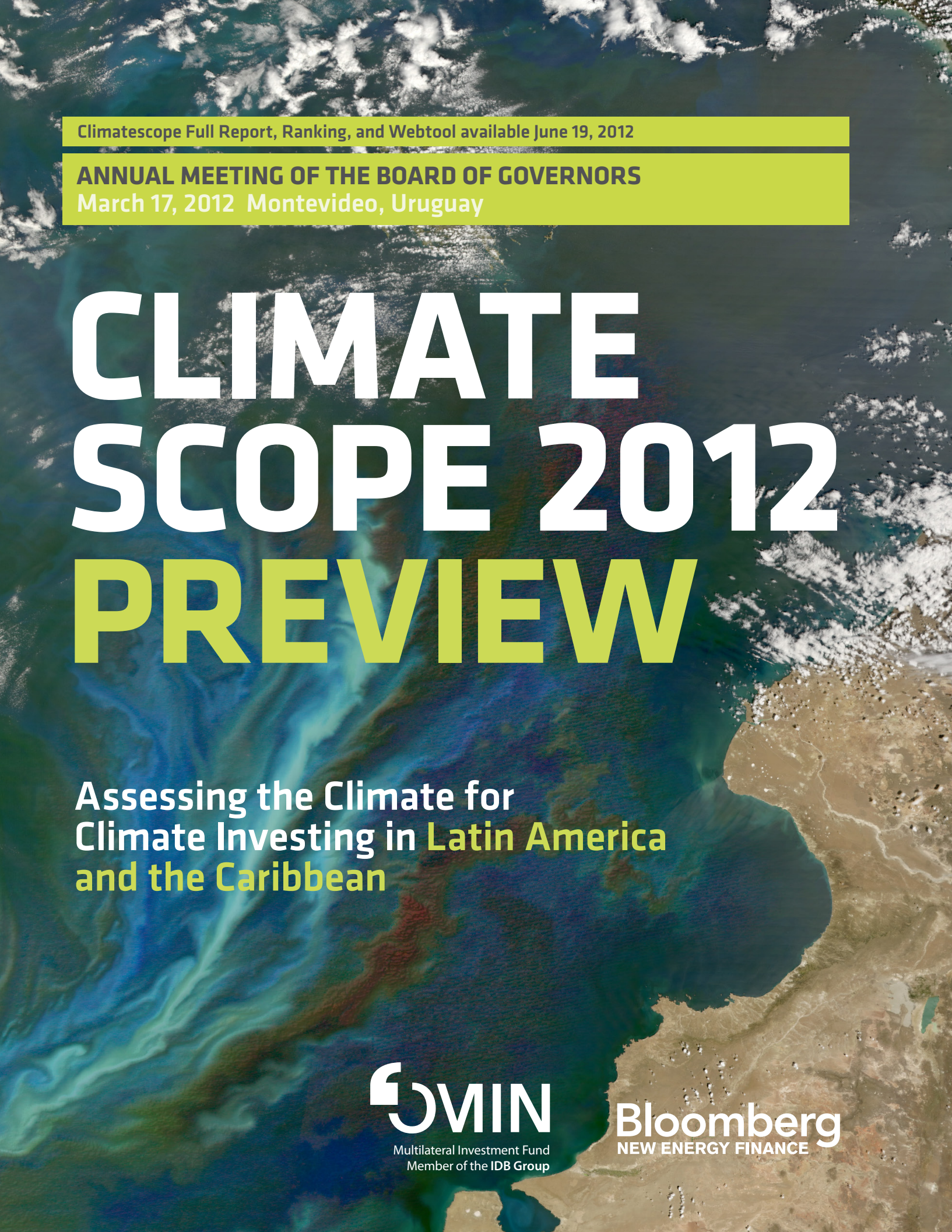




Climatescope Full Report, Ranking, and Webtool available June 19, 2012

ANNUAL MEETING OF THE BOARD OF GOVERNORS
March 17, 2012 Montevideo, Uruguay

CLIMATE SCOPE 2012 PREVIEW

Assessing the Climate for
Climate Investing in **Latin America**
and the **Caribbean**

 **MIF**
Multilateral Investment Fund
Member of the IDB Group

Bloomberg
NEW ENERGY FINANCE

PREFACE FROM MULTILATERAL INVESTMENT FUND

NANCY LEE

The Multilateral Investment Fund is proud to present the first *Climatescope* developed in partnership with Bloomberg New Energy Finance. This annual report will objectively assess the “investment climate for climate investment” across the Latin American and Caribbean (LAC) region.

This index will be a critical tool for investors and entrepreneurs seeking the best places to pursue opportunities in renewable energy and energy efficiency, as well as in the creation of value from the sustainable use of “natural capital”: forests, watersheds and waterways, wetlands and grasslands, beaches, fishing areas, and biodiversity. Lenders can harness this data to identify promising new areas to support green lending. Governments intent on creating supportive enabling environments for climate investment will find the *Climatescope* a helpful tool in guiding their policy choices.

Latin America and the Caribbean are exceptionally well endowed in natural capital. At the same time governments, businesses, civil society, and individuals are increasingly focused on the very real and tangible threats of climate change, deforestation, and biodiversity loss. Yet, many remain excluded from the benefits of natural resources and natural capital. Millions of people and small businesses still lack access to affordable and reliable energy. Though hydro power resources have been tapped in much of the region, the promise of solar, wind, geothermal, and other sources of clean energy has yet to be realized for most citizens. Better, sustainable use of natural capital can provide important income sources for many at the base of the pyramid and in remote locations.



NANCY LEE
General Manager, Multilateral Investment Fund

Established in 1993 as part of the IDB Group, the Multilateral Investment Fund supports economic growth and poverty reduction through private sector-led development projects that benefit poor and low income populations – their businesses, their farms, and their households. During the nearly twenty years that the MIF has been supporting sustainable private sector development, we have seen important innovations coming from the base of the pyramid. Whether supporting açai producers with venture capital, financing small-scale renewable energy start-ups, promoting green microfinance, helping poor households finance and install solar panels, or helping small businesses green their operations, the MIF has worked to champion some of the best ideas from or for small actors.

If you would like more information on the MIF and our Environment and Clean Energy team, visit www.fomin.org. There, you will learn about our projects and programs and access an interactive version of the *Climatescope*, where indicator weights can be adjusted to fit the needs of the user.

I very much hope that you find *Climatescope* a useful public good and a groundbreaking tool in the pursuit of cleaner energy and natural capital solutions to support development in Latin America and the Caribbean.

PREFACE FROM BLOOMBERG NEW ENERGY FINANCE

MICHAEL LIEBREICH

Bloomberg New Energy Finance is proud to partner with the Multilateral Investment Fund of the Inter-American Development Bank to produce *Climatescope*, a ground-breaking effort to document low-carbon energy investment activity and opportunities in 26 Latin American and Caribbean countries.

Our firm is the world's leading provider of data, research, and market intelligence to investors, manufacturers, and policy-makers in the burgeoning clean energy, carbon and water sectors. In 2011, no less than \$260bn in new capital flowed to wind, solar, biofuels, energy efficiency and other low-carbon energy technologies and projects. By the end of 2011 we recorded the one trillionth dollar invested in clean energy since we began counting eight years ago. Much of the action has been in the US, Europe (which has led the world in the installation of photovoltaic systems) and China (the world's biggest producer of both wind turbines and photovoltaic modules).

For its part, the Latin American and Caribbean region is playing an increasingly important role in the emerging clean energy industry. Thanks to Brazil, Colombia, and Argentina, South America is already the world's second biggest producer of bioethanol and biodiesel. In addition, Latin America could add over eight gigawatts of new wind power capacity over the next three years. The nations of Central America are poised to add 130 megawatts of geothermal this year alone. Mexico, Chile, Peru, and others are moving swiftly to facilitate solar deployment.

