

# *Climate and Energy College Seminar*

## **BRAZILIAN CLIMATE POLITICS**

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## Goal 7:

Ensure access to affordable, reliable, sustainable and modern energy for all.



## 13 CLIMATE ACTION



## 11 SUSTAINABLE CITIES AND COMMUNITIES



## 10 REDUCED INEQUALITIES



## 12 RESPONSIBLE CONSUMPTION AND PRODUCTION



GOAL 1 END POVERTY

GOAL 2 END HUNGER

GOAL 3 WELL-BEING

GOAL 4 QUALITY EDUCATION

GOAL 5 GENDER EQUALITY

GOAL 6 WATER AND SANITATION FOR ALL

GOAL 7 AFFORDABLE AND SUSTAINABLE ENERGY

GOAL 8 DECENT WORK FOR ALL

GOAL 9 TECHNOLOGY TO BENEFIT ALL

GOAL 10 REDUCE INEQUALITY

GOAL 11 SAFE CITIES AND COMMUNITIES

GOAL 12 RESPONSIBLE CONSUMPTION BY ALL

GOAL 13 STOP CLIMATE CHANGE

GOAL 14 PROTECT THE OCEAN

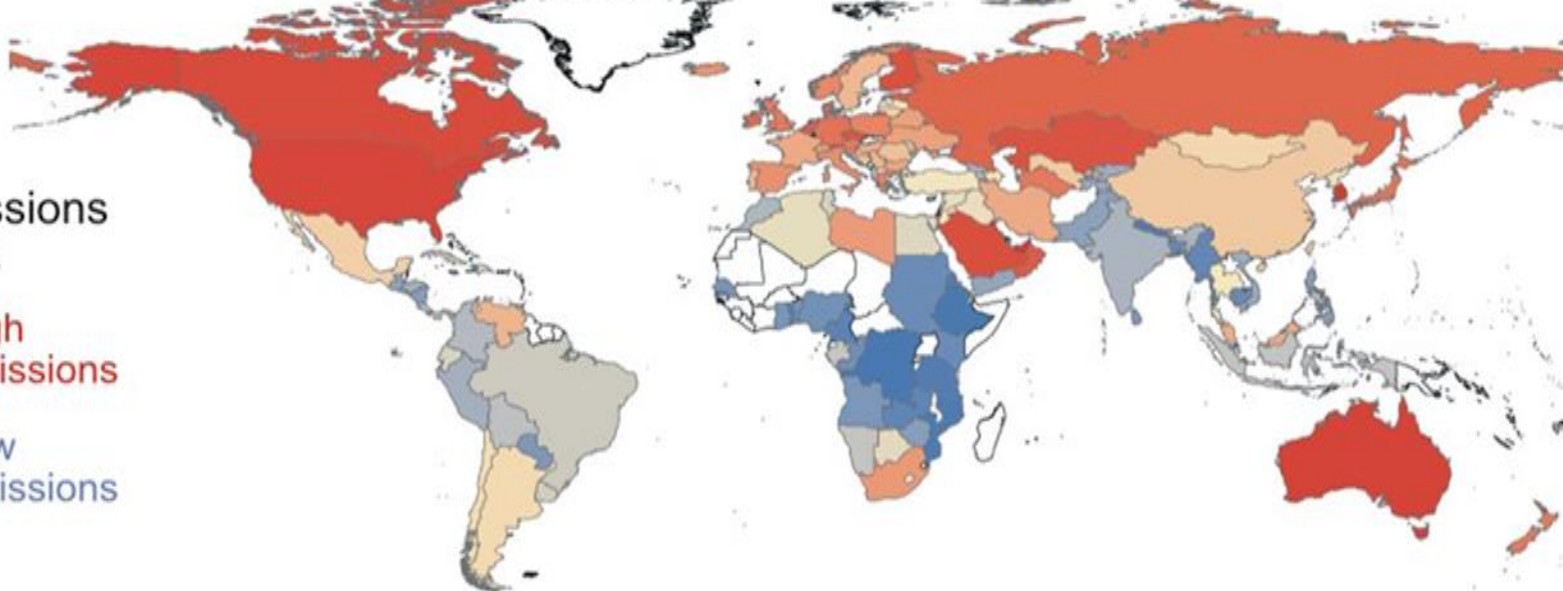
GOAL 15 TAKE CARE OF THE EARTH

GOAL 16 LIVE IN PEACE

GOAL 17 MECHANISMS AND PARTNERSHIPS TO REACH THE GOALS

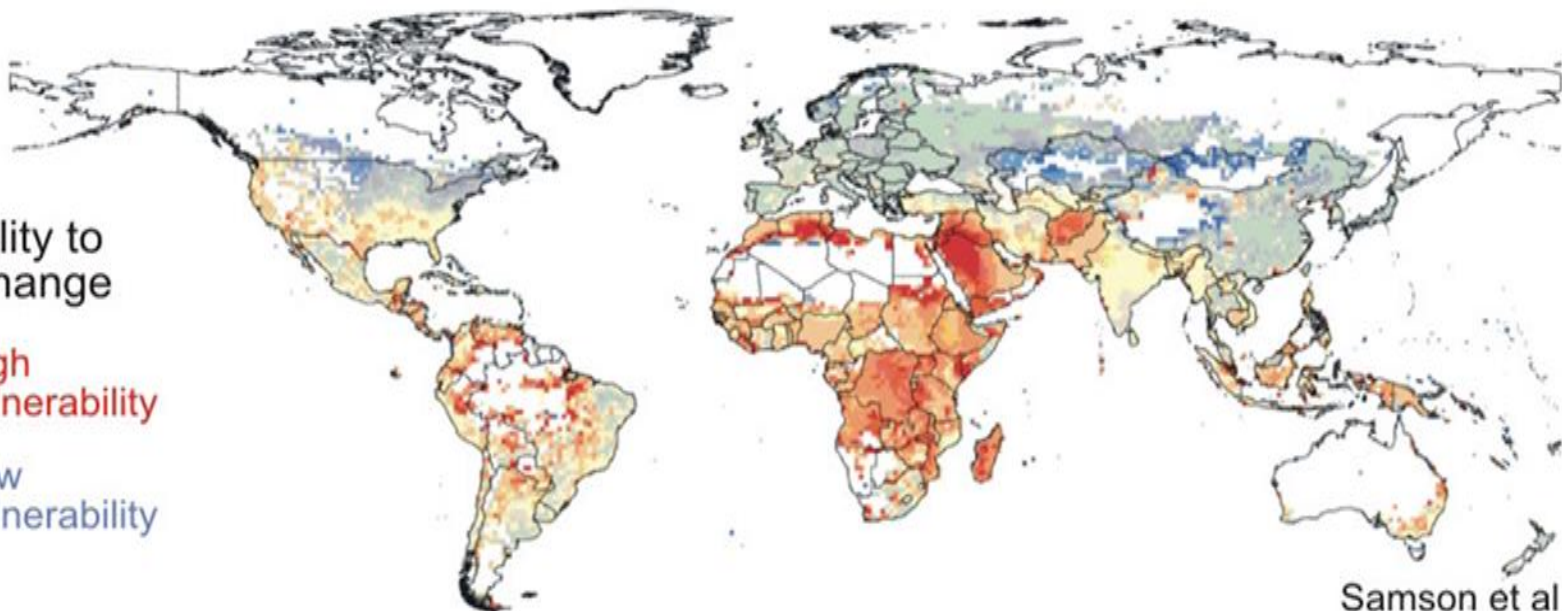


CO2 emissions  
per capita



Those who contribute the least greenhouse gases  
**will be most impacted by climate change**

Vulnerability to  
climate change



# BRAZILIAN CLIMATE POLITICS

## ABSTRACT

- ❖ As most the ninth-largest economy in the world, Brazil will play a crucial role in global efforts to meet the objectives of the Paris Agreement.
- ❖ Until recently, the country has played a leading role in international climate but since the election of President Bolsonaro in January 2019, Brazil's climate policies have been overturned almost in their entirety.
- ❖ In fact, efforts to preserve the Amazon, promote renewable energy, plan for sustainable urban mobility, foster adaptation, and encourage low-carbon agricultural practices have all been halted under Bolsonaro's populist administration.

# BRAZILIAN CLIMATE POLITICS

## ABSTRACT

- ❖ In this webinar, we'll examine Brazilian climate politics, the abrupt loss of the country's protagonism and the impact on international efforts to mitigate climate change.
- ❖ The seminar will also discuss some correlated issues, such as the lack of policies for the progressive elimination of fossil fuel subsidies, some of the successful subnational climate-change policies carried out by states and municipalities and the consequences of eliminating the Brazilian environmental agency's budget for fire prevention.

Perhaps an unusual introduction, but in the context of a very related theme: climate negationism...

