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In the Race to Net Zero, Brazil Needs Less Net and More Zero



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Ambitious and comprehensive public policies are needed to drive and regulate climate investment¹ by the public and private sectors. Policies are also needed to ensure a just transition,² in line with human rights requirements and the sustainable development goals. As Brazil seeks to play a leadership role in the global race to net zero, and given the country's unique emissions profile, what should its climate policy package look like?

Brazil's emissions profile and the cost-effectiveness of solutions should inform climate policy

More than 80% of global greenhouse gas emissions³ come from the following sectors combined: energy (including electricity, heat, and transport), industrial processes and product use (IPPU), and waste. The remaining emissions come from agriculture, forestry, and other land uses (AFOLU). But Brazil's emissions profile is different.⁴ Energy, IPPU, and waste combined represent just one third of the country's emissions. Instead, in Brazil the main culprit is AFOLU: deforestation accounts for roughly one third of emissions, and cattle farming and agriculture jointly account for another third.

While Brazil's forests and land may eventually become net sinks of carbon, they currently work as massive emitters. To start reversing the trend, the country needs to slash its AFOLU emissions. The government should employ strict controls, monitoring, and enforcement to stop illegal deforestation. It should encourage forest restoration and minimize the conversion of forests into large-scale agricultural land or pastures. Recognizing the intrinsic value of biodiversity, it should support Indigenous communities in their sustainable use of ecosystems.

When it comes to Brazil's IPPU emissions, energy holds the largest share. Brazil often boasts about its 80% renewable electricity matrix. However, energy is not just electricity. When including transport, industry, cooking, and other important energy uses in the mix, more than half of Brazil's energy matrix is fossil.⁵ Furthermore, as the country's population, industry, and energy demand grow, Brazil cannot rely on its past as a hydro powerhouse. Instead, it needs to move into its solar and wind future so it can replace fossil fuels beyond electricity generation and meet the demands of an increasingly electric economy.

According to the International Energy Agency (IEA), decarbonization enablers⁶ include energy efficiency, electrification, renewable electricity (solar, wind, geothermal, and hydropower), hydrogen, and biofuels. Decarbonization solutions exist in agriculture,⁷ industry,⁸ and other sectors⁹ as well. Brazil's climate policy package needs to be comprehensive, taking all possible solutions into account in a way that makes sense for Brazil's economy and society. Comparing the cost-effectiveness of solutions¹⁰ across sectors, policy makers can prioritize and accelerate those most economically efficient in reducing emissions.

Brazil's policy should govern climate investment by the public sector

One side of the policy package pertains to public investment. The government needs to swiftly phase out its fossil fuel subsidies,¹¹ which in 2021 were estimated at BRL 118 billion, roughly USD 24 billion. Instead, Brazil should subsidize and incentivize climate solutions, such as solar and wind energy and grids, electric mass transit and cargo transportation systems, and sustainable agriculture and forest management.

Brazil should also increase spending on R&D—for example, through universities and the Brazilian Agricultural Research Corporation, Embrapa—to find innovative ways to reduce emissions from agriculture and cattle farming.¹²

Besides mitigation, the country should also invest in a just transition,¹³ strengthening social safety nets and compensating those most vulnerable to climate impacts and to the disruptions of climate policy. It should upgrade and build its infrastructure for adaptation and resilience to climate impacts, which include stronger and more frequent droughts, floods, landslides, and cyclones.¹⁴

Brazil's policy should govern climate investment by the private sector

The other side of a climate policy package for Brazil pertains to private investment regulation. Command and control policies may be useful, such as energy efficiency standards across the economy and deforestation bans, with hefty and consistently enforced penalties. But economic instruments will be necessary. Brazil needs to speed up the regulation of its emissions trading system (ETS),¹⁵ putting a price on carbon not only on carbon-intensive industry, but on the broadest possible range of economic activities, including agriculture and cattle farming.¹⁶

Companies in Brazil should also be subject to broader and stronger mandatory climate-related disclosures,¹⁷ including around their scope 1 and 2 emissions, and, where useful, scope 3 emissions; their science-based mitigation targets and strategies; and their adaptation and resilience plans.

