How to reach carbon neutrality?

Insights from national pathways to net zero in Brazil

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National Modelling Approach

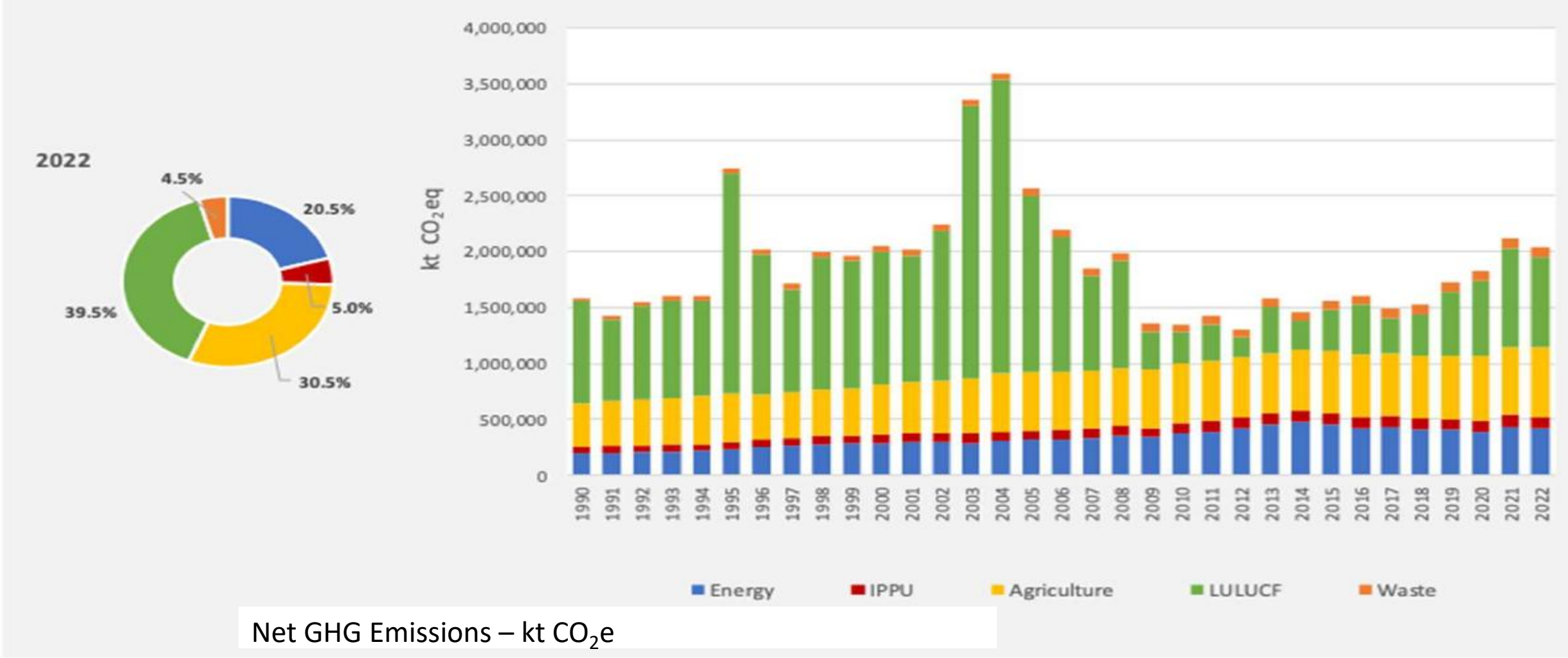
- **Design of Deep Decarbonization Scenarios - DDS at the national level according to global narrative and national qualitative storylines translated into quantitative modelling assumptions with stakeholder involvement.**

- **Identification of national and global requirements for implementing DDS:**
  - **Barriers to decarbonization at the sectoral level in each country**
  - **Policy instruments at the national level to overcome the barriers**
  - **Enabling conditions at the global level**

- **Key findings:**
  - **Sharp reduction of annual deforestation rate and native vegetation restoration in public and private areas have a significant abatement potential allowing to offset other sectors' residual GHG emissions.**
  - **A pathway towards net-zero GHG emissions in 2050 can be reached with available technologies only and a carbon price going up to 50 USD/t CO_2e by 2050**
  - **DDS allows to reach carbon neutrality while keeping slightly better economic and social development results than in Current Policies Scenario (assuming a smart recycling of carbon pricing revenues).**

Brazilian GHG Emissions (Historical Record)

