Energy Balance 2023

Contents

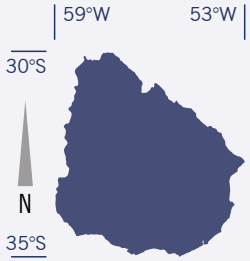
Ministerio de Industria, Energía y Minería

BEN
BALANCE ENERGÉTICO NACIONAL URUGUAY

01

Relevant events 2023

- ✔ Low economic growth: +0.4% of GDP
- ✔ Drought during the first half of the year
- ✔ Refinery shutdown starting in September
- ✔ Third cellulose plant in the country began operations



Uruguay

Land area
176,215 km²
(+/- 64 km²)

Population
3,566,550 inhab.

Population growth rate
0.33%
(2022-2023)

Currency
Uruguayan peso ($)
Exchange rate
38.8 $/US$
(AVERAGE)

GDP per capita
21,657 US$/inhab.

GDP variation
0.4%
(2022-2023)

CPI
5.11%
(CONSUMER PRICE INDEX)

Unemployment rate
7.8%

SOURCE: BCU and INE

Total final consumption/GDP
70.8 toe/millions US$

Total final consumption per capita
1,534 toe/1,000 inhab.

Electricity consumption per capita
3,467 kWh/inhab.

Urban and rural electrification rate
99.9%

CO_2 emissions per capita
2.0 t/inhab.

CO_2 emission factor of the grid
56 t CO_2/GWh

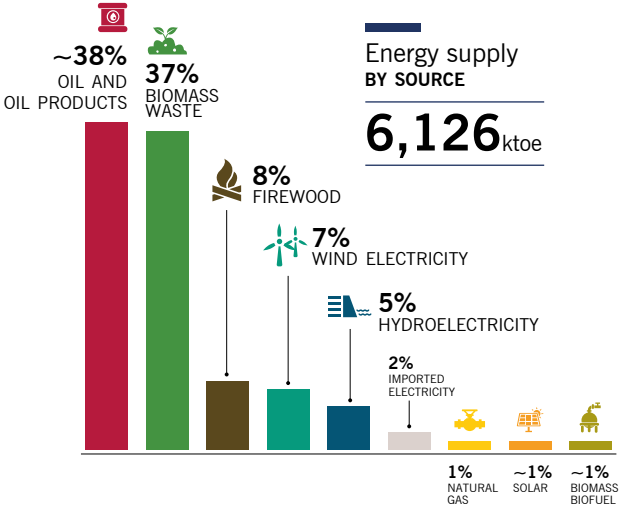
CO_2 emissions by GDP
91.9 t/millions US$

02

Energy supply

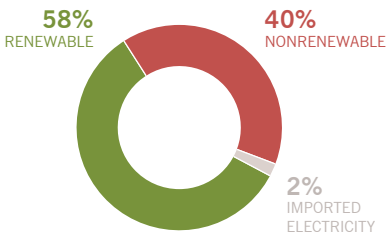
In 2023 **energy supply** reached a **record level, 8% higher** than in 2022

It is worth noting the **growth of biomass waste (+35%)**, a direct consequence of the installation of the **third cellulose plant** in the country.



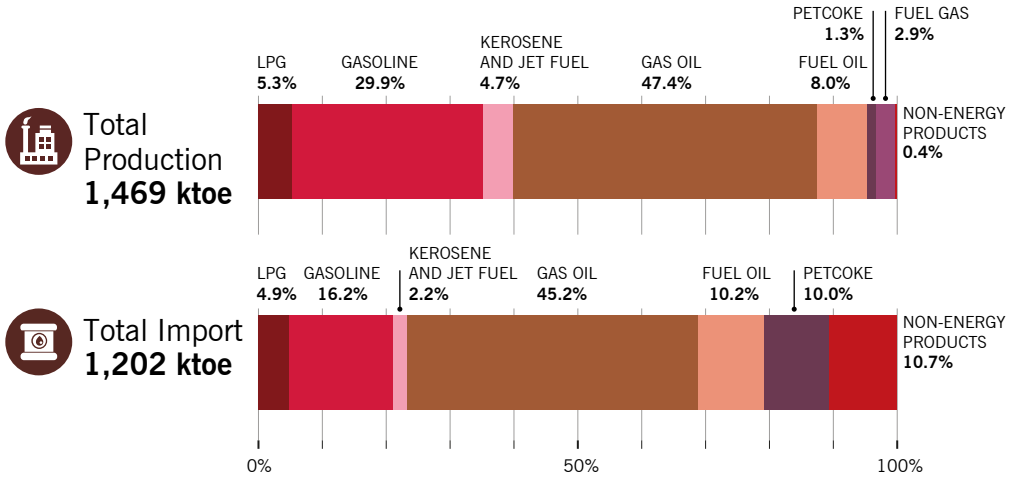
Energy supply
BY SOURCE
6,126 ktoe

2023 was the year with the **highest electricity imports** since 2009



Oil products supply

The refinery began its scheduled maintenance shutdown in September 2023. Production of oil products was **31% lower** than the previous year and **imports increased by 140%**.



