

ASSESSING CLIMATE PROTECTION PERFORMANCE:
G20 COUNTRY PROFILE

Brazil

This Country Profile assesses Brazil's past and present actions to help mitigate climate change, and its Intended Nationally Determined Contribution (INDC) towards future global action. The profile summarises the respective findings of the Climate Change Performance Index (CCPI)ⁱ and Climate Action Tracker (CAT)ⁱⁱ.



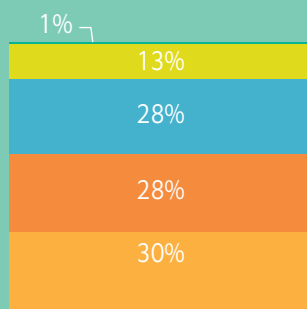
COUNTRY CHARACTERISTICS

KEY INDICATORS*	BRAZIL	G20
Population [million]	198	4,587
GDP per capita (PPP) [US\$]	12,747	14,505
Share of global GHG emissions**	3.2%	74.2%
Share of global GDP	3.1%	80.3%
Share of global population	2.8%	64.7%
GHG per capita [t CO ₂ e/cap]**	5.9	7.2
Energy intensity of the economy (TPES/GDP [MJ/US\$])	4.6	6.6
Carbon intensity of energy supply (CO ₂ /TPES [t CO ₂ /TJ])	37.3	63.1
Carbon intensity of the economy (CO ₂ /GDP [kg CO ₂ /US\$])	0.17	0.42
Share of fossil fuels in primary energy supply	56.5%	83.4%
Share of coal in electricity production	2.6%	35.7%
Share of renewables in primary energy supply	40.7%	11.1%

*year 2012 (unless stated otherwise)
GDP = gross domestic product
GHG = greenhouse gas emissions (net emissions including sinks from agriculture, forestry, and other land uses)
TPES = total primary energy supply
PPP = purchasing power parity in prices of 2005

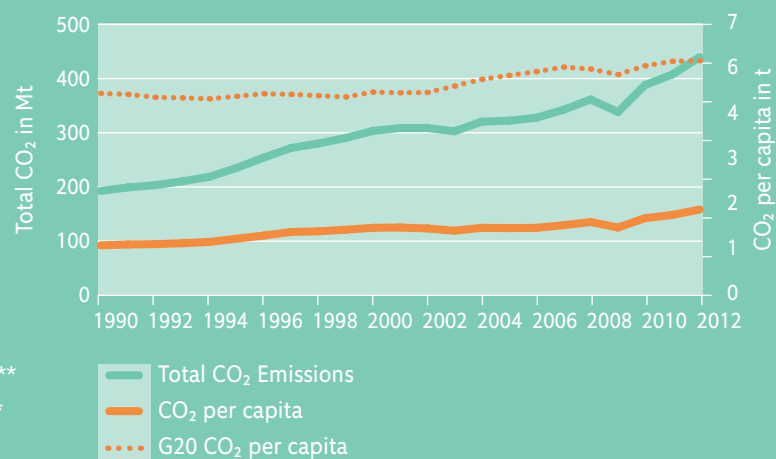
EMISSIONS AND EMISSIONS TRENDS

COMPOSITION OF GHG – BRAZIL 2010



■ F-Gases
■ N₂O
■ CH₄
■ CO₂ from LULUCF**
■ CO₂ excl. LULUCF*
* from Energy, Industry & other

ENERGY-RELATED CO₂-EMISSIONS – BRAZIL



Source: IEA 2014; **CAT 2015

Source: IEA 2014

In Brazil, carbon dioxide (CO₂) emissions from Land Use, Land-Use Change and Forestry (LULUCF) account for over one quarter of all greenhouse gas emissions. The share of methane emissions is high compared with other countries, reflecting a significant agriculture sector. Energy-related per capita CO₂ emissions are about one third of the G20 average.

While Brazil's overall CO₂ emissions are growing relatively strongly, the country's emissions level is still rated medium in the CCPI ranking. While the trend recorded here is negative, the country made improvements in the forestry sector in the very recent past, which will be reflected in the 2016 edition of the CCPI, to be published at COP21 in Paris.

