution, to the use and end-of-life stages. This calculation makes it possible to identify the stages of the process with the greatest environmental impact, and at which stages of the product's life the organisation needs to pay greater attention, i.e. which have the greatest materiality in terms of emissions generated.

Once the calculations have been carried out, most organisations focus on reducing their Scope 1 and 2 emissions, i.e. those arising from operations they control or own, as well as those resulting from the purchase of electricity, heat and steam.

The lack of direct control and the difficulty in gathering information on other sources of indirect emissions, corresponding to Scope 3 of the GHG Protocol and the remaining categories of ISO 14064-1, means that many organisations do not address them, despite the fact that they may in many cases be the main source of emissions. [Appendix 1. Scope 3 Categories](#) lists all the categories that form part of Scope 3 according to the GHG Protocol methodology, with a brief description of the emission sources for each.

¹² Source: [Carbon footprint calculators developed by MITERD \(2024\)](#)

¹³ 163/2014, regarding the mandatory nature of the scope of the carbon footprint calculation and the establishment of a decarbonisation plan.

3.3.- IDENTIFICATION OF OBJECTIVES AND PROPOSED ACTIONS



Identifying the material aspects of the organisation's carbon footprint enables the establishment of overall emission reduction targets, so that a list of actions to be implemented can be drawn up, aimed at progressively reducing CO2 emissions.

It is necessary to set clear and measurable targets that are aligned with current regulatory frameworks. There are internationally recognised methodologies for setting reduction targets, which organisations are not required to follow but are encouraged to do so, such as **the Science Based Targets initiative (SBTi)**, which helps define reduction targets that reflect what science indicates is necessary to limit global warming to below 2 °C or preferably to 1.5 °C, as reflected in the Paris Agreement¹⁶. Organisations subject to the CSRD must report, in addition to the calculation of Scope 1, 2 and 3 emissions, the climate-related targets they have set, indicating whether and how GHG reduction targets have been established, all in accordance with the requirements set out in the ESRS. These requirements are in line with what is described below in this section, namely the guidelines issued by MITERD based on the GHG Protocol for recording the carbon footprint and drawing up the emissions reduction plan, although they are described in detail later on due to certain specific features.

In accordance with the GHG Protocol methodology, and as also set out by MITERD, the steps for setting an emissions reduction target are as follows:

- 1- Define the **type of target**, i.e. whether it is an absolute or an intensity target.
 - a. **Absolute target:** expresses a specific amount of emissions reduction over a given period, which must be expressed in tonnes of CO2 equivalent; for example, reducing GHG emissions by 30% below 2015 levels by 2025.
 - b. **Intensity target:** defined as the ratio of GHG emissions reductions to a variable representing the company's level of activity or operations; for example, an oil company aiming to reduce its GHG emissions per barrel produced by 30% between 2015 and 2025. Whether to set one type of target or the other will depend on the organisation.
- 2- Defining the **scope of the target**, i.e. the organisation's activities and emission sources that will be affected by it. The scope of the carbon footprint inventory and the scope of the target may be the same, or the scope of the target may be limited to a specific subset of the organisation's emission sources.

¹⁶ Source: [The Paris Agreement | United Nations \(2015\)](#)

- 3- Set the **target base year**, with two approaches available: a fixed or a rolling base year. For example, the global target to reduce GHG emissions by 30% from 2015 to 2025 is based on a fixed base year. However, if the target is defined as reducing emissions by 2% annually compared to the previous year from 2015 to 2025, this would be based on a rolling base year.
- 4- Define a **commitment date**, which determines whether the target is short-term or long-term. Long-term targets (over 10 years) depend on uncertain future events, so organisations typically set shorter-term targets.
- 5- Define the **duration of the commitment period**, i.e. the period over which emissions will be monitored against the established target, which may be annual or multi-annual. If, for example, the organisation sets a target to reduce its emissions by 30% compared to the 2015 baseline by 2025, this would be an annual commitment period; and if the organisation aims to reduce its emissions by 30% compared to its 2015 baseline over a commitment period from 2020 to 2025, this would be a multi-year period.
- 6- Define the **level of the target**, i.e. its quantitative value, by first examining the relationships between GHG emissions and the relevant variables that define the organisation's activity, analysing future scenarios for the company in relation to its GHG emissions, and considering the existence within the organisation of plans regarding the environment, investment, or changes to products or services that may affect GHG emissions.

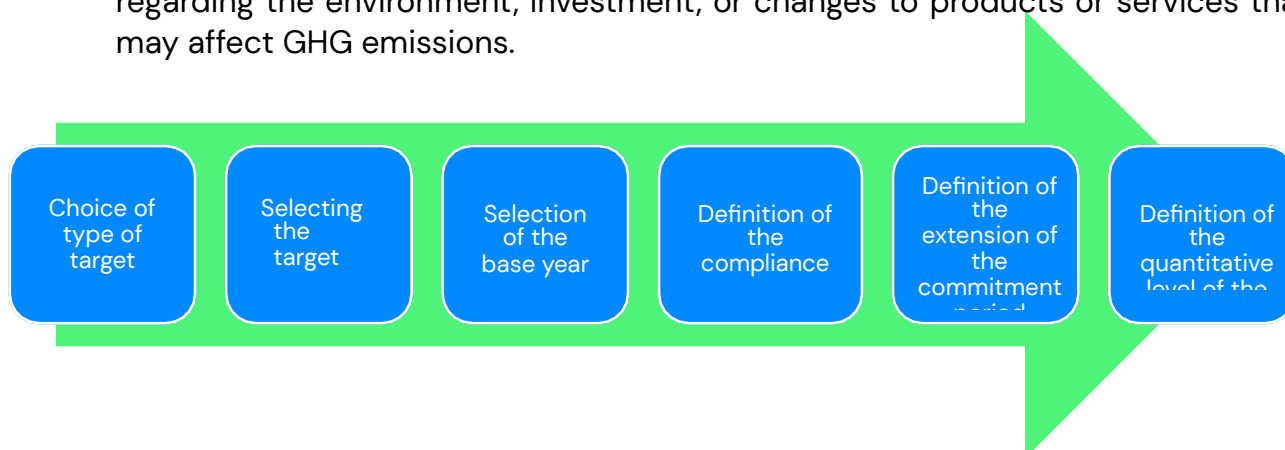


Figure 3. Diagram showing the steps to follow to define an overall reduction target based on the GHG Protocol.