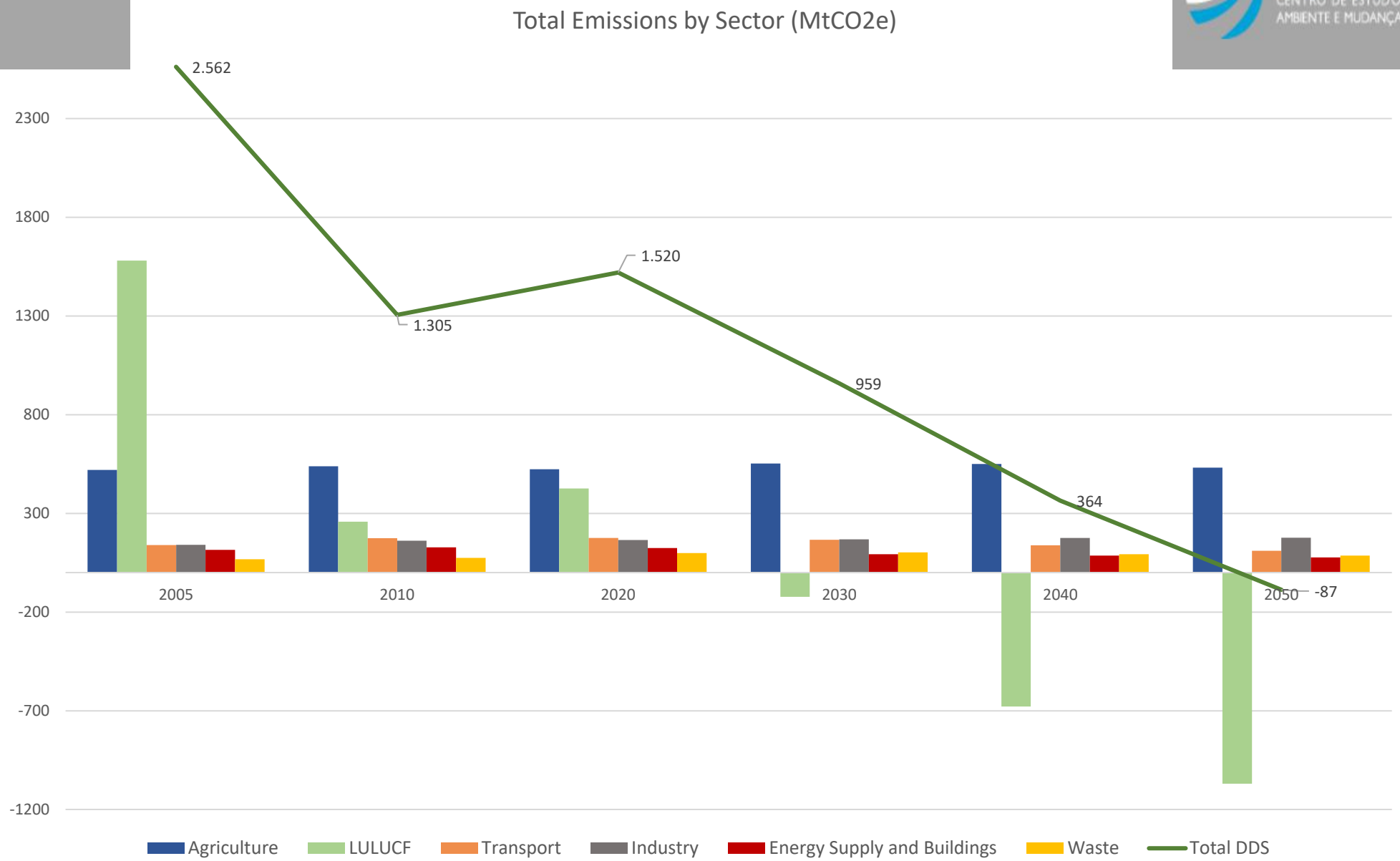
AFOLU: main GHG emissions source in Brazil = 70% of economy-wide GHG emissions in 2022
Deforestation is the main source of LULUCF GHG emissions (CO2) = Around 40%
Enteric Fermentation is the main GHG emissions source (CH4) from Agriculture = 30% of total
49% of overall energy mix = renewables, 89% of power generation = non-fossil => Energy = 20% of total



Net GHG Emissions – kt CO_2e

Source: Biannual Transparency Report – MCTI (BRASIL, 2024)

Economy-wide GHG emissions -DDS



Priority Short-term policies to Enable Key Transformations

➢Resuming policies successfully adopted in the recent past (2004-2012) to sharply reduce annual deforestation rates: both command-and-control and economic instruments; reversing the 2019-2022 trend, reduction of annual deforested area was of 11.2% in 2023 and 32.4% in 2024 (combined figure of 40% reduction in 2022-2024).

➢Carbon Pricing: design the regulations and implement a well-structured cap-and-trade scheme. A significant share of avoided emissions can be obtained at negative or very low costs.

➢ Boosting the forestry sector to capture a large share of emissions to make it possible to achieve net-zero target by 2050 helps to lower costs and provides time for disruptive technologies to be economically viable.

➢Developing innovative financial mechanisms - IFMs to reduce capital costs, de-risk and foster the funding of investments in mitigation actions, and mainly in forest cover restoration and low-carbon infrastructure key enabler of de-risking low carbon projects allowing for Substantial support of key Annex I countries to foster financial flows targeted at mitigation actions in the global South, including both the climate finance tools within UNFCCC (GCF, article 6 of PA) and international financial initiatives to channel private capital to low-carbon investments:.

➢Design and start implementation of a LT-LEDS for Brazil, assessing the economic and social implications of decarbonization, and including policy tools to ensure a just transition.

Opportunities for EU-Brazil cooperation

- Potential for EU/Brazil cooperation on **financial mechanisms to fund decarbonization actions** in Brazil: Amazon Fund, Tropical Forests Forever Fund – TFFF, Ecological Transformation Plan of the Ministry of Economy (Eco Invest hedging fund against exchange rate fluctuations, platform presenting the portfolio of investment opportunities in low-carbon projects, etc.), and smart climate finance tools, such as Multi Sovereign Guarantee Mechanisms

- How to make the design of the **upcoming cap-and-trade Brazilian industry carbon market compatible with CBAM**? What mechanisms would be required to adjust the level of border taxes, at what disaggregation level, what methodologies to use?

- **Cooperation around certification programs compatible with EUDR:** a variety of deforestation free certification programmes exist internationally (eg RSPO, PNCCS and CBS/FSC in Brazil), and ensuring consistency among programmes and cooperation around the certification methodologies and the underlying technology

- Use the lessons learnt from the EU-Brazil dialogue on a **Taxonomy of Green Investments** applicable to CBAM and EUDR.