

# University of Pisa – Climate Pledge Monitoring Report

## Greenhouse Gas Emissions and Energy Performance – Year 2024

As part of its ongoing **climate pledge** and commitment to environmental accountability, the University of Pisa has published its official 2024 data on **greenhouse gas (GHG) emissions, primary energy use, and renewable energy production**. These figures have been compiled and verified by the University's Energy Manager, using certified billing data and internal energy monitoring systems. The publication of this data supports the University's transparent approach to climate action, in line with national and international sustainability standards.

### Greenhouse Gas Emissions

Total GHG Emissions (Scope 1 + 2): 8,267,950 kgCO<sub>2</sub>eq

#### Scope 1 – Direct Emissions

Calculated based on the consumption of fossil fuels for heating and transport, and fugitive emissions (FGAS losses):

Item	Quantity	Density [kg/L]	Emission factor	Emissions [kgCO <sub>2</sub> eq]
Diesel for transport	1,683 L	0.835	3.150 kgCO <sub>2</sub> eq/kg (*)	4,425
Petrol for transport	5,621 L	0.75	3.152 kgCO <sub>2</sub> eq/kg (*)	13,288
FGAS losses	--	--	--	150
Natural gas	1,406,572 Sm <sup>3</sup>	--	2.020 kgCO <sub>2</sub> eq/Sm <sup>3</sup> (**)	2,841,275
Diesel for heating	10,567 L	0.835	3.169 kgCO <sub>2</sub> eq/kg (*)	27,961
LPG	3,600 L	0.52	3.026 kgCO <sub>2</sub> eq/kg (*)	537,558
<b>TOTAL</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2,892,765</b>

(\*) ISPRa emission factor [kgCO<sub>2</sub>eq/kg], Report 398/2024 (National Inventory), Table A6.2

(\*\*) ISPRa emission factor [kgCO<sub>2</sub>eq/kg], Report 398/2024 (National Inventory), Table A6.1



Scope 2 – Indirect Emissions (Purchased Electricity)

Item	Quantity	Emission factor	Emissions [kgCO <sub>2</sub> eq]
Electricity	22,815 MWh	235.6 kgCO <sub>2</sub> eq/MWh (***)	5,375,185

(\*\*\*) ISPRA emission factor [kgCO<sub>2</sub>eq/kg], Report 398/2024 (National Inventory), Table A6.2

Therefore, the **total greenhouse gas emissions** of the University of Pisa in the calendar year **2024** amount to **8,267,950 kgCO<sub>2</sub>eq**.



## Primary Energy Use (All Buildings)

Total Primary Energy Consumption: 63,564,428 kWh

The **primary energy uses** for **University of Pisa buildings** in **2024** are calculated from the following consumption data (using the IEA/OECD conversion factor for primary energy: 1 TOE = 11,630 kWh):

Item	Primary Energy [TOE]	Primary Energy [kWh]
Electricity supplied from the grid	4,266	49,613,580
Natural gas	1,175	13,665,250
Diesel for heating	9.1	105,600
LPG for heating	2.2	25,586
Self-consumed electricity from photovoltaic production	13.3	154,412
<b>TOTAL</b>	<b>5,466</b>	<b>63,564,428</b>

## Energy from Renewable Sources

Total Renewable Energy Produced and Consumed On-Site: 154,412 kWh

This entire amount comes from photovoltaic installations on university buildings and was **100% self-consumed**, contributing to a reduction in indirect emissions and strengthening the University's efforts toward energy autonomy.

This report is a key milestone in tracking the University of Pisa's decarbonization efforts. It reflects a clear, data-driven approach to environmental responsibility and provides a benchmark to measure progress toward the university's **net-zero targets** and broader sustainability commitments under the **2030 Agenda**.

