Wind Energy Finance: Mobilising European Investment in the Indian Wind Sector

Prepared for:

The EU-India Wind Energy Network

A collaboration of:

The European Wind Energy Association

Confederation of Indian Industry

Energy Research Centre of the Netherlands

RISØ National Laboratory

Indian Wind Turbine Manufacturers Association

Sponsored by:

European Commission

EU-India Economic Cross Cultural Programme

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Purpose of the Finance Paper

Financing Objectives

- Address means for Indian projects to access European capital
- Survey means available to support this goal
  - Sources of funds
  - Investment structures
- Identify ways to move the Indian wind sector toward project finance

Assess the Supports

- Assess the strengths and weaknesses of the Indian market that would support the above objectives
  - Project economics
  - Fiscal incentives available
  - Policy support both at State and Central level vs EU

Conclusions Reached

- **European capital has an evolving role to play in the Indian market but is not necessarily 'cheaper' than Rupee funding**
  - Structure of investment is key determinant of cost
  - Corporate borrowing cost of funding is highly borrower-specific
  - Limited recourse project funding must price in risk factors
- **Risk-return factors place limitations on the ability to access funding at a reasonable cost**
  - Link between credit risk and policy risk
  - Equity investor return requirements commensurate to perceived risk
- **Creative investment structures are required to foster an environment able to attract lower cost of capital and more efficient investments**
  - Cross-border partnerships
  - Investment company structures
  - Leveraging exports and foreign-located operations

Issues raised by conference participants

- Financing projects versus project finance
- Disputed of cost of borrowing, cost of capital
- Different opinions of SEB credit quality impacts
- Ability to use trade receivables to support foreign currency borrowing
- Role of CDM
- Enhanced discussion of project finance alternatives

Financing Projects versus Project Financing

There appears to be confusion between the role of **corporate finance** in funding wind farms and the use of **limited-** or **non-recourse** financing. This warrants clarification. Most lending in India is on a corporate basis.

Financing Projects

- Uses corporate balance sheet to support wind project borrowing
- Places the full faith and credit of the project owners at risk to support the loan over the entire life of the loan
- Accordingly lenders focus on the fiscal health of the sponsor company as a going concern rather than on the project alone
- Currently the method that most Indian wind farm developers use

Project Finance

- Uses special purpose companies to build, own and operate wind assets
- Raises debt capital solely on the merit of the project's projected operations
- Has well-defined, closed-ended and limited use of sponsor equity to support the project – typically through to completion of the project only
- Few PF transactions done in India

Myth: "European capital is cheaper"

