Financing Risk Mitigation Instruments in LAC
THE PROBLEM AND A POSSIBLE SOLUTION
IDB’s experience in geothermal Development

• ~$500 M invested in exploration and development (public and private)
• Technical Assistance (e.g. prefeasibility studies) and capacity building
• Access and co-financing with:
  • Concessional financing CIF, GEF, Canada, Japan, others
  • Syndication (A/B loan)
Investment in relevant countries

1. Mexico: $ 35M (CTF) + IDB. Financing of private sector geothermal projects through NAFIN (insurance + financing)
2. Chile: $ 30M (CTF) + IDB. Risk Mitigation mechanism (tbd)
3. Nicaragua: San Jacinto. $ 40 M private sector loan (36 MW)
4. Costa Rica: Miravalles I and III. $ 124 M loan (82 MW)
5. El Salvador:
   • Berlin. $ 215 M Loan (55 MW)
   • Geothermal Regional Training Center, in collaboration with LaGeo, ENEL (Italy) and University of El Salvador;
6. Other: Bolivia: ($ 70 M)
## Recent technical cooperation activities

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Name</th>
<th>Amount (USD)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>Colombia</td>
<td>Pre-Feasibility Study for <em>El Azufral</em></td>
<td>1.5M</td>
<td>Geoscientific and environmental evaluation for exploration</td>
</tr>
<tr>
<td>2010</td>
<td>México</td>
<td>Geothermal Potential Study</td>
<td>0.58M</td>
<td>Geothermal Potential Evaluation</td>
</tr>
<tr>
<td>2011</td>
<td>Colombia</td>
<td>Catalyzing support for Geothermal Energy</td>
<td>3.6M</td>
<td>4 Pre-Investment Studies</td>
</tr>
<tr>
<td>2013</td>
<td>Mexico</td>
<td>Regulatory Study and Proposal for Geothermal Regulations</td>
<td>0.1 M</td>
<td>Regulatory studies and proposed modifications of hydro geothermal resource regulation, new proposed geothermal regulation</td>
</tr>
<tr>
<td>2013</td>
<td>Chile</td>
<td>Design of Risk Mitigation Instruments</td>
<td>0.1 M</td>
<td>Evaluation of alternatives for risk mitigation schemes</td>
</tr>
</tbody>
</table>
IDB’s experience and plans in geothermal development
The information problem: risk-cost-reward relation
Financing structure under a phased approach (based on average costs for the development of a 50MW project)
Insured financing is structured to reduce risk for financial institutions during the exploration stage

1. Developer, leveraged by a financial institution, pays an insurance premium that covers financing during the exploration stage.

2. Developer, leveraged by a financial institution, invests in geothermal exploration.

3a. In case of a successful exploration, developer re-finances, pays principal and interests and a success fee to FIG.

3b. In case of failure, the insurance company and FIG cover the loan.

Preferred option in Mexico
Expected impact for the Fund – Funding partners.

<table>
<thead>
<tr>
<th>Simulation results</th>
<th>Base case</th>
<th>Conservative scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment in geothermal projects</td>
<td>1,138</td>
<td>607</td>
</tr>
<tr>
<td>Efficient energy generation (MW capacity)</td>
<td>300</td>
<td>160</td>
</tr>
<tr>
<td>Employment creation (thousands)*</td>
<td>5.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Greenhouse effects reduction (MtCO2 in 2020)*</td>
<td>1.3</td>
<td>0.7</td>
</tr>
<tr>
<td>Tax income (annual millions of pesos)*</td>
<td>1,200</td>
<td>640</td>
</tr>
</tbody>
</table>

* Estimated with data from “Iniciativa para el desarrollo de las energías renovables en México”, from SENER (Ministry of Energy)
Thank you.

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