INVESTING IN RENEWABLE ENERGY PROJECTS IN MEXICO

- The Mexican Renewable Energy Sector in Context
- Investment drivers
- The Mexican financing and development environment
- How is it done? Marena Renovables case study
- Future directions and challenges
THE MEXICAN RENEWABLE ENERGY SECTOR IN CONTEXT
LATIN AMERICAN WIND POWER MARKET

Brazil and Mexico dominate the Latin American wind power market: 2.8GW by 2012E

- Latin American market waking up to significant wind power potential

- Pipeline for new project developments in the region is substantial, especially for Mexico and Brazil
  - Mexico capacity expected to be 2,000MW by 2013
  - Brazil capacity expected to be >4,000MW by 2013

- Large number of smaller wind farms developed in high cost power markets as substitute to high cost fuel oil/diesel generation

Source: GWEC Annual Reports, Latin Finance, Macquarie
Wind power sector in Mexico has experienced exponential growth, moving from 3 MW in 2005 to more than 1,300 MW in 2012.

- Government estimates wind energy potential at around 71GW in Mexico.

- Development to date has focused on the high wind resource area in Oaxaca (14 projects out of 16 with total capacity of 1,260MW).

- CRE ran 3 Open Season processes in October 2011 to build new transmission lines in Oaxaca, Tamaulipas, and Baja California.

- Other promising regions with good wind potential include Caribbean coast and the Bay of Campeche in the Gulf of Mexico.

Key Regions in Mexico with Wind Potential (up to 71 GW)

Cumul. Installed Wind Power Capacity in Mexico (2006-2012)

Sources: GWEC Annual Reports, WindPower database, Macquarie
MEXICAN POWER MARKET STRUCTURE

Electricity production, transmission and distribution in Mexico is managed by the CFE

Ownership and Regulation

- Mexican electricity industry nationalised in 1960
- 1992 established a range of power generation activities which could be undertaken by the private sector
- Established the Energy Regulatory Commission ("CRE")
  - Approves permits for power generation, gas transport, distribution and storage (LNG)
- Since 1992 the Mexican generation has been modernised
  - Shift from fuel oil to gas
  - Reserve margins increased
- Transmission and distribution remain exclusively undertaken by the Comisión Federal de Electricidad ("CFE")

CFE (Comisión Federal de Electricidad)

- Responsible for planning, developing and operating the national electricity system
- Largest electricity utility in Latin America
- Operates 39.2 GW of generation capacity (excluding IPP projects), and 49,747km of transmission lines
- Independent legal entity, rated Baa1 by Moody's and BBB by S&P's (shares sovereign foreign currency rating)

Source: Secretaría de Energía
PRIVATE PARTICIPATION IN THE POWER SECTOR

Most common private generation structures are Self-Supply and IPP projects

“Self-Supply” Projects (4,391 MW)

- Regime for private power development
  - Power is sold directly to private customers
  - Applicable for thermal + renewable generation
  - Current focus on renewable power development

- Widely developed sector: 491 permits\(^1\) granted by CRE to date

- Contract (PPA) market:
  - Permit must specify offtakers
  - Consumer required to hold nominal equity in project

- Where transmission infrastructure is insufficient, CFE must initiate an open tender process for required infrastructure

IPP Projects (13,246 MW)

- Contracts tendered by CFE for development of generation capacity

- CFE executes PPA with IPP generator to procure power for sales to public

- CFE typically shares key development risks – acquisition of site, permitting, interconnection

- Established regime with 28 permits\(^1\) since 2000 – all IPP projects have been developed by international investors

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1 - 445 operating, 35 under construction, 6 under development, 5 inactive
2 - 27 operating, 1 under development
Source: Secretaría de Energía
## OPERATING WIND FARMS

