UNEP

ARGeo - C6
6TH AFRICAN RIFT GEOTHERMAL CONFERENCE

Hezy Ram

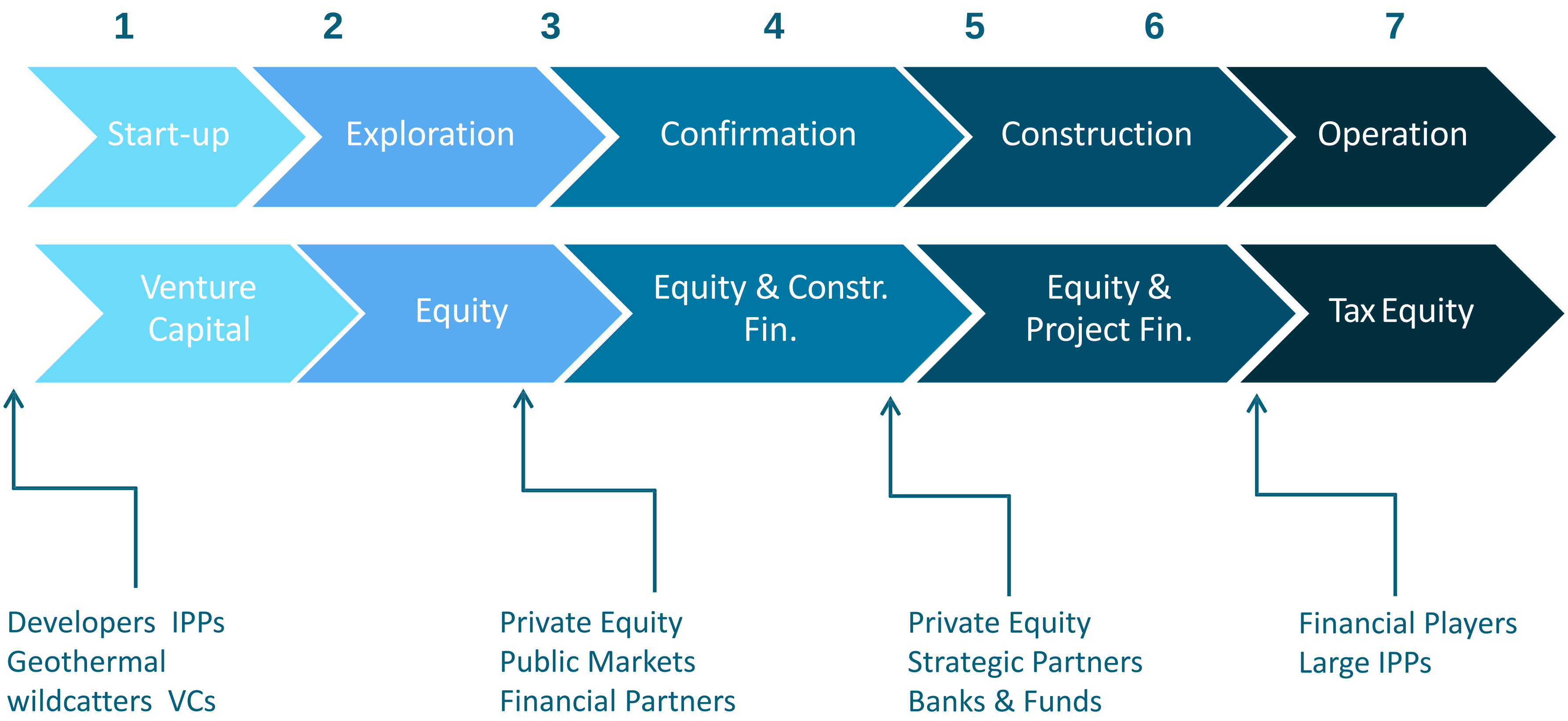
Challenges in Financing Geothermal Projects