<https://www.youtube.com/watch?v=rY-HOYTz-rs>

*This little clip seems to be a great metaphor for climate change deniers. It's from the 1989 movie "Erik the Viking" and features Terry Jones, 1942-2020 (who also directed), as King Arnulf of the island nation of High Brazil. The sinking of the island is actually brought about by the gods' displeasure at an act of violence by one of the Vikings, but the metaphor is too delicious to pass up!!!*

*And, of course, it means a tribute to the wonderful artist Terry Jones, from Monty Python*

# Brazil – general characteristics



# Brazil – general characteristics





**Survey of the status of truck safety: Brazil, China, Australia, and The United States (Blower, 2012)**

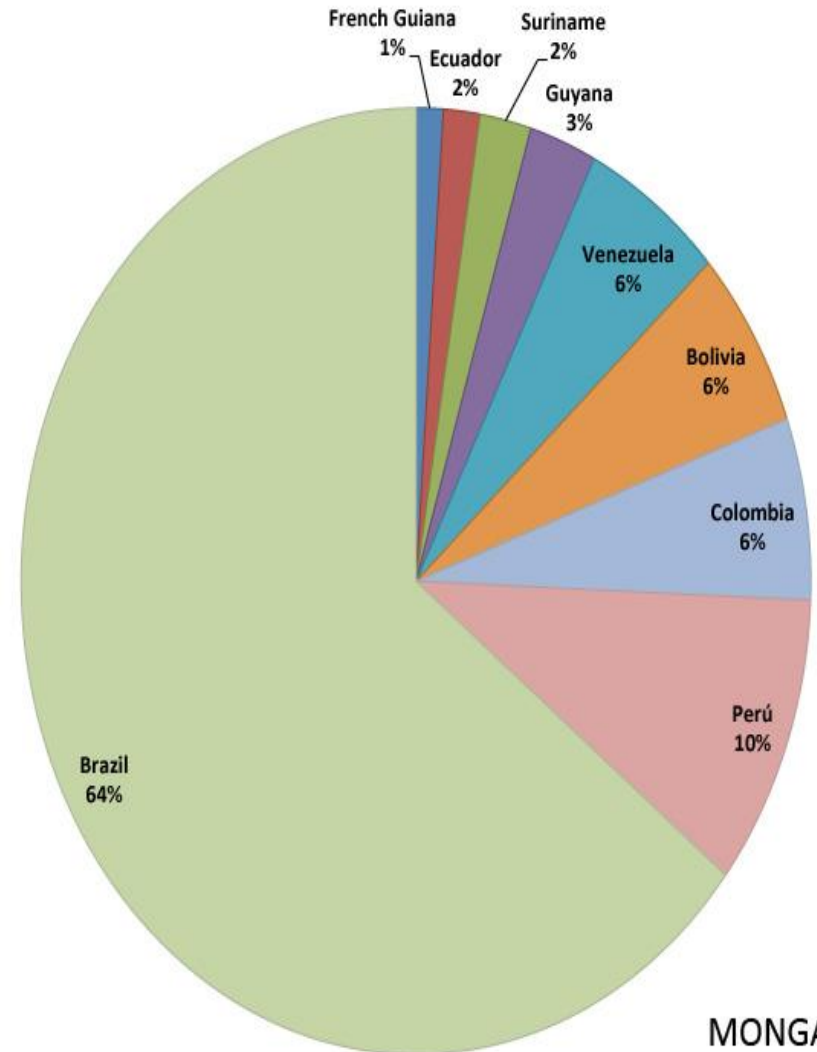
Characteristic	Australia	Brazil	China	US
Population	21,766,711	203,429,773	1,336,718,015	313,232,044
Area (km <sup>2</sup> )	7,741,220	8,514,877	9,596,961	9,826,675
Land	7,682,300	8,459,417	9,569,901	9,161,966
Water	58,920	55,460	27,060	664,709
GDP per capita	\$41,000	\$10,800	\$7,600	\$47,200
Road km	818,356	1,751,868	3,860,800	6,506,204
Paved	n/a	96,353	3,056,300	4,374,784
Unpaved	n/a	1,655,515	804,500	2,131,420

# Brazil – Amazon Rainforest



The Amazon by Country

Total Amazon: 7.76 m sq km (2012)



# Brazil – general characteristics



❖ Characterized by historical socioeconomic inequalities and high-income concentration (the richest 1% concentrates 28.3% of total income), Brazil is also recognized for its typically renewable energy matrix and for the issue of deforestation in the Amazon.

❖ After all, in Brazil, the land use change and forestry sector accounts for almost half of the Brazilian Greenhouse Gas (GHG) emissions, mainly due to deforestation to convert the soil into livestock and agriculture areas and due to forest fires

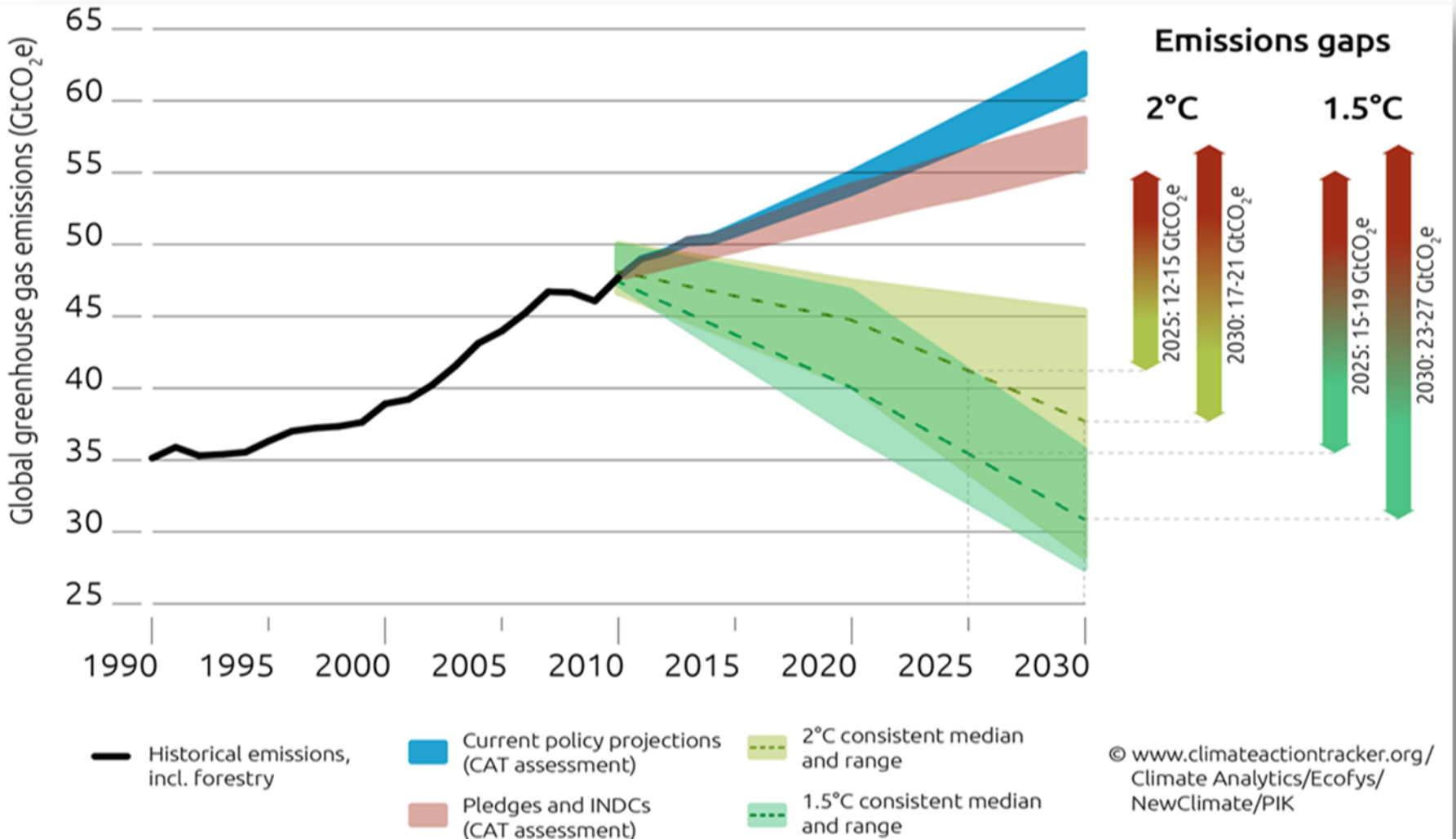


which increased, between January and August 19, 2019, 83% compared to the same period in 2018, with more than 70,000 fires in the period.

