



Technical Training in Project Appraisal for the Lower Mekong Basin

PROJECT FINANCE

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Financial Risks of Major Projects

- **Financiers face risks**
 - Variations in returns
 - Risk of losing all or part of principal amount invested
 - Financiers demand risk premium or other conditions to secure cash flows or provide guarantees
- **Sources of risk**
 - **Country risk** from political and economic policy and practices of country
 - **Market risks** -- price instability, etc
 - **Project risks** -- completion, technology, etc
 - **Other** -- natural disasters, etc

Country Risk

- Risk premiums vary across countries
 - Many developing countries have estimated average costs of equity finance in excess of 20% and as high as 40%
- Different premiums on debt and equity reflecting different risks
- Lowest premiums on sovereign (Government) debt
 - In some countries, sovereign debt is regarded as risk free (0% chance of default), but not in all countries. In some countries, some corporate debt may be less risky than government debt
- Highest premiums on equity

Financing Large Investments in Risky Environments

- Despite high country risk premiums, countries need to attract financing for large investments in mining and energy sectors, as well as major utilities (electricity, gas, water) and infrastructure (bridges, tunnels, highways, etc).
- In short-run it is not possible to make major changes to mitigate conditions causing adverse country risk rating
- Development of project-specific approaches to mitigate risks: *How to make an investment that has required rate of return of 15% in a low risk country feasible in a high-risk country requiring 35%??*

PROJECT FINANCE

- No universally accepted definition of the term “Project Finance” - different people use it in different senses.
- Definition: Project finance refers to a financing in which lenders to a project look primarily to the cash flow and assets of that project as the source of payment of their loans.
- Project finance had its origins in the energy industry (oil & gas production loans). Use is increasing today in many other sectors mining, electric power.

Three Categories of Project Financing

- **Full Recourse** - lenders look initially to each cash flow of the project for debt repayment but ultimately can look to a credit-worthy sponsor for any shortfalls.
- **Non-Recourse** - lenders look solely to the cash flow and assets of the project for debt repayment. There is no external guarantee that they will be paid.
- **Limited Recourse** - all financing between full and non-recourse. Lenders look partially to project cash flow for debt repayment. In defined circumstances can look to project sponsors for debt repayment. There are two categories:
 - Fall away, initially full-recourse then non-recourse (e.g. post-completion)
 - True limited recourse - residual risks to sponsors (e.g. market)

Non-recourse financing

- **Off-balance sheet financing**
 - For non-recourse financing, project is not a liability on the balance sheet of sponsor
 - *“Project” has to be established as a special purpose corporation*
- Typically syndicate of commercial banks will work with project sponsor to develop project finance package; IFIs may play critical facilitation role
- *Banks may play dominant role in project design and approval*

Why Project Financing?

- Size, technology and/or cost of projects
- Risk minimization
- Preservation or lack of borrowing capacity – insufficient capacity to provide guarantees
- Even governments may have limited revenue capacity to raise general obligation debt – use participation bonds guaranteed by specific infrastructure project

Basic approach

- The key to project financing is identification of specific risks and appropriate allocation or risk mitigation measures, particularly to protect senior lenders (typically a consortium of banks)
- Risk issues vary over time – especially construction *versus* operating phase

Why is construction phase especially risky?

Management and Mitigation of Risks

Principle Categories of Risk: *Pre-Completion* and *Post-Completion*

A: Pre-Completion Risks:

Types of Risks

Ways to Reduce or Shift Risk Away from Financial Institution

• Participant Risks

– Sponsor commitment to project

- Reduce magnitude of investment?
- Require lower Debt/Equity ratio

- Finance investment through equity then
by debt

– Financially weak sponsor

- Attain third party credit support for
weak sponsor (e.g. Letter of Credit)
- Cross default to other sponsors

• Construction/Design defects

- Experienced reputable contractor
- Turn key construction contract

A: Pre-Completion Risks (contd):