In order to carry out all these steps, it is necessary to have the commitment of the organisation's senior management, given that achieving the target will require changes in the organisation's behaviour and in decision-making at all levels of the company, which would not be possible without the support of senior management.

Achieving the overall reduction targets requires the implementation of a series of measures or actions aimed at reducing GHG emissions, which are described in great detail

for implementation by the organisation. This list of measures will depend on the specific sector to which the organisation belongs, although it is advisable to ensure that the proposed measures are flexible enough to adapt to different circumstances within the organisation, such as variations in resources or available technologies. MITERD, in its *“Guide to calculating a carbon footprint and drawing up an organisation’s improvement plan”*, provides a series of measures based on the Technical Guidelines on Energy Efficiency from the Institute for Energy Diversification and Saving (IDAE)¹⁷, which offer general guidance. Some of the actions to be implemented may include measures related to improving the energy efficiency of facilities, the use of renewable energy, prioritising the use of sustainable transport for business travel, or promoting sustainable transport among employees.

To draw up a definitive list of actions to be implemented, it will be necessary to assess their technical and economic feasibility, analysing primarily the initial investment required, long-term operating costs, expected savings, the maturity of available technologies, and any existing subsidies or incentives, always taking into account each organisation’s budget.

With regard to grants and incentives in Spain, particular mention should be made of the **Strategic Projects for Economic Recovery and Transformation (PERTE)**¹⁸, which aim to mobilise significant investment for industrial decarbonisation and from which companies in the manufacturing sector can benefit. To date, a total of twelve PERTE projects have been approved in various strategic areas for the Spanish economy, such as the development of electric vehicles, renewable energy, renewable hydrogen, and industrial decarbonisation, amongst others. A PERTE may be a single project or a group of projects with common objectives and a coherent approach, in which the integration of small and medium-sized enterprises is prioritised, with each contributing its value in different areas of the same project. Meanwhile, the need to promote energy efficiency and the use of renewable energy in the country has led to the creation of a series of **support programmes by the IDAE**¹⁹. The most notable of these, which, depending on the programme, may be aimed at both public and private entities, as well as SMEs or large companies, are as follows:

- **Renewable value chain:** this consists of a line of grants to boost the manufacture of equipment and components for renewable energy and storage technologies.

Innovative renewables: the aim is to promote the installation of renewable energy sources that are innovative or provide added value. This includes their ability to integrate into the environment and into the productive sectors. At the same time, the aim is to promote collective self-consumption and the installation of renewable heat pumps, with the aim of decarbonising air conditioning systems.

Source: [Technical Guides on Energy Saving and Efficiency in Air Conditioning | IDAE \(2024\)](#)

¹⁷ Source: [Strategic Projects for Economic Recovery and Transformation \(PERTE\) | Recovery, Transformation and Resilience Plan, Government of Spain](#).

¹⁸ Source: [Business | IDAE Grants Portal](#)

- **H2 Valleys:** aims to promote the creation of large renewable hydrogen valleys or clusters in Spain that bring together, in a single location, the various stages of the value chain associated with this energy source.
- **Biogas Pre-feasibility:** consists of a promotional mechanism under which technical and economic analyses will be carried out on biogas production projects and their use to meet thermal and/or electrical consumption needs.
- **PREE 5000:** aims to fund projects that promote sustainable building in municipalities facing demographic challenges in Spain.
- **MOVES III:** grants under this programme help to finance part of the cost of purchasing electric vehicles, provided the model is included in the IDAE Vehicle Database.
- **CE Implementa:** aims to continue promoting the establishment of Spanish Energy Communities, which consist of a legal entity formed by citizens, SMEs and local authorities that organise themselves to collectively generate, consume and manage their own renewable energy.

Another significant incentive is the **Energy Saving Certificates (CAE)**²⁰, which arise from the need to generate new energy savings through the implementation of energy efficiency projects, and to facilitate investment in energy efficiency technologies by fostering a market in this sector. The CAE consists of an electronic document that guarantees a final energy saving of 1 kWh following the implementation of an energy efficiency measure. Thus, if a saving of 500 kWh is achieved, 500 CAEs will be obtained. The system allows energy savings to be monetised, recovering part of the cost of investments made in energy efficiency by receiving compensation if the energy savings obtained are sold for certification within the system. Consequently, entities legally required to achieve annual energy savings—namely energy companies (gas and electricity suppliers and wholesale operators of petroleum products and LPG)—can fulfil their obligation by paying a fee to the National Energy Efficiency Fund managed by IDAE, or by settling CAEs that they generate themselves or acquire on the market.

As already indicated, in the case of organisations adopting the CSRD, the steps to be followed to establish their reduction targets and the measures to be implemented are in line with those described in the section, although they have certain specific features. The requirements set out in the relevant standards (ESRS 2 and ESRS E1) are summarised below:

¹⁹ Source: [Energy Saving Certificates \(CAE\) Scheme](#)

- Reduction targets must be stated in absolute terms, i.e. in tonnes of CO₂ equivalent or as a percentage of emissions in a base year, or in terms of intensity if deemed relevant.
- They must cover all three scopes, and it is a requirement to explain how these targets align with the boundaries of the GHG inventory. They must be gross targets, meaning that the organisation shall not include GHG removals, carbon credits or avoided emissions as a means of achieving its GHG emission reduction targets.
- The base year must be published and, from 2030 onwards, the reference year for its GHG reduction targets must be updated every five years.
- It will be necessary to include at least target values for 2030, and also for 2050 if available.
- The organisation must state whether the targets are science-based and compatible with limiting global warming to 1.5 °C, publishing the framework and methodology used to determine them, as well as briefly explaining how it has taken future developments into account (changes in sales volumes, new technologies, regulatory factors, etc.) and how this may affect both its GHG emissions and reduction targets.
- The decarbonisation measures to be implemented shall be described, along with their overall quantitative contributions towards achieving the reduction targets.

