



Uruguay's Sovereign Sustainability-Linked Bond (SSLB) Annual Report



May 2024



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Chapter 1

Introduction





This second Annual Report of Uruguay's Sovereign Sustainability Linked Bond updates the evolution of the Key Performance Indicator tied to the intensity of Greenhouse Gas emissions (KPI-1), through the year 2022. It also provides quantitative and qualitative information on the Key Performance Indicator tied to the maintenance of native forests (KPI-2, which is reported every four years). The Report lays out Uruguay's ongoing action plan, institutional arrangements and policy incentives to the private sector to deliver on its ambitious sustainability goals and timelines. By doing so, it enhances transparency and accountability with the investor community, multilateral institutions and civil society.

Uruguay's Sovereign Sustainability-Linked Bond (SSLB), first issued in October 2022, directly links the country's financing strategy and cost of capital to the achievement of its climate and nature-based goals set under the Paris Agreement.¹

The SSLB embeds two Key Performance Indicators (KPIs): (i) reducing the intensity of Greenhouse Gas (GHG) emissions in the economy and (ii) preserving the area of native forests in the country. The Sustainability Performance Targets (SPTs) are based on quantitative goals set for 2025 and are in line with Uruguay's first Nationally Determined Contribution (NDC). The selected KPIs are core, relevant, and material to the country's sustainability objectives, and the SPTs are ambitious, according to the Second Party Opinion (SPO) assessment.² The bond introduces an innovative step-up/step-down interest rate structure, that would reduce the interest rate paid if Uruguay overperforms its NDC targets, or increase the borrowing cost if the country does not deliver on its targets.

As established in Uruguay's SSLB Framework, the values of KPI-1 will be reported and verified every year. To ensure timely and transparent disclosure, GHG emissions reporting in Uruguay has moved from biennial to annual frequency, in line with the standards of most developed economies. On the other hand, the values of KPI-2 will be reported and verified every four years (corresponding to the years 2021, 2025, 2029, and 2033), based on the official cartography of native forest at the national level.

Thus, this second SSLB Annual Report updates the performance of the KPI-1 through the year 2022.³ The methodologies and data used are the same as the one employed by Uruguay to report NDC progress data to the United Nations Framework Convention on Climate Change (UNFCCC).

The United Nations Development Program (UNDP) has provided an external, independent, and qualified review of KPI-1 through 2022. The External Verification

¹ For more information on Uruguay's first Nationally Determined Contribution to the Paris Agreement, see [here](#).

² See SPO's report [here](#).

³ For an overview of the evolution of KPI-1 and KPI-2 through the year 2021, please see the first SSLB Annual report [here](#).



Report, published at the time of this SSLB Annual Report, concludes that the reported values for KPI-1 adhere to the methodology and good practices established in the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines. It also states that the data and information used in this report comply with the quality principles in terms of Transparency, Accuracy, Consistency, Comparability and Completeness established by the IPCC.

Regarding the KPI-2, as part of the country's commitment under its SSLB Framework, this Report provides updated information on actions undertaken during 2022 and 2023 for conserving, and promoting regeneration, of the native forest in Uruguay.

The preparation of this SSLB Annual Report followed the International Capital Market Association's voluntary guidelines on post-issuance disclosure, reporting, and verification for sustainability-linked bonds (SLBP, 2023).⁴ Beyond those requirements, the Ministry of Economy and Finance (MEF, for its Spanish acronym) engaged with key stakeholders to factor in market expectations on the report's content and feedback from the first SSLB Report published in May 2023. This process involved an active dialogue with investment banks, global asset managers,⁵ the Inter-American Development Bank (IDB), the UNDP, the Emerging Markets Investors Alliance (EMIA), the Natural Capital Project at Stanford University and the Assessing Sovereign Climate-related Opportunities and Risks (ASCOR) project group.⁶ This report has also benefited from ongoing technical and financial assistance from the IDB.

As was the case with Uruguay's first SSLB Annual Report published in 2023, this second SSLB Annual Report is the product of a “whole-of-government” approach.⁷ It is a public sector-wide effort jointly undertaken by the Ministry of Economy and Finance, the Ministry of Environment (MA, for its Spanish acronym), the Ministry of Industry, Energy and Mining (MIEM, for its Spanish acronym), and the Ministry of Livestock, Agriculture and Fisheries (MGAP, for its Spanish acronym), with the support of the Ministry of Foreign Relations (MRREE, for its Spanish acronym). Strong inter-ministerial coordination and collaboration is key to ensure a timely and reliable provision of data and communicating clearly and regularly to the market on progress towards achieving the sustainability targets.

Going forward, on or before the 31st of May of each year and until the SSLB maturity in 2034, Uruguay will publish and keep readily available and accessible on its SSLB website, an Annual Report with up-to-date information regarding the KPIs, as well as

⁴ See guideline [here](#).

⁵ We are grateful to 91 Asset Management for their active engagement and constructive suggestions.

⁶ ASCOR is the first publicly available, independent, and open-source investor framework and database assessing the climate action and alignment of sovereign bond issuers. See official website [here](#).

⁷ See SSLB framework [here](#).



an External Verification Report— to evaluate the fulfillment of the 2025 targets and assess the KPIs trajectory during the lifetime of the SSLB.

Key Features of the Sovereign Sustainability Linked Bond

The SSLB sets out goals for two KPIs. KPI-1 is reported every year, while KPI-2 is reported every four years. For each KPI, there are two SPTs. The SPTs are based on quantitative goals set for 2025 and are in line with Uruguay's first Nationally Determined Contribution. These selected SPTs represent ambitious commitments aligned with the country's sustainability goals. The table in the next page outlines the key design characteristics and transactions details of the outstanding SSLB.



Key characteristics and transaction details of the outstanding SSLB

| | | | | |
|---|---|---|--|--|
| Issuer: | República Oriental del Uruguay | | | |
| ESG label: | Sovereign Sustainability-Linked Bond | | | |
| Currency: | US dollar-denominated | | | |
| Format: | SEC-Registered | | | |
| Bond's Issuances: | First issuance: USD 1.5 billion (October 2022) | | | |
| | Reopening: USD 700 million (November 2023) | | | |
| Bond's Amount Outstanding: | USD 2.2 billion dollars | | | |
| Annual Coupon: | 5.75% | | | |
| Maturity: | October 2034 | | | |
| Amortization: | 3 equal principal payments for the last 3 years | | | |
| Key Performance Indicator ("KPI"): | KPI-1 | | KPI-2 | |
| | Reduction in aggregate gross GHG emissions (in CO ₂ e) per real GDP unit, with respect to reference year 1990 (in %) | | Maintenance of native forest area (in hectares), with respect to reference year 2012 (in %) | |
| KPI Reporting Frequency: | Every year | | Every four years | |
| Sustainability Performance Target ("SPT"): | SPT 1.1 Based on Uruguay's NDC ¹ commitment | SPT 1.2 Outperform Uruguay's NDC ¹ commitment | SPT 2.1 Uruguay's NDC ¹ commitment | SPT 2.2 Outperform Uruguay's NDC ¹ commitment |
| | Achieve at least a 50% reduction in aggregate GHG emissions intensity by 2025, from the 1990 reference year | Achieve a reduction of more than 52% in aggregate gross GHG emissions intensity by 2025, from the 1990 reference year | Maintain at least 100% of the native forest area by 2025, compared to reference year 2012 | Achieve an increase of more than 3% of the native forest area by 2025, compared to reference year 2012 |
| SPO's Assessment on Degree of Ambition of SPTs: | Ambitious | Ambitious | Ambitious | Very Ambitious |
| Two-way interest rate mechanism: | Observation Date: | Year 2025 | | |
| | Interest rate step-up trigger: | The interest rate payable on the Bond shall be increased by 15 basis points if SPT 1.1 is not achieved | | The interest rate payable on the Bond shall be increased by 15 basis points if SPT 2.1 is not achieved |
| | Interest rate step-down trigger: | | The interest rate payable on the Bond shall be decreased by 15 basis points if SPT 1.2 is achieved | The interest rate payable on the Bond shall be decreased by 15 basis points if SPT 2.2 is achieved |
| Listing: | Luxembourg Stock Exchange and London Stock Exchange | | | |
| Governing Law: | State of New York, United States | | | |
| Second Party Opinion ("SPO"): | Sustainalytics | | | |
| (1) Nationally Determined Contribution ("NDC") | | | | |




Chapter 2


Summary of Results

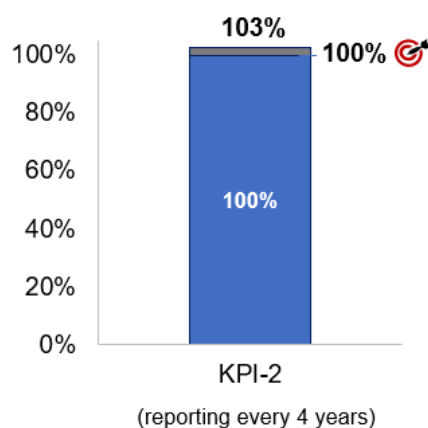
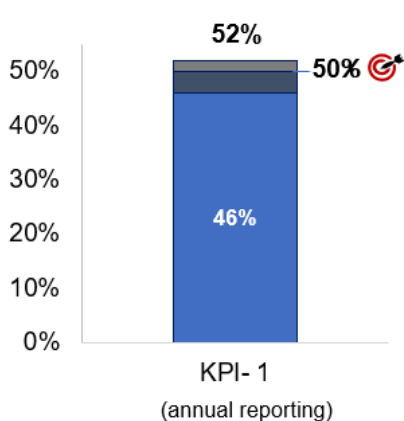


By 2022, the KPI-1 achieved a 46% reduction in the intensity of aggregate gross GHG emissions per real GDP unit, with respect to 1990 levels. Compared with 2021, KPI-1 advanced 5 percentage points, reflecting the combined effect of a reduction in absolute gross GHG emissions and the increase in real GDP, over the period. Gross GHG emissions in 2022 decreased 4.1 % with respect to 2021, on the back of an increasing share of electricity generation sourced with renewable sources and lower estimated nitrous oxide emissions tied to the use of synthetic nitrogen fertilizers for crop production— which more than offset an increase in consumption of fossil fuels in ground transportation. Annual real GDP grew 4.7% in 2022, contributing to the reduction in the intensity ratio. All factors considered, by 2022 Uruguay resumed the progressive decarbonization of its economy, which had stalled in 2020 and 2021 with the onset of the pandemic and a severe regional drought. As a result, the latest KPI-1 value is 4 percentage points short of SPT 1.1 set for 2025.

KPI values as of year 2022, compared to SPTs

|  KPI-1: Reduction of GHG emissions intensity (compared to reference year 1990) | |
|--|-----------------------------|
| SPT 1 | -50% |
| SPT 2 | -52% |
| Latest value | -46% (Year 2022) |

|  KPI-2: Maintenance of Native Forest area (compared to reference year 2012) | |
|---|-----------------------------|
| SPT 1 | 100% |
| SPT 2 | 103% |
| Latest value | 100% (Year 2021) |



Methodology and calculation for each KPI, and corresponding SPT values, are documented in Uruguay's SSLB Framework. The left blue bar indicating the latest KPI-1 value expresses the percent reduction in absolute terms. Source: SSLB Open Source Database, as of April 2024.



On the other hand, as documented in last year's SSLB Annual Report, KPI-2 reached a 100% maintenance of native forest area by 2021, with respect to the baseline. Compared with 2016, measured native forest cover increased 11,832 hectares (approximately 1.4%). This was mostly explained by natural regeneration, increased coverage, and restoration plans. During 2022, the Directorate for General Forestry (DGF) performed several actions for the purpose of conserving the native forests, including by reinforcing its communication strategy through several awareness and information campaigns on native forest.

