

# Carbon Footprint Report

## FY2025

PREPARED BY PROMETHIUM CARBON FOR:



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PROMETHIUM   
C A R B O N



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## 1. Introduction

This is Cassava's third formal GHG inventory. It outlines Cassava Technologies Group's (Cassava) greenhouse gas (GHG) emissions inventory for the 2025 financial year (FY25), covering the period from 1 March 2024 to 28 February 2025.

The purpose of this report is to support corporate climate reporting and guide Cassava's emissions reduction planning. Cassava quantifies its emissions with the aim to integrate climate in its business decisions, support low-carbon growth pathways and identify material climate-related risks and opportunities. The report is intended for internal and external stakeholders, including executives, investors, clients, and other parties with an interest in the Group's environmental performance.

FY25 reporting continues to adopt the GHG Protocol Corporate Standard as the primary methodological framework, with ISO 14064-1:2018 referenced in **Appendix 1** for alignment and supplementary context. Emission sources have been identified using the relevance criteria, ensuring that all material sources are consistently included in accordance with best practices and Cassava's operational realities.

The inventory accounts for both direct and indirect emissions associated with Cassava's operations. During FY25, some changes to the Group's operational and corporate structure were implemented. These changes impact on the boundary of the inventory and are addressed in this report. This year's inventory includes a full-year assessment of emissions from Cassava's point-of-presence (PoP) sites, which were partially captured in the prior reporting cycle, building on improvements made on the FY24 reporting cycle. The boundary adjustments, improved data quality, and full integration of the PoP sites has had a notable impact on the Group's overall footprint.

FY25 also marks the first year in which the Group's performance is evaluated against its FY24 environmental baseline. The current inventory enables initial trend analysis and will inform the Group's progress towards future emission reduction targets in addition the SBTi targets currently being formalised.

A detailed breakdown of the calculations, data inputs, and methodological assumptions is presented in the accompanying Excel workbook.

## 2. Approach and Methodology for GHG Inventories

This section outlines the general approach and methodology followed in compiling a GHG inventory (also known as a carbon footprint). A GHG inventory is a structured compilation of emissions associated with a company's operations, including direct and indirect emissions across its activities and supply chains. The primary objective of a GHG inventory is to enable the systematic quantification, tracking, and reporting of emissions over a defined period. This process provides a consistent means for measuring progress, informs emission reduction strategies, and guides broader sustainability initiatives.

The carbon footprint is presented by aggregating emissions from various sources into standardised categories, aligned with organisational and reporting boundaries defined by

established emissions reporting standards. All emissions are expressed in a common unit: tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e).

## 2.1 GHG Inventory Reporting Standards

GHG inventory reporting standards provide structured frameworks for the consistent and transparent quantification and disclosure of emissions. These standards guide the definition of the inventory’s purpose, boundaries, and scope, and establish criteria for evaluating emission sources, assessing their relevance, and documenting underlying assumptions used in calculations.

Two internationally recognised standards are commonly used for compiling corporate GHG inventories:

- The Greenhouse Gas Protocol Corporate Standard (GHG Protocol<sup>1</sup>) was developed by the World Business Council for Sustainable Development and the World Resources Institute as a guide to help companies report on their corporate GHG emissions.
- The ISO 14064-1, 2nd edition. The ISO standard for measuring and reporting GHG emissions, ISO 14064-1:2006, was revised by the ISO in 2018 and a new edition, ISO 14064-1:2018<sup>2</sup>, was released.

Using these two standards in a complementary manner enhances the environmental integrity of the GHG inventory, supports corporate risk management, and facilitates the development of a robust GHG emissions management strategy.

## 2.2 Reporting Principles

A GHG inventory is developed in line with the reporting principles set out by both the GHG Protocol and ISO 14064-1:2018. These principles form the foundation for consistent, accurate, and transparent emissions accounting and reporting. Table 1 summarises the principles from these standards that guided the preparation of this inventory.

**Table 1: Principles for GHG accounting and reporting**

Principle	Description
<b>Relevance</b>	The GHG inventory should appropriately reflect the data and methodology of the company’s GHG emissions and serves the decision-making needs of users.
<b>Completeness</b>	The GHG inventory should account for all relevant GHG emission sources within Cassava’s inventory boundary.

<sup>1</sup> World Business Council for Sustainable Development & World Resources Institute. The Greenhouse Gas Protocol. 2004. [Available Online]: [ghg-protocol-revised.pdf \(ghgprotocol.org\)](https://ghgprotocol.org/).

<sup>2</sup> International Organization for Standardization. 2018. *Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*. [Available Online]: [ISO 14064-1:2018 - Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals](https://www.iso.org/standard/72431.html)

Principle	Description
<b>Consistency</b>	A consistent methodology should be used to allow for meaningful comparisons of emissions over time.
<b>Transparency</b>	Address all relevant issues in a factual and coherent manner, based on a clear audit trail specific to the company. Disclose any relevant assumptions and provide appropriate references to the accounting and calculation methodologies as well as data sources used.
<b>Accuracy</b>	Ensure that the quantification of GHG emissions is systematically neither overestimated nor underestimated to the best judgment, while reducing uncertainties as far as practicable.

## 2.3 Purpose of the Inventory

The emissions reporting standards require that the purpose of a GHG inventory be clearly defined. GHG inventories can serve multiple functions, including informing emissions reduction strategies, setting GHG targets, tracking progress against reduction targets, and identifying significant sources of emissions for mitigation action. The inventory may also help the company to manage the business risks associated with climate change and its impact on the company by identifying the most significant emission sources for interventions. Corporate GHG inventories provides transparency to stakeholders regarding the company’s response to climate change.

The inventory aims to enhance transparency and accountability in environmental reporting. The intended audience of the inventory includes the company board and stakeholders, such as investors, regulators, customers as well as the broader community. The inventory can also be used for target setting and tracking progress of emissions reduction initiatives towards a company’s climate change goals.

In line with emissions accounting best practice, a base year must be established to allow for the comparison of emissions over time. Typically, the base year is the earliest reporting period for which reliable emissions data is available. It may be restated in future to reflect improved data or changes in organisational boundaries.

## 2.4 Setting Inventory Boundaries

The first step in compiling a GHG inventory is the selection of the appropriate reporting boundaries. These boundaries are essential for identifying the sources of GHG emissions (activities that emit GHGs) to be included in the inventory. Two types of boundaries must be established: organisational boundaries and operational boundaries.

### 2.4.1 Organisational Boundaries

Organisational boundaries define the overall border of the company by specifying which entities (subsidiaries) are reported in the inventory and the allocation of direct and indirect emissions across the organisation. Two approaches can be used to set the organisational boundary: the **control approach** and the **equity share approach**.

Under the **control approach**, a company accounts for 100% of the GHG emissions from subsidiaries over which it has direct control. This approach considers both **financial control**

and **operational control**. Financial control is established when a company has the authority to direct the financial and operating policies, gaining economic benefits from it. Operational control is determined when the company has full authority to implement operating policies.

With the **equity share approach**, the company accounts for GHG emissions in proportion to its share of equity in an operation, reflecting its ownership stake. The remaining emission should be reported under Scope 3 Category 15: Investments.

## 2.4.2 Operational Boundaries

Once the organisational boundary is set, the next step is to establish operational boundaries. These boundaries define which operational activities and associated emissions will be included in the inventory and how they will be categorised. Emissions are categorised as either direct or indirect, and the GHG Protocol further classifies these activities into three scopes:

- **Scope 1:** Direct GHG emissions from sources that are owned or controlled by the company, such as emissions from company-owned vehicles or on-site fuel combustion.
- **Scope 2:** Indirect GHG emissions from the consumption of purchased electricity, steam, or other forms of energy generated upstream from the company.
- **Scope 3:** Other indirect GHG emissions that occur outside the company's direct control but are a consequence of its activities. These include emissions from business travel, employee commuting, upstream supply chain activities, and downstream use of sold products and services.

Clearly setting both organisational and operational boundaries ensures that a company's GHG inventory is accurate, consistent, and aligned with best practice standards for emissions accounting and reporting.

## 2.5 Identifying Emissions Sources

All inputs, resources, and activities involved in operating a company have associated GHG emissions. Accurately identifying emission sources is a critical step in compiling a GHG inventory, as it forms the basis for estimating the organisation's carbon footprint.

Emission sources are closely linked to the company's operational and organisational boundaries and should be identified through a detailed understanding of its activities and value chains. Once the relevant activities are identified, associated data must be collected and quantified. Activity data may be expressed using various metrics depending on the emission source, for example transport activity may be measured in vehicle-kilometres travelled, electricity consumption may be measured in kilowatt-hours (kWh), fuel use may be measured in litres or cubic metres.

Each source should then be assessed for its inclusion, either through the relevance assessment under the GHG Protocol or the significance assessment under ISO 14064-1:2018. Although the terminology used is different, the underlying intent is the same across both standards, to focus efforts on relevant emission sources.



## 2.6 Relevance of Emissions Sources

A quantitative analysis of emissions data enables the evaluation of emission sources based on several criteria including their magnitude. This process involves estimating the GHG emissions associated with each activity or process, helping to determine which sources contribute most significantly to the organisation’s overall emissions profile.

Assessing relevance is an important step in prioritising data collection efforts and resource allocation. It helps identify the most material emission sources for further analysis or mitigation. The GHG Protocol’s Technical Guidance for Calculating Scope 3 Emissions<sup>3</sup> recommends applying a set of relevance criteria when evaluating Scope 3 emissions sources, as outlined in Table 2 below.

**Table 2: Relevance criteria**

Criteria	Description of activities
1. Size	<b>Relevant if</b> they contribute significantly to the company’s total anticipated Scope 3 emissions.
2. Influence	<b>Relevant if</b> there are potential emissions reductions that could be undertaken or influenced by the company.
3. Risk	<b>Relevant if</b> they contribute to the company’s climate related risk exposure. (e.g., climate change related risks such as financial, regulatory, supply chain, product and technology, compliance/litigation, and reputational risks).
4. Stakeholders	<b>Relevant if</b> they are deemed critical by key stakeholders. (e.g., customers, suppliers, investors or civil society).
5. Outsourcing	<b>Relevant if</b> they are outsourced activities previously performed in-house or activities outsourced by the reporting company that are typically performed in-house by other companies in the reporting companies' sector.
6. Sector Guidance	<b>Relevant if</b> they have been deemed significant by sector-specific guidance.
7. Other	<b>Relevant if</b> they meet any additional criteria for determining relevance developed by the company or industry sector.

<sup>3</sup> World Resource Institute. 2013. *Technical Guidance for Calculating Scope 3 Emissions (version 1.0)*. Table [II] Criteria for identifying relevant scope 3 activities. page 12.

## 2.7 Identify Data Sources

Compiling a GHG inventory requires various types of data, including information on company activities, emission factors, and underlying assumptions. The following subsections outline potential data sources and main considerations.

### 2.7.1 Activity Data

To ensure accurate emissions accounting, activity data sources must be identified and data gathered from appropriate internal sources. The following sources can be used to collect the necessary data:

- Utility bills
- Fuel consumption records/meter readings/invoices
- Procurement records/invoices
- Production data
- Sales data
- Transportation logs
- Travel agent travel logs
- Financial inventory

Data collection should involve coordination across departments and personnel within the organisation to ensure comprehensive coverage and accuracy.

### 2.7.2 Assumptions

In cases where raw data is incomplete or lacks transparency, assumptions may be required. These assumptions should be based on expert judgment or proxy data and must be clearly documented. Doing so improves the transparency of the inventory and enables refinements in future reporting cycles.

### 2.7.3 Emission Factors

Accurate emission calculations depend on the selection of appropriate emission factors. To select emission factors, relevant emission factor reputable sources are consulted and can include the Intergovernmental Panel on Climate Change (IPCC) or South Africa's Methodological guidelines for quantification of GHG emissions.

The selection of emission factors should follow the guidance provided in the reporting standards. The ISO 14064-1:2018 specifies the following requirements for emission factors:

- **Recognised Source:** All factors used originate from reputable and recognised sources within the field of greenhouse gas accounting and reporting.
- **Appropriate for GHG Sources:** Each factor is specifically chosen to be appropriate for the emissions source being assessed. This ensures that the calculations accurately reflect the emissions associated with each activity.
- **Up to date factors:** The selected factors are up to date as of the time of quantification, considering the most recent available data and scientific knowledge. This ensures that

the inventory calculations capture the current understanding of emissions and reflect the latest information.

- **Consideration of Uncertainty:** The chosen factors consider the quantification uncertainty associated with each emission source. They are calculated with methodologies that provide accurate and reproducible results, minimising uncertainties and ensuring the reliability of the inventory.
- **Alignment with Intended Use:** The factors align with the intended use of the GHG inventory, which is to provide a comprehensive and accurate representation of emissions. They are specifically chosen to suit the purpose of the inventory and facilitate effective decision-making based on the results.

## 2.8 Calculating Emissions

The methodology used to calculate the GHG inventory entails multiplying the GHG activity data by an appropriate emission factor.

**Activity data x Emission Factor = Quantity of GHG Emissions**

Total GHG emissions produced by a company are determined by categorising and summing the GHG emissions quantities calculated for each category activity using the above equation.

## 2.9 Categorising Emission Sources

A GHG inventory aggregates emissions into categories defined by reporting standards to ensure consistency and comparability. Both the ISO 14064-1:2018 standard and the GHG Protocol provide structured categorisation frameworks.

ISO 14064-1 classifies emissions into six main categories, while the GHG Protocol groups emissions into three scopes, with Scope 3 further divided into 15 categories. Table 3 provides a comparison of how the different emissions are grouped using ISO 14064:2018 and the GHG Protocol.

**Table 3: Comparison of emissions categories in the GHG Protocol and ISO 14064-1:2018**

ISO 14064:2018		GHG Protocol	
Category	Description	Scope and Category	Description
1	Direct GHG emissions and removals	Scope 1	Direct GHG emissions
2	Indirect GHG emissions from imported energy	Scope 2	Energy indirect emissions
		Scope 3, category 3	Fuel- And Energy-Related Activities
3	Indirect GHG emissions from transportation	Scope 3, category 4	Upstream Transportation and Distribution

ISO 14064:2018		GHG Protocol	
Category	Description	Scope and Category	Description
		Scope 3, category 6	Business Travel
		Scope 3, category 7	Employee Commuting
		Scope 3, category 9	Downstream Transportation and Distribution
4	Indirect GHG emissions from products used by organisation	Scope 3, category 1	Purchased Goods and Services
		Scope 3, category 2	Capital Goods
5	Indirect GHG emissions associated with the use of products from the organisation	Scope 3, category 10	Processing of Sold Products
		Scope 3, category 11	Use of Sold Products
		Scope 3, category 12	End-Of-Life Treatment of Sold Products
6	Indirect GHG emissions from other sources	Scope 3, category 5	Waste Generated in Operations
		Scope 3, category 8	Upstream Leased Assets
		Scope 3, category 13	Downstream Leased Assets
		Scope 3, category 14	Franchises
		Scope 3, category 15	Investments

In the GHG Protocol the scopes outline direct and indirect emission sources, by categorising emissions into Scope 1, Scope 2, and Scope 3. These categories allow companies to better understand their environmental impact, identify emission reduction opportunities, and align with climate policies and business objectives.

**Scope 1** emissions are direct GHG emissions that occur from sources owned or controlled by the company. Examples include emissions from fuel combustion in company owned or controlled equipment such as boilers, furnaces, vehicles, and production processes. Scope 1 emissions also include emissions from fugitive sources, such as equipment leaks and intentional or unintentional releases.

**Scope 2** emissions result from the generation of electricity (or other imported energy) purchased and consumed by the company. Although the emissions physically occur at the generation source, they are attributed to the consuming company. For many organisations, Scope 2 emissions are a major contributor and present a key opportunity for emission reduction, particularly through energy efficiency or renewable energy procurement.

**Scope 3** includes all other indirect emissions resulting from activities across the value chain, including the extraction and production of purchased goods and materials, transportation of purchased fuels, and use of sold products and services. These emissions typically occur outside the company’s direct control and are often the most challenging to quantify due to their broader scope and complexity. However, they may represent the largest share of a company’s total carbon footprint and can offer significant opportunities for value chain engagement and reduction strategies.

### 2.9.1 Scope 2 Emissions Accounting

There are two methods for calculating Scope 2 emissions: **location-based** and **market-based**. These should be clear labelled when compiling an inventory.

The **location-based method** reflects the average emissions intensity of grids where electricity consumption occurs, mainly using grid-average emission factor data.

The **market-based method** reflects emissions from electricity that companies deliberately choose. It derives emission factors from contractual instruments, like energy attribute certificates or direct contracts for energy purchase. The remaining electricity which is procured through market mechanism and without specific purchase data must use a "residual mix" emission factor representing average emissions from unclaimed energy.

Companies using the market-based method are not required to have contractual data for every site, but they must follow the Scope 2 Quality Criteria. This method recognises various contractual purchases beyond green power, including supplier-specific labels or fossil fuel contracts.

### **The Quality Criteria to make use of the Market-based approach:**

All contractual instruments used in the market-based method for scope 2 accounting *shall*:

1. Convey the direct GHG emission rate attribute associated with the unit of electricity produced.
2. Be the only instruments that carry the GHG emission rate attribute claim associated with that quantity of electricity generation.
3. Be tracked and redeemed, retired, or cancelled by or on behalf of the reporting entity.
4. Be issued and redeemed as close as possible to the period of energy consumption to which the instrument is applied.
5. Be sourced from the same market in which the reporting entity's electricity-consuming operations are located and to which the instrument is applied.

In addition, utility-specific emission factors shall:

6. Be calculated based on delivered electricity, incorporating certificates sourced and retired on behalf of its customers. Electricity from renewable facilities for which the attributes have been sold off (via contracts or certificates) shall be characterised as having the GHG attributes of the residual mix in the utility or supplier-specific emission factor.

In addition, companies purchasing electricity directly from generators or consuming on-site generation shall:

7. Ensure all contractual instruments conveying emissions claims be transferred to the reporting entity only. No other instruments that convey this claim to another end user shall be issued for the contracted electricity. The electricity from the facility shall not carry the GHG emission rate claim for use by a utility, for example, for the purpose of delivery and use claims.

Finally, to use any contractual instrument in the market-based method requires that:

8. An adjusted, residual mix characterising the GHG intensity of unclaimed or publicly shared electricity shall be made available for consumer scope 2 calculations, or its absence shall be disclosed by the reporting entity.

Contractual instruments in the market-based method are not carbon offsets; they convey emission rates per megawatt hour (MWh) associated with energy generation facilities.

## 2.10 Verification

Third-party verification enhances the credibility and transparency of a GHG inventory. Verification ensures that reported data is accurate, consistent with reporting standards, and supported by proper documentation.

ISO 14064-3:2018 provides the framework for the verification of GHG inventories compiled under both ISO 14064-1 and the GHG Protocol. It is common practice for companies to include verification statements in their Annual Integrated Reports or Sustainability Reports, demonstrating accountability and reinforcing stakeholder confidence in the reported emissions data.

# 3. Implementation of the methodology to Cassava

## 3.1 Purpose of the Inventory

Cassava Technologies has developed its GHG inventory with multiple objectives in mind. Primarily, the inventory serves as a critical tool for transparent environmental reporting, enabling the Group to communicate its emissions profile to stakeholders, including investors, regulators, customers, and the broader public.

In addition to improving disclosure, the inventory supports compliance with investor and stakeholder requirements and forms the foundation for Cassava's broader climate strategy. It also provides Cassava the ability to make more informed decisions based on the GHG inventory data. The current assessment has been conducted for the FY25 reporting cycle, and the results are discussed in the following sections.

Importantly, the FY24 GHG inventory establish the base year for setting emission reduction targets. FY24 was selected as the base year, as it represents the first comprehensive GHG emissions assessment undertaken across all operations within the Group. Cassava has committed to pursuing a science-based targets in the next phase of its climate journey, and the FY24 footprint provides the reference point against which future emissions performance will be measured. This enables the Group to track the progress of its emission reduction initiatives over time and to ensure Cassava can achieve its net-zero commitment by 2040.

## 3.2 Reporting Boundaries

Cassava Technologies has adopted the operational control approach to define the organisational boundary for its GHG reporting. Under this approach, Cassava accounts for 100% of emissions from all facilities where it has full authority to introduce and implement operating policies. Accordingly, the emissions reported in this document cover all activities and operations under Cassava's operational control, as listed in Table 4.