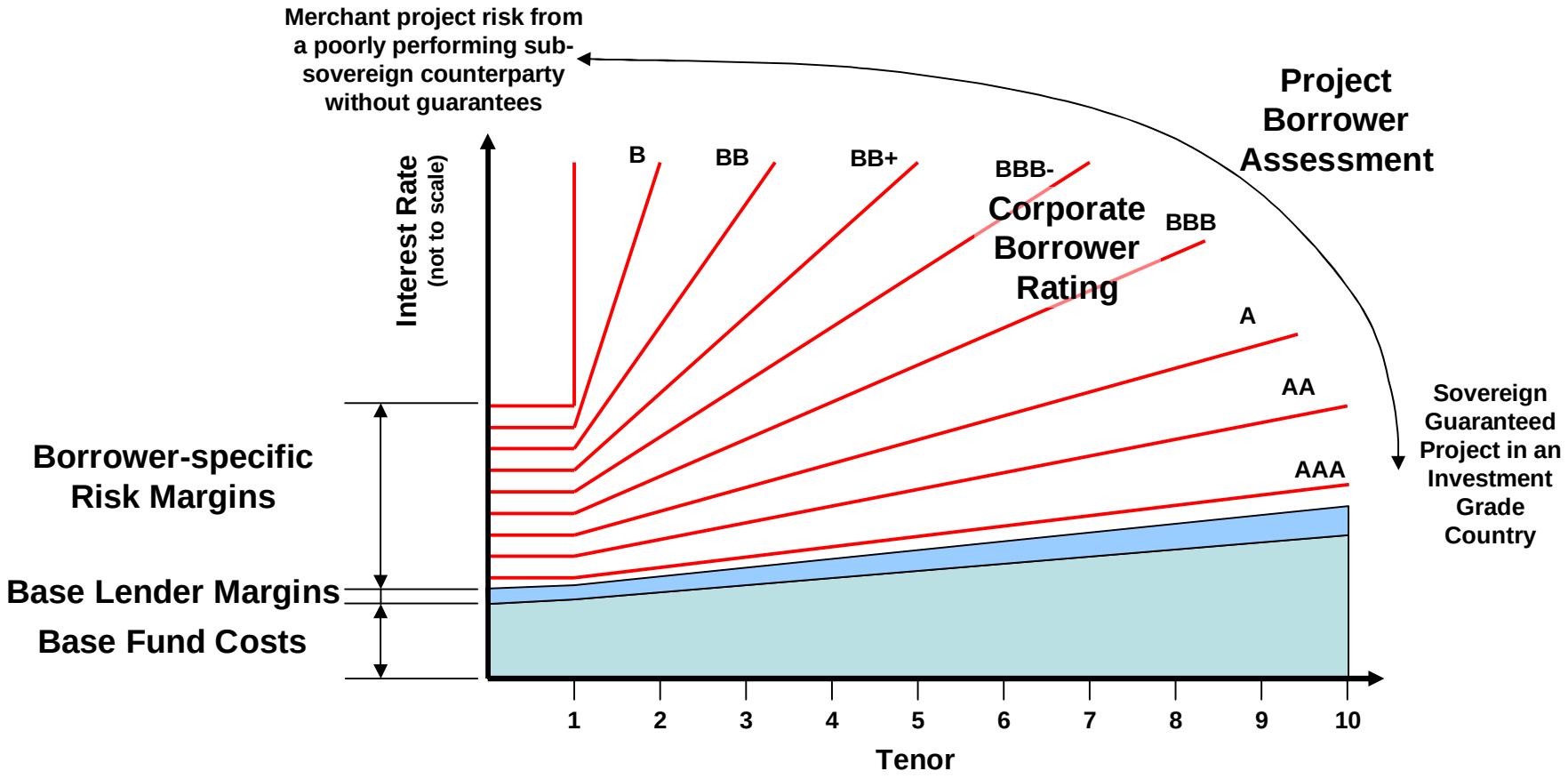
- Many potential borrowers and policymakers start with the hypothesis that European capital looks cheaper therefore should be used
- This simplified conjecture fails to account for how capital is priced
- Influences on pricing
  - Base cost of funds to the lender
  - Overheads and base profit margins for the lender
  - Borrower-specific risk factors
- Need for hedging and supports
  - Exchange rate fluctuations need to be covered off – at a cost to the borrower – either through:
    - Hedging programmes
    - Cash reserve provisioning
  - Insurance and/or guarantees may be required beyond the cost of the debt itself that can require
    - Contingent liabilities that tie up balance sheet capacity
    - Purchasing insurance or guarantee products that add cost to borrowing

What makes foreign currency debt expensive?

