מכון ויצמן למדע

WEIZMANN INSTITUTE OF SCIENCE

2023 and 2024 Carbon Footprint

October 2025

EcoTraders
Energy & Environment

Executive summary

As part of its ongoing commitment to sustainability, the Weizmann Institute is proud to present its second carbon footprint report. The first report, published in 2023 and covering data from 2022, served to establish a baseline. This new report analyzes the Institute's carbon footprint for 2023 and 2024, highlighting the main sources of emissions and supporting the identification and implementation of abatement measures in the Institute's emissions reduction plan.

The analysis was conducted according to the GHG Protocol guidelines – the world's most widely used Greenhouse Gas accounting standard – and relates to the carbon footprint of the Weizmann Institute campus in Rehovot and associated activities, including dormitories, cafeterias present in the campus, as well as other rented spaces such as the recreation center, the Davidson Institute, etc.

The carbon footprint for each year includes direct emissions at the Institute (associated with the fuel consumption in vehicles and buildings, and the use of refrigerants within the HVAC system) as well as indirect emissions from electricity and water consumption, waste treatment, business travels, staff and student commuting, and emissions associated with the manufacture, transport and provision of key goods and services.

Results

The Weizmann Institute's total greenhouse gas emissions amounted to 121,558 tCO_2e in 2023 and 119,821 tCO_2e in 2024, corresponding to per capita emissions of 31.64 tCO_2e and 30.94 tCO_2e, respectively. This reflects an increase in emissions compared to 2022, when the total carbon footprint was 98,833 tCO_2e, and per capita emissions were 20.64 tCO_2e. It should be noted that the per capita emissions for 2022 were calculated based on the absolute number of students and staff, whereas in 2023 and 2024, the calculation was based on Full-Time Equivalent (FTE) figures, which are approximately 20% lower than the absolute counts. At the Weizmann Institute, students are enrolled in Master's and PhD programs and are actively engaged in research and campus activities, similarly to academic and administrative staff.

In 2022, the Institute's emissions per square meter amounted to 0.35 tCO_2e.[i] This indicator increased to 0.43 tCO_2e per square meter in 2023 driven by a rise in total emissions.. In 2024, this indicator declined slightly to 0.42 tCO_2e per square meter.

It is important to note that the increase in total emissions from 2022 to 2023 is primarily due to improved data, particularly in the recording of refrigerant refills, and to the expanded inclusion of Scope 3 categories. While purchased goods and services and capital goods were already partially accounted for in 2022, their share within the analysis was significantly expanded in 2023 and 2024, leading to a more comprehensive

[i] The constructed surface area in the 2022 report did not fully reflect all relevant elements and has been updated here.

and accurate representation of the Institute's carbon footprint. In addition, renovation activities were not included at all in the 2022 carbon footprint, whereas they were incorporated in the 2023 and 2024 assessments. A modest rise in electricity consumption also contributed to the increase in emissions.

In 2022, indirect emissions from purchased electricity (Scope 2) were the largest source of emissions, representing 53% of the total emissions, followed by other indirect emissions (Scope 3), which accounted for 44%.

In both 2023 and 2024, this pattern reversed, with other indirect emissions (Scope 3) becoming the largest contributor, 49.5% of total emissions in 2023 and 51% in 2024. Indirect emissions from electricity consumption (Scope 2) followed closely behind, accounting for 44% of total emissions in 2023 and 2024. Direct emissions (Scope 1), resulting from fuel combustion and the use of refrigerants in HVAC systems, remained the smallest contributor, increasing from 2.7% of total emissions in 2022 to 6.5% in 2023, before decreasing to 5% in 2024.