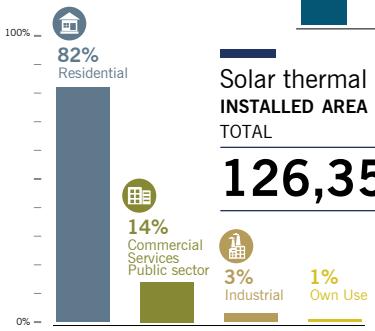
03

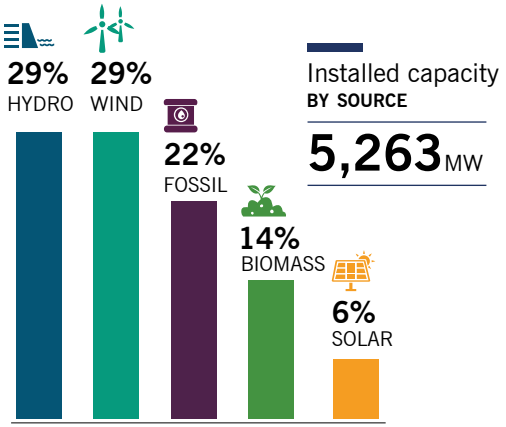
Infrastructure of the energy system

Total installed capacity **increased by 7%** in 2023

Biomass
731 MW
↑75%

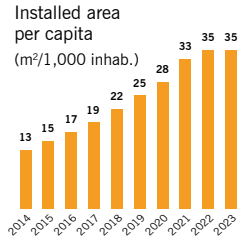
Solar photovoltaic
300 MW
↑7%



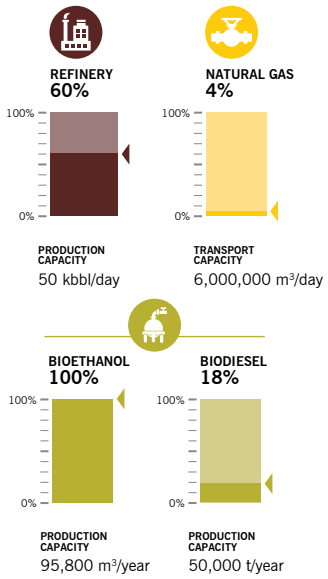


Installed capacity
BY SOURCE
5,263 MW

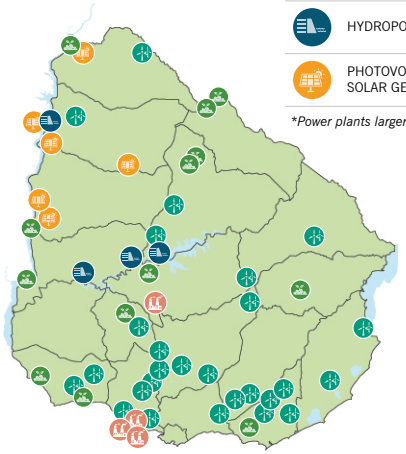
Solar thermal
INSTALLED AREA
TOTAL
126,359 m²



Used capacity



Distribution of electricity generators



THERMAL GENERATORS (FOSSIL FUELS)	4
THERMAL GENERATORS (BIOMASS)	12
WIND GENERATORS	42
HYDROPOWER PLANTS	4
PHOTOVOLTAIC SOLAR GENERATORS	17

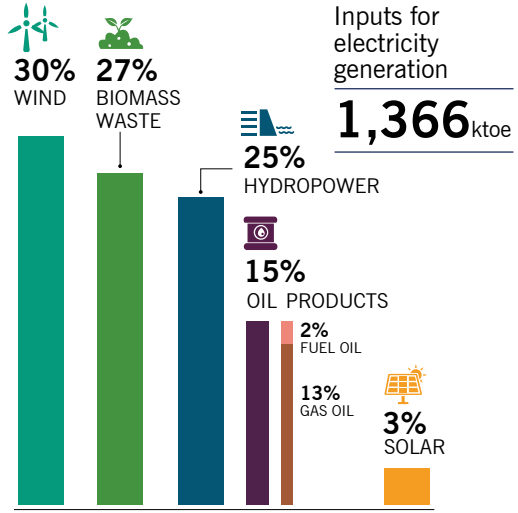
**Power plants larger than 1 MW are shown*