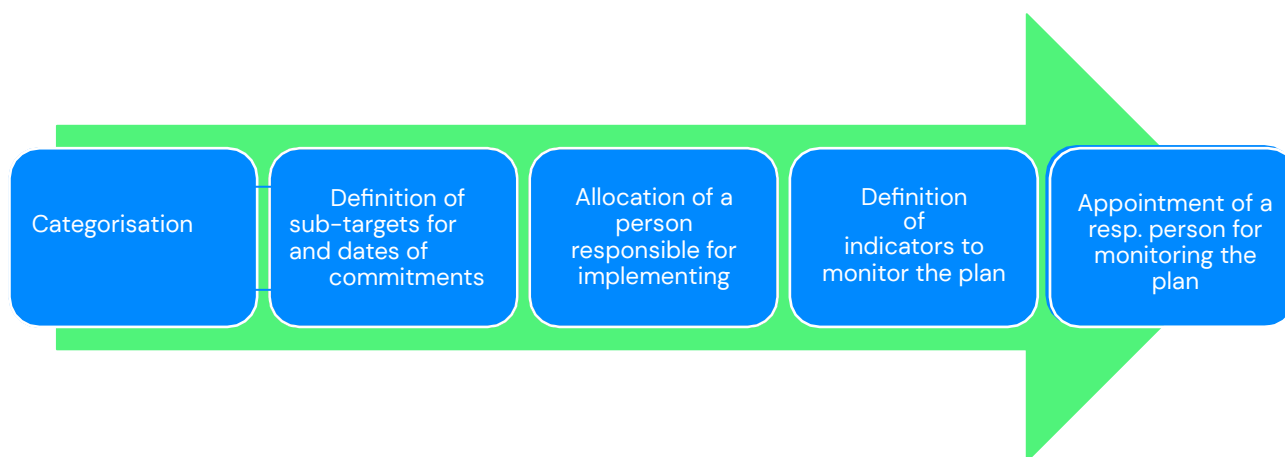
3.4.- DEFINITION AND MONITORING OF THE DECARBONISATION PLAN

Once the overall reduction targets have been identified and a definitive list of measures has been drawn up, the actions listed should be categorised according to the emission source that each measure is intended to address. For example, if the proposed action aims to reduce fossil fuel consumption in equipment controlled by the organisation, it can be categorised as an action aimed at reducing direct GHG emissions, corresponding to Scope 1 according to the GHG Protocol, or to Category 1 as defined by ISO 14064-1. Each defined and categorised action must be accompanied by a partial reduction target associated with that action—that is, the degree of emissions reduction expected to be achieved through its implementation—as well as a commitment date. It is therefore advisable to appoint a person responsible for implementing these measures within the organisation.

To ensure the monitoring and evaluation of emissions over time, as well as of the various reduction measures throughout the decarbonisation plan, it is necessary to establish within the plan a series of metrics that will enable an analysis of GHG emissions and also of the degree of implementation of the decarbonisation plan. For example, to measure the effectiveness of the measures, an organisation can monitor them using the tonnes of CO₂-s per employee as an indicator. It is advisable to carry out a continuous monitoring of these indicators, enabling a response to any deviations from the proposed targets in the

shortest possible time. It will therefore be necessary to appoint a person within the organisation to be responsible for monitoring the decarbonisation plan.

Figure 4. Flowchart showing the steps to follow for the proper definition and monitoring of a decarbonisation plan.



The steps described are summarised below:

Should the organisation adopt the CSRD, the ESRS 2 standard stipulates that monitoring must include reporting on the organisation's performance against stated objectives, including how the objectives and the monitoring metrics used are monitored and reviewed, and whether progress is in line with initial expectations. For monitoring metrics, the following must be reported:

- The methodologies and significant assumptions on which the metric is based, including their limitations.
- Whether the metric has been validated by an external body other than the assurance provider, and if so, which body.
- The metric must be well defined, with clear and meaningful descriptions.
- If a currency is specified as the unit of measurement, the organisation must use the presentation currency of its financial statements.

To ensure that the measures implemented are not only effective within a particular organisation but can also be adapted to different contexts and organisations, it is recommended that the processes described for information purposes in this guide be standardised, setting out the procedures to be followed in a document that can be easily followed. For example, it is good practice to set out in writing how the information required to calculate the footprint will be collected, or how the indicators for monitoring the measures included in the plan will be calculated. To facilitate monitoring of the plan, it is advisable to set out in a schematic format the measures, the objective associated with their quantitative contribution and the compliance date, the person responsible for

implementing the measures, the corresponding monitoring indicators, the monitoring period, and the person responsible for such monitoring. As indicated above, continuous monitoring is recommended, although the period for each indicator will be determined by the organisation itself. For example, if the organisation's electricity consumption is being monitored and electricity bills are received monthly, the related monitoring metrics can be updated on a monthly basis. An example diagram that the organisation can draw up is shown below.



Figure 5. Diagram to facilitate monitoring of the decarbonisation plan.

This framework can be used as a basis, but the organisation may decide to include additional information such as the planned financial investment for each measure over the target's commitment period, or the current status of the measure, indicating whether implementation has already begun at the time of drafting.

The following table shows a list of the most common themes, measures and indicators (both absolute and relative) to be included in a decarbonisation plan. It is worth noting that indicators referring to a reduction should be compared with previous years, or, where appropriate, with the base year.