Still, given the extraordinary natural resources available and the rapidly growing demand for energy, Latin America and the Caribbean remain fundamentally under-invested to date. In 2011 the region attracted less than 10% of all funds invested in clean energy worldwide. This is set to change as LAC can benefit from favorable global market conditions. Over the past three years, clean energy equipment costs have dropped significantly, making these technologies more competitive than ever with fossil fuels. Overcapacity among equipment manufacturers, along with uncertainty about some of their traditional markets, has meant players from Europe, Asia, and the US are now clamoring for opportunities in the Latin America and Caribbean region.

What this means for local policy-makers is that spurring the kind of clean energy deployment seen elsewhere now requires relatively little, if anything, in the way of direct subsidies. Nonetheless, some basic support will be needed to foster low-carbon energy growth – availability of private capital, relevant manufacturing and service value chains, development of skills and capabilities, and above all stable, transparent and reliable policy structures.

Climatescope seeks to undertake the first comprehensive assessment of the current state of play for each of these critical factors in the Latin America and Caribbean region. The primary goal is to highlight which countries have made the most progress to date, though we have also identified others with work to do. The analysis is highly quantitative, taking into account no fewer than 30 separate data inputs, but it also reflects our firm's expertise and that of outside experts with whom we consulted.

We anticipate this report will heighten awareness of where the Latin America and Caribbean region stands today, and what progress must be achieved for it to play its full role in addressing the specter of climate change, while at the same time allowing millions to enjoy the benefits of abundant energy for the first time. In more concrete terms, we expect the *Climatescope* to be used as a handbook for manufacturers and financiers seeking to better understand this region's opportunities for investment.

The eyes of the world will be very much on Latin America this year, with Brazil hosting Rio+20, the United Nations Conference on Sustainable Development marking the 20th anniversary of the first Earth Summit. As a proud member of the UN's Sustainable Energy for All Committee, it is my sincere hope that the Latin America and Caribbean region can lead the way on these critically important issues during this year and beyond.

I am already looking forward to working on next year's updated *Climatescope*, in which I am sure we will be reporting on significant further progress in this most dynamic of regions.



MICHAEL LIEBREICH
Chief Executive and Founder, Bloomberg New Energy Finance

Bloomberg
NEW ENERGY FINANCE

CLIMATESCOPE 2012 PREVIEW

The Multilateral Investment Fund of the Inter-American Development Bank Group, in partnership with Bloomberg New Energy Finance, is proud to present a preview of key findings from *Climatescope 2012*.

The official launch of *Climatescope* will take place on 19 June 2012 during the week of the Rio+20 United Nations Conference on Sustainable Development in Rio de Janeiro, Brazil.

Climatescope 2012 is a report and index that assesses the investment climate for climate-related investment in Latin America and the Caribbean. It profiles 26 countries in the region and evaluates their ability to attract capital for low-carbon energy¹ sources while building a greener economy. All countries profiled here are borrowing members of the Inter-American Development Bank (IDB).

IDB BORROWING MEMBERS:

CARIBBEAN

Bahamas
Barbados
Dominican Republic
Guyana
Haiti
Jamaica
Suriname
Trinidad and Tobago

CENTRAL AMERICA & MEXICO

Belize
Costa Rica
El Salvador
Guatemala
Honduras
Mexico
Nicaragua
Panama

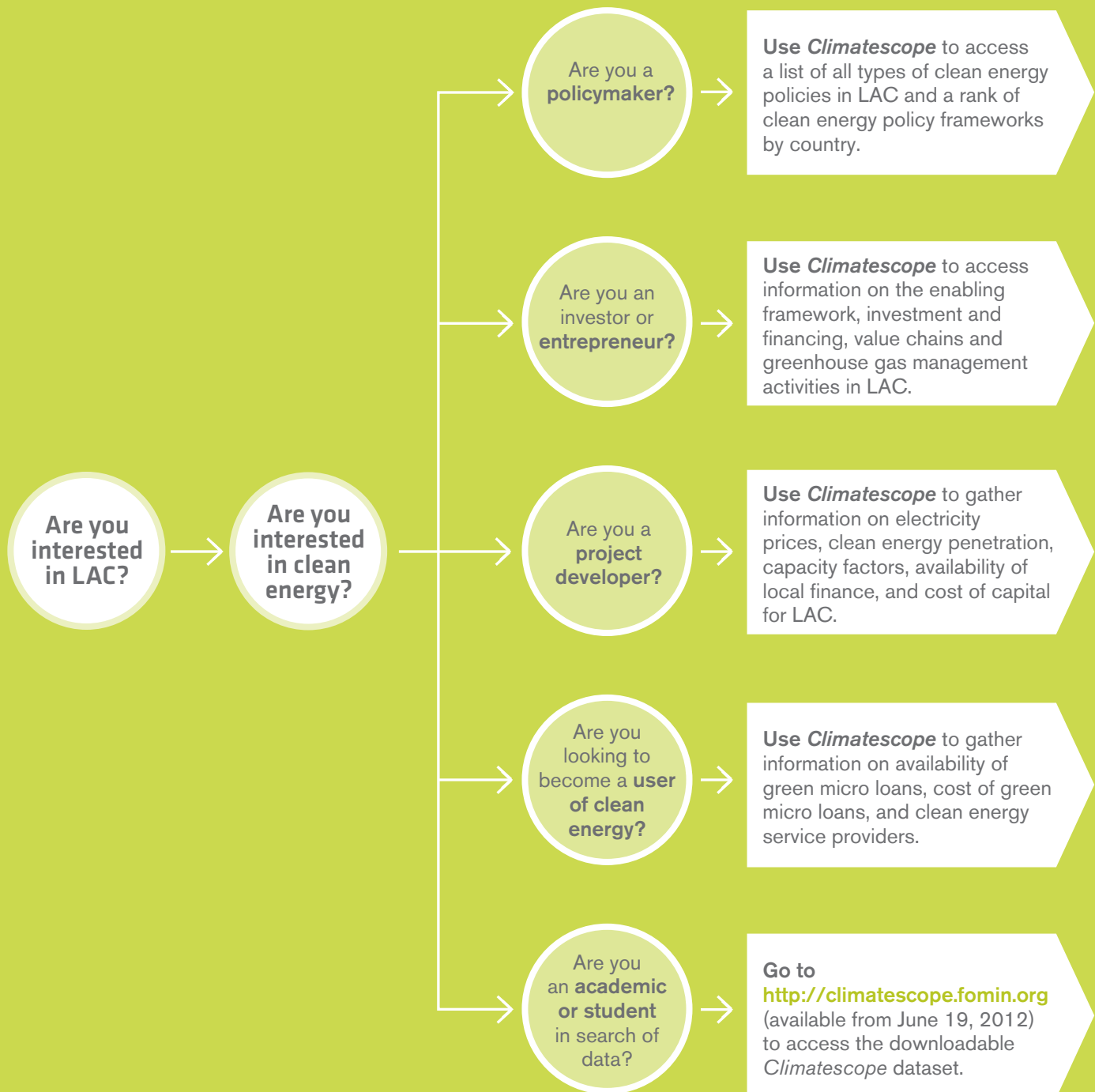
SOUTH AMERICA

Argentina
Bolivia
Brazil
Chile
Colombia
Ecuador
Paraguay
Peru
Uruguay
Venezuela

¹ Employing a definition long used by Bloomberg New Energy Finance, this study does not consider large hydro (>50MW) to be a low-carbon source of power generation.

WHAT'S YOUR PERSPECTIVE?

Assessing the Climate for Climate Investing
in Latin America and the Caribbean



To assign each country an overall score, *Climatescope* examines the following four overarching and interrelated parameters:

- I. Enabling framework** – The existing policies, power market structures and levels of clean energy capacity online in a given country, as well as other market-size related factors.
- II. Clean energy investment and climate financing** – Funds deployed in support of clean energy, plus the availability and cost of local capital such as microfinance.
- III. Low-carbon business and clean energy value chains** – The availability of local manufacturing and supply chains for clean energy goods, services and financing.
- IV. Greenhouse gas management activities** – The extent of actions taken and projects developed under the United Nations Clean Development Mechanism (CDM).