CCPI EVALUATION OF BRAZIL'S EMISSIONS



Source: CCPI 2015

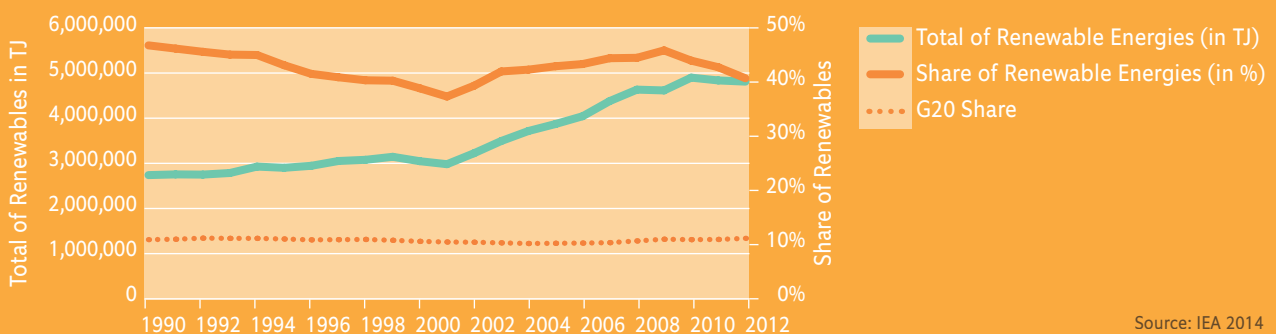
DECARBONISATION

Decarbonisation of the global economy will be a crucial element for staying below the 2°C threshold. Two important steps towards achieving such decarboni-

sation are a shift from fossil fuels to renewable energy sources, and a reduction in carbon and energy intensityⁱⁱⁱ.

RENEWABLE ENERGY

RENEWABLE ENERGY IN BRAZIL



Source: IEA 2014

In Brazil, 40% of primary energy supply comes from renewable sources, which is the highest share of all G20 countries. The CCPI ranks Brazil therefore as

good. Further growth in the renewable sector over the past five years contributes to a positive trend.

CCPI EVALUATION OF BRAZIL'S RENEWABLE ENERGY



Source: CCPI 2015

ENERGY- AND CARBON INTENSITY

The measurement of carbon and energy intensity uses macroeconomic data. A country's progress towards decarbonisation is indicated by decoupling of its GDP growth from growth in carbon and energy

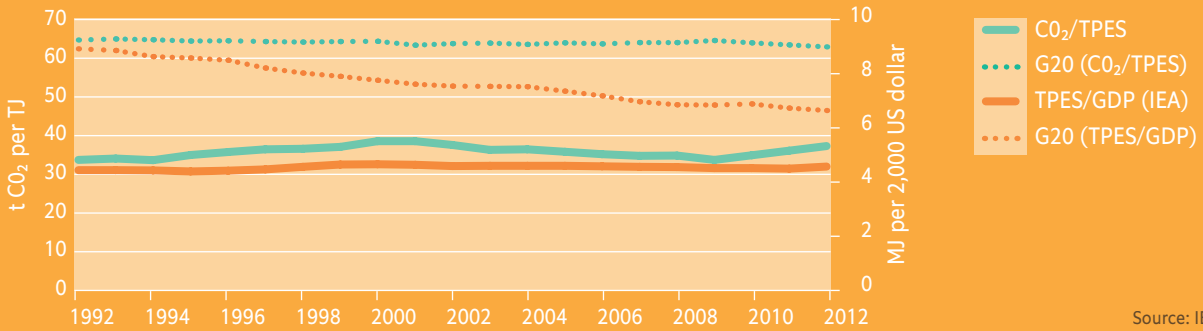
intensity. The latter are measured as CO₂ emissions per unit of Primary Energy Supply (CO₂/TPES) and Primary Energy Supply per unit of GDP (TPES/GDP) respectively.