**Table 4: Cassavas Operations in the operational control boundary**

Region	Country
<b>Liquid Division</b>	
<b>South African Region</b>	South Africa
<b>Rest of Africa Region (combined East and Central Africa Regions)</b>	Kenya
	Uganda
	Rwanda
	South Sudan
	Tanzania
	Zanzibar
	Egypt
	Botswana
	DRC
	Zambia
	Zimbabwe
<b>Liquid Corporate</b>	UK
	Mauritius
	United Arab Emirates
<b>Business Divisions</b>	
<b>ADC</b>	Nigeria
	Kenya
	South Africa
<b>Sasai</b>	South Africa
	Botswana
	Kenya
	Mauritius
	Zambia
<b>Vaya</b>	Mauritius
	South Africa

During the FY25 reporting cycle, there were structural changes in the Group compared to FY24. Notably, Distributed Power Africa (DPA) and Telrad were included in the FY24 inventory but have been excluded from the company structure and therefore the FY25 boundary. Adjustments have been made to the base year (FY24) to maintain consistency with this revised organisational structure.

Cassava’s operations are grouped into the following business divisions: Africa Data Centres (ADC), Liquid Intelligent Technologies (Liquid), Sasai Fintech (Sasai), and Vaya Technologies (Vaya). From FY26 onwards Sasai will include Vaya in its data as these two operations have merged. The organisational structure in Cassavas operational boundary is shown in

Figure 1.



**Figure 1: Cassava's organogram in the GHG inventory boundary**

Cassava further consolidates its country-level operations into broader regions and refers to individual sites within these areas as “Operations.” The list of included operations by division and country is also presented in Table 4.

### 3.3 Company Activities

The activity data used in the FY25 carbon footprint calculations was provided by regional HSE managers and their teams across the Group. While the data has not been verified or assured by a third party, internal efforts have been made to ensure its accuracy and integrity. However, Cassava is planning to conduct internally evaluation of its FY25 carbon footprint calculations to identify areas of improvement and to prepare it for an external verification process planned for FY27.

#### 3.3.1 Liquid Technologies

Liquid is a leading provider of digital infrastructure in Africa. Its fibre broadband network and satellite connectivity deliver high-speed internet access anywhere on the continent. Its connectivity platform is responsible for our international wholesale connectivity operations, commercialising our pan-African fibre network, subsea cable network and global satellite connectivity. Through this business, we connect the north-to-south and east-to-west coasts of Africa.

Emissions from Liquid arise from several sources, including the direct combustion of diesel and petrol in backup generators, network maintenance vehicles, and equipment used for fibre



installation. Electricity consumption at corporate offices and operational facilities also contributes significantly to emissions, particularly for lighting, heating, cooling, and powering IT equipment. Additional indirect emissions result from the procurement of telecommunications hardware such as fibre cables, routers, switches, and vehicles, as well as from waste generated through office operations and the disposal or recycling of electronic equipment. Emissions associated with the transportation of materials to and from sites, along with logistics for distribution and service delivery, are also material contributors to Liquid's footprint.

### **3.3.2 Africa Data Centres**

ADC provides rapid and secure data centre services and is one of Africa's largest networks of interconnected, carrier and cloud-neutral data centre facilities, bringing international experts to the pan-African market. Strategically located, these world-class facilities store business-critical data for our customers.

ADC's emissions are driven primarily by electricity consumption, which is required to power servers, lighting, and cooling systems, particularly heating, ventilation, and air conditioning (HVAC) units that maintain optimal data centre operational conditions. Refrigerant emissions from equipment servicing and maintenance are also relevant, along with waste emissions linked to the disposal and recycling of IT hardware. Transportation of equipment and materials to and from data centres further contributes to ADC's overall emissions profile.

### **3.3.3 Sasai Fintech and Vaya Technologies**

Sasai Fintech is a pan-African business that offers bespoke payment solutions, including the Sasai Super App – a mobile application that delivers convenience and simplified access to secure and reliable payment functionality (money transfers, micro insurance, mobile money and other payment solutions), chat functionality (instant messaging, voice and video calls) and interactive media functionality (social media and podcasts etc.).

The Sasai portfolio offers distinct and synergistic products and services, delivered through a fully integrated model, which is difficult to replicate and provides the Group with a competitive advantage. As of FY26, the Vaya Technologies (Vaya) business was incorporated into Sasai Fintech. Vaya is a digital marketplace that provides access to affordable internet, allowing sectors across Africa to adopt digital services.

Emissions from these divisions are associated with the energy use in operation of data centres and telecommunications infrastructure that support app functionality and connectivity services. This includes servers, switches, routers, and cooling systems. Additional emissions result from the installation and maintenance of digital infrastructure across multiple countries, requiring the transport of personnel and equipment. Office-based electricity consumption and production emissions of procured networking hardware also contribute to the divisions' indirect emissions.

## **3.4 Emissions Sources**

The emission sources included in this assessment are based on the activities described in the previous section and are categorised in accordance with the Greenhouse Gas Protocol. Table

5 presents the relevant emissions sources included in Cassava’s FY25 GHG inventory, classified by scope and category where applicable.

**Table 5. Emissions sources and categorisation included in Cassava’s FY25 GHG inventory**

Emission Sources included	GHG Protocol	
	Scope	Description
<p>Direct emissions from sources that are owned or controlled by Cassava. These include:</p> <p>Stationary combustion of diesel in equipment            Mobile combustion of petrol and diesel use in company-owned vehicles            Fugitive emissions from air conditioning and refrigeration systems</p>	1	Stationary Combustion Sources Mobile Combustion Sources Fugitive Emissions
<p>Indirect emissions from the generation of purchased electricity consumed by Cassava’s operations. These include:</p> <p>Electricity purchased from the national utility grid            Self-generated renewable electricity            Electricity consumed at PoP sites</p>	2	Purchased Electricity
<p>Purchased Goods and Services, including emissions from the procurement of:</p> <ul style="list-style-type: none"> <li>• Water (municipal &amp; bottled)</li> <li>• Network equipment</li> <li>• Cables</li> <li>• Routers and switches</li> <li>• Fibre cables</li> <li>• Printer toner</li> <li>• Wooden utility poles</li> <li>• Tools</li> </ul>	3	Category 1: Purchased Goods and Services
<p>Emissions from the production of capital goods purchased by the by the company in the reporting year, including assets such as:</p> <ul style="list-style-type: none"> <li>• Laptops</li> <li>• Computer monitors</li> <li>• Phones</li> <li>• Vehicles</li> <li>• Generators</li> <li>• Solar power systems</li> <li>• UPS units</li> <li>• Batteries</li> <li>• Printers</li> </ul>	3	Category 2: Capital Goods

Emission Sources included	GHG Protocol	
	Scope	Description
<ul style="list-style-type: none"> <li>Air conditioners</li> <li>IT equipment</li> <li>Office infrastructure.</li> </ul>		
<p>Emissions related to the production of fuels and energy purchased and consumed by Cassava in the reporting year such as:</p> <ul style="list-style-type: none"> <li>Upstream emissions related to the production and transportation of purchased fuel</li> <li>Transmission and Distribution losses related to the purchased electricity</li> </ul>	3	Category 3: Fuel and energy related activities
<p>Emissions related to upstream transportation and distribution including:</p> <ul style="list-style-type: none"> <li>Air freight activities</li> <li>Sea transport, cargo and container shipping</li> <li>Local distribution using vans and heavy goods vehicles</li> </ul>	3	Category 4: Upstream Transportation and Distribution
<p>Treatment of waste generated at Cassava's operations including:</p> <ul style="list-style-type: none"> <li>General waste disposed in landfill</li> <li>Electronic waste disposed in landfill</li> <li>Electronic waste recycling</li> <li>Hazardous waste disposal</li> <li>Third party composting activities</li> <li>Food waste disposal</li> </ul>	3	Category 5: Waste Generated in Operations
<p>Emissions from business travel activities including:</p> <ul style="list-style-type: none"> <li>Flights (short- and long-haul)</li> <li>Accommodation</li> <li>Rail transport</li> <li>Ferry transport</li> <li>Rental vehicles across different providers and vehicle groups.</li> </ul>	3	Category 6: Business travel
<p>Employee commuting activities including emissions from:</p> <ul style="list-style-type: none"> <li>Personal vehicles use</li> <li>Carpooling</li> <li>Public transport (bus, taxi, train, underground)</li> <li>Non-emission commuting modes like walking</li> </ul>	3	Category 7: Employee Commuting

Emission Sources included	GHG Protocol	
	Scope	Description
and cycling		
Operation of assets that are leased by the reporting company in the reporting year such as: <ul style="list-style-type: none"> <li>• Upstream Fugitive Emissions</li> <li>• Upstream Utilities</li> <li>• Upstream Fuels</li> <li>• Upstream PoP site facilities leased by Cassava but not directly owned</li> </ul>	3	Category 8: Upstream Leased Assets
Emissions from downstream transportation and distribution from transportation/storage of sold products in vehicles/facilities not owned by Cassava including: <ul style="list-style-type: none"> <li>• Air freight</li> <li>• Shipping</li> <li>• Road freight using vans and trucks.</li> </ul>	3	Category 9: Downstream Transportation and Distribution
Emissions from assets owned by Cassava but leased to third parties, specifically linked to activities at PoP sites, including: <ul style="list-style-type: none"> <li>• Diesel combustion in generators</li> </ul>	3	Category 13: Downstream Leased Assets

The list of included emission activities and boundary definitions may evolve as Cassava continues to advance its sustainability reporting and target-setting processes. The identification and justification of emission sources are essential components of a credible GHG inventory and form the basis for effective long-term emissions management and reduction planning.

The GHG Protocol states that the reporting of Scope 1 and Scope 2 emissions is mandatory, while Scope 3 emissions reporting is voluntary. However, as Cassava has committed to setting science-based targets with the Science-Based Targets Initiative (SBTi), committing to be net-zero by 2040, it is required to report on all relevant Scope 3 categories, with exclusions permitted only if adequate justification is provided. For this inventory, all Scope 3 categories were evaluated for relevance. Several categories, specifically *Processing of Sold Products*, *Use of Sold Products*, *End-of-Life Treatment of Sold Products*, *Franchises*, and *Investments*, were either determined to be not applicable to Cassava’s business model (e.g. Franchises) or are already accounted for under other relevant categories (e.g. Investments). The inclusion of indirect emission activities within each Scope 3 category has been guided by the GHG Protocol’s relevance criteria.

### 3.5 Application of Relevance Assessment

The GHG Protocol recommends conducting a relevance assessment to guide the inclusion of emission sources within a company’s GHG inventory. For this inventory, the data provided by Cassava and the resulting emissions were evaluated using relevance criteria to determine which sources should be included within the inventory.

This relevance assessment supports transparency, accuracy, and comparability between reporting cycles. It ensures that material emission sources are captured and provides a clear basis for future emissions tracking, target setting, and stakeholder engagement. By conducting this assessment, Cassava can align with leading international standards, prioritise main emissions sources for mitigation, and ensure its reporting is focused on the most impactful areas of its value chain.

The relevance criteria recommended by the GHG Protocol are presented in Table 6. This assessment process is essential for boundary setting and target formulation and should be revisited whenever changes to the Group’s operational activities occur.

Further details on the application of the relevance assessment are provided in **Appendix 2: Relevance Assessment**.

**Table 6: GHG Protocol Relevance criteria applied to Cassava**

Criteria	Description
1. Size	<b>Relevant if</b> emissions contribute 1% or more of Cassava’s total carbon footprint. These are considered quantitatively substantial and relevant.
2. Influence	<b>Relevant if</b> Cassava can influence emission sources by implementing measures to monitor and reduce the emissions associated with these activities, such as through environmental criteria in supplier contracts or operational decision-making.
3. Risk	<b>Relevant if</b> emissions contribute Cassava’s exposure to climate-related risks. This could include emissions associated with activities that contribute to at least one of the following: regulatory risks, reputational concerns, or supply chain vulnerabilities.
4. Stakeholders	<b>Relevant if</b> they are deemed significant by stakeholders of Cassava including investors, customers, suppliers, or the public.
5. Outsourcing	<b>Relevant if</b> indirect emissions result from outsourced activities that are core business activities. For example, hosting of data centres.

Criteria	Description
6. Sector Guidance	<b>Relevant if</b> there are sector-specific guidance, benchmarks or targets defined for an emissions source relevant to Cassava.
7. Other – Employee Engagement	<b>Relevant if</b> employee policies and engagements can influence emissions from Casava’s business activities, such as employee engagement programmes on water conservation and energy savings.

### 3.6 Data Sources

The inputs, resources, and activities associated with Cassava's operations have corresponding emission-related impacts. Identifying appropriate data sources is therefore essential for accurately calculating the Group’s carbon footprint.

#### 3.6.1 Activity Data

The activity data used in the FY25 carbon footprint calculations was collected from Cassava’s regional ESG managers and onsite teams. Although the data has not been verified by a third party, internal processes were implemented to enhance data integrity and completeness.

The following processes were followed to support robust data collection and review:

- Standardised data templates were developed and distributed across operational teams.
- Data collection workshops were held to guide ESG teams on populating data sheets.
- Mid-year reviews of information captured, and anomalies or missing data points were identified and queried.
- Data submissions were reviewed using sanity checks and comparisons against historical trends, including FY24 figures.
- Supporting documents such as invoices, lease agreements, and utility bills were reviewed where applicable.
- Travel agents’ data sheets and car rental companies’ reports.

**Table 7: Data sources used for emissions sources**

Emission Source	Data Source
Diesel use	Procurement system for purchases of fuels used in stationary and mobile equipment.
Petrol use	Procurement system for purchases of fuels used in stationary and mobile equipment.
Airconditioning gas	Invoices of suppliers
Purchased electricity	Utility bills
Water	Utility bills
Telecommunications equipment	Invoices from suppliers
Equipment	Invoices from suppliers
Machinery	Invoices from suppliers
Vehicles	Company finance department

Emission Source	Data Source
Transmission and Distribution losses	Calculated from Scope 1 and Scope 2 data
Upstream emissions of purchased electricity	Utility bills
Upstream emissions of purchased fuels	Purchase orders
Disposal in a landfill	Waste management report
Recovery for recycling	Waste management report
Electronic waste	Waste management report
Air travel Accommodation	Travel agents and financing department
Rail and Road travel	Travel agents and financing department
Business travel in rental cars or employee-owned vehicles other than employee commuting to and from work	Travel agents and financing department
Equipment	Purchase orders
Generator	Purchase orders
Solar Equipment	Purchase orders
Downstream transport Air transport, Road transport	Invoices
Downstream leased assets: Solar equipment	Invoices / lease contracts
Downstream leased assets: Diesel used in generators	Invoices
Employee commuting	Commuter survey

**Appendix 3:** presents the following operational environmental activity data for the reporting period, including fuel consumption (diesel and petrol), purchased electricity, on-site renewable electricity generation, water usage, and waste generation and recycling. It also details the diesel consumption, purchased electricity, and renewable energy generated at Liquid’s PoP sites across Africa.

### 3.6.2 Emission Factors

The calculations of Cassava’s FY25 GHG inventory relies on a range of assumptions, emission factors, and conversion factors, which have been carefully selected and applied to ensure accuracy and reliability. These factors are provided in the accompanying Excel spreadsheet and are also available in **Appendix 4: Emission Factors, Conversion Factors & Assumptions**.

By adhering to the quality criteria for emissions factors, Cassava ensures that the calculations of its GHG inventory are based on reliable and relevant information. The transparent inclusion of the assumptions, emission factors, and conversion factors allows for traceability and facilitates the understanding and verification of the reported emissions.

### 3.6.3 Assumptions

Assumptions play a critical role in ensuring the accuracy and completeness of the emissions assessment where data is incomplete, missing, or not available. Due to the complexity and variability of data sources, as well as potential gaps in available information, assumptions are necessary to estimate emissions where measurements are not available or feasible. These assumptions help standardise calculations, provide a basis for comparison, and enable the inclusion of all relevant emission sources. By clearly documenting these assumptions,

Cassava can enhance the transparency and reliability of their GHG inventory. The general assumptions used in calculating Cassava's GHG inventory are listed below. For a more detailed list that includes the assumptions used per scope refer to **Appendix 5: Assumptions**.

#### **General Assumptions Applicable to all operations, scopes and categories:**

- Missing monthly data was estimated using the average of available monthly data from the same reporting year.
- Outliers and extreme fluctuation values were flagged and reviewed by the relevant operation's manager, which either confirmed the data and provided a comment or provided corrected figures.
- In cases where no unit of measure was provided, a unit was assumed by evaluating the data and assigning the most appropriate unit based on the specific emission activity (e.g., for water consumption data without a unit, the data was assessed to determine whether litres or kilolitres were used).
- In the GHG calculations workbook, values shown in red indicate estimates provided by the OPCOs, while green text denotes estimates made by Promethium.
- Where no estimate was explicitly requested or provided, blank cells were assumed to represent zero activity.

## **4. Results for Corporate Reporting**

### **4.1 Organisational GHG Emissions Profile**

This section presents the organisational GHG emissions profile for Cassava Technologies for the FY25 reporting cycle, developed in line with the GHG Protocol. The results are based on the methodology outlined in Chapter 3 and represent the emissions associated with activities within Cassava's operational control boundary. For consistency in year-on-year comparison, the FY24 emissions were restated to reflect structural changes, namely the exclusion of Distributed Power Africa (DPA) and Telrad, and the consolidation of the Central Africa Region (CAR) and East Africa Region (EAR) into a combined Rest of Africa (RoA) region. The GHG inventory follows the GHG Protocol structure to align with the SBTi reporting framework, thereby supporting the development and tracking of emission reduction targets. The inventory is also presented using the ISO14064-1:2018 in **Appendix 1: Results as per ISO 14064-1:2018**

#### **4.1.1 Results as per GHG Protocol**

The data collected and analysed are presented in accordance with the GHG Protocol and highlights the material sources of emissions, offering valuable insights for future carbon footprint reporting and management strategies

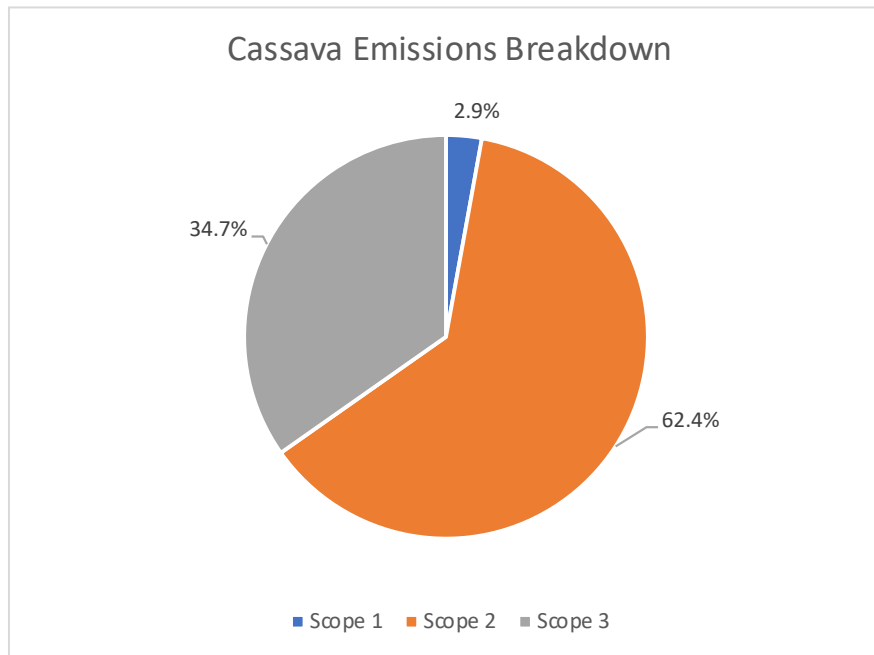


**Table 8: Summary of Cassava’s FY25 according to the GHG Protocol**

Scope	Description	Corporate Emissions tCO <sub>2</sub> e	LIT SA Emissions tCO <sub>2</sub> e	LIT RoA Emissions tCO <sub>2</sub> e	ADC Emissions tCO <sub>2</sub> e	Sasai/Vaya Emissions <sup>4</sup> tCO <sub>2</sub> e	Total FY25 Emissions tCO <sub>2</sub> e
SCOPE 1	Stationary Combustion of Diesel	-	23	454	845	0	1 322
	Mobile Combustion Of Diesel	-	830	1 753	-	-	2 583
	Mobile Combustion Of Petrol	7	705	596	-	-	1 309
	Fugitive Emissions – R407C	-	5	-	-	-	5
	Fugitive Emissions – R410A	-	248	137	128	-	513
	Stationary Combustion of Diesel at PoP Sites	-	-	821	-	-	821
	Fugitive Emissions – R410A at PoP Sites	-	-	75	-	-	75
<b>Total SCOPE 1</b>		<b>7</b>	<b>1 812</b>	<b>3 835</b>	<b>973</b>	<b>0</b>	<b>6 627</b>
SCOPE 2	Purchased Grid Electricity	132	13 971	1 873	128 506	42	144 524
	Purchased Grid Electricity at PoP Sites	-	-	416	-	-	416
<b>Total SCOPE 2</b>		<b>132</b>	<b>13 971</b>	<b>2 290</b>	<b>128 506</b>	<b>42</b>	<b>144 941</b>
SCOPE 3	Category 1: Purchased Goods and Services	1	426	2 588	13	0	3 028
	Category 2: Capital Goods	4	29	69	1	1	103
	Category 3: Fuel- and Energy-related Activities	13	2 253	1 211	18 194	6	21 677
	Category 4: Upstream Transportation & Distribution	-	940	3 818	-	-	4 758
	Category 5: Waste Generated in Operations	40	7	592	14	0	653
	Category 6: Business Travel	1 078	395	180	710	16	2 375
	Category 7: Employee Commuting	255	2 032	2 157	290	187	4 921
	Category 8: Upstream Leased Assets	-	30 377	12 506	-	-	42 883
	Category 9: Downstream Transportation & Distribution	-	55	77	-	-	132
	Category 13 Downstream Leased Assets	-	-	173	-	-	173
<b>SCOPE 3 Sub-Total</b>		<b>1 391</b>	<b>36 514</b>	<b>23 371</b>	<b>19 221</b>	<b>210</b>	<b>80 707</b>
<b>Total Emissions</b>		<b>1 530</b>	<b>52 296</b>	<b>29 497</b>	<b>148 700</b>	<b>253</b>	<b>232 275</b>

<sup>4</sup> Some activities may appear as zero in the consolidated group results due to rounding to the nearest whole number. In such cases, the actual emissions value is less than 0.5 tCO<sub>2</sub>e. For a more accurate representation of these emissions, please refer to the divisional breakdowns, which retain decimal precision.