The time series and underlying data for both KPIs between 1990 and 2022, can be found in the "Open Source Database" published in Uruguay's SSLB website.⁸

Uruguay is committed to continuing its transition toward a low-carbon, environmentally sustainable economy. Uruguay remains among the world leaders in large-scale wind power and production of other forms of clean electric energy. The country also aims to reduce carbon dioxide emissions in hard-to-abate sectors, such as heavy transportation, by promoting electric mobility, developing green hydrogen production, and harnessing its abundant renewable energy sources such as water, wind, and biomass. As a food supplier for an increasing world population, Uruguay intends to meet the challenge of increasing agricultural and livestock production while reducing methane and nitrous oxide emissions and preserving its unique grassland ecosystem.

The protection of native forests and the prevention of deforestation will continue to be a key part of Uruguay's environmental strategy. The country has made significant investments in the management of its native forests, which are protected by law and subject to tax exemptions. This has ensured that agricultural activity is not, as it is in much of the world, a driver of deforestation.

⁸ See "Open Source Database" [here](#).



Chapter 3

Update on Key Performance Indicator with Annual Frequency (KPI-1)





This section of the Annual Report refers to the estimation and reporting of KPI-1 values through the year 2022, as established in Uruguay's SSLB Framework. The detailed methodological reports underpinning the KPI-1 calculation are published in Uruguay's SSLB website, together with this Annual Report.⁹ See Annex 2 for additional details.

Evolution of KPI-1 through 2022

The KPI-1 captures the evolution of the economy-wide GHG emissions intensity for Uruguay. It is defined as the reduction of aggregate gross GHG emissions (in CO₂ equivalent) per real GDP unit, with respect to year 1990 (in %). The indicator aggregates the three main GHGs (CO₂, CH₄, and N₂O) and the main sectors contributing emissions of each GHG (as set out in the first NDC, published in 2017). To obtain the intensity measure, aggregate gross GHG emissions are normalized by real GDP.

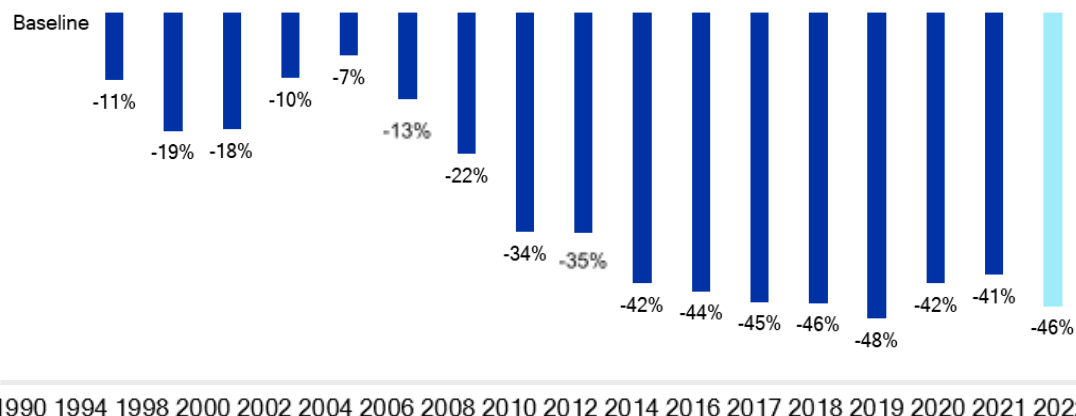
As of 2022, the KPI-1 indicator reached -46%, advancing 5 percentage points compared to 2021 (when it reached -41%).¹⁰ The improvement in the KPI-1 indicator between 2021 and 2022 was driven by (i) a decrease in absolute gross GHG emissions (-4.1%, from 38,073 Gg in 2021 to 36,495 Gg in 2022) and (ii) an increase of 4.7% in real GDP, over the same period.

⁹ In the "SSLB Annual Report" section of Uruguay's SSLB [website](#).

¹⁰ As noted in the Technical Data Sheets, the historical series on estimated gross GHG emissions may be subject to modifications or revisions due to improvements in estimation methodologies, the addition of new emission sources or data corrections, among other factors. Likewise, time series values of real GDP series could be subject to revisions in national account figures published by the Central Bank. As a result, changes to historical values for the estimated KPI-1 can occur. For example, at the time of the publication of the first Annual SSLB Report in May 2023, the estimate of the real GDP change in 2020 was -6.3%. After official annual real GDP figures were released in March 2024, the magnitude of the real GDP contraction in 2020 was subsequently revised downwards to -7.3%. As a result, the latest KPI-1 value for 2020 published in this Report was revised down from -43 to -42%.

KPI-1: Reduction of the Intensity of Aggregate Gross GHG Emissions per real GDP unit

change compared to 1990, in percent



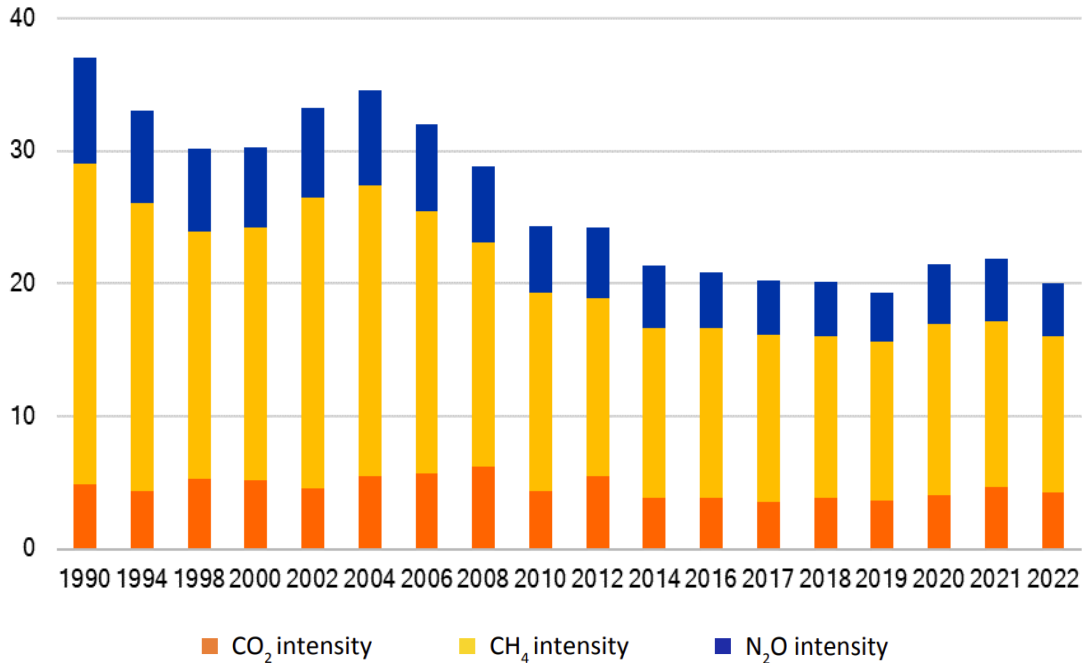
Considers the three global GHGs and the main sectors contributing emissions of each GHG, as set out in the 2017 NDC. Expressed in Gg CO₂eq, metric GWP100 AR5. Real GDP measured in billions of pesos in 2016 constant prices, based on official national accounts historical data published by the Central Bank as of March 2024. For the period 1990-2021, data is for years with official NGHGI publication and data for 2022 was estimated for this SSLB Annual Report. Source: SSLB Open Source Database as of April 2024.

Emissions decreased significantly due to a higher share of electricity generation sourced with renewable sources, lower estimated use of synthetic nitrogen fertilizers, and the decrease in the non-dairy cattle herd, all of which more than offset an increase in consumption of fossil fuels in ground transportation. In 2022, GDP continued to bounce back, reflecting an economic recovery underpinned by reopening of borders and a decrease in mobility restrictions in the post-pandemic period.

This improvement in the KPI-1 indicator between 2021 and 2022 is reflected in a reduction in the GHG intensity in Uruguay's economy. The intensity of aggregate gross GHG emissions for the year 2022 was 20 Gg CO₂eq/billion Uruguayan constant pesos, down from 21.8 Gg CO₂eq/billion constant pesos in 2021. Still, the carbon intensity of the economy was higher than immediately before the onset of the pandemic in 2019 (19.3).



Evolution of Uruguay's Intensity of Gross Greenhouse Gas Emissions as a share of real GDP by type of gas



Considers the three global GHGs and the main sectors contributing emissions of each GHG, as set out in the 2017 NDC. Expressed in Gg CO₂eq, metric GWP100 AR5. Real GDP measured in billions of pesos in 2016 constant prices, based on official national accounts historical data published by the Central Bank as of March 2024. For the period 1990-2021, data is for years with official NGHGI publication and data for 2022 was estimated for this SSLB Annual Report. Source: SSLB Open Source Database as of April 2024.

The table on the next page shows the evolution between 1990 and 2022 of the value of KPI-1 and its underlying drivers: (i) GHG emissions by type of gas, (ii) aggregate gross emissions in CO₂ equivalent terms, (iii) real GDP, and (iv) GHG intensity in the economy.



KPI-1: Disaggregated Historical Data

1990-2022 series

| Year | CO ₂ (Gg) | CH ₄ (Gg, expressed in CO ₂ eq) | N ₂ O (Gg, expressed in CO ₂ eq) | Aggregate gross GHG emissions (CO ₂ eq) | Real GDP (billions of pesos at 2016 constant prices) | Intensity of aggregate gross GHG emissions per real GDP unit | KPI-1: Reduction of aggregate gross GHG emissions per real GDP unit, with respect to 1990 (in percent) |
|------|----------------------|---|--|--|--|--|--|
| 1990 | 3,851 | 19,158 | 6,315 | 29,325 | 792 | 37 | |
| 1994 | 4,222 | 21,212 | 6,815 | 32,249 | 975 | 33 | -11% |
| 1998 | 5,876 | 20,824 | 6,874 | 33,574 | 1,114 | 30 | -19% |
| 2000 | 5,544 | 20,362 | 6,530 | 32,437 | 1,071 | 30 | -18% |
| 2002 | 4,345 | 20,787 | 6,466 | 31,598 | 950 | 33 | -10% |
| 2004 | 5,506 | 22,028 | 7,190 | 34,724 | 1,006 | 34 | -7% |
| 2006 | 6,448 | 22,234 | 7,361 | 36,043 | 1,125 | 32 | -13% |
| 2008 | 7,928 | 21,773 | 7,354 | 37,056 | 1,285 | 29 | -22% |
| 2010 | 6,366 | 21,490 | 7,244 | 35,100 | 1,444 | 24 | -34% |
| 2012 | 8,603 | 21,069 | 8,353 | 38,025 | 1,572 | 24 | -35% |
| 2014 | 6,628 | 21,715 | 7,876 | 36,219 | 1,699 | 21 | -42% |
| 2016 | 6,741 | 22,104 | 7,363 | 36,208 | 1,734 | 21 | -44% |
| 2017 | 6,305 | 22,107 | 7,337 | 35,749 | 1,764 | 20 | -45% |
| 2018 | 6,755 | 21,632 | 7,253 | 35,640 | 1,767 | 20 | -46% |
| 2019 | 6,559 | 21,241 | 6,604 | 34,405 | 1,783 | 19 | -48% |
| 2020 | 6,510 | 21,370 | 7,372 | 35,251 | 1,652 | 21 | -42% |
| 2021 | 8,159 | 21,741 | 8,172 | 38,073 | 1,744 | 22 | -41% |
| 2022 | 7,710 | 21,549 | 7,236 | 36,495 | 1,826 | 20 | -46% |

Considers the three global GHGs and the main sectors contributing emissions of each GHG, as set out in the 2017 NDC. Expressed in Gg CO₂eq, metric GWP100 AR5. Real GDP measured in billions of pesos in 2016 constant prices, based on official national accounts historical data published by the Central Bank as of March 2024. For some years the GHG aggregated gross emissions column does not perfectly match the sum of the CO₂, CH₄ and N₂O columns due to rounding. For 2021 the value of CO₂ shows correction due to hydraulic conditions. For the purpose of the calculation of the KPI value, the result of the formula is rounded up or down to the nearest integer, as established in the SSLB Framework and consistent with the way the numerical goals were set under Uruguay's 2017 NDC. For the period 1990-2021, data is for years with official NGHGI publication and data for 2022 was estimated for this SSLB Annual Report. Source: SSLB Open Source Database, as of April 2024.