Importantly, the Brazilian government and state-owned company Petrobras must stop the country's colossal expansion of oil and gas.¹⁸ This expansion is inconsistent with climate action and with the role that the country wants to play in emissions reductions. It sends the wrong signal to the private sector. It is also unnecessary, according to the IEA's pathway to net zero by 2050,¹⁹ which affirms that “there is no need for investment in new fossil fuel supply.” It works against the country by locking it into the declining fossil fuel economy.²⁰ It is at complete odds with both the global long-term trend and the strong economic case to invest in renewable energy²¹ instead.

Finally, Brazil's policy must drive the private sector away from the trend and trap of excessive reliance on carbon credits²²—especially from controversial nature-based offsetting and insetting,²³ which bet on the potential of soils and vegetation as carbon sinks. As the updated 2023 OECD Guidelines²⁴ for Multinational Enterprises on Responsible Business Conduct indicate, offsets “should not draw attention away from the need to reduce emissions and should not contribute to locking in greenhouse gas-intensive processes and infrastructure.” While offsetting is necessary as a measure of last resort to neutralize residual emissions that cannot be reduced, “we cannot offset our way out of climate change.”²⁵ To play a leadership role in the race to net zero, Brazil's policy must nudge the private sector to prioritize eliminating or reducing emissions and to limit offsetting—in other words, to seek less *net* and more *zero*.

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References

- ¹ “Overhauling Investment Governance for a Just Zero-Carbon Future,” Columbia Center on Sustainable Investment, <https://ccsi.columbia.edu/content/investment-governance-climate-energy>.
- ² Martin Dietrich Brauch, “Taking Equity into Account in International and Domestic Legal Frameworks on Compensation for Climate Change and the Energy Transition,” *Columbia Center on Sustainable Investment* (blog), May 2, 2022, <https://ccsi.columbia.edu/equity-just-transition-climate-justice-compensation-energy-transition-isds>.
- ³ “Historical GHG Emissions,” Climate Watch, (Washington, DC: World Resources Institute, 2022), <https://www.climatewatchdata.org/ghg-emissions>.
- ⁴ Federative Republic of Brazil, Fourth National Communication of Brazil to the UNFCCC, 2020, https://www.gov.br/mcti/pt-br/centrais-de-conteudo/publicacoes-mcti/quarta-comunicacao-nacional-do-brasil-a-unfccc/executive_summary_4nc_brazil_web.pdf.
- ⁵ “Matriz Energética e Elétrica,” Empresa de Pesquisa Energética, <https://www.epe.gov.br/pt/abcdenergia/matriz-energetica-e-eletrica>.
- ⁶ “Decarbonisation Enablers,” International Energy Agency (IEA), <https://www.iea.org/energy-system/decarbonisation-enablers>.
- ⁷ Nabuurs, G.-J., R. Mrabet, A. Abu Hatab, M. Bustamante, H. Clark, P. Havlík, J. House, C. Mbow, K.N. Ninan, A. Popp, S. Roe, B. Sohngen, S. Towprayoon, *Agriculture, Forestry and Other Land Uses (AFOLU)*. In *IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. (Cambridge and New York: Cambridge University Press, 2022), https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter07.pdf.
- ⁸ Bashmakov, I.A., L.J. Nilsson, A. Acquaye, C. Bataille, J.M. Cullen, S. de la Rue du Can, M. Fishedick, Y. Geng, K. Tanaka, 2022: *Industry*. In *IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. (Cambridge and New York: Cambridge University Press, 2022), https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter11.pdf.
- ⁹ Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, 2022, <https://www.ipcc.ch/report/ar6/wg3>.
- ¹⁰ Bockel, L., Sutter, P., Touchemoulin, O., and Jonsson, M, *Using Marginal Abatement Cost Curves to Realize the Economic Appraisal of Climate Smart Agriculture Policy Options. EASYPol Series 116* (Rome: FAO, 2012), <http://www.fao.org/3/a-bq866e.pdf>.
- ¹¹ Carlos Alexandre de Oliveira, “Brazil Spent BRL 118.2 Billion on Fossil Fuel Subsidies in 2021,” *Climate Scorecard*, May 9, 2023, <https://www.climate-scorecard.org/2023/05/brazil-spent-brl-118-2-billion-on-fossil-fuel-subsidies-in-2021>.
- ¹² “Low Carbon Agriculture,” Embrapa, <https://www.embrapa.br/en/tema-agricultura-de-baixo-carbono/sobre-o-tema>.