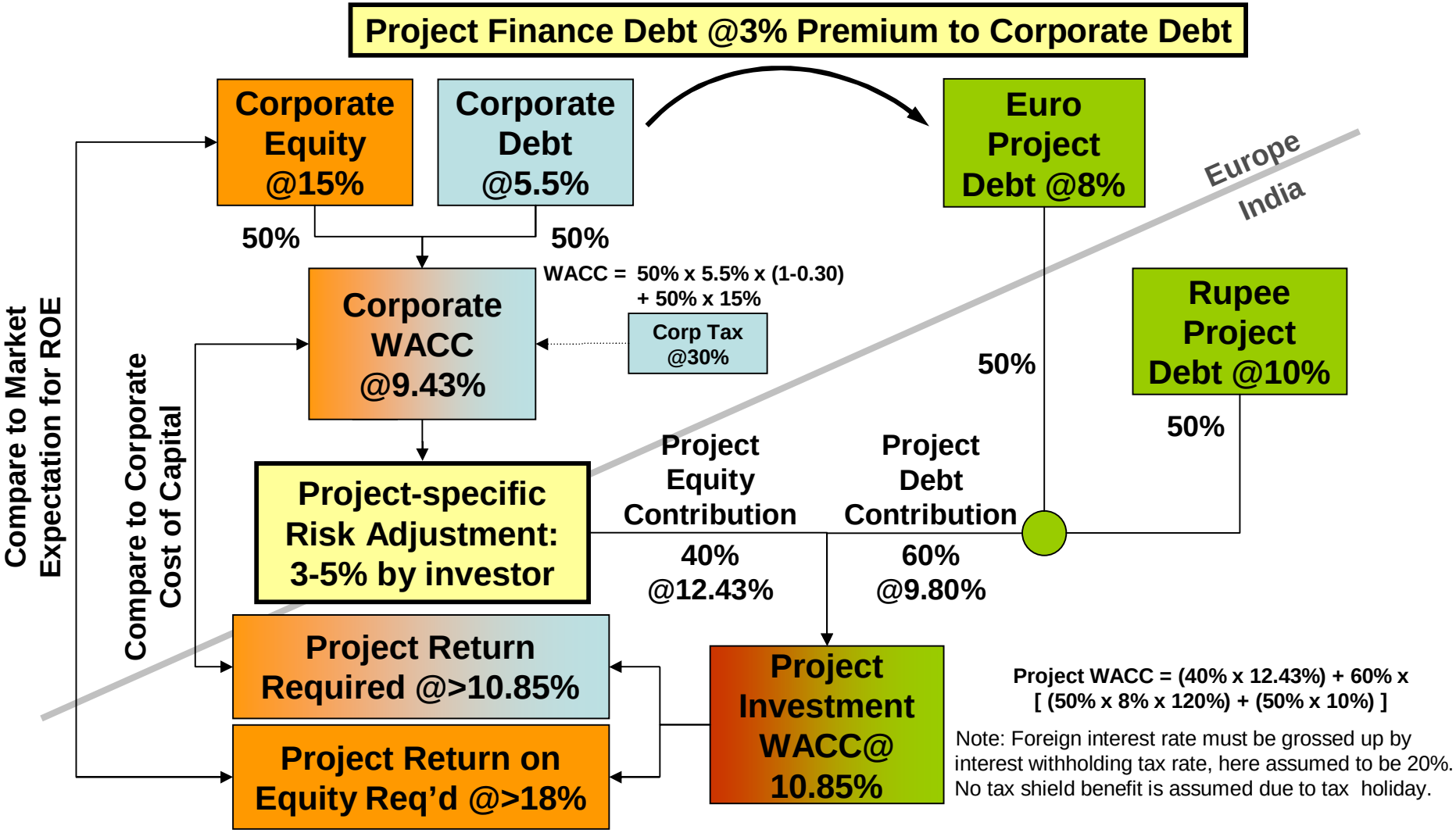
- **Risk and risk perception**
  - Perception is reality; this directly impacts cost of funds
    - Lenders will adjust interest rates and investor will adjust return requirements to account for risk
- Top risks: **Credit risk** and **Policy risk**
  - The combination of these risks dramatically impacts cost and tenor available – particular for project finance
  - Second order risks
    - Currency risk – hedging against fluctuations over the term of the debt
    - Technology risk
- **Other costs**
  - Interest withholding tax
    - Borrowers need to gross up interest charges to cover the 10-20% withholding tax on foreign interest payments
  - Fees
    - Lenders will add fees to deals they believe are more difficult to complete

Relationship between tenor and pricing

The risk profile of the borrower, whether corporate or project-level, greatly impacts the tenor and price available for debt