Areas of action	Measures	
Monitoring	Selection and monitoring of indicators	Carbon footprint (tonnes CO ₂ eq.), water consumption (m ³), electricity consumption (kWh), natural gas consumption (kWh)
	Conducting audits	Number of audits carried out, number of errors found in data collection
Building efficiency	Purchase of Guarantees of Origin (GoO)	Savings with GO (kWh)
	Installation of solar panels	Energy generated (kWh, or ratio of renewable energy to total consumption)
	Purchase of more energy-efficient equipment	Investment (€), energy saved (kWh)
	Improvement in the building's energy efficiency	Investment (€), energy saved (kWh)
	Maintenance of the air conditioning system	Investment (€), energy saved (kWh), number of maintenance visits
Vehicle fleet	Vehicle fleet replacement	Investment (€), emissions saved (tonnes CO ₂ eq.)
	Review of travel routes	Emissions saved (tonnes CO ₂ eq.), reduction in mileage (km)
	Sustainable travel policies	Emissions saved (tonnes CO ₂ eq.), investment (€)
	Promotion of sustainable employee transport (commuting)	No. of training sessions, training hours, investment (€), monitoring of behavioural change (reduction in number of cars, number of employees using sustainable transport, etc.)
Assessment and optimisation of internal processes	Improvement of energy efficiency and environmental performance of processes	Water (m ³), electricity (kWh) and fuel (litres, m ³ , kWh) saved, waste avoided (tonnes), emissions avoided (tonnes CO ₂ eq.), savings achieved (€)

Areas of action	Measures	Monitoring indicators (*)
		Absolute
Digitalisation	Digitisation of processes	Reduction in paper consumption (tonnes) and energy consumption (kWh).
Waste management	Waste recovery	Tonnes by type of treatment, total tonnes generated, % of recovery
Purchasing	Supplier assessment	No. of suppliers aligned with sustainability policies, no. of audits carried out, no. of suppliers rejected
	Material selection	No. of materials changed, cost-to-investment ratio for emissions reduction
Training	Raising awareness of sustainability among employees	Number of training sessions held, number of training hours, investment (€)

Table 3. List of common lines of action, measures and indicators in a decarbonisation plan.

(*) It is also advisable to include intensity indicators. Intensity indicators express a ratio or proportion and are calculated as the ratio of the corresponding absolute value to a unit of measurement, which may be, for example, the total hours worked within the organisation, the average annual number of full-time equivalent (FTE) employees, the organisation's revenue, or the number of production units.

The preparation of a decarbonisation plan is mandatory for all organisations wishing to register their carbon footprint with MITERD; this is **a separate document from the carbon footprint report**. In other words, it is not possible to register a carbon footprint unless this is accompanied by a decarbonisation plan. As indicated in this guide, the minimum requirement is that the plan sets out specific actions and the likely timeframe for their implementation, as well as the expected savings and reductions compared to a base year. The period covered by the plan must include the year of calculation and one or more future years; thus, the plan does not need to be revised annually, but the plan initially proposed will be monitored. **Compliance with the plan is not mandatory**, and failure to achieve the self-imposed targets has no consequences regarding registration in the register. Nevertheless, once the register has been notified of the plan, and in subsequent registrations, the organisation must report on its progress and implementation status.

3.5. REPLICABILITY AND BEST PRACTICES

Below are some illustrative examples of best practice regarding carbon footprints and sustainability in general, based on initiatives adopted by leading sustainability companies and on information received from financial and investment organisations regarding their current or future actions relating to their value chain.

Carbon footprint

- Setting emission reduction targets to be incorporated into decarbonisation plans using science-based criteria. One example cited is the Science Based Targets initiative (SBTi) standard, which is widely recognised globally and brings rigour to the process of defining roadmaps aligned with the decarbonisation targets set out in the Paris Agreement and in the main regulatory frameworks.
- In industrial companies, it is becoming increasingly important to carry out product life cycle analyses and issue third-party verified Environmental Product Declarations, in which one of the impact categories calculated relates to Global Warming Potential (GWP). This provides a rigorous starting point for identifying process improvements aimed at reducing the greenhouse gas emissions impact of products. These aspects are becoming increasingly important in the market positioning of a significant number of products. Similarly, the results could be incorporated into the calculation of a company's carbon footprint.
- A significant number of property developers and construction companies operating in the building and infrastructure sectors have incorporated the conduct of life-cycle assessments at early stages (basic or detailed design) into their continuous improvement processes, with the aim of identifying improvements designed to optimise the carbon footprint during the development process itself. This also enables the establishment of plans to reduce the carbon footprint and optimise energy efficiency, in line with long-term objectives for carbon neutrality and energy efficiency.
- Registering the carbon footprint, regardless of whether the organisation is affected by the draft Royal Decree 163/2014, offers a number of benefits that are of interest. Primarily, it will raise the profile of efforts made to combat climate change through a nationwide system. Furthermore, identifying opportunities to reduce emissions will typically lead to lower energy consumption, which can result in financial savings for the organisation. Organisations that register their carbon footprint and have a decarbonisation plan receive the 'Calculo' seal from MITERD, which is an official recognition. Furthermore, if the organisation registers its carbon footprint and those of the three immediately preceding years (i.e. four consecutive years of registered carbon footprints are available) and, in addition, demonstrates a downward trend in its emissions, it will receive the "Calculo y Reduzco" seal. The

seal awarded indicates the organisation's participation in the register and the specific time period to which this participation relates. The reduction is demonstrated by analysing emissions in relation to a ratio, calculated by dividing emissions by the activity index defined by the organisation. The average of this ratio over the last three years must be lower than the average for the previous three-year period. If this is not the case, it may only receive the "I Calculate" seal. If, for example, the organisation seeks to demonstrate that it has reduced its emissions in 2024, it will demonstrate the following:

Average ratio in 2021, 2022, 2023 > Average ratio in 2022, 2023, 2024

Energy efficiency

- Given that one of the most significant factors in the greenhouse gas emissions of many organisations is linked to their energy consumption, regardless of whether an organisation is legally obliged to carry out energy audits, it is recommended that plans be established to improve the energy efficiency of facilities and/or that the relevant actions be included within decarbonisation plans.
- Energy consumption and costs are a major issue for a large number of companies. With the aim of achieving a degree of autonomy that can be difficult for small and medium-sized enterprises to achieve individually, it may be worthwhile to establish an Energy Community, which consists of a group of various stakeholders who decide to collaboratively manage their energy through local renewable energy generation facilities, mobility services or energy efficiency measures. In addition to savings from reduced emissions, financial benefits and improved competitiveness, coordinated collaboration to promote the development of various energy projects also leads to cost reductions due to economies of scale, or greater utilisation of available renewable resources by maximising collaboration between the different participants. As indicated in section 3.3, there is currently an IDAE support programme (CE Implementa) which may be of interest²¹.

