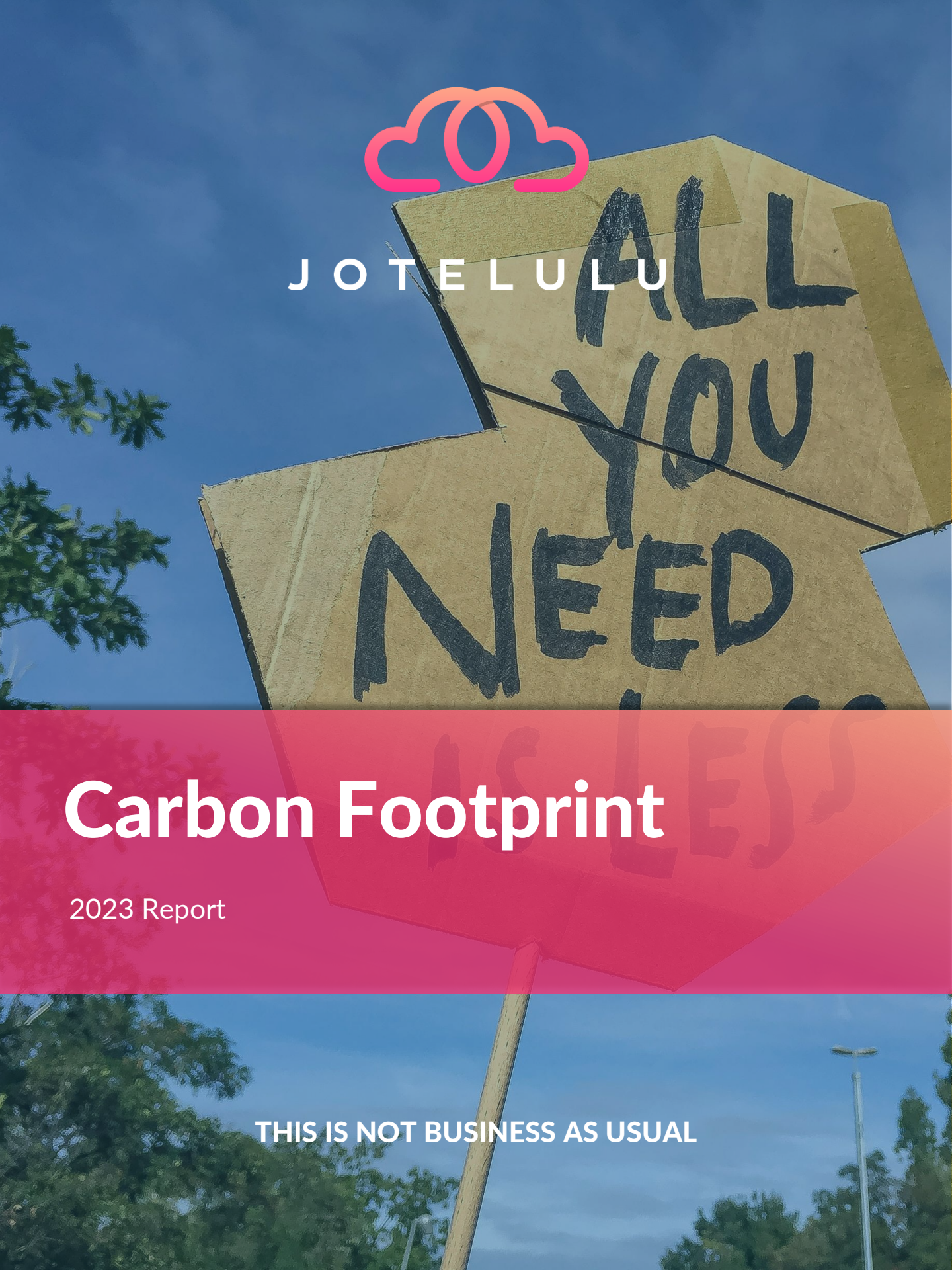


JOTELULU

# Carbon Footprint

2023 Report

THIS IS NOT BUSINESS AS USUAL

## EXECUTIVE SUMMARY

Climate change is a global phenomenon that threatens sustainable development, global ecosystems and the well-being of communities around the world. Addressing climate change is a collective challenge that requires immediate action. Today, there are many organisations taking part in voluntary initiatives to reduce their environmental impact, and **Jotelulu is definitely one of them**.

**Our Goal:** To continue to grow as a company and add value for IT businesses while keeping our environmental impact as low as possible.

To achieve this, we need to first measure our performance and compare it with previous years, and that is why we have produced this report for 2023, our fifth carbon footprint report to date. In the following pages, we provide a complete analysis of all the emissions of $CO_2$ and other greenhouse gases that are directly or indirectly linked to Jotelulu's business operations.

Applying the International Standard GHG Protocol (developed by the WRI and WBCSD), this study focuses on the **most significant emission sources** for each of the standard's defined categories (Scopes 1, 2 and 3).

**Table 1 - Carbon Footprint Data.** Scope, emission sources and $kgCO_2eq$ per source.

| Scope | Source of Emissions | $kgCO_2eq$ |
|---|---|---|
| Scope 1 | Stationary Combustion (Heating) | **4,534** |
| Scope 2 | Electricity Consumption | **4,343** |
| Scope 3 | Employee Commuting | **5,254** |
| | Business Trips | **11,621** |
| | Hardware Purchases | **36,709** |
| | Waste Management | **33** |
| | Parcels and Deliveries | **397** |

Based on the data collected, Jotelulu's total emissions for 2023 amounted to **62.89 t $CO_2$eq.**