- 13 Martin Dietrich Brauch, "Taking Equity into Account in International and Domestic Legal Frameworks on Compensation for Climate Change and the Energy Transition," *Columbia Center on Sustainable Investment* (blog), May 2, 2022, <https://ccsi.columbia.edu/equity-just-transition-climate-justice-compensation-energy-transition-ids>.
- 14 Eduardo Simões and Gabriel Araujo, "Cyclone Batters Southern Brazil, Death Toll From Floods Hits 36," *Reuters*, September 6, 2023, <https://www.reuters.com/world/americas/death-toll-floods-brazils-southernmost-state-reaches-31-2023-09-06/>.
- 15 Marcela Ayres and Bernardo Caram, "Brazil Government Eyes Emissions Cap, Indigenous Protections in New Carbon Market," *Reuters*, August 17, 2023, <https://www.reuters.com/sustainability/society-equity/brazil-govt-eyes-emissions-cap-indigenous-protections-new-carbon-market-2023-08-17/>.
- 16 Sarah Brown, "Brazil Cap-and-Trade Carbon Framework in Sight, but Agriculture Gets a Pass," *Mongabay*, September 6, 2023, <https://news.mongabay.com/2023/09/brazil-cap-and-trade-carbon-framework-in-sight-but-agriculture-gets-a-pass/>.
- 17 Prudential and Foreign Exchange Regulation Department of Central Bank of Brazil, New Regulation on Social, Environmental, and Climate-Related Risk Disclosures, September 15, 2021, https://www.bcb.gov.br/content/about/legislation_norms_docs/BCB_Disclosure-GRSAC-Report.pdf.
- 18 Melisa Cavcic, "Turning Brazil into World's Fourth Largest Oil Producer with New Hydrocarbon Exploration Programme," *Offshore Energy*, March 27, 2023, <https://www.offshore-energy.biz/turning-brazil-into-worlds-fourth-largest-oil-producer-with-new-hydrocarbon-exploration-programme/>.
- 19 International Energy Agency (IEA), *Net Zero by 2050* (Paris: IEA, 2021), <https://www.iea.org/reports/net-zero-by-2050>.
- 20 Jeffrey D. Sachs, Perrine Toledano, and Martin Dietrich Brauch, with Tehtena Mebratu-Tsegaye, Efosa Uwaifo, and Bryan Michael Sherrill. Roadmap to Zero-Carbon Electrification of Africa by 2050: The Green Energy Transition and the Role of the Natural Resources Sector (Minerals, Fossil Fuels, and Land). Commissioned by and prepared for the African Natural Resources Management and Investment Centre, African Development Bank (AfDB). New York: Columbia Center on Sustainable Investment (CCSI), November 2022, <https://ccsi.columbia.edu/content/roadmap-zero-carbon-electrification-africa>.
- 21 "Scaling Renewable Energy Investment: Roadblocks and Drivers," Columbia Center on Sustainable Investment, <https://ccsi.columbia.edu/content/renewable-energy-investment-roadblocks-drivers>.
- 22 Jack Arnold and Perrine Toledano, "Corporate Net-Zero Pledges: The Bad and the Ugly," *Columbia Center on Sustainable Investment* (blog), December 1, 2021, <https://ccsi.columbia.edu/news/corporate-net-zero-pledges-bad-and-ugly>.
- 23 Nora Mardirossian and Jack Arnold, *Nature-Based Insetting: A Harmful Distraction from Corporate Decarbonization* (New York: CCSI, March 2023), <https://ccsi.columbia.edu/sites/default/files/content/docs/publications/align-insetting-harmful-distraction.pdf>.
- 24 Organisation for Economic Cooperation and Development, *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct* (Paris: OECD, June 2023), https://www.oecd-ilibrary.org/finance-and-investment/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct_81f92357-en.
- 25 Adrian Horton, "John Oliver on Corporate 'Net Zero' Proposals: 'We Cannot Offset Our Way Out of Climate Change,'" *The Guardian*, August 22, 2022, <https://www.theguardian.com/tv-and-radio/2022/aug/22/john-oliver-net-zero-climate-change-last-week-tonight>.