



MVOTMA

Ministerio de Vivienda
Ordenamiento Territorial
y Medio Ambiente



URUGUAY

SECOND BUR

Facilitative Sharing of Views
SBI 50, Bonn, June 19, 2019

PRESENTATION OUTLINE

Part I: Summary of BUR 2

- National circumstances
- GHG inventory
- Mitigation actions
- Support needed and received

Part II: Experience and lessons learned in participating in the ICA process

Part III: Q&A



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NATIONAL CIRCUMSTANCES

| | |
|------------|---|
| Population | 3,467,054 |
| Area | 176,215 km ² |
| Geography | Plains with low hills |
| Climate | Temperate with extreme events |
| Economy | 4.1% annual average growth rate (2003-2018) |



ECONOMY BASED ON AGRICULTURE AND TOURISM
POPULATION AND MAIN INFRASTRUCTURES IN COASTAL AREAS
**VULNERABLE TO THE ADVERSE EFFECTS
OF CLIMATE CHANGE**



URUGUAY'S CLIMATE CHANGE INSTITUTIONAL ARRANGEMENTS AND LEGAL FRAMEWORK

1990 Ministry of Housing, Land Planning and Environment (MVOTMA)

1994 Ratification UNFCCC, Kyoto Protocol (2001) and Doha Amend (2018)

2009 National Climate Change Response System (SNRCC)

2015 National Environment, Water and Climate Change Secretariat

2016 National Environment System and National Environment Cabinet

2016 Ratification Paris Agreement

2017 Approval of National Climate Change Policy and First NDC

NATIONAL GHG INVENTORY SYSTEM

- System designed and implemented in 2016
- Based on EPA
- File management system
- Institutional arrangement for the National GHG Inventory

NCCRS WG on GHG Inventory

**Ministry of Housing,
Land Planning and
Environment (MVOTMA)**

- National compilation
- IPPU
- Waste

**Ministry of Livestock,
Agriculture and
Fisheries (MGAP)**

- AFOLU

**Ministry of Industry,
Energy and Mining
(MIEM)**

- Energy

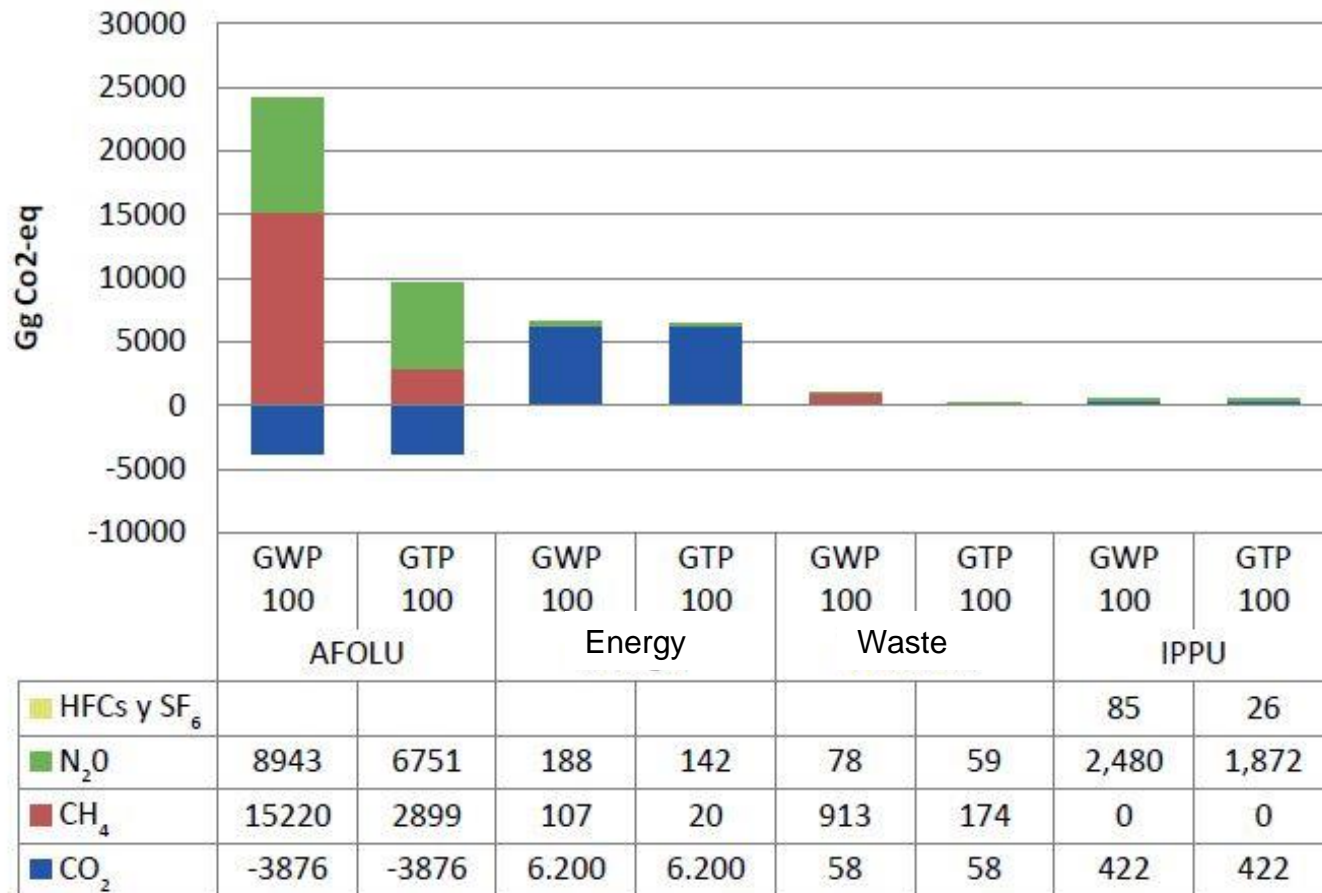
GHG INVENTORY YEAR 2014 (2006 IPCC GUIDELINES)