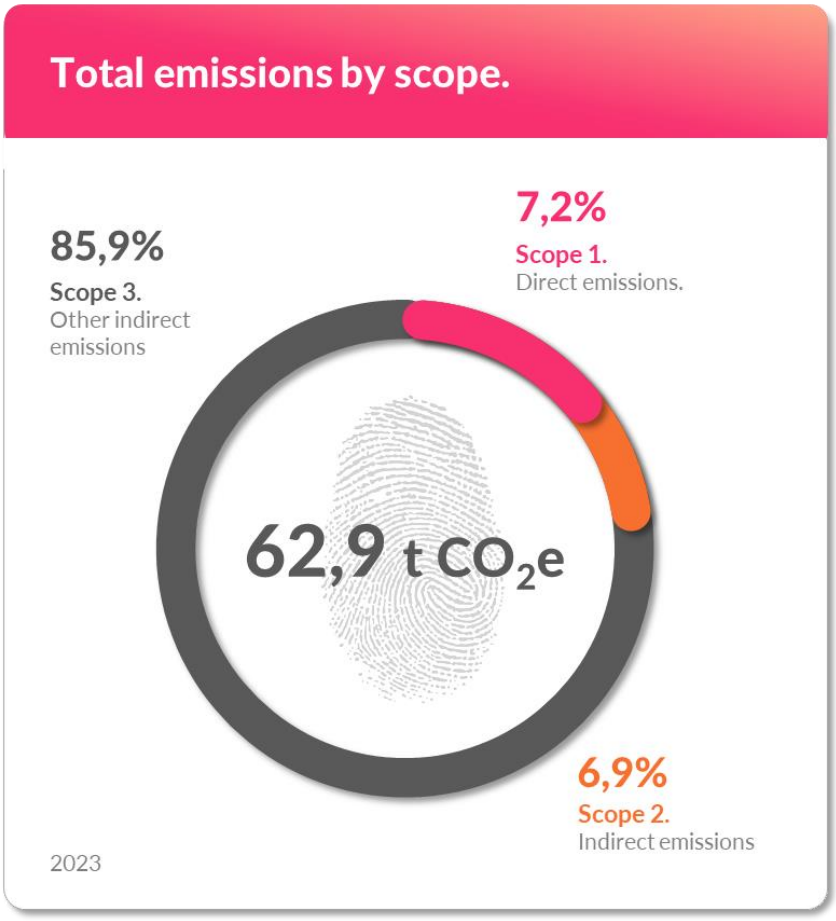


**Figure 1** – Total Emissions by Scope

The most significant emission sources are, in descending order, **purchased hardware**, **business trips, employee commuting**, **direct emissions** and **electricity consumption**. The remaining 0.7% is contributed by the two other emission sources, waste management and deliveries, which add up to just 430.5 kg $CO_2$eq.

At this point, it is also important to recognise that Jotelulu doubled both its turnover and employee headcount in 2023.

This has meant increased investment in hardware and greater electricity consumption, both in our data centre and the homes of our employees (remote working).

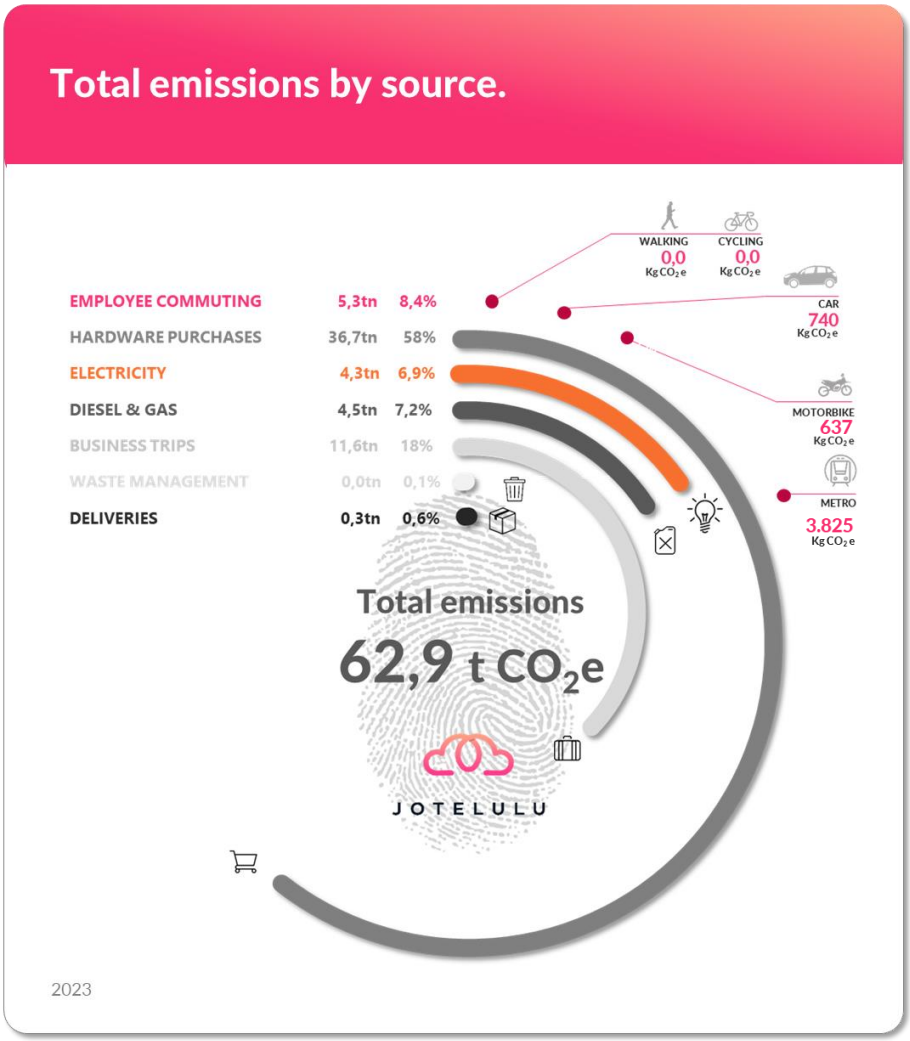


**Figure 2** – Total Emissions by Source

**This new carbon footprint analysis has been a truly revealing study for us at Jotelulu. It clearly shows the impact of our business growth on emissions, the importance of remote working and, in particular, the contribution of our hardware purchasing and business trips. Jotelulu has measured its carbon footprint now for the last five years, and this exercise allows us to see how our emissions evolve over time and what the biggest contributors are.**

**This exercise has also clearly demonstrated the need to include environmental values in our decision-making processes. We are currently experiencing exponential growth and need increasingly more resources (employees, energy and equipment) to continue evolving. The pandemic has also illustrated how measures like remote working will be key as we gain a better understanding of what our growth means in terms of our carbon footprint.**

