



BRAZIL

In Brazil, asset financing of renewables in 2020 would more than double to \$8.4 billion under the enhanced policy scenarios. Absent additional policy measures, private investment in renewable energy in Brazil is expected to remain stable at just under \$4 billion over the next 10 years. With strong energy policies, Brazil is poised for significant growth in wind energy investment and has one of the world's highest biomass and small-hydro power capacities, with more expected to be built over the next 10 years. In the enhanced policy scenario, the cumulative investment potential in Brazil from 2010 to 2020 is projected as \$67 billion, which would leverage installation of 25 GW of renewable energy generating capacity.

Already, Brazil has one of the lowest carbon electricity matrices in the world with nearly three quarters of the country's 2009 total installed capacity of 107 GW represented by hydro sources large and small. Non-hydro renewables accounted for 7 percent of capacity.

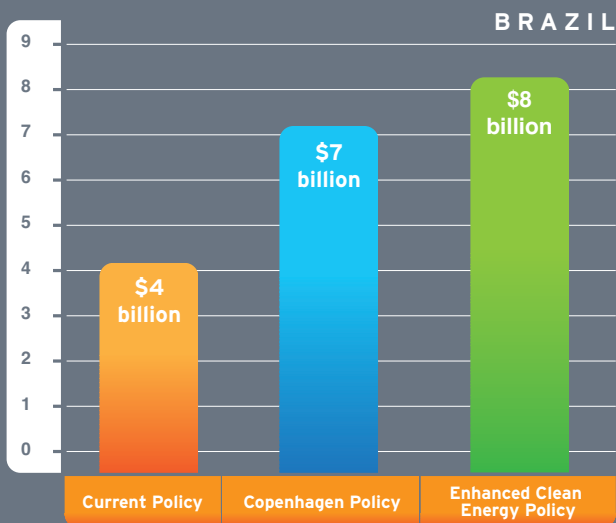
Brazil is the second-largest national biofuel market, in installed capacity and number one in readily available resources for further capacity expansion. The country has actively supported development of these resources, including a mandatory 25 percent ethanol blend in gasoline and a 5 percent biodiesel mandatory blend. Brazil has removed most of its early incentives for ethanol because the sector can now compete directly with fossil fuels. Meanwhile, Brazil's financing programs, development bank loans and renewable energy auctions have led to healthy biomass and small hydro power-sectors, with 5.1 GW and 4.1 GW installed, respectively. Investors have

flocked to the country in recent years, giving Brazil a 148 percent five-year investment growth rate (including biofuels), second only to Turkey's.

The government's renewable energy auctions have been popular though plagued by problems, such as projects' difficulties in accessing transmission lines at a low cost. The government is considering a program in which the power contract auctions would be held annually, a move that would greatly improve the long-term certainty in Brazil's market. The country is also discussing a possible 10 percent renewable energy mandate by 2018, additional tax incentives for wind, solar, marine energy and electric vehicles, and exemptions for wind development from transmission tariffs. Finally, Brazil has offered to cut its 2020 business-as-usual emissions by at least 36 percent in its post-Copenhagen pledge. This would be done mostly through reduction in deforestation, but also through increased use of biofuels, energy efficiency programs and renewable energy, though it stressed that its targets were not binding.

Brazil could have more success if it adopted a federal renewable electricity standard and set consistent and yearly renewable energy power auctions. The government could also lower taxes on renewable energy and infrastructure projects. Taxes account for as much as 40 percent of projects' costs. In addition, the government could consider lowering interest rates through the central bank for project construction debt so that the national development bank BNDES is not the only institution offering attractive loans. Brazil would also do well to establish a cap-and-trade program in line with international programs.

FIGURE 28. INVESTMENT IN RENEWABLE ENERGY ASSETS, 2020 (BILLIONS OF \$)



NATIONAL CLEAN ENERGY POLICIES	
Carbon Cap	
Carbon Market	
Renewable Energy Standard	✓
Clean Energy Tax Incentives	✓
Auto Efficiency Standards	✓
Feed-in Tariffs	✓
Government Procurement	
Green Bonds	✓

FINANCE AND INVESTMENT (2009)*	
Total Investment	\$7.4 billion
G-20 Investment Rank	6
Percentage of G-20 Total	6.5%
5-Year Growth Rate	147.8%

INSTALLED CLEAN ENERGY (2009)	
Total Renewable Energy Capacity	9.1 GW
Total Power Capacity	9.8%
Percentage of G-20 Total	3.2%
5-Year Growth Rate	13.9%
Key Renewable Energy Sectors	
Biomass	5,100 MW
Small-Hydro	4,100 MW

KEY CLEAN ENERGY TARGETS (2012)	
Wind	1422 MW

KEY INVESTMENT INCENTIVES	
Wind	Generation-based subsidies/Preferential BNDES loans
Small-Hydro	Generation-based subsidies/Preferential BNDES loans
Biomass	Generation-based subsidies/Preferential BNDES loans

*Includes investments in venture capital and public markets, and asset finance for all clean energy technologies including biofuels and energy efficiency.