As of 2022, Uruguay's gross emission profile continues to be strongly determined by non-CO₂ GHG emissions. Estimated CH₄ (methane) emissions represented 59% of aggregate gross emissions and N₂O (nitrous oxide) emissions accounted for 19.8%. In Uruguay, both non-CO₂ emissions are almost completely generated in biological processes: methane and nitrous oxide greenhouse gases are strongly linked to primary food production in the Agriculture and Livestock sector.¹¹ Finally, CO₂ (carbon dioxide) emissions made up 21.1% of the total in 2022, and are generated mainly in the Energy sector, specifically from the burning of fossil fuels.

Between 2021 and 2022, estimated gross GHG emissions decreased 1578 Gg in CO₂eq, broken down by type of GHG as follows:

- Total N₂O emissions decreased significantly (936 Gg in CO₂eq, or 11,5%), contributing 59.3% of the absolute decrease in overall GHG emissions between 2021 and 2022.
- Total CO₂ emissions decreased 449 Gg (or 5.5%), and contributed 28.5% of the absolute decrease in overall GHG emissions between 2021 and 2022.
- Total CH₄ emissions in 2022 decreased 192 Gg (or 0.9 %) between 2021 and 2022, and contributed 12.2% of the absolute decrease in overall GHG emissions.

Key Drivers on GHG emissions by Sector

The table on the next page shows the main contributing categories to the absolute change in gross GHG emissions in Uruguay between 2021 and 2022.^{12:}

¹¹ Note that the Agriculture, Forestry and Other Land Uses (AFOLU) sector does not account for Land Use and Land Use Change category (LULUCF) in KPI-1. Therefore, Agriculture (including livestock) is a synonym to AFOLU throughout the Report.

¹² Main contributing categories are identified based on the combined effect of their percentage change in gross emissions between 2021 and 2022 and corresponding share in total gross GHG emissions in 2021.



Gross GHG emissions: Main Contributing Categories

Expressed in Gg CO₂eq

| Main GHG type | Sector | Source of emissions | 2021 emissions | 2022 emissions | Absolute variation 2021-2022 | Percentage variation 2021-2022 |
|------------------|--------|--|----------------|----------------|------------------------------|--------------------------------|
| N ₂ O | AFOLU | Use of synthetic nitrogen fertilizers | 1,770 | 905 | -865 | -49% |
| CO ₂ | Energy | Electricity generation | 1,442 | 802 | -640 | -44% |
| CH ₄ | AFOLU | Non-dairy cattle | 22,574 | 22,209 | -365 | -2% |
| CO ₂ | IPPU | Cement production | 477 | 436 | -41 | -9% |
| CH ₄ | AFOLU | Dairy cattle | 1,228 | 1,194 | -34 | -3% |
| CH ₄ | AFOLU | Sheep farming | 1,352 | 1,334 | -18 | -1% |
| CO ₂ | Energy | Fossil fuel consumption by manufacturing and construction industries | 1,012 | 1,035 | 23 | 2% |
| CH ₄ | Waste | Disposal of urban solid waste | 1,368 | 1,421 | 53 | 4% |
| CO ₂ | Energy | Consumption of fossil fuels in ground transportation | 3,915 | 4,160 | 245 | 6% |

Considers the three global GHGs and the main sectors contributing emissions of each GHG, as set out in the 2017 NDC. Expressed in Gg CO₂eq, metric GWP100 AR5. Main contributing categories are identified based on their percentage change in gross emissions between 2021 and 2022 and corresponding share in total gross GHG emissions in 2021. Data for 2021 corresponds to official NGHGI publication and data for 2022 was estimated for this SSLB Annual Report. Source: Emissions Report (EMR).



Energy

In Uruguay, CO₂ emissions are generated mainly in the Energy sector, specifically from the burning of fossil fuels. Within the Energy sector, ground transportation represents the main driver of CO₂ emissions, while the Industrial Processes sector represents a relatively smaller share (mostly related to cement production).

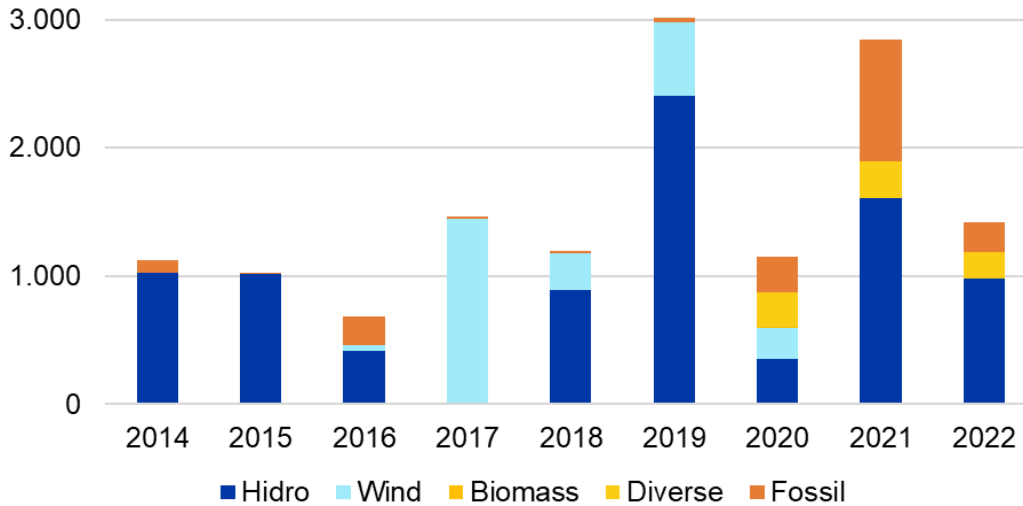
Electricity generation. Historically within the Energy sector, the category with the most interannual variability on CO₂ emissions is electricity generation. This is due to fluctuations on the consumption of fossil fuels associated with the hydropower availability tied to rainfall conditions, and Uruguay's strong regional electricity interconnection links with neighboring countries (Argentina and Brazil).

Indeed, in 2021, amid a severe drought hitting the region, there was a significant increase in CO₂ emissions tied to a surge in Uruguay's exports of electricity to Brazil (that were largely sourced with fossil fuels). During 2022, however, carbon emissions from fossil fuel-generated electricity declined 44% compared to 2021, due to better hydraulic levels (greater rainfall) and lower demand from electricity from abroad (as well as lower reliance on thermal power plants to meet this external demand). As a result, renewable sources (hydro, wind, biomass and solar) accounted for 90% of electric power generation in 2022. Uruguay remains among the world leaders in large-scale wind power and production of other forms of clean electric energy. In addition, the share of thermal biomass as a renewable source of energy is poised to increase, as the new UPM pulp mill (UPM Paso de los Toros) operating at full capacity feeds surplus electricity from biomass to the grid.



Uruguay's Electricity Exports, by Source of Generation

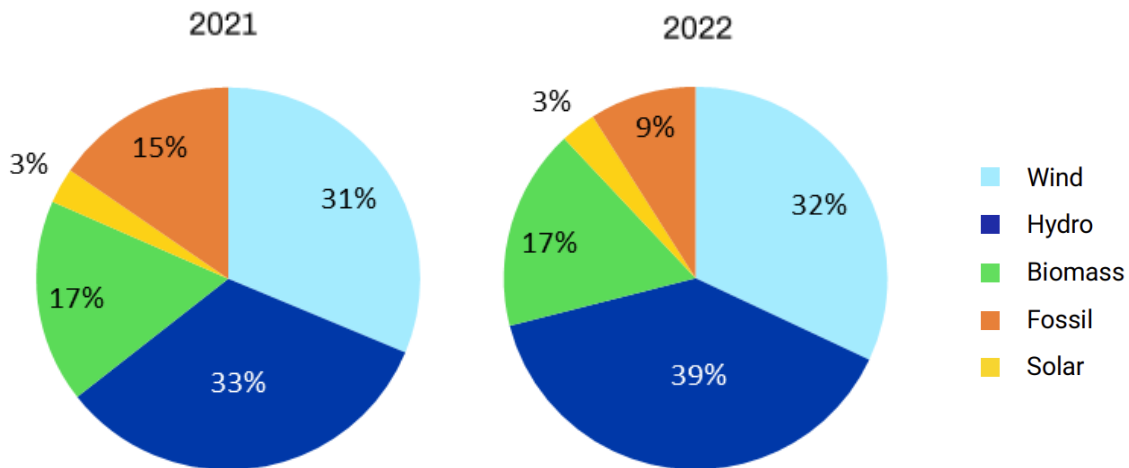
Total thousands of MWh



Diverse refers to surplus/overflows from renewable sources of wind, biomass, photovoltaic (under surplus conditions) and hydro (under overflow conditions) units. Source: National Administration of Electric Power Plants and Transmissions, 2024.

Uruguay's Electricity Generation, by Source

Percentage of total



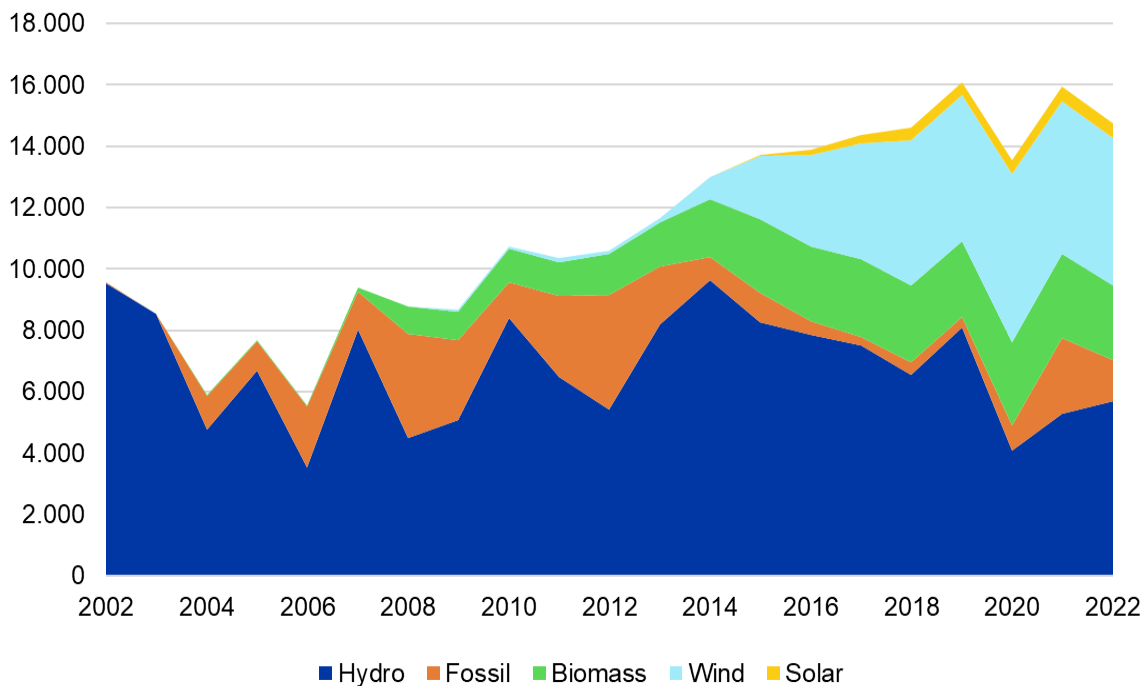
Source: National Energy Balance, 2022.