Cassava Technologies’ total GHG emissions for the FY25 reporting period amounted to **232 275 tCO<sub>2</sub>e**, representing a 19% increase from the FY24 total of 194 556 tCO<sub>2</sub>e. This increase is attributable to an increase in electricity consumption across the group, in most cases due to more stable power supply which in turn resulted in lower Scope 1 emissions, and the expansion and refinement of Scope 3 data. Despite the changes to the group’s structure, the overall emissions footprint rose due to improved data granularity during this reporting cycle. **Figure 2** illustrates the total emissions per scope for the Group’s total emissions.



**Figure 2: Cassava emissions breakdown**

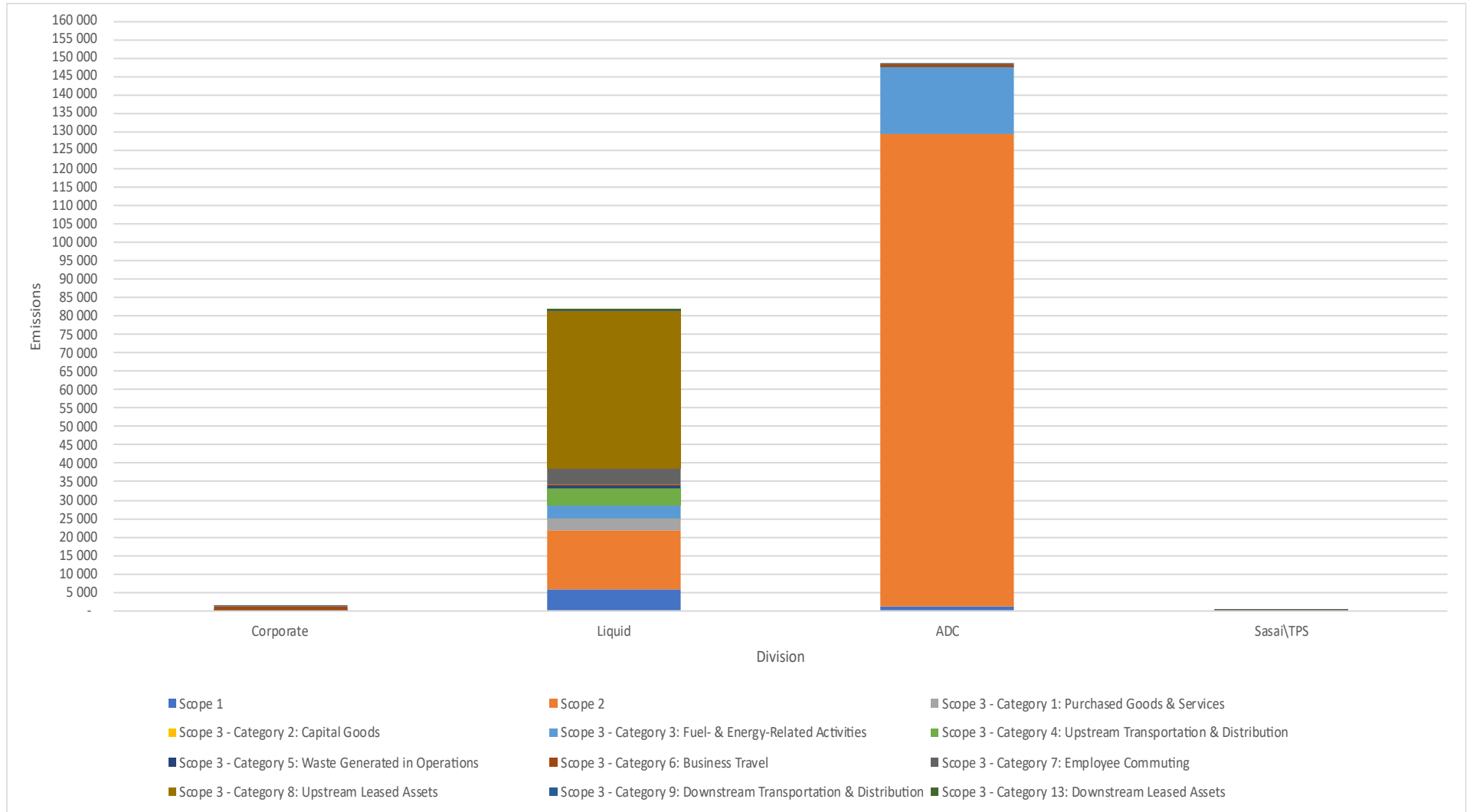
Cassava’s **Scope 1** emissions, which account for direct emissions from fuel combustion and fugitive gases, totalled **6 627 tCO<sub>2</sub>e** in FY25. This is a significant reduction from the 9 626 tCO<sub>2</sub>e in FY24. The decrease is largely due to lower stationary combustion emissions as more stable power electrical power supply was reported in FY25 compared to FY24, indicating less reliance on backup generators which contributed significantly to this category in the previous year. In FY25, mobile combustion remained the largest contributor to Scope 1 emissions at 3 892 tCO<sub>2</sub>e, with Liquid South Africa (LIT SA) and RoA responsible for most of these emissions. Stationary combustion contributed 1 322 tCO<sub>2</sub>e, primarily from the use of diesel in backup generators in offices, data centres and point of presence (PoP) facilities, while fugitive emissions related to refrigerant leakages totalled 518 tCO<sub>2</sub>e, primarily from R410A and small amounts of R407c used in HVAC systems.

**Scope 2** emissions, which includes indirect emissions from the generation of purchased electricity, increased from 136 097 tCO<sub>2</sub>e in FY24 to **144 941 tCO<sub>2</sub>e** in FY25. This 6.5% increase was primarily driven by the increase in stable electricity supply in South Africa primarily, and the slight increase in electricity demands of ADC due to data centre expansion activities, which reported 128 506 tCO<sub>2</sub>e, contributing approximately 89% of the Group’s total Scope 2 emissions. This reflects the energy-intensive nature of the data centre operations - for cooling and continuous power supply purposes. LIT SA was the second-largest contributor to Scope 2 emissions, reporting 13 971 tCO<sub>2</sub>e, followed by RoA with 2 290 tCO<sub>2</sub>e. The

contributions from Corporate and Sasai/Vaya divisions were considerably smaller, at 132 tCO<sub>2</sub>e and 42 tCO<sub>2</sub>e, respectively.

The **Scope 3** emissions categories include all other indirect emission sources associated with the Cassava's value chain. These emissions have changed significantly to **80 707 tCO<sub>2</sub>e** in FY25, from 48 834 tCO<sub>2</sub>e in the restated FY24 footprint. This 65% change reflects both improved data reporting and data availability in several activity areas. The most material contributor was Category 8 – Upstream Leased Assets, which reached 42 883 tCO<sub>2</sub>e, more than doubling from the FY24 total of 16 302 tCO<sub>2</sub>e. This increase is due to better tracking of fuel and energy use and from PoP sites that are both owned and leased but operated by Cassava. Category 3 – Fuel- and Energy-Related Activities followed, contributing 21 677 tCO<sub>2</sub>e, which showed a slight increase from 20 925 tCO<sub>2</sub>e in FY24, in line with the increase in electricity consumption use across the Group. Employee commuting accounted for 4 921 tCO<sub>2</sub>e, a decrease from 6 278 tCO<sub>2</sub>e in FY24, reflecting a decrease in the number of full-time employees at the various operations within Cassava. Business travel emissions also declined from 4 018 tCO<sub>2</sub>e to 2 378 tCO<sub>2</sub>e, due to improved digital engagement strategies, work from home options, and improved monitoring and approval of travel across the group.

Upstream transportation and distribution accounted for 4 758 tCO<sub>2</sub>e in FY25, compared to the 157 tCO<sub>2</sub>e reported in FY24 because of improved data collection. Smaller relevant to their overall contribution to the total footprint, are the categories of purchased goods and services, accounting for 3 028 tCO<sub>2</sub>e, and capital goods for 103 tCO<sub>2</sub>e, but which had significant increases compared to FY24 due to the improved data availability of the provided data. Waste generated in operations contributed 653 tCO<sub>2</sub>e and primarily result from general waste sent to landfill and e-waste disposal. Downstream transportation and distribution added a further 132 tCO<sub>2</sub>e, while emissions from downstream leased assets, associated with assets owned by Cassava and leased to other entities, amounted to 173 tCO<sub>2</sub>e. Overall, the Scope 3 results reflect Cassava's growing data collection process and the inclusion of additional sources that had previously been excluded or underreported. **Figure 3** below shows the emissions per divisions in Cassava, followed by a section that presents a breakdown of emissions by division, providing a more detailed view of the contributors to Cassava's total GHG footprint.



**Figure 3: GHG emissions for Cassava per division**

#### 4.1.2 Results by Division

In this section, a breakdown of the emissions for each division within the Cassava Group for FY25 is provided. This detailed analysis provides insights into the specific contributions of each division to the overall Group carbon footprint, helping to identify primary areas for emission reduction potential.

##### 4.1.2.1 Corporate division

Cassava Technologies' Corporate division reported total GHG emissions of 1 530 tCO<sub>2</sub>e in FY25. While smaller than other divisions, these emissions reflect the operational footprint of administrative and support functions across several regional offices, including Mauritius, Nigeria, the United Kingdom (UK), and the United Arab Emirates (UAE).

**Table 9: Corporate Division Total FY25 Emissions Breakdown**

Scope	Description	Corporate Mauritius tCO <sub>2</sub> e	Corporate Nigeria tCO <sub>2</sub> e	Corporate UK tCO <sub>2</sub> e	Corporate UAE tCO <sub>2</sub> e	Total Corporate FY25 Emissions tCO <sub>2</sub> e
SCOPE 1	Mobile Combustion of Petrol	7.08	-	-	-	7.08
<b>Total SCOPE 1</b>		<b>7.08</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7.08</b>
SCOPE 2	Purchased Electricity	30.40	-	74.17	27.46	132.02
<b>Total SCOPE 2</b>		<b>30.40</b>	<b>-</b>	<b>74.17</b>	<b>27.46</b>	<b>132.02</b>
SCOPE 3	Category 1: Purchased Goods and Services	0.49	-	0.79	0.10	1.38
	Category 2: Capital Goods	3.80	-	0.02	-	3.81
	Category 3: Fuel- and Energy-related Activities	4.50	-	6.56	2.00	13.06
	Category 5: Waste Generated in Operations	38.81	-	0.47	0.25	39.53
	Category 6: Business Travel	19.74	-	1 064.33	-	1 078.08
	Category 7: Employee Commuting	66.68	35.27	130.42	22.58	254.96
<b>SCOPE 3 Sub-Total</b>		<b>128.03</b>	<b>35.27</b>	<b>1 202.58</b>	<b>24.93</b>	<b>1 390.82</b>

<b>Total Emissions</b>	<b>165.51</b>	<b>35.27</b>	<b>1 276.75</b>	<b>52.39</b>	<b>1 529.92</b>
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Scope 1 emissions for the Corporate division were limited to 7.08 tCO<sub>2</sub>e, all attributed to fuel combustion of petrol in company vehicles at the Mauritius operations. No other direct combustion activities were reported for the Corporate offices.

Scope 2 emissions from the Corporate division totalled 132.02 tCO<sub>2</sub>e, resulting from purchased grid electricity consumed in the corporate offices. The largest contributor was the UK office, which reported 74.17 tCO<sub>2</sub>e, followed by Mauritius with 30.40 tCO<sub>2</sub>e and the UAE with 27.46 tCO<sub>2</sub>e. These figures reflect energy consumption from lighting, heating, cooling, and IT operations in corporate facilities and is also a reflection of the quantities and sizes of the corporate offices.

Scope 3 emissions constituted the largest portion of the Corporate footprint, amounting to 1 390.82 tCO<sub>2</sub>e. This included the most significant contributing category of business travel, which accounted for 1 078.08 tCO<sub>2</sub>e (78% of Corporate Scope 3 emissions). Of this total, the UK office contributed 1 064.33 tCO<sub>2</sub>e, reflecting a high number of long- and short-haul flights as well as accommodation and rail transport. Business travel emissions included a wide range of travel modes and destinations, such as flights to and accommodation in the UAE, India, Switzerland, and Peru, highlighting the international scope of corporate engagements. It is expected that the travel for the UK will be significant as a big part of Cassava’s executive team still resides in the UK, and travels across the globe to attend to and support the group’s subsidiaries.

Employee commuting was the second-highest contributor to Scope 3 at 254.96 tCO<sub>2</sub>e. The UK again had the largest contribution (130.42 tCO<sub>2</sub>e), followed by Mauritius (66.68 tCO<sub>2</sub>e) and the UAE (22.58 tCO<sub>2</sub>e). Modes of transport included diesel and petrol vehicles, public transport (bus, underground, train), and hybrid cars.

Other Scope 3 categories were smaller in magnitude but still relevant. Fuel- and energy-related activities contributed 13.06 tCO<sub>2</sub>e, mainly from upstream emissions associated with purchased electricity and mobile fuel. Waste generated in operations accounted for 39.53 tCO<sub>2</sub>e, with general waste sent to landfill in Mauritius and a small quantity of food and cardboard waste reported in the UAE and UK. Although the UK is the biggest corporate office most of their waste is managed and recycled by the landlord, with detailed waste management reports generated monthly. Purchased goods and services and capital goods contributed 1.38 tCO<sub>2</sub>e and 3.81 tCO<sub>2</sub>e, respectively, primarily from consumption of water and procurement of IT equipment like laptops and phones.

Overall, the Corporate division’s emissions profile showed significant travel-related activities and electricity use. The high contribution from business travel presents a clear opportunity for emission reduction through enhanced virtual collaboration, more stringent travel policies, or increased use of lower-emission travel alternatives. Similarly, commuting emissions may be addressed through flexible work arrangements or incentives for public and low-emission transport use.

#### 4.1.2.2 Liquid Intelligent Technologies

The Liquid division reported a total of 81 793 tCO<sub>2</sub>e emissions for the FY25 reporting period. This figure includes emissions from LIT SA, which accounted for a total of 52 296 tCO<sub>2</sub>e, and the combined Rest of Africa (RoA) region, which collectively contributed 29 497 tCO<sub>2</sub>e across more than 11 African countries, including Botswana, DRC, Egypt, Kenya, Rwanda, South Sudan, Tanzania, Uganda, Zambia, Zanzibar, and Zimbabwe.

**Table 10: Liquid division FY25 Emissions Breakdown**

Scope	Description	Liquid South Africa Emissions tCO <sub>2</sub> e	Liquid Rest of Africa Emissions tCO <sub>2</sub> e	Liquid Total Emissions tCO <sub>2</sub> e
SCOPE 1	Stationary Combustion of Diesel	23	454	477
	Mobile Combustion Of Diesel	830	1 753	2 583
	Mobile Combustion Of Petrol	705	596	1 301
	Fugitive Emissions – R407C	5	-	5
	Fugitive Emissions – R410A	248	137	385
	Stationary Combustion of Diesel at PoP Sites	-	821	821
	Fugitive Emissions – R410A at PoP Sites	-	75	75
<b>Total SCOPE 1</b>		<b>1 812</b>	<b>3 835</b>	<b>5 647</b>
SCOPE 2	Purchased Grid Electricity	13 971	1 873	15 844
	Purchased Grid Electricity at PoP Sites	-	416	416
<b>Total SCOPE 2</b>		<b>13 71</b>	<b>2 290</b>	<b>16 261</b>
SCOPE 3	Category 1: Purchased Goods and Services	426	2 588	3 014
	Category 2: Capital Goods	29	69	98
	Category 3: Fuel- and Energy-related Activities	2 253	1 211	3 464
	Category 4: Upstream Transportation & Distribution	940	3 818	4 758
	Category 5: Waste Generated in Operations	7	592	600
	Category 6: Business Travel	395	180	575
	Category 7: Employee Commuting	2 032	2 157	4 189
	Category 8: Upstream Leased Assets	30 377	12 506	42 883
	Category 9: Downstream Transportation & Distribution	55	77	132
	Category 13 Downstream Leased Assets	-	173	173
<b>SCOPE 3 Sub-Total</b>		<b>36 514</b>	<b>23 371</b>	<b>59 885</b>
<b>Total Emissions</b>		<b>52 296</b>	<b>29 497</b>	<b>81 793</b>

Scope 1 emissions for Liquid amounted to 5 647 tCO<sub>2</sub>e, of which 1 812 tCO<sub>2</sub>e originated from LIT SA and 3 835 tCO<sub>2</sub>e from RoA. The largest contributors within Scope 1 were mobile combustion (i.e., fuel used in company-owned vehicles) and stationary combustion of diesel in backup generators. Mobile combustion emissions resulted in 3 885 tCO<sub>2</sub>e, driven by Liquid's

field operations and logistics support throughout the regions. LIT SA alone accounted for 1 536 tCO<sub>2</sub>e from vehicle use, while RoA reported 2 349 tCO<sub>2</sub>e, with countries such as Zambia and Zimbabwe reported high mobile fuel usage, contributing 361 tCO<sub>2</sub>e and 943 tCO<sub>2</sub>e, respectively. Majority of the fleet vehicles are used to conduct ongoing maintenance and site inspections, limiting the possibilities of fuel savings in the near future. Stationary combustion at PoP sites in RoA added an additional 821 tCO<sub>2</sub>e, while fugitive emissions (from refrigerant leakage) totalled 390 tCO<sub>2</sub>e, mostly due to R410A use in air conditioning systems.

Scope 2 emissions, representing indirect emissions from purchased electricity, totalled 16 261 tCO<sub>2</sub>e. LIT SA accounted for 13 971 tCO<sub>2</sub>e, from electricity used in operational facilities and offices across South Africa. The RoA region reported 2 290 tCO<sub>2</sub>e, with notable contributions from Rwanda (860 tCO<sub>2</sub>e), Uganda (299 tCO<sub>2</sub>e), and Zimbabwe (276 tCO<sub>2</sub>e). An additional 416 tCO<sub>2</sub>e in total was reported for electricity consumption at Cassava's owned PoP sites across the RoA region, which are integral to maintaining connectivity infrastructure.