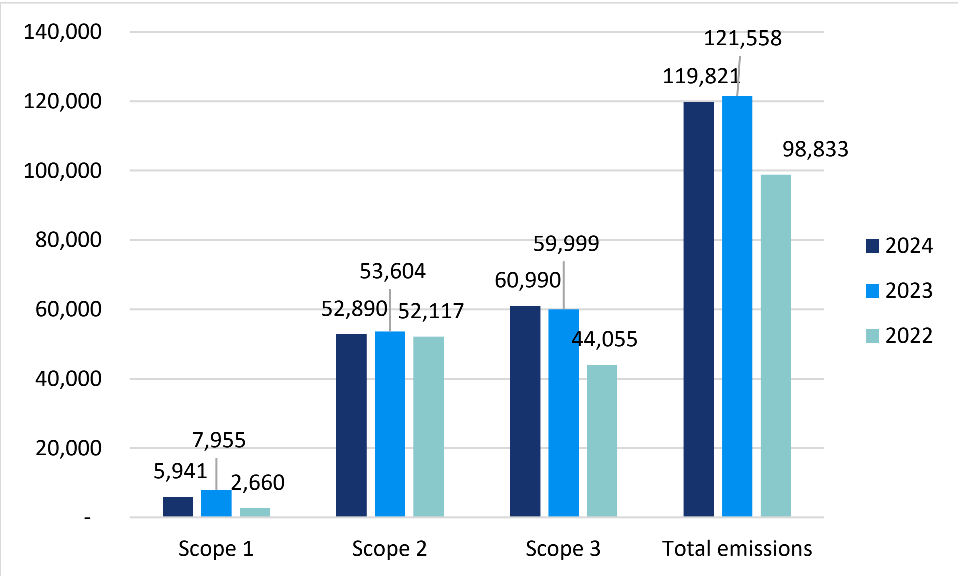

Figure 1: 2022, 2023 and 2024 emissions breakdown per scope (tCO2e)

The identification of the main emission sources serves as a basis for formulating emission reduction measures. Since the last report, the Institute has significantly expanded its initiatives to advance renewable energy and is on track to transform into an almost entirely renewable energy-powered campus. Solar panel installations on rooftops and parking lots are in various stages of development, including a 2.9-megawatt solar PV field that went online in February 2024 and now provides approximately 10% of the Institute's electricity capacity, and 4% of the Institute's total electricity consumption. In addition to on-campus solar generation, the Institute will purchase solar-generated electricity from Enlight to transition its entire electricity consumption to renewable sources.

2023

Electricity consumption was the main source of emissions in 2023, accounting for 50.4% of total emissions. Construction and renovation activities were the second-largest category, contributing 10.8% of total emissions, followed by chemicals and biochemicals, which represented 10.2%. Other goods and services purchased by the Institute accounted for 8.5% of emissions. Refrigerants, fuel consumption, scientific equipment and software, food and events, and commuting each contributed approximately 3–4% of total emissions. Waste, water consumption, and business travel each accounted for around 1%.