The following graph shows the evolution of electricity generation by source from 2002 to 2022:

Electricity generation by accumulated source

In gigawatt-hour (GWh), 2002-2022 period



Source: National Energy Office (DNE) of the Ministry of Industry, Energy and Mining.

Fossil fuel consumption by manufacturing and construction industries.

Emissions in the manufacturing and construction industry increased by 2% between 2021 and 2022. Specifically, the increase in GHG emissions was due to an increase in fuel consumption in the construction and paper industry, partially offset by a decrease in the food industry and cement production.

Consumption of fossil fuels in ground transportation. Within the Energy sector, the emission source that showed the greatest increase is the consumption of fossil fuels in land transportation, rising 6% during the 2021-2022 period. This was mainly driven by the significant growth of the vehicle fleet throughout the period considered and particularly, due to the rise in diesel consumption in heavy-duty vehicles and buses. However, it is important to note that despite the increase in emissions, it was lower than the increase in energy consumption. This disparity could be attributed to improvements in efficiency and the diversification of energy sources consumed, including electricity and biofuels.



Generally speaking, the latest combustion vehicles are becoming more efficient, making vehicle replacement a primary driver of efficiency improvements. Secondly, even though it remained a minority, the demand for electric energy in transportation increased due to more sales of electric and hybrid vehicles. Between 2020 and 2024 electric vehicles increased from 1,976 to 7,821 units.



Agriculture, Forestry and Other Land Uses (AFOLU) Sector

Use of synthetic nitrogen fertilizers. Estimated total N₂O emissions tied to the use of synthetic nitrogen fertilizers decreased significantly in 2022 compared to 2021 (-49%, from 1770 to 905 in CO₂eq Gg). This reduction explains almost 92% of the absolute year-on-year decrease of total N₂O emissions.

Emissions resulting from the use of nitrogen fertilizers are calculated off the volume of synthetic nitrogen fertilizers imported into the country during the calendar year. This data is expressed in tonnes of nitrogen per year, and is determined based on data provided by the National Directorate of Agricultural Services (DGSA) of the MGAP. Using this parameter and according to the emission factors from the 2006 IPCC Guidelines, direct and indirect N₂O emissions are calculated.

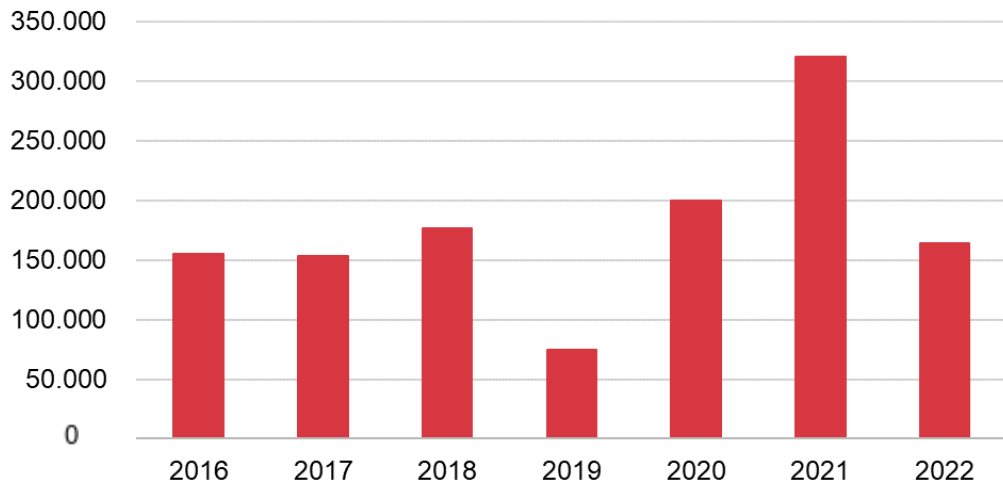
In this context, the decrease in the N₂O emissions from the use of synthetic nitrogen fertilizers is explained by the significant decline in imports of this type of fertilizers during 2022, despite the increase in the overall planted area of winter and summer crops that use nitrogen fertilizers.¹³ The volume of nitrogen fertilizer imports show significant variability year to year as shown in the graph below. It is driven by fluctuations in agricultural activity (area of agricultural soils and planted pastures), as well as exogenous factors, such as international prices (which spiked in 2022 due to conflict between Russia and Ukraine).

¹³ Imported synthetic nitrogen fertilizers during 2022 were used in the planting seasons for summer and winter crops during the agricultural cycle 2022/2023 (wheat, barley, canola, carinata, corn, sorghum, and rice).



Estimated Nitrogen Content of Imported Fertilizers

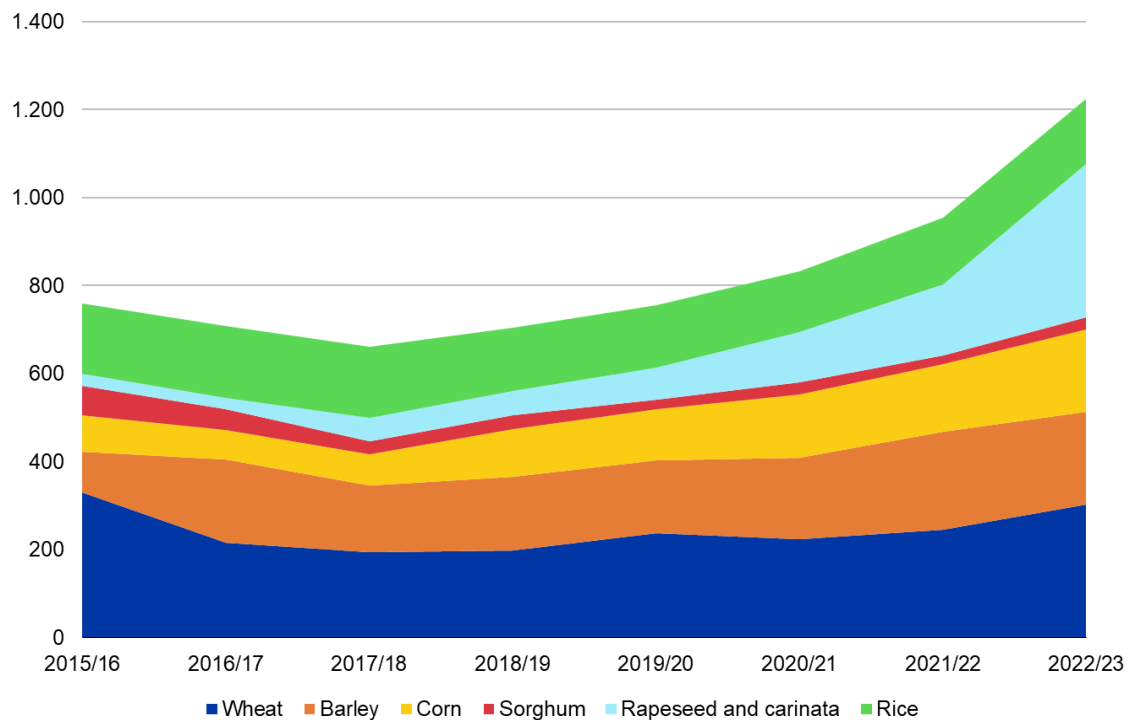
in tons of nitrogen by year



Source: Agricultural Statistics Office (DIEA) estimation of the Ministry of Livestock, Agriculture and Fisheries.

Area planted with selected crops, by agricultural year

In thousands of hectares



Source: Agricultural Statistics Office (DIEA) of the Ministry of Livestock, Agriculture and Fisheries.



Non-dairy and dairy cattle production, and sheep farming. Regarding non-dairy cattle farming, greenhouse gas emissions showed a 2% decrease during the 2021-2022 period, in line with variations in livestock stock, with higher slaughter rates. Furthermore, the change in emissions throughout the series (1990-2022 period) was much lower than the growth in meat production, indicating a sustained decrease in methane intensity ratios. In particular, a notable trend in the country's non-dairy cattle farming is the increasing contribution of younger age categories to the total slaughter, leading to a restructuring of the overall livestock composition with positive impacts in GHG emissions.

Lastly, between 2021 and 2022, both sheep farming and dairy cattle farming experienced a decrease in aggregate emissions, primarily attributed to a proportionate reduction in livestock stock within each sector. Specifically, emissions in sheep farming decreased by 1%, while emissions from dairy cattle decreased by 3%. N₂O emissions from livestock urine showed a 2% reduction in 2022 compared with 2021 (5.826 Gg CO₂eq) and this was also explained by the stock decrease in dairy and non-dairy livestock.



IPPU Sector

In the Industrial Process sector, over 99% of these emissions were generated by the mineral industry (cement production and lime production), while the remaining 1% was generated in the metal industry (steel production through scrap recycling and other uses of carbonates). Cement production has consistently accounted for the majority of CO₂ emissions, primarily due to the emissions released in the clinker production process, which is the main component of cement. During the 2021-2022 period, emissions decreased by 9% due to a reduction in clinker production at two local production plants.



Waste Sector

The waste sector accounts for approximately 8% of methane emissions in the country, primarily stemming from landfill sites according to the KPI-1 calculation. From 1990 to 2022, emissions from the disposal of solid waste have risen significantly due to an increase in waste generated by population growth, higher per capita income, and expanded coverage (municipal solid waste collection and



transportation to disposal sites). Specifically, between 2021 and 2022, overall methane emissions increased by 4%, mainly due to the rising quantity of urban solid waste disposed of in landfills.