### Ownership of operating wind farms dominated by international developers and utilities

#### Operating Wind Farms in Mexico

<table>
<thead>
<tr>
<th>#</th>
<th>Wind Farm Name</th>
<th>MW</th>
<th>Commissioning Date</th>
<th>Location</th>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>La Venta</td>
<td>1.6</td>
<td>1994</td>
<td>Oaxaca</td>
<td>CFE</td>
</tr>
<tr>
<td>2</td>
<td>La Venta II</td>
<td>83.3</td>
<td>2006</td>
<td>Oaxaca</td>
<td>CFE</td>
</tr>
<tr>
<td>3</td>
<td>Parques Ecológicos de México</td>
<td>79.9</td>
<td>2009</td>
<td>Oaxaca</td>
<td>Iberdrola</td>
</tr>
<tr>
<td>4</td>
<td>Eurus</td>
<td>250.0</td>
<td>2010</td>
<td>Oaxaca</td>
<td>Acciona</td>
</tr>
<tr>
<td>5</td>
<td>La Mata-La Ventosa</td>
<td>67.5</td>
<td>2010</td>
<td>Oaxaca</td>
<td>EDF EN</td>
</tr>
<tr>
<td>6</td>
<td>Bií Nee Stipa</td>
<td>26.4</td>
<td>2010</td>
<td>Oaxaca</td>
<td>Iberdrola</td>
</tr>
<tr>
<td>7</td>
<td>Gobierno de Baja California</td>
<td>10.0</td>
<td>2010</td>
<td>Baja California</td>
<td>Turbo Power</td>
</tr>
<tr>
<td>8</td>
<td>Fuerza Eólica del Istmo</td>
<td>80</td>
<td>2011</td>
<td>Oaxaca</td>
<td>Peñoles</td>
</tr>
<tr>
<td>9, 10, 11</td>
<td>Oaxaca II, III &amp; IV</td>
<td>304.2</td>
<td>2011</td>
<td>Oaxaca</td>
<td>Acciona</td>
</tr>
<tr>
<td>12</td>
<td>Arriaga</td>
<td>28.8</td>
<td>2012</td>
<td>Chiapas</td>
<td>Grupo Salinas</td>
</tr>
<tr>
<td>13</td>
<td>Bií Nee Stipa II</td>
<td>74.0</td>
<td>2012</td>
<td>Oaxaca</td>
<td>Enel Green Power</td>
</tr>
<tr>
<td>14</td>
<td>La Venta III</td>
<td>101.0</td>
<td>2012</td>
<td>Oaxaca</td>
<td>Iberdrola</td>
</tr>
<tr>
<td>15</td>
<td>Piedra Larga</td>
<td>90.0</td>
<td>2012</td>
<td>Oaxaca</td>
<td>Renovalia</td>
</tr>
<tr>
<td>16</td>
<td>Oaxaca I</td>
<td>101.0</td>
<td>2012</td>
<td>Oaxaca</td>
<td>ACS</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1,297.7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: WindPower database; GWEC; AMDEE: Macquarie
INVESTMENT DRIVERS
Growth of Mexican energy demand will continue to require new generation capacity

- Population and GDP growth will underpin strong demand growth over the medium term.
- Government seeking to increase renewable energy capacity in fuel mix.
  - Forecast to reach 25% in 2026 (~21.4 GW) representing growing share of output.

**Evolution of Mexico’s Gross Generation Capacity (2010-2026)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Withdrawals</th>
<th>New Capacity</th>
<th>2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>52.9</td>
<td>44.5</td>
<td>85.7</td>
</tr>
<tr>
<td>2026</td>
<td>11.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Secretaría de Energía (SENER)
High power prices for industrial and commercial consumers make case for purchasing renewable power straight forward.

- Italy: ~US$ 300/MWh
- Turkey: ~US$ 250/MWh
- Brazil: ~US$ 200/MWh
- Mexico: ~US$ 160/MWh
- Germany: ~US$ 150/MWh
- Colombia: ~US$ 100/MWh
- India: ~US$ 50/MWh
- South Korea: ~US$ 50/MWh
- China: ~US$ 50/MWh
- United States: ~US$ 50/MWh

Average US$ per MWh for Industrial Users

- ~US$ 160/MWh
High quality wind and solar resources have given renewable energy a cost advantage in different market segments.

### Investment Drivers

<table>
<thead>
<tr>
<th>CFE IPP Projects</th>
<th>Limited Risk Large Scale USD Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Diversification by CFE of fuel mix for generation fleet</td>
<td></td>
</tr>
<tr>
<td>- Availability of high quality wind resources</td>
<td></td>
</tr>
<tr>
<td>- Government policy</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self Supply Projects</th>
<th>Blue Chip Off-takers Fragmented loads</th>
</tr>
</thead>
<tbody>
<tr>
<td>- High cost of energy supplied by CFE</td>
<td></td>
</tr>
<tr>
<td>- Exposure to price volatility</td>
<td></td>
</tr>
<tr>
<td>- High quality wind and solar resource</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Export Projects</th>
<th>Established PPA Structure US Utility Counterparts</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Mandatory renewables requirements</td>
<td></td>
</tr>
<tr>
<td>- Reduced permitting issues</td>
<td></td>
</tr>
<tr>
<td>- Lower development costs</td>
<td></td>
</tr>
</tbody>
</table>
3

THE MEXICAN FINANCING AND DEVELOPMENT ENVIRONMENT
MEXICAN FINANCING ENVIRONMENT

Financing environment favourable for international participation

Available Debt Financing

- Mexican banks are regarded as sound, with low level of dependence on foreign funding
- Extensive participation of international project finance lenders in local market
- Government development banks (BANOBRAS, NAFIN) and infrastructure fund (FONADIN) playing complementary role in financing.
- Interest rate and currency hedging available for peso loans – large trades may need to be executed over several days
- Debt capital markets are emerging as an alternative to bank debt market

Straight forward repatriation of equity returns

- No exchange controls
- No capital taxes
- Repatriation of foreign investment returns or proceeds is guaranteed under various investment treaties (including NAFTA)
**DEBT FINANCING**

Bank debt financing available for USD and MXN based projects – multilaterals play a key role