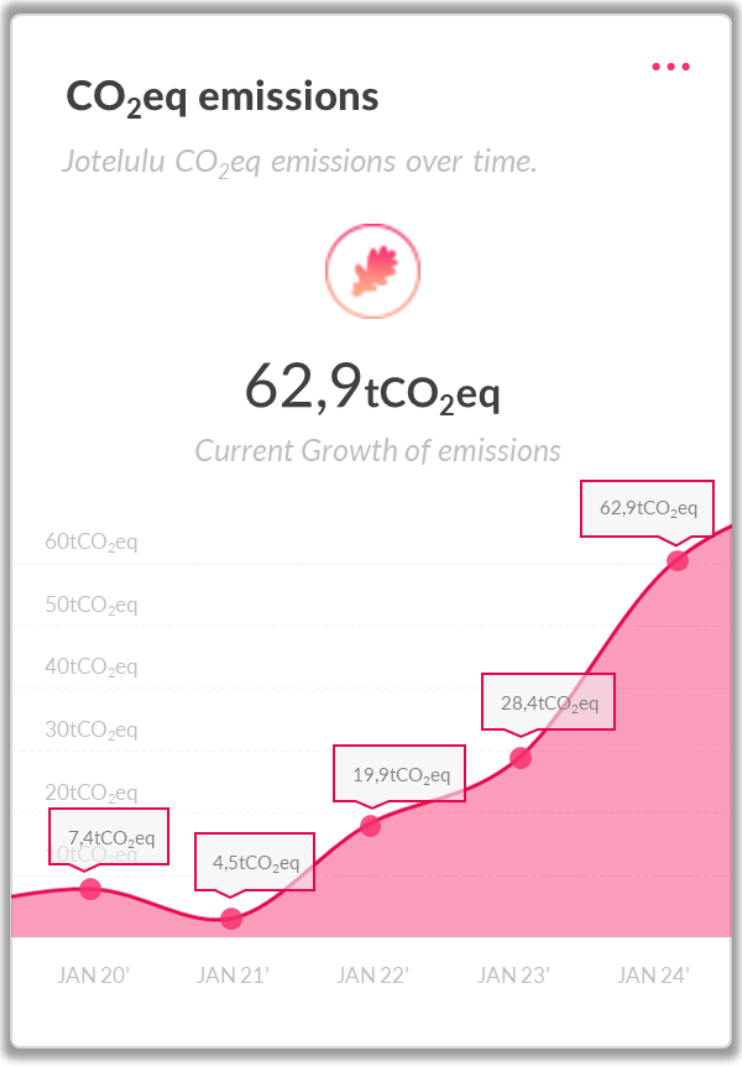


**Figure 3** - Comparison of Emissions in 2019, 2020, 2021 and 2022.

# 1. INTRODUCTION

## 1.1. Carbon Footprint

The term 'Carbon Footprint' refers to the total emissions of $CO_2$ and other greenhouse gases (GHGs) caused directly or indirectly by a given subject[1]. By analysing this carbon footprint, we can get an idea of GHG emissions over a specific period of time.

Establishing the carbon footprint of an organisation involves quantifying the GHG emissions linked to the activities of a given organisation or group of connected organisations over a certain period of time (normally a year) and expressing them in tonnes of $CO_2$eq. The aim of this exercise is to then devise a carbon strategy to reduce GHG emissions over time.

Our main objective of this carbon footprint study has been to quantify the total GHG emissions resulting from Jotelulu's business operations between January and December 2023.

## 1.2. The GHG Protocol

This report has been produced according to the guidelines set out in the GHG Protocol [*The Greenhouse Gas (GHG) Protocol, developed by the World Resources Institute (WRI) and the World Business Council on Sustainable Development (WBCSD), setting the global standard for how to measure, manage and report greenhouse gas emissions*]. The GHG Protocol defines the principles and requirements to produce a GHG emissions report for an organisation. It also includes guidelines for designing, creating and managing a corporate GHG inventory, as well as its subsequent reporting and validation.

This standard takes into consideration the facilities and activities linked to the organisation and attempts to measure the GHG emissions generated by all physical processes required for the organisation's operations, regardless of where they take place.

[1] Event, organisation, service or product

In terms of methodology, the GHG Protocol separates types of emissions into three different categories called 'scopes':

- **Scope1 - Direct Emissions.** These are emissions from sources that either belong to the organisation or result from activities under the organisation's control. This includes stationary combustion, business processes, mobile combustion and fugitive emissions (Emissions of hydrofluorocarbons (HFC) derived from the use of air conditions and refrigeration units).
- **Scope 2. Indirect Emissions.** These are $CO_2e$ emissions resulting from the organisation's purchasing of electricity, heat or steam that is produced externally to the organisation.
- **Scope 3. Other Indirect Emissions.** These are emissions resulting from the business's activities, that form part of its value chain, but that come from sources not belonging to the organisation or outside its control. Examples of Scope 3 emissions include the extraction and production of purchased materials; transportation using vehicles not belonging to the business; waste management; and employee commuting. For most companies in the services sector, the majority of GHG emissions belong to Scope 3.

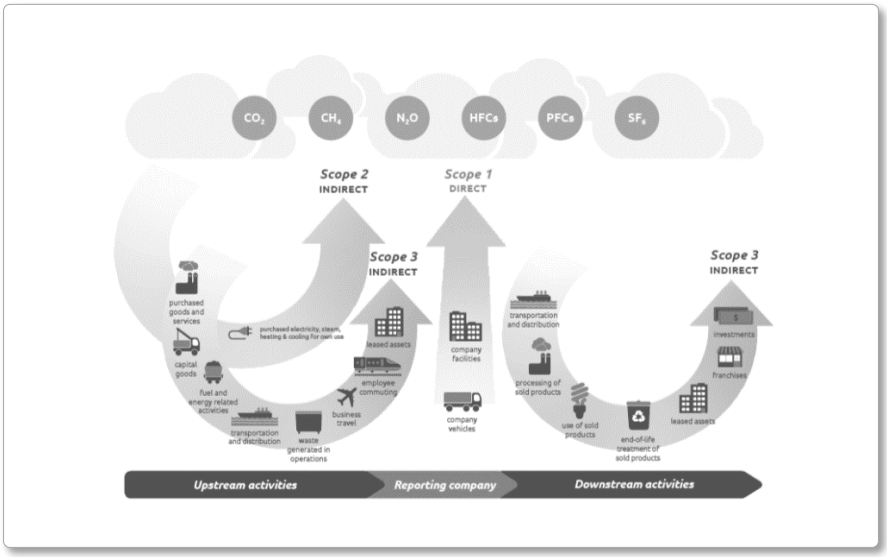


**Figure 4** - Summary of Scopes and Emissions throughout the Value Chain

## 2. GHG EMISSIONS CALCULATION METHODOLOGY

### 2.1. Definition of Jotelulu's Organisational Boundaries

Before calculating Jotelulu's carbon footprint, it is essential to establish the limits of the organisation and its operations. The GHG Protocol Corporate Standard of Accounting and Reporting defines these as "organisational boundaries". A business's operations can vary in terms of both legal and organisational structure and, therefore, include their own operations, those of partners, subcontractors and any processes that they may be involved in to a greater or lesser extent.

By setting these organisational boundaries, we are able to define the business units and operations that will form part of the study.

The GHG Protocol outlines two approaches for establishing the organisational limits: the equity share approach and the control approach. Given the size of the business, the decision was made to adopt the **operational control** approach since the study will focus solely on Jotelulu and its direct and indirect emissions.

Once the **organisational boundaries have been defined**, meaning the operations over which the company has control, it is possible to identify the related emission sources, classify them as either direct or indirect and establish the scope of each source.