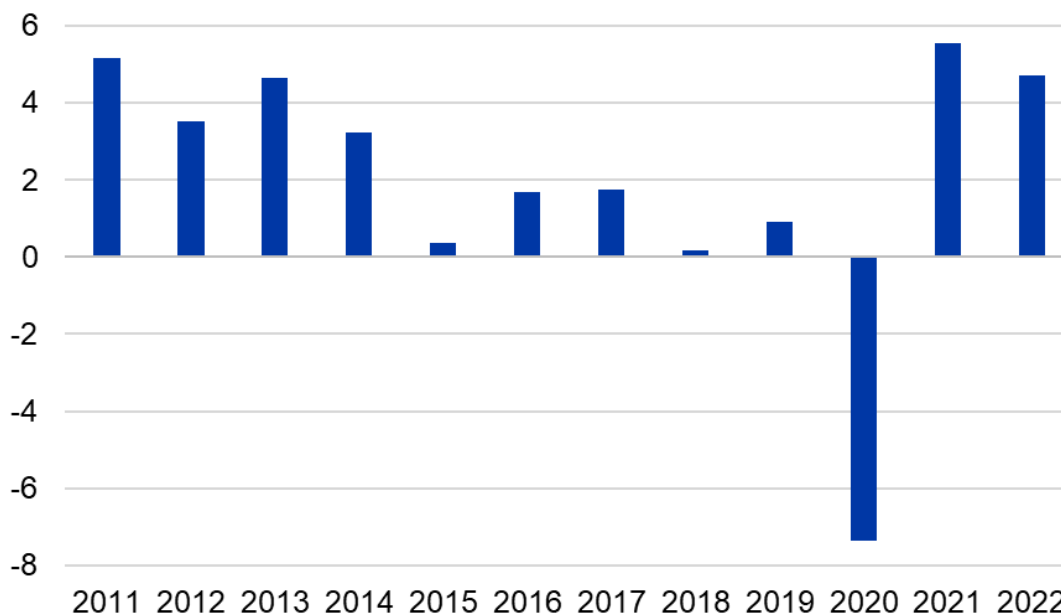


Real Gross Domestic Product

In 2022, GDP grew by 4.7% in real terms, reflecting an economic recovery driven by foreign direct investment, increased industrial production, and higher commodity exports. Additionally, the agriculture sector saw a significant improvement, particularly in the first half of the year, driven by increased demand and global prices resulting from the Russia-Ukraine conflict. However, in the fourth quarter of 2022, real GDP decreased by 1.0% year-on-year, primarily due to a 39.2% decline in the agriculture, fishing, and mining sector, and industrial production, as a result of adverse external conditions and the effects of a severe drought.¹⁴

Uruguay's Real Gross Domestic Product

Annual percent change



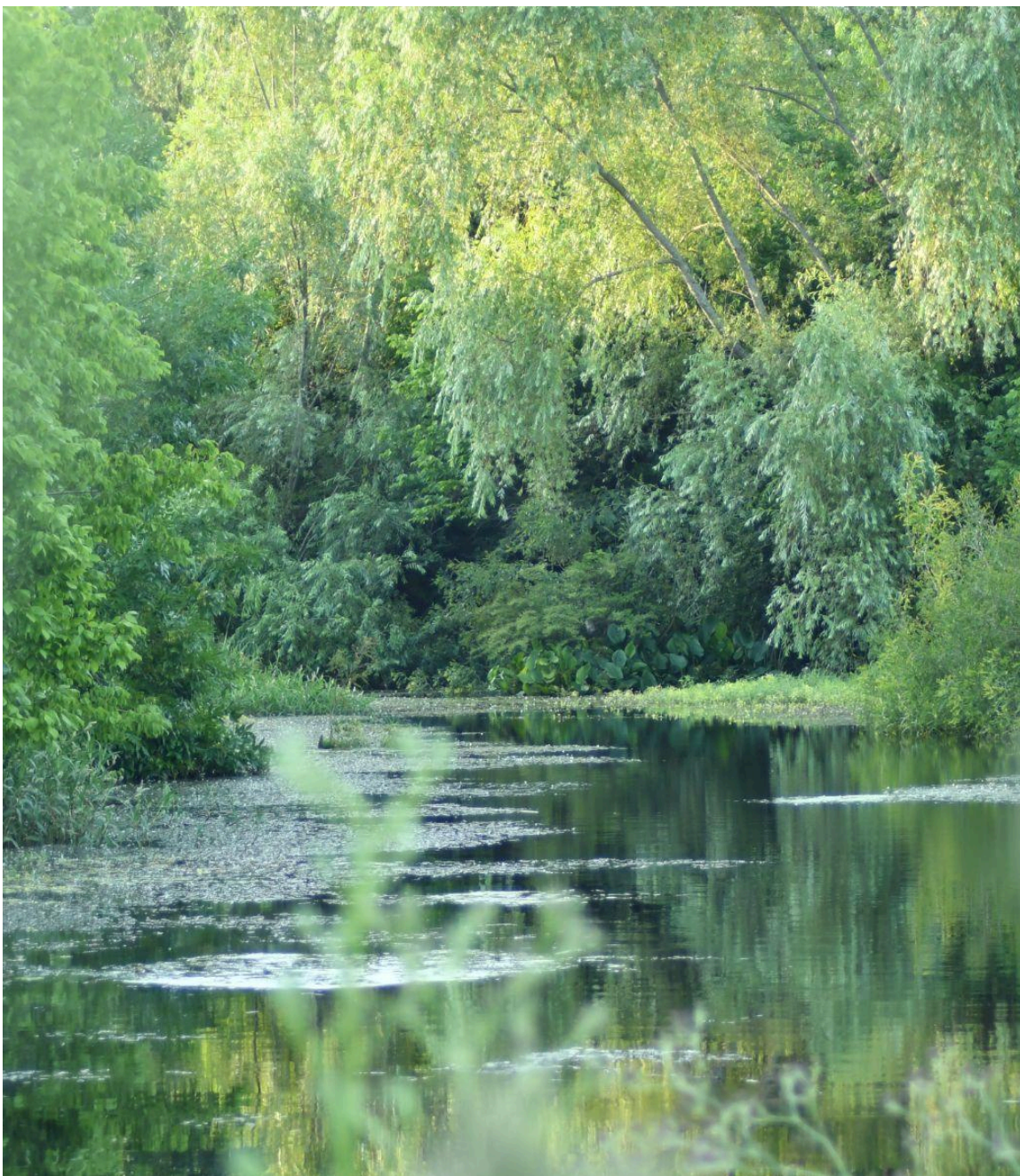
Latest official series published by the National Accounts System of the Central Bank of Uruguay, retroplated using the variation rate method as a statistical splicing technique. Source: SSLB Open Source Database as of April 2024.

¹⁴ For more information, see [here](#).



Chapter 4

Key Performance Indicator with Reporting every 4 years (KPI-2)





KPI-2 refers to the maintenance of the native forest area (in hectares) with respect to 2012 (in percentage). As established in Uruguay's SSLB Framework, the commitment is to carry out a satellite-imaging mapping (cartography)¹⁵ of the native forest area, every four years (corresponding to the years 2021, 2025, 2029, and 2033). For the years in which the cartography is not carried out (i.e., when KPI-2 is not calculated), Uruguay will provide an intermediate update on any actions, policies, regulations, and/or changes in the normative framework for conserving native forest.

The last available estimation of the native forest area was reported for 2021 in the first Uruguay SSLB Report, reaching 100% maintenance of the native forest area with respect to the base year (representing a point estimate area of 847,318 hectares).

It is important to note how challenging and ambitious it is to maintain and improve the current status of native forest in Uruguay, especially considering increasing pressures from land use and climate change impacts. Factors such as prolonged droughts, which affect tree growth, together with the impact on natural regeneration, represent significant challenges. Going forward, the country is committed to making significant efforts in terms of promotion, control and surveillance to ensure the preservation of the area.

Correspondingly, this section presents management indicators carried out associated with the actions that were implemented by the DGF during 2022 and 2023 in order to promote, preserve and protect the country's native forests.

New native forest registrations and management plans. The Forest registration constitutes the primary measure for the conservation of native forest in Uruguay, mandated by Law No.13,723.¹⁶ The existence of a National Forest Registry managed by the DGF constitutes the basis for the organization of the forest management and is essential for decision-makers, as it provides information on the forests' condition and area, its interaction with productive activities, and its ownership.

The national forestry policy establishes the existence of tax incentives for producers to promote the registration of forests in the DGF (Law No. 15,939, Forest Law). Additionally, Decree 247/989, indicates in Article 3, the tax benefits for establishments with area occupied by native forest. Furthermore, registration allows forest owners to propose interventions through management plans for exploiting the resource sustainably while respecting the ecosystem. The DGF authorizes the

¹⁵ More details on the measuring methodology can be found in the Technical Data Sheet of KPI-2 in the "KPI Definitions and SPT Values" section of Uruguay's SSLB [website](#).

¹⁶ See Law No. 13,723 [here](#).



intervention of native forests when owners submit a management plan that complies with current technical, environmental, and legal criteria.

Regarding forest registration, during 2022, 131 new registrations were made and 60 new ones were received in 2023. For the new management plans, during 2022 and 2023 were presented 63 and 44 new plans respectively.

Protection of native forest. In Uruguay, the protection of native forests is regulated by the Forest Law and its regulatory decrees. Additionally, Article No. 24 of the aforementioned law prohibits logging and any operation that threatens the survival of the native forest; with the exception that the cutting is for domestic use of the establishment, or when authorized by the DGF. For reporting potential illegal logging, society plays an active role in forest conservation and protection, through various communication channels (in person, by phone and online) with the DGF. This institution is responsible for technically investigating the reports to confirm if an offense has occurred and, if so, it has to sanction it.

In 2022, 126 inspections were carried out and 25 complaints were received. In 2023, 180 inspections were carried out and 33 complaints were received.

Failure to comply with the law and/or cutting outside of what is authorized by DGF resolution generates sanctions and fines. In 2022, DGF technicians identified 23 offenses (ex. illegal logging), covering 32.8 hectares, and 11 offenses during 2023, spanning 27.9 hectares. This indicates that offenses detected and documented during 2023, despite decreasing by 52%, covered a similar area to that reported in 2022.

Management plans in place. Management plans are a tool that justifies the need for intervention, providing a structured framework to outline and detail forest management activities. Through management plans authorized by the DGF, producers can exploit forest resources while ensuring sustainability and ecosystem preservation. Over the course of 2022, the DGF authorized 75 management plans (2.542 ha) while during 2023, 112 were authorized (1.954 ha). These represented 0.30% and 0.23% of the country's native forest area, respectively.

As a whole, no significant illicit activities were detected, nor were there increases in areas requested for management that could suggest a decrease in the surface occupied by forest ecosystems.

Implementation of the REDD+ Project. In 2022, the country completed the first stage of the Reduction of Emissions from Deforestation and Forest Degradation (REDD+) project, supported by the Forest Carbon Partnership Facility (FCPF) of the World Bank. This initiative was executed jointly by the MGAP and the MA. It aimed to provide inputs to improve the quality of the country's native forest ecosystems and



their ecosystem services, as well as to prevent GHG from deforestation and degradation processes and promote conservation actions and increased carbon sequestration.

In parallel, it sought to enhance and deepen the current knowledge about native forests through various research lines developed within a working agreement with the National Institute of Agricultural Research (INIA) and other institutions. In December 2022, the FCPF Participants Committee endorsed the REDD+ Readiness Package of Uruguay through Resolution PC/Electronic/2022/31.



Chapter 5

External Verification of Key Performance Indicator





In May 2024, UNDP published the External Verification Report for the KPI-1 values through the year 2022. The UNDP verification report concludes that¹⁷: *“In UNDP’s opinion, KPI-1 reported in the 2022 Key Performance Indicator Report for the Sovereign Sustainability-Linked Bond has been prepared in accordance with the methodologies established in Uruguay’s Sovereign Sustainability-Linked Bond (SSLB) Framework”.*

The verification also highlights that: *“KPI-1 estimation complies with the principles of quality in terms of Transparency, Completeness, Consistency, Comparability, and Accuracy, established for reporting in the Good Practice Guidance incorporated into the 2006 IPCC Guidelines.”*

In addition, it notes: *“The Emissions Report (EMR) time series 1990-2022, fully complies with the fundamental inventory requirements of Decisions 17/CP.8, 2/CP.17 y 18/CMA.1¹⁸”. Finally, the UNDP affirms that “The KPI-1 estimation process demonstrates a strong commitment to continuous improvement enabled by a robust quality assurance and quality control system, which integrates the review and recalculation of historical values to improve the quality of KPI-1 according to the good practices of the 2006 IPCC Guidelines as methodological improvements and access to better quality data emerge, as well as planning for future improvement of the KPI-1 estimation process.”*

¹⁷See: <https://sslburuguay.mef.gub.uy/333/20/areas/external-verification.html>

¹⁸ Decision 18/CMA.1 applies as of December 2024.



