

SOUTH AMERICA



Brazil

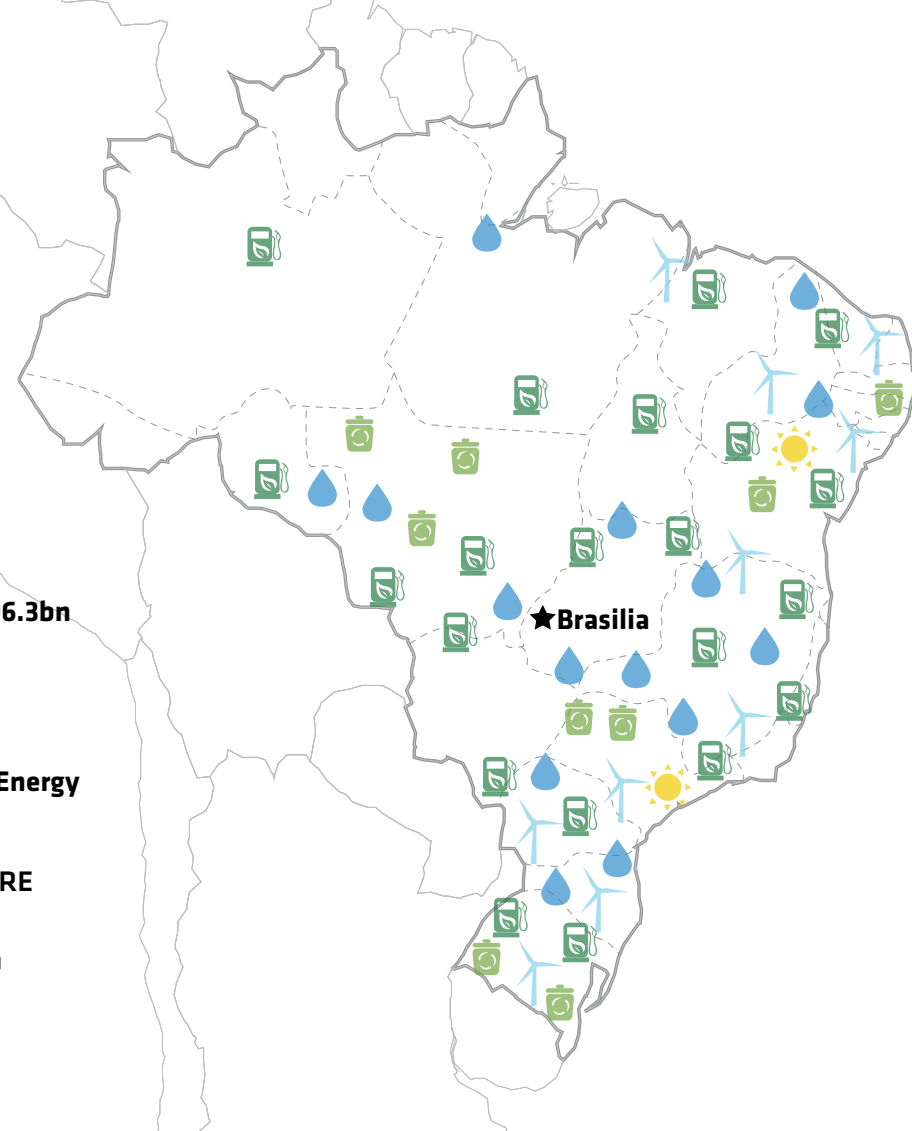
GDP: **\$2,250bn**
 Five-year economic growth rate: **7%**
 Population: **200m**
 Total clean energy investments, 2006-2013: **\$96.3bn**
 Installed power capacity: **126GW**
 Renewable share: **15.3%**
 Total clean energy generation: **45,815GWh**
 Top energy authority: **Ministry of Mines and Energy**

OVERALL RANKING
2014

2

OVERALL SCORE
2014

2.17



PARAMETER	RANKING	SCORE
I. Enabling Framework	01	2.14
II. Clean Energy Investment & Climate Financing	27	0.57
III. Low-Carbon Business & Clean Energy Value Chains	02	4.41
IV. Greenhouse Gas Management Activities	02	3.24

SUMMARY

The largest economy in Latin America, Brazil finished second on *Climatescope 2014*, scoring 2.17 out of 5.

2013 was a difficult year for Brazil's power sector, which relies heavily on large-hydro generation and suffered through one of the worst droughts in 50 years. Brazil had to lean far more than anticipated on gas generation; power prices spiked. Meanwhile, clean energy investment fell 52% from 2012 with the country attracting just \$3.1bn in 2013 for new non-large hydro clean energy projects.