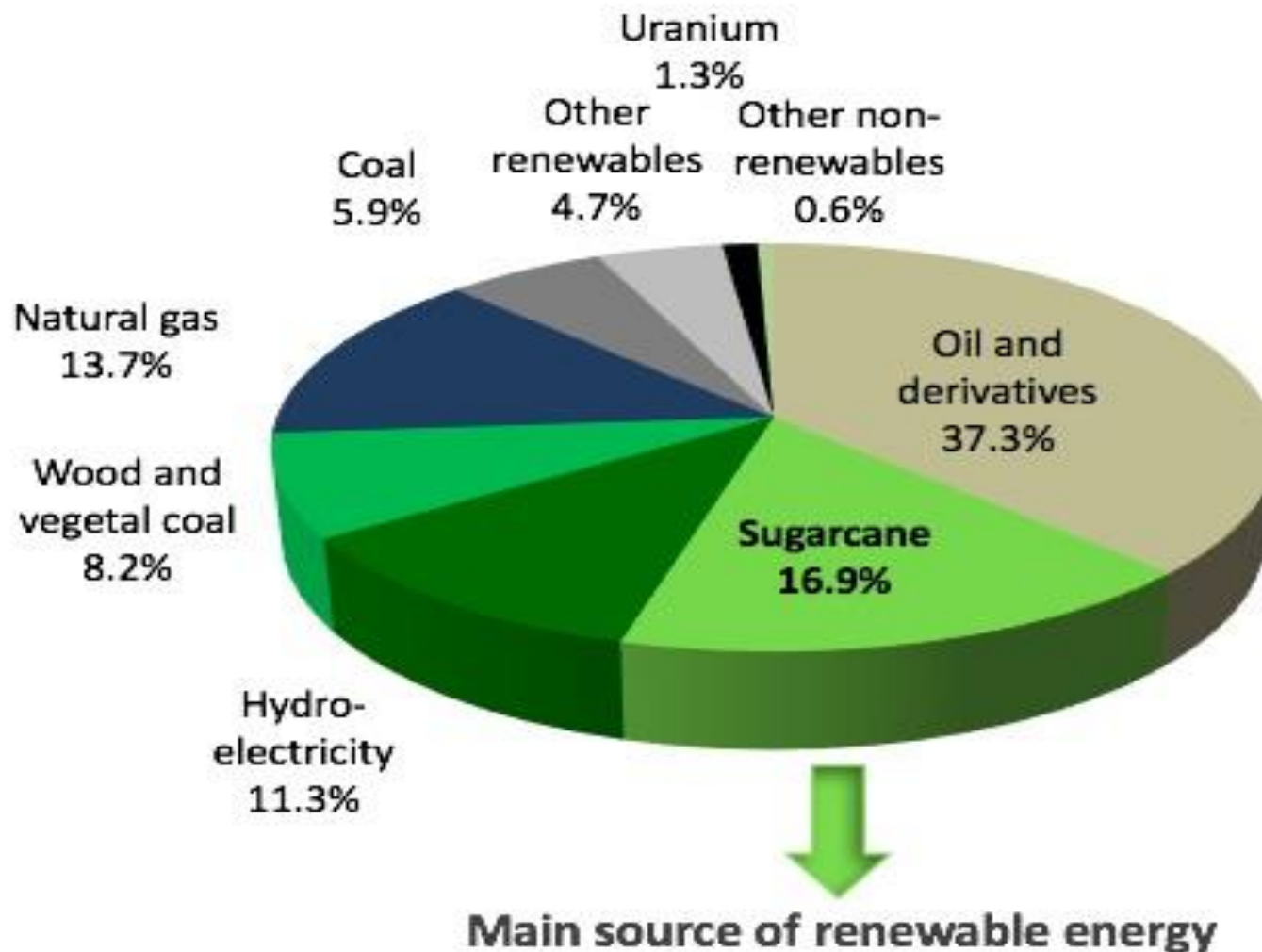
❖ Brazilian GDP = US\$ 1.869 trillion, in 2019

# Paris Agreement

*To keep the prospect of a 2°C world alive in the longer term, global annual GHG emissions have to be curbed to 35 GtCO<sub>2</sub>e, by 2030, and to 22 GtCO<sub>2</sub>e, by 2050*