Chapter 6

Future Pathways: Actions to Drive Progress on KPIs





Public Policy Initiatives, and Incentives to the Private Sector

Uruguay is committed to continuing its transition toward a low-carbon, environmentally sustainable economy. The country is working towards a clean energy future through policies that seek the decarbonization of key economic sectors (with a focus on ground transportation and industry) and advance in its Second Energy Transition. In the Agriculture, Forestry and Other Land Uses (AFOLU) sector, policies will be geared towards encouraging sustainable production, the protection, conservation, and regeneration of ecosystems, and the sequestration of carbon. Moreover, the government is fully committed to sustainable economic development through innovative sustainable finance initiatives. This section lays out the different policy measures across a range of sectors that are expected to contribute to the fulfilment of goals for Uruguay's KPIs.¹⁹



Energy, Industrial Processes and Stated Owned Enterprises

Electric Mobility. MIEM continues to work on different strategies to decarbonize the transport sector, the main CO₂ emitter, seeking environmental but also economic and social sustainability.²⁰ This is supported by a strong institutional arrangement, the Electric Mobility Roundtable, a broad forum for dialogue between key public and private stakeholders in the transportation sector. The strategies include:

- Further stimulate the adoption of electric vehicles (EV), for example, through energy efficiency certificates and tax incentives granted in recent years.
- Regarding public transportation, in 2023, Uruguay approved Law No. 20.212, establishing the Sustainable Mobility Trust Fund aimed at enabling sustainable and affordable public transport. Simultaneously, the Montevideo Municipality and private transport companies designed Trust Funds for the incorporation of electric buses into the capital's transport system. This initiative aims to replace 120 new electric and accessible buses and their charging infrastructure. Also, MIEM created the Program "Subite Bus" that aims to subsidize a total of 14 new electric units, distributed throughout all the national territory.

¹⁹ For additional information on these policies, please refer to the section "Pathways to Environmental and Climate Progress" in Chapter 3 of the SSLB Framework published in September 2022.

²⁰ The World Energy Council's Trilemma Index acknowledged Uruguay's performance on Energy Security, Energy Equity, and Environmental Sustainability of Energy Systems as the best in its region and 13th globally in 2021. See [here](#).



- The expansion of electric mobility, including more initiatives to support the charging infrastructure in key transportation corridors. The electric public utility company, Administración Nacional de Usinas y Trasmisiones Eléctricas (UTE), offers new benefits for the acquisition of electric chargers, such as the 2024 Plan and a commercial discount on the connection fee for new supplies.
- Regarding capacity building, during 2024 an agreement was signed between MIEM, UTE, INEFOP,²¹ and the German-Uruguayan Chamber of Commerce and Industry (AHK), with support from the IDB. This agreement focuses on the development of occupational profiles in electromobility, aiming to adapt and design technical-professional career paths and study programs related to electric mobility.

Energy Efficiency. MIEM is conducting several initiatives that aims to supports the purchase of Class A electrical equipment,²² and the issue of energy efficiency certificates²³ that contribute to the replacement of technologies and promote energy efficiency in households.

In this line, UTE is poised to achieve 100% coverage of smart meters by the end of 2024. As a result of deploying this infrastructure, impacts such as improved commercial products promoting energy efficiency and renewable sources usage are expected.

Electricity generation. The full-capacity operation of the new UPM pulp mill (UPM Paso de los Toros) has increased the installed renewable energy capacity in the electric grid, as well as the proportion of biomass in the total energy mix. Specifically, the installed biomass capacity rose from 9% to 14% of the total, increasing from 417 MW to 731 MW. Additionally, the country continues to expand its installed renewable energy capacity, with a new 100-megawatt photovoltaic solar park scheduled to be installed in the coming years. This will increase the installed capacity of this source by 37%, enhancing the complementarity between intermittent renewable energy sources.

Additionally, UTE is leading the construction of the extra-high-voltage power line (500 kV) between Tacuarembó and Salto Departments, which was the first green transmission line financed by IDB Invest worldwide. With this project Uruguay's electrical sector aims to achieve the first certification for green transmission lines worldwide.

²¹ Instituto Nacional de Empleo y Formación Profesional.

²² See Programa Renovate [here](#) and Plan 2024 UTE [here](#).

²³ See Energy Efficiency Certificates [here](#).



The H2U Program continues to make progress in implementing actions aimed at developing the green hydrogen economy in Uruguay. During 2024, activities have been carried out to further strengthen national knowledge and capabilities in this area. Some of these activities are: training workshops, research and development projects, collaboration with international partners as the Government of Germany and the European Union, public awareness campaigns, and policy developments. In addition, recently two pilot projects for the production of green hydrogen for use in fuel cell vehicles for forestry trucks are currently under development, aiming to replace the use of fossil fuels at the national level. One of the projects is supported by state subsidy funds, and both will receive benefits linked to the Investment Promotion Law, which can represent a high percentage of return on investment through tax exemptions.

Finally, the oil refinery company, Administración Nacional de Alcoholes y Portland (ANCAP), has made some changes in its refinery that allowed it to replace part of the fuel oil used in its furnaces and boilers with natural gas. This change is expected to have a significant impact on CO₂ emissions, estimated at saving the equivalent to the emissions from 45,000 combustion-engine vehicles on the road.



Agriculture and Livestock Management

Sustainable livestock farming and production. MGAP in conjunction with MA and MEF, established a new program to promote the adoption of technologies by livestock producers to meet the target sets for 2030 under Uruguay's Second NDC. The objectives of this Program are to increase productive efficiency and, thereby, reduce the methane emission intensity related to meat production, while simultaneously improving the producers' incomes and certain biodiversity indicators.

Additionally, within the framework of the National Climate Change Response System (SNRCC, in Spanish), the Government will begin the execution of the action "Sustainable Livestock in Uruguay", funded by the European Union's Euroclima Program. The objectives of this initiative are to develop a livestock sustainability monitoring system, design a capacity-building program for sustainability, and pilot scaling methods for good livestock management practices to enhance sustainability.

In line with the measures also established in Uruguay's Second NDC, the country is also working in the following areas, where progress has been made:²⁴

²⁴ See SSLB [website](#).



- Incorporate good practices in livestock and grassland management (including sown legumes with high tannins concentration) to reduce GHG emissions and enhance soil carbon sequestration. The results of incorporating this type of practices were presented in the “Report on Systematization of Livestock Practices and Technologies with Mitigation Potential”.²⁵
- Develop an animal breeding platform with the objective of reducing methane emissions for cattle and sheep without losing sight of livestock productivity. This includes strengthening the incorporation of genomics into current animal breeding programs, selecting more efficient animals converting feed in product and estimating the potential impacts of genetic improvement on GHG emissions mitigation and its co-benefits with climate change adaptation. The National Institute of Agricultural Research (INIA) has presented investigations results on the Genetics for Sustainable Livestock for Hereford Breed.²⁶
- Continuing the working on investigation to generate science-based evidence on the applicability of methanogenesis inhibitors in livestock systems (dairy, confinement, and field) and assess their potential to mitigate GHG emissions and their impact on animal production. see “Report on Systematization of Livestock Practices and Technologies with Mitigation Potential”.²⁷
- Estimate the potential impact of animal health issues on methane emission reductions for cattle and sheep and their co-benefits with climate change adaptation. In 2021,²⁸ the Departmental Animal Welfare Institutions started its operations, highlighting the role that municipalities have to advance in coordination, evaluate what has been done, and propose future actions and betting on decentralization throughout Uruguay.

National Strategy for Agricultural Development (SENDA).²⁹ The Agriculture, Planning and Policy Office (OPYPA) of MGAP developed the SENDA. This initiative, based on a technical approach, aims to foster an environment of exchange that allows for reflection on the dynamics of agricultural chains and their contribution to the national economy. The methodology employed identified six strategic dimensions that serve as a reference for the coordinated design of sectoral policies in the context of major future trends: international integration, infrastructure and logistics, sustainability ecosystems, productive and social developments, information technologies for agriculture and institutional capacities.

²⁵See report [here](#).

²⁶ See reports [here](#).

²⁷See report [here](#).

²⁸See website [here](#).

²⁹ See Strategy [here](#).



Reducing use of synthetic nitrogen fertilizers. Uruguay continues to advocate resources to promote research on the benefits of the incorporation of the slow-release fertilizers and/or adjustments in the timing of fertilizer applications for nitrogenous fertilizers,³⁰ and exchange with farmers on the efficiency of nitrogen fertilization on crops and pastures. Likewise, based on the results of the aforementioned research, the existing economic and fiscal instruments are being reviewed to incentivize the use of slow-release fertilizers.

Promote agroecological production. Uruguay continues the execution of the "Agroecological and Resilient Systems in Uruguay" project (SARU for its Spanish acronym), with the objective of strengthening agricultural systems and capacity building of rural producers.³¹ The Project has already generated results that enable it to address the actions defined in the project according to the planned commitments. At the same time, impacts are observed in all lines of action established during the design, indicating that they have been planned to have proven and executable results (for more information see the Annual Report of OPYPA 2022).³²

In that line, the country continues its commitment to sustainable development and the implementation of agricultural practices that respect the environment while promoting agricultural efficiency and productivity. In that sense, the country advances in the Regulation of Bio-inputs for Agriculture, working on a project to specifically regulate botanical products, which are already registered under existing decree.

Organic agricultural production has been adopted by groups of beef cattle farmers in a certified process with industry. This practice avoids the use of synthetic fertilizers and chemicals and consumes less energy, reducing its carbon footprint and promoting practices that increase agricultural biodiversity and soil carbon. The MGAP has systematized the certification of organic and integrated agricultural and aquaculture production through a Presidential Decree in May 2022. This decree established the National Certification System for Organic and Integrated Production, in which producers can voluntarily participate, adapting to the new characteristics to these production systems and to a growing demand from consumers for organically grown products.

³⁰ Slow-release fertilizers allow the continuous supply of nitrogen throughout the crops growing season and reduce nitrogen losses that occur through volatilization and denitrification. By adjusting the timing of application, the nutrients can be made available to the plants according to their specific requirements, optimizing the quantity of nitrogen used. Such implementations serve as better practices in the utilization of synthetic nitrogen fertilizers, ultimately leading to a reduction of nitrous oxide emissions.

³¹ See project [here](#).

³² See the Annual Report OPYPA [here](#).



Waste Management

The MA has led the development of the National Waste Management Plan, in the framework of the Waste Law approved in 2019. The National Waste Management Plan (PNGR) was elaborated through a participatory approach, embodying a set of principles and strategic directives that will be implemented in association with subnational governments and with the participation of the private sector.

Consistent with the hierarchical scale of waste management established by the Waste Law, the final disposal of waste is envisaged as a measure of last resort. The PNGR aspires to significantly reduce the volume of waste consigned to final disposal, thereby mitigating the generation of GHG emissions. It aims to enhance the environmental standards of final disposal operations across the country and to foster the development of national capabilities. Furthermore, it envisions that all household waste disposal sites will maintain optimal environmental conditions and be equipped with methane capture and combustion systems.

In September 2023, Uruguay presented the **National Strategy for the Prevention and Reduction of Food Losses and Waste (FLW)**, designed to make visible national and regional initiatives and activities that address the problem and aim to find joint solutions between the various stakeholders. This plan is envisioned as a planning tool to prevent, reduce and improve the management of FLW in the country, based on a comprehensive approach identifying the main causes along the production chain.³³

³³ See Strategy [here](#).



Forestry and Other Land Uses

Communication Strategy. DGF carried out a strong awareness and information campaign on the protection of native forests and the regulation in force, reaching not only producers but also the wider civil society. During 2022, the communication strategy was framed within the SENDA program, developed through the concept of NATIVE PATH,³⁴ which involves presence in the media, social networks, audiovisual material, and a specific and user-friendly area on the MGAP website with educational information.