On the positive side, Brazil saw a record volume of non-large hydro renewable capacity (3.3GW) commissioned in 2013 and renewables now represent 15% of a 126GW national power matrix. In addition, in 2013 Brazil contracted through tenders 6.2GW of future renewable capacity from wind, small hydro and biomass plants to be commissioned in the next 3-5 years.

This pipeline of new projects bodes well for Brazil remaining a dynamic clean energy market. Investment levels are expected to rebound in 2014 after two years of decline as developers seek to build the new capacity contracted in 2013.

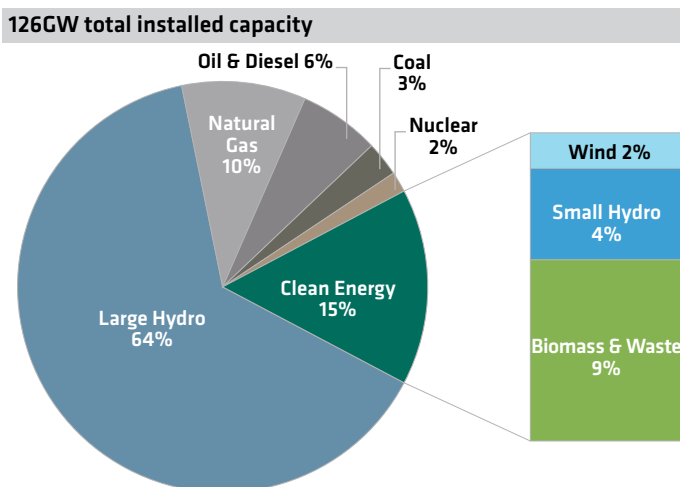
For further information, access www.global-climatescope.org/brazil

I. ENABLING FRAMEWORK

Ranking 1 / Score 2.14

Despite a very difficult year for Brazil's power sector, the country had the highest Global Climatescope Enabling Framework parameter score in the survey of 2.14 due to a supportive local policy framework, growth of installed renewables capacity, rising biofuel production and high spot power prices.

INSTALLED POWER CAPACITY BY SOURCE, 2013 (%)



Source: Bloomberg New Energy Finance, Agência Nacional de Energia Elétrica
Note: Some values cannot be graphically represented due to scale, please see source data for the complete numbers.

Brazil has long prided itself on its large hydro-based power matrix and hydroelectricity has accounted for three quarters of all generation over the past five years. However, two consecutive drought years have illustrated the system's limitations after

KEY POLICIES

Feed-in Tariff	The government's PROINFA program guaranteed power prices at above-average market rates for 3GW of biomass & waste, small hydro and wind in 135 projects. It ended in 2011.
Auction	There have been 18 tenders in which renewable have competed, contracting a total of almost 17GW in the form of biomass (4.1GW), small hydro (0.7GW) and wind (12GW).
Biofuels	A mandate to blend 5% biodiesel with diesel and 27.5% ethanol with gasoline.
Debt/Equity Incentives	BNDES, the national development bank, offers credit lines for renewable energy, energy efficiency and ethanol projects.
Tax Incentives	These include a 2-year exemption for renewable energy from social contributions (PIS/COFINS tax) and exemption for large infrastructure projects through REIDI program.
Utility Regulation	A fee discount for renewable energy transmission and distribution.
Net Metering	Legislation for a net metering program has been approved, but deployment has been slow.

Fuente: Bloomberg New Energy Finance

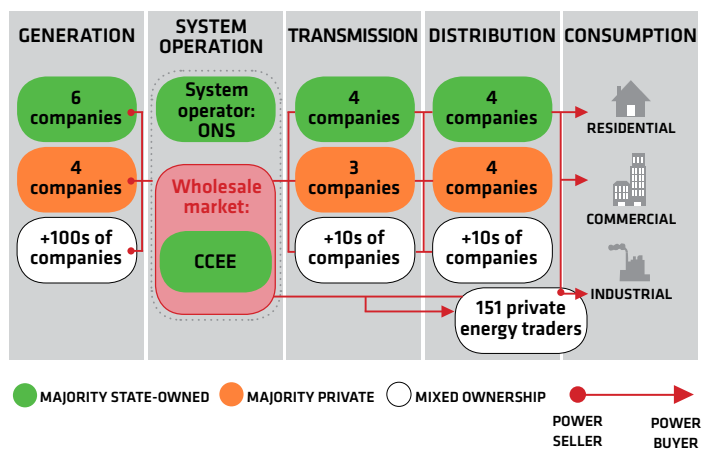
reservoirs reached critical levels in the Southeast and Center-west of the country. In 2013, Brazil had to fire up more thermal generation, boosting costs for utilities and large consumers. Prices in the spot market reached peaks of \$300/MWh, with an average spot price in 2013 of \$261/MWh.