| Categories | Emissions (Gg) | | | Emissions CO2-eq (Gg) | | | | | Emissions (Gg) | | | |
|-------------------------------------|----------------|---------|---------|-----------------------|------|-----|---|---|----------------|-------|-------|------|
| | CO2 net | CH4 | N2O | HFCs | PFCs | SF6 | Otros gases halogenados con factor de conversión CO2-eq | Otros gases halogenados sin factor de conversión CO2-eq | NOx | CO | COVDM | SO2 |
| Total emissions and removals | 2803,2 | 773,3 | 29,7 | 85,3 | NO | 0,2 | NO | NO | 52,9 | 627,5 | 77,9 | 41,7 |
| 1 - Energy | 6199,6 | 5,1 | 0,6 | | | | | | 50,8 | 610,0 | 56,7 | 28,5 |
| 2 - IPPU | 421,7 | NO | 8,0E-03 | 85,3 | NO | 0,2 | NO | NO | 1,7 | 9,3 | 21,2 | 13,2 |
| 3 - AFOLU | -3875,6 | 724,8 | 28,8 | | | | | | 0,4 | 8,2 | 0 | 0 |
| 4 - Waste | 57,6 | 43,5 | 0,3 | | | | | | | | | |
| 5 - Others | NO | NO | NE | | | | | | NO | NO | NO | NO |
| Memo Items | | | | | | | | | | | | |
| International Bunkers | 917,7 | 6,4E-02 | 2,5E-02 | | | | | | 19,7 | 1,3 | 1,9 | 3,8 |
| 1.A.5.c – Multilateral Ops | | | | | | | | | | | | |



GHG INVENTORY YEAR 2014 (2006 IPCC GUIDELINES)