Additionally, DGF participated in the United Nations Forum on Forests held in New York to discuss global strategies and exchange on policy implementation and became part of the “Open-Ended Intergovernmental Ad Hoc Expert Group” in Vienna; with the objective of the mid-term review of the International Agreement on Forests.

Adapting to new regulations on deforestation. Another important milestone is that the DGF started to carry out the project called "Certification of agro-exportable products from native forest land". The project is aligned with the new commercial requirements of the European Union for products free from deforestation, as determined by Regulation (EU) 2023/1115, the "Regulation on Deforestation-Free or Zero Deforestation Chains (EUDR)". This project aims to strengthen institutional capacities, and looks to implement a public certification system for sustainable management of native forests linked to the main agro-export value chains. This is a milestone for the beginning of a transition towards productive integrity associated with biodiversity conservation. This public initiative seeks to establish criteria and quality and origin standards, while adding value to various production chains, promoting the conservation of a key ecosystem, and enabling consumers to access products from sustainable management. More information is presented in the Case Study: "Certification of agro-exportable products from native forest land".

Promoting research. During 2023, investments were made in the Germplasm Center and National Nursery of Toledo to improve production, as well as historic investments in equipment for the operations of the nursery. Likewise, greater plant production was achieved by supplying key quality inputs: 7,950 plants and cuttings were produced with the aim of promoting rehabilitation and reforestation activities. Despite the atypical climatic situation in 2023, 45,965 kg of seeds of native species were collected, processed and preserved for the aforementioned Center and the

³⁴ See the SENDA program [here](#).



exchange of genetic material of native species with that of the National System of Protected Areas (SNAP) continued and of the Administrative Commission of the Uruguay River (CARU).



Sustainable Finance Initiatives

Sustainable Sovereign Financing. The government has engaged multilateral banks in developing loan instruments that link the cost of capital to the country's forward-looking environmental targets under the Paris Agreement. In that context, Uruguay has signed a Sovereign Sustainability-Linked Loan (SSLL) with the World Bank, linking the loan's cost of borrowing with the country's success in meeting the indicator of reducing the intensity of livestock methane emissions. As a food supplier to the growing world population, Uruguay intends to meet the challenge of boosting livestock production (which is an integral part of our economic fabric), while reducing the intensity of methane emissions and preserving its unique grassland ecosystem and native forests. Furthermore, by turning its Nationally Determined Contribution commitments into financially binding targets through its SSLB and SSLL, Uruguay has enhanced its transparency and accountability on climate action through financial innovation. For more information see the Case Study "Sovereign Sustainability-Linked Loan with the World Bank".

Uruguay is currently working on a sustainability-linked loan from the IDB, within the recently launched CLIMA pilot program, an innovative framework that will reward borrowers with a discount of 5% on the loan principal for achieving climate and nature objectives. The loan will embed energy efficiency goals, and is jointly undertaken by the Ministry of Economy and Finance, the Ministry of Environment, the Ministry of Industry, Energy and Mining and the state-owned company UTE.

Sustainable market development. Also, under the framework of the Sustainable Finance Roundtable (Mesa de Finanzas Sostenibles, MFS), MEF and the Central Bank of Uruguay have launched the process for developing a national green finance taxonomy.³⁵ Both institutions are currently assessing the international experience to define the scope of the work, and the Ministry of Environment is currently participating in these technical working groups. With the IDB support, the MFS is developing "sustainable activities guidelines", according to the MEF and BCU institutional commitments within the current government period. In 2023, UNDP also through its Sustainable Finance Hub, undertook a capacity building workshop for public and private stakeholders related to sustainable finance in Uruguay.

³⁵ For more information on the Sustainable Finance Roundtable, see [here](#).



Sustainable investment promotion. Under the Investment Promotion Law, several incentives and tax benefits have been introduced for low-carbon productive investments that generate favorable environmental externalities.³⁶ Companies that qualify recover a percentage of the executed investment (between 30% and 100%) depending on the score obtained in the matrix of committed indicators, which is based on the uptake of clean technologies.³⁷ During the period 2020-2021, 421 projects were recommended for granted exemptions, resulting in a cumulative intended investment of approximately USD 103 million. Further, in 2022 there were 415 projects recommended under the Clean Technologies indicator, corresponding to an investment of around USD 273 million. Of the total recommended projects, 59% were classified under the clean technology adoption indicator in 2022.

³⁶ For more information on the Investment Promotion Law, see [here](#).

³⁷ This indicator covers investment in those goods that contribute to environmentally sustainable production, either through efficiency in the use of resources such as raw materials, inputs, water, and energy, the substitution of fossil fuels for renewable ones (solar thermal, wind, waste-to-energy, and photovoltaic renewable energy generation), or through positive environmental impacts such as those derived from biogas purification, internal water recycling, and reduction in the generation of waste, effluents, and polluting emissions. It also provides incentives for investments in electric vehicles, renewable energies, LEED (Leadership in Energy and Environmental Design) certified buildings, and adaptation to climate change in the agricultural sector.



Chapter 7

Case Studies





Certification of Agro-Exportable Products from Native Forest Land

The European Union's enactment of regulation 2023/1115 on deforestation-free products (EUDR) marks a significant milestone in the requirements for exporting to this market. This regulation, which will come into force by end-December 2024, will establish the obligation to demonstrate that products destined to the EU come from areas free of deforestation. Initially, the regulation will affect key products for Uruguay, such as beef, soy and wood, mainly given that the EU is the country's second trading partner.

Uruguay is firmly committed to fostering the implementation and compliance with environmental standards that contribute to the sustainability of production chains linked to native forests and biodiversity conservation. In this context, the DGF is currently working on the Certification of Agro-exportable Products from Native Forest Land project. This Certification project seeks to strengthen institutional capacities to implement a public certification system for the sustainable management of native forests related to key agro-export value chains. Specifically, the project's goal is to develop a certification proposal system and conduct a pilot export experience to the EU that allows quantifying the requirements for its future application. This initiative is part of Component 2 of the European Union's (EU) AI-Invest Verde program, which aims to promote sustainable growth and job creation in Latin America.

Implementing the agroforestry certification, and accessing more demanding export markets, implies the need for complete traceability of the products, from their initial production phase until their arrival at the container or final shipment. The certification would thus establish criteria and quality standards while adding value to the production chain, promote the conservation of a key ecosystem, and enable consumers to access products sustainably managed. The DGF is actively collaborating with authorities and key stakeholders in the agro-export sector and has already carried out a pilot experience. In April 2024, a wood chip shipment to Portugal met all the requirements established by the new regulation, i.e., the complete traceability of the products, from their initial production phase until their arrival in the container or final shipment. As part of the due diligence process, DGF carried out the deforestation inspections, as well as georeferencing and geolocation of the sites from where the wood for the shipment of chips would be extracted. This action was complemented with an evaluation to determine that there was no deforestation from 2020 to date. Once confirmed, the corresponding approval was granted. In addition, a review of the information was carried out by external consultants to ensure its compliance with the regulations, which culminated in the issuance of the certificate by the MGAP, in compliance with the new European Union regulations.



Trust Funds for Sustainable Mobility

Uruguay is firmly committed to promoting electric mobility, within the framework of its second energy transition. This commitment involves accelerating the incorporation of electric buses to the public transportation fleet. These buses have lower environmental impact, reducing the dependence on imported energy sources (oil), and increasing the reliance on domestic renewable energy sources. Articles 584 and 585 form Law 20.212 of November 2023, mandated the Executive Branch to create the Trust Fund for Sustainable Mobility (FiMS, by its acronym in Spanish) which will replace the Public Transport Tariff Administration Trust Fund (FAB, by its acronym in Spanish). This latter Trust Fund was created back in 2006, to reduce the public transport tariff by subsidizing diesel expenses. By design, this subsidy had operated as a negative incentive for the replacement of diesel buses for electric buses. During 2023, the Government worked on the FiMS characteristics in order to replace the FAB and make electric buses competitive, without impacting fares to customers.

The FiMS will manage the resources delivered to programs that enable public transportation of passengers in a sustainable manner and at affordable prices. The FiMS will have the Executive Branch as Trustors, acting through the Ministry of Economy and Finance, the Ministry of Transportation and Public Works and the state-owned oil enterprise ANCAP (National Administration of Fuels, Alcohol and Portland).

FiMS incorporates a transition phase and sets deadlines and incentives to accelerate electric mobility in the public transport subsystems (Urban, Middle-distance, Long-distance). While current diesel buses will retain its subsidy support, the new diesel buses that are incorporated into the Montevideo public transport subsystem, the biggest subsystem, will not receive refunds from the FiMS. Only buses with exclusively electric motorization that are incorporated into the Montevideo subsystem will receive support from FiMS.

In addition, the Municipality of Montevideo and private transport companies designed Trust Funds for the incorporation of electric buses into the capital's transportation system. This financial instrument will allow the replacement of 120 new electric and accessible buses during 2024 and revamp their charging infrastructure. With this measure, the emissions of 120 diesel buses, equivalent to 7,680 tons of CO₂/year, can be avoided. Thus, it is expected that the electric fleet will reach 8% of the total fleet of Montevideo city. Likewise, the validators of the entire public transport fleet will be replaced, moving from 2G to 5G technology, allowing different payment alternatives, optimizing and streamlining operations.



Sovereign Sustainability-Linked Loan with the World Bank

On May 7th, 2024, Uruguay signed a new Development Policy Loan (DPL) with the World Bank for USD 350 million. The loan includes the groundbreaking feature of a step-down in interest payments based on verifiable performance against ambitious climate targets.

This innovative Sovereign Sustainability-Linked Loan (SLL) allows for a reduction in the interest rate paid (of up to 100 bps per year) if Uruguay overperforms on its Paris Agreement commitments to lower the intensity of methane emissions from its livestock sector (KPI). This could result in up to US\$12.5 million in interest savings throughout the maturity of the loan, which would be channeled to climate-smart agricultural projects. The loan does not include financial penalties if KPI targets are not met.

Uruguay is the first country to benefit from this financial mechanism and the World Bank will seek to replicate and scale this approach to incentivize countries to provide global public goods.

The design of the loan involved strong coordination between the Ministry of Economy and Finance, the Ministry of Livestock, Agriculture and Fisheries, and the Ministry of Environment. Close collaboration with the World Bank's technical teams was also essential in the design of the instrument. The loan is underpinned by a robust system of annual reporting and external verification of the KPI involved. As in the case of the Sovereign Sustainability-Linked Bond (SSLB) issued in 2022, the United Nations Development Program will independently verify the environmental performance indicator. A Concept Note, that can be found [here](#)³⁸, describes the instrument's environmental goal-driven design, the innovative financial mechanism and the reporting and verification framework underpinning it.

As a food supplier to the growing world population, Uruguay intends to meet the challenge of boosting livestock production and productivity (which is an integral part of our economic fabric), while reducing the intensity of methane emissions and preserving its unique grassland ecosystem and native forests. Furthermore, by turning its NDC commitments into financially binding targets through its SSLB and SLL, Uruguay has enhanced its transparency and accountability on climate action through financial innovation.

³⁸ See Concept Note [here](#).