Some relevant references on energy communities are briefly described below, by way of example:

- Toda Valladolid²². In Castile and León, the 'Toda Valladolid' energy community was established in 2023, promoted by the Chamber of Commerce and in collaboration with the Valladolid Provincial Council, with the participation of various local councils (Mayorga, Fresno el Viejo and Piña de Esgueva). The objective is to reduce and stabilise energy costs through the installation of solar panels on municipal premises in the three towns.

²⁰ Source: [Energy Communities / Idae](#)

²¹ Source: [CEL Toda Valladolid – Local Energy Community](#)

- CTM SEnergy I (SynerHy)²³. An energy community promoted and created by the Madrid Transport Centre (CTM), with the aim of implementing shared self-consumption open to more than 100 companies based in the spaces managed by this logistics centre in the city of Madrid, where energy is used intensively. This project was selected in 2023 by the IDAE as part of the first call for proposals under the CE Implementa Programme to support the creation and launch of Energy Communities.

Sustainability and Corporate Governance Report

- It is recommended that Spanish companies affected by the European CSRD directive report in accordance with European standards (ESRS) in their sustainability reports from 2025 onwards. This means that, although there is no legal obligation as yet, companies may choose to align themselves with the proposed standards in order to be prepared for their legal obligations in the near future.
- For organisations which, although not yet obliged to report in accordance with the European CSRD in the short term, have a number of employees and/or current or projected turnover close to the thresholds set out in that directive, it is recommended that they carry out a preliminary gap analysis, with the aim of planning in advance the necessary actions regarding data collection and management, and the implementation of the required governance and reporting processes.
- For organisations that are not required to report their ESG performance, it is considered good practice in any case to produce a **voluntary annual report** tailored to the company's resources and strategies, including its most relevant ESG performance data (which may include its greenhouse gas emissions). Such actions have positive effects both in terms of reputation and in relation to investors and customers, who are increasingly integrating their value chain into their own sustainability strategies.
- It is recommended that sustainability be incorporated into the decision-making processes of any organisation, as a further aspect to be taken into account in governance processes, to the extent that this is appropriate to the organisation's characteristics and resources.

²² Source: [CTM SEnergy Phase I / SynerHy](#)

3.6.- PRACTICAL EXAMPLE

- The company owns its own office, which consists of an entire building.
- The company has its own vehicle fleet, which uses E5 fuel (petrol).
- The company has an electricity contract without a Renewable Energy Guarantee of Origin certificate, meaning the renewable origin of this consumed energy is not certified.
- Each employee's *commuting* is carried out in private vehicles using E5 (petrol) or B7 (diesel) fuel. Each employee uses one vehicle.
- All of the company's business trips in 2023 were made by company car or by plane.

A legal consultancy wishes to calculate its carbon footprint for the year 2023 and draw up a decarbonisation plan. The organisation has the following characteristics:

The preparatory steps for the calculation described in this section of the guide are carried out.

- **Establishment of organisational and operational boundaries (*).** The company has decided to use the GHG Protocol methodology and will apply an operational control approach to the footprint calculation, as it has full authority to introduce and implement its operational policies in the operation of its assets. The following emission sources are included within the scope of the calculation:
 - The vehicle fleet. The vehicles belong to the company, which is responsible for their maintenance and proper use.
 - The office's natural gas boiler. The company leases the entire building and has operational control over this equipment, being responsible for its maintenance.
 - Fugitive emissions. The company is responsible for the maintenance of the building's facilities; therefore, gas leaks associated with air conditioning and refrigeration equipment, or fire-extinguishing equipment, relate to assets controlled by the company.
 - Indirect emissions associated with the purchase of electricity consumed by the company.
 - Indirect emissions associated with employees' *commuting*.

- Indirect emissions associated with business travel. That is, journeys made using transport not owned by the company.

(*) Due to the complexity of data collection and the calculation of Scope 3 indirect emissions, this example has been simplified such that a partial calculation of this scope has been carried out, including in the carbon footprint calculation the indirect emissions associated with categories 6 (business travel) and 7 (employee commuting), in accordance with the GHG Protocol.

- **Selection of the period for which the footprint is calculated.** The reporting period is the calendar year, from 01/01/2023 to 31/12/2023.
- **Compilation of operational activity data.** The company has compiled the necessary information and summarised it as set out below.
 - SCOPE 1: direct emissions.
 - Stationary combustion: natural gas consumption in the boiler. Information regarding the amount of fuel consumed is obtained from the monthly bills received. The emission factor is obtained from MITERD.
 - Mobile combustion: consumption of E5 fuel (petrol). Information regarding the amount of fuel consumed by the vehicle fleet is obtained from the monthly invoices received. This emission factor is obtained from MITERD.
 - Fugitive emissions: the amount of refrigerant gas to be topped up in the office's air-conditioning equipment. In the event of a gas leak, the amount to be topped up during maintenance is equal to the amount of gas that has leaked. This information is available in the relevant maintenance reports. This subcategory also includes the amount of CO₂ from fire extinguishing equipment in the event of a fire where it has been used. If the equipment has been removed and a new unit purchased, this does not constitute a fugitive emission. The emission factors for each refrigerant gas, as well as for CO₂ from fire extinguishing equipment, are obtained from MITERD,
 - SCOPE 2: indirect emissions caused by imported energy.
 - Emissions from electricity consumption: the amount of electricity consumed in the office. This information is obtained from the electricity bills provided by the electricity supplier. The emission factor in this case will depend on the supplier and can be consulted on the MITERD website.

○ SCOPE 3: other indirect emissions.

