

The Development of the Renewable Energy Market in Latin America and the Caribbean

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Brown-Bag Lunch, IDB Headquarters
Washington DC, 24 September 2014



Worldwatch in the Region

- *Dominican Republic Wind and Solar Roadmap*
EEP, 2012
- *C-SERMS Phase I Baseline Report*
CARICOM & IDB, 2013 (first draft)
- *Sustainable Energy Roadmaps in the Dominican Republic, Haiti and Jamaica*
ICI of the German Government, 2013 & 2014
- *10 Islands Profiles & Regional Matrix*
Carbon War Room, 2014
- *The Way Forward for Renewable Energy in Central America*
(with INCAE Business School)
EEP, CDKN, 2013
- *Study on the Development of the Renewable Energy Market in LAC*
IDB, 2014
- *Study of Water and Energy Regulatory Systems in Four Caribbean Islands and Lessons Learned for the Pacific*
ADB, 2014

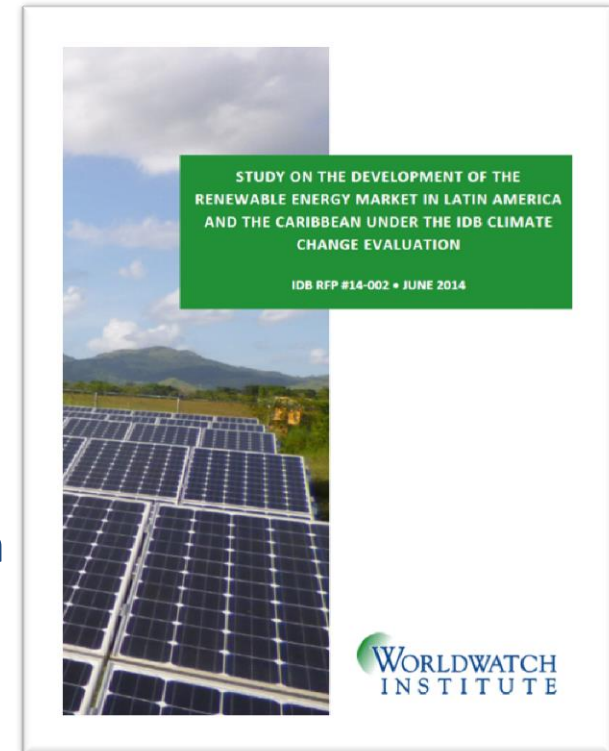
Overview

Purpose:

To identify the strengths and challenges related to renewable energy development in LAC and to develop recommendations to guide future IDB activity