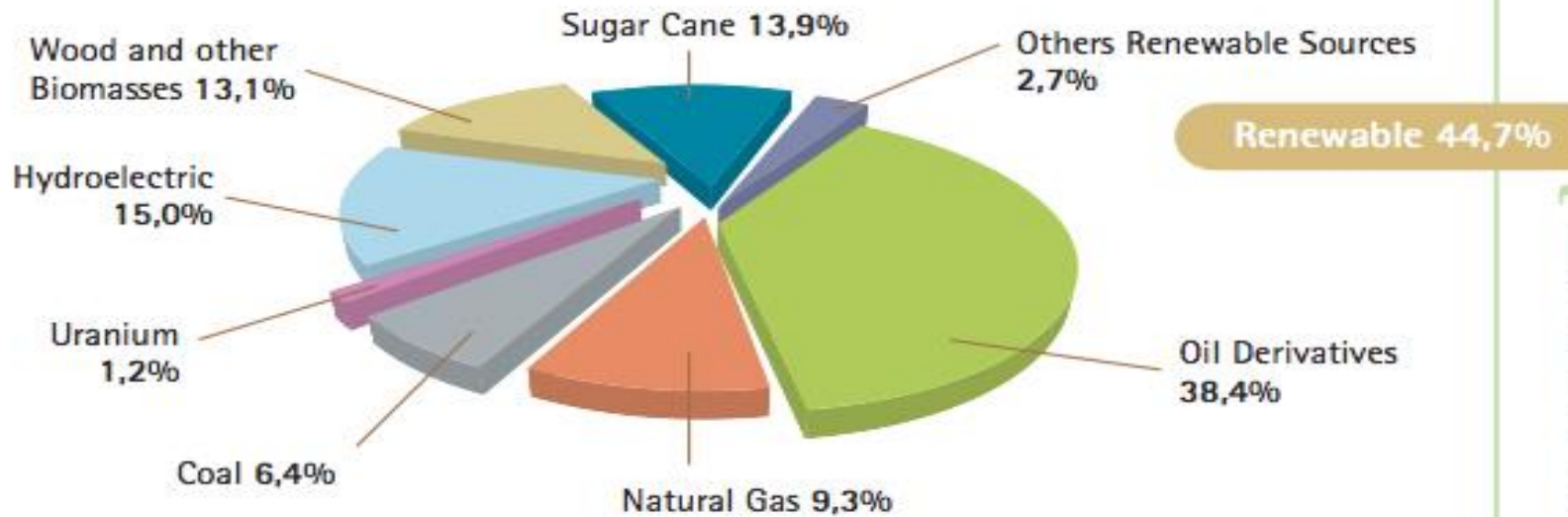


## BRAZILIAN ENERGY MATRIX IN 2015

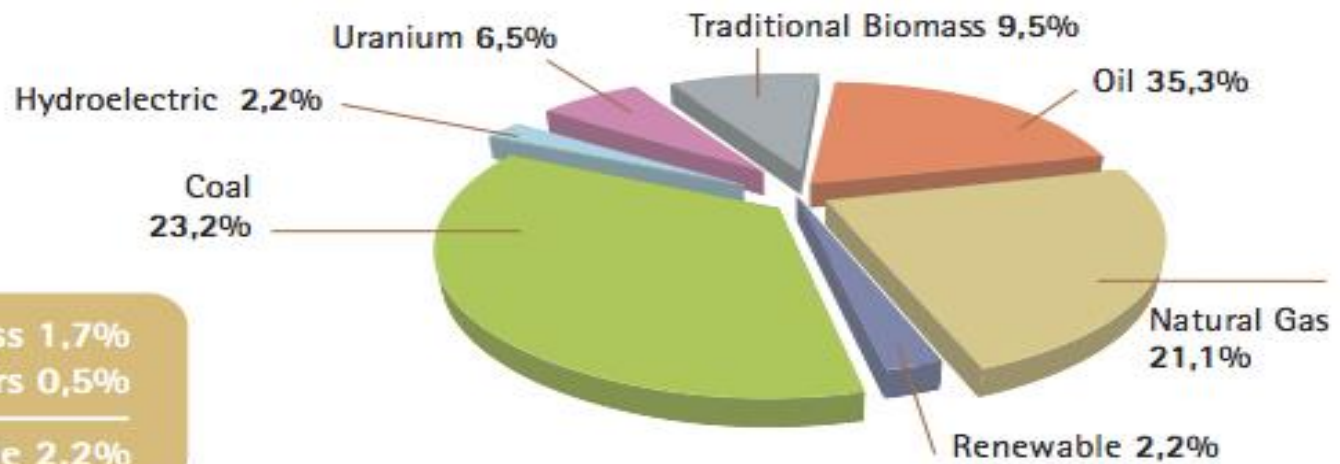


Source: Balanço Energético Brasileiro BEN (2016). Compiled by UNICA

## BRAZILIAN ENERGY MATRIX



## WORLD ENERGY MATRIX

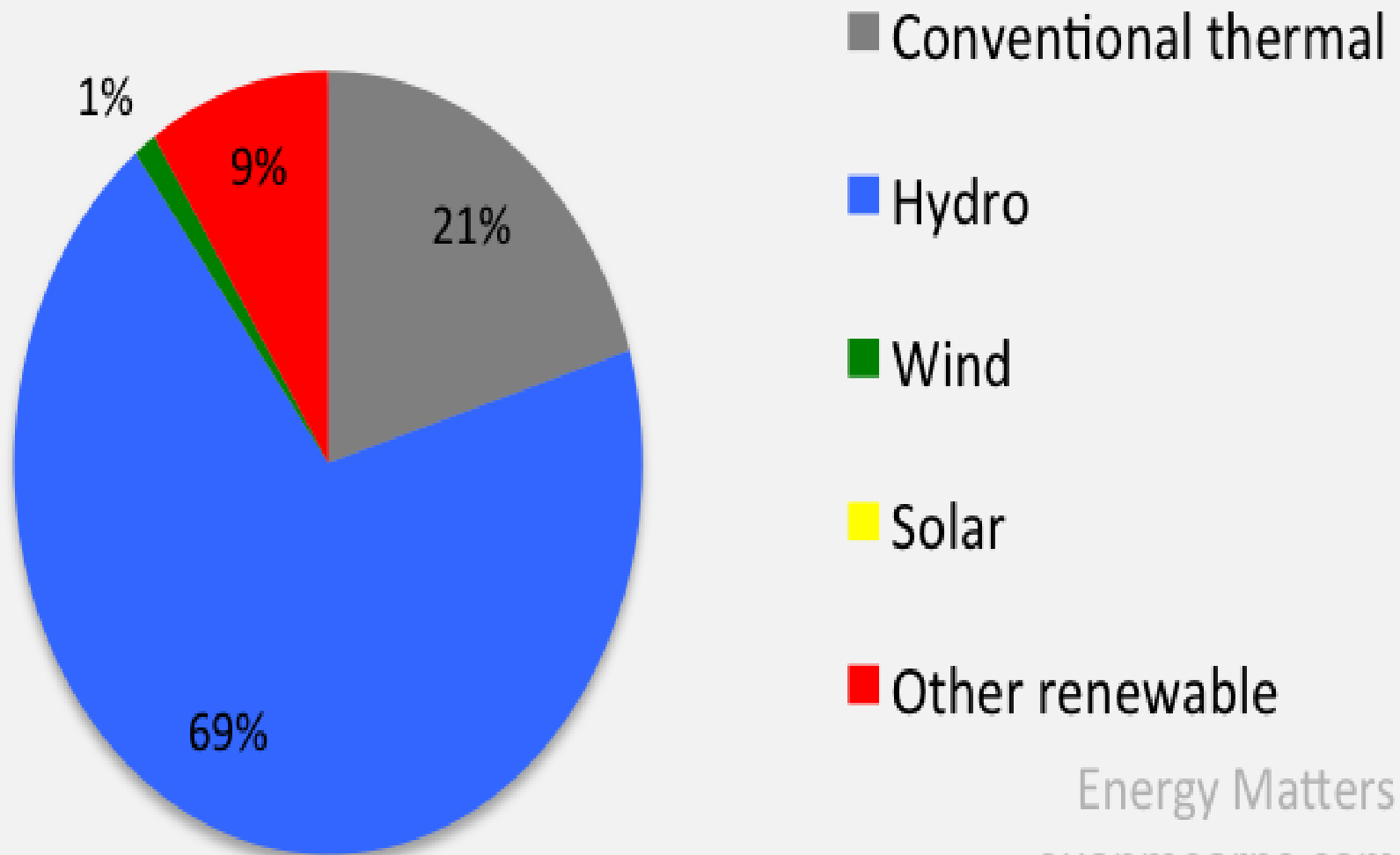


Modern Biomass 1,7%  
Others 0,5%  

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Renewable 2,2%

# Brazil electricity generation 2013





**Brazil, from 2016 to 2017, reduced its emissions of greenhouse gases by 2.3% (from 2,118 to 2,070 MtCO<sub>2</sub>e).**

**Brazilian emissions have stabilized practically since the 1990s, according to data from the Brazilian Climate Observatory**

**Brazil's Nationally Determined Contribution – NDC Brazil:**

→ **37%** reduction in emission of GHG in **2025** comparing with **2005**, the base year

→ **43%** reduction in emission of GHG in **2030** comparing with **2005**, the base year

**The Brazilian NDC was a result of a participatory process with governance, business, third sector and academia.** It included consultations on a large volume of existing high-level studies, an additional discussion process with workshops, multi-criteria workshops, bilateral discussions with relevant actors, and a process of contribution and criticism open to the public through the Brazilian Forum on Climate Change (FBMC) website

Brazil is the only developing country whose NDC contains targets disaggregated by sector, and not due to carbon intensity (cases of MEXICO, India and China, for example)

Despite this, as many other NDC from the countries, the Brazilian NDC is also abstract, vague and insufficient so that the average temperature of the Earth's surface doesn't exceed 2 Celsius degree until 2100, according the Paris Agreement

# Main strategies to achieve the Brazilian NDC:

- ❖ Increase the share of sustainable bioenergy in the Brazilian energy matrix to 18%;
- ❖ Restore 12 million hectares of forests;
- ❖ To achieve zero illegal deforestation in the Brazilian Amazon;
- ❖ To reach 45% participation of renewable energies in the energy matrix;
- ❖ Obtain 10% of efficiency gains in the electric sector;
- ❖ Promote the use of clean technologies in the industrial sector;
- ❖ Stimulate measures of efficiency and infrastructure in public transportation and urban areas.

- ❖ **Brazilian GHG emissions correspond to about 2% of global GHG emissions**
- ❖ **2 billion tCO<sub>2</sub>e (46% deforestation, 24% agribusiness, and 21% energy and transport – SEEG, 2018)**
- ❖ **Globally, the country is the seventh largest emitter**

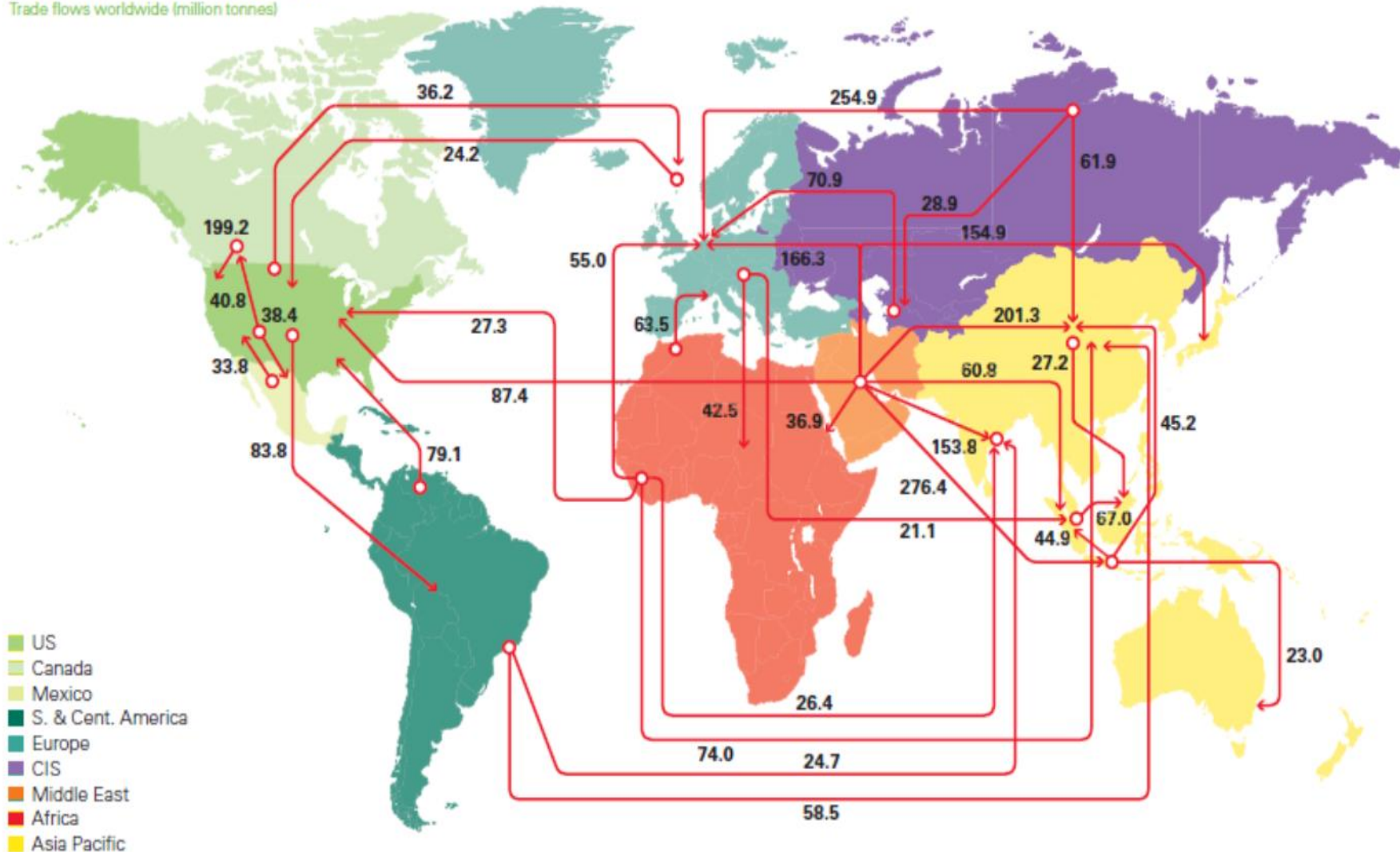
**Brazil assumed, in its climate goals signed in the Paris Agreement – NDC –, that will restore 12 million hectares of forests. Fulfilling this goal may be the country's main instrument to do its part in combating global warming.**