Scope 3 emissions constituted the majority of Liquid's footprint, and the largest contribution to Cassava's total group footprint, at 59 885 tCO<sub>2</sub>e, with LIT SA contributing 36 514 tCO<sub>2</sub>e and RoA 23 371 tCO<sub>2</sub>e. The most significant Scope 3 category was Upstream Leased Assets which includes the diesel used in backup generators and electricity consumption at leased PoP sites, totalling 42 883 tCO<sub>2</sub>e, of which 30 377 tCO<sub>2</sub>e originated from LIT SA and the remainder from PoP sites in countries such as Zimbabwe (6 991 tCO<sub>2</sub>e), Zambia (2 097 tCO<sub>2</sub>e), and Uganda (1 529 tCO<sub>2</sub>e).

The second-largest contributor within Scope 3 was Upstream Transportation and Distribution emissions which were significantly higher in FY25 due to improved data availability, totalling 4 758 tCO<sub>2</sub>e. These emissions were largely associated with freight flights and road logistics required to support the deployment of telecommunications equipment across the operations. LIT SA accounted for 940 tCO<sub>2</sub>e, while Zimbabwe contributed nearly 3 655 tCO<sub>2</sub>e.

Employee Commuting was also a significant source of Scope 3 emissions, accounting for a total of 4 189 tCO<sub>2</sub>e. These emissions decreased in FY25 compared to FY24 due to the decrease in full-time employee numbers. LIT SA had the largest contribution to this category with 2 032 tCO<sub>2</sub>e, followed by Kenya with 626 tCO<sub>2</sub>e and Zimbabwe with 545 tCO<sub>2</sub>e. This highlights the impact employee commuting habits have on the company footprint. Zimbabwe has a larger number of full-time employees compared to Kenya, but the Kenya employees might largely rely on higher emission intensive means of transport. It is recommended that the group conduct a new employee commute survey to identify the most significant contributors of carbon footprinting and then look at incentivising employees to look at more responsible commute options.

Fuel- and Energy-Related Activities, accounted for 3 464 tCO<sub>2</sub>e, in line with the division's high electricity use and fuel consumption. Purchased Goods and Services contributed 3 014 tCO<sub>2</sub>e, largely concentrated in Zambia but with significant purchases in LIT SA as well. Smaller categories such as Business Travel emissions decreased compared to the previous year, totalling 575 tCO<sub>2</sub>e, likely due to increased reliance on virtual engagements. Capital Goods (98 tCO<sub>2</sub>e), Waste Generated in Operations (600 tCO<sub>2</sub>e), and Downstream Transportation and Distribution (132 tCO<sub>2</sub>e) also form part of the Liquid's Scope 3 emissions which showed an increase compared to the previous reporting cycle due to improved data quality and



availability during FY25. Additionally, Downstream Leased Assets, covering diesel use in PoP facilities leased to external entities, accounted for 173 tCO<sub>2e</sub>.

Generally, Liquid’s emissions profile reflects its operational scale and energy-intensive infrastructure. It also highlights the importance of addressing Scope 3 sources—particularly emissions from upstream leased assets and commuting—within Cassava’s future emissions reduction strategy. As such, this division holds significant potential for impactful emissions reductions, focussing on expanding renewable energy generation, particularly at high-consuming sites, and enhancing electricity data quality by integrating automated metering and standardised reporting across facilities. Continued efforts to improve PoP site efficiency and reduce transportation emissions, particularly through route optimisation and fuel-efficient logistics, will also be beneficial.

#### 4.1.2.3 Africa Data Centres

Africa Data Centres (ADC) reported total GHG emissions of 148 700 tCO<sub>2e</sub> for FY25, making it the largest contributor to Cassava Technologies’ overall emissions. These emissions are driven by ADC’s energy-intensive operations, particularly electricity consumption at its facilities in South Africa, Kenya, and Nigeria.

**Table 11: ADC Division Total FY25 Emissions Breakdown**

Scope	Description	ADC Kenya Emissions tCO <sub>2e</sub>	ADC Nigeria Emissions tCO <sub>2e</sub>	ADC South Africa Emissions tCO <sub>2e</sub>	ADC Total Emissions tCO <sub>2e</sub>
SCOPE 1	Stationary Combustion of Diesel	-	-	845.15	845.15
	Fugitive Emissions – R410A	-	-	127.95	127.95
<b>Total SCOPE 1</b>		<b>-</b>	<b>-</b>	<b>973.10</b>	<b>973.10</b>
SCOPE 2	Purchased Grid Electricity	6 878.43	603.27	121 023.86	128 505.56
<b>Total SCOPE 2</b>		<b>6 878.43</b>	<b>603.27</b>	<b>121 023.86</b>	<b>128 505.56</b>
SCOPE 3	Category 1: Purchased Goods and Services	5.01	1.42	6.34	12.77
	Category 2: Capital Goods	0.21	0.26	0.12	0.59
	Category 3: Fuel- and Energy-related Activities	1 469.18	115.76	16 609.39	18 194.34
	Category 5: Waste Generated in Operations	2.50	1.97	9.17	13.65
	Category 6: Business Travel	-	-	709.72	709.72
	Category 7: Employee Commuting	54.96	38.39	196.79	290.14
<b>SCOPE 3 Sub-Total</b>		<b>1 531.85</b>	<b>157.80</b>	<b>17 531.54</b>	<b>19 221.20</b>
<b>Total Emissions</b>		<b>8 410.28</b>	<b>761.07</b>	<b>139 528.50</b>	<b>148 699.85</b>

South Africa was the largest contributing operation accounting for 139 528 tCO<sub>2</sub>e, or over 93% of the division’s total emissions. Kenya reported total emissions of 8 410 tCO<sub>2</sub>e, and Nigeria contributed 761 tCO<sub>2</sub>e.

Scope 1 emissions for ADC were all from the South African operations and amounted to 973 tCO<sub>2</sub>e. These were derived entirely from direct emissions associated with stationary combustion of diesel and refrigerant gas leakages. Diesel generators used for backup power supply were responsible for 845 tCO<sub>2</sub>e, and 128 tCO<sub>2</sub>e were from fugitive emissions due to refrigerant leakage, specifically R410A used in the facility’s HVAC systems.

Scope 2 emissions, representing indirect emissions from purchased electricity, totalled 128 506 tCO<sub>2</sub>e, making it the most significant source of emissions for the division. This represents 89% of ADC’s total emissions. South Africa’s Scope 2 emissions amounted to 121 024 tCO<sub>2</sub>e, while Kenya’s Scope 2 electricity emissions contributed 6 878 tCO<sub>2</sub>e, and Nigeria 603 tCO<sub>2</sub>e. The magnitude of electricity consumption reported reflects the energy-intensity of ADC’s operations required to power and cool IT infrastructures, servers, and secure environments in ADC’s data centres.

Scope 3 emissions were reported at 19 221 tCO<sub>2</sub>e, with the most material contribution coming from Category 3: Fuel- and Energy-Related Activities, which amounted to 18 194 tCO<sub>2</sub>e. South Africa’s emissions from fuel- and energy-related activities contributed 16 609 tCO<sub>2</sub>e, 1 469 tCO<sub>2</sub>e from Kenya and 116 tCO<sub>2</sub>e from Nigeria. These emissions are associated with upstream energy activities such as fuel extraction and refining, and transmission losses related to ADC’s electricity consumption. Smaller but relevant contributions to Scope 3 emissions included business travel at 710 tCO<sub>2</sub>e, employee commuting at 290 tCO<sub>2</sub>e, waste generated in operations at 14 tCO<sub>2</sub>e, and purchased goods and services at 13 tCO<sub>2</sub>e, mostly related to the acquisition of office consumables and IT-related supplies.

ADC’s carbon footprint continues to be dominated by electricity-related emissions, both directly through purchased electricity and indirectly through upstream fuel- and energy-related activities. This highlights the importance of renewable energy procurement and energy efficiency improvements in its long-term sustainability strategy. ADC can also consider its option to procure renewable energy through wheeling agreements with independent power producers (IPPs) if physical area problems arise for further expanding its solar installations to rely more on green power solutions.

#### 4.1.2.4 *Sasai Fintech and Vaya Technologies*

For FY25, the combined emissions from Sasai and Vaya amounted to 252.61 tCO<sub>2</sub>e. The results are presented as a single division as the two share most of their office infrastructure and operational support systems, and as such, emissions could not be disaggregated with reasonable accuracy.

**Table 12: Sasai/Vaya Division Total FY25 Emissions Breakdown**

Scope	Description	Total Sasai/Vaya Emissions tCO <sub>2</sub> e
SCOPE 1	Stationary Combustion of Diesel	0.27

<b>Total SCOPE 1</b>		<b>0.27</b>
SCOPE 2	Purchased Grid Electricity	42.43
<b>Total SCOPE 2</b>		<b>42.43</b>
SCOPE 3	Category 1: Purchased Goods and Services	0.37
	Category 2: Capital Goods	1.47
	Category 3: Fuel- and Energy-related Activities	5.82
	Category 5: Waste Generated in Operations	0.02
	Category 6: Business Travel	15.69
	Category 7: Employee Commuting	186.55
<b>SCOPE 3 Sub-Total</b>		<b>209.91</b>
<b>Total Emissions</b>		<b>252.61</b>

Scope 1 emissions were minimal, totalling 0.27 tCO<sub>2</sub>e, and were entirely attributable to stationary combustion of diesel in backup generators during power outages at office facilities. Scope 2 emissions, derived from purchased electricity, amounted to 42.43 tCO<sub>2</sub>e, highlighting the divisions’ core operations as a service provider and the reliance on grid power to support core functions such as software development, app maintenance, customer support, and administration. These emissions are relatively low due to the smaller operational footprint of Sasai and Vaya compared to infrastructure-heavy divisions like ADC and Liquid.

Scope 3 emissions formed the majority of the divisions' carbon footprint, totalling 209.91 tCO<sub>2</sub>e, or over 83% of their total reported emissions. The largest contributor within Scope 3 was employee commuting, which amounted to 186.55 tCO<sub>2</sub>e. Other notable Scope 3 contributions included business travel at 15.69 tCO<sub>2</sub>e. Emissions from fuel- and energy-related activities accounted for 5.82 tCO<sub>2</sub>e, which aligns proportionally with the divisions’ Scope 2 electricity use. Minor contributions were recorded under capital goods (1.47 tCO<sub>2</sub>e) and purchased goods and services (0.37 tCO<sub>2</sub>e). Waste-related emissions were negligible, with 0.02 tCO<sub>2</sub>e recorded from operational waste.

While the total contribution of Sasai/Vaya to the Group’s emissions is relatively small compared to infrastructure-intensive divisions, it should be noted that the data availability was very limited in FY25 compared to FY24. However, even though it still has a small contribution to Cassava’s total emissions, targeted initiatives to replace grid electricity use with renewable energy, reduce business travel and promote low-carbon commuting options could still be beneficial for the division to consider.

## 5. Conclusion

The FY25 GHG inventory for Cassava Technologies presents a detailed view of the organisation’s carbon footprint, reflecting both improved data availability and cooperation across the Group’s operations. The inclusion of additional Scope 3 categories and improved granularity of emission sources, particularly from upstream and downstream leased assets and transportation significantly improved the completeness of the inventory.

## 5.1 Summary of Carbon Footprint

FY25 emissions increased to 232 275 tCO<sub>2</sub>e, compared to the restated 194 556 tCO<sub>2</sub>e for FY24. This 19% increase was largely driven by improvements in data quality, expanded boundary coverage, and more stable grid electricity supply across several regions, which while reducing Scope 1 emissions, led to increases in Scope 2 and related upstream Scope 3 categories. Table 13 below shows the total scope 1, 2 and 3 emissions for each division as well as the Cassava Group total, for a detailed breakdown of the emission per category please refer to Table 8 in section 4.1.1.

**Table 13: Summary of Cassava's FY25 GHG Inventory**

GHG Inventory according to the GHG Protocol	Corporate tCO <sub>2</sub> e	LIT SA tCO <sub>2</sub> e	LIT RoA tCO <sub>2</sub> e	ADC tCO <sub>2</sub> e	Sasai/Vaya tCO <sub>2</sub> e	Total FY25 Emissions tCO <sub>2</sub> e
Scope 1	7	1 812	3 835	973	0	<b>6 627</b>
Scope 2	132	13 971	2 290	128 506	42	<b>144 941</b>
Scope 3	1 391	36 514	23 371	19 221	220	<b>80 707</b>
<b>Total Emissions</b>	<b>1 530</b>	<b>52 296</b>	<b>29 497</b>	<b>148 700</b>	<b>253</b>	<b>232 275</b>

ADC is the largest contributor to Cassava's carbon footprint, driven almost entirely by electricity consumption for data centre operations. With Scope 2 emissions accounting for 89% of ADC's total footprint, ongoing reliance on grid power in South Africa highlights the need for greater adoption of renewable energy and improvements in energy efficiency.

Liquid Technologies is the second-largest contributor, with substantial emissions across all three scopes. Scope 1 emissions from mobile combustion highlights the significance of field operations and vehicle fleet activities, while Scope 3 emissions were driven by upstream leased assets (notably PoP site energy use), upstream transportation, and employee commuting.

The Corporate division reported lower total emissions compared to FY24, but high business travel emissions highlight a clear opportunity to enhance travel policies and promote digital engagement alternatives. Commuting-related emissions are notable and could be reduced through employee engagement policies like flexible work arrangements or low-carbon transport incentives.

Sasai and Vaya's combined footprint was small in the context of the Group, but Scope 3 emissions from employee commuting and business travel still formed the majority of their emissions. It should be highlighted though that compared to FY24, the division's total emissions reduced significantly due data limitations in FY25.

The inventory reinforces the importance of implementing targeted emission reduction strategies, particularly in energy-intensive divisions such as ADC and Liquid and provides a robust platform for future tracking aligned with Science Based Targets initiative (SBTi) commitments.

Overall, the FY25 inventory provides a clear view of Cassava's sustainability growth and provides a stepping stone for prioritising action in Cassava's emission-intensive activities. The data collected will be important in setting realistic reduction targets and in developing focused mitigation measures per division, particularly as Cassava advances its climate ambition and continues alignment with global disclosure frameworks and best practice reporting standards.

## 5.2 Recommendations

Cassava Technologies' FY25 GHG inventory reflects the improvements in data quality, structural consistency, and reporting completeness. The increase in total reported emissions is largely attributed to the expanded data coverage and improved data accuracy. With FY24 confirmed as the Cassava's base year for its SBTi commitments, FY25 represents an important milestone in validating the reliability of the base year and identifying the next steps required for emissions reduction planning. This section outlines key recommendations to support Cassava's continued progress in two key areas: improving GHG data collection and quality and advancing emissions reduction across its operations.

### 5.2.1 Enhancing GHG Inventory Data Quality and Coverage

To build on the progress achieved in FY25, the following measures are recommended to further improve the quality, consistency, and completeness of Cassava's GHG inventory:

- **Consolidate and standardise reporting processes across divisions:** Continue deploying consistent reporting templates and enforce mandatory reporting fields (e.g., physical units, data sources, timeframes) across all divisions and regions. Ongoing engagement with each division is important to identify and include all relevant activities in the reporting process. This engagement will also support the development of a more comprehensive and structured data collection template that accommodates division-specific needs while maintaining consistency. Strengthening the reporting framework in this way will improve data accuracy, eliminate inconsistencies, and further enable meaningful year-on-year comparisons.
- **Implement a centralized data management system:** Recommend investing in a cloud-based platform accessible to all operations and subsidiaries for real-time data capturing, reporting, and monitoring. This will reduce spreadsheet-related errors, prevent data manipulation, and enhance the reliability, accuracy, availability, and efficiency of carbon reporting.
- **Expand automation and real-time monitoring:** Increase the use of automated tools such as utility APIs, IoT sensors, and fleet tracking systems to capture energy, fuel, and activity data at the source. This will reduce manual reporting errors and enable more frequent and accurate data collection.
- **Align GHG reporting with operational systems:** Integrate environmental data streams with financial, procurement, courier/logistics, and HR systems. This will improve accuracy, data availability, traceability, reduce duplication, and possibly uncover emissions activities in areas such as travel bookings, supplier contracts, and leased assets.
- **Reinforce data governance and internal review cycles:** Initialising monthly data collection and quarterly internal review processes. This will support early identification

of anomalies, data gaps, and changes in emission trends, allowing timely adjustments to mitigation efforts.

- **Provide division-level training and support:** Conduct regular capacity-building workshops tailored to each division's emissions profile. Given the varying emission sources and operational contexts, focused training will guide local teams to improve data quality and evolve to include more activities.
- **Verify and audit emission data where material:** Adopt third-party or internal verification protocols for divisions or emission sources that constitute a material portion of the Group footprint. Where verification is not feasible, apply internal benchmarking against prior years and similar operations.
- **Prioritise physical activity data over financial proxies:** Ensure emission estimates are based on physical units (e.g., litres of fuel, kWh of electricity, kg of waste), especially in countries with volatile exchange rates and rapid inflation. This increases the reliability and repeatability of calculations.
- **Develop a GHG Emissions KPI's at Division Level:** Establish a division-level GHG KPI system linked to monthly or quarterly reporting and tracking intensity metrics like emissions per FTE, per revenue, etc. This supports early detection of abnormal trends and helps prioritise interventions.
- **Establish GHG Emissions KPI's and targets at Management Level:** Define and approve key performance indicators and reduction targets for relevant Heads of Department and senior managers responsible for measuring, reporting, and reducing the Group's overall carbon footprint.

### 5.2.2 Advancing Emission Reductions Across Cassava Divisions

With FY24 selected as the official base year for Cassava's target setting, and with the FY25 footprint serving to validate and refine baseline data, and highlighting areas for potential improvement, the next step is to planned emission reduction initiatives at a division-level. The following focus areas are recommended:

#### Scope 1 Emissions:

- **Stationary Combustion of Diesel:** Where backup power systems like diesel generators are still required, invest in low-emission or zero-emission alternatives in such applications, such as biofuel blends or solar-battery hybrid systems. Where generators remain necessary, ensure regular maintenance, efficiency upgrades, and accurate reporting of fuel usage.
- **Fleet management:** Continue to enforce procurement policies to prioritise fuel-efficient or electric vehicles when replacing fleet assets, and optimise fleet utilisation through route planning, usage tracking, and maintenance protocols. Consider piloting electric vehicle fleets where renewable energy charging infrastructure is available, especially at operations where these options already exist.

#### Scope 2 Emissions:

- **Accelerate renewable electricity procurement:** Expand solar capacity of current installations, particularly in South Africa where grid electricity emissions are high, or invest in developing new renewable installations especially at operations that are

energy intensive. Where on-site options are limited, explore Renewable Energy Certificates (RECs) or Power Purchase Agreements (PPAs).

- **Energy efficiency in facilities:** Implement energy audits to identify cost-effective efficiency upgrades (e.g., LED lighting, HVAC optimisation, thermal insulation) at energy intensive facilities such as data centres and offices.

### Scope 3 Emissions:

- **Optimise PoP site energy use:** Given the significant emissions from leased and owned PoP sites, explore energy efficiency retrofits, remote monitoring, and solar or battery-based backup systems where technically feasible. Also improving the monitoring of utilities at these sites could potentially decrease these emissions or highlight areas for possible improvements.
- **Promote low-carbon commuting options:** Develop regional commuting reduction strategies, including carpooling programmes, subsidies for public transport, and continue to support and encourage remote or hybrid work arrangements for employees where feasible, to reduce emissions from employee commuting. Incentives can also be considered for employees that use low-carbon options to commute, such as better parking spaces for carpooling employees, drop-off and collection services for employees using public transport, etc.
- **Implement sustainable travel policies:** Prioritise grouping of required business travel engagements where possible, limit short-haul flights, and establish internal thresholds for business travel emissions per team and if travel is required investigate the option of selecting flights that use sustainable aviation fuel (specifically in countries that have already implemented these options). Continue leveraging virtual engagement tools to reduce travel demand.
- **Apply Internal Carbon Pricing for Business Travel:** Introduce an internal carbon price, which can be informed by systems like each country's carbon tax rates, to travel budgets that are charged per business trip's emissions. The collected funds can finance internal reduction and mitigation projects.
- **Engage suppliers on emissions performance:** For upstream goods and services, develop supplier screening criteria that favour low-emission alternatives. Begin engaging with key suppliers to improve their carbon data disclosures and reporting templates to improve data accuracy and highlight possible reduction areas. Also start including "return" policies with suppliers where products and service infrastructure can be returned to suppliers for responsible disposal or reuse.
- **Waste reduction:** Conduct regular waste audits to identify and address key sources of waste and implement recycling programs and initiatives to reduce waste sent to landfills.
- **Purchased goods and services and capital goods:** Perform life cycle analyses of major purchased goods and capital goods to identify and choose lower-emission alternatives. Implement circular economy practices, such as refurbishing and reusing equipment, to extend the life cycle of capital goods and reduce emissions.

