METHODOLOGY

A long lens was used by astronauts aboard the International Space Station to take this photograph highlighting many natural and built features around Cancún. The street pattern of this Mexican tourist mecca contrasts with the waterways of the marinas that open into the bay and the lagoons. And the brilliant blue water over coral reefs contrasts with the dark waters of inland lagoons. The reefs are part of the second largest reef system on Earth, and they draw tourists from all over the world.

OVERVIEW

Climatescope seeks to bring quantitative rigor to the basic question of what makes a country attractive for clean energy investment, development, and deployment. It seeks to answer this by collecting as much relevant data as possible, then organizing it in a manner that is both easy to consume and empowers users to gain key insights.

Climatescope ranks countries on their past, present, and future ability to attract investment for clean energy companies and projects. Clean energy is defined as biofuels, biomass & waste, geothermal, solar, wind and small hydro (up to 50MW). While a number of Climatescope nations have historically embraced large hydro generation to meet local power needs, this study focused exclusively on newer sources of low-carbon generation, both because they are often technologically cutting edge and because they can generally be deployed far faster than large hydro projects, which can take years or even decades to commission. By comparison, wind projects can be sited and erected in as little as two to three years. Utility-scale solar photovoltaic projects can be constructed in as little as six months and distributed photovoltaic systems can be added to rooftops in a day or less. In short, these technologies are poised to make – and in many cases are already making – near immediate impact on energy supply and access in the developing world. Climatescope sought to assess how ready these countries are to embrace them.

In this fourth edition of the project, the index once again consists of four overarching parameters. Beneath these parameters are 53 data inputs, or indicators. Some indicators consist of a single data input but many consist of multiple data points that have been synthesized into a single figure. Each indicator counts toward a country's final score but these are not weighted equally (see illustration on pages 26 and 27). Scores range from 0 to a maximum of 5.

The final score a country receives under *Climatescope* is determined by a weighted combination of its four parameter scores. For 2015, the weighting of these parameters remains as it was in 2014:

The entire *Climatescope* model can be viewed at www.global-climatescope.org where users are encouraged to adjust the parameter weightings according to their priorities and download the aggregate data available.

I	Enabling Framework	40%
II	Clean Energy Investment and Climate Financing	30%
III	Low-carbon Business and Clean Energy Value Chains	15%
IV	Greenhouse Gas Management Activities	15%

METHODOLOGY OVERVIEW

I. ENABLING FRAMEWORK — 40%

	On-grid	Off-grid
Policy & Regulation		
Clean Energy Policies	9.6%	6.4%
Power Market Structure	4.8%	4.0%
Distributed Energy Regulatory Framework	0.0%	2.4%
Clean Energy Rural Electrification Programs	0.8%	0.8%
Energy Access Policies	0.0%	1.6%
Policy Barriers	0.8%	0.8%
Clean Energy Penetration		
Clean Energy Installed Capacity	3.2%	3.2%
Growth Rate of Clean Energy Installed Capacity	3.2%	3.2%
Clean Energy Electricity Generation	3.2%	3.2%
Growth Rate of Clean Energy Electricity Generation	3.2%	3.2%
Biofuels Production	1.6%	1.6%
Growth Rate of Biofuels Production	1.6%	1.6%
Price Attractiveness		
Average Retail Electricity Prices	2.0%	0.0%
Average Electricity Spot Prices	2.0%	2.4%
Average Kerosene Prices	0.0%	0.8%
Average Diesel Prices	0.0%	0.8%
Market Size Expectation		
Growth Rate of Power Demand	2.0%	1.2%
Electrification Rate	2.0%	2.4%
Population Using Solid Fuels For Cooking	0.0%	0.4%

II. CLEAN ENERGY INVESTMENT AND CLIMATE FINANCING — 30%

	On-grid	Off-grid
Amount Invested		
Clean Energy Investment	6.8%	8.1%
Growth Rate of Clean Energy Investment	6.8%	5.4%
Fund Sources		
Loans, Grants, Grant Programs	3.0%	3.0%
Local Investment	3.0%	3.0%

Colors show methodology subdivisions and weightings

PARAMETER | WEIGHT | CATEGORY | INDICATOR | ON-GRID NET WEIGHT | OFF-GRID NET WEIGHT

METHODOLOGY OVERVIEW (continued)

Green Microfinance	On-grid	Off-grid
Number of Green Microfinance Institutions (MFIs)	2.1%	2.1%
Green Microloans	1.2%	1.2%
Green Microborrowers	1.2%	1.2%
Average Cost of Green Microdebt	1.0%	1.0%
Cost of Debt		
Average Cost of Debt	2.6%	2.6%
Swap Rate	2.6%	2.6%