<u>Types of Risks</u>	<u>Ways to Reduce or Shift Risk Away from Financial Institution</u>
<ul style="list-style-type: none">• Process failure	<ul style="list-style-type: none">- Process / equipment warranties- Tested technology
<ul style="list-style-type: none">• Completion Risks<ul style="list-style-type: none">– Cost overruns	<ul style="list-style-type: none">- Pre-agreed overrun funding- Fixed (real) price contract- Contractor takes junior debt and/or equity stake (BOT)
<ul style="list-style-type: none">– Project not completed	<ul style="list-style-type: none">- Completion guarantee/performance bond- Reputable contractor- Tests or mile-stones: mechanical/financial for completion
<ul style="list-style-type: none">– Project does not attain mechanical efficiency	<ul style="list-style-type: none">- Assumption of debt by sponsors if not completed satisfactorily; fall away

B. Post-Completion Risks

Types of Risks

Ways to Reduce or Shift Risk Away from Financial Institution

- **Natural Resource/Raw Material**

- Availability of raw materials

- Independent reserve certification
- Example: mining projects: reserves twice planned mining volume
- Firm supply contracts: for example – energy supply agreement for thermal power plant
- Ready spot market

- **Production/Operating Risks**

- Operating difficulty leads to insufficient cash flow

- Proven technology
- Experienced operator/ management team
- Performance warranties on equipments
- Insurance to guarantee minimum cash

B. Post-Completion Risks (contd)

<u>Types of Risks</u>	<u>Ways to Reduce or Shift Risk Away from Financial Institution</u>
<ul style="list-style-type: none">• Market Risk<ul style="list-style-type: none">–Volume -cannot sell entire output–Price - cannot sell output at profit	<ul style="list-style-type: none">- Long term contract with creditworthy buyers :take-or-pay; take-if-delivered; take-and-pay- Minimum volume/floor price provisions- Price escalation provisions: index price to major cost items: inflation, exchange rate, wages, etc
<ul style="list-style-type: none">• Financial risk	<ul style="list-style-type: none">- Ensure sufficient debt service coverage- Decrease debt-equity ratio- <i>Offshore Escrow Accounts</i>
<ul style="list-style-type: none">• Force Majeure Risks<ul style="list-style-type: none">–Strikes, floods, earthquakes, etc.	<ul style="list-style-type: none">- Insurance- Debt service reserve fund

Ways to Reduce or Shift Risk Away from Financial Institution

Types of Risks

- **Political Risk**

- Covers range of issues from nationalization/expropriation, changes in tax and other laws, currency inconvertibility, etc.

- Host govt. political risk assurances
- Assumption of debt
- Official insurance: OPIC, COFACE, EXIM
- Private insurance: AIG, LLOYDS
- **Offshore Escrow Accounts**
- Multilateral or Bilateral involvement

- **Abandonment Risk**

- Sponsors walk away from project leaving banks to run project

- Abandonment test in agreement for closure based on historical and projected costs and revenues

- **Other Risks: Not really project risks but may include:**

- Syndication risk
 - Currency risk
 - Interest rate exposure
 - Rigid debt service
 - Hair trigger defaults

- Secure strong lead financial institution
- Currency swaps / hedges
- Interest rate swaps
- Built-in flexibility in debt service obligations

Private Participation Agreements

- Note that many of the risk mitigation and risk allocation concepts in project finance have become major tools in enabling and managing private participation in public projects

Financing Sources

- **Commercial Banks**

- Syndicated Loans
- Term Loans
- Revolving Credit Loans

Advantages of commercial banks financing include:

- Funds are available
- Capable of sophisticated project and risk analysis
- Fewer limitations
- Non-recourse or limited recourse financing possible

Drawbacks of commercial bank financing include:

- Typically medium-term lending (5-10 years) with short-grace period which may not fit in with project needs
- Floating rate - uncertainty about project costs
- Higher cost

Financing Sources *(contd.)*

- **Capital Markets**
 - Bond/Note issues
 - U.S.
 - Euromarkets
 - Japan
 - Commercial Paper
 - U.S.
 - Euro-Commercial Paper
 - Private Placements (insurance companies, pension funds, etc.)