These parameters are supported by a series of 30 indicators based on data captured by Bloomberg New Energy Finance through first-hand research, consultation of publicly available sources and discussions with experts. Together, these indicators and their corresponding parameters form a holistic picture of a particular country's climate for climate-related investment. The accompanying web tool will be available on June 19, 2012 at <http://climatescope.fomin.org>. It will allow users to adjust the relative importance of the four parameters, in essence enabling them to customize the *Climatescope*'s underlying methodology for their own purposes.

Climatescope is intended as a go-to guide for investors or developers looking to commit funds to low-carbon energy projects in the region, or for manufacturers looking to site new factories. For policy-makers, it is intended as a yardstick against which to measure current achievements and set future goals.

In 2011, no less than \$260bn in new investment flowed to clean energy projects and companies worldwide, with the bulk going into Europe, the US and China.

For its part, Latin America attracted approximately 10% of the global total. So it should come as little surprise that the overall *Climatescope* results highlight considerable room for improvement for countries seeking to attract more capital for their local low-carbon energy sectors and to install more clean power capacity. Still, the results highlight important momentum in the region and the massive opportunity ahead. With its exceptional natural resources, solid economic growth, and a general desire for improved energy security among its nations, the region is now poised for major clean energy growth.

KEY FINDINGS

- At least 80 clean energy policies are in place or in the late planning stage in Latin America and the Caribbean. For the most part, these represent energy market mechanisms or tax-based incentives. Yet policy experts consulted in the writing of this report concurred that the region is significantly behind in the clean energy policy realm.
- 7% of the 301GW power capacity installed today in Latin America and the Caribbean is represented by renewable sources such as biomass and waste (10.2GW), small hydro (8.4GW), wind (2.4GW), geothermal (1.5GW) and solar (1.5MW). Compared with its peers, Panama has significantly increased its renewable share of installed power capacity with a year-on-year growth rate of 31% from 2006 to 2010.
- There is no 'silver bullet' to improving a country's overall *Climatescope* score. Rather, a series of changes are necessary to make a marked improvement and, in turn, attract substantial additional low-carbon energy investment. Clearly defined policy frameworks will be key.
- Brazil, Nicaragua and Panama, respectively, received the highest *Climatescope* scores thanks to a combination of supportive local policies, clean energy investment and other factors. But they were not the only countries to shine in this study. Others were particularly strong in different areas such as policy, market structures, microfinance organizations, or carbon project activity.

- The region's relatively high electricity prices offer opportunity for clean energy project developers, though they serve as a source of discontent for consumers. Such prices provide a signal for investors looking to build cost-competitive clean energy projects to displace generation from fossil fuels. Moreover, thanks to today's unprecedentedly low clean energy equipment prices, new capacity can be installed in some nations entirely economically – without the benefit of subsidies.
- Microfinance has emerged as a significant lever to help expand clean energy access to the energy poor; 34m people in Latin America and the Caribbean currently have no meaningful grid access. Out of 448 microfinance institutions operating in Latin America and the Caribbean, 71 offer some sort of green financial product. Nicaragua distinguishes itself as having the highest level of green microfinance penetration. In all, \$75m in green micro loans have been disbursed by green microfinance organizations operating in Latin America and the Caribbean to date, granting some 44,000 low-income borrowers access to clean and cheap renewable energy.
- The region's largest economies are the leaders in terms of active domestic players involved in clean energy value chains, ranging from financial institutions, to equipment makers, to project developers and installers. Brazil is the only country with a complete value chain for at least two clean energy technologies (biofuels and biomass & waste). Mexico is on the road to becoming the first country with a complete value chain for wind and solar. While smaller nations are unlikely to host complete value chains, they could play key roles in fulfilling missing links in producing specialized equipment.
- Bloomberg New Energy Finance recorded \$90bn of clean energy investment in Latin America and the Caribbean between 2006 and 2011. Brazil attracted close to 80% of the total funds committed. However, *Climatescope* does not rank countries on absolute numbers. Rather, countries are ordered on the significance of clean energy investments to the overall economy. In that context, the sheer size of the Brazilian economy dwarfs the \$70bn committed to clean energy there. Nicaragua attracted the most clean energy investments as a share of GDP.
- Most CDM projects in Latin America and the Caribbean are located in Brazil and Mexico. As a consequence, both countries received the highest score for the parameter analyzing greenhouse gas management activities in the region. A presence of multinational corporations in these nations is most likely the reason. For its part, Panama performed better than its peers in terms of its carbon off-set project development, a measure of how successful a country has been in abating its emissions by capitalizing on the sale of carbon credits. Clearly, a new international accord on carbon, stronger local policies, or some combination of both will be required to spur greater activity.

FURTHER DETAILS ON THE FULL REPORT

The full *Climatescope 2012* report and index will be available on June 19, 2012 and will include profile summaries of all 26 countries, complete data on all 30 indicators, and details on methodology and score analysis. The report will be accompanied by a fully interactive online tool available at <http://climatescope.fomin.org>, which will allow users to adjust various assumptions in the *Climatescope* model to see how different countries score under different scenarios. The site will also make all the data behind the report available for download in aggregated form.

SOUTH AMERICA



Brazil

GDP: **\$2,087bn¹**
Population: **195m²**
5-Year Economic Growth Rate: **14%³**
Total Cumulative Clean Energy Investments: **\$70bn⁴**
Installed Power Capacity: **116GW⁵**
Renewable Share: **12%**
Total Clean Energy Generation: **47,357GWh⁶**
Top Energy Authority: **Ministry of Mines and Energy⁷**

Brasilia

OVERALL RANKING

1

OVERALL SCORE

2.71

PARAMETER	RANKING	SCORE
I. Enabling Framework	2	2.769
II. Clean Energy Investment & Climate Financing	2	2.082
III. Low Carbon Business & Clean Energy Value Chains	1	4.250
IV. Greenhouse Gas Management Activities	2	2.752

SUMMARY

In this first edition of *Climatescope*, Brazil emerges at the top with an overall score of 2.71. The country performed strongly in all four of the parameters, finishing no lower than second in any. Brazil is larger than the other nations of Latin America and the Caribbean in terms of population and GDP. This gap both helps and hurts the country in terms of its overall score. It explains why Brazil has so many pieces of the various clean energy value chains in place and scored so highly on Parameter III. But it subtracts on Parameter II – investment and finance – which is calculated by comparing investment in clean energy against overall GDP.

From 2006 to 2011, Brazil attracted \$70bn for clean energy companies and projects, half of which went toward biofuels. In 2011, however, wind outpaced biofuels attracting \$8.8bn in investments. Wind will likely continue to be Brazil's leading growth sector in the short term due to government-organized reverse auctions for wind power contracts, fiscal incentives, cheap local financing, and a robust wind manufacturing value chain.

1 Source: World Bank. Notes: Nominal GDP for 2010 period in billions of US dollars.

2 Source: International Monetary Fund Notes: population for 2010 period in millions.

3 Refers to the 2006 to 2010 period.

4 Source: Bloomberg New Energy Finance Notes: cumulative investment from 2006 to 2011.

5 Source: Agência Nacional de Energia Elétrica (ANEEL).

6 Source: ANEEL.

7 Name in original language: Ministério de Minas e Energias.

I. ENABLING FRAMEWORK

Ranking 2 / Score 2.769

Brazil scored 2.77 on the enabling framework parameter, placing second among all nations, behind Panama. The country fared especially well on the clean energy policy, power sector structure, and power demand growth rate indicators. Brazil has in the past met half its light-vehicle fuel needs with sugar-based ethanol, and this boosted its standing in the clean energy penetration category. On the other hand, Brazil's overall score was depressed by its performance on indicators examining its share of renewables relative to installed capacity and generation. Had this score been calculated in absolute terms Brazil would have finished top of the list.