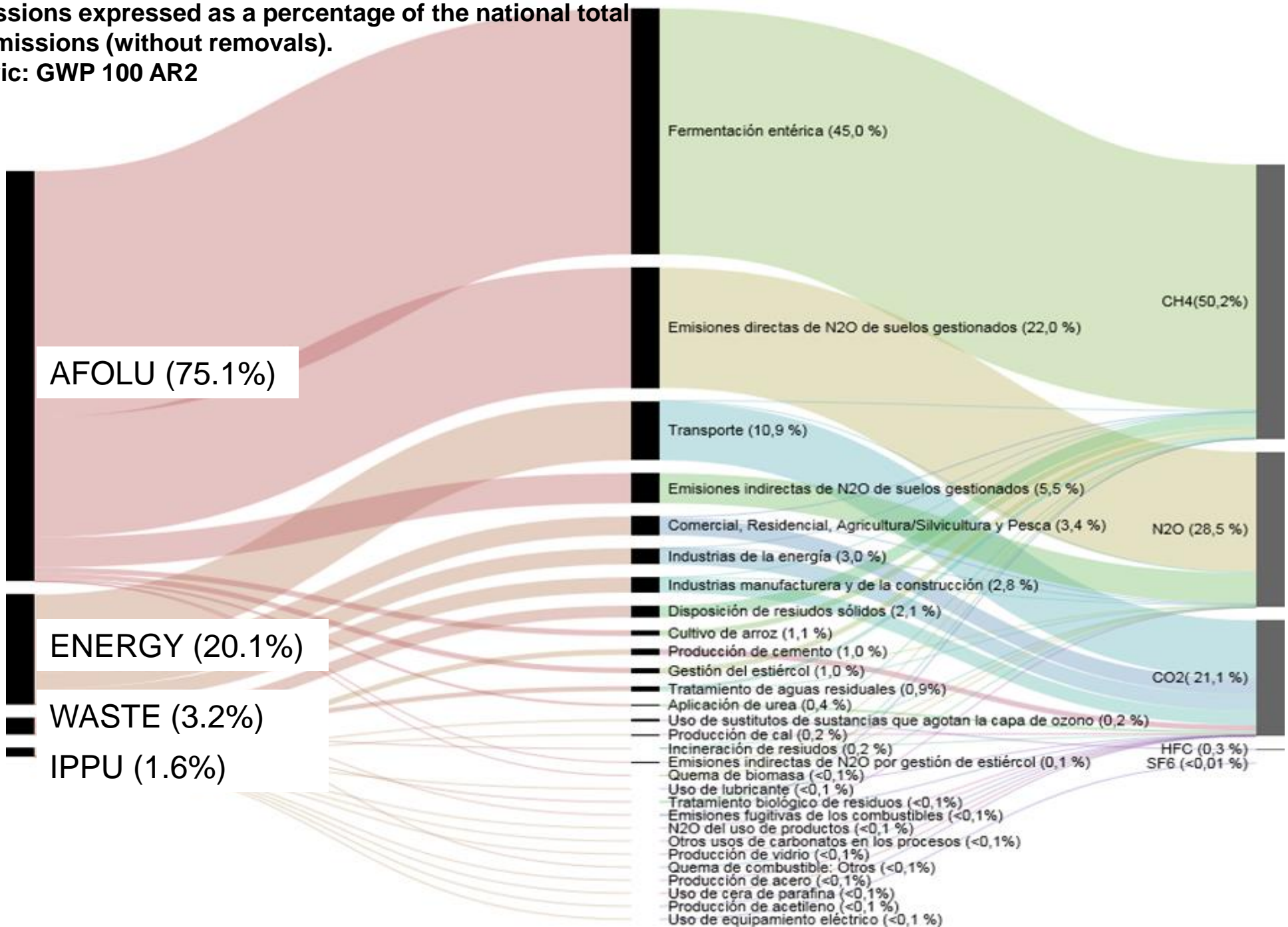
2014 emissions by sector and gas in CO₂ eq (GWP AR2 and GTP AR5 metrics).



GHG INVENTORY YEAR 2014

Emissions expressed as a percentage of the national total of emissions (without removals).