Annex 1

Descriptive Statistics on Greenhouse Gas Emissions in 2022

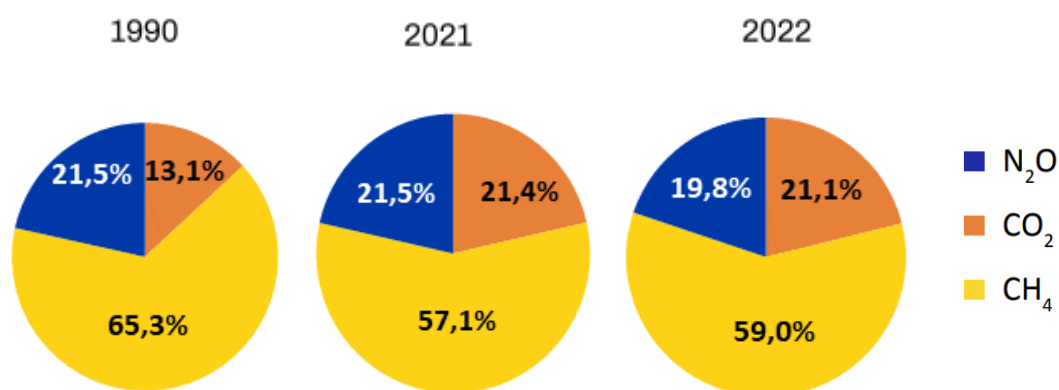


As of 2022, Uruguay's emission profile continues to be strongly determined by non-CO₂ GHG emissions. Estimated CH₄ (methane) emissions represented 57% of aggregate gross national emissions and N₂O (nitrous oxide) accounted for 19.9%. Both non-CO₂ emissions are almost completely generated in biological processes. Finally, CO₂ (carbon dioxide) emissions made up 21.1% of the total.³⁹

The chart below shows the evolution of the composition of Uruguay's emissions profile in 1990 (reference year), and years 2021 and 2022. Compared to the previously available data for 2021, in 2022 the proportion of CH₄ emissions has increased mostly at the expense of the share of N₂O emissions, while the share of CO₂ in aggregate emissions has remained relatively stable.

Evolution of Uruguay's Gross Greenhouse Gas Emissions Profile

By gas, percentage of total each year



Considers the three global GHGs and the main sectors contributing emissions of each GHG, as set out in the 2017 NDC. Expressed in Gg CO₂eq, Metric GWP100 AR5. Source: SSLB Open Source Database as of April 2024.

In Uruguay, CO₂ emissions are generated mainly in the Energy sector, specifically from the burning of fossil fuels. In 2022, CO₂ emissions from the Energy sector represented 93.4% of total CO₂ emissions. Within the Energy sector, transport represents the main driver of CO₂ emissions. Finally, the Industrial Processes sector represented less than 7% of CO₂ emissions (mostly related to cement production).

CH₄ emissions and N₂O emissions are generated almost entirely in the Agriculture (including livestock) sector, as methane and nitrous oxide greenhouse gases are strongly linked to primary food production (crops and beef).⁴⁰ This sector accounted for 91.8% of total CH₄ and 96.3% of total N₂O emissions in 2022. Finally, the Waste

³⁹ This section of the Report refers to gross GHG emissions categories considered in the definition of KPI-1, which are those set out in the 2017 NDC.

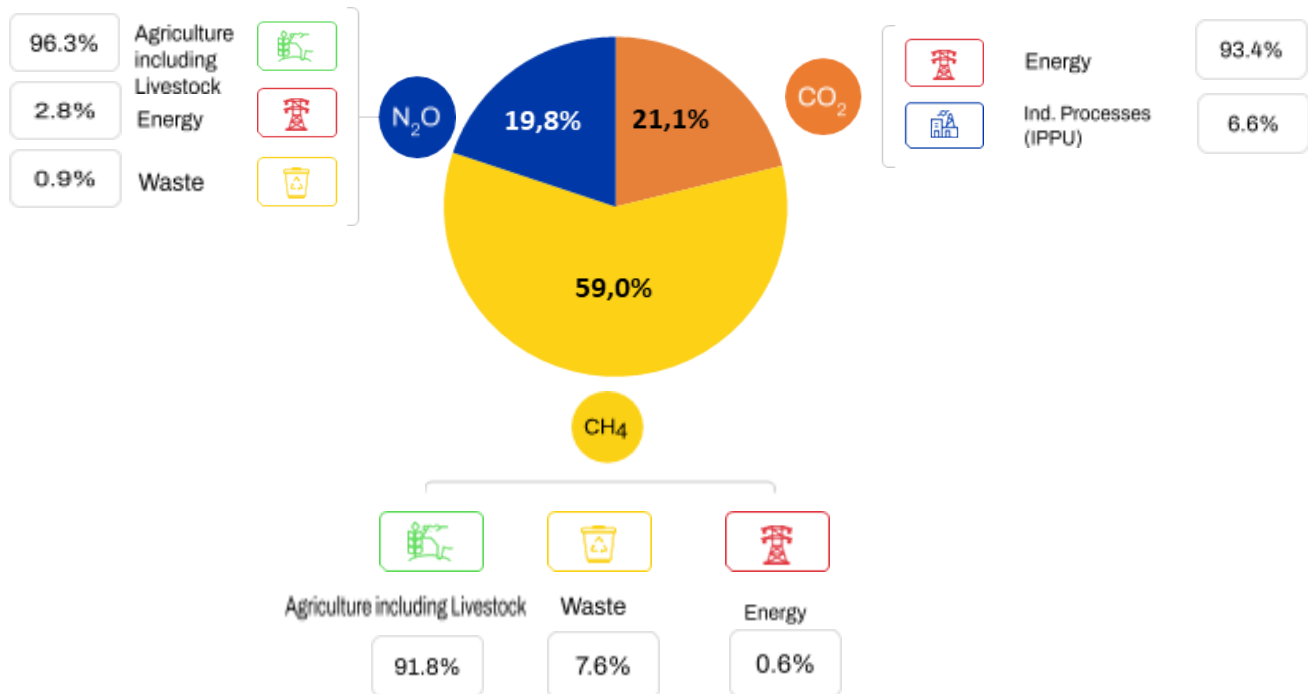
⁴⁰ Note that the Agriculture, Forestry and Other Land Uses (AFOLU) sector does not account for Land Use and Land Use Change category (LULUCF) in KPI-1. Therefore, Agriculture (including livestock) is a synonym to AFOLU throughout the Report.

sector represented 7,6% of all CH₄ and slightly less than 1% of N₂O emissions (mostly from disposal of solid urban waste).

According to the latest available data for 2022, cattle raising continues to be the most carbon-intensive economic activity within the Agricultural sector. This activity accounts for 74% of CH₄ emissions (mostly due to enteric fermentation)⁴¹ and approximately 26% of N₂O emissions (due to manure left on pasture by grazing animals).⁴²

Uruguay's Gross Greenhouse Gas Emissions Profile, by sector

Percentage of total within each type of gas, 2022



Considers the three global GHGs and the main sectors contributing emissions of each GHG, as set out in the 2017 NDC. Expressed in Gg CO₂eq, metric GWP100 AR5. Source: SSLB Emissions Report (EMR).

Sector-wise, emissions considered in KPI-1 from AFOLU sector accounted for 26.748 Gg CO₂eq and were mainly explained by CH₄ emissions from livestock production (19.359 Gg CO₂eq) and by N₂O emissions from all livestock urine (5.739 Gg CO₂eq) and from the use of synthetic nitrogen fertilizers in crop production (905 Gg CO₂eq).

⁴¹ Enteric fermentation accounts for methane generated during the digestive process of ruminants (i.e., cattle and sheep).

⁴² Uruguay's food production is expected to continue growing in the future, since the country has particularly fertile soils, global demand is on the rise, and the country intends to continue to contribute to global food security. This means that Uruguay's GHG inventory is, and will continue to be, heavily influenced by the emissions from the Agriculture sector.



Annex 2

Reporting and External Verification of KPI-1





Reporting

The KPI-1 covers gross GHG emissions of CO₂, CH₄, and N₂O, corresponding to the gases, sectors, categories, and sources set out in the 2012 NGHGI, on which the 2017 Nationally Determined Contribution's emissions intensity reduction commitments were established.⁴³ The economy-wide emissions of these greenhouse gases are aggregated in CO₂-equivalent units using the 100-year Global Warming Potential metric established in the Fifth Assessment Report (GWP-AR5) of the IPCC.

The GHG emissions reported for 2022 (estimated during 2023), as well as any adjustments to historical values made for the inclusion of additional data sources and recalculations due to methodological improvements or corrections, have been carried out according to the good practices and scientific standards of the 2006 IPCC Guidelines for the preparation of the NGHGI. The resulting historical series from 1990 to 2022 of GHG estimates are contained in the Emissions Report (EMR, or IEM for its Spanish acronym), delivered to the SSLB inter-ministerial Working Group in December of 2023.

To obtain the GHG intensity measure through 2022, aggregated gross emissions are normalized by real GDP (measured in billions of constant 2016 pesos). For these purposes, the latest available official time series of the National Accounts System of the Central Bank of Uruguay is used (as published in March 2024), retropolated to 1990 using the variation rate method as a statistical splicing technique.⁴⁴

Finally, to calculate the performance of the KPI with respect to its baseline year, the 2022 KPI Report (KPIR, or INI for its Spanish acronym) contains the calculation of the KPI-1 following the formula established in Uruguay's SSLB Framework.⁴⁵ The KPIR was put together by the Programming, Monitoring, Reporting and Verification Working Group (pMRV) and the final version was delivered to the inter-ministerial SSLB Working Group in April 2024.

These two detailed methodological reports (EMR and KPIR) are published in Uruguay's SSLB website together with this second Annual Report.⁴⁶ The underlying historical data for the corresponding KPIs between 1990 and 2022 can be found in the "Open Data Source" published on Uruguay's SSLB website.⁴⁷

⁴³ See NDC [here](#).

⁴⁴ In line with international standards, the Central Bank of Uruguay (BCU) reviews national accounts estimates, particularly gross domestic product (GDP) data, on an annual basis pursuant to its "Data Review and Release Calendar Policy." According to this policy, annual GDP estimates for a given year can undergo up to four annual revision rounds until they become firm (i.e., the fourth vintage is the final one).

⁴⁵ More information on the estimation methodologies for the KPIs and the time series for real GDP can be found in the Technical Data Sheets in the SSLB's [website](#).

⁴⁶ In the "SSLB Annual Report" section of the SSLB [website](#).

⁴⁷ See website [here](#).



This reporting work was developed through close coordination between the four ministries involved and complying with the work schedule initially established, fulfilling the SSLB's reporting commitments, and further developing its already strong internal governance system.⁴⁸

External Verification

UNDP has externally and independently verified the key performance indicator KPI-1 included in the Sovereign Sustainability-Linked Bond (SSLB) Framework, as reported in the 2022 KPIR prepared by the Government of Uruguay.⁴⁹

The technical review of the EMR time series 1990-2022 of CO₂, CH₄, and N₂O from the Energy, Industrial Processes, Agriculture, and Waste Sectors was conducted according to the methodology contained in the United Nations Framework Convention on Climate Change's (UNFCCC) Guide for Peer Review of National Greenhouse Gas Inventories. Since the KPI is an intensity metric, the denominator (the time series for real GDP) being used was also externally verified.

Uruguay and UNDP have set up an accelerated four-month external review process for the KPI. Despite the complexities of collecting and externally validating the country's annual GHG emissions, Uruguay's publication of annual, externally verified GHG data, with a lag of approximately one year and five months from the end of the observation year (2022), enhances the current reporting and peer-reviewed verification process applicable to the country as established under the requirements of the UNFCCC.⁵⁰

⁴⁸ More information on the work-streams for the reporting of KPIs can be found at Uruguay's SSLB website section "Inter-Ministerial SSLB Governance". See [here](#).

⁴⁹ See KPIR. <https://www.mef.gub.uy/30672/20/areas/sslb-annual-report.html>.

⁵⁰ These require – for non-Annex 1 countries such as Uruguay – biannual reporting and generally involve a lag of 3.5 years between the end of the observation year and when the final verified data is reported.