Compared with its peers Brazil has the most diverse set of clean energy policies with at least one incentive in place for nearly every one of the categories examined (see figure below). Experts consulted for this study considered Brazil's clean energy policies to be relatively ambitious and effective, especially for biofuels. Last year, Brazil's reverse auctions for wind power contracts grabbed international headlines for attracting exceptionally low bids. However, it remains to be seen if these will result in as much new wind capacity as government officials have touted.

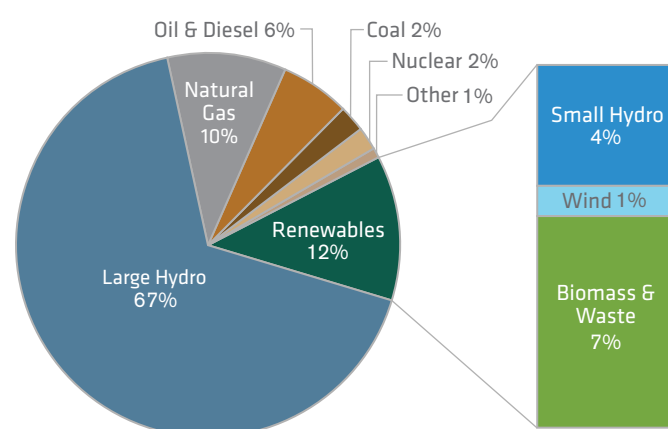
In absolute terms, Brazil has 11.9GW of clean energy installed capacity – 3GW more than all the other Latin American and Caribbean countries combined. This represents 12% of the country's total installed power capacity. Biofuels account for 19% of Brazil's 120bn-liter liquid fuel matrix. While spot prices for electricity in Brazil are relatively low, prices paid by the end user are quite high,

averaging, \$163/MWh in part due to taxation. Such exorbitant prices make rooftop photovoltaic systems potentially very attractive for Brazilian homeowners.

Brazil's electrification rate is relatively high at 95%. Still, approximately 9.7m Brazilians have no access to reliable power. To counter that, the federal government has instituted the Luz Para Todos Program which has brought electricity to 14.3m people since 2003, according to government figures. A vast majority of the 2.9m homes electrified under this program, now use small photovoltaic systems.

BRAZIL INSTALLED POWER CAPACITY BY SOURCE, 2011 (GW)

116GW Total



Source: Bloomberg New Energy Finance, Agência Nacional de Energia Elétrica (ANEEL).

Note: Small hydro includes mini hydro (capacity < 30MW).

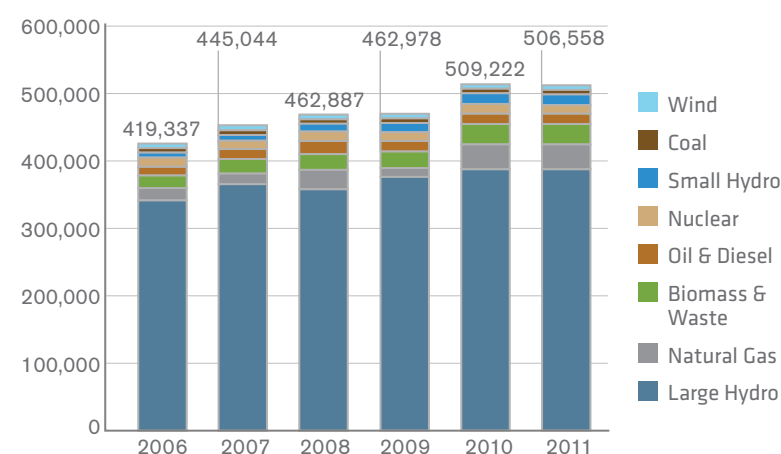
KEY POLICIES

Qty	Category
	Available Policy Type; Unavailable Policy Type
4	Energy Market Feed-in tariff; Energy targets; Auction; Biofuels blending mandate; Net metering; Other
1	Equity Finance Grants; Incubators; Infrastructure funds; Other
1	Debt Finance Funding; Export trade credit; Green bonds; Other
3	Tax-Based Accelerated depreciation; Tax relief; Income Tax; Import Duty; Tax rebate; Other
0	Carbon Market Domestic cap & trade; Emissions reduction target; Project-based carbon credits; Other

Source: Bloomberg New Energy Finance.

Note: (Qty) refers to number of policy types, not total number of policies.

BRAZIL ANNUAL ELECTRICITY GENERATION BY SOURCE, 2006–2011 (GWh)



Source: Bloomberg New Energy Finance, Agência Nacional de Energia Elétrica (ANEEL).

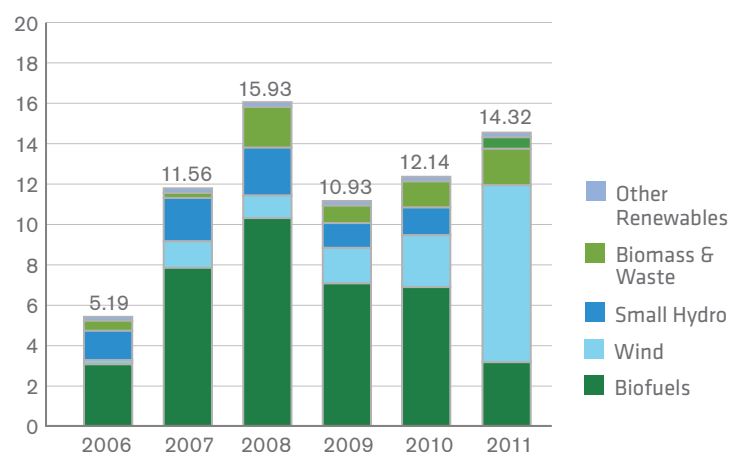
II. CLEAN ENERGY INVESTMENT AND CLIMATE FINANCING

Ranking 2 / Score 2.082

Brazil placed 2nd in this parameter with a score of 2.08. From 2006 to 2011, the country attracted a cumulative total \$70m in clean energy investment or 77% of all funds committed to the Latin America and the Caribbean low-carbon economy. Historically, biofuels took the lion's share of the funds, but since 2011 wind has taken the lead. Last year, a total of \$6.7bn was invested in Brazilian wind compared with \$1.3bn in biofuels (see figure below).

To date, Banco Nacional de Desenvolvimento Econômico e Social (BNDES) has funded about \$18bn in local clean energy projects and companies. Offering below-market rates and extremely favorable conditions, the **Brazilian state-development bank has effectively monopolized lending to the country's low-carbon economy crowding out foreign lenders.** For their part, foreign governments and development finance institutions such as the Inter-American Development Bank (IDB), Kreditanstalt für Wiederaufbau (KfW), the Global Environment Facility (GEF), and the International Climate Initiative have offered \$1bn in grants to clean energy development in Brazil – more than BNDES and the Brazilian government combined.

BRAZIL ANNUAL INVESTMENTS IN CLEAN ENERGY, 2006–2011 (\$bn)



Source: Bloomberg New Energy Finance.

Note: Total investments includes: Asset Finance, Corporate Finance and Venture Capital/Private Equity commitments.

GREEN MICRO FINANCE AT A GLANCE

Number of MFIs in the country:

36 MFIs

How many offer green micro loans:

9 Green MFIs

Average costs of green micro loans:

2.60%

Total amount of green micro loans disbursed:

\$71,160,000

Number of green micro borrowers:

33,708

Green MFI Organizations:

Agência do Crédito

ASCOOB Central

Banco do Vale

Banco do Planalto Norte

BANCRI

CEADE

ICC MAU-CE

Lander

SEBRAE

Source: Bloomberg New Energy Finance.

Note: Figures are based on a survey conducted by BNEF from October 2011 to January 2012 with a total of 448 Microfinance institutions based in LAC. We had an 80% response rate for the survey. Of 36 MFIs in Brazil, 30 responded to the survey.