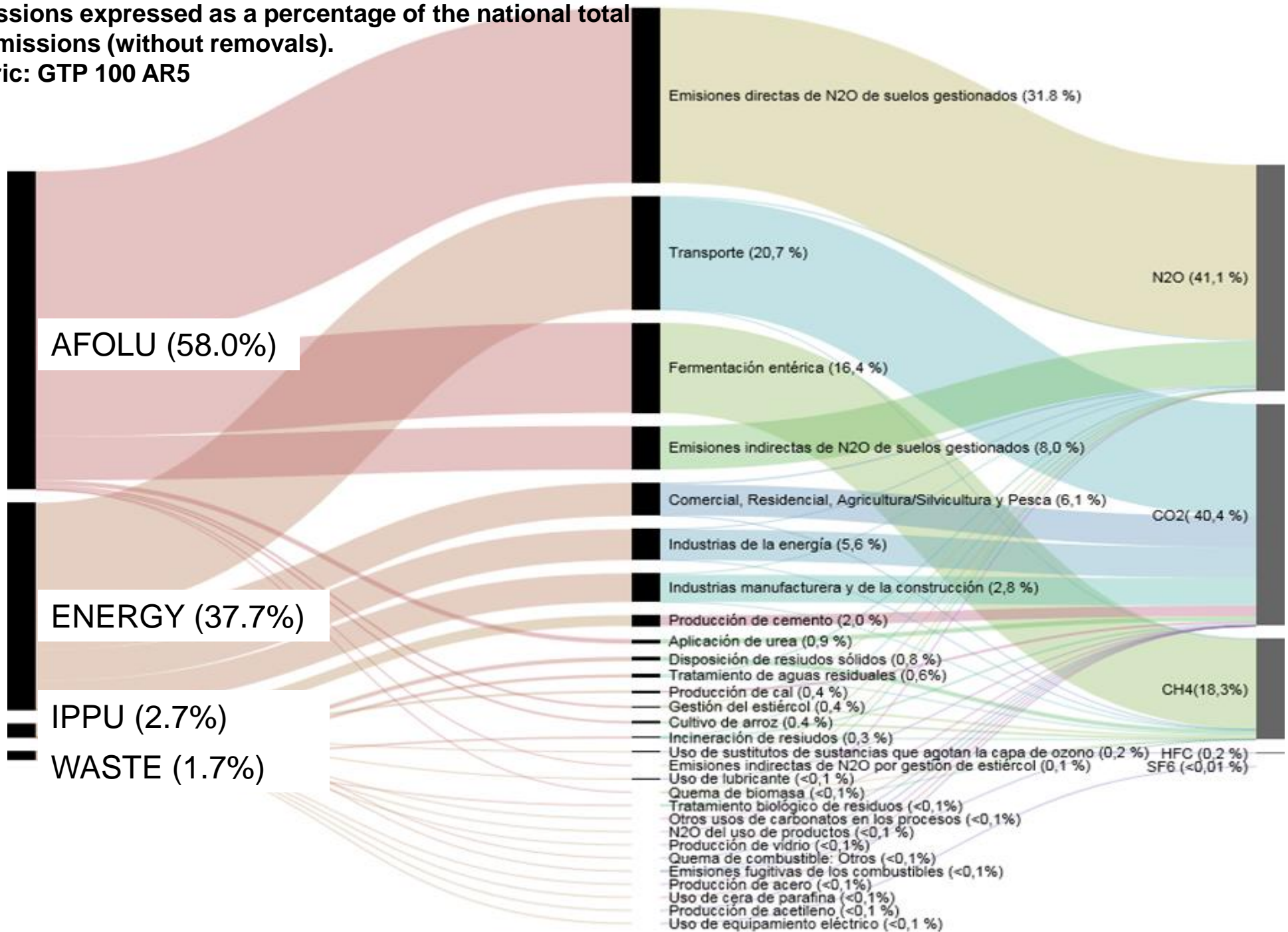
Metric: GWP 100 AR2



GHG INVENTORY YEAR 2014

Emissions expressed as a percentage of the national total of emissions (without removals).

Metric: GTP 100 AR5



GHG INVENTORY –Time series 1990-2014.