04

Electricity generation

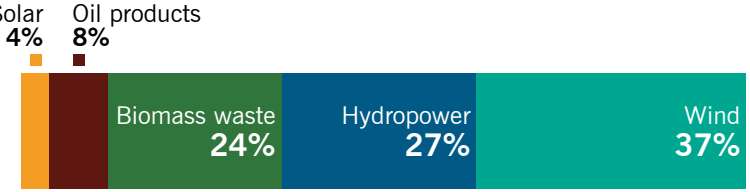
In 2023 there was **strong growth in biomass waste** as inputs for electricity generation, **21% higher than the previous year** and historical peak.

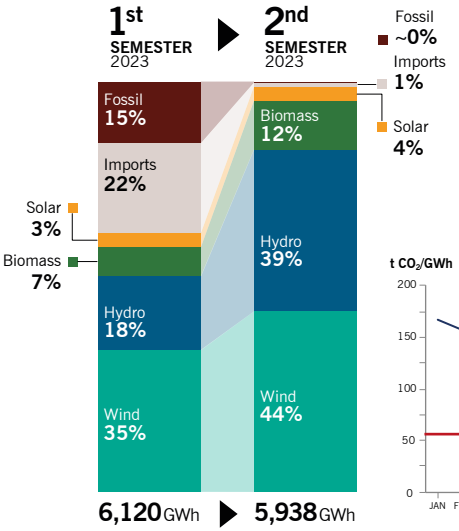
Electricity generation **decreased by 13%** in 2023



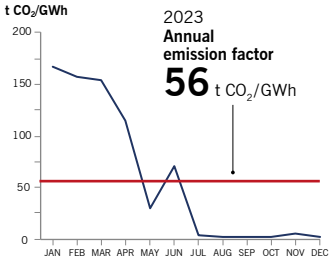
Inputs for electricity generation
1,366 ktoe

Electricity generation
BY SOURCE
12,877 GWh
(1,107 ktoe)



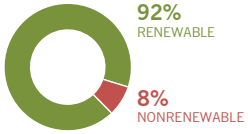


Electricity supply



The drought in the first half of the year led to an increase in fossil thermal generation and electricity imports.

In the second half of the year, the use of fossil fuels was drastically reduced, thus reducing the CO_2 emission factor.



The significant growth in thermal generation using biomass (+26%) offset the significant decrease in hydroelectric production (-38%), and even allowed to **increase to 92% the share of renewable sources** in the generation matrix.