LOCAL INVESTMENTS BY LOCAL PLAYERS

2011 Total **\$7,937m**

Top Three Local Investors

1st	BNDES	\$4,949m
2nd	Banco Itau BBA SA	\$288m
3rd	Banco do Brasil SA	\$44m

Source: Bloomberg New Energy Finance.

Note: Figures only include investments in new build clean energy projects in 2011, do not include refinancing or acquisitions. BNDES is Banco Nacional de Desenvolvimento Econômico e Social.

III. LOW CARBON BUSINESS AND CLEAN ENERGY VALUE CHAINS

Ranking 1 / Score 4.250

Brazil's 4.2 score in the low carbon businesses and clean energy value chains parameter was the highest received by any country for any parameter. The sheer size and level of development of the Brazilian economy proved to be an asset here. In addition, BNDES' local-content rules, which stipulate that projects must use domestically-made equipment to access the bank's low-cost capital, have spurred a local manufacturing build out. Today, Brazil has a complete value chain for three of six clean energy subsectors: biofuels, biomass and waste, and small hydro. If Brazil had capacity to manufacture large scale fiberglass blades, its wind value chain would be complete as well. Anticipating growth, the country's solar value chain is starting to develop. Geothermal is the only technology that has no meaningful value chain in Brazil because the country has no geothermal resource. **Given the build out that has taken place to date, it should come as no surprise that Brazil is looking beyond its borders for export opportunities across Latin America and the Caribbean.**

CLEAN ENERGY SERVICE PROVIDERS

Qty	Sector	Available Sub-Sector; Unavailable Sub-Sector
7	Ancillary Products & Services	Consultancy-O&M; Consultancy-Technical; Contract Maintenance; Contract Manufacturing; Control Room Systems; Education & Training; Inspection & Maintenance; Specialist Services; Testing & Certification Services
	Developers & Utilities	Integrated Service Provider
3	Marketing Services	Distributor; Market Research; PR Company
6	Financial & Legal Services	Banking-Corporate; Banking-Custody, Trust & Deposit; Insurance Provider; Lawyer-Commercial; Lawyer-Financial Markets; Lawyer-Project Finance; Recruitment/Search

Source: Bloomberg New Energy Finance.

Note: Refers to key service segments for clean energy. Text highlighted in green signifies there is at least one company in the sub-sector active in the country.

CLEAN ENERGY VALUE CHAINS BY SECTOR

Qty	Sector	Available Sub-Sector; Unavailable Sub-Sector
5	Biofuels	Distribution & Blending; Engineering Companies; Feedstock Suppliers; Producers; Retailing/IOC
5	Biomass & Waste	Feedstock Supply; Manufacturing Equipment; Power Generation; Project Development; System Integration
	Geothermal	Balance of Plant; Exploration/Production Drilling; Operation & Maintenance; Power Purchase; Pre-Drilling Exploration; Project Development; Turbine & Power Block; Well Completion & R.C. Resource
4	Small Hydro	Civil Works/Builder; Engineering; Operation & Maintenance; Power Purchase; Turbines
6	Solar	Balance of Plant; Cells; Ingots; Installation; Modules; Project Development; Raw Feedstock (solar-grade silicon); Wafers
7	Wind	Blades; Construction/Installation; Gearboxes; Generators; O&M; Power Generator; Project Development; Turbines

Source: Bloomberg New Energy Finance.

Note: Refers to key manufacturing segments for each of the clean energy sectors. Text highlighted in green signifies there is at least one company in the sub-sector active in the country.

FINANCIAL INSTITUTIONS IN CLEAN ENERGY

●	Banks
●	Corporate Finance
●	Funds
●	Private Equity/Venture Capital

● = At least one institution active in that segment in the country.

Source: Bloomberg New Energy Finance.

Note: Refers to types of institutions that finance clean energy projects.

IV. GREENHOUSE GAS MANAGEMENT ACTIVITIES

Ranking 2 / Score 2.752

Looking solely at Brazil's greenhouse gas (GHG) management activities, the country scored a 2.75 placing second behind Mexico. In terms of carbon offset project development, the two countries are tied atop the list. No fewer than six of the 10 largest CDM projects in Latin America and the Caribbean are located in Brazil, including a single 38MT adipic acid reduction project. Brazil's high overall score was also aided by the country's relatively low risk for CDM development and a strong presence of CDM validators. Finally, Brazil like Mexico boasts a relatively high number of corporations that are undertaking GHG management

efforts. Brazil has 57 companies with emissions reductions initiatives in place, according to company disclosures in annual reports or company sustainability initiatives. An equal number of companies (57) have taken on energy efficiency initiatives. **Key global-Brazilian companies with GHG management initiatives include Petrobras, Companhia Vale do Rio Doce, Banco Itaú, Bradesco, Banco do Brasil, Cosan, Embraer and Natura.** This suggests climate change impact is being incorporated into corporate decision making at these organizations and that local public policies are not necessarily driving their actions.

CENTRAL AMERICA

Nicaragua

GDP: **\$6.5bn¹**

Population: **5.8m²**

5-Year Economic Growth Rate: **5%³**

Total Cumulative Clean Energy Investments: **\$1.1bn⁴**

Installed Power Capacity: **1,073MW⁵**

Renewable Share: **30%**

Total Clean Energy Generation: **1,080GWh⁶**

Top Energy Authority: **Ministry of Energy and Mines⁷**

Managua

OVERALL RANKING

2

OVERALL SCORE

2.15

PARAMETER	RANKING	SCORE
I. Enabling Framework	3	2.377
II. Clean Energy Investment & Climate Financing	1	3.097
III. Low Carbon Business & Clean Energy Value Chains	13	0.750
IV. Greenhouse Gas Management Activities	9	1.348

SUMMARY

Nicaragua placed second among 26 countries with an overall *Climatescope* score of 2.15. The country performed well on indicators with strong weighting: clean energy policies, power sector structure, total clean energy investments, and availability of green microfinance. From 2006 to 2011, cumulative clean energy investment in the country totaled \$1.1bn. Last year alone, around \$211m went to Nicaragua's wind and geothermal sectors. The Central American nation has the region's most developed green microfinance sector with a total of 10 organizations

providing 3,511 low-income borrowers with some kind of green financial product. Biomass and waste is currently Nicaragua's flagship clean energy sector with a total 122MW of installed capacity. In 2010, the sector accounted for 36% of total electricity generation (1,080GWh). However, it is the favorable geothermal potential which positions the country well to develop more clean energy capacity in coming years. Since 2009, this promising sector has been taking the lion's share of total clean energy investment, reaching a cumulative total of \$563m in 2011.

1 Source: World Bank. Notes: Nominal GDP for 2010 period in billions of US dollars.

2 Source: International Monetary Fund. Notes: population for 2010 period in millions.

3 From 2006 to 2010.

4 Source: Bloomberg New Energy Finance. Notes: cumulative investment from 2006 to 2011.

5 Source: Instituto Nicaragüense de Energía (INE). Notes: Includes capacity for isolated systems.

6 Source: INE. Notes: Includes capacity for isolated systems.

7 Name in original language: Ministerio de Energía y Minas.

I. ENABLING FRAMEWORK

Ranking 3 / Score 2.377

Looking solely at the enabling framework parameter, Nicaragua scored 2.38 finishing in 3rd position behind Panama and Brazil. It performed slightly better than Peru thanks to the significant share of renewable capacity relative to its \$6.5bn economy, the growing share of renewables for electricity generation, and the relatively attractive electricity tariffs for both the retail and spot power markets. While 30% of Nicaragua's total 1,073MW of installed power capacity is derived from renewables, the country is still largely reliant on dirty and expensive fossil fuels (see figure on the right).