# Major energy trade movements, 2017 (BP 2018)

*Since the Pre-Salt maturation, Brazil could refine all its oil; but, import part of the total oil derivatives consumed, mainly from the USA*

## Major trade movements 2017

Trade flows worldwide (million tonnes)



**Brazil is the second country in the world that most subsidizes fossil fuels, behind only Saudi Arabia; in Brazil, approximately, US\$ 16 billion per year (since 4-5 years ago) is devoted to the consumption of petroleum products**

**( “Brown to Green” Report, 2018)**

**In the world, in 2007, this kind of subsidy was 75 billion dollars; in 2017, reached almost 150 billion dollars**

**The obvious conclusion is that is not so easy to fight against climate change in this way**

# Reflections

- ❖ The Brazilian efforts towards climate mitigation until COP21 was mainly focused on deforestation, once those reductions have been achieved those initiatives, energy and **agribusiness** will be have the biggest GHG reduction potential;
- ❖ Energy GHG emissions are more significant for Subnational governments in Brazil;
- ❖ Power generation policies are within federal control, while subnational policies should focus on demand side policies, and community scale renewables;

***Consortiums of cities are a new governmental sphere that can play an important role at vertical integration of low emission policies.***

# The challenge for Brazil, in terms of helping in the world efforts to mitigate climate change is to maintain the currently share of renewables on the energy generation and consumption

Regional consumption by fuel 2017  
Percentage

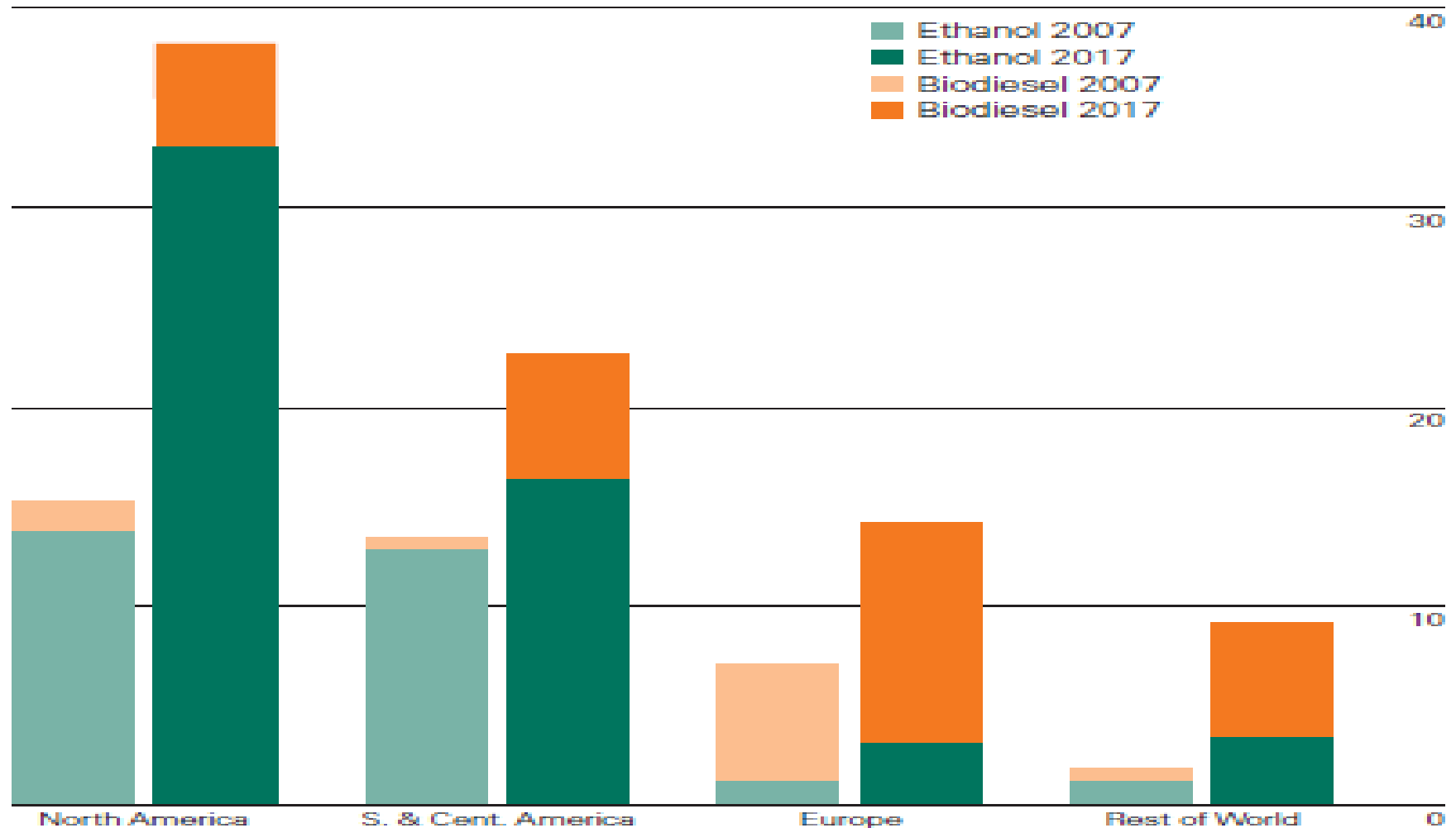




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## World biofuels production