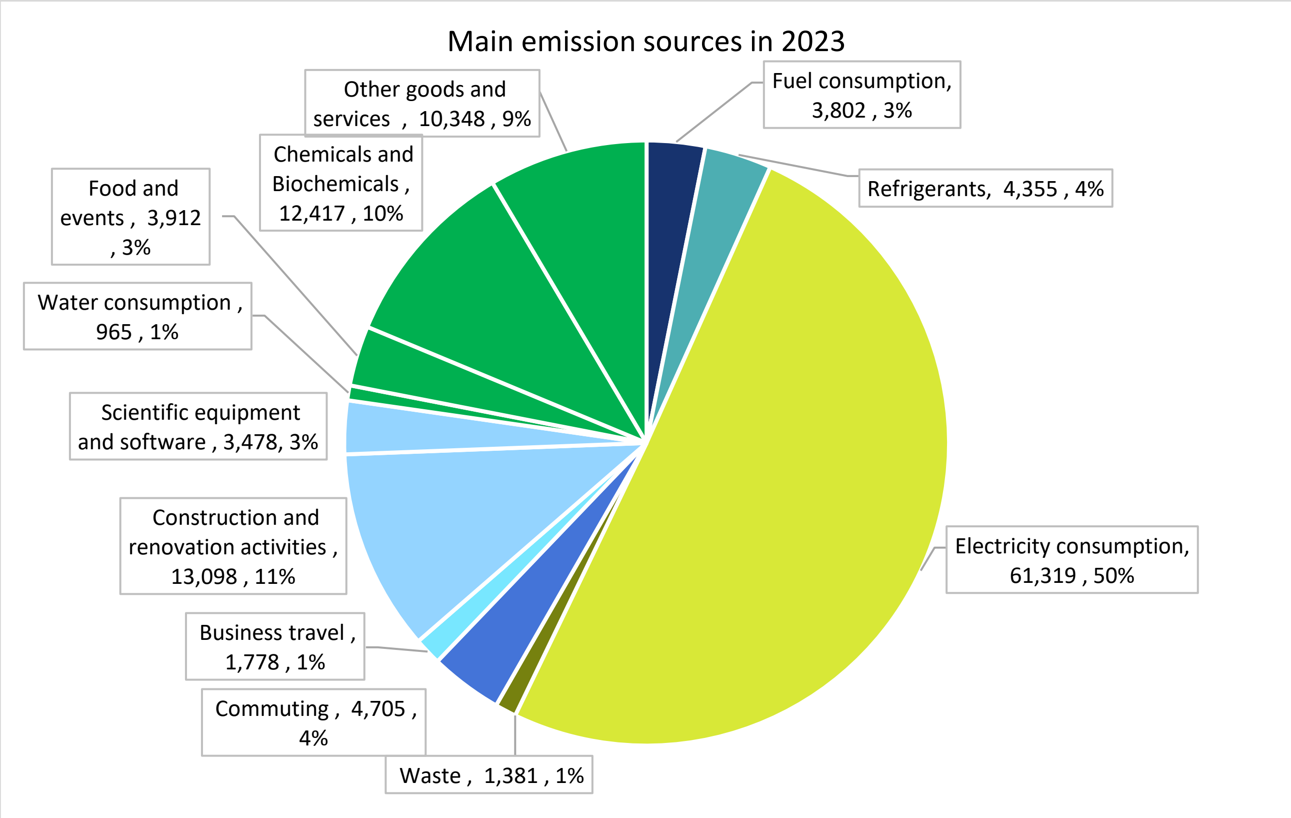

Figure 2: Summary of main emission sources of Weizmann Institute of Science in 2023

<u>2024</u>

Electricity consumption was the main source of emissions in 2024 as well, accounting for 50.7% of total emissions. Construction and renovation activities were the second largest category, contributing 12.2% and chemicals and biochemicals represented 10.3% of emissions, renovation activities represent 6%, commuting and other capital goods accounted for 4% each. Waste and water consumption each contributed around 1%.

