Financial Instruments to scale up investment in Geothermal Power. A Mexican approach.

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Outline

• Introduction, our approach

• The view of investors

• The view of donors/authorities
The point of view of the investor: a risk-adjusted-return approach

RETURN

Increase income
• Feed in tariffs
• Premiums for PPAs
• Carbon CERs

Decrease costs
• Grants and rebates
• Tax credits/deductions
• Soft loans
• Equity

RISK

Risk sharing/mitigation
• Credit enhancement
• Total or partial production or savings guarantees
• Insurance for specific risks
• Local currency finance
Insured/convertible loan: structured to share risk during the exploration stage

1. A developer, leveraged by a financial institution, pays a fee/insurance premium that covers financing during the exploration stage.
2. A developer, leveraged by a financial institution, invests in geothermal exploration.
3a. In case of a successful exploration, developer re-finances the loan, pays principal and interests and a success fee to Fund.
3b. In case of failure, the insurance company/Fund covers the loan.
Impact of insured loan for investors

Expected capital flow is not significantly different for successful projects with or without the insured loan, breakeven dates are delayed but not by much.

<table>
<thead>
<tr>
<th>Simulation results</th>
<th>VAR</th>
<th>NPV in case of success</th>
<th>IRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without the loan</td>
<td>9.3</td>
<td>93</td>
<td>15%</td>
</tr>
<tr>
<td>With the loan, Fund pays interest rate</td>
<td>4.6</td>
<td>81</td>
<td>17%</td>
</tr>
<tr>
<td>With the loan, Fund pays interest rate and 25% of the insurance premium</td>
<td>4.6</td>
<td>85</td>
<td>18%</td>
</tr>
<tr>
<td>With the loan, Fund pays interest rate and 100% of the insurance premium</td>
<td>4.6</td>
<td>86</td>
<td>18%</td>
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</tbody>
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Lower NPV, Higher return, Lower value at risk
Insured/convertible loan: Financing scheme

EXPLORATORY DRILLING

Drilling (well 1) Succeeds

Drilling (well 2) Succeeds

CONFIRMATION AND PRODUCTION DRILLING

Drilling (well 3) Fails

Drilling (well 4) Fails

Drilling (well 5) Fails

Drilling (well n) Fails

Succeeds

Refinancing (Financing II)

Munich RE

Mexican Government

Financing I: Exploration loan

Repays loan

NAFIN / BID / CTF

Plant construction and operation

Financing II: Refinancing

Repays loan

Repays loan

Repays loan

IDB

Institutions for People
The point of view of Governments and donors

- The use of public resources:
  
a) EFFICIENCY IN TERMS OF IMPACT: Modeling the impact of access to finance at early stage
b) MINIMIZING RISK: Moral hazard, risk sharing, minimum capital, support capped per project
c) MAXIMIZING REVOLVING NATURE OF THE FUND: Modeling the sustainability of the fund, the Mexican case
Modeling the sustainability of the fund

Cash Flows

- Risk premiums and grant recovery of successful projects
- Interest income
- Paid out guarantee for failed projects

Fund size 15 years out

Fund size at 15 years out: $14 - $23

50% chance of loss
50% chance of profit
CONCLUSION

• Geothermal Finance in Mexico

▶ SHORT TERM urgency requires

▶ SPEED helping Governments scale up investment
▶ LEVERAGE = EFFICIENCY: blending Government, IDB and international climate finance resources in innovative ways, to scale up private and PPP investment

▶ LONG TERM requires

▶ structuring DEMAND, helping bring old CFE projects out of the closet
▶ helping design POLICY, assisting in the drafting of the new Geothermal Law
▶ Using National Development Banks to promote SUSTAINABLE FINANCING by PRIVATE BANKS AND CAPITAL MARKETS
Institutions for People

Inter-American Development Bank/ www.iadb.org