By sector with GWP AR2 and GTP AR5 metrics

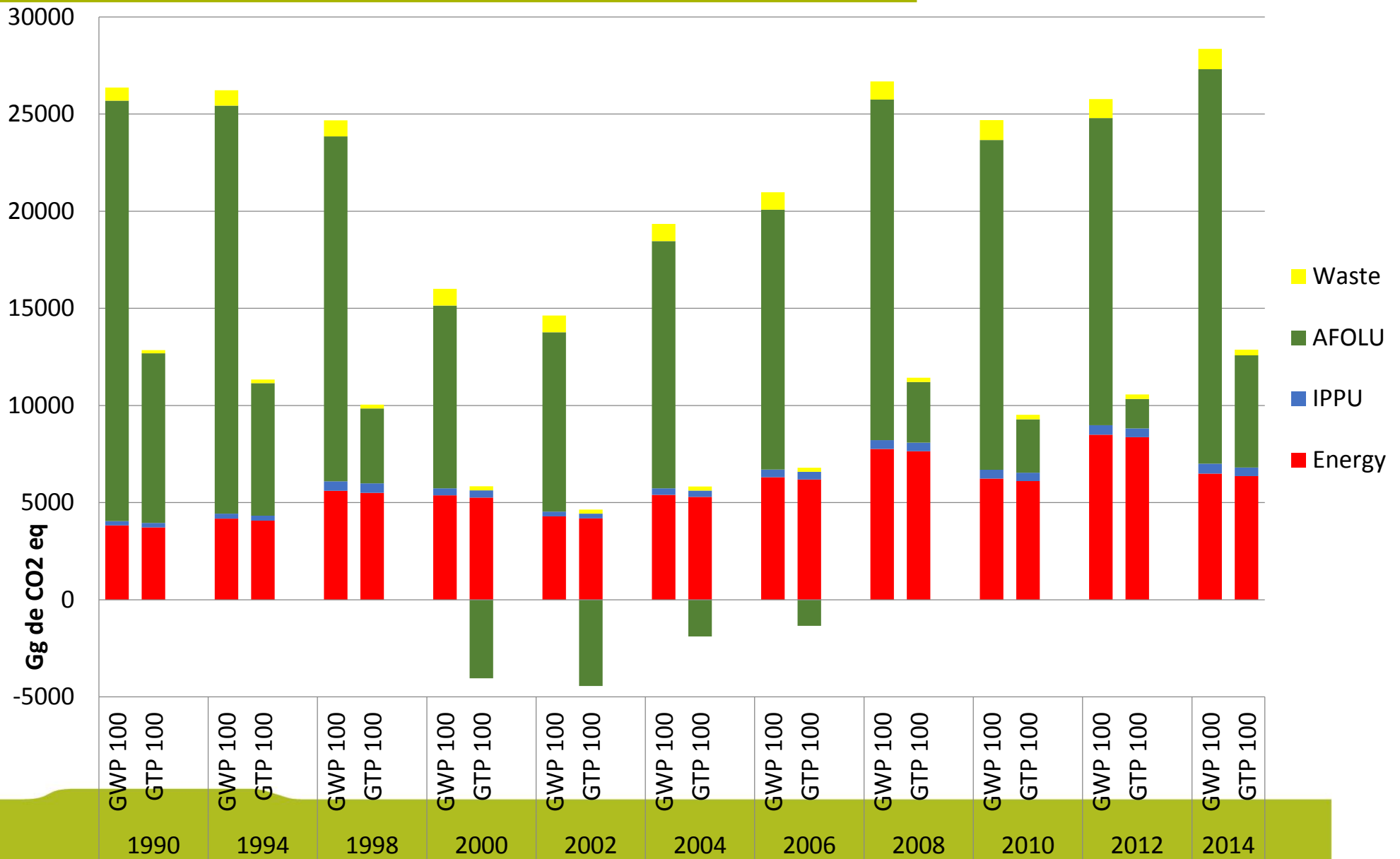


Table 1
Greenhouse gas emissions by gas of Uruguay

| <i>Gas</i> | <i>1990</i> | | <i>2014</i> | | <i>% change 1990–2014 (using GWP)</i> | <i>% change 1990–2014 (using GTP)</i> |
|------------------------|--|--|--|--|---|---|
| | <i>GHG emissions (Gg CO₂ eq – using GWP) including removals</i> | <i>GHG emissions (Gg CO₂ eq – using GTP) including removals</i> | <i>GHG emissions (Gg CO₂ eq – using GWP) including removals</i> | <i>GHG emissions (Gg CO₂ eq – using GTP) including removals</i> | | |
| CO ₂ (net) | 4 604 | 4 604 | 2 803 | 2 803 | -39 | -39 |
| CH ₄ | 14 504 | 2 763 | 16 240 | 3 093 | 12 | 12 |
| N ₂ O | 7 259 | 5 480 | 9 212 | 6 954 | 27 | 27 |
| HFCs + SF ₆ | | | 85 | 26 | | |
| Total | 26 367 | 12 847 | 28 340 | 12 876 | 7.5 | 0.2 |

Table 2

Shares of greenhouse gas emissions by sector of Uruguay in 2014


| <i>Sector</i> | <i>GHG emissions (Gg CO₂ eq – using GWP)</i> | <i>Share (%)</i> | <i>GHG emissions (Gg CO₂ eq – using GTP)</i> | <i>Share (%)</i> |
|----------------------|---|------------------|---|------------------|
| Energy | 6 495 | 22.9 | 6 362 | 49.4 |
| AFOLU (net) | 20 300 | 71.6 | 5 770 | 44.8 |
| Industrial processes | 510 | 1.8 | 449 | 3.5 |
| Waste | 1 048 | 3.7 | 290 | 2.3 |

MITIGATION POLICIES AND ACTIONS

Policies and programs promoting early mitigation actions:

- **Sustainable diversification of the energy matrix**
- **Promotion of energy efficiency**
- **Sustainable and efficient transport**
- **Increase of agricultural productivity and sustainability** (reduction of methane emissions from beef production per kg)
- **Maintenance and increase of land stocks**
- **Waste management and treatment**
- **7 NAMAs** submitted to the UNFCCC NAMA Registry. (Energy sector)