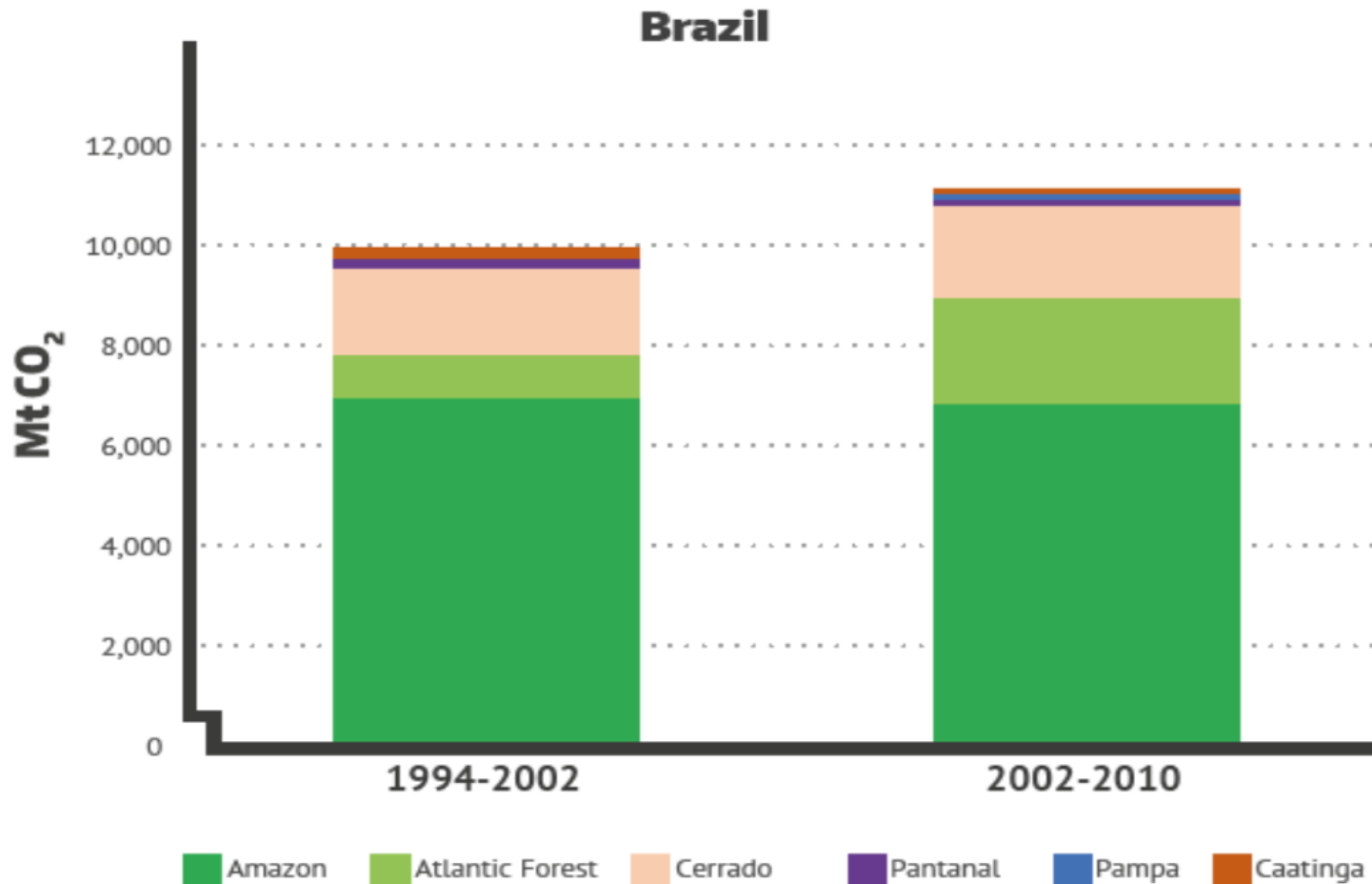
Million tonnes oil equivalent



# BRAZILIAN THIRD NATIONAL COMMUNICATION to the UNFCCC

(Ministry of Environment, Brazil, 2016)

*Anthropogenic CO<sub>2</sub> emissions related to land-use change and land cover in Brazil for the periods considered in this Inventory*



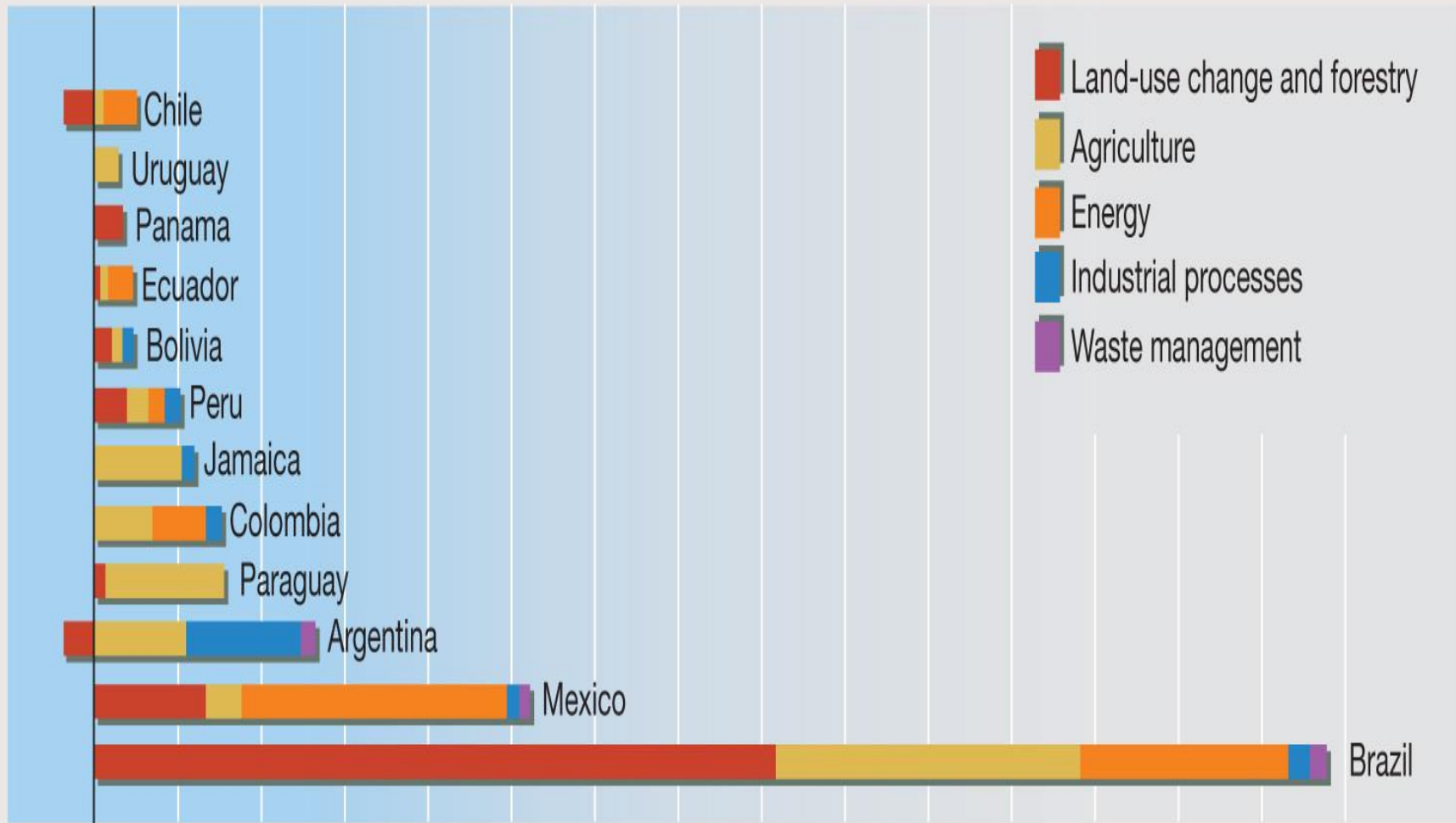
*OBS: Net anthropogenic CO<sub>2</sub> emissions related to land-use change and land cover in Brazil in the period between 2002 to 2010 comprise the sum of emissions from 2002-2005 and 2005-2010 for the Amazon biome, and 2002-2010 for the other biomes, according to 3.80.*

# Latin America GHG emitters by sector

Thousands of metric tons of CO<sub>2</sub> equivalent

-100 0 100 200 300 400 500 600 700 800 900 1 000

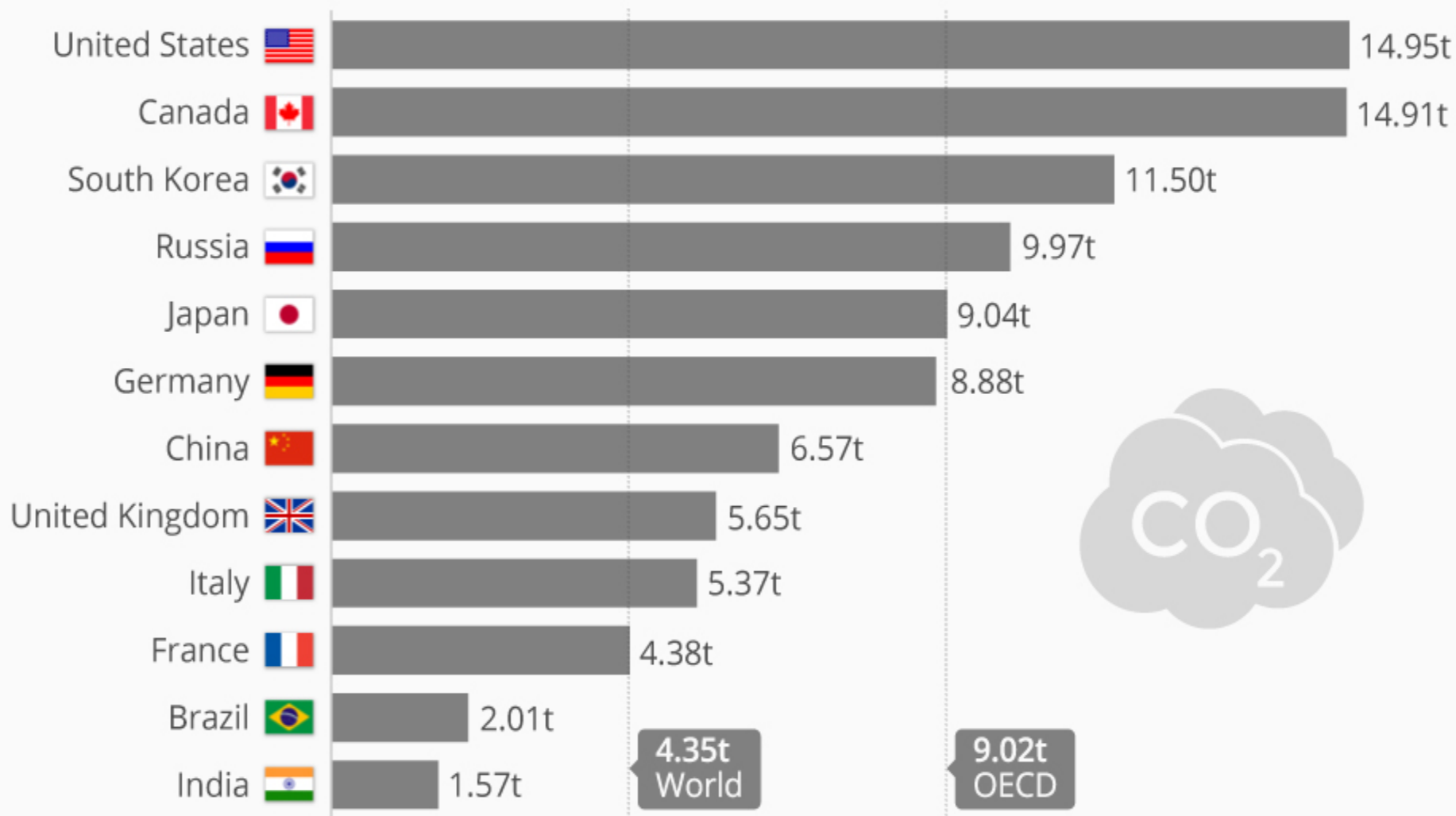
1 500



Source: ECLAC, *Climate Change and Development in Latin America and the Caribbean. Overview, 2009.*