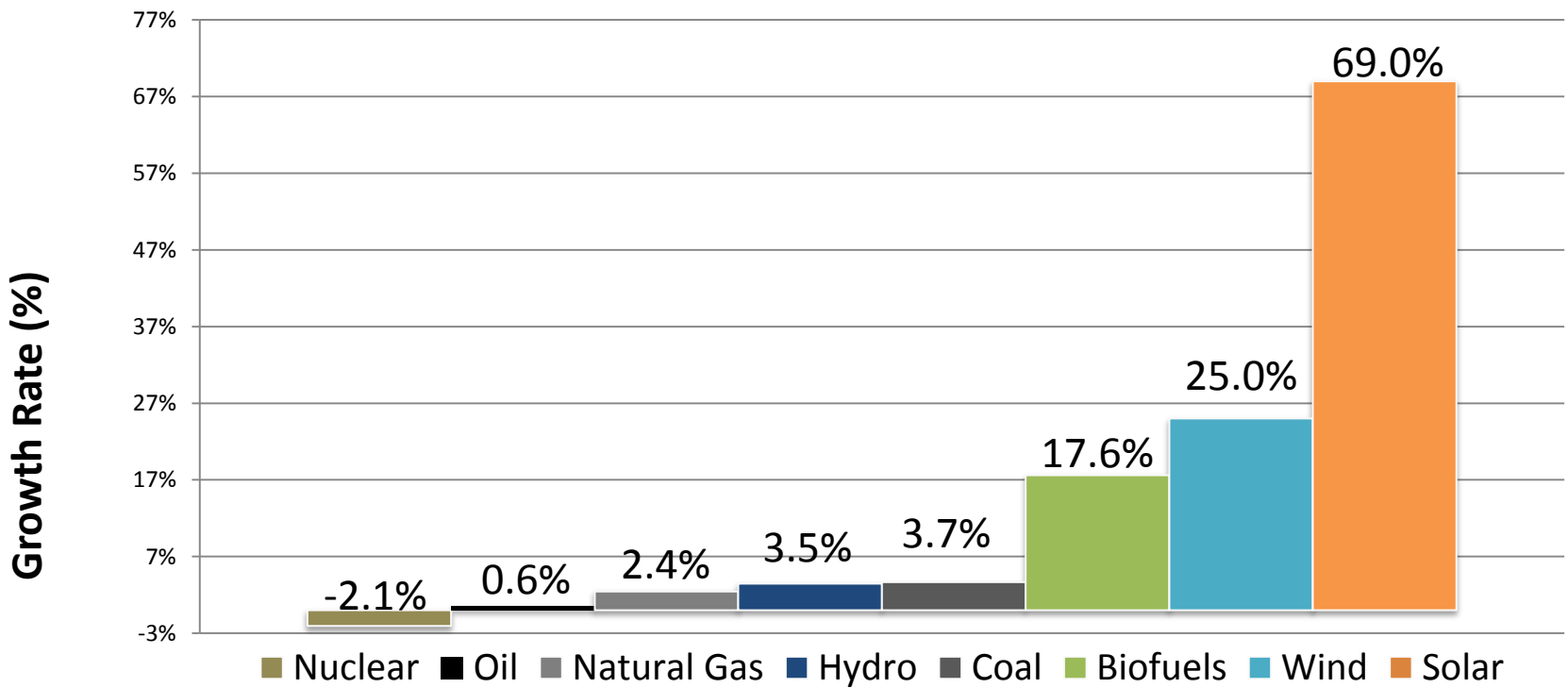
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2. Renewable Energy in LAC
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4. Vulnerability to Climate Change and Adaptation Strategies in the Power Sector in LAC
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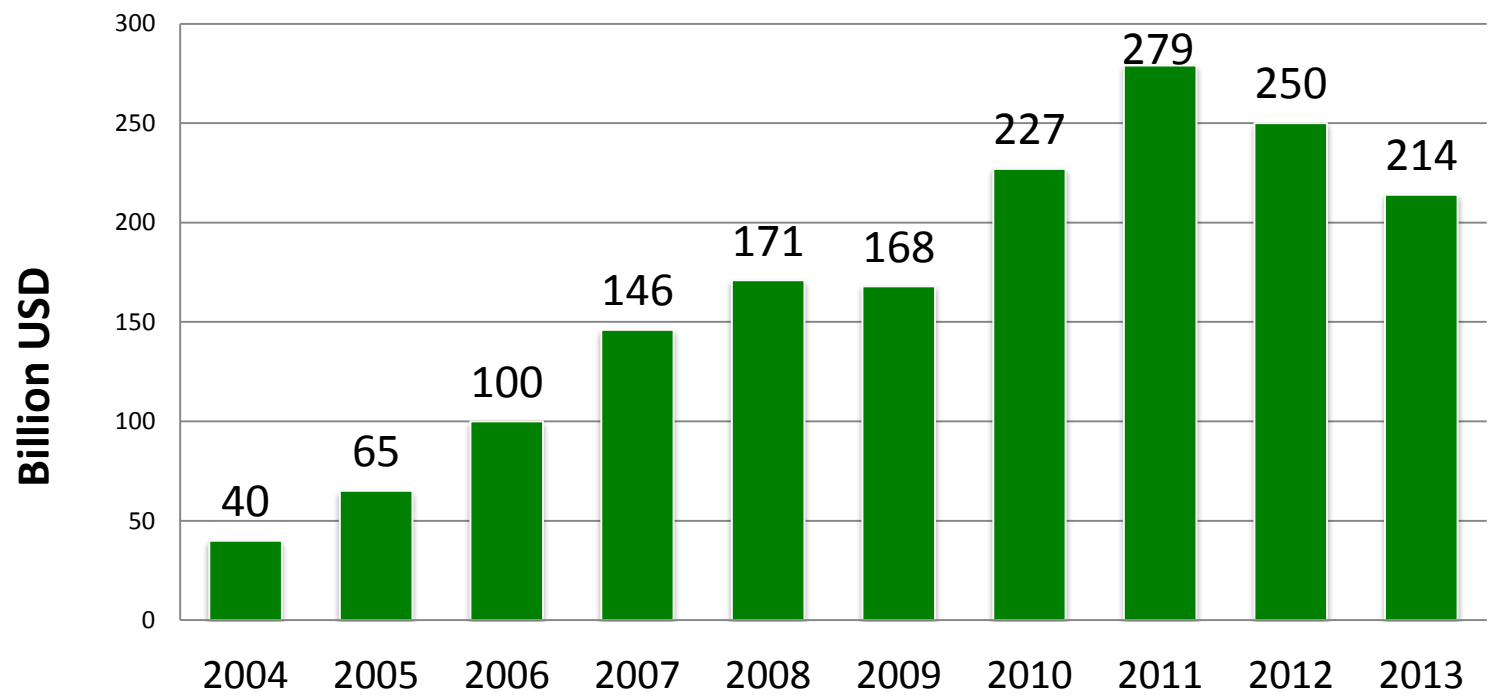
1. Renewable Energy for Power Generation: Global Trends