III. LOW-CARBON BUSINESS & CLEAN ENERGY VALUE CHAINS — 15%

Value Chain	On-grid	Off-grid
Financial Institutions in Clean Energy	3.8%	3.0%
Value Chains by Clean Energy Sector	7.5%	3.0%
Distributed Clean Energy Value Chains By Sector	0.0%	3.0%
Clean Energy Service Providers	3.8%	3.0%
Distributed Clean Energy Service Providers	0.0%	3.0%

IV. GREENHOUSE GAS MANAGEMENT ACTIVITIES — 15%

Carbon Offsets	On-grid	Off-grid
Historic Activity	3.0%	3.0%
Clean Development Mechanism (CDM) Risk	1.5%	1.5%
Future Potential	1.5%	1.5%
Carbon Policy		
Greenhouse Gas (GHG) Emission Reduction Targets	1.9%	1.9%
Country Registry	1.1%	1.1%
Market-Based Instruments	0.4%	0.4%
PMR & NAMA Commitments	1.1%	1.1%
Corporate Awareness		
GHG Global Reporting Initiatives	0.8%	0.8%
Principles of Responsible Investment	0.8%	0.8%
Energy Efficiency Initiatives	0.8%	0.8%
Emission Reduction Policies	0.8%	0.8%
Environmentally Focused Business Training	0.8%	0.8%
Environmentally Focused Think Tanks	0.8%	0.8%

ACCOUNTING FOR LESSER DEVELOPED NATIONS THROUGH THE "OFF-GRID FOCUS" METHODOLOGY

As in 2014, *Climatescope* 2015 assessed nations ranging from lowest income to those firmly considered "middle income". As a result, *Climatescope* 2015 once again includes a special, augmented "off-grid focus" methodology that includes seven special indicators, with weightings adjusted in the model accordingly. These indicators were taken into account alongside the other "on-grid" indicators for a sub-set of 23 *Climatescope* nations: 18 in Africa, one in Latin America and Caribbean, and four in Asia.

The goal of the off-grid effort is to level the playing field so that all countries can be compared in the fairest possible manner against one another in a single 55-country list. In addition, visitors to www.global-climatescope.org can examine the specific off-grid focus indicators in detail if they choose and compare in isolation the 23 nations that were assessed using this methodology.

To determine which countries are assessed using the off-grid focus methodology, a 0-5 scoring system was once again applied. Five factors contributed at different weightings to this score; those that score a 2.5 or higher are considered "off-grid focus countries".

The off-grid focus methodology's additional indicators were specifically designed in consultation with outside experts to assess conditions in developing nations. These indicators fell under *Climatescope's* first three parameters but had no impact on Greenhouse Gas Management Activities Parameter IV. They were:

- Distributed energy regulatory frameworks: How well does a country's local market structure facilitate off-grid or small-scale development of projects?
- Energy access policies: What local policies exist specifically to spur off-grid activity?
- Average local kerosene and diesel prices: How high are these prices and how attractive do they make potential alternative (cleaner) sources of generation?
- Population using solid fuels for cooking: How many citizens would potentially value alternative fuel sources to cook?
- Distributed clean energy value chains: What local mini-hydro and mini-wind equipment makers, mini-photovoltaic systems providers, and other similar types of players exist in-country?
- Distributed clean energy service providers: What local retailers, pay-as-you go facilitators, insurance providers, and others specializing in off-grid and small-scale clean energy services are in-country?

For 2015, the *Climatescope* methodology was left almost entirely unchanged from 2014. For further elaboration on the methodology as well as to review all relevant data in aggregated form, please visit www.global-climatescope.org. Questions or comments on the methodology and feedback on data are welcome and should be submitted to climatescope@bloomberg.net.

FACTOR	QUESTION	CRITERIA/SCORE	DATA SOURCE
Electrification rate	What percentage of a country's population is not currently connected to the power grid?	A country with a low enough proportion connected received a score of 2.	International Energy Agency
Number of national power outages	How many power outages did the country experience in the most recent year for which there is complete data?	A country with a sufficiently large enough number of outages scored 1.	World Bank
Duration of outages	What was the average length of time a typical grid outage lasted?	A country where outages lasted sufficient durations scored 1.	World Bank
Power transmission losses	What are the typical line losses?	A country where transmission losses exceeded a certain threshold scored 0.5	World Bank
Human Development Index	How is the country classified in the UNDP's HDI?	A country classified "Low Development" scored 0.5	UNDP

Source: Climatescope 2014