Brazil is gradually diversifying its energy sources. In 2013, it contracted a record volume of future non-large hydro renewable capacity through auctions, which continue to be an effective mechanism for adding low-cost capacity. A total of 6.2GW of wind, small hydro and biomass capacity was contracted in 2013 during four tenders. In 2014, Brazil will hold its first technology-specific auction for solar and biogas from waste residues. Policies have also been implemented that allow solar system owners to get credit for sending excess generation back to the grid ("net metering"), but there has been little such distributed generation developed to date.

Biofuels production jumped 27% in 2013 to reach 27.4b litres, nearly all of it ethanol. Nevertheless, the Brazilian biofuels industry continues to suffer from controlled gasoline prices, which make ethanol less competitive in the pump.

POWER SECTOR STRUCTURE

Regulator: ANEEL (Agência Nacional de Energia Elétrica)



Source: Bloomberg New Energy Finance

II. CLEAN ENERGY INVESTMENT AND CLIMATE FINANCING

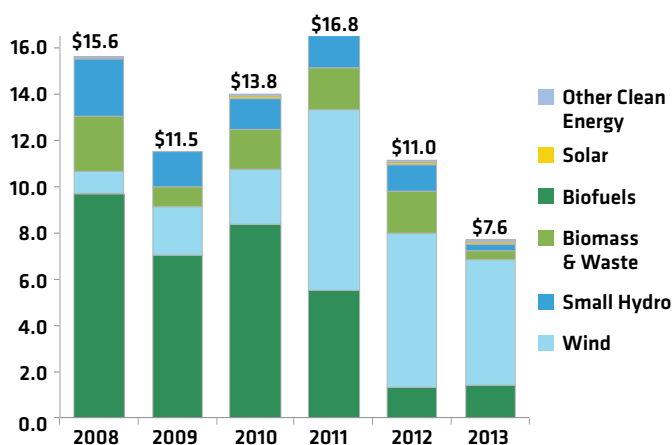
Ranking 27 / Score 0.57

Following global trends, Brazil experienced a second consecutive annual drop in renewable energy investment in 2013, attracting just half what it did in 2012. Slow economic growth, a troubled ethanol sector, and relatively few new wind power delivery contracts signed in 2012 were largely to blame. As a result, the largest economy in Latin America performed poorly compared to other nations on Global Climatescope Parameter II, ranking 27th with a score of 0.57.

Despite the drop, Brazil still figures as one of the top 10 countries globally in clean energy investment and attracted a total of \$7.5bn last year, which includes new, refinancing and acquisition investment. Almost half, or \$3.6bn, went to finance acquisition deals largely in the wind sector. Wind has become the main clean energy source in the country, accounting for \$5.4bn in new investment and acquisition deals last year.

ANNUAL INVESTMENT IN CLEAN ENERGY, 2008-2013 (\$bn)

\$96.3bn total cumulative investment



Source: Bloomberg New Energy Finance

Notes: Total investments includes: Asset Finance, Corporate Finance and Venture Capital / Private Equity Commitments.

Solar is still emerging and had attracted just \$167m in investment cumulatively as of year-end 2013. Most of that went to pilot projects and utility-scale plants for the 2014 World Cup. Moving forward, solar investment should gradually rise as more capacity gets contracted under Brazil's tenders.

GREEN MICROFINANCE HIGHLIGHTS

Summary Green MFI Survey 2014

Green Microfinance Institutions / Total MFIs	4/165
Average Cost of Green Microloans	4.5%

Source: Bloomberg New Energy Finance

Note: Figures based on survey conducted by BNEF from March to June 2014, with a total of 1067 microfinance institutions based in LAC.

While approximately 3GW of projects of existing wind projects in Brazil benefit from the country's previous Proinfa feed-in tariff program, new projects receive no such subsidies. Instead, they depend largely on Brazil national development bank BNDES for low-interest loans and tax incentives for infrastructure projects to be competitive. As a result, BNDES remains the primary clean energy financier in Brazil. In 2013, the bank backed \$1.4bn in wind, small hydro and biofuels deals.

Nonetheless, commercial banks have an important role in Brazil's clean energy sector. BNDES can move slowly in approving loans, opening the door for commercial banks to provide bridge loans that ensure projects avoid development delays.