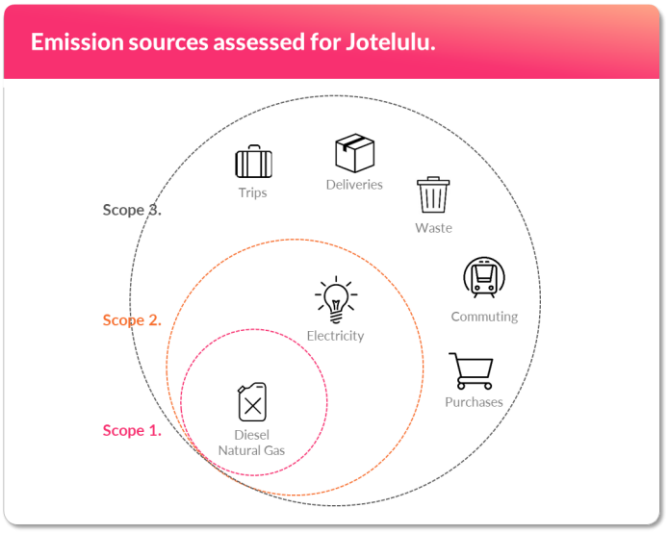


**Figure 5 –** Emission Sources Considered for Calculating Jotelulu's Carbon Footprint

## 2.2. Base Year and GHGs Considered

When reporting on the GHG emissions derived from Jotelulu's business activity, it is also important to establish a base year against which to compare the results.

Setting a base year allows us to track emissions performance over time and make comparisons. It also allows us to evaluate whether GHG emissions reduction measures are having the desired effect and report on the achievement of set objectives. For the purposes of this study, **the base year will be 2019**.

Therefore, 2023 (January to December) will be the fifth year of the study and will be compared with 2022, 2021, 2020 and the base year, 2019. This comparison will allow us to observe how our emissions change over time and check that we are achieving our targets.

In addition to the need for a base year, the GHG Protocol also specifies the **6 GHGs to be taken into consideration: $CO_2$, $CH_4$, $N_2O$, HFC, PFC and $SF_6$**. Therefore, the GHGs considered for this study are $CO_2$, $CH_4$, $N_2O$, and HFC. PFC and $SF_6$ have not been included since they relate to industrial processes that do not form part of Jotelulu's business activities.

Similarly, the emissions of each GHG have been calculated separately and converted into $CO_2$ equivalents ($CO_2$eq) based on their global warming potential, as defined by the GHG Protocol.

## 2.3. Data Collection

One of the greatest challenges when carrying out a study of this kind is how to ensure the collection of good-quality data. This means that devising a robust data collection process is a priority when designing a carbon footprint study and the following measures have been taken as a result:

- To ensure the quality of data, a system has been developed that makes it easy to collect data and allows for the same data to be collected in future years.
- Activity data from various reference sources has been compared to ensure consistency in the data reported to all parties involved.
- Decisions concerning organisational and operational boundaries have been checked to ensure that they have been applied correctly so that the data collected is accurate and relevant.
- In some instances, fuel consumption data has been converted into energy units before applying carbon content emission factors, which may be better correlated to a fuel's energy content than its mass.

Having taken all of these steps, a simple and centralised data collection system has been developed.

## 2.4. Inventory Calculations and Analysis

While the GHG Protocol defines the scope of the carbon footprint calculation, the IPCC (*Intergovernmental Panel on Climate Change*) provides instructions on how to perform the calculation and use the relevant formulas.

In most cases, emissions are calculated by multiplying activity or consumption measurements by an emissions factor, often with the help of auxiliary data.

However, in some cases, accurate activity data can be difficult to obtain and estimates will be required. In this section, we will look at emissions factors, auxiliary data and estimates in more detail.

### 2.4.1. Activity Data

**Activity data is a numerical representation of a specific action** in terms of consumption and subsequent GHG emissions. This data can be expressed using different units of measurement and not always the units of consumption.

This data is usually obtained from meter readings, purchasing records, service invoices, direct observation, mass balances, stoichiometry or other methods.

Ensuring that the activity data collected is reliable and representative has been a top priority for this study. Below is a breakdown of the data taken into consideration to calculate Jotelulu's carbon footprint.

- **Energy Consumption and Maintenance:**

  For this study, we have taken into consideration the most significant emission sources related to energy and fuel consumption and consumption related to maintenance work during 2023.

**Table 2 -** Activity Data: Energy and fuel consumption and renewal of AC gases.

| Energy Consumption and Maintenance | Activity Data |
|---|---|
| Natural Gas (Employees' Homes) | **24,913kWh/year** |
| Electricity Consumption (Offices + Homes) | **3,730 kWh/year + 10,281 kWh/year** |
| Electricity Consumption (Data Centres) | **275,940 kWh/year** |
| AC Gas Renewal (Offices) | **0 l/year** |

- **Hardware Purchases:**

When considering the company's purchasing of equipment, we have mainly focused on the most significant purchases based on the volume of purchases and their associated emission factor.

**Table 3 -** Activity Data: Hardware purchases.

| Hardware Purchased | Activity Data |
|---|---|
| Laptops | **48 units** |
| Servers + Cabinets (Data Centres) | **23 units** |
| Monitors | **8 units** |

- **Business Trips:**

This includes all kilometres travelled by members of the team for work purposes. We have calculated the total distance travelled for each trip made by the sales team, for a one-off team meeting or to attend an event.

**Table 4 -** Activity Data: Number of trips and means of transport.

| Means of Transport | No. of Trips | Average Distance |
|---|---|---|
| Taxi | 54 | **10 km** |
| Electric Car | 20 | **10 km** |

**Table 4 -** Activity Data: Number of trips and means of transport.

| Means of Transport | No. of Trips | Distance |
|---|---|---|
| Tren [MAD – BARCELONA] | 29 | **506 km** |
| Tren [MAD – VALENCIA] | 39 | **359 km** |
| Tren [MAD – ZARAGOZA] | 7 | **312 km** |
| Tren [MAD – CORUÑA] | 3 | **592 km** |
| Tren [MAD – GIRONA] | 2 | **705 km** |
| Tren [MAD – MÁLAGA] | 4 | **518 km** |
| Tren [MAD – GRANADA] | 2 | **420 km** |
| Tren [MAD – OVIEDO] | 2 | **450 km** |
| Tren [MAD – JAEN] | 2 | **330 km** |
| Tren [MAD – CIUDAD REAL] | 2 | **190 km** |
| Avión [MAD – LISBON] | 12 | **624 km** |
| Avión [MAD – TENERIFE] | 7 | **2,014 km** |
| Avión [MAD – BADAJOZ] | 2 | **404 km** |
| Avión [MAD – CORUÑA] | 6 | **592 km** |
| Avión [MAD – PORTO] | 13 | **561 km** |
| Avión [MAD – PARIS] | 32 | **1,276 km** |