- Emissions from *commuting*: the amount of E5 (petrol) and B7 (diesel) fuel consumed due to employees' home-to-work-to-home journeys. This information is obtained from an

conducted annually among all employees of the organisation. MITERD emission factors are used.

- Emissions from business air travel: the kilograms of CO₂ equivalent generated by each air journey per employee. This information can be obtained by knowing the departure point, destination and ticket class. The associated emissions can be calculated from this information using tools such as ICAO ²⁴.

- **Identifying appropriate emission factors.** As previously indicated, the company has used the emission factors provided by MITERD.

Once the previous steps have been completed, it is possible to calculate emissions. The company decides to use one of the calculators available on the MITERD website to calculate its Scope 1 and 2 emissions.

To calculate the footprint using this tool, the company does the following:

1. It downloads the Excel tool called “*Organisational Scope 1+2 Carbon Footprint Calculator*” ²⁵.

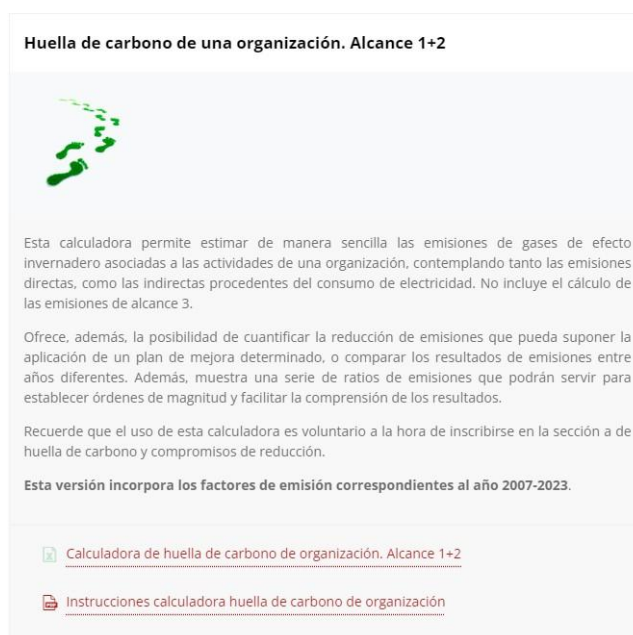


Figure 6. Access to the calculator provided by MITERD for calculating the carbon footprint.

This table contains the activity data for emission sources used to calculate the carbon footprint, which the company has entered into the calculator. This table also shows the litres of petrol and diesel consumed due to employees' business travel, which is required to calculate Scope 3. The data are given in the units corresponding to the relevant emission factors.

Table 4. Activity data for the various emission sources for the year 2023.

Activity data	
Scope 1: Direct emissions	
Natural gas consumption in boiler (kWhPCS)	130,000
E5 fuel (petrol) consumption in the vehicle fleet (litres)	16,000
Amount of refrigerant gas (kg)	0
Scope 2: Indirect energy emissions	
Electricity consumption (kWh)	300,000
Scope 3: Other indirect emissions	
Consumption of E5 (petrol) and B7 (diesel) fuel for <i>business</i> travel (litres)	12,500 litres of petrol 12,500 litres of diesel

To calculate the emissions associated with each source, the tool uses the formula given on page 6 of this section:

Carbon footprint (u of $C02e$) = activity data (u) * Emission factor (u $C02e$ / u) (1)

- Once all activity data has been entered, the "Final Report. Results" tab displays the carbon footprint broken down by Scope 1 and Scope 2.

5. Figure 9. Tab in the calculator showing the absolute results broken down by year.

RESULTADOS ABSOLUTOS AÑO DE CÁLCULO

Resultados (el dato a introducir en el formulario en caso de solicitar la inscripción en el Registro es el expresado en t CO₂e)

Año de cálculo:

	t CO ₂	kg CH ₄	kg N ₂ O	t CO ₂ e
EMISIONES DIRECTAS	0,00	0,00	0,00	0,00
EMISIONES INDIRECTAS POR ENERGÍA COMPRADA	-	-	-	0,00
TOTAL	0,00	0,00	0,00	0,00

Resultados por gases desglosados según actividades

Nota: en los casos en los que se dispone únicamente del factor de emisión agregado expresado en CO₂e y no de los factores de cada gas, estos últimos se considerarán nulos para el cálculo del total de las emisiones por gases.

	kg CO ₂	g CH ₄	g N ₂ O	kg CO ₂ e
EMISIONES DIRECTAS (ALCANCE 1)				
Instalaciones fijas	0,00	0,00	0,00	0,00
Transporte por carretera ⁽¹⁾	0,00	0,00	0,00	0,00
Transporte ferroviario	0,00	0,00	0,00	0,00
Transporte marítimo	0,00	0,00	0,00	0,00
Transporte aéreo	0,00	0,00	0,00	0,00
Funcionamiento de maquinaria	0,00	0,00	0,00	0,00
Fugitivas - climatización y refrigeración	-	-	-	0,00
Proceso	0,00	0,00	0,00	0,00
SUBTOTAL	0,00	0,00	0,00	0,00
EMISIONES INDIRECTAS (ALCANCE 2)				
Electricidad edificios ⁽²⁾	-	-	-	0,00
Electricidad vehículos ⁽²⁾	-	-	-	0,00
Calor, vapor, frío, aire comprimido	-	-	-	0,00
SUBTOTAL	-	-	-	0,00
TOTAL	0,00	0,00	0,00	0,00

⁽¹⁾ Las emisiones de los vehículos eléctricos se engloban en emisiones indirectas debidas al consumo de electricidad.

⁽²⁾ Para años anteriores a 2021 las emisiones debidas al consumo eléctrico solo tienen en cuenta el CO₂ y no otros GEI.