# The Global Disparity in Carbon Footprints

Per capita CO<sub>2</sub> emissions in the world's largest economies in 2016\* (in metric tons)



@StatistaCharts

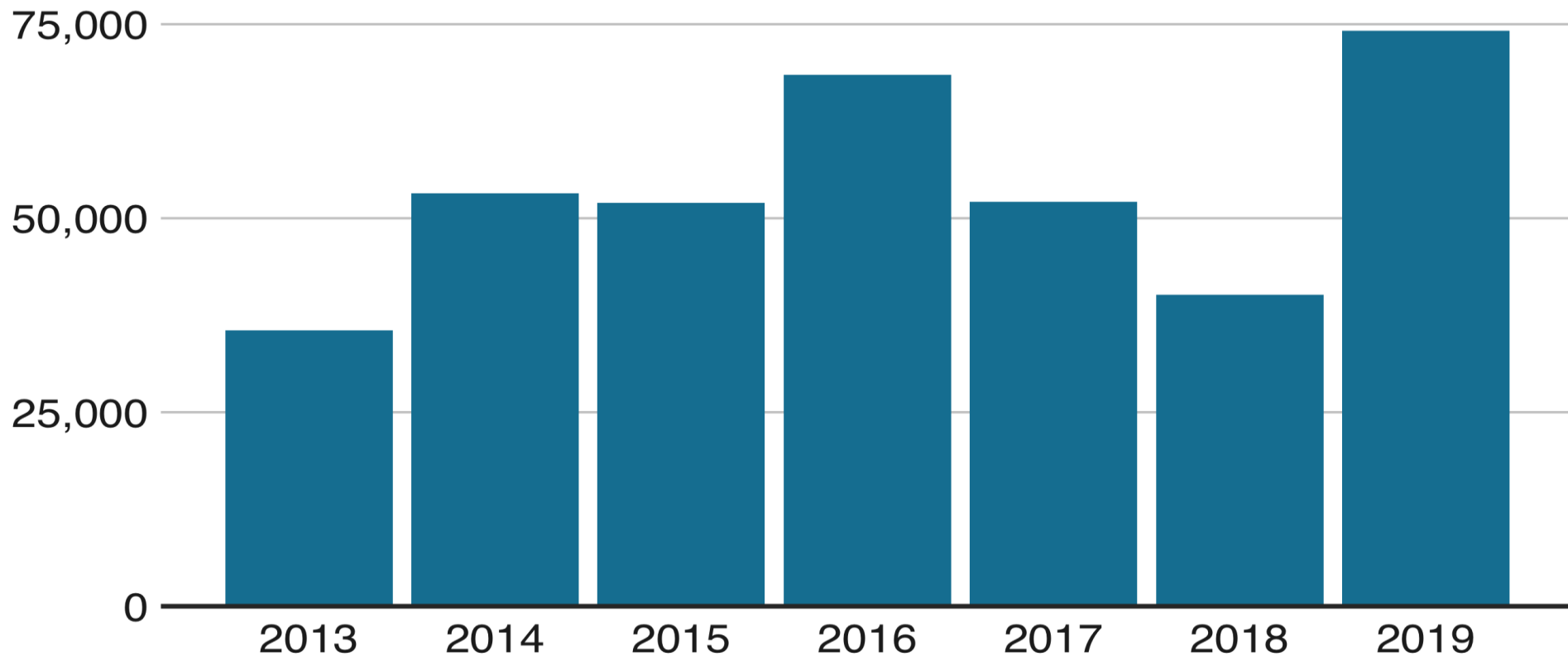
\* countries chosen based on 2017 nominal GDP

Sources: International Energy Agency, International Monetary Fund

A direct consequences of eliminating the Brazilian environmental agency's budget for fire prevention (which implies, of course, in loss of capacity to monitor deforestation in the Amazon) – A decision from Bolsonaro Administration (January 2019)

## This year has seen more than double the number of fires in Brazil than in 2013

Total number of fires between 1 January - 20 August



Source: National Institute for Space Research



Foto: Reprodução/OnovoPress Brasil



From September to January 6, forest fires in Australia emitted **370** million tonnes of carbon dioxide (CO<sub>2</sub>), according to the Copernicean Atmosphere Monitoring Service (CAMS) of the European Center for Medium-Term Meteorological Forecasts (ECMWF);

In comparison, the fires that hit Brazilian states located in the Amazon emitted **392** million tons of greenhouse gases between January 1 and November 15 of last year

# Opportunities for the Brazilian transport sector

Among the subsectors of the Brazilian energy sector (transport activities, electricity generation, industry and fuel production), the **transport sector** is the main emitter: in **2016**, it was responsible for the emission of **204 MtCO<sub>2</sub>e** (or **39% of the total of that year's emissions**) → **5% of emissions = air transportation sector + hydroway 1% + railway 1% and road, accounting for the largest share: 92% of) emissions**

## Green light:

→ **In 2018, 62.7% of the Brazilian fleet of vehicles was already flex fuel**

## Red light:

*The increasingly intensive use of individual motorized transport is one of the main factors that contributed to the accelerated pace of growth of GHG emissions in the country.*

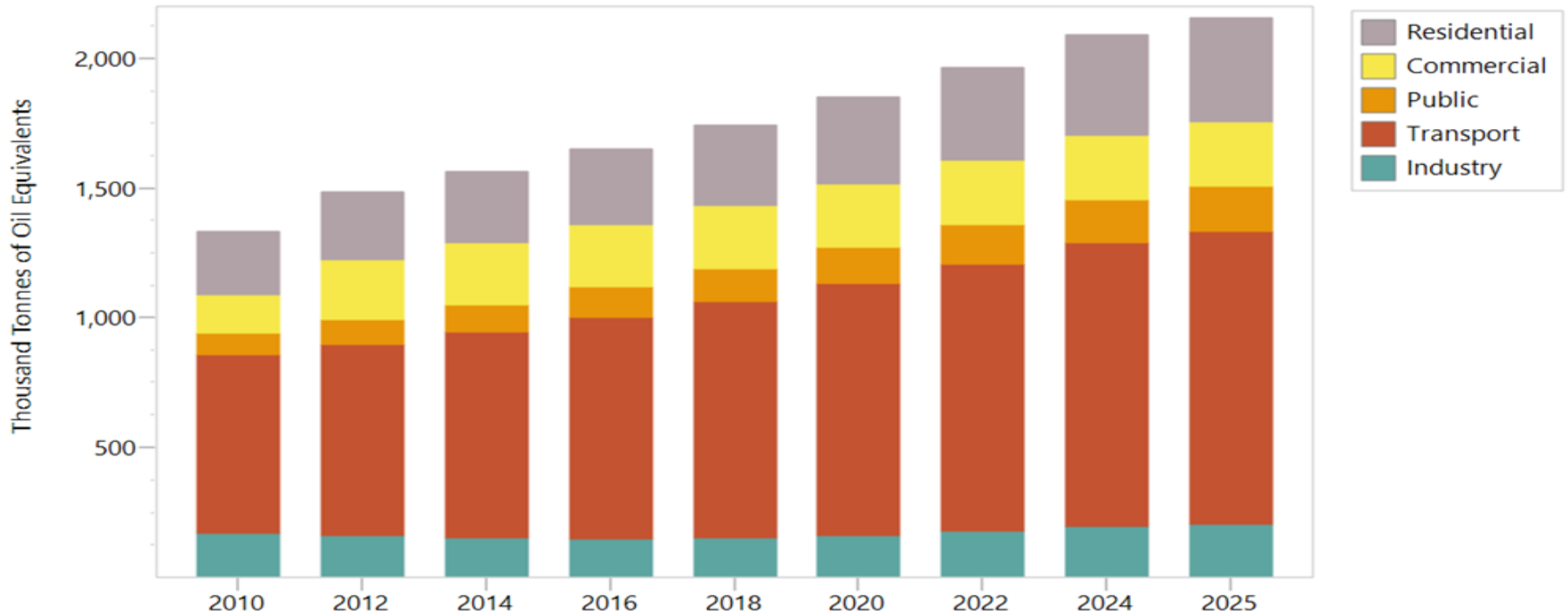


# There are some interesting Subnational climate policy (or, at least, plans or studies)

*Energy modelling of a municipal consortium in the state of São Paulo to analyze and reduce the impact of the Electrical Grid on Subnational GHG Emissions*