Global Growth in Energy by Source 2007–2012



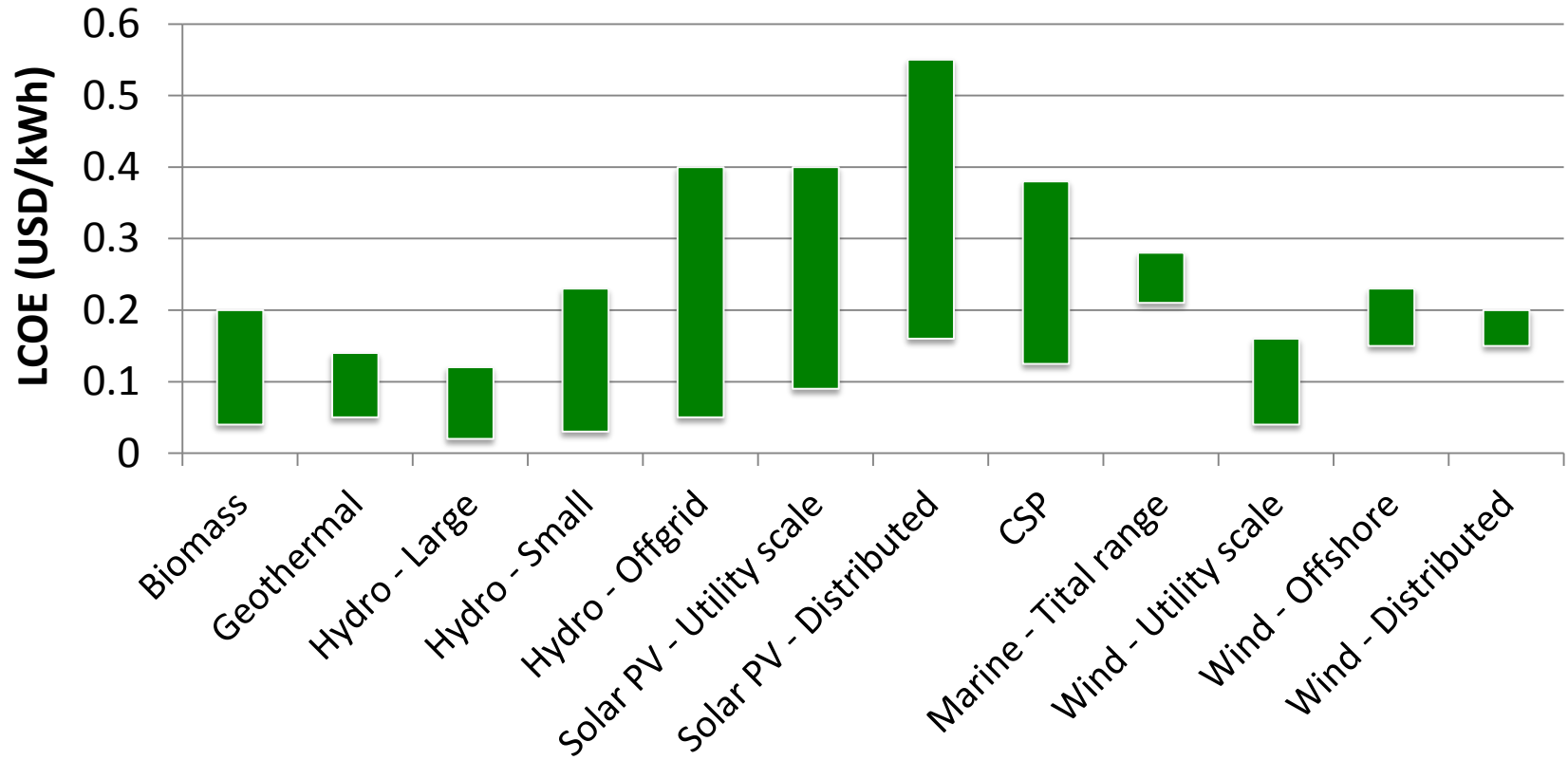
Source: BP

Global Investment in Renewable Energy 2004–2013