**Table 4 -** Activity Data: Number of trips and means of transport.

| Means of Transport | No. of Trips | Distance |
|---|---|---|
| Avión [MAD – LONDON] | 1 | **1,727 km** |
| Avión [MAD – PAMPLONA] | 2 | **394 km** |
| Avión [MAD – BILBAO] | 8 | **403 km** |
| Taxi [MAD – OVIEDO] | 2 | **450 km** |
| Taxi [CARTAGENA – VALENCIA] | 2 | **269 km** |

- **Deliveries:**

Over the course of 2023, given that our courier calculates our carbon footprint for us, we have only recorded the number of packages sent per month and the total weight in kg.[2]

**Table 5.** Activity Data: Deliveries.

| Month | Total Weight | Total Packages Sent |
|---|---|---|
| January | 73kg | **15** |
| February | 140kg | **225** |
| March | 86kg | **22** |

[2] See Estimates section.

**Table 5.** Activity Data: Deliveries

| Month | Total Weight | Total Packages Sent |
|---|---|---|
| April | 70kg | **17** |
| May | 69kg | **15** |
| June | 59kg | **13** |
| July | 73kg | **15** |
| August | 73kg | **11** |
| September | 137kg | **10** |
| October | 199kg | **13** |
| November | 205kg | **17** |
| December | 31kg | **11** |

- **Commuting:**

Using a specially created survey of each company employee, all commuting travel was recorded for 2023. Remote working is the arrangement for most employees (38 people), though there are 22 people working on a hybrid basis for whom a specific analysis has been carried out.

**Table 6 -** Activity Data: Daily travel of Jotelulu staff (to and from the office).

| Means of Transport | Daily Distance |
|---|---|
| Metro | **171km** |
| Petrol Car | **16km** |

**Table 6 -** Activity Data: Daily travel of Jotelulu staff (to and from the office).

| Means of Transport | Daily Distance |
|---|---|
| Diesel Car | **2km** |
| Motorbike | **30km** |
| Light Rail | **105km** |
| Walking/Cycling | **4km** |

- **Waste Management:**

The company's waste management is performed by authorised organisations resulting in the following activity data.

**Table 7 -** Activity Data: Waste management.

| Waste | Amount per Collection | Treatment | Distance |
|---|---|---|---|
| Organic | 1.5kg | Landfill | **600 km** |
| Paper | 2kg | Recycling | **430 km** |

[2] Ver apartado estimaciones realizadas.

### 2.4.2. Emission Factors

The GHG Protocol defines an emission factor as a coefficient that allows GHG emissions to be estimated from a unit of available activity data. In other words, emission factors are standardised values that make it possible to link an activity to the amount of gases released into the atmosphere. These values are usually expressed as a weight of carbon emissions divided by the weight, distance or duration of the emission source.

- **Electricity by Energy Provider.** To reduce the uncertainty involved in this calculation, we have opted to use the emission factor for the energy provider instead of the more generalised emission factor for the national energy mix.

**Table 8 –** Emission Factors: Emission factor by energy provider.

| Energy Provider | Emission Factor (kg $CO_2$eq/kWh) | Source |
|---|---|---|
| Hola Luz (Office – Offset Emissions) | 0.00 | ***Carbon Neutral* Impact Hub Certified** |
| Villar Mir Energía S.L. (Data Centre – Renewable Sources) | 0.00 | ***Renewable Energy Guarantee 2020*** |
| No Specific Provider (Homes) | 0.31 | **Ministry for Ecological Transition** |

- **Combustion**

**Table 9 -** Emission Factors: Stationary combustion.

| Fuel | Emission Factor | Source |
|---|---|---|
| Heating Oil (Office – Offset Emissions) | 0 kg $CO_2$eq/l | ***Carbon Neutral* Impact Hub Certified** |
| Natural Gas (Homes) | 0.182 kg $CO_2$eq/kWh | **Ministry for Ecological Transition** |

- **Passenger Transport**

**Table 10 -** Emission Factors: Passenger transport by vehicle type.

| Vehicle Type | Emission Factor (kg $CO_2$eq/passenger km) | Source |
|---|---|---|
| Light Rail / Metro | 0.065 | **2012 Guidelines to DEFRA** |
| Diesel Car | 0.1979 kg$CO_2$ \| 0.000001 kg$N_2O$ \| 0.0000003 kg$CH_4$ | **US EPA Climate Leaders** |
| City Bus | 0.1073 | **2012 Guidelines to DEFRA** |
| Train | 0.0602 | **2012 Guidelines to DEFRA** |
| Petrol Car | 0.2070 kg$CO_2$ \| 0.000005 kg$N_2O$ \| 0.0000009 kg$CH_4$ | **US EPA Climate Leaders** |
| Motorbike | 0.1059 | **US EPA Climate Leaders** |

- **Freight Transport**

**Table 11 -** Emission Factors: Freight transport by vehicle type.

| Vehicle Type | Emission Factor (kg $CO_2$eq/t * km) | Source |
|---|---|---|
| Heavy Freight (HGV by default) | 0.1236 | **2012 Guidelines to DEFRA** |
| Light Freight (LGV) | 0.2000 | **GHG Protocol Transportation & Distribution** |

- **Waste Management.**

**Table 12 -** Emission Factors: Waste Management.

| Process | Emission Factor (kg CO2e/kg waste) | Source |
|---|---|---|
| Landfill | 0.875 | **National GHG Inventory (2008)** |

- **Hardware Purchases**

**Table 13. -** Emissions Factors: Hardware production.

| Product | Emission Factor (kg $CO_2$eq/unit) | Source |
|---|---|---|
| Laptop | 310 | **HP 17 Laptop PC – Carbon Footprint** |
| Server | 744 | **HP ProLiant DL360 Gen10 Server – Carbon.F.** |
| Monitor | 585 | **HP E24q G4 QHD Monitor– Carbon Footprint.** |

### 2.4.3. Auxiliary Data

Auxiliary data is essential for calculating the GHG emissions associated to activity data as it is sometimes necessary to convert units of activity data in order to establish the emission factor to use.

The auxiliary data or conversion factors used to calculate our carbon footprint include:

- **GWP** or Global Warming Potential: a factor that describes the radiative forcing impact of one unit of given GHG relative to one unit of $CO_2$. GWP makes it possible to convert the emissions of each GHG ($CH_4$, $N_2O$, PFC...) into $CO_2$eq.