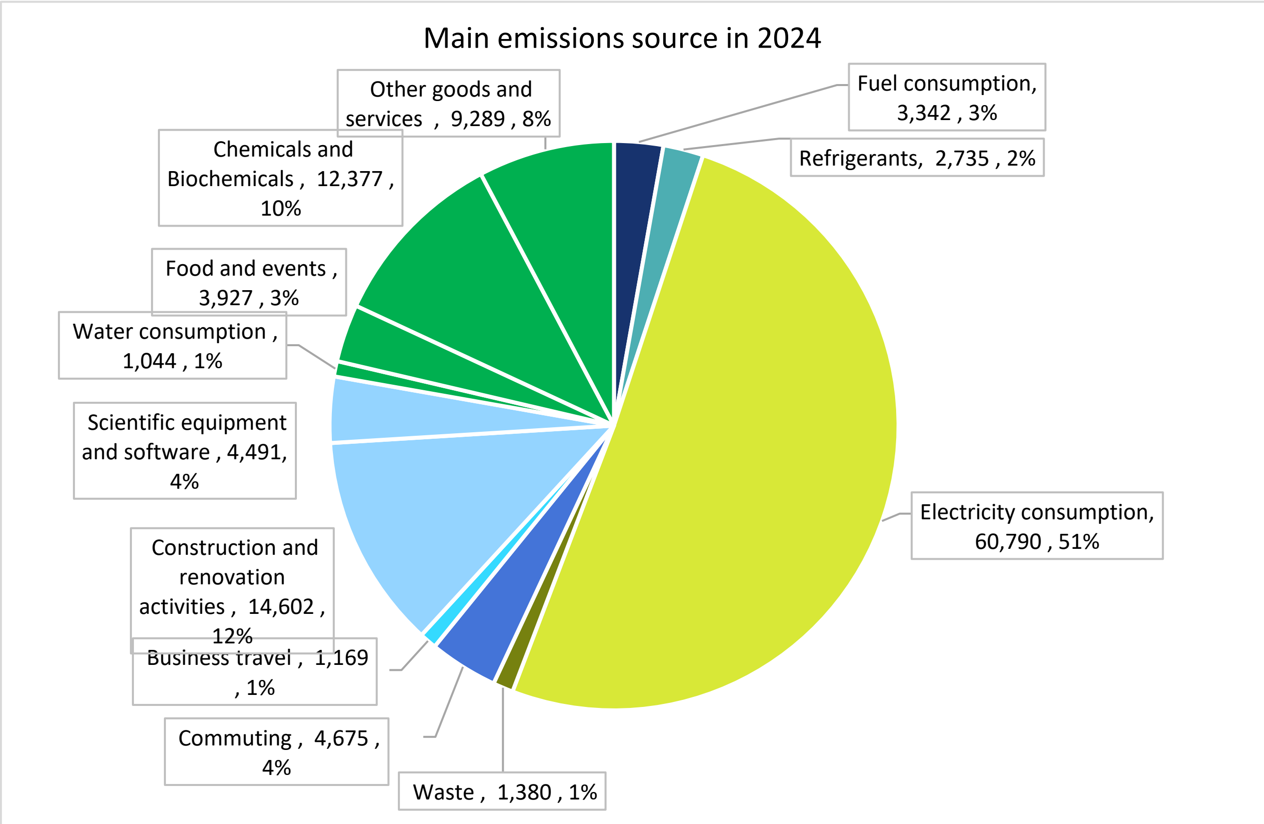

Figure 3: Summary of main emission sources of Weizmann Institute of Science in 2024

Analysis overview

Objectives and work process

The main objectives of the carbon footprint study for the Weizmann Institute were:

1. Calculation of the direct and indirect emissions of the Weizmann Institute for the years 2023, 2024
2. Identification of key emission sources as a basis for potential emission reduction measures

This report was guided and overseen by the Green Campus Committee and Sustainability Office.
Data collection was supervised by Prof. A. Levy and Stav Gilutz. Data was cleaned up and provided by various units and staff, most notably:

- Energy and water related data and consumption of refrigerants in the HAVC systems: Yuval Yarmolovsky, Head of Systems Engineering and Maintenance Branch, Construction and Engineering Division in conjunction with several personnel, most notably:
  - Evgeny Shvarzman, Head of Electricity and Control Unit
  - Zafrir Segal, Head of Facilities and Energy Centers Unit
  - Ronen Wohlfarth, Head of Plumbing and Gas Unit
- Ran Cohen, Gadir Engineering Ltd.Construction, renovation and planning related data:
  - Ifat Fried, Planning Data Coordinator, Planning Branch
  - Guy Arev, Head of Budgets and Contracts Branch, Construction and Engineering Division
  - Oren Negbi, Project Management Officer, Budgets and Contracts Branch
- Waste-related data: Almog Ashwal, Head of Visibility and Environment Branch.
- Business travel related data: Galit Meshulam, Head of Travel Unit Procurement-related data: Eitan Lutzky, Head of Procurement Branch, and Tatyana Rivkin, Procurement Division
- Food related data: Ravit Pik Sagi, Head of Auditoriums, Guesthouses and Restaurants Branch, and Moshe Fisher, Head of Restaurants Unit.
- Human resources related data: Geut Damari, Head of Control and Analysis, Human Resources Department.

Selected standard – GHG Protocol

The carbon footprint of the Weizmann Institute was conducted following the principles and requirements of the GHG Protocol Corporate Accounting and Reporting Standard (The Greenhouse Gas Protocol, 2011, 2015), which is the world's most widely-used greenhouse gas accounting standard[ii].

The GHG Protocol standard takes into account emissions across the value chain of an organization, a project or a product.