Source: BNEF

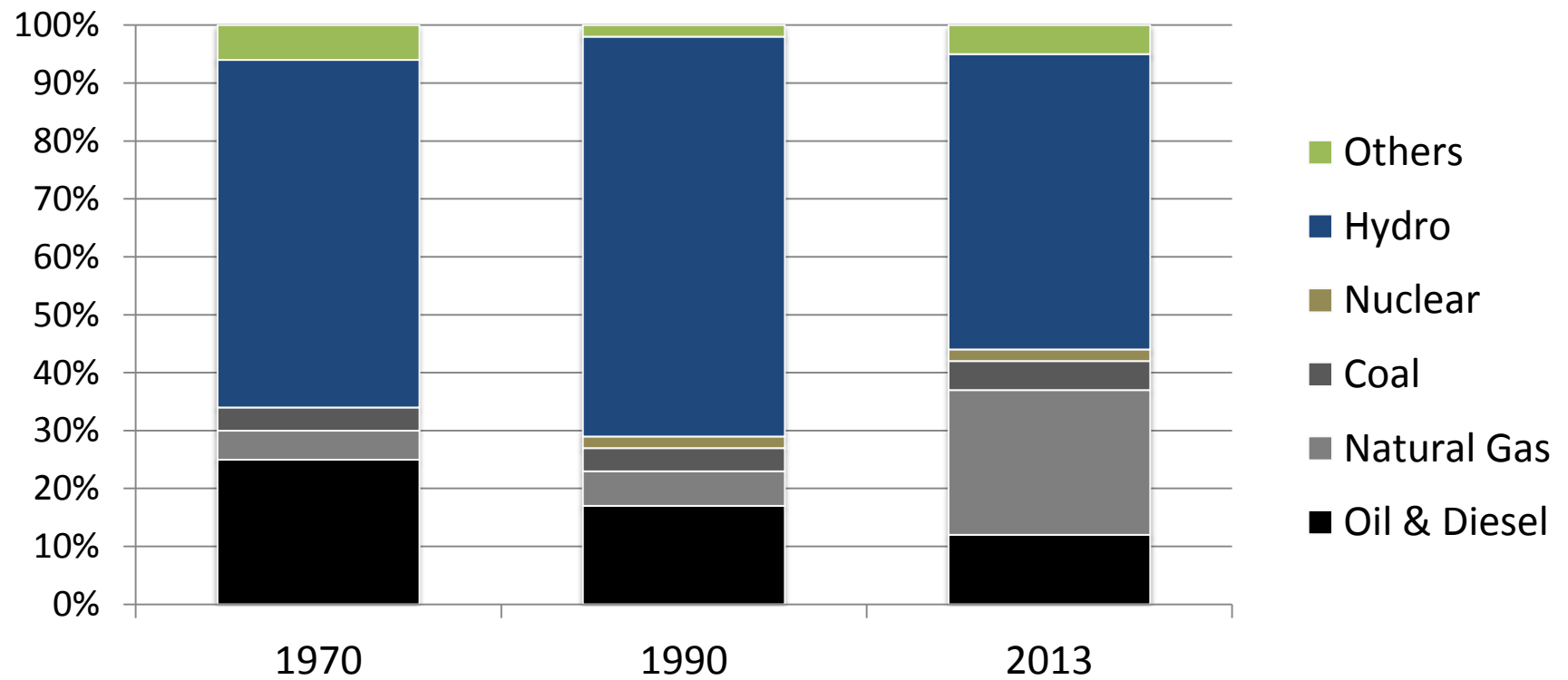
Global Levelized Cost of Energy for Renewable Power Generation, 2013



