This country profile assesses the Brazil’s past, present and indications of future performance towards a low-carbon economy by evaluating emissions, decarbonisation, climate policy performance and climate finance. The profile summarises the respective findings from, amongst others, the Climate Change Performance Index (CCPI, operated by Germanwatch and Climate Action Network Europe), the Climate Action Tracker (CAT, operated by Climate Analytics, NewClimate Institute, Ecofys and Potsdam Institute for Climate Impact Research), and analyses from the Overseas Development Institute (ODI).

In Brazil, GHG emissions have risen since 1990, a trend likely to continue to 2030. Land use, land-use change and forestry (LULUCF) emissions play a major role in Brazil’s GHG profile. At their 1995 peak, they were nearly triple those of all GHG emissions from other sources, but have now declined. Since 2011, LULUCF emissions have been lower than energy-related CO₂. Energy-related CO₂/capita have risen, but are well below G20 average. CCPI 2016 rates Brazil’s emissions as relatively good, but growing energy-related emissions per capita account for a negative trend.
The energy intensity of Brazil’s economy (TPES/GDP) has remained at about the same level throughout recent years, in contrast to most G20 countries, which have falling energy intensity rates. Nevertheless, Brazil’s energy intensity remains below the G20 average. The CCPI evaluates the energy intensity of Brazil’s economy as relatively good, and sees a negative trend.

Compared to the G20 average, Brazil’s carbon intensity of total primary energy supply (CO₂/TPES) is relatively low. While it has been rising since 2009, it is expected to remain relatively constant in the future. In 2013, CO₂ emissions per TPES were at a level of about 37 tCO₂ per TJ, considered relatively good in the CCPI rating. Due to the increase within the last five years, the CCPI recognises a negative trend.

The share of coal in Brazil’s total primary energy supply is relatively low. Since 1990 it has varied between 5% and 8%. For future predictions, it is expected that the share will remain on a level of around 6% until 2030.
Electricity demand per capita

Brazil’s electricity demand per capita continuously increased over recent years, but remains relatively low compared to other G20 countries. It is expected that it will further increase until 2030.

Emissions intensity of the electricity sector

Brazil’s electricity emissions intensity has increased, and today is around 98 gCO₂ per kWh. This relatively low intensity level results from the large hydropower sector and its relatively well-developed renewable energy sector. Future projections show electricity emissions intensity will remain relatively stable.
On national policy, experts highlighted Brazil’s weak governance and poor appreciation for economic opportunities in low carbon development. On international policy, experts acknowledged the efforts in pushing negotiations, but criticised the poor mitigation ambition and willingness to compromise. Overall, the CCPI rates Brazil’s climate policy as medium.

Brazil submitted its Intended Nationally Determined Contribution (INDC) on 28 September 2015. Its target is to reduce net GHG emissions by 37% below 2005 levels by 2025, after accounting for the Land Use, Land Use Change and Forestry (LULUCF) sector. The INDC also has an “indicative contribution” to reduce emissions by 43% below 2005 levels by 2030, including LULUCF. It outlined steps to help meet the targets, including a share of 45% renewables in the total energy mix by 2030. After excluding LULUCF, the Climate Action Tracker estimates the INDC will result in an increase in emissions of about 36% above 2005 levels by 2025. Based on this target, it rates Brazil “medium,” meaning it is inconsistent with limiting warming to below 2°C - unless other countries make much deeper reductions and comparably greater effort.

According to the CAT’s assessment, Brazil is very close to meeting its INDC targets under current policies. For example, the 45% renewable energy target represents a very small improvement relative to baseline projections. Currently implemented policies lead to about 41% of renewables in Brazil’s energy mix by 2030, close to today’s level of 41.3%.
Climate Transparency rates Brazil’s investment attractiveness as low to medium, due to weak long-term renewables targets, inadequate (financial) support policies for renewable energy development and unambitious past political action. While strongly relying on hydropower, Brazil has a low market absorption capacity for other renewables, despite a recent plan to increase non-hydro renewable capacity by 12GW by 2018.

Sources: Allianz Energy and Climate Monitor and RECAI reports

The Allianz Energy & Climate Monitor ranks G20 member states on their relative fitness as potential investment destinations for building low-carbon electricity infrastructure. The investment attractiveness of a country is assessed through four categories: Policy adequacy, Policy reliability of sustained support, Market absorption capacity and the National investment conditions. The Renewable Energy Country Attractiveness Index (RECAI) produces score and rankings for countries’ attractiveness based on Macro drivers, Energy market drivers and Technology-specific drivers which together compress a set of 5 drivers, 16 parameters and over 50 datasets.

Historical investments in renewable energy and investment gap

This section shows Brazil’s current investments in the overall power sector (including distribution and transmission) as well as in renewable energy expressed as the share of the total annual investments needed to be in line with a 2°C compatible trajectory.

Carbon pricing mechanisms

**Emissions Trading Schemes (ETS)**

An ETS caps the total level of GHG emissions and allows industries to trade allowances based on their marginal abatement cost. By creating a supply and demand for allowances, an ETS establishes a market price for GHG emissions.

**Carbon Tax**

A Carbon tax directly sets a price on carbon by defining a tax rate on GHG emissions or – more commonly – on the carbon content of fossil fuels. Unlike an ETS, a carbon tax is a price-based instrument that pre-defines the carbon price, but not the emissions reduction outcome of a carbon tax.

Although Brazil has no carbon pricing system yet in place, the government is currently exploring possibilities of using a national Emissions Trading Scheme to more cost-effectively meet its voluntary greenhouse gas reduction commitment.

At the subnational level, Rio de Janeiro and Sao Paulo are considering implementing ETS schemes to curb emissions from energy-intensive sectors. However, political opposition has significantly delayed and further postponed their implementation.
Fossil fuel subsidies

Petrobras, where the government holds the controlling interest, is Brazil’s largest oil and gas producer, producing over 5 times the combined of all Brazil’s 34 private oil and gas companies. The government offers a range of tax and budgetary subsidies for fossil fuel production, including preferential loans for oil and gas producers through Petrobras and the Brazilian Development Banks (BNDES). OECD data indicates a sharp decline in government direct spending on the extraction of petrol and natural gas in 2014. Paying the fuel costs for national coal power plants - a temporary mechanism resulting from the transition in regulatory models in the power industry - is expected to end in 2027.

Average annual national subsidies (2013-14)*

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<th>Brazil</th>
<th>G20 total</th>
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<td>$4.9 billion</td>
<td>$70 billion</td>
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% of government’s income from oil and gas production (2013)*

3.7%

Source: ODI, 2015

*The indicators above refer only to subsidies for fossil fuel production, and include direct spending (e.g. government budget expenditure on infrastructure that specifically benefits fossil fuels), tax expenditure (e.g. tax deductions for investment in drilling and mining equipment) and other support mechanisms (e.g. capacity mechanisms).

Public climate finance

Brazil is not listed in Annex II of the UNFCCC, and it is therefore not formally obliged to provide climate finance. While climate-related spending by multilateral development banks may exist, it has not been included in this report.