Enabling private geothermal development

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The cases we studied

Gümüsköy, Turkey: The first time the private sector financed exploration of an unproven geothermal field in the country

Olkaria III, Kenya: The first privately funded and developed geothermal project in Africa

Sarulla, Indonesia: The largest single contract geothermal power plant in the world
Private sector investment needs
1: Revenue certainty over a project’s lifetime

Supportive regulatory frameworks and clear deployment targets are the basic conditions for geothermal growth.

FiT design can engage the private sector if:
- It is aligned as much as possible with the project’s lifetime and financing liabilities
- It is able to shift operational risks considered critical by the private sector
Early public exploration and tendering of proven fields can attract private sector investment.

Private exploration should be incentivized if:

- The private sector can manage these risks at the **lowest cost**
- **Survey data** can be provided to support the exploration phase
- **Tariffs can be increased** to reflect the developer’s exploration costs

![Impact of exploration on LCOE](image)

- **LCOE Olkaria III**
- **LCOE Olkaria III (with early exploration)**

+15%
3: Long-term, low-cost debt

It frees equity resources enabling investment in further geothermal projects and capacity

It decreases financing costs, and, in certain cases, ensures projects’ financial viability

<table>
<thead>
<tr>
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<th>Gümüşköy Turkey</th>
<th>Olkaria III Kenya</th>
<th>Sarulla Indonesia</th>
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</thead>
<tbody>
<tr>
<td>After tax Equity IRR</td>
<td>16%</td>
<td>16%</td>
<td>14-16%*</td>
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<tr>
<td>After tax Equity IRR (w/o favourable loan terms)</td>
<td>15%</td>
<td>12%</td>
<td>10-12%</td>
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</tbody>
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(*) range based on geothermal projects in Indonesia, comparable with the project’s IRR.
4: Risk mitigation to unlock financing

Government guarantees for off-takers seem to be crucial where there are concerns about their creditworthiness.

DFIs’ provision of political risk mitigation tools can unlock and further lower the cost of capital.

DFIs can facilitate the acquisition of technical capacity to bridge lenders’ knowledge gaps.
Questions for participants
Questions

• What is the best FiT structure from the private and public sector point of view? What operational risks are appropriate to shift on the public sector?

• How should the private sector be involved in the exploration phase? Does it depend on the maturity of the field or the private market? Are countries with regulated electricity bills able to increase FiTs to incentivize private exploration?

• How can debt finance be engaged earlier in the project? With which risk mitigation instruments?
Thank you