Source: REN21

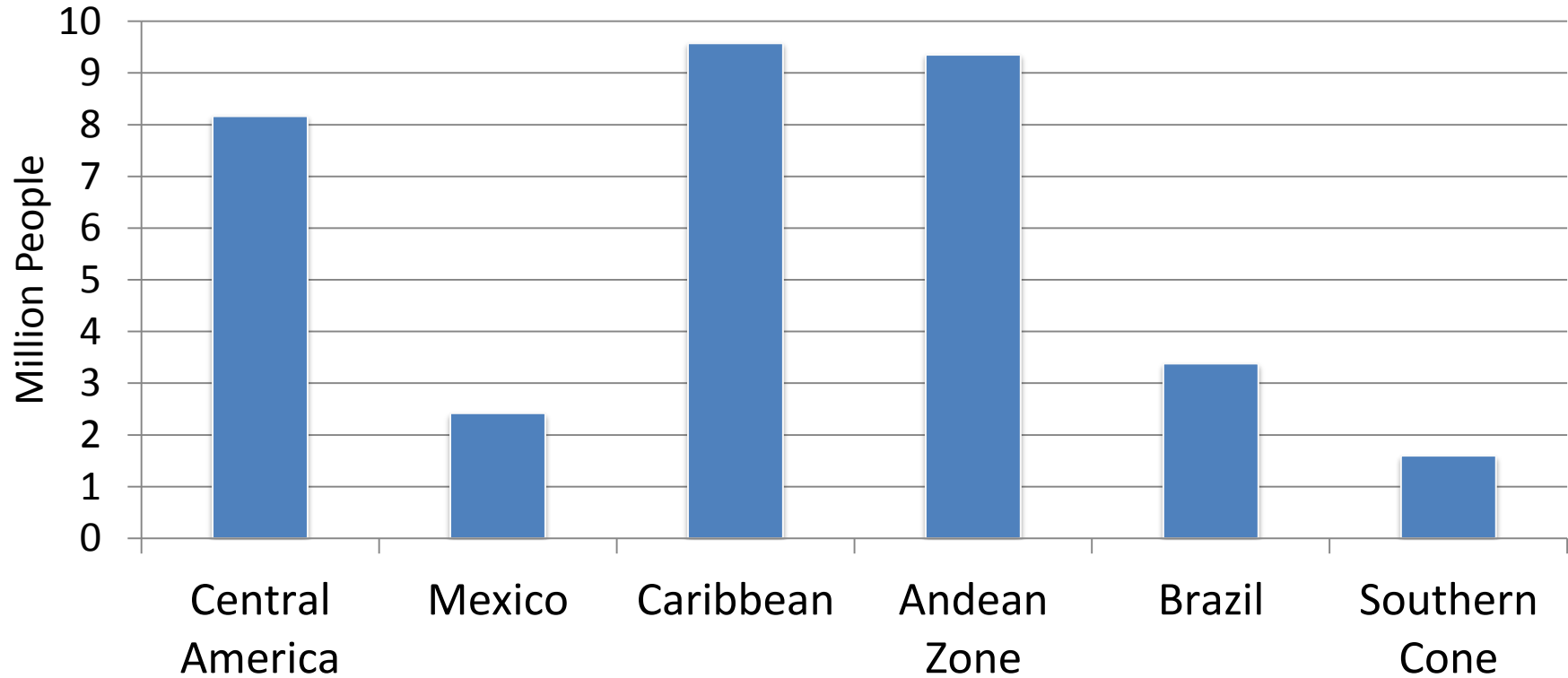
2. Renewable Energy in LAC

Electricity Generation by Source in LAC, 1970, 1990, and 2013