Financing Sources *(contd)*

Capital markets *(contd)*

- Not a major source of financing for projects. Limited investor/market sophistication. Market demand is for “quality” -- confidence depends upon standards, reputation and regulation.
 - Access to these funding sources through use of primary bank credit facility as credit support.
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- **Foreign/Domestic Equity**
 - Retained earnings
 - Offshore joint venture partners/investors/IFC
 - Domestic equity offering

Financing Sources *(contd)*

• **Export Credits**

–Offered by OECD countries and many others to promote exports. Attractive source of financing:

- Longer Maturities
- Fixed Rates
- Below Market Rates

• **Multilateral/Bilateral Sources**

- IBRD (World Bank)
- Regional Development Bank (ADB, AFDB, IADB, etc.)
- European Investment Bank, etc.

These institutions are important sources of concessionary financing, but generally only sovereign lending

Financing Sources *(contd)*

- Private/Public Partnerships
 - Privatization of public utilities and infrastructure
 - BOT, BOO, BOOT (Build Operate Own Transfer)

PROJECT FINANCE

THE HUB POWER CASE

HUB BACKGROUND

- PAKISTAN EXISTING CAPACITY 11,000 MW, TO GROW AT 6% PER ANNUM
- **1,200 MW** OR 13% OF SYSTEM CAPACITY (4 OIL-FIRED UNITS)
- OPERATED AND MAINTAINED BY NATIONAL POWER INTERNATIONAL OF ENGLAND
- TOTAL FINANCING **US\$1,545 m** (25% EQUITY)
- 40 KM NORTH-WEST OF KARACHI
- PROJECT CONCEPTION 10 YEARS AGO
- NEGOTIATIONS TOOK 8 YEARS
- 8 FINANCING FACILITIES
- 7 CURRENCIES
- BILATERAL AND MULTILATERAL FINANCING
- BOO, TURNKEY PROJECT
- GOVERNMENT OF PAKISTAN(GOP)-GUARANTEED IMPLEMENTATION AGREEMENT, POWER PURCHASE AGREEMENT, FUEL SUPPLY AGREEMENT

HUB PROJECT DEVELOPMENT

- Xenel and Hawker Siddeley Power Engineerings Ltd (HSPE) submitted proposal for a 2x300 MW station in **1987** to the Government of Pakistan (GOP), specifically the Water and Power Development Authority (WAPDA) and Pakistan State Oil (PSO) and others.
- July, 1988, a Letter of Intent was issued by GOP for a 1200 MW power station with construction led by Mitsui of Japan.
- Hub River Power Group (HRPG) was set up in Cayman Islands to promote the project.
- HRPG was managed by K&M Engineering and Consulting Corp of Washington supported by other financial and legal specialists
- November 1988, Feasibility Study submitted.
- Negotiations on Implementation Agreement, Power Purchase Agreement and Fuel Supply Agreement began. **December 1989, Implementation Agreement, Power Purchase Agreement and Tariff Agreement were signed.**
- Because of unsatisfactory tariff, HSPE and Canadian Utilities Power withdrew
- 1990, The Gulf War
- Construction consortium was reformed: Mitsui and IHI of Japan, Campenon Bernard of France and Ansaldo of Italy. At the same time, US\$360m financing under a political risk guarantee provided by the World Bank and J-EXIM was sought

HUB PROJECT DEVELOPMENT

(Continued)

- Mid-1990, a new Tariff Agreement was reached between GOP and new construction consortium.
- Second half, 1990, discussions on subordinated loans started with NDFC. Term sheets prepared. Preliminary commitments were obtained from SACE, COFACE, MITI, WB and J-EXIM for political risk guarantees.
- **August 1991, Hub Power Company Ltd was incorporated.**
- November 1991, court ruling on Shariah Laws made financing difficult.
- All project activities halted. Credibility of project threatened.
- Mid 1992, Shariah Laws issue resolved, Implementation Agreement, Power Purchase Agreement and Fuel Supply Agreement signed.
- Mobilization financing was sought and secured from Al-Rajhi Bank of Saudi Arabia, Private Sector Energy Development Fund and NDFC.
- December 1992, construction started.
- 1993-4, loan guarantees between WB/J-EXIM and commercial banks negotiated, commitments from ECAs finalized, loans agreements signed, shares offered
- January 1995, conditions for disbursement of senior facilities satisfied, financial closure ceremonies held.