i Climate Change Performance Index is jointly published by Germanwatch and Climate Action Network Europe, a coalition of over 120 member organizations. The Index is 80% based on objective indicators of emissions trend and level, renewable energies and energy efficiency and 20% on national and international climate policy assessments by more than 300 experts from the respective countries. www.germanwatch.org/en/ccpi

ii Climate Action Tracker is an independent scientific analysis produced by four research organizations: Climate Analytics, Ecofys, the Potsdam Institute for Climate Impact Studies and the NewClimate Institute. www.climateactiontracker.org

iii Another indicator is energy efficiency. However, energy efficiency is complex to measure, requiring a sector by sector analysis, where comparable data sources across G20 countries are not available at present.

ENERGY- AND CARBON INTENSITY IN BRAZIL



Source: IEA 2014

Both the energy intensity (CO₂/Primary Energy) and carbon intensity (Primary Energy/GDP) of Brazil's economy have remained at the same level in recent years. In contrast, most G20 countries have seen fall-

ing energy intensity. As a result, there is no indication of a decarbonisation pathway. Nevertheless, the current level of energy and carbon intensity is relatively good, according to the CCPI evaluation.

CCPI EVALUATION OF BRAZIL'S ENERGY AND CARBON INTENSITY



Source: CCPI 2015

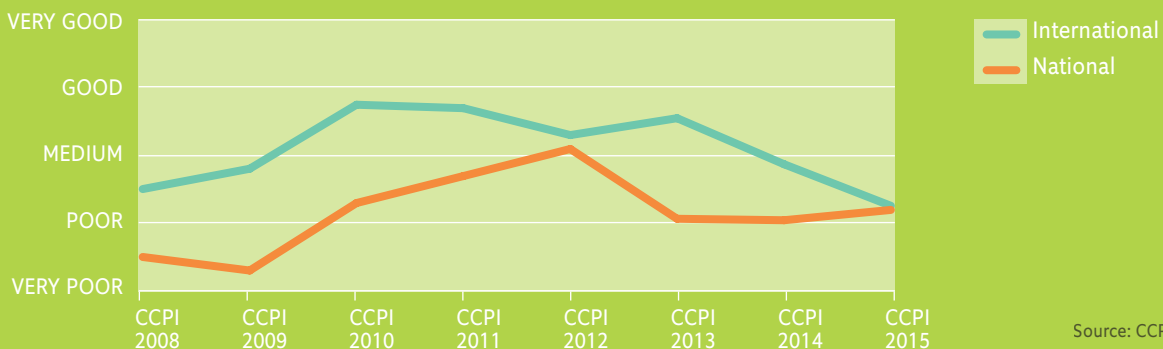
CLIMATE POLICY PERFORMANCE

EVALUATION OF RECENT CLIMATE POLICY

The CCPI evaluates a country's performance in national and international climate policy through feedback from national energy and climate experts.

The experts assess the country's performance in international negotiations, national policy making and in the implementation of climate policies.

BRAZIL'S CLIMATE POLICY



Source: CCPI 2008-2015

Brazil's national policy performance has improved over the assessment period, from very poor initially. Experts still criticise weak governance, and poor appreciation of climate change risks, and the economic opportunities from low carbon development. Historically, Brazil's international evaluation has varied from medium to good, reflecting its role as a