SELECT TO DISPLAY FLOWS SEPARATELY

05

Flow chart 2023

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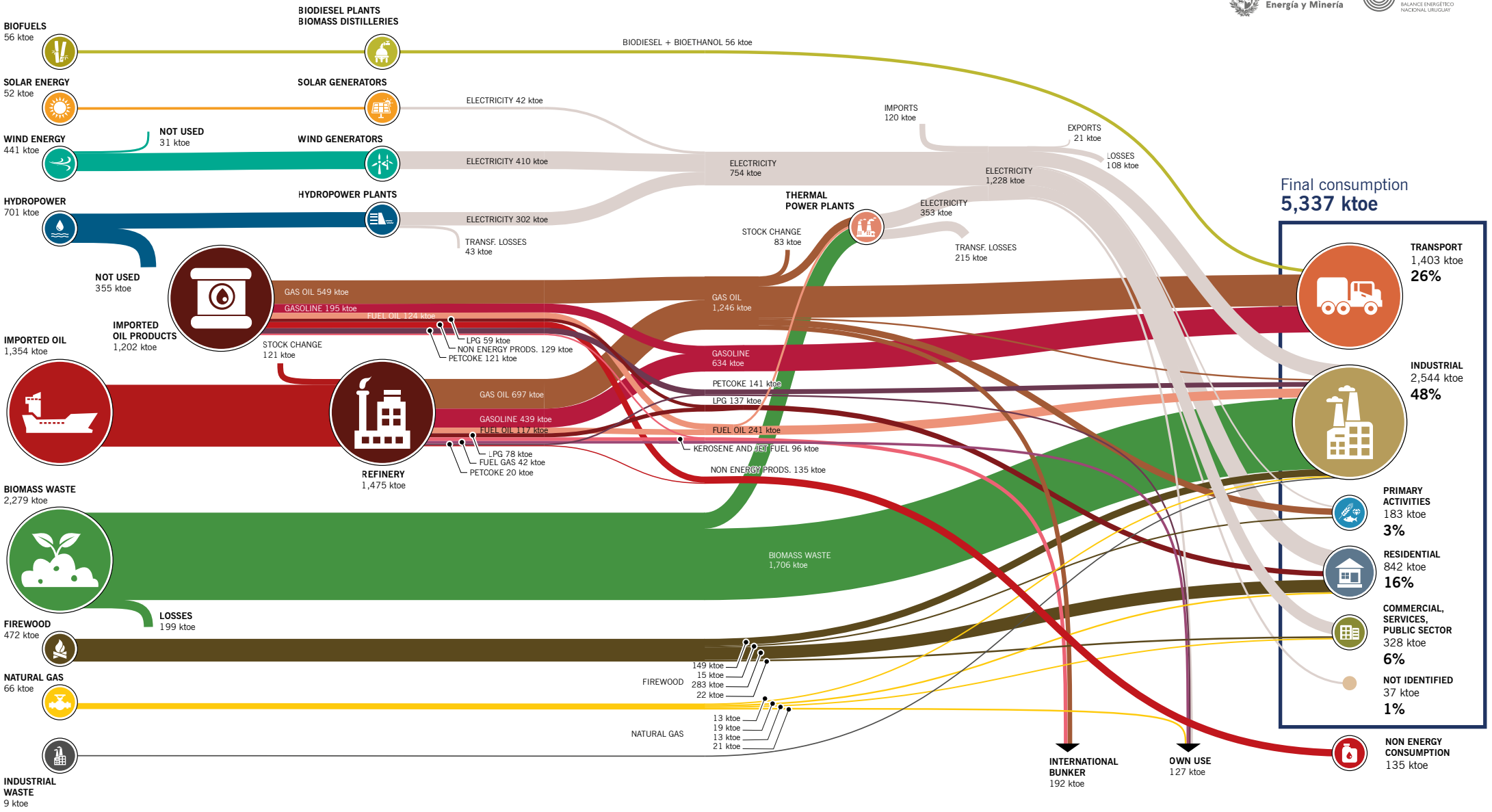


NOTE: ONLY MAIN ENERGY FLOWS ARE REPRESENTED

Demand

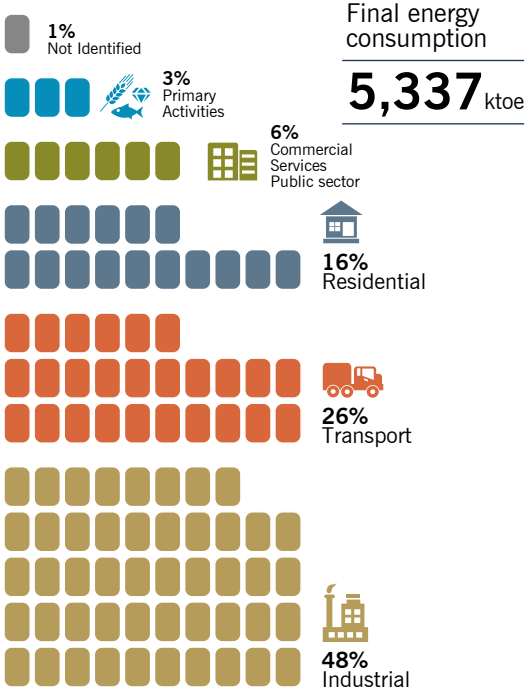
In 2023 final energy consumption reached a **historical maximum, 10% higher than the previous year**, mainly due to the increase in consumption in the **industrial sector**

Industrial establishments **autogenerated 53% of the electricity consumed** and directly imported more than one third of the fuel oil.