**Table 14 -** Auxiliary Data: GWP per type of gas.

| Type of Gas | GWP | Source |
|---|---|---|
| $CO_2$ | 1 | IPCC Fourth Assessment Report: Climate Change 2007 |
| $CH_4$ | 25 | IPCC Fourth Assessment Report: Climate Change 2007 |
| $N_2O$ | 298 | IPCC Fourth Assessment Report: Climate Change 2007 |
| HFC 134 | 1,430 | IPCC Fourth Assessment Report: Climate Change 2007 |
| HFC 410 | 1,181 | IPCC Fourth Assessment Report: Climate Change 2007 |
| HFC 407 | 1,773 | IPCC Fourth Assessment Report: Climate Change 2007 |

### 2.4.4. Estimates and Assumptions

Due to the nature of the project and the amount of data collected, the number of estimates required has been relatively low. As the GHG Protocol explains in its extension of Scope 3, where no good-quality primary data exists, estimates, extrapolations and even approximations can be made to perform the calculation.

**Office Attendance (Commuting):** At Jotelulu, remote working is here to stay. During 2023, the number of employees has been estimated at 60. Of these, 38 work from home full-time (no visits to the office) and 22 work according to a hybrid arrangement. We have had to make this estimate to take into account the various changes and new hires over the course of the year.

**Purchasing:** With respect to hardware purchases, we have only taken into account those purchases that are likely to have a significant bearing on the carbon footprint calculation. This means that the only purchases included have been those of laptops, monitors and servers for the data centre. Less expensive purchases that are likely to have a negligible impact on the results of the calculation have not been included.

**Energy Consumption:** Since the majority of employees work from home, we have had to extrapolate from the average gas consumption of a standard home (7,921 kWh per year) to apply this figure proportionally. Then, we analysed the average electricity consumption of a laptop and a lightbulb to estimate the amount of electricity consumed during working hours at home. The aim of these calculations is to include an estimate of energy consumption at home linked to the business.

**Recycling:** Additionally, according to Chapter 5 (Box 5.6) of the *"Corporate Value Chain (Scope 3) Accounting and Reporting Standard"*, emissions linked to recycling processes should only be considered once to avoid double counting. Therefore, emissions linked to recycling processes have only been considered for purchases of consumables and will not have an impact on waste management.

**Energy Consumption (Data Centres):** Interxión (Digital Realty) was our main data centre provider in 2023. The provider already offsets their own carbon emissions related to the data centre, and these emissions therefore do not contribute towards Jotelulu's carbon footprint. Nonetheless, we considered it important to assess the energy consumption of our racks. Last year, we had 7 racks in operation in Spain and France at 90% capacity. We have had to estimate this due to the various changes and new hires that occurred over the course of 2023.

**Deliveries:** Due to a change of provider and a subsequent lack of communication with the previous provider, we do not have figures for the first 6 months of the year. Therefore, an approximate number and weight for deliveries has been established for this period.

## 3. RESULTS

### 3.1. Overall Analysis of Emissions

In 2023, Jotelulu's total emissions were **62,892 kg $CO_2$eq**. In accordance with the standard and the proposed organisational boundaries, we can see the direct emissions (Scope 1) accounted for 7.2% of the total, indirect emissions (Scope 2) accounted for 6.9% and the remaining indirect emissions (Scope 3) accounted for 85.9% of the company's total emissions.

**Table 15 –** Types of emissions by scope.

| Type of Emission | Emissions in kg $CO_2$eq |
|---|---|
| Direct Emissions (Scope 1) | **4,534** |
| Indirect Emissions (Scope 2) | **4,343** |
| Other Indirect Emissions (Scope 3) | **54,015** |

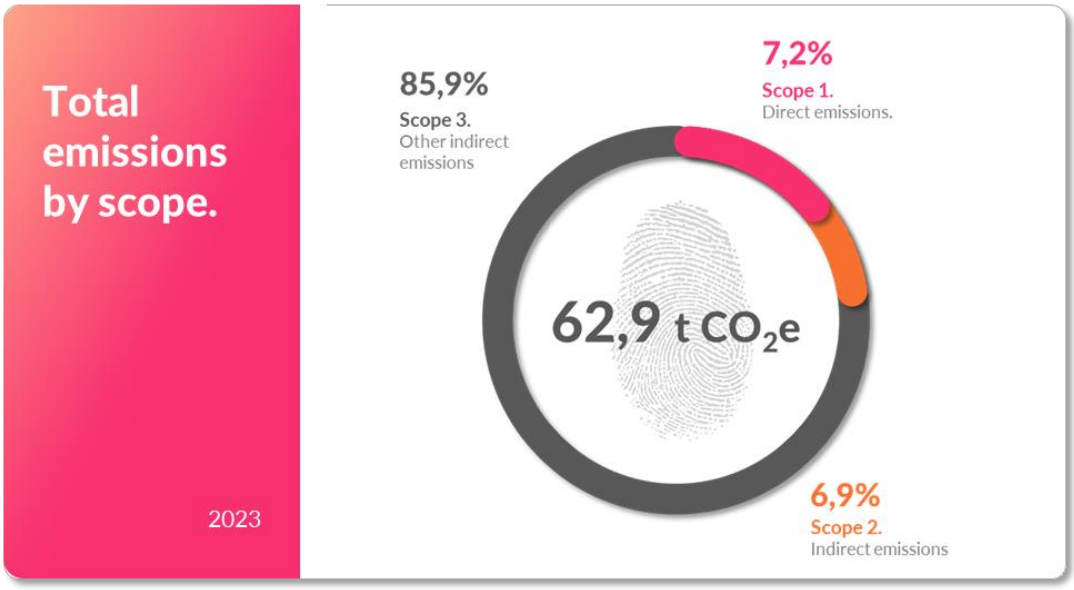


**Figure 6. - Emissions by Scope.**

Turning to the exact sources of emissions, the most significant sources were hardware purchasing, business trips, employee commuting, direct emissions and electricity consumption. Together, these five categories represented 99.3% of the company's emissions in 2023. The remaining 0.7% was attributable to the other two sources analysed.