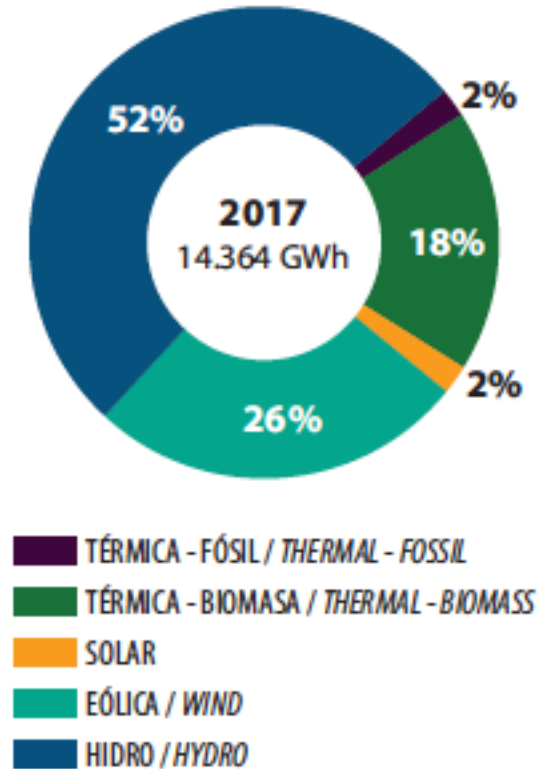
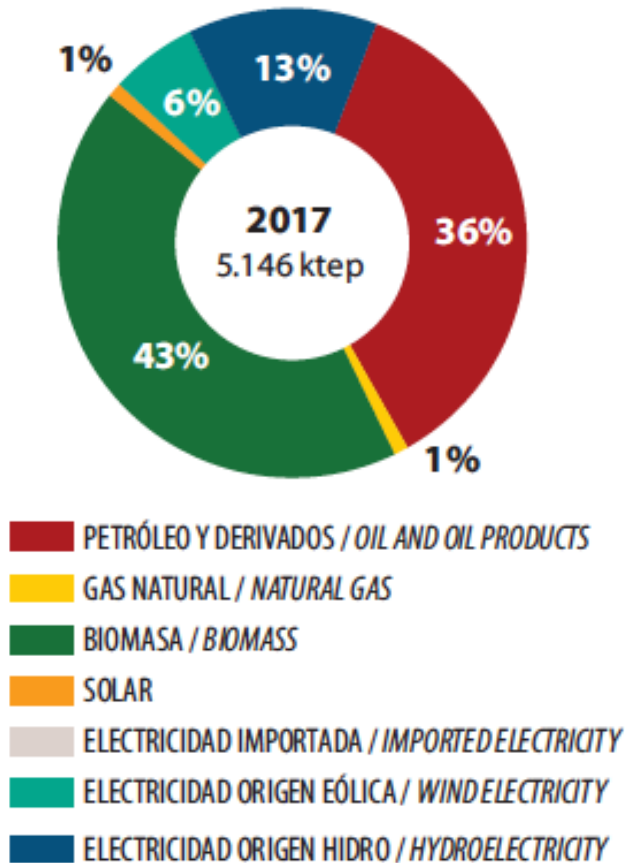
Domestic MRV System:

- National greenhouse gas inventory system
 - National Energy Balance and Agriculture Statistics.
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ENERGY MATRIX 2017