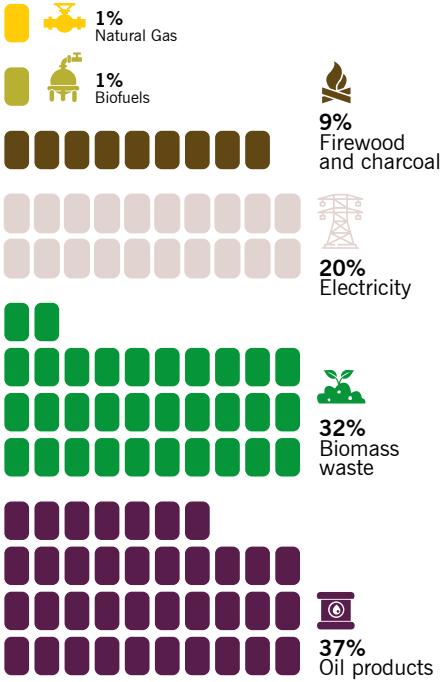
Final energy consumption by SECTOR

Final energy consumption

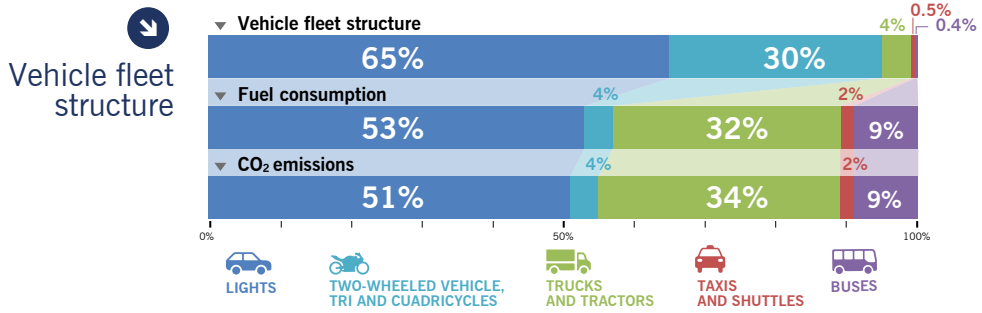
5,337 ktoe



Final energy consumption by SOURCE



Vehicle fleet structure

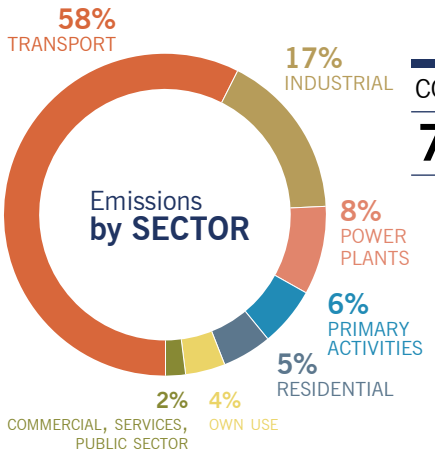


Carbon dioxide emissions

Total **CO_2 emissions decreased by 1%** in 2023

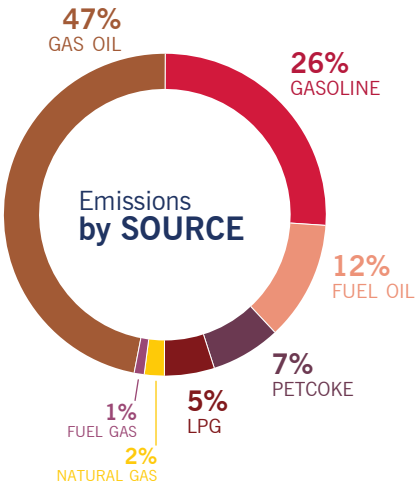
88% Fuel combustion in final consumption sectors

12% Energy industries



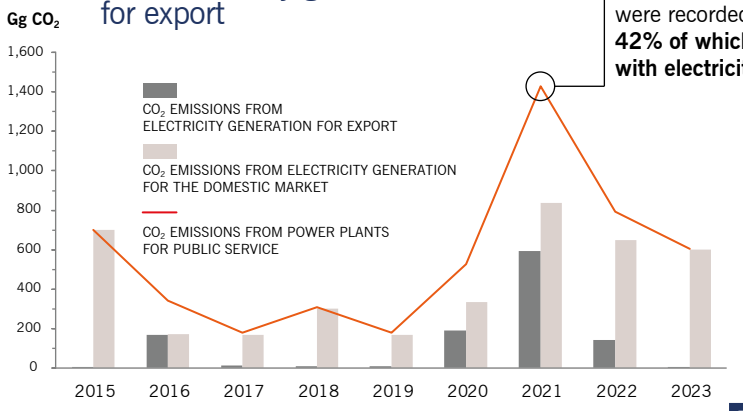
CO_2 emisions

7,099 Gg



Emissions from public service power plants **decreased by 24%** compared to the previous year, due to lower consumption of fossil fuels in electricity generation.