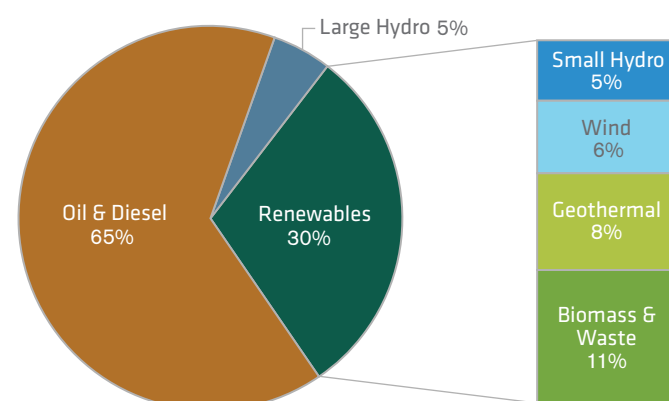
The country's energy market regulatory framework, in place since April 2005, aims to displace close to 700MW of oil and diesel power capacity by obliging electricity distributors to tender power purchase contracts for clean energy for at least 10 years. Nicaragua's power sector reform has been somewhat successful in establishing a functioning wholesale power market, and opening opportunities for the private sector in generation and distribution. Power market regulator Instituto Nicaragüense de Energía (INE) seeks to encourage renewable energy generators to sell output into the spot market. Thanks to INE's stewardship, the country has effectively enforced these renewable energy contractual incentives.

In 2010 alone, the Central American nation generated 1,080GWh of renewable power, mostly from biomass and waste, as well as geothermal sources. Electricity prices are attractive for investors, averaging \$183/MWh at the retail level and \$137/MWh in the spot market. High

electricity prices encourage the development of new generation from cheaper, cleaner sources which in the long run will benefit both the population and the environment. The country has a particularly low electrification rate compared with other nations in Latin America and the Caribbean. This offers opportunity for small, distributed scale clean energy developers to tap into this resource-rich market. To aid this deployment, the government and development finance institutions have been offering grants to off-grid programs aimed at expanding access to energy in a sustainable manner.

NICARAGUA INSTALLED POWER CAPACITY BY SOURCE, 2011 (GW)

1.1GW Total



Source: Bloomberg New Energy Finance, Instituto Nicaragüense de Energía (INE).
Note: 2011 data refers to January–September 2011.

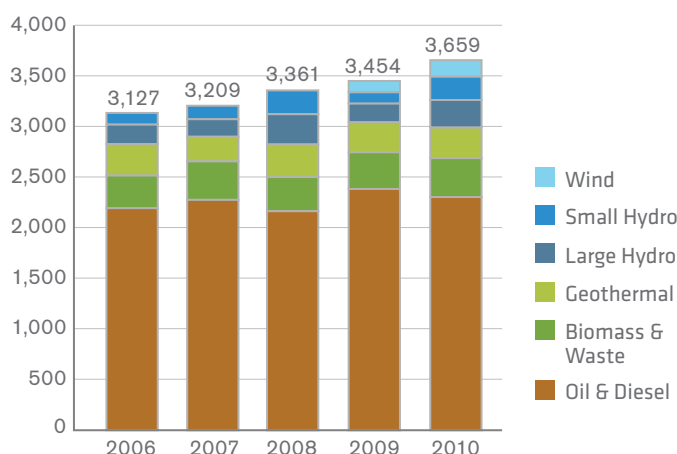
KEY POLICIES

Qty	Category
	Available Policy Type; Unavailable Policy Type
1	Energy Market Feed-in tariff; Energy targets; Auction; Biofuels blending mandate; Net metering; Other
	Equity Finance Grants; Incubators; Infrastructure funds; Other
	Debt Finance Funding; Export trade credit; Green bonds; Other
3	Tax-Based Accelerated depreciation; Tax relief; Income Tax ; Import Duty ; Tax rebate; Other
	Carbon Market Domestic cap & trade; Emissions reduction target; Project-based carbon credits; Other

Source: Bloomberg New Energy Finance.

Note: (Qty) refers to number of policy types, not total number of policies.

NICARAGUA ANNUAL ELECTRICITY GENERATION BY SOURCE, 2006–2010 (GWh)



Source: Bloomberg New Energy Finance, Instituto Nicaragüense de Energía (INE).
Note: Data includes isolated systems.

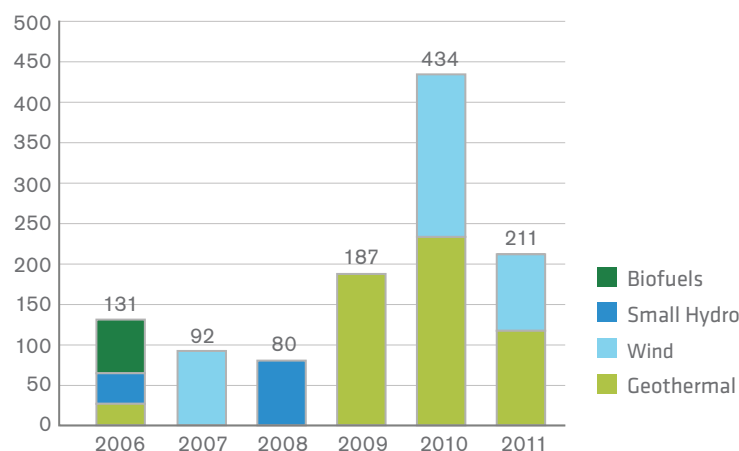
II. CLEAN ENERGY INVESTMENT AND CLIMATE FINANCING

Ranking 1 / Score 3.097

From 2006 to 2010, Nicaragua attracted approximately \$1.1bn in clean energy investment for its geothermal (50%), wind (34%), small hydro (10%) and biofuels (6%) sectors. Last year alone, about \$117m and \$95m went into financing new geothermal and wind projects, respectively. Since 2009, geothermal has attracted the most interest from investors seeking to explore Nicaragua's promising but relatively untapped sub-surface power generation potential.

Development finance institutions – the Central American Bank for Economic Integration (CABEI), the Inter-American Development Bank (IDB), and the Multilateral Investment Fund (MIF) – have played a key role in funding clean energy development in Nicaragua. The government has also come to play a significant role in the sector through investments made via Financiera Nicaragüense de Inversiones in which it holds a controlling stake. The downside for investors is that the local cost of funding is relatively high compared with other countries in the region. Nicaragua's sovereign cost of debt averages around 13%.

NICARAGUA ANNUAL INVESTMENTS IN CLEAN ENERGY, 2006–2011 (\$m)



Source: Bloomberg New Energy Finance.

Note: Total investments includes: Asset Finance, Corporate Finance and Venture Capital/Private Equity commitments.

Clean energy activity in Nicaragua is also very strong at the micro level, where investment decisions are not made based on pure economic profit, but also on broader social benefits. **Nicaragua is the most robust green microfinance market of the Latin America and Caribbean region with 10 organizations offering some kind of green financial product.** Costs for green micro loans in Nicaragua range from 1.5% to 28% depending on the green microfinance institution and green financial product. The majority of borrowers are either low income rural citizens or rural micro, small and medium enterprises (MSMEs).

GREEN MICRO FINANCE AT A GLANCE

Number of MFIs in the country:

31 MFIs

How many offer green micro loans:

10 Green MFIs

Average costs of green micro loans:

13.20%

Total amount of green micro loans disbursed:

\$2,934,307

Number of green micro borrowers:

3,511

Green MFI Organizations:

AFODENIC

Asociacion Alternativa

Caritas Esteli

CEPRODEL

Coop 20 de Abril

Fondo de Desarrollo Local

FUNDENUSE

FUNDESER

MiCredito

Prestanic

Source: Bloomberg New Energy Finance.

Note: Figures are based on a survey conducted by BNEF from October 2011 to January 2012 with a total of 448 Microfinance institutions based in LAC. We had an 80% response rate for the survey. Of 31 MFIs in Nicaragua, 25 responded to the survey.