HUELLA DE CARBONO DE ALCANCE 1+2 (t CO₂e)

Emisiones dir. (alcance 1) Emisiones ind. electricidad (alcance 2)

EMISIONES DIRECTAS (ALCANCE 1)

Instalaciones fijas	0,0%			
Transporte por carretera	0,0%			
Transporte ferroviario	0,0%			
Transporte marítimo	0,0%			
Transporte aéreo	0,0%			
Funcionamiento de maquinaria	0,0%			
Fugitivas - climatización, refrigeración y otros	0,0%			
Proceso	0,0%			

EMISIONES INDIRECTAS POR ELECTRICIDAD Y OTRAS (ALCANCE 2)

Electricidad edificios	0,0%			
Electricidad vehículos	0,0%			
Calor, vapor, frío, aire comprimido	0,0%			

On the same tab, you can view the trend in emissions over time, provided that the carbon footprint values from previous years have been entered.

RESULTADOS RELATIVOS - EVOLUCIÓN

AÑO DE CÁLCULO:

t CO₂e /

t CO₂e / m²

t CO₂e / empleado

AÑO 1:

t CO₂e /

t CO₂e / m²

t CO₂e / empleado

AÑO 2:

t CO₂e /

t CO₂e / m²

t CO₂e / empleado

AÑO 3:

t CO₂e /

t CO₂e / m²

t CO₂e / empleado

Evolución del ratio de emisiones t CO₂e/ud

Comparación media del ratio de emisiones de dos trienios a = año de cálculo t CO₂e/ud

Promedio ratio trienio (a-3, a-2, a-1) Promedio ratio trienio (a-2, a-1, a)

Figure 10. Tab in the calculator showing the evolution of the carbon footprint by year.

The calculation of Scope 3 emissions is not included in the MITERD calculator, so the company must perform this calculation separately. For employee commuting, the calculation is based on the litres of E5 petrol and B7 diesel consumed, using the same formula as the MITERD calculator, along with the corresponding emission factors also provided by MITERD. In the case of business travel by air, the ICAO tool already provides a value in kg of CO₂ equivalent, so the organisation must add up the kg of CO₂ equivalent generated on each journey by each employee who has travelled.

The results obtained by the company are shown below, broken down into the three scopes.

Table 5. Absolute emissions generated by the company in 2023.

Emissions	
Scope 1: Direct emissions	59,644 kg CO2 eq.
- Direct emissions from stationary combustion	23,660
- Direct emissions from mobile combustion	35,984
- Direct fugitive emissions caused by the release of GHGs in anthropogenic systems	0
Scope 2: Indirect energy emissions	77,700 kg CO2 eq.
-Indirect GHG emissions from imported electricity	77,700
Scope 3: Other indirect emissions	101,225 kg CO2 eq.
-Emissions from employees' commuting	40,615
-Emissions from business travel	45,000
Total emissions	222,959 kg CO2 eq.

For the example being considered, this table shows the bulk of emissions in 2023.

Table 6. Relative importance of each emission source in relation to total absolute emissions.

Proportion	% of total absolute emissions
1	
Stationary combustion: natural gas consumption in the boiler	10.6
Mobile combustion: consumption of E5 fuel (petrol)	16.1
Fugitive emissions	0
2	
Emissions from electricity consumption	34.9
3	
Emissions from employees' commuting	18.2
Emissions from business travel	20.2

The company has decided to set a series of reduction targets following its carbon footprint calculation, drawing up a decarbonisation plan. To this end, it has decided to follow the steps set out by MITERD in the document *“Guide to calculating a carbon footprint and drawing up an improvement plan for an organisation”* and established by the GHG Protocol. It is assumed that the organisation is not currently affected by the CSRD, and that the first step – securing the commitment of the organisation’s senior management – has been met.

2. **Definition of the type of target.** An absolute target is set, which will be to reduce absolute CO2 equivalent emissions by a specific amount.
3. **Scope of the target.** This will be the same as for the carbon footprint inventory.
4. **Target base year.** A fixed target base year is selected. In this case, 2023 will be selected as the base year, for example, considering that this is the year in which the company began accounting for its emissions.
5. **Commitment date.** 2028 is selected as the commitment date.
6. **Duration of the commitment period.** The target will be monitored annually to track progress towards the final target set for 2028. In this way, any deviations detected can be identified annually and corrective actions implemented.
7. **Definition of the target level.** The company has decided to reduce its absolute CO2 equivalent emissions by 45% by 2028 compared to the levels recorded in 2023.

To this end, it will be necessary to draw up a list of measures and categorise them by scope.

- Replacement of the company’s vehicle fleet with more efficient models. Where possible, hybrid or electric vehicles will be chosen. Scope 1.
- Implement temperature controls in buildings, setting the air conditioning limit at no higher than 21 °C in winter for heated spaces, and no higher than 26 °C for cooled spaces. Scope 1.
- Carry out regular checks and maintenance of the building’s air-conditioning system to prevent refrigerant gas leaks. Scope 1.
- Purchase electricity from certified renewable energy sources, i.e. electricity that comes with a Guarantee of Origin (GoO). Scope 2.
- Run an awareness campaign among employees to encourage carpooling for *commuting*. Scope 3.
- Implement a business travel policy within the company, replacing air travel with rail travel wherever possible. Scope 3.

- Monitor the company's fuel and electricity consumption on a monthly basis and calculate its carbon footprint annually. Scopes 1, 2 and 3.

This table shows the company's decarbonisation plan, setting out all these measures with their partial reduction targets and compliance dates, as well as those responsible for implementing and monitoring the measures; the indicators to be measured; and the monitoring period for these. It is worth noting that, when this table refers to energy or emissions saved, it is in relation to the base year (2023). In this case, the company has also decided to calculate intensity indicators, which will be the ratio of the corresponding absolute value to the total hours worked annually. Therefore, the total hours worked in the company will also be recorded year on year.

Table 7. Decarbonisation plan for the case study company.