## Appendix 1: Results as per ISO 14064-1:2018

This section presents the total quantified GHG emissions for Cassava Technologies for the FY25 reporting period in accordance with the ISO 14064-1:2018 standard. The quantification follows the categorisation of emissions into direct and indirect sources, as defined by the standard, and reflects the emissions associated with operations under Cassava’s organisational boundary based on operational control.

**Table 14: Summary of FY25 results according to ISO 16064-1:2018**

Emission Category	Total Corporate Emissions tCO <sub>2</sub> e	Total Liquid Emissions tCO <sub>2</sub> e	Total ADC Emissions tCO <sub>2</sub> e	Total Sasai/Vaya Emissions tCO <sub>2</sub> e	Total FY25 Emissions tCO <sub>2</sub> e
Category 1: Direct GHG emissions and removals	7	5 673	973	0	6 654
Category 2: Indirect GHG emissions from imported energy	145	19 724	146 700	48	166 618
Category 3: Indirect GHG emissions from transportation	1 333	9 655	1 000	202	12 190
Category 4: Indirect emissions from products used by the organisation	5	3 111	13	2	3 132
Category 5: Indirect GHG emissions associated with the use of products from the organization	-	-	-	-	-
Category 6: Indirect GHG emissions from other sources	40	43 656	14	0	43 709
<b>Total emissions</b>	<b>1 530</b>	<b>81 819</b>	<b>148 700</b>	<b>253</b>	<b>232 302</b>

Cassava Technologies’ direct GHG emissions for FY25 totalled 6 654 tCO<sub>2</sub>e, accounting for combustion and fugitive emissions directly emitted from owned or controlled sources across the Group. Most of these emissions (5 673 tCO<sub>2</sub>e) were reported by the Liquid division, primarily from mobile and stationary combustion at technical and PoP sites. The ADC division contributed 973 tCO<sub>2</sub>e, mostly from diesel generators and refrigerant leaks in data centre cooling systems. Emissions from Corporate and Sasai/Vaya divisions were negligible in comparison, with 7 tCO<sub>2</sub>e and 0.27 tCO<sub>2</sub>e respectively.



Cassava's indirect emissions from imported energy amounted to 166 618 tCO<sub>2</sub>e, making this category the most material component of the Group's footprint. These emissions are primarily associated with electricity purchased from national grids. The ADC division reported the highest share (146 700 tCO<sub>2</sub>e), highlighting the electricity-intensive nature of its data centre operations. Liquid reported 19 724 tCO<sub>2</sub>e, mainly from network operations and offices, while Corporate and Sasai/Vaya contributed minor amounts (145 tCO<sub>2</sub>e and 48 tCO<sub>2</sub>e, respectively).

Total transportation-related indirect emissions were calculated at 12 190 tCO<sub>2</sub>e. These include employee commuting, business travel, and upstream and downstream transport and distribution activities. The Liquid division reported the highest contribution (9 655 tCO<sub>2</sub>e), driven by extensive business travel and a large employee base reliant on commuting. The Corporate division also reported a significant share (1 333 tCO<sub>2</sub>e), mostly from international travel in the UK and UAE. The ADC and Sasai/Vaya divisions contributed 1000 tCO<sub>2</sub>e and 202 tCO<sub>2</sub>e respectively.

Cassava reported 3 132 tCO<sub>2</sub>e under indirect emissions from products used by the organization. This category captures emissions from upstream goods and capital equipment. The Liquid division again led this category with 3 111 tCO<sub>2</sub>e, due to purchases of IT and network infrastructure. Corporate, ADC, and Sasai/Vaya reported small emissions of 5 tCO<sub>2</sub>e, 13 tCO<sub>2</sub>e, and 2 tCO<sub>2</sub>e respectively.

A total of 43 709 tCO<sub>2</sub>e were reported under indirect emissions from other sources. These emissions reflect waste disposal and upstream and downstream leased assets. This was the second-highest emissions category, with the Liquid division contributing 43 65 tCO<sub>2</sub>e, primarily from diesel and electricity use at leased PoP sites. The Corporate and ADC divisions reported tCO<sub>2</sub>e and 14 tCO<sub>2</sub>e respectively, while Sasai/Vaya recorded a negligible amount.

Cassava Technologies' total GHG emissions for FY25 amounted to 232 302 tCO<sub>2</sub>e. The ADC division remains the largest contributor (148 700 tCO<sub>2</sub>e), followed by Liquid (81 819 tCO<sub>2</sub>e), Corporate (1 530 tCO<sub>2</sub>e), and Sasai/Vaya (253 tCO<sub>2</sub>e). These results provide a detailed, standardised view of the Group's emissions and establish a clear baseline for identifying key mitigation opportunities in future reporting cycles and reduction planning.

## Appendix 2: Relevance Assessment

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
Purchase of goods and services – Purchase of Water	No- these emissions do not form more than 1% of the overall indirect emissions.	No – Cassava has no level of influence on the purchase of water as it is supplied by a municipality	Yes- There is a high level of risk if water shortages occur for Cassavas workforce. This risk is higher in countries such as South Africa who experience water shortages.	No – Cassava’s stakeholders do not specifically require the emission source to be included in their GHG inventory.	No - water is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector	No - sector guidance does not have a recommendation for this emission source.	Yes – Campaigns to use less water and to reduce water waste can be implemented for Cassava’s employees through employee engagement.	This emission source should be included in the inventory because of the risk to Cassava being without water poses, and employee engagement.
Purchase of goods and services – Purchase of Office Equipment (paper, furniture, air conditioner, camera)	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes -_ Cassava can influence suppliers as there are some possibilities for switching to other suppliers or office equipment with lower emissions.	Yes- climate change-related events such as flooding pose a risk of supply chain disruptions, which could impact Cassava's ability to secure the necessary goods for its operations, potentially affecting business continuity	No – Cassava’s stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – Office equipment is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	No - sector guidance does not have a recommendation for this emission source.	No – employees are not accountable for procuring office equipment, as this responsibility lies within the formal purchasing process.	Office equipment should be included in the inventory because of the influence of Cassava, and risk.
Purchase of goods and services – Purchase of operational consumables	Yes- these emissions do form more than 1% of the overall indirect emissions.	Yes -_ Cassava can influence suppliers as there are some possibilities for switching to other suppliers	Yes- climate change-related events such as flooding pose a risk of supply chain disruptions, which could impact Cassava’s ability to secure the	No – Cassava’s stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – Operational consumables is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-	No - sector guidance does not have a recommendation for this emission source.	No – Employees are not responsible for procuring operational consumables, as this is managed through the formal procurement	Operational consumables should be included in the inventory because of the size, influence of Cassava and risk.

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
(batteries, cables, cement, fibre, tyres, wood poles, tools)		or operational consumables with lower emissions.	necessary goods for its operations, potentially affecting business continuity.		house by other companies in the ICT sector.		process, which includes supplier assessments and the use of preferred suppliers.	
Purchase of goods and services – Purchase of ICT equipment (network equipment, toners, printer, monitor, server)	Yes- these emissions do form more than 1% of the overall indirect emissions.	Yes - Cassava can influence suppliers as there are some possibilities for switching to other suppliers of ICT equipment with lower emissions.	Yes- risk of supply chain disruptions from climate change related events such as flooding, heat waves or other extreme weather events can disrupt Cassavas supply chain for the ICT equipment that can negatively impact Cassava’s daily business activities.	No – Cassava’s stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – ICT equipment is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	Yes – ICT sector guidance <sup>5</sup> is applicable and recommends that ICT equipment and services are included and can influence their business services.	No – employees are not responsible for procuring ICT equipment, as this is managed through the formal procurement process, which includes supplier assessments and the use of preferred suppliers.	ICT equipment should be included in the inventory because of the size, influence of Cassava, risk and sector guidance.
Purchase of goods and services – Purchase of Solar equipment	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes - Cassava can influence suppliers as there are some possibilities for switching to other suppliers	Yes- risk of electricity disruptions provided from solar equipment can result from climate change related events such as extreme storms,	No – Cassava’s stakeholders do not specifically require the emission source to be included in their GHG inventory.	No –Solar equipment is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-	No - sector guidance does not have a recommendation for this emission source.	No – employees are not responsible for procurement of solar equipment.	Solar equipment should be included in the inventory because of the influence of Cassava and risk.

<sup>5</sup> Available at: <https://ghgprotocol.org/sites/default/files/2023-03/GHGP-ICTSG%20-%20ALL%20Chapters.pdf>

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
		of solar equipment.	hail or other extreme weather events that can disrupt Cassavas electricity supply can negatively impact Cassava's daily business activities as well as their emission reduction goals.		house by other companies in the ICT sector.			
Purchase of capital goods – ICT equipment (laptops)	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes - Cassava can influence suppliers as there are some possibilities for switching suppliers of ICT equipment with lower emissions.	Yes- risk of supply chain disruptions from climate change related events such as flooding, heat waves or other extreme weather events can disrupt Cassavas supply chain for the ICT equipment that can negatively impact Cassava's daily business activities.	No – Cassava's stakeholders do not specifically require the emission source to be included in their GHG inventory.	No –ICT equipment is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	Yes – ICT sector guidance <sup>6</sup> is applicable and recommends that ICT equipment and services are included and can influence their business services.	No – general employees are not responsible for procuring solar equipment, as this is managed through the formal procurement process, which includes supplier assessments and the use of preferred suppliers.	ICT equipment should be included in the inventory because of the influence of Cassava, risk and sector guidance.
Purchase of capital goods – operational assets	Yes- these emissions do form more than 1% of the overall	Yes - Cassava can influence suppliers as there are some	Yes- climate change related events such as flooding, heat waves or other	No – Cassava's stakeholders do not specifically require the emission source	No –operational assets is not an outsourced activity previously performed in-	No - sector guidance does not have a recommendation for this	No – employees are not responsible for procuring operational assets	Operational assets should be included in the inventory because of the

<sup>6</sup> Available at: <https://ghgprotocol.org/sites/default/files/2023-03/GHGP-ICTSG%20-%20ALL%20Chapters.pdf>

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
(vehicles, generator, inverter, solar power station, UPS)	indirect emissions.	possibilities for switching to other suppliers of operational assets with lower emissions.	extreme weather events can incapacitate Cassavas operational assets that can negatively impact Cassava's daily business activities.	to be included in their GHG inventory.	house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	emission source.	or capital goods, as these are managed by senior management through the formal procurement process, which includes supplier assessments and the use of preferred suppliers.	size, influence of Cassava and risk.
Fuel- & Energy-Related Activities of purchased electricity (grid electricity, diesel, Solar)	Yes- these emissions do form more than 1% of the overall indirect emissions.	No – Cassava has no level of influence on the purchase of electricity as it is supplied by a utility company.	Yes- risk of supply chain disruptions from climate change related events such as flooding and high wind speeds, can disrupt Cassava's supply chain for electricity supply that can negatively impact Cassava's business activities.	Yes – Cassava's stakeholders do require the emission source to be included in Cassava's GHG inventory.	No - Electricity is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	Yes - sector guidance does recommend for this emission source to be included.	Yes – Campaigns to use less electricity can be implemented for Cassava's employees through employee engagement.	Yes, it should be included based on size, risk, stakeholders, sector guidance and employee engagement.
Fuel- and Energy-related activities of stationary combustion (diesel, petrol)	No- these emissions do not form more than 1% of the overall indirect emissions.	No – Cassava has no direct level of influence.	Yes- risk of electricity disruptions from climate change related events such as flooding and high wind speeds, can disrupt Cassava's supply	Yes – Cassava's stakeholders do require the emission source to be included in Cassava's GHG inventory.	No – stationary combustion is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-	No - sector guidance does not have a recommendation for this emission source.	No – No, employees are not responsible for the procurement of fuel, as this is managed through the formal	Yes, it should be included based on risk and stakeholders.

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
			chain for electricity supply which increased the need for the use of generators. If a generator or fuel is not available, it can negatively impact Cassava's business activities.		house by other companies in the ICT sector.		procurement process	
Fuel- and Energy-related activities of mobile combustion (petrol, diesel)	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes- Cassava has a moderate level of influence over this emission source, as fuel consumption by company vehicles and mobile equipment can be managed through operational decisions, such as optimising fleet management and implementing fuel-efficient practices.	Yes, mobile combustion is relevant to Cassava's GHG inventory. The risk associated with this emission source is moderate, as fluctuations in fuel prices, regulatory changes, or the adoption of more stringent emissions standards could affect operational costs and emissions management	Yes – Cassava's stakeholders do require the emission source to be included in Cassava's GHG inventory	No – mobile combustion is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	No - sector guidance does not have a recommendation for this emission source.	Yes – Campaigns to use less fuel in vehicles can be implemented for Cassava's employees through employee engagement.	Yes, it should be included based on influence, stakeholders, risk and employee engagement.

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
Upstream Transportation & Distribution	No- these emissions do not form more than 1% of the overall indirect emissions.	No – Cassava has no direct level of influence.	Yes- risk of supply chain disruptions from climate change related events such as flooding can disrupt Cassava’s business activities.	No – Cassava’s stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – upstream transportation & distribution is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	No - sector guidance does not have a recommendation for this emission source.	No – employees are not responsible for transportation & distribution.	Yes, it should be included based on risk.
Waste generated in operation – Waste Sent to Landfill (waste treatment, composting waste, plastic waste, paper waste, food waste sent to landfill)	Yes- these emissions do form more than 1% of the overall indirect emissions.	Yes – Cassava has a level of influence on the waste sent to landfill as they can limit the amount sent to landfill and increase recycling practices.	Yes- risk of supply chain disruptions from climate change related events such as flooding, can disrupt Cassava’s supply chain for waste sent to landfill that can negatively impact Cassava’s employee health.	Yes – Cassava’s stakeholders require the emission source to be included in their GHG inventory.	No – waste sent to landfill is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	No - sector guidance does not have a recommendation for this emission source.	Yes – Campaigns to use reduce waste sent to landfill and to make use of recycling can be implemented for Cassava’s employees through employee engagement.	Yes, it should be included based on size, Cassava’s influence, stakeholders, risk and employee engagement.
Waste generated in operation – Other waste disposal (e-	No- these emissions do not form more than 1% of the overall	Yes – Cassava has a level of influence on the waste disposed as	Yes- risk of supply chain disruptions from climate change related events such as flooding, can	No – Cassava’s stakeholders do not specifically require the emission source to be included in	No – waste disposal is not an outsourced activity previously performed in-house nor is it an	No - sector guidance does not have a recommendation for this	Yes – Campaigns to use reduce waste and to make use of recycling can be implemented for	Yes, it should be included based on Cassava’s influence, risk

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
waste disposed, hazardous wate)	indirect emissions.	the waste can be limited and recycling practices can increase.	disrupt Cassava's supply chain for waste disposal that can negatively impact Cassava's employee health.	their GHG inventory.	activity that is typically performed in-house by other companies in the ICT sector.	emission source.	Cassava's employees through employee engagement.	and employee engagement.
Waste generated in operation – Waste Recycled	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes – Cassava has a level of influence on the recycled waste as Cassava can increase recycling practices.	Yes- risk of supply chain disruptions from climate change related events such as flooding, can disrupt Cassava's supply chain for recycled waste can negatively impact Cassava's employee health.	No – Cassava's stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – waste disposal is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	No - sector guidance does not have a recommendation for this emission source.	Yes – Campaigns to increase recycling can be implemented for Cassava's employees through employee engagement.	Yes, it should be included based on Cassava's influence, risk and employee engagement.
Business travel – travel claims	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes – Cassava has a level of influence on the travel as they can choose different suppliers for travel.	Yes- risk of supply chain disruptions from climate change related events such as flooding, can disrupt Cassava's travel plans and increase costs of travel.	No – Cassava's stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – business travel is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	No - sector guidance does not have a recommendation for this emission source.	No –employees are not responsible for booking transportation for business travel, as this is managed through the designated travel booking process.	Yes, it should be included based on Cassava's influence and risk.
Business travel – flights, sea, rail travel	Yes- these emissions do form more than 1% of the overall	Yes – Cassava has a level of influence on the flights, sea	Yes- risk of supply chain disruptions from climate change related events such as	No – Cassava's stakeholders do not specifically require the emission source	No – business travel is not an outsourced activity previously performed in-	No - sector guidance does not have a recommendation for this	No –employees are not responsible for booking transportation for	Yes, it should be included based on Cassava's



Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
	indirect emissions.	travel and rail travel as they can choose different suppliers and lower emission flights, sea and rail travel.	flooding, can disrupt Cassava's travel plans and increase costs of travel.	to be included in their GHG inventory.	house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	emission source.	business travel, as this is managed through the designated travel booking process.	influence and risk.
Business travel – rentals	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes – Cassava has a level of influence on the rentals as they can choose different suppliers.	Yes- risk of supply chain disruptions from climate change related events such as flooding, can disrupt Cassava's travel plans and increase costs of travel.	No – Cassava's stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – business travel is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	No - sector guidance does not have a recommendation for this emission source.	No –employees are not responsible for booking transportation for business travel, as this is managed through the designated travel booking process.	Yes, it should be included based on Cassava's influence and risk.
Business travel – accommodation	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes – Cassava has a level of influence on the accommodation as they can choose different suppliers.	Yes- risk of supply chain disruptions from climate change related events such as flooding, can disrupt Cassava's travel plans and increase costs of travel.	No – Cassava's stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – business travel is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT sector.	No - sector guidance does not have a recommendation for this emission source.	No –employees are not responsible for booking accommodation for business travel, as this is managed through the designated travel booking process.	Yes, it should be included based on Cassava's influence and risk.
Employee commuting (personal)	Yes- these emissions do form more	No – Cassava has no level of influence on	Yes- risk change related events such as extreme weather	No – Cassava's stakeholders do not specifically	No – employee commuting is not an outsourced	No - sector guidance does not have a	Yes, campaigns can be implemented to	This emission source should be included

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
transport, public transport, mixed transport, green transport)	than 1% of the overall indirect emissions.	employee commuting.	events can disrupt employees commuting to work, putting them in danger.	require the emission source to be included in their GHG inventory.	activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT.	recommendation for this emission source.	encourage carpooling or arrange for a shuttle service.	based on size, risk, and employee engagement.
Upstream Leased assets - Utilities	Yes- these emissions do form more than 1% of the overall indirect emissions.	No -Cassava does not have direct influence if the utilities are included in their rental agreement.	Yes- risk of utility disruptions from climate change related events such as flooding can disrupt Cassava's business activities.	No – Cassava's stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – utilities is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT.	No - sector guidance does not have a recommendation for this emission source	No – employees are not responsible for procurement of utilities.	This emission source should be included based on size and risk.
Upstream Leased assets – Upstream Fuels	No- these emissions do not form more than 1% of the overall indirect emissions.	No – due to loadshedding or power disruptions at rental properties the use of generator is needed but the generator is controlled by the landlord and Cassava does not have	Yes- risk of supply chain disruptions from climate change related events such as flooding, can disrupt fuel procurement and negatively influence Cassavas daily operations if loadshedding occurs.	No – Cassava's stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – upstream fuels are not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT.	No - sector guidance does not have a recommendation for this emission source	No – employees are not responsible for procurement of fuel.	Upstream Fuels should be included based on risk.