III. LOW CARBON BUSINESS AND CLEAN ENERGY VALUE CHAINS

Ranking 13 / Score 0.750

Local manufacturing and supply chains for clean energy goods, services, and financing are fairly underdeveloped in Nicaragua. Finance providers are the most established with a handful of banks operating locally. Nicaragua has at least one active sub-sector in five out of six clean energy value chains (see illustration on the right). Of those, the geothermal and small hydro value chains are the most developed. Other active players in Nicaragua include: Tecnosol and ECAMI, two small companies that sell solar PV modules and other renewable energy technologies to rural households and businesses; Grupo Fenix, a non-profit fostering development of renewables, particularly solar, in rural areas; and Paso Pacifico, an advisory and consultancy offering carbon consulting services.

FINANCIAL INSTITUTIONS IN CLEAN ENERGY

● Banks

Corporate Finance

Funds

Private Equity/Venture Capital

● = At least one institution active in that segment in the country.

Source: Bloomberg New Energy Finance.

Note: Refers to types of institutions that finance clean energy projects.

CLEAN ENERGY VALUE CHAINS BY SECTOR

Qty	Sector	Available Sub-Sector; Unavailable Sub-Sector
	Biofuels	Distribution & Blending; Engineering Companies; Feedstock Suppliers; Producers; Retailing/IOC
1	Biomass & Waste	Feedstock Supply; Manufacturing Equipment; Power Generation; Project Development ; System Integration
2	Geothermal	Balance of Plant; Exploration/Production Drilling; Operation & Maintenance; Power Purchase ; Pre-Drilling Exploration; Project Development ; Turbine & Power Block; Well Completion & R.C. Resource
2	Small Hydro	Civil Works/Builder; Engineering ; Operation & Maintenance ; Power Purchase; Turbines
1	Solar	Balance of Plant; Cells; Ingots; Installation ; Modules; Project Development; Raw Feedstock (solar-grade silicon); Wafers
1	Wind	Blades; Construction/Installation; Gearboxes; Generators; O&M; Power Generator; Project Development ; Turbines

Source: Bloomberg New Energy Finance.

Note: Refers to key manufacturing segments for each of the clean energy sectors. Text highlighted in green signifies there is at least one company in the sub-sector active in the country.

IV. GREENHOUSE GAS MANAGEMENT ACTIVITIES

Ranking 9 / Score 1.348

Nicaragua has a strong variety of CDM projects, mostly from renewable sources – wind, small hydro, geothermal and bagasse power – but also reforestation. The country received a good score on the CDM offset project volume indicator, ranking 3rd. However, the country did not score at all on three other indicators – CDM risk, companies'

efforts on emission reduction and efficiency gains – which depressed its overall ranking in this parameter. On the carbon offset survey, Nicaragua received an average score in terms of difficulty for developing projects. Respondents claimed that around 90% of the labor involved in developing projects is local.

CENTRAL AMERICA



Panama

GDP: **\$26.8bn¹**

Population: **3.5m²**

5-Year Economic Growth Rate: **12%³**

Total Cumulative Clean Energy Investments: **\$1.1bn⁴**

Installed Power Capacity: **2,049MW⁵**

Renewable Share: **13%**

Total Clean Energy Generation: **795GWh⁶**

Top Energy Authority: **National Secretariat of Energy⁷**

● **Panama City**

OVERALL RANKING

3

OVERALL SCORE

2.05

PARAMETER	RANKING	SCORE
I. Enabling Framework	1	2.896
II. Clean Energy Investment & Climate Financing	12	0.712
III. Low Carbon Business & Clean Energy Value Chains	10	1.172
IV. Greenhouse Gas Management Activities	3	2.750

SUMMARY

With an overall *Climatescope* score of 2.05, Panama placed 3rd among 26 nations. The country's performance is largely due to its enabling framework and substantial efforts aimed at managing greenhouse gas emissions. Its liberalized power market has attracted investments in new clean energy generation and as a result the country has posted exceptionally high growth rates in this area. Still, the country's overall ranking was hurt by its relatively low score on clean energy investments and finance, which was

assessed based on its importance relative to the overall economy. Panama also lags behind other Central American nations in green microfinance activity. In absolute terms, investments in clean energy picked up starting from 2007, reaching \$1.08bn in 2011, mostly for small hydro projects. In the short term, small hydro will continue to be Panama's flagship renewable source, but once the country's reverse auctions for clean energy gain traction wind capacity additions will follow.

1 Source: World Bank. Notes: Nominal GDP for 2010 period in billions of US dollars.

2 Source: International Monetary Fund. Notes: population for 2010 period in millions.

3 From 2006 to 2010

4 Source: Bloomberg New Energy Finance. Notes: cumulative investment from 2006 to 2011.

5 Source: Autoridad Nacional de los Servicios Públicos (ASEP)

6 Source: Autoridad Nacional de los Servicios Públicos (ASEP)

7 Name in original language: Secretaría Nacional de Energía

I. ENABLING FRAMEWORK

Ranking 1 / Score 2.896

Panama's 2.90 score on the enabling framework parameter placed it above the 25 other nations, including Brazil and Nicaragua. Its first place finish was due to a favorable power sector structure and strong growth rates in clean energy installed capacity and generation. Still, only recently has Panama pushed for more diverse clean energy policies, holding its first wind auction in 2011 and setting a biofuels mandate to start in 2013. The current policy framework, while relatively ambitious, must mature to prove its effectiveness in encouraging clean energy deployment and technology diversification.

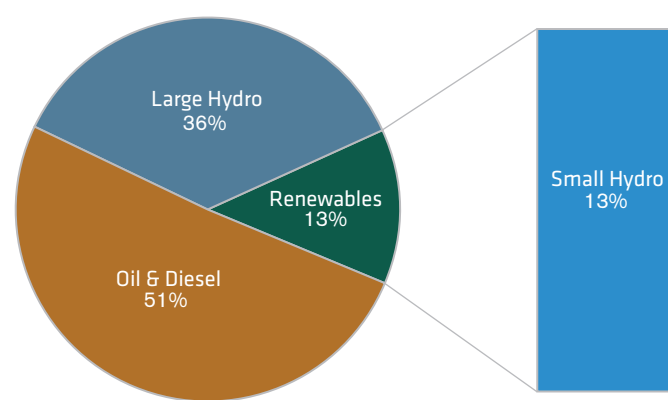
GDP growth has averaged 12% per year over the past five years resulting in both a rapid rise in electricity demand and expansion of local clean energy capacity. **The country had 64MW of clean capacity installed in 2007, which quadrupled by mid-2011, reaching 262MW.** While all of that was small-hydro projects, Panama is now poised for diversification after holding its first reverse auction for wind power contracts. The validity of the initial results from that event has been called into question by some investors. Assuming the controversy can be resolved, some 158MW of new wind is expected online by 2014.

Clean energy project developers are not limited to selling power into the grid via government-sponsored reverse auctions. Panama's functioning wholesale power market – associated with relatively high spot prices – provides investors with an attractive opportunity to build new clean energy generation projects without relying on risky incentives. The country's electrification rate is relatively low

at around 85% compared with the Latin American and Caribbean average. To counter that, the government has begun to tap developing clean energy via the Oficina de Electrificación Rural (OER). This program aims to expand access to energy in the countryside through the use of small distributed systems powered by photovoltaics, mini hydro and small wind turbines.

PANAMA INSTALLED POWER CAPACITY BY SOURCE, 2011(GW)

2GW Total



Source: Bloomberg New Energy Finance, Autoridad Nacional de los Servicios Públicos (ASEP).

Note: 2011 Data refers to January–June 2011.