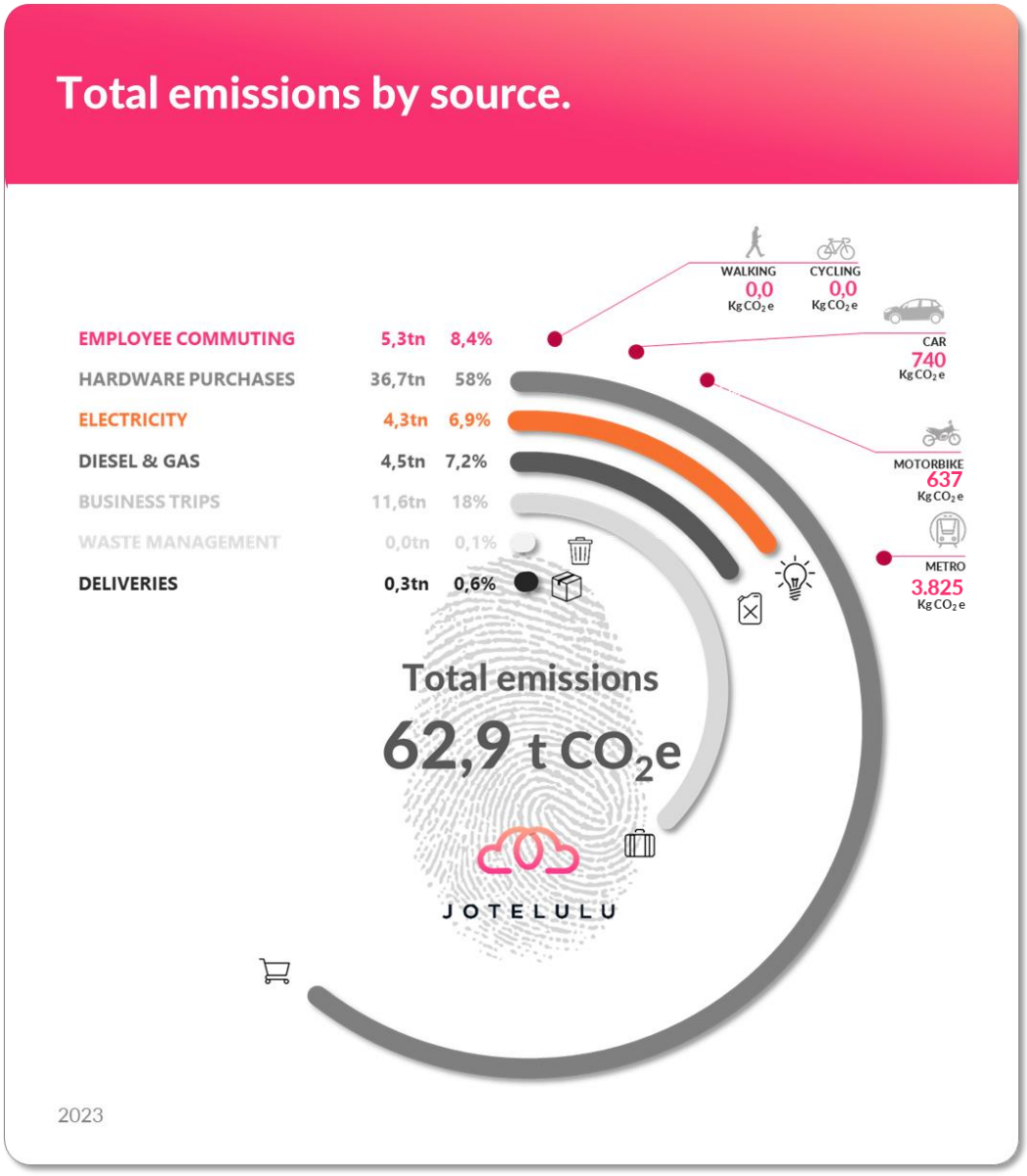


**Figure 7 –** Total emissions by source

### 3.2. Scope 1 Emissions

To calculate direct or Scope 1 emissions, we have assessed all emissions derived from stationary combustion, mobile combustion and fugitive emissions (air conditioning). Since the company does not have its own vehicles and that office emissions (Impact Hub and Leganitos) are offset every year, the only direct emissions are those linked to the heating of employees' homes (for those working remotely).

**Table 16 –** Scope 1 emissions by source

| Type of Emissions | Emissions $kgCO_2eq$ |
|---|---|
| Stationary Combustion | **4,534** |
| Mobile Combustion | **0** |
| Fugitive Emissions | **0** |

### 3.3. Scope 2 Emissions

For Jotelulu, indirect or Scope 2 emissions were 4,343 kg $CO_2eq$ in 2022. The three sources assessed with the electricity consumption of the data centres (offset or renewable energy), the office (offset by Impact Hub Madrid [offset] and Leganitos 47) and the laptops and lighting in employees' homes when working remotely.

**Table 17 –** Scope 2 emissions by source

| Type of Emissions | Emissions $kgCO_2eq$ |
|---|---|
| Electricity Consumption - Office and Data Centre | **0** |
| Electricity Consumption – Employees' Homes + Leganitos 47 | **4,343** |

### 3.2. Scope 3 Emissions

Scope 3 is an optional category for the report. It covers emissions sources linked to Jotelulu's activities but that do not belong to the company or are not under its direct control.

Scope 3 emissions sources are generally the most numerous and account for the majority of emissions. Therefore, analysing these sources in greater depth allows us to produce a more complete report and gain a much fuller picture of the most important emission sources. However, calculating these emissions can be a complex task and there are numerous obstacles when accounting for all the variables, compiling the relevant data and analysing the results.

An advanced analysis of Scope 3 emissions like the one included in this study is an impossible task for many other organisations. However, to calculate our carbon footprint, we have attempted to include the greatest number of emission sources by paying special attention to the most significant without underappreciating the rest. As a result, the Scope 3 emission sources included in the Jotelulu carbon footprint calculation are:

- **Employee Commuting**
- **Hardware Purchases**
- **Business Trips**
- **Waste Management**
- **Deliveries**

Jotelulu's Scope 3 emissions for 2023 added up to **54,015 kgCO2eq**, representing 85.9% of the total carbon footprint. Since they account for a such a disproportionate percentage of the company's total emissions, a more detailed analysis of each source is essential.

**Table 18 –** Scope 3 emissions by source

| Type of Emissions | Emissions $kgCO_2eq$ |
|---|---|
| Employee Commuting | **5,254** |
| Hardware Purchases | **36,709** |
| Business Trips | **11,621** |
| Waste Management | **33** |
| Deliveries | **397** |

**Employee Commuting**

The emissions resulting from employees commuting to the office in 2023 added up to **5,254 kg $CO_2$eq**, which equates to **87.6 kg $CO_2$eq** per person per year. However, remote working is a common practice at Jotelulu. In 2023, 55% of the company worked *fully remotely* and the remaining 45% worked according to a hybrid model, attending the office between 1.5 and 2.5 days a week. The most common form of transport was the metro. However, there are employees who use private vehicles (car or motorbike) or the train.

**Hardware Purchasing**

Given the continuous hardware needs of a tech company like Jotelulu, it was considered important to analyse this emission source in greater detail, particularly the equipment that we consider likely to have the biggest impact on emissions (servers, laptops and monitors).