case studies for developing countries

31st October to 6th November 2016

United Nations Conference Centre - (UNCC - AA),
Addis Ababa, Ethiopia

Project & Financing Stages



Financing Options by Stage

PROJECT DEVELOPMENT STAGE	EARLY STAGE: Surface Exploration, Test Drilling, Initial Production Drilling	MIDDLE STAGE: Resource Confirmation, Field Development, Complete Production Drilling	LATE STAGE: Power Plant Engineering, Construction, and Commissioning
Risk of Project Failure	High	Medium	Low
Typical Financing Sources	• Balance sheet financing by a large developer • Private equity (project finance) possible but with high risk premium • Government incentives (capital cost sharing, soft loan or guarantee) • Concessional funds from international donors	• Balance sheet financing, corporate debt or bonds issued by a large developer • Public equity issuance • Construction (short-term) debt • Loan guarantee by government • Long-term debt or guarantees from IFIs • Export credit agency financing	• Construction debt • Long-term debt from commercial sources • Long-term debt from IFIs • Partial risk guarantee or partial credit guarantee instruments to attract or improve tenor and terms of commercial debt • Export credit agency financing

Project Finance Characteristics

Good News

- Debt provided for project development solely based on Projects' perceived risks & expected future cash flows

- Debt providers either have no recourse or only limited recourse to parent company that develops or "sponsors" project (Project Sponsors)

- For equity investors--equity returns maximized, significant liabilities moved off balance sheet, key assets protected, & opportunities for tax financing