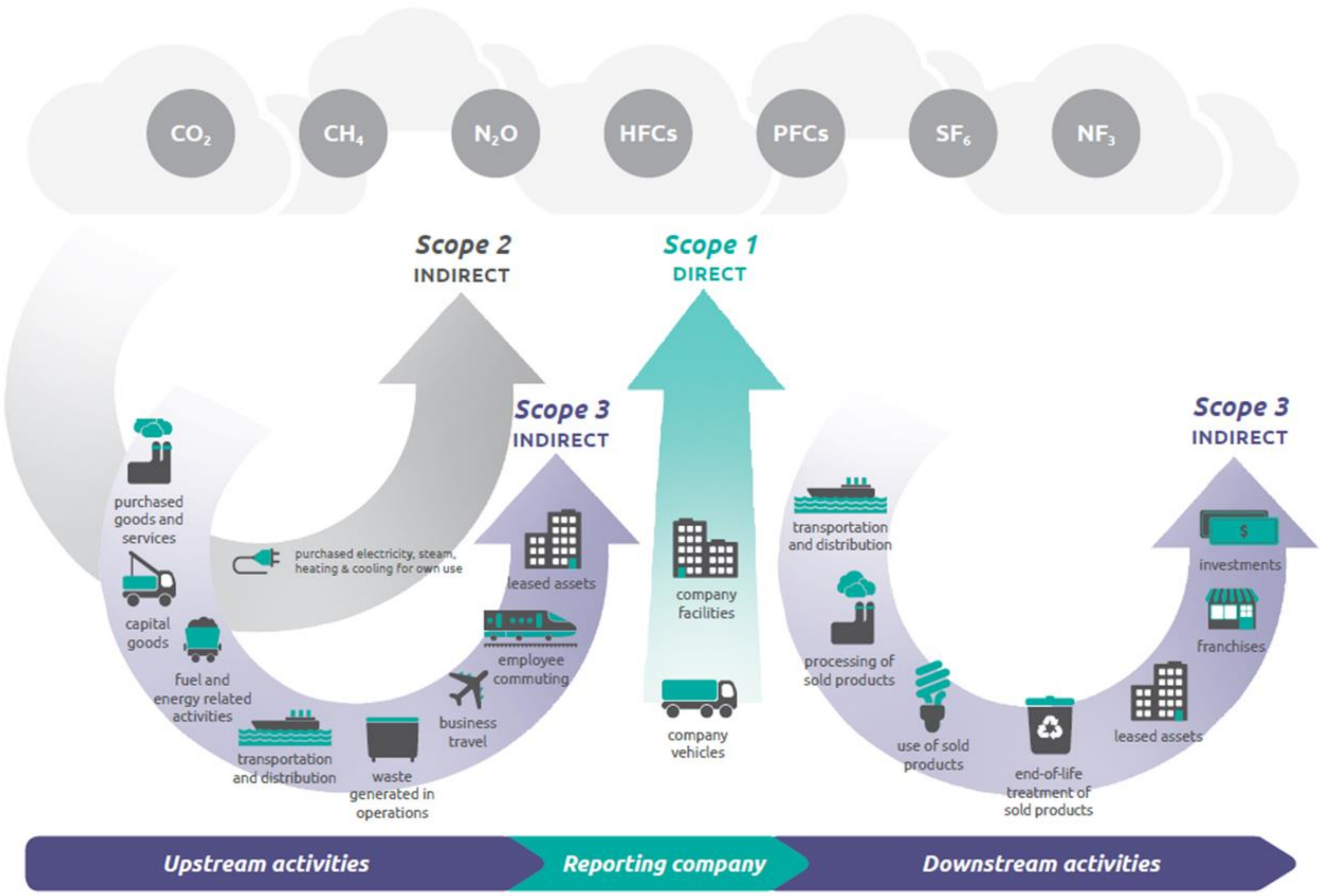

Figure 4: Overview of GHG Protocol scopes and emissions across the value chain[iii]

Direct and indirect emissions are categorized into three scopes:

- Scope 1 = Direct GHG emissions

  Direct GHG emissions are emissions from sources that are owned or controlled by the organization and include emissions due to fuel consumption (in vehicles, heating equipment or other), and fugitive emissions due to the use of refrigerants in HVAC.
- Scope 2 and 3 = Indirect GHG emissions