Source of indirect emissions	Relevance criteria							Recommendation
	Size	Influence	Risk	Stakeholders	Outsourcing	Sector guidance	Other (Employee Engagement)	
		influence over it.						
Downstream Transportation and Distribution	No- these emissions do not form more than 1% of the overall indirect emissions.	Yes – Cassava can choose alternative courier companies as well as alternative transport companies.	Yes - risk of supply chain disruptions from climate change related events from extreme weather events can disrupt downstream transportation and distribution resulting in Casava not being able to deliver services to their clients.	No – Cassava’s stakeholders do not specifically require the emission source to be included in their GHG inventory.	No – upstream fuels is not an outsourced activity previously performed in-house nor is it an activity that is typically performed in-house by other companies in the ICT.	No - sector guidance does not have a recommendation for this emission source	No – employees are not responsible for downstream transportation and distribution decisions.	Downstream Transportation and Distribution should be included based on influence and risk.

## Appendix 3: Cassava Operational Environmental Data

Table 15: General Facilities Activity Data

Location	Grid Electricity consumed <sup>7</sup> (kWh)	Renewable energy generated <sup>7</sup> (kWh)	Total Fuel consumption - Diesel (KI)	Total Fuel consumption - Petrol (KI)	Municipal water consumption (kl)	General waste sent to landfill (tonnes)	General Waste recycled (tonnes)	E-waste sent to landfill (tonnes)	E-Waste recycled (tonnes)	Hazardous waste sent to landfill (tonnes)
LIT SA	13 180 106	1 080 109	289.72	292.53	31 972.14	13.86	10.66	-	26.84	-
LIT RoA	4 006 129	-	769.32	258.06	3 843.55	1 061.78	4 460.32	0.01	3.52	1 180.00
Zimbabwe	751 720	-	310.05	21.27	2 056.26	1 055.78	4 460.00	-	-	1 180.00
Zambia	188 894	-	225.35	54.82	135.36	0.79	-	0.01	-	-
Botswana	61 495	-	20.51	6.79	177.19	0.39	-	-	-	-
DRC	801 432	-	51.96	40.29	-	3.64	-	-	-	-
Kenya	390 631	-	85.76	50.70	116.00	-	0.32	-	-	-
Uganda	490 770	-	15.58	31.75	1 096.93	0.64	-	-	3.52	-
Rwanda	902 203	-	34.93	-	3.42	-	-	-	-	-
Tanzania	258 263	-	14.94	13.82	13.40	0.55	-	-	-	-
Zanzibar	160 721	-	10.25	24.25	245.00	-	-	-	-	-
South Sudan	-	-	-	14.38	-	-	-	-	-	-
Nigeria	-	-	-	-	-	-	-	-	-	-
Egypt	-	-	-	-	-	-	-	-	-	-
ADC Group	129 027 164	3 141 714	320.22	-	8 797.51	25.85	30.72	-	-	0.13
ADC - SA	114 173 449	1 576 845	320.22	-	6 730.87	17.50	10.62	-	-	-
ADC - Kenya	13 756 860	1 564 870	-	-	1 541.91	4.79	0.80	-	-	-

<sup>7</sup> Please note that these values have been rounded to the nearest whole number

Location	Grid Electricity consumed <sup>7</sup> (kWh)	Renewable energy generated <sup>7</sup> (kWh)	Total Fuel consumption - Diesel (KI)	Total Fuel consumption - Petrol (KI)	Municipal water consumption (kl)	General waste sent to landfill (tonnes)	General Waste recycled (tonnes)	E-waste sent to landfill (tonnes)	E-Waste recycled (tonnes)	Hazardous waste sent to landfill (tonnes)
ADC - Nigeria	1 096 855	-	-	-	524.73	3.55	19.29	-	-	0.13
Sasai/TPS	40 027	-	0.10	-	2 295.24	-	-	-	3.48	-
Corporate	454 398	-	-	3.07	9 031.81	75.81	0.30	0.004	-	-
UK	358 223	-	-	-	5 160.96	0.74	0.30	0.004	-	-
Mauritius	33 775	-	-	3.07	3 225.60	74.59	-	-	-	-
UAE	62 400	-	-	-	645.25	0.48	-	-	-	-

**Table 16: PoP Sites Activity Data**

Location	Grid Electricity consumed (kWh)	Renewable energy generated (kWh)	Total Fuel consumption - Diesel (KI)
LIT SA	-	-	-
LIT RoA	1 406 733.19	2 304.00	311.04
Zimbabwe	15 284.88	-	16.08
Zambia	15 462.01	-	175.23
Botswana	58 236.00	2 304.00	1.92
DRC	864 761.00	-	112.81
Kenya	-	-	-
Uganda	-	-	-
Rwanda	401 432.50	-	4.28
Tanzania	-	-	-
Zanzibar	51 556.80	-	0.72
South Sudan	-	-	-
Nigeria	-	-	-
Egypt	-	-	-
ADC Group	N/A	N/A	N/A
ADC - SA	N/A	N/A	N/A
ADC - Kenya	N/A	N/A	N/A
ADC - Nigeria	N/A	N/A	N/A
Sasai/TPS	N/A	N/A	N/A

Location	Grid Electricity consumed (kWh)	Renewable energy generated (kWh)	Total Fuel consumption - Diesel (kl)
Corporate	N/A	N/A	N/A
UK	N/A	N/A	N/A
Mauritius	N/A	N/A	N/A
UAE	N/A	N/A	N/A

## Appendix 4: Emission Factors, Conversion Factors & Assumptions

Item	Value	Unit	Source
<b>SCOPE 1 - EMISSION FACTORS</b>			
Stationary Diesel Combustion - Global	0.00264	tCO <sub>2</sub> e/Litre	Calculated
Stationary Diesel Combustion - South Africa	0.00266	tCO <sub>2</sub> e/Litre	Calculated
Stationary Petrol Combustion - Global	0.00226	tCO <sub>2</sub> e/Litre	Calculated
Stationary Petrol Combustion - South Africa	0.00236	tCO <sub>2</sub> e/Litre	Calculated
Combustion of Diesel (Mobile Fuel) - Global	0.00293	tCO <sub>2</sub> e/Litre	Calculated
Combustion of Diesel (Mobile Fuel) - South Africa	0.00295	tCO <sub>2</sub> e/Litre	Calculated
Combustion of Petrol (Mobile Fuel) - Global	0.00231	tCO <sub>2</sub> e/Litre	Calculated
Combustion of Petrol (Mobile Fuel) - South Africa	0.00241	tCO <sub>2</sub> e/Litre	Calculated
R22 Refrigerant	1 760	tCO <sub>2</sub> e/tonne	DEFRA GHG conversion factors 2024 - 'Refrigerant & other' tab
R410A Refrigerant	1 924	tCO <sub>2</sub> e/tonne	DEFRA GHG conversion factors 2024 - 'Refrigerant & other' tab
R407c Refrigerant	1 624	tCO <sub>2</sub> e/tonne	DEFRA GHG conversion factors 2024 - 'Refrigerant & other' tab
R134a Refrigerant	1 300	tCO <sub>2</sub> e/tonne	DEFRA GHG conversion factors 2024 - 'Refrigerant & other' tab
<b>SCOPE 2 - EMISSION FACTORS</b>			
<b>GRID EMISSION FACTORS</b>			
South Africa - GEF	1.06	tCO <sub>2</sub> e/MWh	Eskom Calculated emission factor - Factor 2 on page 122 of Annual Integrated Report 2024 <a href="https://www.eskom.co.za/wp-content/uploads/2024/12/Eskom-integrated-report-2024.pdf">https://www.eskom.co.za/wp-content/uploads/2024/12/Eskom-integrated-report-2024.pdf</a>
Kenya - GEF	0.5	tCO <sub>2</sub> e/MWh	BI-ANNUAL ENERGY AND PETROLEUM STATISTICS REPORT FINANCIAL YEAR 2023/2024 pg 20. <a href="https://www.epra.go.ke/sites/default/files/2025-02/EPRA%20Statistics%20Report%20-%20January%20-%20December%202023.pdf">https://www.epra.go.ke/sites/default/files/2025-02/EPRA%20Statistics%20Report%20-%20January%20-%20December%202023.pdf</a>

Item	Value	Unit	Source
Uganda - GEF	0.61	tCO <sub>2</sub> e/MWh	UGA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Rwanda - GEF	0.66	tCO <sub>2</sub> e/MWh	RWA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
South Sudan - GEF	0.62	tCO <sub>2</sub> e/MWh	SSD_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Tanzania - GEF	0.51	tCO <sub>2</sub> e/MWh	TZA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Zanzibar - GEF	0.51	tCO <sub>2</sub> e/MWh	Assume Same as Tanzania
Botswana - GEF	1.79	tCO <sub>2</sub> e/MWh	BWA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Democratic Republic of Congo - GEF	-	tCO <sub>2</sub> e/MWh	COD_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Zambia - GEF	1.00	tCO <sub>2</sub> e/MWh	ZMB_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Zimbabwe - GEF	0.36	tCO <sub>2</sub> e/MWh	ZWE_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Nigeria - GEF	0.55	tCO <sub>2</sub> e/MWh	NGA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
UK - GEF	0.21	tCO <sub>2</sub> e/MWh	DEFRA GHG conversion factors 2024 - 'UK Electricity' tab
Mauritius - GEF	0.90	tCO <sub>2</sub> e/MWh	MUS_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
UAE - GEF	0.44	tCO <sub>2</sub> e/MWh	ARE_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Egypt - GEF	0.53	tCO <sub>2</sub> e/MWh	EGY_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
<b>RENEWABLE ENERGY EMISSION FACTOR</b>			
Renewable Energy	-	tCO <sub>2</sub> e/MWh	
<b>SCOPE 3 - EMISSION FACTORS</b>			
<b>3.1 PURCHASED GOODS AND SERVICES &amp; 3.2 CAPITAL GOODS</b>			
Water Consumption	0.000153	tCO <sub>2</sub> e/kilolitre	DEFRA GHG conversion factors 2024 - 'Water Supply' tab



Item	Value	Unit	Source
IT Equipment (Dell)	0.000002	tCO <sub>2</sub> e/USD	Calculated by dividing the total scope 1 + 2 emissions of a major computer manufacturer (Dell) by their total revenue to get an estimate emissions per revenue
IT Components (Intel)	0.000016	tCO <sub>2</sub> e/USD	Calculated by dividing the total scope 1 + 2 emissions of a major computer component manufacturer (Intel) by their total revenue to get an estimate emissions per revenue
Wood Products	0.000562	tCO <sub>2</sub> e/USD	DEFRA GHG conversion factors 2024 - 'Material Use' tab - Assumed Primary Material Production of Wood
Cement Products	0.006401	tCO <sub>2</sub> e/USD	Calculated by dividing the total scope 1 + 2 emissions of a major Cement manufacturer (PPC Cement) by their total revenue to get an estimate emissions per revenue
Purchased Paper (Sappi)	0.000001	tCO <sub>2</sub> e/USD	Calculated using the emissions intensity figure provided by Sappi 2024 sustainability report in kgCO <sub>2</sub> e/million USD and converted to tCO <sub>2</sub> e/USD <a href="https://cdn-s3.sappi.com/s3fs-public/2024-Sappi-Group-Sustainability-Report-Final-7.pdf">https://cdn-s3.sappi.com/s3fs-public/2024-Sappi-Group-Sustainability-Report-Final-7.pdf</a>
UPS Emission Intensity	0.000003	tCO <sub>2</sub> e/USD	Calculated by dividing the total scope 1 + 2 emissions of a major UPS manufacturer (Schneider Electric) by their total revenue to get an estimate emissions per revenue
Server Emission Intensity	0.000003	tCO <sub>2</sub> e/USD	Assumed to be same as UPS as APC (Large Server Racks and cabinet manufacturer) is part of Schneider Electric company
Printers & Toners Emission Intensity (HP)	0.000003	tCO <sub>2</sub> e/USD	p 077 <a href="https://www8.hp.com/h20195/v2/GetPDF.aspx/c08980815.pdf">https://www8.hp.com/h20195/v2/GetPDF.aspx/c08980815.pdf</a>
Air Conditioner Emission Intensity (LG)	0.000136	tCO <sub>2</sub> e/USD	p 103 <a href="https://www.lg.com/content/dam/lge/global/sustainability/pdf/2023-2024_LGE_SR(EN).pdf">https://www.lg.com/content/dam/lge/global/sustainability/pdf/2023-2024_LGE_SR(EN).pdf</a>
Vehicle Emission Intensity	0.000047	tCO <sub>2</sub> e/USD	Calculated by dividing the total scope 1 + 2 emissions of a major Vehicle manufacturer (Toyota) by their total revenue to get an estimate emissions per revenue
Optic Fibre Emissions Intensity	0.000004	tCO <sub>2</sub> e/USD	Calculated Using the average price per metre of ADSS cable and the carbon footprint value for optic fibre cable
Tools Emission Intensity	0.000406	tCO <sub>2</sub> e/USD	Calculated by dividing the total scope 1 + 2 emissions of a major Tools manufacturer (Stanley Black & Decker) by their total revenue to get an estimate emissions per revenue

Item	Value	Unit	Source
Generators Emission Intensity	0.000021	tCO <sub>2</sub> e/USD	Calculated by dividing the total scope 1 + 2 emissions of a major Generator manufacturer (Cummins) by their total revenue to get an estimate emissions per revenue
Furniture Emission Intensity	0.000027	tCO <sub>2</sub> e/USD	Calculated by dividing the total scope 1 + 2 emissions of a major Office Furniture manufacturer (Steelcase) by their total revenue to get an estimate emissions per revenue
Solar & Inverter Emission Intensity	0.000018	tCO <sub>2</sub> e/USD	Question 7.53.2.80 <a href="https://knowledge-center.solaredge.com/sites/kc/files/se-solaredge-cdp-corporate-questionnaire.pdf">https://knowledge-center.solaredge.com/sites/kc/files/se-solaredge-cdp-corporate-questionnaire.pdf</a>
Batteries Emission Intensity	0.000007	tCO <sub>2</sub> e/USD	Calculated using the emissions intensity figure provided by Bosch sustainability report in tCO <sub>2</sub> e/million Euro and converted to tCO <sub>2</sub> e/USD
Network Equipment (Cisco)	0.0000028	tCO <sub>2</sub> e/USD	<a href="https://www.cisco.com/c/dam/m/en_us/about/csr/esg-hub/_pdf/2023-Cisco-CDP-Climate-Change-Response.pdf">https://www.cisco.com/c/dam/m/en_us/about/csr/esg-hub/_pdf/2023-Cisco-CDP-Climate-Change-Response.pdf</a>
Purchased Water	0.000791	tCO <sub>2</sub> e/USD	Calculated
Vehicle Emissions per Unit	0.610000	tCO <sub>2</sub> e/unit	p 52 <a href="https://global.toyota/pages/global_toyota/sustainability/report/sdb/sdb24_en.pdf">https://global.toyota/pages/global_toyota/sustainability/report/sdb/sdb24_en.pdf</a>
Communication & Energy Cable Emission Intensity	0.000459	tCO <sub>2</sub> e/USD	Emission Factor: Communication and energy wire and cable   Equipment   Electrical Equipment   United States of America (the)   Climatiq
Average Smartphone Emissions Intensity	0.000690	tCO <sub>2</sub> e/USD	Calculated
<b>3.3 FUEL AND ENERGY RELATED ACTIVITIES</b>			
<b>TRANSMISSION &amp; DISTRIBUTION LOSSES</b>			
South Africa - T&D Factor	0.14	tCO <sub>2</sub> e/MWh	Calculated
South African T&D Losses	0.1194	-	<a href="https://www.eskom.co.za/wp-content/uploads/2024/12/Eskom-integrated-report-2024.pdf">https://www.eskom.co.za/wp-content/uploads/2024/12/Eskom-integrated-report-2024.pdf</a> pg 78
Kenya - T&D Factor	0.11	tCO <sub>2</sub> e/MWh	Calculated
Kenya T&D Losses	0.18		KEN_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Uganda - T&D Factor	0.06	tCO <sub>2</sub> e/MWh	Calculated

Item	Value	Unit	Source
Uganda T&D Losses	0.09	-	UGA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Rwanda - T&D Factor	0.07	tCO <sub>2</sub> e/MWh	Calculated
Rwanda T&D Losses	0.09	-	RWA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
South Sudan - T&D Factor	0.04	tCO <sub>2</sub> e/MWh	Calculated
South Sudan T&D Losses	0.057	-	SSD_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Tanzania - T&D Factor	0.10	tCO <sub>2</sub> e/MWh	Calculated
Tanzania T&D Losses	0.158	-	TZA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Zanzibar - T&D Factor	0.10	tCO <sub>2</sub> e/MWh	Calculated
Zanzibar T&D Losses	0.158	-	Assume Same as Tanzania
Botswana - T&D Factor	0.48	tCO <sub>2</sub> e/MWh	Calculated
Botswana T&D Losses	0.212	-	BWA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Democratic Republic of Congo - T&D Factor	-	tCO <sub>2</sub> e/MWh	Calculated
DRC T&D Losses	0.151	-	COD_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Zambia - T&D Factor	0.21	tCO <sub>2</sub> e/MWh	Calculated
Zambia T&D Losses	0.176	-	ZMB_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Zimbabwe - T&D Factor	0.07	tCO <sub>2</sub> e/MWh	Calculated
Zimbabwe T&D Losses	0.164	-	ZWE_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Nigeria - T&D Factor	0.11	tCO <sub>2</sub> e/MWh	Calculated
Nigeria T&D Losses	0.161	-	NGA_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
UK - T&D Factor	0.02	tCO <sub>2</sub> e/MWh	DEFRA 2024 "Transmission and Distribution" Tab
Mauritius - T&D Factor	0.08	tCO <sub>2</sub> e/MWh	Calculated

Item	Value	Unit	Source
Mauritius T&D Losses	0.080	-	MUS_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
UAE - T&D Factor	0.03	tCO <sub>2</sub> e/MWh	Calculated
UAE T&D Losses	0.068	-	ARE_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
Egypt - T&D Factor	0.07	tCO <sub>2</sub> e/MWh	Calculated
Egypt T&D Losses	0.110	-	EGY_U4E-Country-Saving-Assessment_Jul-22.pdf (united4efficiency.org)
<b>WELL-TO-TANK LOSSES</b>			
WTT Diesel	0.0006	tCO <sub>2</sub> e/Litre	DEFRA GHG conversion factors 2024 - 'WTT - fuels' tab - Diesel (100% mineral)
WTT Petrol	0.00060664	tCO <sub>2</sub> e/Litre	DEFRA GHG conversion factors 2024 - 'WTT - fuels' tab - Petrol (100% mineral)
<b>3.5 WASTE GENERATED IN OPERATIONS</b>			
Waste to Landfill	0.52	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2024 - 'Waste Disposal' tab - Commercial and industrial waste
E-Waste Disposed	0.01	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2024 - 'Waste Disposal' tab - WEEE - mixed
Recyclable Waste	0.01	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2024 - 'Waste Disposal' tab - Assumed Average Plastic Waste
E-Waste Recycled	0.01	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2024 - 'Waste Disposal' tab
Hazardous Waste	0.01	tCO <sub>2</sub> e/tonnes	Assumed to be E-waste disposed after Discussion with Liquid
Recycled Mixed Paper	0.01	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2024 - 'Waste Disposal' tab
Waste to Landfill - Food Waste	0.70	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2024 - 'Waste Disposal' tab
Waste to Landfill - Paper Waste	1.16	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2023 - 'Waste Disposal' tab
Waste to Landfill - Plastic Waste	0.01	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2024 - 'Waste Disposal' tab
Waste to Landfill - Mix Paper & Food Waste	0.93	tCO <sub>2</sub> e/tonnes	Calculated
Waste to Landfill - Construction Waste	0.0012	tCO <sub>2</sub> e/tonnes	DEFRA GHG conversion factors 2024 - 'Waste Disposal' tab - Assumed concrete and brick waste
<b>3.6 BUSINESS TRAVEL</b>			