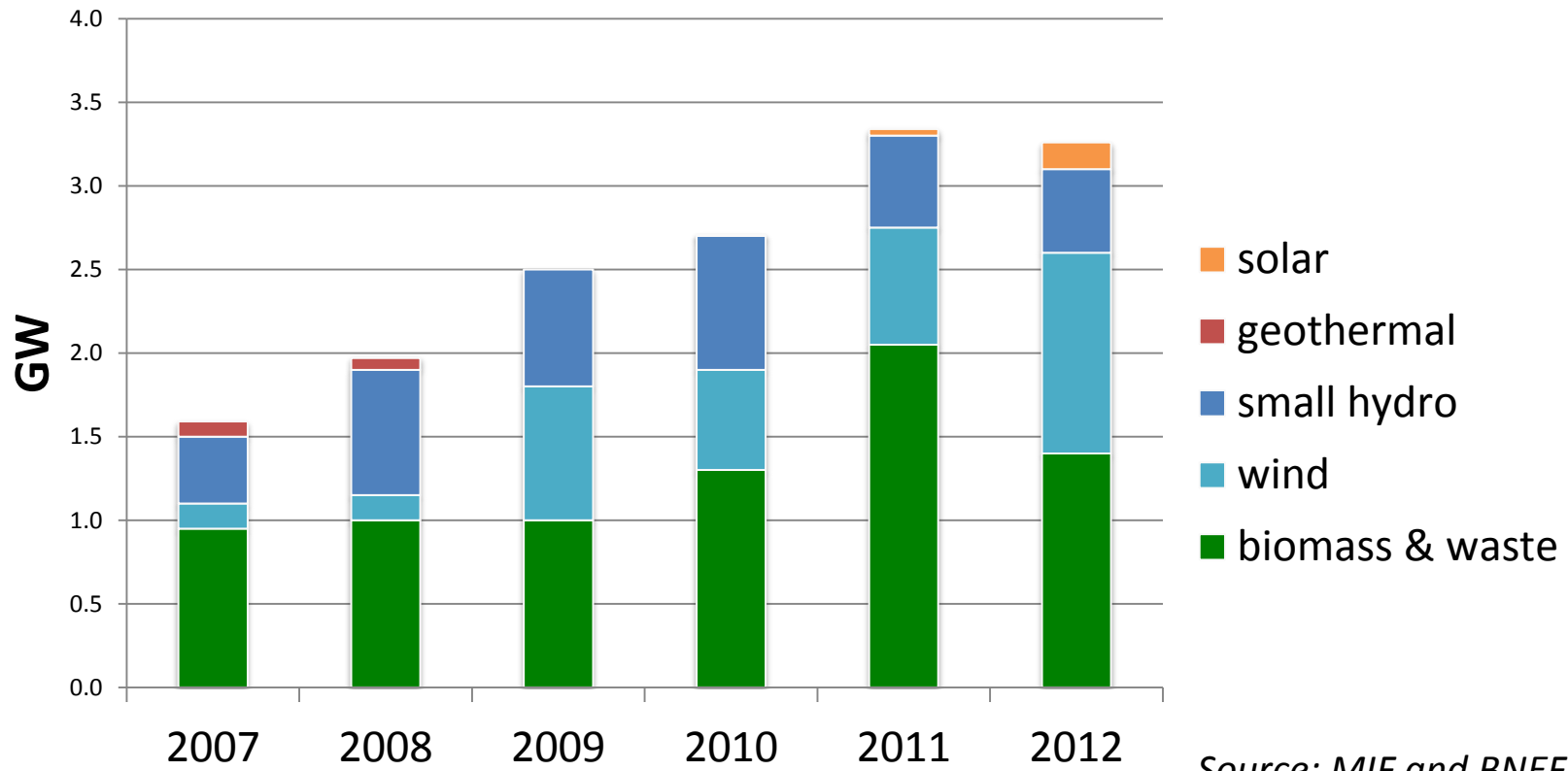
Source: Tissot, OLADE

Population Without Access to Electricity in LAC, 2013



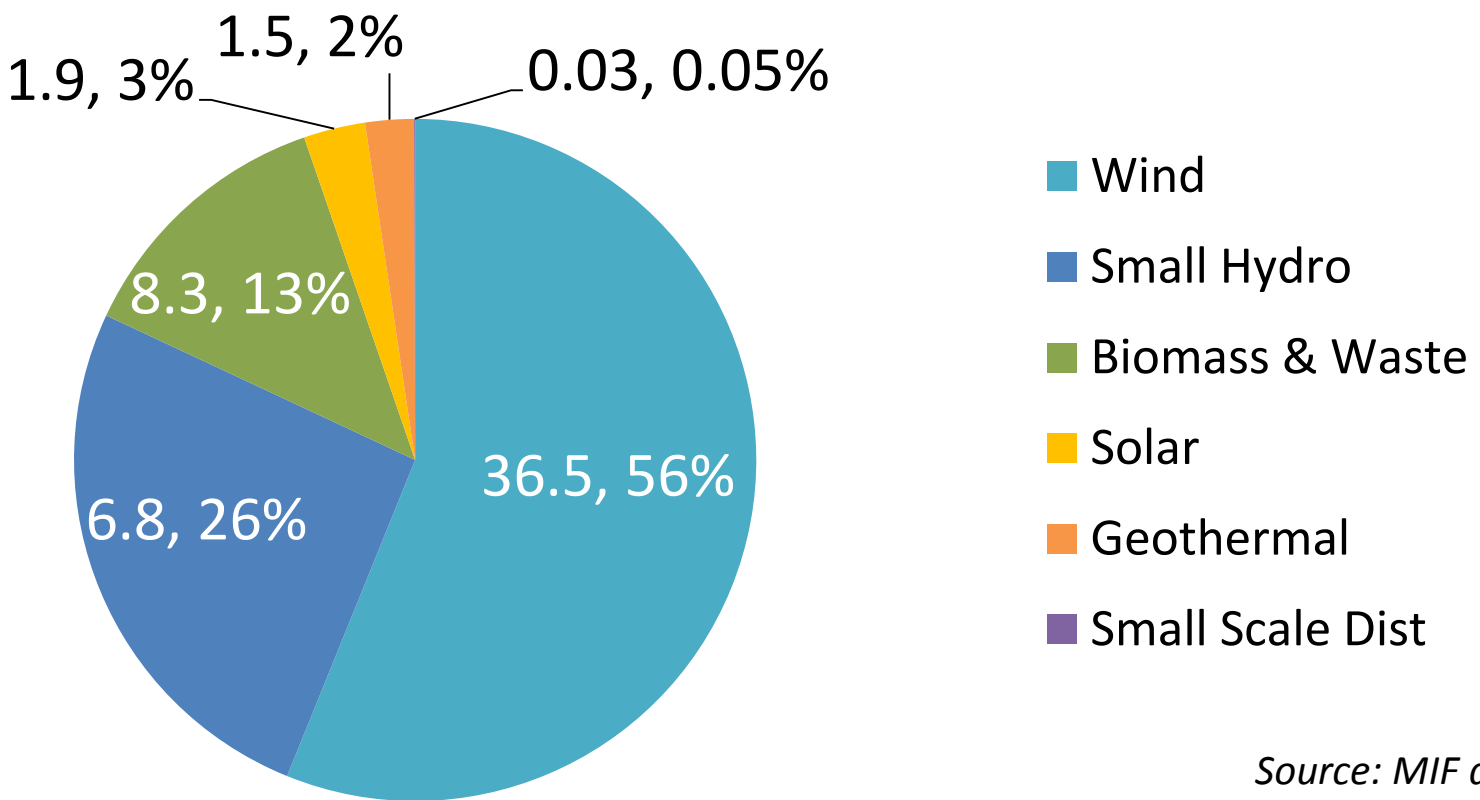
Source: ClimateScope 2013

Net Renewable Capacity Additions by Source in LAC, 2007–2012



Source: MIF and BNEF

Renewable Energy Investment by Technology in LAC (\$B,%)