Measures	Reduction targets and compliance dates	Person responsible for implementation and monitoring	Monitoring indicators	Monitoring period
Monitor the company's fuel and electricity consumption and calculate its carbon footprint.	This measure does not have a specific quantitative target, but it will facilitate compliance	Head of the Environment Department	- Carbon footprint (kg CO₂ eq.) - Electricity consumption (kWh) - Natural gas consumption (kWh) - Petrol consumption in the	- Annual - Monthly - Monthly - Monthly
Procure electricity from certified renewable energy sources, i.e. electricity backed by a Guarantee of Origin (GoO).	100% reduction in absolute emissions from this source by 2023 and 2028.	Head of the Environment Department	Reductions with GOs (kWh)	Monthly
Monitor the temperature in buildings, ensuring that the heating limit does not exceed 21 °C in winter for heated premises, and does not exceed 26 °C for cooled premises.	5% reduction in absolute emissions from this source by 2023 and 2028.	Head of the Facilities and Maintenance Department	Energy saved (kWh)	Annual
Carry out regular checks and maintenance of the building's air conditioning system to prevent refrigerant gas leaks.	Keep absolute emissions associated with this source at zero.	Head of the Facilities and Maintenance Department	- Financial investment (€) - Energy saved (kWh) - No. of maintenance checks carried out.	- Annual - Annual - Annual
Replacement of the company's vehicle fleet with more efficient models. Where possible, hybrid or electric vehicles will be chosen.	A 9% reduction in absolute emissions from this source by 2028.	Head of the Finance Department	- Financial investment (€) - Emissions saved (kg CO₂ eq.)	- Annual - Annual
Implement a business travel policy within the company, replacing air travel with rail travel wherever possible.	20% reduction in absolute emissions from this source by 2023 and 2028	Head of the Environment Department	- Emissions saved (kg CO₂ eq.) - Financial investment (€)	- Annual - Annual
Run an awareness campaign among employees to encourage carpooling for commuting.	10% reduction in absolute emissions from this source by 2023 and 2028	Head of the Environment Department	- Number of training sessions held per year - Total training hours, - Financial investment (€) - Number of employees who	- Annual - Annual - Annual - Annual

The company has also decided to produce the following tables to monitor emissions. The table below will be updated annually to reflect the reduction percentages achieved. For the calculation of emissions per hour worked in 2023, a total of 300,000 hours worked was assumed.

Table 8. Reduction in absolute emissions by year and source.

Scope	Source	Base year carbon footprint (kg CO2 eq.)	Reduction in absolute emissions by year and source (%)				
		2023	2024	2025	2026	2027	2028
Scope 1	Natural Gas	23,660					
	E5 Fuel Passenger Cars	35,984					
	Air conditioning	0					
Scope 2	Electricity	77,700					
Scope 3	Commuting	40,615					
	Business travel	45,000					

Table 9. Emissions reduction per hour worked per year and by source.

Scope	Source	Base year (kg CO2 eq/hour worked)	Emissions reduction per hour worked per year and source (%)				
		2023	2024	2025	2026	2027	2028
Scope 1	Natural Gas	0.079					
	E5 fuel for passenger cars	0.12					
	Air conditioning	0					
Range 2	Electricity	0.26					
Scope 3	Commuting	0.13					
	Business travel	0.15					

Following this, the organisation has calculated its carbon footprint for 2023 and drawn up a decarbonisation plan for the next five years, which it will update annually to track progress towards its overall target of reducing its absolute GHG emissions by 45

absolute GHG emissions by 2028 compared to 2023.

4.- APPENDIX 1. SCOPE 3 CATEGORIES

Category 1: Purchased goods and services

Includes all 'upstream' emissions from the production of all goods (tangible products) purchased by the organisation, for example: consumption of paper, batteries, water, etc.; and services (intangible products) purchased by the organisation. For example: expenditure on maintenance and repairs, software, staff, postal services, marketing and communication,

Category 2: Fixed assets

Includes all 'upstream' emissions from the production of capital goods purchased or acquired by the organisation. For example: machinery, IT equipment, buildings, etc.

Category 3: Fuel and energy-related activities not included in Scope 1 or 2

This includes emission sources related to the procurement of fuels and electricity in the 'well-to-tank' process, as well as their transport and distribution.

Category 4: Upstream transport and distribution

Emissions associated with the transport of products purchased by the organisation. If the company has suppliers this can be a significant source of emissions.

Category 5: Waste generated by operations.

This includes emissions from the storage and treatment of waste generated by the organisation during its operations. It includes both non-hazardous waste (paper, cardboard) and hazardous waste (fluorescent tubes, alkaline batteries)

Category 6: Business travel

This includes emissions resulting from employees' travel for business purposes in vehicles owned by the organisation or operated by third parties, such as aeroplanes, trains, buses, etc. This category includes business travel undertaken by staff (but not employees' journeys to their usual place of work) as well as travel by customers or visitors.

Category 7: Employee commuting

Includes emissions resulting from employees' home-to-work-to-home journeys. These may be due to travel by car, bus, train, underground and other means (tram, walking, cycling, etc.).

Category 8: Assets leased by the organisation

Emissions from assets that the manager leases and uses and which are not already included in Scope 1 (e.g. fuel for leased machinery) or Scope 2 (e.g. energy for leased offices)

Category 9: Downstream transport and distribution

Transport and distribution of products sold by the organisation between the company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned by the reporting company)

Category 10: Processing of products sold

Includes emissions arising from the processing of intermediate products sold by third parties (e.g. manufacturers) following sale by the reporting company. Intermediate products require further processing, transformation or incorporation into another product before use, and therefore give rise to emissions resulting from post-sale processing

Category 11: Use of services/products sold by the organisation

This includes emissions resulting from the use or consumption of goods or services sold by

Category 12: Waste arising from products sold by the organisation

Disposal and treatment of waste from products sold by the company (in the reporting year) at

Category 13: Assets leased to the organisation

Emissions arising from the operation of assets owned by the organisation, which it leases to other entities and which are not included in Scopes 1 and 2.

Category 14: Franchises

Emissions arising from the operation of franchises not included in Scopes 1 and 2. A franchise is a business that operates under licence to sell or distribute goods or services and should be distinguished from tenants or partners

Category 15: Investments

Emissions arising from the operator's investments in emitting assets (for example, a pension fund investing in real estate).

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