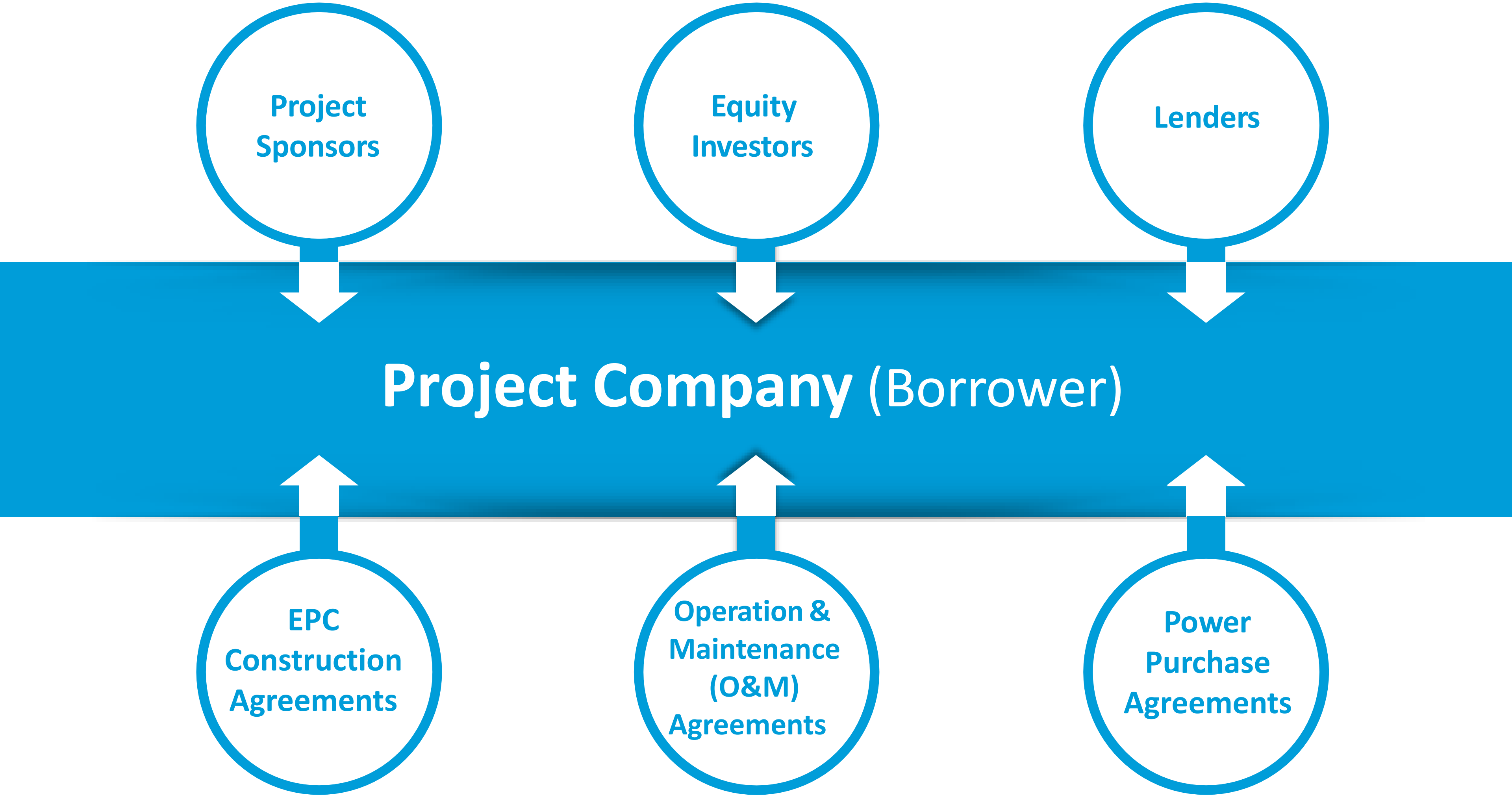
Bad News

- Document intensive, time consuming, many players, and expensive to execute & close

- High administrative & closing costs—fees to debt providers, consultants, & attorneys

- Imposes significant operating restrictions on Project company— ability to make equity distributions to Project Sponsors (dividend block) prior to payment of operating expenses, debt service, & possible sweeps (in bank deals to prepay debt)

Typical Project Finance Schematic



Potential Funding Sources

Equity

- Potential strategic partners--selected based on timing, size, financial strength,

& skill set

- Local partners--government & other contacts
- Possible portfolio investors--local venture capital funds or stock exchange listing

Debt

- **Multilateral Agencies –(MLAs)--World Bank, IFC, AfDB, etc**

–Decouples sourcing & finance--political risk mitigation not tied to export of goods from specific country--as required by Export Credit Agencies (ECAs)

–Preferred creditor status--not subject to rescheduling due to lack of foreign currency

–High political exposure & importance—Project Sponsors & host country gain valuable political prestige

Potential Funding Sources (cont'd)

Debt (cont'd)

–Export Credit Agencies (ECAs)

- Couples sourcing & finance--political risk mitigation tied to export of goods from specific country (max. 85% value)
- More capable than most banks in evaluating political risks due to direct government to government relations
- Major ECAs recently have been more willing to absorb commercial risks
- Sourcing of equipment, timing of approach, & understanding of ECA concerns key in maximizing participation
- Overseas Development Credits to Govt. and on-lent

–Commercial Banks

- Most likely only to take residual risks associated with ECAs and/or MLA financing
- More likely to accept commercial risks if Project sound

Potential Funding Sources (cont'd)

Debt (cont'd)

Capital Markets

–Capacity to finance very large transactions
–Access to incremental investor pools--fund managers, mutual funds, insurance companies, pension funds, etc
–Good for "story" credits in emerging markets
–Rapidly advancing ability to invest in complex transactions & take political risk
–Hungry for yield for right projects--quality of Project Sponsors & sound Project economics important
–Cash flow emphasis--less restrictive covenants.

Local Sources

–Helps finance local costs
–Usually short term (5 years) & high yield (17-20% interest rate)

Financing geo projects in Developed and Developing Countries

Are any major differences in the way we finance project in both regions?

Why we have more options for financing projects in Developing Countries?

How to deal with "Political Risks"

State owned developers/competitors – pros and cons (only in Developing Countries)

Vague regulations, slow moving Governments and "social aspects"

The Big Elephant in the room – transparency and equal dealing

Thank you!