CO_2 emissions from electricity generation for export



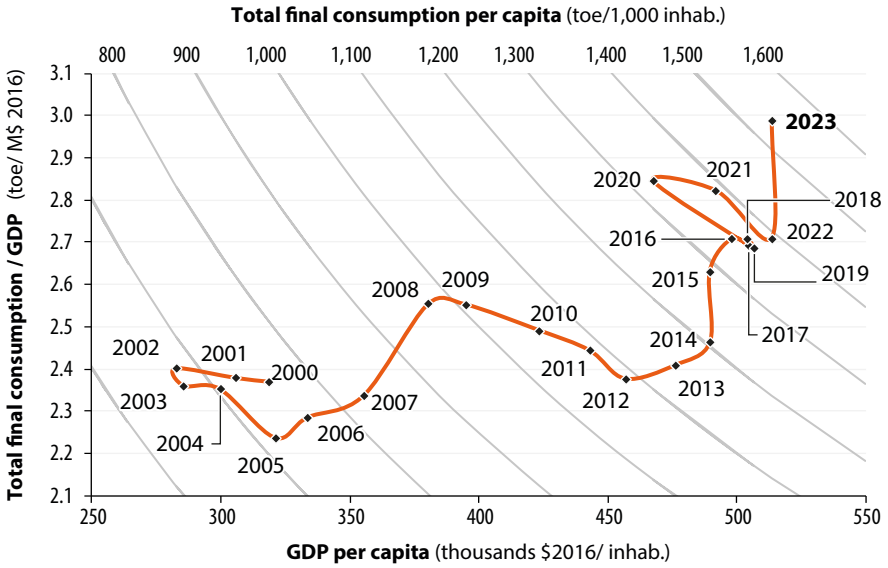
In **2021, high CO_2 emissions** were recorded in power plants, **42% of which were associated with electricity that was exported.**

08

Indicators

Energy path

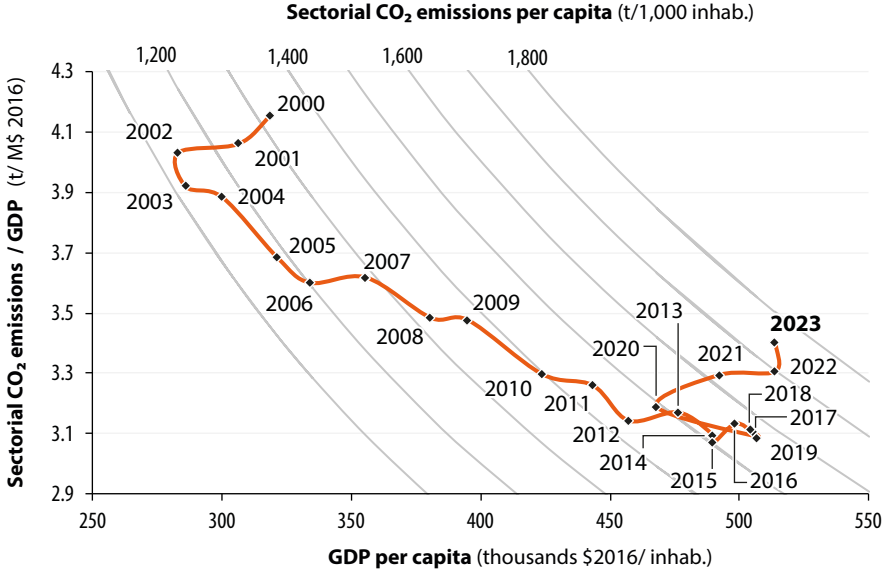
Between 2000 and 2023, Uruguay's **energy path** has had a clear upward trend, with some specific periods of decline.



CO_2 emissions path

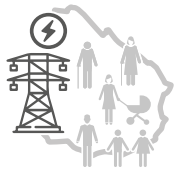
The evolution of the **CO_2 emissions path** resulted in a net downward trend, in contrast to the energy path.

This has largely been due to the increased consumption of biomass-related sources in the country, which has resulted in an increase in final energy intensity but a decrease in the intensity of CO_2 emissions in the consumption sectors.



09

Sustainable Development Goals



INDICATOR 7.1.1

100%

Proportion of population with access to electricity

INDICATOR 7.1.2

99%

Proportion of population with primary reliance on clean fuels and technology

INDICATOR 7.2.1

58%

Renewable energy share in the total final energy consumption

INDICATOR 7.3.1

3 toe/M$ 2016

Energy intensity measured in terms of primary energy and GDP

Energy Balance 2023

National Energy Directorate
Planning, Statistics and Balance Area

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