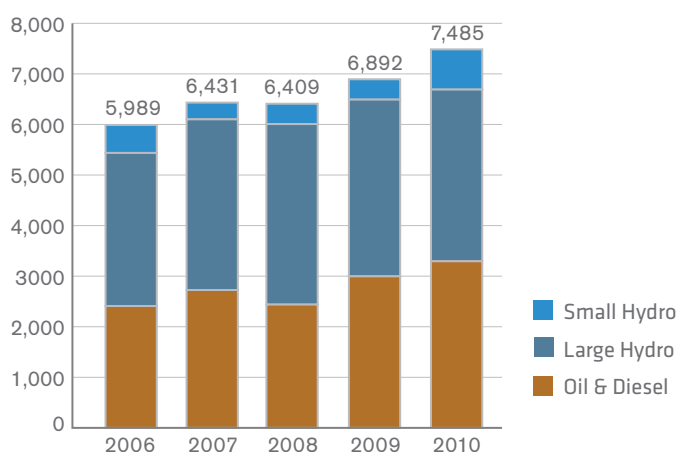
KEY POLICIES

Qty	Category Available Policy Type; Unavailable Policy Type
2	Energy Market Feed-in tariff; Energy targets; Auction ; Biofuels blending mandate ; Net metering; Other
	Equity Finance Grants; Incubators; Infrastructure funds; Other
	Debt Finance Funding; Export trade credit; Green bonds; Other
3	Tax-Based Accelerated depreciation; Tax relief ; Income Tax; Import Duty ; Tax rebate; Other
	Carbon Market Domestic cap & trade; Emissions reduction target; Project-based carbon credits; Other

Source: Bloomberg New Energy Finance.

Note: (Qty) refers to number of policy types, not total number of policies.

PANAMA ANNUAL ELECTRICITY GENERATION BY SOURCE, 2006–2010 (GWh)



Source: Bloomberg New Energy Finance, Autoridad Nacional de los Servicios Públicos (ASEP).

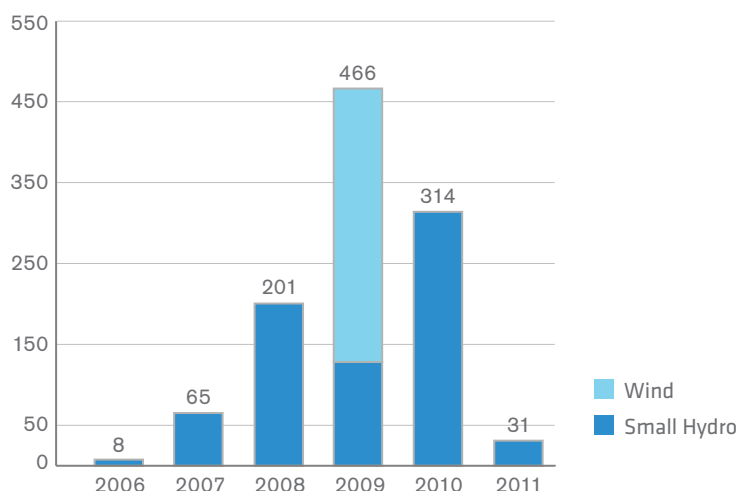
II. CLEAN ENERGY INVESTMENT AND CLIMATE FINANCING

Ranking 12 / Score 0.712

Panama had its lowest score on the clean energy investments and climate financing parameter, holding 12th position with a 0.71. Although the country had a cumulative total of \$1.1bn invested in clean energy from 2006 to 2011, the investment growth rate has slowed since 2009. Panama's score was adversely impacted by its lack of local green microfinance availability and dearth of local investors.

In 2011, only \$31m was invested in Panama's clean energy sector, a small sum compared with 2009 (\$466m) and 2010 (\$314m). Small hydro has been the lead sector for investment over the years, with the exception of 2009 when wind had the largest share due to the financing of a 225MW wind farm. The Inter-American Investment Corporation (IIC) and the Inter-American Development Bank (IDB) are the main project financiers in the country. The IDB is also the sole provider of all clean energy grants to date.

PANAMA ANNUAL INVESTMENTS IN CLEAN ENERGY, 2006-2011 (\$m)



Source: Bloomberg New Energy Finance.

Note: Total investments includes: Asset Finance, Corporate Finance and Venture Capital/Private Equity commitments.

III. LOW CARBON BUSINESS AND CLEAN ENERGY VALUE CHAINS

Ranking 10 / Score 1.172

Panama did not rank well on the low-carbon business and clean energy value chain parameter, scoring 1.17. It placed 10th, landing between two other Central American nations: Guatemala and El Salvador. With regard to financial institutions, the country has organizations in two segments: banks and private equity/venture capital. Although most of the country's investment in clean energy has been in the small-hydro sector, its value chain is underdeveloped. **Wind is the sector with most value chain segments, but still, only two: generators and project development.** Similarly, Panama's local market for clean energy service providers has not been fully explored, with only three types of companies active out of a total of 20. Overall, the country's value chain is incomplete and there is plenty of room for local companies to tackle the market, taking advantage of Panama's generous policy tax incentives.

FINANCIAL INSTITUTIONS IN CLEAN ENERGY

●	Banks
	Corporate Finance
	Funds
●	Private Equity/Venture Capital

● = At least one institution active in that segment in the country.

Source: Bloomberg New Energy Finance.

Note: Refers to types of institutions that finance clean energy projects.

CLEAN ENERGY VALUE CHAINS BY SECTOR

Qty	Sector	Available Sub-Sector; Unavailable Sub-Sector
	Biofuels	Distribution & Blending; Engineering Companies; Feedstock Suppliers; Producers; Retailing/IOC
1	Biomass & Waste	Feedstock Supply; Manufacturing Equipment; Power Generation; Project Development ; System Integration
1	Geothermal	Balance of Plant; Exploration/Production Drilling; Operation & Maintenance; Power Purchase; Pre-Drilling Exploration; Project Development ; Turbine & Power Block; Well Completion & R.C. Resource
1	Small Hydro	Civil Works/Builder; Engineering ; Operation & Maintenance; Power Purchase; Turbines
	Solar	Balance of Plant; Cells; Ingots; Installation; Modules; Project Development; Raw Feedstock (solar-grade silicon); Wafers
2	Wind	Blades; Construction/Installation; Gearboxes; Generators ; O&M; Power Generator; Project Development ; Turbines

Source: Bloomberg New Energy Finance.

Note: Refers to key manufacturing segments for each of the clean energy sectors. Text highlighted in green signifies there is at least one company in the sub-sector active in the country.

CLEAN ENERGY SERVICE PROVIDERS

Qty	Sector	Available Sub-Sector; Unavailable Sub-Sector
1	Ancillary Products & Services	Consultancy-O&M; Consultancy-Technical ; Contract Maintenance; Contract Manufacturing; Control Room Systems; Education & Training; Inspection & Maintenance; Specialist Services; Testing & Certification Services
	Developers & Utilities	Integrated Service Provider
1	Marketing Services	Distributor ; Market Research; PR Company
1	Financial & Legal Services	Banking-Corporate ; Banking-Custody, Trust & Deposit; Insurance Provider; Lawyer-Commercial; Lawyer-Financial Markets; Lawyer-Project Finance; Recruitment/Search

Source: Bloomberg New Energy Finance.

Note: Refers to key service segments for clean energy. Text highlighted in green signifies there is at least one company in the sub-sector active in the country.

IV. GREENHOUSE GAS MANAGEMENT ACTIVITIES

Ranking 3 / Score 2.750

Panama performed strongly on the greenhouse gas management activities parameter, ranking 3rd with a score of 2.75. That high score is largely attributed to the offset project volume indicator, in which the country ranked first. This signifies **Panama had the highest carbon project abatement relative to its GDP and CO2 emissions**. Looking ahead, the short-term abatement opportunities should be relatively sparse despite significant existing carbon offset projects (28), including hydro CDM efforts and forestry projects. Panama did not score at all on the

other three related indicators that account for the balance of greenhouse gas activity score – CDM risk, companies' efforts on emissions reduction and efficiency gains – leaving room for improvement. Though the results of the carbon offset survey do not affect the overall score (weighting for this parameter is zero as the sample size was too small), our survey respondents gave Panama middle-of-the-pack scores in terms of difficulty and cost for developing projects.

ACKNOWLEDGEMENTS

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