Emissions associated with these hardware purchases in 2022 totalled **36,709 kg$CO_2$eq**, accounting for almost 60% of the company's total emissions.

## Business Trips

The work performed by Jotelulu staff often involves travel which is an important factor to consider when calculating our carbon footprint. Therefore, we collected data on all the business trips made by train, car and plane during 2023.

Total emissions associated with business trips were **11,621 kg $CO_2$eq** in 2023, representing the third largest source of Scope 3 emissions and 19% of the company's total carbon footprint.

## Waste Management

The management and transportation of waste from Jotelulu's offices to the relevant treatment centres in 2023 were other significant emission sources that we decided to include in this study. The transportation of all waste and the landfill management of solid urban waste generated by the company resulted in emissions totalling **33.08 kg $CO_2$eq** over the course of the year.

## Deliveries

Despite initially being believed to be a significant source of emissions, Jotelulu deliveries actually accounted for a remarkably low emissions despite the number of packages sent in 2023 (384 in total). Emissions associated with deliveries added up to **397.44 kg $CO_2$eq**, just 0.7% of the company's total carbon footprint.

## 4. COMPARISON 2019 - 2023

2023 has been yet another truly exceptional year for us in many ways. Remote working is here to stay, with more than half the workforce working remotely full-time. Jotelulu has also seen exponential growth, with revenue doubling, and this has had a significant impact on the need for staff and resources (energy consumption, purchasing, etc.).

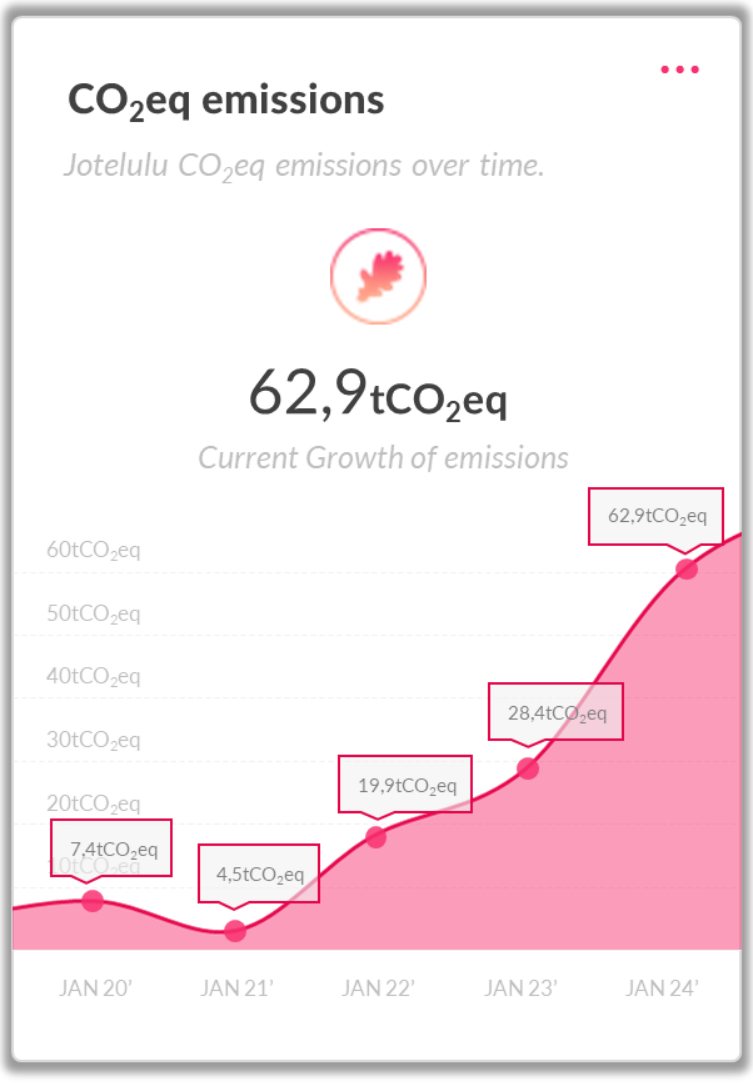


**Figure 8 –** Jotelulu emissions between 2019 and 2023

**During 2023, Jotelulu's carbon footprint grew by 34.5 t $CO_2$eq, almost 100% more than the previous year.**

The fundamental reason for this has been the **company's growth**. The doubling of revenue during 2023 has led to increased demand for resources that are 100% necessary for our business, with a notable increase in purchasing of hardware for both our data centre and offices.

Furthermore, as the workforce has expanded, this has meant not just more hardware for employees but also more travel and energy consumption. All of these factors have had a significant impact on the company's emissions, although things could have been much worse.

On top of all this, Jotelulu has continued to expand internationally, adding the French market to its presence in Spain and Portugal. This has led to a considerable increase in the number of business trips which have also impacted our carbon footprint.

Emissions from all other sources have practically remained the same as in previous years or have increased but remain low in overall terms. Emissions from waste management, for example, have stayed the same as in 2022, while emissions derived from deliveries increased substantially.

**Ultimately, Jotelulu's carbon footprint increased considerably in 2023. However, the reasons for this are clear. Despite taking measures to reduce our emissions, the nature of our business and the outstanding growth of the company has led to an increase in emissions of more than 100%. While this is a big figure, it is important to recognise the unique circumstances in which we find ourselves. For 2024, it is clear that we will need to make attempts to stabilise our emissions and take measures to contain the impact of our operations despite the company's growth figures.**

## 5. CONCLUSION

The carbon footprint study performed for 2019, 2020, 2021, 2022 and now 2023 is a fundamental initiative for Jotelulu as part of its approach to sustainability and tackling climate change.

This exhaustive and highly accurate study (covering Scopes 1, 2 and 3) shows how equipment purchases, commuting, electricity consumption, business trips and direct emissions all played a key role in Jotelulu's 2023 carbon footprint. It also shows how other sources that we initially believed to be significant (deliveries and waste management) have barely registered an impact.

With this fifth carbon footprint calculation, Jotelulu has established the beginning of a regular analysis that will help us as we seek to reduce our environmental impact.

**As shown in this report, despite the various measures already implemented (remote working, purchasing, etc.), the company's growth has had a much greater environmental impact**. The year 2023 has not been a normal year, but it will help us to set new ambitious goals and strategies for the years to come. The company has now fully embraced remote working and our sales strategy is 100% online. Now, we need to focus on seeking more sustainable solutions for our hardware purchasing.

In conclusion, Jotelulu is **fully committed** to caring for the environment, and we aspire to have a low impact despite the growth that we are currently experiencing. So, as well as introducing measures to reduce (or at least not increase) our current carbon footprint, we are also going to offset the emissions generated in 2023 in order to maintain our status as a Carbon Neutral platform and business.


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