Source: MIF and BNEF

Renewable Energy Policy Trends

- Renewable energy targets
- Renewable energy tenders or auctions
- FITs
- Quota obligations
- Net metering
- Fiscal incentives
- Public funds for renewable energy projects

3. Barriers to the Advancement of Renewable Energy in LAC and Opportunities to Overcome Them

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Technological Barriers

- Lack of available data and information
 - Transmission and distribution challenges
- **Need for integrated resource planning**

3. Barriers to the Advancement of Renewable Energy in LAC and Opportunities to Overcome Them

Market Barriers

- Restricted grid and power market access
 - Lack of economies of scale
 - High transaction costs
 - Counterparty risk
 - Fossil fuel subsidies
- **Need to create open, fair, and competitive electricity markets**

3. Barriers to the Advancement of Renewable Energy in LAC and Opportunities to Overcome Them

Finance Barriers

- Currency risks
 - Inadequacy of financial products
 - Underdeveloped financial sectors
- **Need for financial sector development**

3. Barriers to the Advancement of Renewable Energy in LAC and Opportunities to Overcome Them

Social Barriers

- Lack of public acceptance
 - Vested interest in business as usual
 - Not in my backyard
- **Need for up-to-date, fully inclusive data gathering and communication**

4. Vulnerability to Climate Change and Adaptation Strategies in the Power Sector in LAC

Climate Change Impacts in the Region

- Changes in precipitation
- Temperature increase
- Ocean warming
- Sea-level rise
- Increase in frequency of extreme weather events

Power Sector Vulnerability

- Climate change affects the whole energy supply chain
- For example:
 - Water scarcity affects hydropower, biomass, fossil fuels and nuclear power generation
 - Higher temperatures decrease thermal efficiency for fossil fuels and nuclear power generation
 - Extreme weather events and sea level rise put infrastructure at risk
 - Rising temperatures lead to higher energy demand

The Need for Adaptation Measures

- LAC depends on hydropower for 50% of its electricity, so water availability is a major concern
- It has already experienced decreases in hydropower due to extreme droughts
- Need in-depth assessments of impacts of climate change on non-hydro energy sources, vulnerability studies at a national level, and the development of adaptation strategies

5. How the IDB Can Support Renewable Energy Development in LAC

How the IDB Can Support Renewable Energy Development in LAC?

- Building Enabling Infrastructure for the Grid of the Future
- Securing Private Sector Investment
- Engaging in Energy Policy Design and Development
- Helping to Establish Supply Chains for Current and Emerging Technologies

Building Enabling Infrastructure for the Grid of the Future

- Help governments address important infrastructure and technical barriers to building a smart, low-carbon, and low-cost energy system.
- Assist governments in carrying out critical infrastructural investments, as well as aid in capacity building of system operators throughout the region.
- Support countries in coordinating infrastructure expansion with the establishment of smart grids, weather forecasting, and energy efficiency technologies.
- Assist governments in carrying out feasibility and environmental impact studies of potential large-scale renewable energy generation sites and in planning for their integration to the grid.
- Provide technical and policy assessments for the most cost-effective regional integration strategies and aid countries in harmonizing national-level energy plans and regulations.

Securing Private Sector Investment

- Assist governments in lowering market and financial barriers that prevent the private sector from investing in small-, mid-, and large-scale renewable energy, energy efficiency, and smart grid projects.
- Help leverage private sector investment through risk mitigation of renewable energy projects.
- Aid small-scale projects in meeting equity requirements and help build the capacity of local financial institutions, increasing their familiarity with renewable energy projects and lowering perceived risks.
- In markets with limited private sector involvement, the IDB can stimulate engagement by providing support for public-private partnership (PPP) projects.

Engaging in Energy Policy Design and Development

- Continue to play an important role in assisting governments through capacity building, institutional development, and policy design.
- The IDB, with its extensive knowledge of the region, is ideally positioned to support national governments in developing sustainable energy plans that are suitable to their needs and goals.

Helping to Establish Supply Chains for Current and Emerging Technologies

- The IDB can support the growth of local supply chains for clean energy technologies through capacity building and technical cooperation, as well as through financing of pilot projects, local businesses, and emerging clean energy technologies.

Thank you!

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