Global Energy Mix: 63% renewable

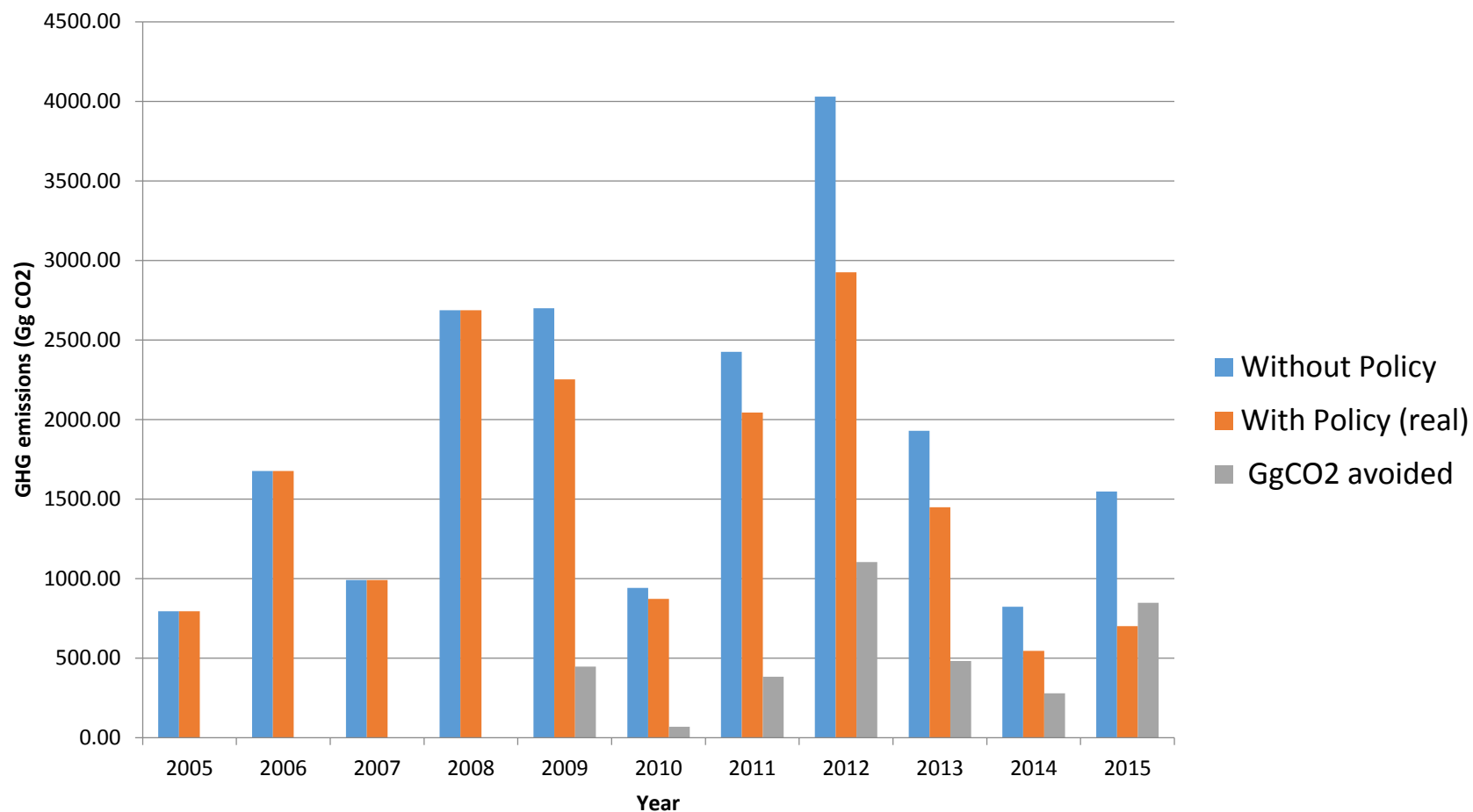
Electricity generation: 98% renewable



EMISSION REDUCTION ESTIMATION: Avoided Emissions from Renewable Energy introduction

Methodologies and assumptions: Demand: Leap / Optimizer Wasp / SimsEE

Result: 3608 Gg of CO₂ avoided as a result of Energy Policy implemented during 2005-2015.



SUPPORT NEEDED FOR MITIGATION ACTIONS

| | | | | |
|---------|---|---|---|---|
| ENERGY: | Solar concentration, geothermal and sea-wave (TNA) | F | T | C |
| | Electric accumulators (batteries / hydro-pump) (NDC) | F | T | C |
| | Solar water heaters for large users (NDC) | F | | |
| TRANSP: | E-vehicles in public transportation and utilities (NDC) | F | T | C |
| | Vehicle efficiency and emissions lab (NDC TNA) | F | T | C |
| | Efficient driving programmes (TNA) | F | T | C |
| IPPU: | Alternative fuels in cement production (NDC) | F | | |
| | Partial Clinker substitution in cement production (NDC) | F | T | C |
| AFOLU: | Cattle Grassing Management (NDC TNA) | F | T | C |
| | Intermittent flooding in rice production (NDC) | F | T | C |
| | Slow-release fertilizing (NDC) | F | T | C |
| WASTE: | CH ₄ capture and burning in final disposal (NDC) | F | T | C |
| | Improvement in industrial waste water treatment (NDC) | F | T | C |

SUPPORT NEEDED FOR CAPACITY BUILDING – FACILITATION OF REPORTING

The TTE, in consultation with Uruguay, identified ten capacity-building needs. Uruguay further identified the following as priority capacity-building needs:

- **Estimating emissions and removals from all 2006 IPCC land-use categories through the development of land-use maps and land-use change matrices;**
- Developing the national capacities and databases necessary to enhance the application of the EMEP/EEA Air Pollutant Emission Inventory Guidebook 2016 (European Environment Agency, 2016), particularly for estimating SO₂ and GHG precursors in the energy sector;
- **Developing a quantitative uncertainty analysis for all sectors by adjusting or validating the default values from the IPCC guidelines to national circumstances;**
- **Conducting quantitative analysis of mitigation actions and their effects;**
- Developing procedures and institutional arrangements for data management to collect information related to financial resources, technology transfer, capacity-building and technical support received.