Item	Value	Unit	Source
<b>FLIGHTS</b>			
Domestic UK	0.0003	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
Economy to/from UK (Short-haul)	0.0002	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
Business to/from UK (Short-haul)	0.0003	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
Economy to/from UK (Long-haul)	0.0002	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
Premium Economy to/from UK (long-haul)	0.0003	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
Business to/from UK (Long-haul)	0.0006	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
First to/from UK (Long-haul)	0.0008	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
Economy to/from Non-UK	0.0001	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
Premium Economy to/from Non-UK	0.0002	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
Business to/from Non-UK	0.0004	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
First to/from Non-UK	0.0005	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Air" tab
<b>RAIL</b>			
Rail - Economy Class	0.00001	tCO <sub>2</sub> e/km	What is the Co2 emission factor per kilometer when using Eurostar? - Eurostar Help Centre
Rail - Business Premier	0.00001	tCO <sub>2</sub> e/km	What is the Co2 emission factor per kilometer when using Eurostar? - Eurostar Help Centre
Rail - First Class	0.00004	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - land" & "WTT - pass vehs & travel - land" tab; Assume National Rail
Rail - Standard Class	0.00004	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - land" & "WTT - pass vehs & travel - land" tab; Assume National Rail
<b>RENTAL VEHICLES</b>			
FirstCar Rental - Category A	0.000116	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
FirstCar Rental - Category B	0.000138	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
FirstCar Rental - Category C	0.000137	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
FirstCar Rental - Category D	0.000143	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions

Item	Value	Unit	Source
FirstCar Rental - Category E	0.000171	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
FirstCar Rental - Category K	0.000169	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
FirstCar Rental - Category N	0.000145	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
FirstCar Rental - Category R	0.000129	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
FirstCar Rental - Category U	0.000164	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category A	0.000101	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category B	0.000130	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category C	0.000144	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category D	0.000115	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category F	0.000143	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category H	0.000147	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category I	0.000195	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category K	0.000167	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category L	0.000184	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category M	0.000155	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
AVIS - Category N	0.000190	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions

Item	Value	Unit	Source
AVIS - Category O	0.000152	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
Bluu - Category K	0.000128	tCO <sub>2</sub> e/km	Received from Liquid in LIT SA & ADC Business travel data - Company specific emissions
Europcar - Category A	0.000101	tCO <sub>2</sub> e/km	Assumed to be Toyota Vitz ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - Toyota-Vitz.pdf
Europcar - Category B	0.000135	tCO <sub>2</sub> e/km	Assumed to be VW Polo Vivo ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - <a href="https://www.google.com/url?sa=t&amp;rct=j&amp;q=&amp;esrc=s&amp;source=web&amp;cd=&amp;ved=2ahUKEwj-2piatsuNAXmZ0EAHSCWOyWQFnoECBoQAQ&amp;url=https%3A%2F%2Fwww.vw.co.za%2Fidhub%2Fcontent%2Fdam%2Fonehub_pkw%2Fimporters%2Fza%2Fbrochures%2Fpv%2F2023-pv-desktop-brochure%2Fpolo_vivo_specsheet.pdf&amp;usq=AOvVaw0JGvVQI85H29MXPBPyouAu&amp;opi=89978449">https://www.google.com/url?sa=t&amp;rct=j&amp;q=&amp;esrc=s&amp;source=web&amp;cd=&amp;ved=2ahUKEwj-2piatsuNAXmZ0EAHSCWOyWQFnoECBoQAQ&amp;url=https%3A%2F%2Fwww.vw.co.za%2Fidhub%2Fcontent%2Fdam%2Fonehub_pkw%2Fimporters%2Fza%2Fbrochures%2Fpv%2F2023-pv-desktop-brochure%2Fpolo_vivo_specsheet.pdf&amp;usq=AOvVaw0JGvVQI85H29MXPBPyouAu&amp;opi=89978449</a>
Europcar - Category C	0.000158	tCO <sub>2</sub> e/km	Assumed to be Toyota Corolla Quest ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - Corolla_Quest_Brochure.pdf
Europcar - Category D	0.000129	tCO <sub>2</sub> e/km	Assumed to be Toyota Staria ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - Toyota-Starlet.pdf
Europcar - Category E	0.000189	tCO <sub>2</sub> e/km	Assumed to be Hyundai Staria ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - <a href="https://cdn.hyundai.co.za/Hyundai_STARIA_8pg_Brochure_Incl_Multicab_F_WEB_pdf_1668432512.pdf">https://cdn.hyundai.co.za/Hyundai_STARIA_8pg_Brochure_Incl_Multicab_F_WEB_pdf_1668432512.pdf</a>
Europcar - Category F	0.000158	tCO <sub>2</sub> e/km	Assumed to be TOYOTA COROLLA QUEST ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - <a href="https://freewaytoyota.co.za/site/wp-content/uploads/2021/01/Corolla_Quest_Brochure.pdf">https://freewaytoyota.co.za/site/wp-content/uploads/2021/01/Corolla_Quest_Brochure.pdf</a>
Europcar - Category H	0.000156	tCO <sub>2</sub> e/km	Assumed to be VW T-Roc ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - <a href="https://www.google.com/url?sa=t&amp;rct=j&amp;q=&amp;esrc=s&amp;source=web&amp;cd=&amp;ved=2ahUKEwjfqJ-3t8uNAXUHUKAEHUwRID0QFnoECB0QAQ&amp;url=https%3A%2F%2Fwww.vw.co.za%2Fidhub%2Fcontent%2Fdam%2Fonehub_pkw%2Fimporters%2Fza%2Fbrochures%2Fpv%2F2023-pv-desktop-brochure%2Ft-roc_specsheet.pdf&amp;usq=AOvVaw0JGvVQI85H29MXPBPyouAu&amp;opi=89978449">https://www.google.com/url?sa=t&amp;rct=j&amp;q=&amp;esrc=s&amp;source=web&amp;cd=&amp;ved=2ahUKEwjfqJ-3t8uNAXUHUKAEHUwRID0QFnoECB0QAQ&amp;url=https%3A%2F%2Fwww.vw.co.za%2Fidhub%2Fcontent%2Fdam%2Fonehub_pkw%2Fimporters%2Fza%2Fbrochures%2Fpv%2F2023-pv-desktop-brochure%2Ft-roc_specsheet.pdf&amp;usq=AOvVaw0JGvVQI85H29MXPBPyouAu&amp;opi=89978449</a>

Item	Value	Unit	Source
			2Fwww.vw.co.za%2Fidhub%2Fcontent%2Fdam%2Fonehub_pkw%2Fimporters%2Fza%2Fbrochures%2Fpv%2F2023-pv-desktop-brochure%2Ft_roc_specsheet.pdf&usg=AOvVaw0kajiY6HxL725CuUswrtF&opi=89978449
Europcar - Category M	0.000145	tCO <sub>2</sub> e/km	Assumed to be Toyota Urban Cruiser ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - Urban-Cruiser.pdf
Europcar - Category N	0.000195	tCO <sub>2</sub> e/km	Assumed to be Toyota Fortuner ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - Fortuner_spec_sheet.pdf
Europcar - Category O	0.000133	tCO <sub>2</sub> e/km	Assumed to be Mercedes-Benz C-Class C180 ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - Mercedes-Benz C-Class C180 - 2023 Green NCAP Datasheet
Europcar - Category S	0.000128	tCO <sub>2</sub> e/km	Assumed to be VW Polo TSI ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - <a href="https://www.google.com/url?sa=t&amp;rct=j&amp;q=&amp;esrc=s&amp;source=web&amp;cd=&amp;ved=2ahUKEwj2voj_uMuNAxUmYEEAHQ6UCa4QFnoECBgQAQ&amp;url=https%3A%2F%2Fwww.vw.co.za%2Fidhub%2Fcontent%2Fdam%2Fonehub_pkw%2Fimporters%2Fza%2Fbrochures%2Fpv%2F2023-pv-desktop-brochure%2Fpolo_specsheet.pdf&amp;usg=AOvVaw0_eZk_8SIRqzABlpmKIHx6&amp;opi=89978449">https://www.google.com/url?sa=t&amp;rct=j&amp;q=&amp;esrc=s&amp;source=web&amp;cd=&amp;ved=2ahUKEwj2voj_uMuNAxUmYEEAHQ6UCa4QFnoECBgQAQ&amp;url=https%3A%2F%2Fwww.vw.co.za%2Fidhub%2Fcontent%2Fdam%2Fonehub_pkw%2Fimporters%2Fza%2Fbrochures%2Fpv%2F2023-pv-desktop-brochure%2Fpolo_specsheet.pdf&amp;usg=AOvVaw0_eZk_8SIRqzABlpmKIHx6&amp;opi=89978449</a>
Europcar - Category T	0.000138	tCO <sub>2</sub> e/km	Assumed to be KIA Picanto ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - picanto-specification.pdf
Europcar - Category W	0.000260	tCO <sub>2</sub> e/km	Assumed to be Toyota Hilux ( <a href="https://www.europcar.co.za/our-fleet">https://www.europcar.co.za/our-fleet</a> ) - Microsoft Word - 220419M - Hilux full release
Rental Vehicle - Bajaji	0.002000	tCO <sub>2</sub> e/km	Calculated
Rental Vehicle - Business Class	0.000266	tCO <sub>2</sub> e/km	Assume Average Petrol Vehicle from DEFRA Conversion factors 2024 - 'Business Travel - Land' & 'WTT - pass Vehs & travel - land' sheet - Executive Petrol Car
Rental Vehicle - Semi Luxury	0.000409	tCO <sub>2</sub> e/km	Assume Average Petrol Vehicle from DEFRA Conversion factors 2024 - 'Business Travel - Land' & 'WTT - pass Vehs & travel - land' sheet - Luxury Petrol Car



Item	Value	Unit	Source
Rental Vehicle - XL	0.000344	tCO <sub>2</sub> e/km	Assume Average Petrol Vehicle from DEFRA Conversion factors 2024 - 'Business Travel - Land' & 'WTT - pass Vehs & travel - land' sheet - Large Petrol Car
Average Rental Vehicle	0.000166	tCO <sub>2</sub> e/km	Assumed average vehicle - DEFRA 2024 "Business Travel - Land" Tab; Average Unknown Vehicle
Rental Vehicle - Motorbike	0.00014	tCO <sub>2</sub> e/km	DEFRA Conversion Factors 2024 'Business Travel - Land' & 'WTT - pass Vehs & travel - land' sheet - Average Motorbike
<b>FERRY</b>			
Ship - Business Class	0.000138	tCO <sub>2</sub> e/km	Assume Average Ferry from DEFRA Conversion factors 2024 - 'Business Travel - sea' & 'WTT - business travel - sea' sheet - Average (All Passengers)
<b>ACCOMMODATION</b>			
South Africa - Accommodation	0.05	tCO <sub>2</sub> e/night	DEFRA 2024 "Hotel Stay" Tab
South Sudan - Accommodation	0.04	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Botswana - Accommodation	0.05	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Democratic Republic of the Congo - Accommodation	0.02	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Egypt - Accommodation	0.04	tCO <sub>2</sub> e/night	DEFRA 20234"Hotel Stay" Tab
Ethiopia - Accommodation	0.02	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
France - Accommodation	0.01	tCO <sub>2</sub> e/night	DEFRA 2024 "Hotel Stay" Tab
Ivory Coast - Accommodation	0.02	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Italy - Accommodation	0.01	tCO <sub>2</sub> e/night	DEFRA 2022"Hotel Stay" Tab
Kenya - Accommodation	0.02	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Morocco - Accommodation	0.06	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Nigeria - Accommodation	0.03	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Rwanda - Accommodation	0.03	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
UK - Accommodation	0.01	tCO <sub>2</sub> e/night	DEFRA 2024 "Hotel Stay" Tab
United Arab Emirates - Accommodation	0.06	tCO <sub>2</sub> e/night	DEFRA 2024 "Hotel Stay" Tab
USA - Accommodation	0.02	tCO <sub>2</sub> e/night	DEFRA 2024 "Hotel Stay" Tab

Item	Value	Unit	Source
Tanzania - Accommodation	0.04	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Zambia - Accommodation	0.01	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Zimbabwe - Accommodation	0.03	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
India - Accommodation	0.06	tCO <sub>2</sub> e/night	DEFRA 2024 "Hotel Stay" Tab
Jersey - Accommodation	0.03	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Saudi Arabia - Accommodation	0.11	tCO <sub>2</sub> e/night	DEFRA 2024 "Hotel Stay" Tab
Peru - Accommodation	0.02	tCO <sub>2</sub> e/night	<a href="https://www.hotelfootprints.org/">https://www.hotelfootprints.org/</a>
Switzerland - Accommodation	0.01	tCO <sub>2</sub> e/night	DEFRA 2024 "Hotel Stay" Tab
<b>EMPLOYEE CLAIMS</b>			
Travel Claims	0.00016	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Land" Tab; Assume Average petrol Vehicle
<b>3.7 EMPLOYEE COMMUTING</b>			
Employee Commuting - Car (Diesel)	0.00017	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Land" Tab; Average Diesel Vehicle
Employee Commuting - Car (Petrol)	0.00016	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Land" Tab; Average Petrol Vehicle
Employee Commuting - Car (Hybrid)	0.00013	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Land" Tab; Average Hybrid Vehicle
Employee Commuting - Car (Unknown)	0.00017	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Land" Tab; Average Unknown Vehicle
Employee Commuting - Car, train & walk	0.00007	tCO <sub>2</sub> e/km	Calculated
Employee Commuting - Bus	0.00011	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Land" Tab - Average Bus
Employee Commuting - Mix: Bus and Taxi	0.00016	tCO <sub>2</sub> e/km	Calculated
Employee Commuting - Mix: train and bus	0.00007	tCO <sub>2</sub> e/km	Calculated
Employee Commuting - Underground	0.00003	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Land" Tab - Rail London Underground
Employee Commuting - Mix: Train, Bus & Taxi	0.00012	tCO <sub>2</sub> e/km	Calculated

Item	Value	Unit	Source
Employee Commuting - Mix: Underground, Bus/Taxi	0.00011	tCO <sub>2</sub> e/km	Calculated
Employee Commuting - Mix: Car & Train	0.00010	tCO <sub>2</sub> e/km	Calculated
Employee Commuting - Bicycle	-	tCO <sub>2</sub> e/km	
Employee Commuting - Train	0.00004	tCO <sub>2</sub> e/km	DEFRA 2024 "Business Travel - Land" Tab - Rail National Rail
Employee Commuting - Taxi (Toyota Quantum)	0.00002	tCO <sub>2</sub> e/km	Toyota Ses'Fikile Quantum Specifications - <a href="https://www.halfway4ways.co.za/vehicle/toyota-2-5-d-4d-sesfikile-16s">https://www.halfway4ways.co.za/vehicle/toyota-2-5-d-4d-sesfikile-16s</a>
Employee Commuting - Taxi	0.00021	tCO <sub>2</sub> e/km	DEFRA 20234"Business Travel - Land" Tab - Regular Taxi
Employee Commuting - Motorbike	0.00014	tCO <sub>2</sub> e/km	DEFRA Conversion Factors 2024 'Business Travel - Land' & 'WTT - pass Vehs & travel - land' sheet - Average Motorbike
Employee Commuting - Walk	-	tCO <sub>2</sub> e/km	
<b>3.4/3.9 UPSTREAM &amp; DOWNSTREAM TRANSPORTATION AND DISTRIBUTION</b>			
Average Petrol Vehicle - Distance	0.00016	tCO <sub>2</sub> e/km	DEFRA GHG conversion factors 2024 - 'Business travel - land' tab
Average Diesel Vehicle - Distance	0.00017	tCO <sub>2</sub> e/km	DEFRA GHG conversion factors 2024 - 'Business travel - land' tab
Average Van Freighting	0.00078	tCO <sub>2</sub> e/tonne.km	Assume Average Van up to 3.5 tonne from DEFRA Conversion factors 2024 - 'Freighting goods' & 'WTT - delivery vehicles & freight' sheet - Unknown Fuel type
Container Ship	0.00002	tCO <sub>2</sub> e/tonne.km	Assume Average Container Ship from DEFRA Conversion factors 2024 - 'Freighting goods' & 'WTT - delivery vehicles & freight' sheet
Freight Flight (Short-Haul)	0.00187	tCO <sub>2</sub> e/tonne.km	Assume Short-haul, to/from UK flights with RF from DEFRA Conversion factors 2024 - 'Freighting goods' & 'WTT - delivery vehicles s & freight' sheet
Freight Flight (Long-Haul)	0.00123	tCO <sub>2</sub> e/tonne.km	Assume Long-haul, to/from UK flights with RF from DEFRA Conversion factors 2024 - 'Freighting goods' & 'WTT - delivery vehicles & freight' sheet
General Cargo Ship	0.00002	tCO <sub>2</sub> e/tonne.km	Assume Average General Cargo Ship from DEFRA Conversion factors 2024 - 'Freighting goods' & 'WTT - delivery vehicles & freight' sheet

Item	Value	Unit	Source
Heavy Goods Vehicle (All Rigid)	0.00022	tCO <sub>2</sub> e/tonne.km	Assume HGV all Rigid from DEFRA Conversion factors 2024 - 'Freighting goods' & 'WTT - delivery vehicles & freight' sheet - Average Laden
<b>CONSTANTS</b>			
<b>FUEL COMBUSTION DEFAULT EMISSION FACTORS</b>			
Stationary Diesel Combustion - CO2 Emission	74 100	kgCO <sub>2</sub> /TJ	Methodological Guidelines - Annexure A, Table A.1 IPCC Default emissions factors
Stationary Diesel Combustion - CH4 Emission	3	kgCH <sub>4</sub> /TJ	Methodological Guidelines - Annexure A, Table A.1 IPCC Default emissions factors
Stationary Diesel Combustion - N2O Emission	0.6	kgN <sub>2</sub> O/TJ	Methodological Guidelines - Annexure A, Table A.1 IPCC Default emissions factors
Stationary Petrol Combustion - CO2 Emission	69 300	kgCO <sub>2</sub> /TJ	Methodological Guidelines - Annexure A, Table A.1 IPCC Default emissions factors
Stationary Petrol Combustion - CH4 Emission	3	kgCH <sub>4</sub> /TJ	Methodological Guidelines - Annexure A, Table A.1 IPCC Default emissions factors
Stationary Petrol Combustion - N2O Emission	0.6	kgN <sub>2</sub> O/TJ	Methodological Guidelines - Annexure A, Table A.1 IPCC Default emissions factors
Mobile Diesel Combustion - CO2 Emission	74 100	kgCO <sub>2</sub> /TJ	Methodological Guidelines - Annexure A, Table A.2 IPCC Default emissions factors
Mobile Diesel Combustion - CH4 Emission	4.15	kgCH <sub>4</sub> /TJ	Methodological Guidelines - Annexure A, Table A.2 IPCC Default emissions factors
Mobile Diesel Combustion - N2O Emission	28.6	kgN <sub>2</sub> O/TJ	Methodological Guidelines - Annexure A, Table A.2 IPCC Default emissions factors
Mobile Petrol Combustion - CO2 Emission	69 300	kgCO <sub>2</sub> /TJ	Methodological Guidelines - Annexure A, Table A.2 IPCC Default emissions factors
Mobile Petrol Combustion - CH4 Emission	3.5	kgCH <sub>4</sub> /TJ	Methodological Guidelines - Annexure A, Table A.2 IPCC Default emissions factors
Mobile Petrol Combustion - N2O Emission	5.7	kgN <sub>2</sub> O/TJ	Methodological Guidelines - Annexure A, Table A.2 IPCC Default emissions factors
<b>SOUTH AFRICAN SPECIFIC COMBUSTION EMISSION FACTORS</b>			
Diesel Combustion - CO2 Emission	74 638	kgCO <sub>2</sub> /TJ	Methodological Guidelines - Annexure A, Table A.3
Petrol Combustion - CO2 Emission	72 430	kgCO <sub>2</sub> /TJ	Methodological Guidelines - Annexure A, Table A.3