Energy Demand Final Units  
Projeção PDE 2024 Scenario, All Fuels

Figure 1 –CIOESTE’s Energy Demand



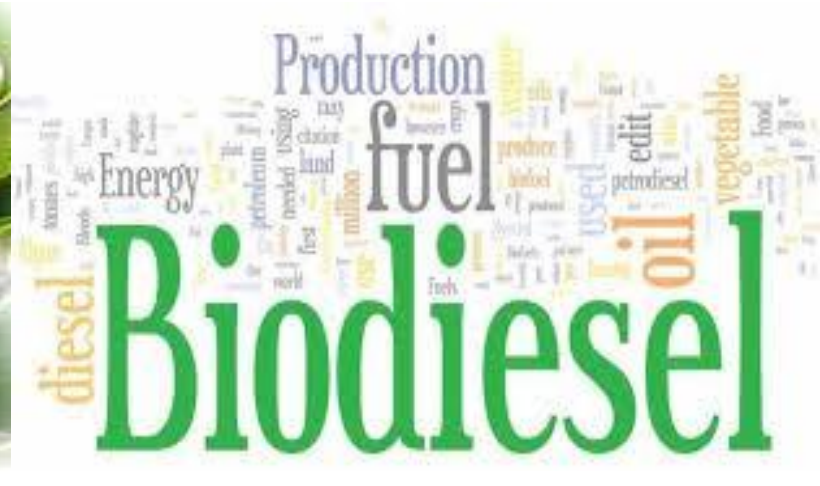
**There are some interesting Subnational climate policy (or, at least, plans or studies)**

*Is growing fast the electrical bus fleet in some Brazilian big cities (Campinas and São Paulo, for example)*



**There are some interesting Subnational climate policy (or, at least, plans or studies)**

*The main policy to stimulate Biodiesel is national, but the planting of some of the raw materials (babassu, rapeseed, castor) sometimes occurs via family farming and receiving stimulus from state governments and even municipalities, especially in the Northeast Region of Brazil*



# Brazilian historical avant-garde in tackling climate change

Since the United Nations Conference on Environment and Development ("Eco 92"), in Rio de Janeiro, in 1992, the country's diplomats and scientists use to took part in all in international climate change negotiations



# Brazilian historical avant-garde in tackling climate change

- ❖ Brazil use to lead, with others countries, the diplomatic multilateral efforts to mitigate climate change, in particular within the Conference of the Parties (COP) of the United Nation Framework Convention on Climate Change (UNFCCC);
- ❖ Brazilian climate policy negotiators had relevant participation, for example, in the creation and definition of the rules inherent to the flexibility mechanisms related to the Kyoto Protocol (in particular, the Clean Development Mechanism - CDM), in the debates about Reducing Emissions from Deforestation and forest Degradation in developing countries (REDD+) and with regard to global policies and initiatives to promote the production and use of biofuels (as in the case of ethanol and biodiesel).

## **Brazilian historical avant-garde in tackling climate change**

- ❖ During COP 23 (2017), in Bonn, Germany, and in COP 24 (2018), in Katowice, Poland, the Brazilian official delegation acted in diplomatic cooperation with Argentina and Uruguay, especially in the scope of the negotiations inherent to the G 77+China
- ❖ Looking for regional energy integration, energy security, scientific cooperation...

# Brazil is losing fast its historical avant-garde in tackling climate change since “Bolsonaro’s event”

- ❖ COP 25 would be held in Brazil after years of negotiations by the country's delegations at COP; but, even before assuming his mandate, the country's new president, Jair Bolsonaro, in November 2018, announced that the country would no longer host COP 25 (he said that COP 25 “would be too expensive” for Brazil);
- ❖ This meant loss of capacity and power for climate negotiation for Latin America countries, and, moreover, represented time loss in the context of mitigation and adaptation to climate change.
- ❖ COP 25 would be held in Chile, which, with the support of Costa Rica (and, of course, UNFCCC), agreed to hold the event even with little time for preparation. However, due to widespread popular demonstrations against economic neoliberalism in Chile, this country also declined to hold COP 25 – which, as you know, was held in Madrid.

**Brazil is losing fast its historical avant-garde in tackling climate change since “Bolsonaro’s event”**

**COP 25, in Madrid, in December 2019, ends without realizing its main objective, i.e., to regulate Article 6 of the Paris Agreement**

**But, Brazil, China and India work together to imposed strong obstacles to this**



# What really means President Bolsonaro (or Bolsonaro's government) for Brazilian Climate Politics?

Brazilian Climate Observatory, 2019  
(<http://www.observatoriodoclima.eco.br/>):

- ❖ In 2019, the number of fines (related to environmental crimes) imposed by IBAMA (Brazilian Institute of the Environment and Renewable Natural Resources) was the lowest in 15 years (10,270 from January to November 2019);
- ❖ 9,762 Km<sup>2</sup> (almost the size of Melbourne) of deforestation in Amazonia from January to November 2019 = the highest in 10 years;
- ❖ 65% increase in deforestation on indigenous lands (comparing January-November 2018 and January-November 2019);
- ❖ Invasions in native territories (indigenous peoples, territories protected by law) = 160, from January to September 2019 (a sad historical record);
- ❖ 27 forest native leaders were murdered in 2019.



- ❖ **Brazil is one of the countries most vulnerable to climate change**
- ❖ The 2 °C limit of average temperatures in relation to the pre-industrial period can be crossed in 2030 in the Mediterranean, in central Brazil and in the USA
- ❖ Sonia Seneviratne et al., “ Allowable CO2 emissions based on regional and impact-related climate targets ”. *Nature*, 529, 28 / 1 / 2016: «a regional 2 °C threshold was passed in the simulations around year 2000 for TNn in the Arctic, while it is projected to be reached by ca. 2030 for TXx in the Mediterranean, Brazil and the contiguous U.S., and only by the mid-2040s for the global mean temperature, under the business-as-usual (RCP8.5) emissions scenario. ”

# What really means President Bolsonaro (or Bolsonaro's government) for Brazilian Climate Politics?

Agribusiness in Brazil uses excessive amounts of pesticides (30% of pesticides used in Brazil are prohibited in the European Union);

In Brazil, insistently, “24 hours a day”, the TV media divulges in paid advertisements that “AGRO is pop”, “AGRO is tech”..

In fact, Brazilian agribusiness is typically toxic and contributes to the increase in GHG emissions, after all, directly or indirectly this sector is related to deforestation

# What really means President Bolsonaro (or Bolsonaro's government ) for Brazilian Climate Politics?

Some plans of the Bolsonaro's government for the current 2020, before the begging of Coronavirus pandemic (all of those mentioned by many ministers):

- ❖ Decrease environmental protection and social protection laws;
- ❖ Facilitate mining projects in the Amazon on Indigenous Lands (this is illegal in Brazil; so, it'll be necessary to change the Federal Constitution);
- ❖ Facilitate soy planting in the Amazon on Indigenous Lands;
- ❖ Opening of Amazonian Indigenous Lands for the exploitation of wood by national and multinational corporations (this is illegal in Brazil; so, it'll be necessary to change the Federal Constitution);
- ❖ Large-scale extensive agriculture in the Amazon;

# What really means President Bolsonaro (or government Bolsonaro) for Brazilian Climate Politics?



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# What really means President Bolsonaro (or government Bolsonaro) for Brazilian Climate Politics?

- ❖ The initial idea of the Bolsonaro government, in early 2019, was to merge the Ministry of Environment (MMA) with the Ministry of Agriculture (MAPA)
- ❖ MMA, however, continues to exist, but has lost a lot of its budget and, in addition, many of its sectors have simply been extinguished, such as the Climate Change Secretariat
- ❖ According Ricardo Salles, the actual Minister of the MMA, climate change is not a priority, after all, the global warming is a natural process (sometimes, this minister says that global warming doesn't exist)



But, evidently, even in this so difficult (populist/totalitarian/fascist) political moment (not only in Brazil, of course) we (science, civil society, conscious policy makers...) won't give up fighting against the consequences and causes of climate change

And there are many voices to inspire us...



*Even if I knew that tomorrow the world  
would go to pieces, I would still plant my  
apple tree*



**Martin Luther King Jr. (1929-1968)**

**Tribute to Brazilian anthropologist, writer and Indianist Darcy Ribeiro (1922-1997), who used to say that the Brazilian people are much better than their economic elite**



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Thanks!!!!

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