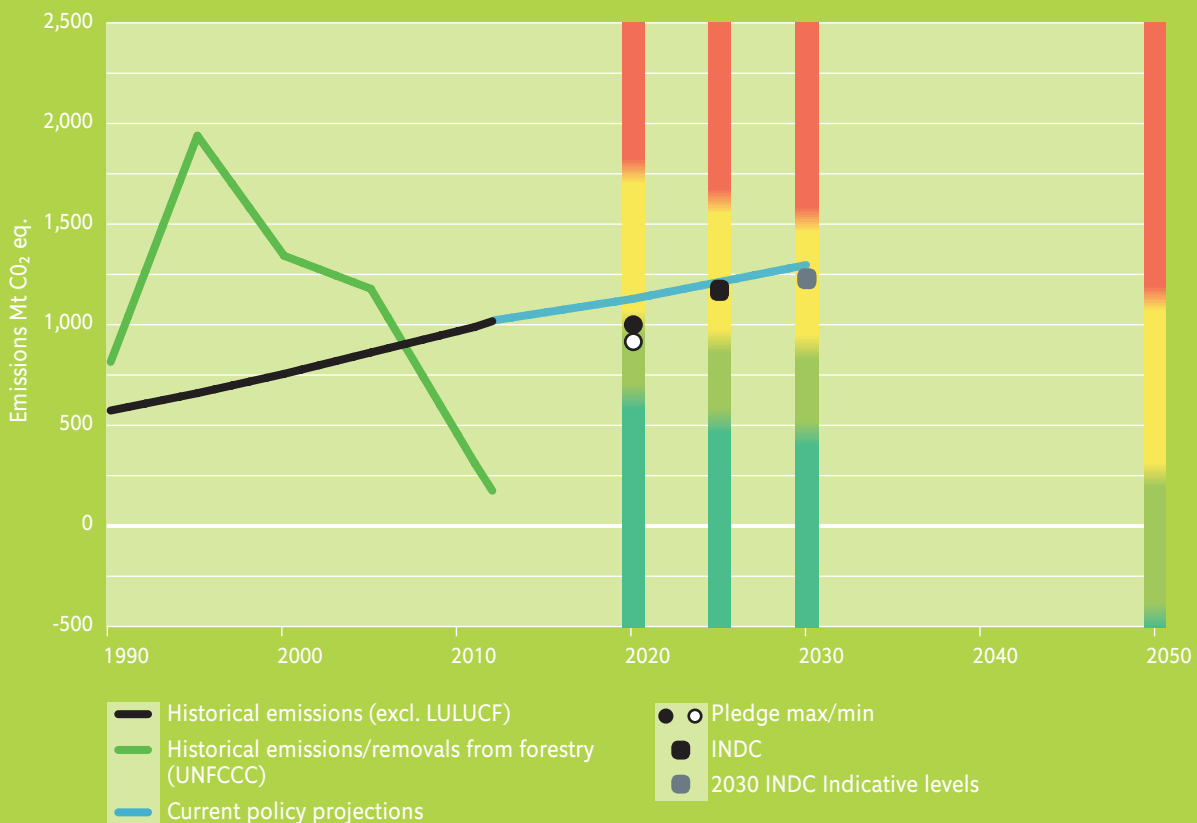
progressive negotiator. Most recently, however, its international performance has dropped. National experts criticise a poor willingness to compromise in international negotiations. Brazil's overall national and international climate policy performance receive a poor rating.

CCPI EVALUATION OF BRAZIL'S CLIMATE POLICY



Source: CCPI 2015

COMPATIBILITY OF NATIONAL CLIMATE TARGETS WITH 2°C



Source: © www.climateactiontracker.org/Climate Analytics/Ecofys/ NewClimate/PIK

Brazil submitted its Intended Nationally Determined Contribution (INDC) on 28 September 2015. The INDC included a target to reduce net greenhouse gas (GHG) emissions by 37% below 2005 levels by 2025, after accounting for the Land Use, Land Use Change and Forestry (LULUCF) sector. In addition, the INDC mentioned an “indicative contribution” to reduce emissions by 43% below 2005 levels by 2030, also including LULUCF. The INDC outlined steps to help achieve these targets, including reaching a share of 45% renewables in the total energy mix by 2030. After excluding LULUCF, the CAT estimates that 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 that it is not consistent with limiting warming to below 2°C unless other countries make much deeper reductions and comparably greater effort.

According to 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 already lead to about 41% renewables in the Brazilian energy mix by 2030, close to today’s level of 41.3%.

CAT EVALUATION OF BRAZIL’S INTENDED NATIONALLY DETERMINED CONTRIBUTIONS (INDC)