SUPPORT RECEIVED

- Enabling activities:
 - ✓ Financial support to comply with reporting commitments under the UNFCCC (NatComs, BUR, TNA)
 - ✓ Capacity building: CGE training materials and workshops on GHG Inventories, mitigation and BURs.
- Leveraging policies:
 - ✓ Financial support for overcoming barriers and financing pilots (i.e. GEF 6 Sustainable transportation project; GEF 5 waste management).
- Institutional strengthening.

OVERALL IMPROVEMENTS

Improvements from BUR1 to BUR2:

- 2006 IPCC Guidelines used in all sectors.
- IPCC Software 2.54.
- File management system.
- Quality Control
- Estimation of avoided emissions in energy sector.

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LESSONS LEARNED OF THE ICA PROCESS

Improvements identified for BUR3 (2016 NGHGI):

- Estimation of GHG emissions for remaining categories of LULUCF sector.
 - Quantitative uncertainties, key categories with uncertainties
 - Improvement of Quality Control
 - Activity data improved in most of sectors
 - Development of additional emission factors
 - Procedures to collect information related to support received
 - Continue development of quantitative analysis of mitigation actions
- 

LESSONS LEARNED OF THE ICA PROCESS

Lessons learned:

- **Technical teams continuity within BUR-ICA and from BUR to BUR.**
- **ICA process strengthens the GHG Inventory Working Group**

Positive remarks:

- **TTE spoke Spanish.**
- **Support of the Secretariat during the ICA process.**

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Q&A 11 QUESTIONS RECEIVED:

- *Success factors in Uruguay in order to ensure sustainability in the preparation of BURs and NCs.*
 - *Plans to enhance the coverage of the national GHG inventory, particularly in the AFOLU sector.*
 - *Plan to shift to higher tiers to estimate CO2 emissions from road transportation*
 - *Lessons learned from using the 2006 IPCC guidelines.*
 - *Plans to develop capacities to perform GHG emissions projections for future reporting.*
 - *Uruguay's management and monitoring its National Inventory System.*
 - *Work undertaken to develop progress indicators and quantitative estimations of mitigation actions and related capacity constraints.(2 Q)*
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Q&A 11 QUESTIONS RECEIVED:

- *Bilateral engagement (for instance with Argentina or Brazil) on sharing best practices and lessons learned in regards to adaptation and/ or mitigation action.*
 - *Sections of the BUR guidelines which poses constraint and type of information/guidance which would be more useful.*
 - *Sectors detected during the development of the domestic MRV system that stood out where there are opportunities for more ambitious action.*
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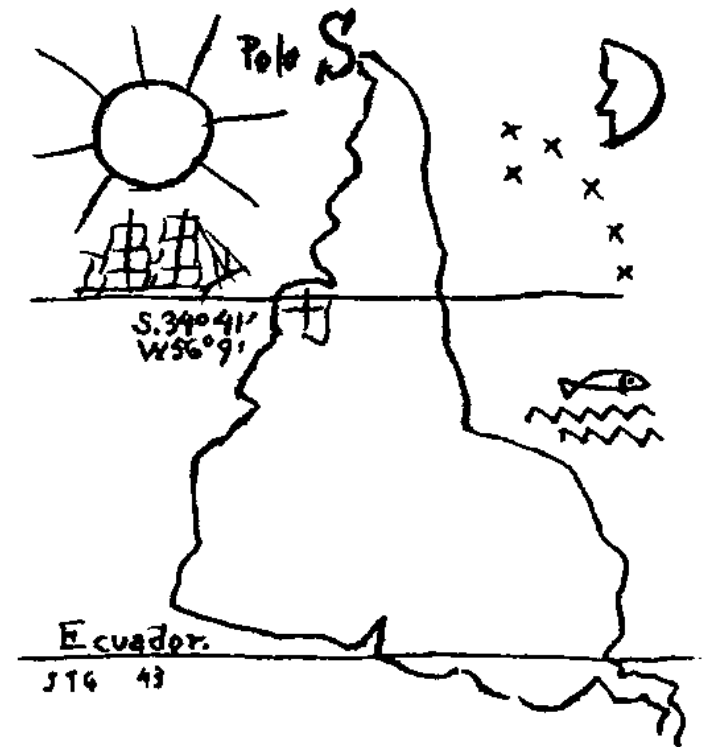


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