ECO: Expanded Cofinancing Operations Guarantee Program; COFACE: Compagnie Française d'Assurance pour le Commerce Extérieur; CDC: Commonwealth Development Corporation; PSEDF: Private Sector Energy Development Fund managed by NDFC (National Development Finance Corporation); SACE: Italian ECA.

WHY PROJECT FINANCING?

- PAKISTAN URGENTLY NEEDED NEW POWER CAPACITY
- PROJECT TOO BIG, GOVERNMENT WANTED TO PRIVATIZE POWER SECTOR, CONVENTIONAL DOMESTIC FINANCING NOT AVAILABLE
- WORLD BANK MOVED AWAY FROM FINANCING DIRECT GOVERNMENT INVOLVEMENT IN UTILITY PRODUCTION – REQUIRED PRIVATE PARTICIPATION
- FOREIGN COMMERCIAL BANKS HAVE MONEY, BUT WOULDN'T ACCEPT PAKISTAN'S COUNTRY/POLITICAL RISK
- PROJECT FINANCING IS A WAY TO MANAGE THE PROJECT RISK SO THAT IT IS ACCEPTABLE TO LENDERS

HUB FINANCING

(1993 US\$m)

	Base (US\$m)	share	Standby (US\$m)	share
Equity				
Promoting shareholders	148.8			
Other investors (domestic 70)	222.7			
TOTAL	371.5	24.3%		
Subordinated debt				
PSEDF I	321.7		53.3	
PSEDF II	114.2		82.5	
TOTAL	435.9	28.6%	135.8	61.5%
Senior Debt				
World Bank ECO - guaranteed loan	200.0		40.0	
J-EXIM-guaranteed loan	100.0		20.0	
Export Credit Agency-insured loans				
COFACE	45.1			
MITI	86.4			
SACE	194.6			
CDC	36.9			
Senior rupee facility	75.0		25.0	
TOTAL	738.0	47.1%	85.0	38.5%
TOTAL FINANCING	1545.4	100.0%	220.8	100.0%

HUB FINANCING NOTES

- Financing features were designed to meet senior debt lenders' requirements:
 - Government of Pakistan (GOP)-Guaranteed Implementation Agreement, Power Purchase Agreement, Fuel Supply Agreement
 - Multilateral Agencies Guaranteed Country Risk
 - Credible Project Sponsors' Equity Participation (National Power and Xenel of England)
 - Substantial Standby Loans
 - High (50%) Equity and Junior Debt Cushion

HUB'S RISK SHIFTING MECHANISMS

- PROJECT COMPLETION RISK REDUCED BY:
 - GOP-GUARANTEED IMPLEMENTATION AGREEMENT*
 - FUEL SUPPLY AGREEMENT
 - POWER PURCHASE AGREEMENT
 - STANDBY LOANS
 - PROJECT SPONSORS' EQUITY PARTICIPATION

*Hub Power, 1996, pp. 49-51

HUB'S RISK SHIFTING MECHANISMS

(cont'd)

- **Commercial Risk:**
 - REDUCED BY GOP-GUARANTEED
 - PURCHASE AGREEMENT AND FUEL SUPPLY AGREEMENT
- Operation and Maintenance Contract With National Power
- **Foreign Exchange Risk:** Reduced By:
 - GOP GUARANTEED
 - IMPLEMENTATION
 - AGREEMENT
- **Country/political Risk:**
 - PRINCIPALS GUARANTEED BY WORLD BANK AND J-EXIM
- **Interest Payments:**
 - Guaranteed By Export Credit Agencies

HUB TARIFF

- BASED ON 17% REAL RETURN ON EQUITY
- GUARANTEED BY GOP

THE HUB LESSONS

- **Complicated combination of contracts and guarantees**
- **Time consuming – early case of project finance of a major electric in a developing country – donors shifting from direct financing of utilities through governments to facilitating private financing of private entities**
- **High transaction/legal costs**
- **Can deal with risks effectively**
- **Nearly all major risks are addressed**
- **Only operating performance risk remains. For known technology, this risk is low**
- **For a very highly guaranteed project, the essential remaining risk is the fairness of the negotiated tariffs and intake prices.**
- *Note major risk analysis models developed to assist project analysis and negotiations*