**Recent Financing of Wind Farms in Mexico**

<table>
<thead>
<tr>
<th>Project</th>
<th>Company</th>
<th>Type</th>
<th>Amount (US$m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Venta III</td>
<td>Iberdrola</td>
<td>Equity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>European Investment Bank</td>
<td>Debt</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>World Bank</td>
<td>Debt</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>EDF Energies Nouvelles</td>
<td>Equity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>US Export Import Bank</td>
<td>Debt</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>IFC</td>
<td>Debt</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>IDB</td>
<td>Debt</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Climate Investment Fund</td>
<td>Debt</td>
<td>15</td>
</tr>
<tr>
<td>Oaxaca III</td>
<td>Acciona</td>
<td>Equity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Banobras</td>
<td>Debt</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>BBVA</td>
<td>Debt</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Acciona</td>
<td>Equity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cemex</td>
<td>Equity</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>IDB</td>
<td>Debt</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>IFC</td>
<td>Debt</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>Debt</td>
<td>166</td>
</tr>
</tbody>
</table>

Source: Infrastructure Journal, Macquarie, Firjan, The Economist
**Country risk premium typically applied to returns in US, Northern Europe**

- The premium that the market requires to invest in US$-denominated Mexico sovereign bonds relative to U.S. Treasuries of the same tenor indicates the market's view on Mexico sovereign risk.
- Due to its improving macroeconomic fundamentals, Mexico's country risk has decreased considerably.
- This premium has averaged 155 bps over the past twelve months, and 168 bps over the last 10 years.

Source: Bloomberg September 2012
HOW IS IT DONE?
MAREÑA RENOVABLES CASE STUDY
Acquisition, development and financing of Latin America’s largest wind farm

- Macquarie Capital advised a consortium that acquired a 396 MW wind farm from Preneal

- Project highlights
  - Largest wind farm development in Latin America
  - One of the strongest wind resources in the world
  - Long-term power purchase agreement with investment-grade off-takers: FEMSA (world’s largest Coca-Cola bottler) and Heineken Mexico

- Macquarie Capital roles
  - Principal investor for 22.5% of the development equity
  - Sole financial advisor for the Project
  - Lead developer

- International team spanning Macquarie offices in Mexico, Austin, Sydney, Tokyo, Amsterdam and New York

- All land, permits and commercial contracts required for the project in place at financial close – 11 months after acquisition

**MAREÑA RENOVABLES: OVERVIEW**

- **CER Monetization**
  - Acquisition of CERs
  - Confidential
  - October 2011
  - Sole Financial Advisor

- **Debt Financing**
  - Mitsubishi Corporation
  - February 2012
  - Sole Financial Advisor

- **Equity Financing**
  - HSBC / CRD AGRICOLE
  - MXN 8.886 million
  - February 2012
  - Sole Financial Advisor
MAREÑA RENOVABLES EQUITY FINANCING

67.5% of the Project equity sold to Mitsubishi and PGGM

Equity Sell-down Process Summary

- Macquarie Capital led a sell-down process over 11 months reaching out to more than 90 investors worldwide (61 financial sponsors and 31 strategics)

- In February 2012, Macquarie Capital and FEMSA successfully sold down their 67.5% equity stake to
  - PGGM, a leading Dutch pension fund service provider with around EUR 115 billion pension assets under management; and
  - Mitsubishi Corporation, a Tokyo-based conglomerate with significant expertise in power development and generation

- MMIF remains a long-term investor with 32.5% of the Project equity
**MAREÑA RENOVABLES: DEBT FINANCING**

Macquarie Capital successfully raised a total of MXN 8,885.6 million (~US$700m) debt financing from 9 lenders

### Final Debt Structure

<table>
<thead>
<tr>
<th>Term Debt Facility Amount</th>
<th>MXN 8,885.6 million (~US$700m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currency</td>
<td>Mexican Pesos (MXN)</td>
</tr>
<tr>
<td>Tenor</td>
<td>21-month Availability Period, 14.7-year Operating Period</td>
</tr>
<tr>
<td>Amortization</td>
<td>Sculpted amortization</td>
</tr>
<tr>
<td>Export Credit Agency</td>
<td>EKF is guaranteeing MXN equivalent of US$250m (MXN 3,183m)</td>
</tr>
</tbody>
</table>

“Macquarie’s Wind Energy Financing Blazes a Trail in the Mexican Renewables Market”

Source: InfraNews Americas – May 2012
FUTURE DIRECTIONS AND CHALLENGES
KEY SHORT AND MEDIUM TERM CHALLENGES

Sector must address a number of challenges to continue evolution and growth

Transmission access
- High wind resource areas now facing capacity constraints (Oaxaca, Tamaulipas)
- Open season process is not providing certainty required to finance development
- Cross border (export) sector has huge potential but also limited by transmission access

Technological evolution
- Lower panel prices are opening up solar market
- New turbine models are expanding viable resource areas

Financing
- Structures to accommodate lower credit quality off-takers, fragmented loads
- Refinancing of bank debt in capital markets

Price environment
- Impact of long term shift to gas on long term power pricing
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