LEAGUE TABLE

2013 Total Investors **\$7,324m**

Top Three Investors, 2013 (\$m)

1st	Banco Nacional de Desenvolvimento Economico e Social	\$1,403m
2nd	Superintendencia do Desenvolvimento do Nordeste	\$400m
3rd	Banco Santander SA	\$152m

Top Three Asset Finance Deals, 2013 (\$m)

Rank	Sector	Project (MW)	Developer	Value
1st	Wind	Faisa Wind Portfolio (128MW)	Eolica Faisa	\$256m
2nd	Wind	Odebrecht Rio Grande do Sul Wind Portfolio (104MW)	Odebrecht	\$200m
3rd	Bioethanol	GranBio Alagoas Next Generation Bioethanol Plant (82mLpa)	Renova Energia	\$149m

Source: Bloomberg New Energy Finance

Notes: Figures refer to asset finance investments committed in 2013 and include balance sheet commitments

III. LOW-CARBON BUSINESS AND CLEAN ENERGY VALUE CHAINS

Ranking 2 / Score 4.41

Brazil scored only behind China among Global Climatescope countries for its clean energy value chain, with a score of 4.41 out of a possible 5. Brazil's exception performance on Parameter III is largely due to the size of its clean energy sector and its "local content" policies requiring equipment be manufactured in-country.

To access BNDES low-interest loans, developers must source equipment locally. Rules for wind and solar are most stringent with BNDES establishing a technology "roadmap" with which project developers must comply. Perhaps unsurprisingly, most equipment made in Brazil supplies Brazilian projects and little gets exported. High tariffs on foreign-made equipment also serve to protect local manufacturing plants from overseas competitors.

Brazil has a complete value chain in four clean energy sectors: biomass & waste, biofuels, small hydro and wind. The country is on the road to adding more sub-segments to its solar value chain as local content rules clamp down. Currently, only modules and inverters are produced in the country and at very small scale. By the end of 2020, it is expected that cells will also be locally produced. A geothermal value chain is not expected to develop in Brazil as the country has few natural geothermal resources.





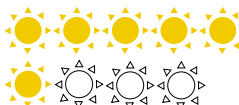
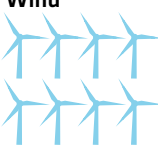
FINANCIAL INSTITUTIONS IN CLEAN ENERGY

- ✓ Banks
- ✓ Corporate Finance
- ✓ Funds
- ✓ Impact Funds
- ✓ Private Equity / Venture Capital

Source: Bloomberg New Energy Finance

Note: Refers to types of institutions that finance clean energy projects. Check means that at least one institution is active in that segment in the country

CLEAN ENERGY VALUE CHAINS BY SECTOR

Sector / Quantity	Available Sub-Sector, Unavailable Sub-Sector
Biofuels 	Producers ; Engineering ; O&M ; Equipment Manufacturing ; Distribution and Blending
Biomass & Waste 	Project Development ; Engineering ; O&M ; Equipment Manufacturing ; Feedstock Supply
Geothermal 	Project Development ; Engineering ; O&M ; Resource Development ; Turbines ; Balance of Plant
Small Hydro 	Project Development ; Engineering ; O&M ; Turbines ; Balance of Plant
Solar 	Project Development ; Engineering ; O&M ; Polysilicon/ingots ; Wafers ; Cells ; Modules ; Inverters ; Balance of Plant
Wind 	Project Development ; Engineering ; O&M ; Turbines ; Blades ; Gearboxes ; Towers ; Balance of Plant

Source: Bloomberg New Energy Finance

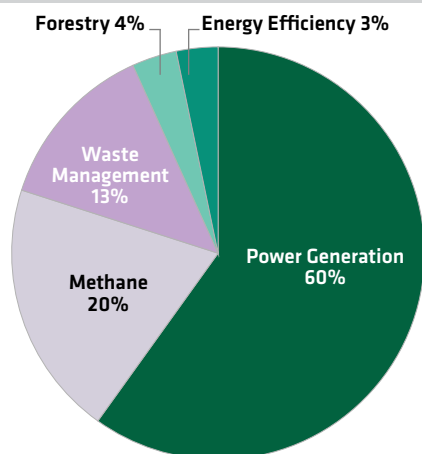
Note: Colored icons represent the number of available subsectors for a given clean energy sector value chain. Bold text, on the right, illustrates at least one organization in that sub-sector is active in the country.

IV. GREENHOUSE GAS MANAGEMENT ACTIVITIES

Ranking 2 / Score 3.24

CDM OFFSET PROJECTS BY SECTOR

324 CDM projects



Source: UNEP Risoe, Bloomberg New Energy Finance

Brazil received the second highest Global Climatescope score of 3.24 on Parameter IV pertaining to greenhouse gas management activities.

The country has 409 GHG offset projects registered under three crediting standards: the Clean Development Mechanism, Gold Standard and VCS. Even when levelized against the country's most recent reported CO2 annual emissions (419,754,156 tons in 2010), Brazil still scores better than the Latin America regional average.

Given the size of its \$2.2tr economy, Brazil is home to multinational companies, which contributed to its high score in the Corporate Awareness category. A total of 93 Brazil-based companies have reported energy efficiency policies and another 86 have reported GHG emission reduction activities. Several of these are also signatories of the Principles for Responsible Investment (PRI) and the Global Reporting Initiative (GRI).