[ii] The Greenhouse Gas Protocol (GHG Protocol) is a multi-stakeholder partnership of businesses, non-governmental organizations (NGOs), governments, and others convened by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). Launched in 1998, the mission of the GHG Protocol is to develop internationally accepted greenhouse gas (GHG) accounting and reporting standards and tools, and to promote their adoption in order to achieve a low emissions economy worldwide. https://ghgprotocol.org/

[iii] Source: GHG Protocol

Indirect GHG emissions are emissions that are a consequence of the activities of the organization but occur at sources owned or controlled by another organization. Indirect emissions are divided into two scopes:

- → Scope 2 = Indirect emissions from energy (electricity) consumption
- → Scope 3 = Other indirect emissions (separated into 15 different categories, such as goods and services, waste treatment, business travel, students and staff commuting, etc.). Detailed descriptions of each category are provided annex 1.

Boundaries of the analysis

The carbon footprint was performed for the campus of the Weizmann Institute. The first step in performing the carbon footprint is setting the boundaries of the analysis, both in terms of the organizational boundaries, as well as the operational boundaries, as detailed below.

Setting organizational boundaries

In addition to the direct operations of the Institute, the campus itself hosts activities by external organizations in its facilities, both on a regular (such as vendors) and an ad-hoc basis. Setting the organizational boundaries essentially determines which activities at the Weizmann campus "belong" to the Weizmann Institute, and which do not.
In setting organizational boundaries, an approach is selected for consolidating GHG emissions. This approach is then consistently applied to define those buildings and operations that constitute the Institute for the purpose of accounting and reporting GHG emissions.

The operational control approach for the Weizmann Institute's carbon footprint was selected as the consolidation approach: the analysis included emissions from operations over which the Institute has operational control, meaning if it has the full authority to introduce and implement its operating policies at the operation. As opposed to financial control, this approach did not account for GHG emissions from operations in which the Institute owns a financial interest, but does not have operational control; conversely, it includes activities for which the Institute has operational control despite having no direct financial interest.
Most importantly, this means that emissions associated with activities by external organizations conducted on-campus in the Institute facilities, such as organizational meetings and events, are included in the Institute's organizational boundaries, as it is the Institute itself that has operational control over these facilities. However, on-campus facilities and activities that are not operated by the Institute are, to the extent that they provide services to the Institute, included as indirect emissions (scope 3 – for more detail see operational boundaries below).

Consequently, the boundaries of the analysis considered the following buildings:

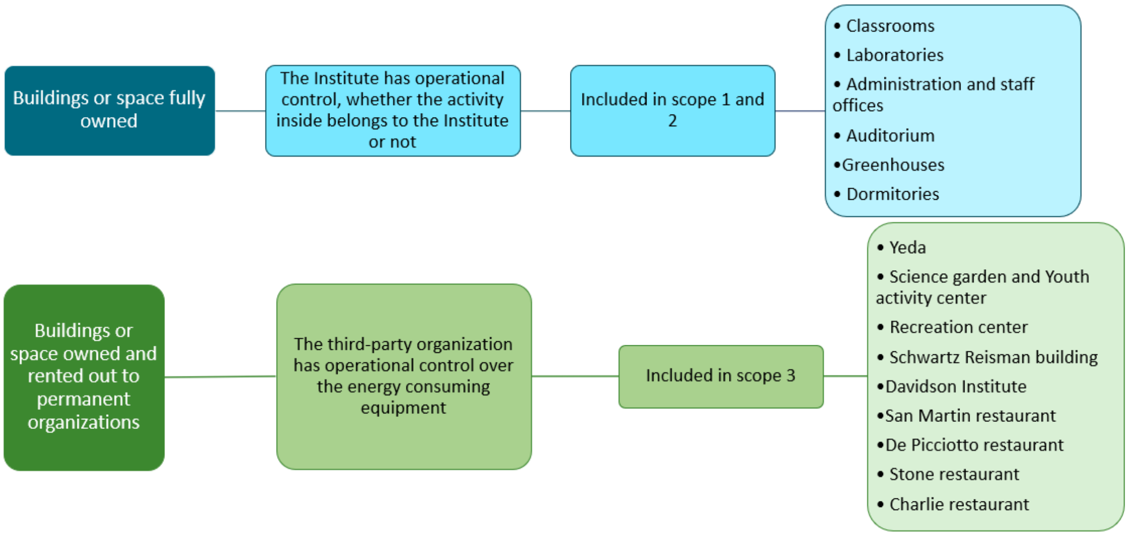

Figure 5: Definition of the organizational boundaries of the analysis

Setting operational boundaries

After an organization has determined its organizational boundaries in terms of the operations that it owns or controls, it then sets its operational boundaries. This involves identifying emissions associated with its operations, categorizing them as direct and indirect emissions, and choosing the scope of accounting and reporting for indirect emissions.

What is classified as direct and indirect emissions is dependent on the consolidation approach selected previously for setting the organizational boundary.

Fuel consumption that occurs from sources owned or controlled by the organization, is classified as Scope 1 (direct) emissions, since the combustion happens within the organization's own operations.

Electricity consumption is considered an indirect source of emissions (Scope 2) because the emissions occur at the power plant that generates electricity, not at the organization's site. When fuel or electricity is consumed outside the organization's direct control, such as in employees' commuting or outsourced activities, these are categorized under Scope 3 (other indirect) emissions. Fuel and energy related activities refer to the indirect emissions that occur during the extraction, production, and transportation of fuels and materials before they reach the organization and are also reported under Scope 3.

Consequently, the following emissions sources were included in the analysis:

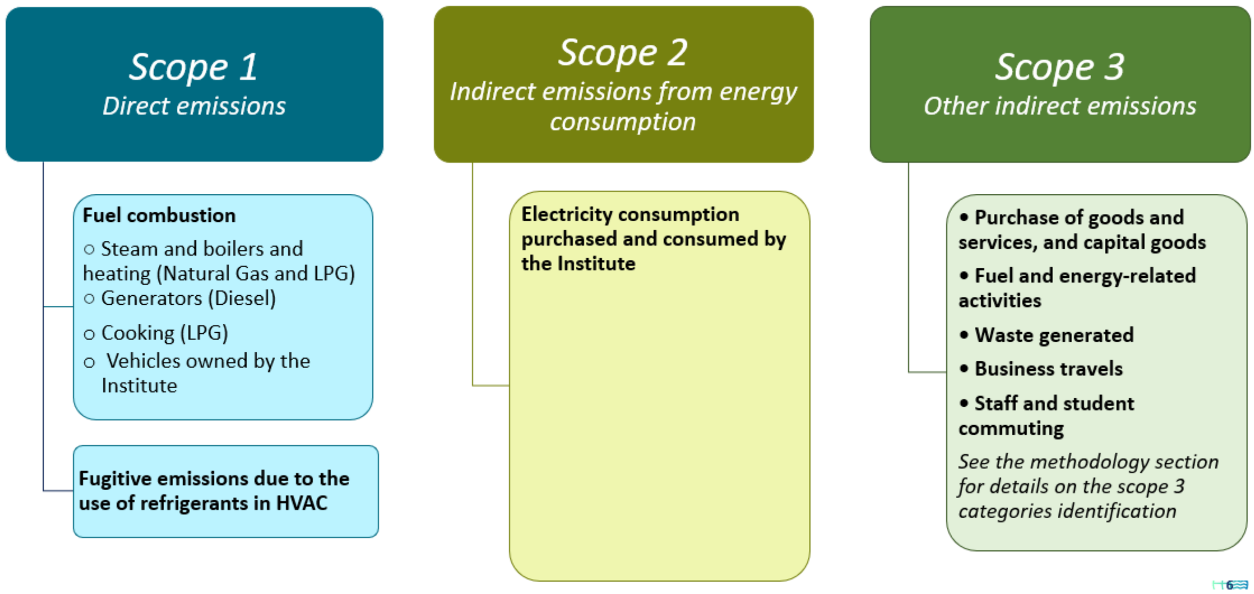

Figure 6: Summary of emissions sources included in the analysis