Item	Value	Unit	Source
<b>FUEL COMBUSTION NET CALORIFIC VALUES</b>			
Diesel NCV	35.5	MJ/Litre	Methodological Guidelines - Annexure D, Table D.1
Petrol NCV	32.5	MJ/Litre	Methodological Guidelines - Annexure D, Table D.1
<b>GLOBAL WARMING POTENTIAL</b>			
CO2 GWP	1	kgCO2/kg	Methodological Guidelines - Annexure G
CH4 GWP	23	kgCH4/kg	Methodological Guidelines - Annexure G
N2O GWP	296	kgN2O/kg	Methodological Guidelines - Annexure G
<b>ASSUMPTIONS</b>			
Rand Water Tariff (1 July 2023 - 30 June 2024)	14.6	ZAR/kl	Excluding VAT <a href="https://randwater.co.za/media/forums/presentations/Tariff%20Consultation%20-%202024%20-%202025%20Presentation%20-%20Customers%20and%20Stakeholders.pdf">https://randwater.co.za/media/forums/presentations/Tariff%20Consultation%20-%202024%20-%202025%20Presentation%20-%20Customers%20and%20Stakeholders.pdf</a>
Rand Water Tariff (1 July 2024 - 30 June 2025)	15.3	ZAR/kl	Excluding VAT <a href="https://randwater.co.za/media/forums/presentations/Tariff%20Consultation%20-%202024%20-%202025%20Presentation%20-%20Customers%20and%20Stakeholders.pdf">https://randwater.co.za/media/forums/presentations/Tariff%20Consultation%20-%202024%20-%202025%20Presentation%20-%20Customers%20and%20Stakeholders.pdf</a>
Uganda Purchased Water tariffs	5 168.00	UGX/kl	<a href="https://www.nwsc.co.ug/wp-content/uploads/2024/10/NWSC-TARIFF-BREAKDOWN-2024.pdf">https://www.nwsc.co.ug/wp-content/uploads/2024/10/NWSC-TARIFF-BREAKDOWN-2024.pdf</a>
Bajaji Rental Vehicle Average Consumption	0.20	Litre/km	CASE STUDY   Electric tuk-tuks in Bangkok - Dalberg - Bajaji vehicle is also called TukTuks
Bajaji Rental Vehicle Combustion	10.00	kgCO2e/Litre	CASE STUDY   Electric tuk-tuks in Bangkok - Dalberg - Bajaji vehicle is also called TukTuks
Intel Revenue	54 200 000 000	USD	Intel 2023-24 CSR Report pg. 116 <a href="https://csrreportbuilder.intel.com/pdfbuilder/pdfs/CSR-2023-24-Full-Report.pdf">https://csrreportbuilder.intel.com/pdfbuilder/pdfs/CSR-2023-24-Full-Report.pdf</a>
Intel Scope 1 + 2	893 000	tCO <sub>2</sub> e	Intel 2023-24 CSR Report pg. 108 <a href="https://csrreportbuilder.intel.com/pdfbuilder/pdfs/CSR-2023-24-Full-Report.pdf">https://csrreportbuilder.intel.com/pdfbuilder/pdfs/CSR-2023-24-Full-Report.pdf</a>
Dell Revenue	88 400 000 000	USD	Dell ESG report FY24 on pg. 6 <a href="https://www.dell.com/en-us/dt/corporate/social-impact/esg-resources/reports/fy24-esg-report.htm#pdf-overlay=//www.delltechnologies.com/asset/en-">https://www.dell.com/en-us/dt/corporate/social-impact/esg-resources/reports/fy24-esg-report.htm#pdf-overlay=//www.delltechnologies.com/asset/en-</a>

Item	Value	Unit	Source
			us/solutions/business-solutions/briefs-summaries/delltechnologies-fy24-esg-report.pdf
Dell Scope 1 + 2	172 400	tCO <sub>2</sub> e	Dell ESG report FY24 on pg. 19 <a href="https://www.dell.com/en-us/dt/corporate/social-impact/esg-resources/reports/fy24-esg-report.htm#pdf-overlay=//www.delltechnologies.com/asset/en-us/solutions/business-solutions/briefs-summaries/delltechnologies-fy24-esg-report.pdf">https://www.dell.com/en-us/dt/corporate/social-impact/esg-resources/reports/fy24-esg-report.htm#pdf-overlay=//www.delltechnologies.com/asset/en-us/solutions/business-solutions/briefs-summaries/delltechnologies-fy24-esg-report.pdf</a>
Schneider Electric Revenue	38 153 000 000	Euro	Schneider Electric Full Year 2024 Results pg 1 <a href="https://www.se.com/ww/en/assets/564/document/505646/release-fy-results-2024.pdf?p_enDocType=Financialrelease&amp;p_File_Name=2024FY Results">https://www.se.com/ww/en/assets/564/document/505646/release-fy-results-2024.pdf?p_enDocType=Financialrelease&amp;p_File_Name=2024FY Results</a>
Schneider Electric Scope 1 + 2	143 708	tCO <sub>2</sub> e	Sustainable Development Report 2024 p 281 <a href="https://www.se.com/ww/en/assets/564/document/513141/2024-sustainability-report.pdf?p_enDocType=EDMS&amp;p_File_Name=2024%20Sustainable%20Development%20Report">https://www.se.com/ww/en/assets/564/document/513141/2024-sustainability-report.pdf?p_enDocType=EDMS&amp;p_File_Name=2024%20Sustainable%20Development%20Report</a>
Toyota Revenue	17 575 593 000 000	YEN	FINANCIAL SUMMARY FY2024 <a href="https://global.toyota/pages/global_toyota/ir/financial-results/2024_4q_summary_en.pdf">https://global.toyota/pages/global_toyota/ir/financial-results/2024_4q_summary_en.pdf</a>
Toyota Scope 1 + 2	5 430 000	tCO <sub>2</sub> e	<a href="https://global.toyota/pages/global_toyota/sustainability/report/sdb/sdb24_en.pdf">https://global.toyota/pages/global_toyota/sustainability/report/sdb/sdb24_en.pdf</a>
Stanley Black & Decker - Tools & Outdoor Revenue	13 367 100 000	USD	<a href="https://s29.q4cdn.com/245094436/files/doc_financials/2024/ar/Stanley-Black-Decker-2024-Annual-Report.pdf">https://s29.q4cdn.com/245094436/files/doc_financials/2024/ar/Stanley-Black-Decker-2024-Annual-Report.pdf</a> - page 10 (Tools & Outdoor Revenue)
Stanley Black & Decker Scope 1 + 2	290 735	tCO <sub>2</sub> e	Stanley Black & Decker 2023 Impact Report
Cummings Revenue	34 100 000 000	USD	Cummins Sustainability Progress Report pg 5 <a href="https://www.cummins.com/sites/default/files/2024-07/2023-2024-Cummins-Sustainability-Progress-Report.pdf">https://www.cummins.com/sites/default/files/2024-07/2023-2024-Cummins-Sustainability-Progress-Report.pdf</a>
Cummings Scope 1 + 2	706 138	tCO <sub>2</sub> e	Cummins Sustainability Progress Report pg 25 <a href="https://www.cummins.com/sites/default/files/2024-07/2023-2024-Cummins-Sustainability-Progress-Report.pdf">https://www.cummins.com/sites/default/files/2024-07/2023-2024-Cummins-Sustainability-Progress-Report.pdf</a>

Item	Value	Unit	Source
Steelcase Revenue	3 159 600 000	USD	p. 18 <a href="https://s27.q4cdn.com/997547422/files/doc_financials/2024/ar/scs-02-23-2024-10k.pdf">https://s27.q4cdn.com/997547422/files/doc_financials/2024/ar/scs-02-23-2024-10k.pdf</a>
Steelcase Scope 1 + 2	85 584	tCO <sub>2</sub> e	Steelcase 2024 Impact report p44 <a href="https://www.steelcase.com/content/uploads/2024/10/2024_Steelcase_Impact_Report.pdf">https://www.steelcase.com/content/uploads/2024/10/2024_Steelcase_Impact_Report.pdf</a>
PPC Cement Revenue	10 058 000 000	ZAR	PCC Integrated Report 2024 p. 9 <a href="https://thevault.exchange/?get_group_doc=189/1722852161-PPCIntegratedReport2024.pdf">https://thevault.exchange/?get_group_doc=189/1722852161-PPCIntegratedReport2024.pdf</a>
PPC Cement Scope 1 + 2	3 529 321	tCO <sub>2</sub> e	PCC sustainability Report 2024 p 16 <a href="https://thevault.exchange/?get_group_doc=189/1722852289-PPCSustainabilityReport2024.pdf">https://thevault.exchange/?get_group_doc=189/1722852289-PPCSustainabilityReport2024.pdf</a>
Mile to km	1.61	km/mile	Constant
Pence to GBP	100.00	pence/GBP	Constant
Average Wood Density	472.50	kg/m <sup>3</sup>	Assumed Cedar wood as per source suggested application for poles <a href="https://matmatch.com/learn/property/density-of-wood">https://matmatch.com/learn/property/density-of-wood</a>
Average ADSS Optic Fibre Cable Cost	0.56	USD/m	Wholesale fiber optic cable price and 4 way to save cost (honeycable.com)
Average Optic Fibre Emissions	0.002300	tCO <sub>2</sub> e/km	<a href="https://www.intelligentdatacentres.com/2024/01/03/how-optical-fibre-will-help-create-a-sustainable-future-for-data-centres/#:~:text=It%20calculated%20the%20carbon%20footprint%20of%20one%20optical%20fibre%20to%20be%202.3%20kg%20CO2eq/km%2C">https://www.intelligentdatacentres.com/2024/01/03/how-optical-fibre-will-help-create-a-sustainable-future-for-data-centres/#:~:text=It%20calculated%20the%20carbon%20footprint%20of%20one%20optical%20fibre%20to%20be%202.3%20kg%20CO2eq/km%2C</a>
Bosch Group Emissions Intensity	0.000006	tCO <sub>2</sub> e/Euro	p 29 <a href="https://assets.bosch.com/media/global/sustainability/reporting_and_data/2024/bosch-sustainability-report-2024.pdf">https://assets.bosch.com/media/global/sustainability/reporting_and_data/2024/bosch-sustainability-report-2024.pdf</a>
Samsung A15 Smartphone LCA emissions	0.051300	tCO <sub>2</sub> e/unit	<a href="https://www.samsung.com/global/sustainability/policy-file/AYVhR1k6BicAlx95/LCA_Results_for_Smartphones.pdf">https://www.samsung.com/global/sustainability/policy-file/AYVhR1k6BicAlx95/LCA_Results_for_Smartphones.pdf</a>
SAMSUNG Galaxy A15 5G A Series Cell Phone, 128GB	74.31	USD/Unit	Provided by Zimbabwe in Purchased goods list - Purchased 1 unit
<b>AVERAGED CONSUMPTIONS USED FOR ESTIMATES</b>			
Average warehouse electricity consumption per floorspace	33.0	kWh/m <sup>2</sup>	Warehousing-and-logistics-guide.pdf (ctprodstorageaccountp.blob.core.windows.net)

Item	Value	Unit	Source
Average Office waste sent to landfill	0.74	kg/person/day	<a href="https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html#:~:text=Worldwide%2C%20waste%20generated%20per%20person%20per%20day%20averages%200.74%20kilogram">https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html#:~:text=Worldwide%2C%20waste%20generated%20per%20person%20per%20day%20averages%200.74%20kilogram</a>
Average working days per month	20	days/month	Assumed
Average Water Consumed in Office per day per employee	32	litre/person/day	Office-Buildings-Water-Efficiency-Guide-EN.pdf (squarespace.com)
<b>CONVERSIONS</b>			
Zambian Kwacha to US Dollar (25 Mar 2024 - 25 Feb 2025)	29.30	USD/ZMW	<a href="https://www.xe.com/currencycharts/?from=USD&amp;to=ZMW&amp;view=2Y">https://www.xe.com/currencycharts/?from=USD&amp;to=ZMW&amp;view=2Y</a>
US Dollar to Great British Pound	0.78	GBP/USD	<a href="https://www.xe.com/currencycharts/?from=USD&amp;to=GBP&amp;view=2Y">https://www.xe.com/currencycharts/?from=USD&amp;to=GBP&amp;view=2Y</a>
Ugandan Shillings to US Dollar	0.00	USD/UGX	<a href="https://www.xe.com/currencycharts/?from=UGX&amp;to=USD&amp;view=2Y">https://www.xe.com/currencycharts/?from=UGX&amp;to=USD&amp;view=2Y</a>
Euro to USD (25 Mar 2024 - 25 Feb 2025)	1.13	EUR/USD	<a href="https://www.xe.com/currencycharts/?from=EUR&amp;to=USD&amp;view=2Y">https://www.xe.com/currencycharts/?from=EUR&amp;to=USD&amp;view=2Y</a>
YEN to USD (25 Mar 2024 - 25 Feb 2025)	0.01	YEN/USD	<a href="https://www.xe.com/currencycharts/?from=JPY&amp;to=USD&amp;view=2Y">https://www.xe.com/currencycharts/?from=JPY&amp;to=USD&amp;view=2Y</a>
ZAR to USD (25 Mar 2024 - 25 Feb 2025)	18.24	ZAR/USD	<a href="https://www.xe.com/currencycharts/?from=USD&amp;to=ZAR&amp;view=2Y">https://www.xe.com/currencycharts/?from=USD&amp;to=ZAR&amp;view=2Y</a>
AED to USD	0.27	USD/AED	<a href="https://www.xe.com/currencyconverter/convert/?Amount=1&amp;From=AED&amp;To=USD">https://www.xe.com/currencyconverter/convert/?Amount=1&amp;From=AED&amp;To=USD</a>
Average Diesel 50 Price in Zimbabwe (Bulawayo) - February 2025	0.58	USD/Litre	<a href="https://zimpricecheck.com/price-updates/fuel-and-gas-prices/">https://zimpricecheck.com/price-updates/fuel-and-gas-prices/</a>
Average Petrol price in Zambia (February 2025)	34.98	Kwacha/Litre	<a href="https://www.erb.org.zm/wp-content/uploads/PressStatements/CurrentFuelPumpPricesFebruary2025.pdf">https://www.erb.org.zm/wp-content/uploads/PressStatements/CurrentFuelPumpPricesFebruary2025.pdf</a>
DRC Petrol Price (May 2025)	1.05	USD/Litre	<a href="https://www.globalpetrolprices.com/Democratic-Republic-of-the-Congo/gasoline_prices/">https://www.globalpetrolprices.com/Democratic-Republic-of-the-Congo/gasoline_prices/</a>
Uganda Petrol Price	4 857.00	UGX/Litre	<a href="https://www.globalpetrolprices.com/Uganda/gasoline_prices/">https://www.globalpetrolprices.com/Uganda/gasoline_prices/</a>
Average Petrol price in Mauritius (May 2025)	1.33	USD/Litre	<a href="https://www.globalpetrolprices.com/Mauritius/gasoline_prices/">https://www.globalpetrolprices.com/Mauritius/gasoline_prices/</a>



Item	Value	Unit	Source
Average Petrol price for UAE	2.74	AED/Litre	<a href="https://tribune.com.pk/story/2525742/uae-hikes-fuel-prices-how-much-will-tank-fill-ups-cost">https://tribune.com.pk/story/2525742/uae-hikes-fuel-prices-how-much-will-tank-fill-ups-cost</a>
Average Petrol price in London (Dec 2024)	1.38	GBP/Litre	<a href="https://assets.publishing.service.gov.uk/media/67e3d1f9148bef6fa4cfdb6c/quarterly-energy-prices-march-2025.pdf">https://assets.publishing.service.gov.uk/media/67e3d1f9148bef6fa4cfdb6c/quarterly-energy-prices-march-2025.pdf</a>
Average South African Diesel Price	20.73	ZAR/Litre	Fuel Pricing - AA
Average Estimated SouthAfrican Grid Electricity Tarrif	2.56	ZAR/kWh	Calculated using the data provided by Cassava
48F Fiber Cable/ 48 Core ADSS weight per length	0.072	kg/m	48f-figure-8-cable_spec-sheet.pdf

## Appendix 5: Assumptions

### Scope 1 – Direct Emissions:

- Mobile Combustion: For Corporate Mauritius, data for mobile petrol use was provided in USD. Monthly average fuel prices for the reporting year were used to convert costs into litres consumed for emission calculations.

### Scope 2 – Indirect Emissions from Imported Energy:

- For DRC Office 1, electricity data for August 2024 to February 2025 was unavailable. The available monthly data was used to calculate an average monthly consumption and extrapolated to the missing months.
- For DRC Offices 2 and 3, no electricity data could be collected. Average per-person electricity consumption from DRC Office 1 was applied to the staff headcount at DRC Offices 2 and 3.
- For LIT and ADC Johannesburg, electricity for the shared Midrand Innovation Park facility was allocated on a 25% (LIT) / 75% (ADC) basis. ADC provided the full site consumption and LIT reported its cost for their 25% share. The cost was used to calculate a ZAR/kWh electricity rate, which was then used to estimate electricity for LIT East London, Richards Bay, Mthatha, and Port Elizabeth.
- LIT Zimbabwe reported electricity consumption in USD. Local utility tariffs were used to convert cost to consumption in kWh.
- LIT Zambia did not provide electricity data for its warehouse. Electricity consumption was estimated based on a benchmark of 33 kWh/m<sup>2</sup> of warehouse floor area.
- LIT UAE corporate electricity consumption was not provided. Consumption was estimated based on previous year's data using reported costs and DEWA utility tariffs.
- For Sasai/TPS South Africa, the electricity cost was provided. The same ZAR/kWh rate calculated for LIT SA was used to estimate consumption.

### Scope 3 – Other Indirect Emissions:

- Upstream Leased Assets: Electricity, water, and waste reported as included in rent payments were classified under upstream leased assets.
- Water Consumption:
  - For LIT offices in Johannesburg, East London, Richards Bay, Mthatha, and Port Elizabeth, municipal water consumption reported in ZAR was converted to kilolitres using Rand Water tariffs.

- For LIT Uganda, commercial water tariffs published by the Uganda National Water and Sewerage Corporation were used. Average exchange rates over the reporting period were applied to convert UGX to USD before estimating kilolitres.
- Where water consumption data was missing for LIT Zimbabwe, Kenya (offices 1–4), South Sudan, and Mauritius Corporate, it was estimated based on 0.032 m<sup>3</sup>/employee/day, assuming 20 working days/month.
- For ADC Nigeria (Oct 2024), ADC JHB (Nov 2024), and ADC CPT (Sep 2024), missing water consumption was estimated using the average of available months.
- For LIT DRC 1, estimated water costs of USD 100/month for Mar–Jul 2024 was used to derive per-person water consumption based on the previous year’s dataset.
- Electricity Consumption: For Kenya Office 3, electricity data was unavailable. Consumption was estimated using a per capita intensity calculated from Offices 1, 2, and 4.
- Waste: Where waste data was missing for offices in Zimbabwe, Kenya (offices 1–4), South Sudan, and Mauritius Corporate, waste was estimated at 0.74 kg/employee/day for 20 days/month, 12 months/year.
- Transportation:
  - For freight shipments, where product quantity was provided but weights were not, product weights were estimated through online research or based on weights reported by other OPCOs for similar items.
  - Delivery modes listed as "truck", "courier", "land", or "road" were classified as heavy goods vehicle – all rigid if shipment weight exceeded 3.5 tonnes; otherwise, average van emission factors were used.
  - Freight records missing weight, distance, or identifiable product descriptions were excluded from the emissions inventory.
- Business Travel:
  - Where flight distances were not provided, the Airport Distance Calculator was used. For road travel, Google Maps was used to estimate trip distances.
  - For LIT Zambia, business travel reported as "transport services" via road was classified as standard class rental vehicle.
  - For Sasai/TPS, rental vehicles were assumed to be standard class where class was unspecified.

- Average vehicle emission factors were derived for AVIS, Bluu Car, and First Car Rental fleets using vehicle type emissions reported by LIT SA and ADC.
- Short-haul flights marked as “First” or “Premium” were categorised as Business Class due to emission factor availability.
- Where bookings included multiple legs and/or passengers, each flight leg was split and emissions allocated per passenger.
- Rental vehicle classes listed as "Standard", "Basic", "Economy", or "Non-Executive" were assumed to be average cars with unknown fuel types.
- Purchased Goods & Services: Procurement data was screened to focus on high-volume, high-impact categories. Included items were batteries, networking equipment, printer toners, fibre optic cables, routers, switches, access points, wooden utility poles, tools, equipment, and cement.
- Capital Goods: Procurement data was screened to focus on high-volume, high-impact categories. Items included were laptops, monitors, phones, vehicles, generators, furniture, air conditioners, UPS, inverters, batteries, computers, IT equipment, solar systems, and printers.

#### **PoP Site Emissions:**

- Electricity & Fuel Use:
  - Where energy sources at PoP sites included batteries or inverters, it was assumed all were charged using grid electricity.
  - For South African PoP sites, where electricity data was reported in ZAR, a South Africa-specific electricity tariff (ZAR/kWh) was calculated from the split consumption at ADC and LIT JHB. This average rate was used to convert PoP electricity costs into kWh consumption.