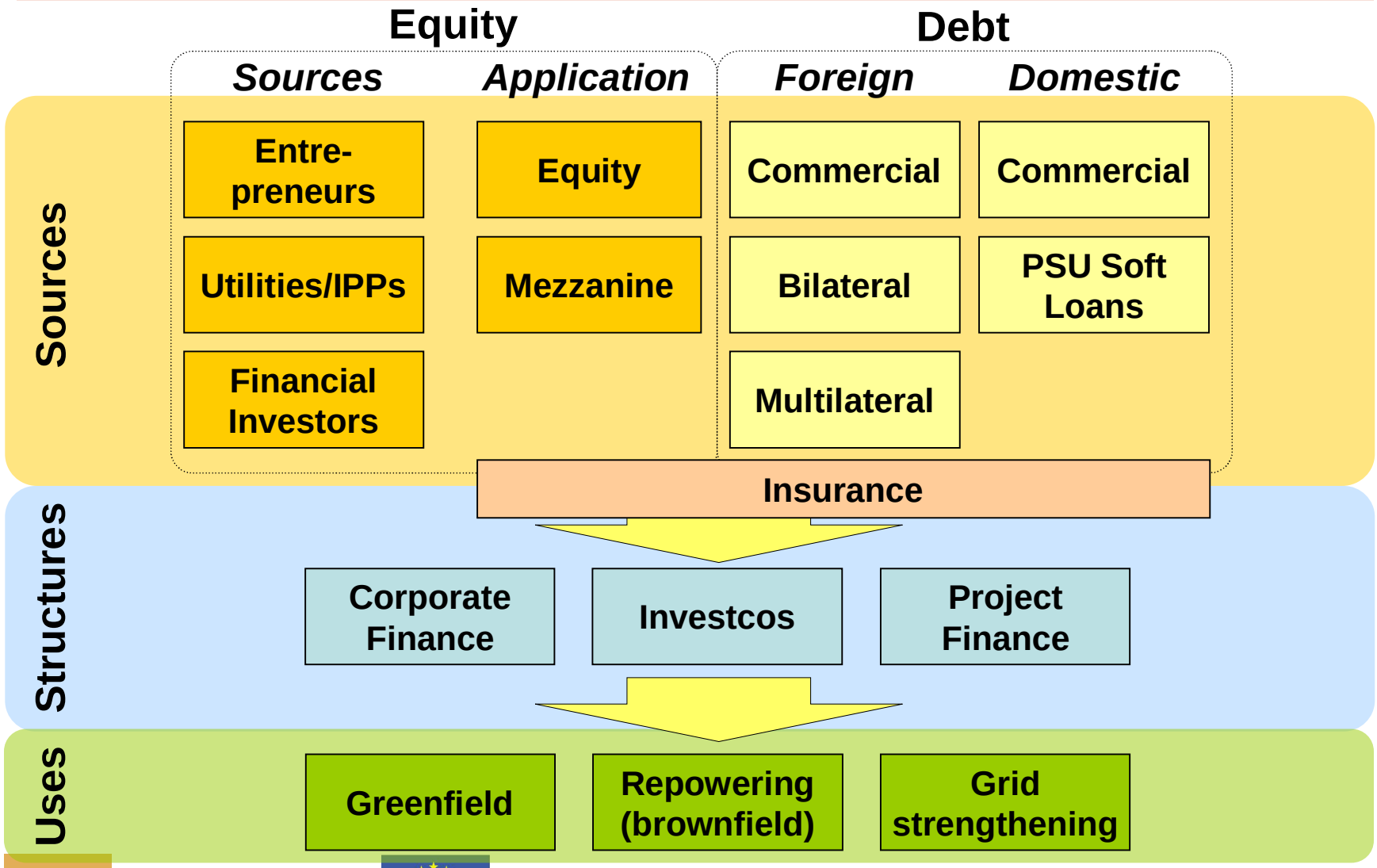
Euro corporate vs. Indian project cost of capital: example



India wind financing tool kit

- **Structuring**
  - Use existing assets as a foundation for new financing
    - Modern windfarms
    - Repowering older technology windfarms
  - Financial engineering
- **Policy supports**
  - Special Economic Zones
  - Open Access Transmission
- **Funding sources**
  - ‘Soft’ Rupees
  - Bilateral ‘green’ money
  - Equity funds
  - Corporate finance
  - Project finance

Source, use & method of wind project funding



Special economic zones

- SEZ rules implemented in February 2006
  - 50 have been approved
  - Over 150 more are pending
- Well suited to export oriented manufacturing operations
  - Several states looking to set up renewable energy technology parks
- Tax breaks and incentives for establishing power generation to support SEZs infrastructure requirements
- Potential to sell up to 50% of the power outside the SEZ
  - May be possible to wheel electricity from one SEZ to another
- Some discussion about ‘power-only’ SEZs
  - But potentially violates spirit of the rules, thus potentially risky

Open access transmission

Policy context

- Electricity Act 2003 called for open access to the grid
- Open Access Transmission Rules at the Central level were issued in 2005 covering inter-state transmission
- States have been developing and implementing intra-state transmission access and pricing
  - But policies are not uniform, at times not clear, and are being tested within regulatory commissions

Bottlenecks

- Grid upgrades, enhancements needed to get power to load centres

Critical importance

- Fair, balanced transmission pricing and access is the key to integrating resource appropriately located wind farms to paying customers
  - Potential to create ‘virtual’ windfarms of larger scale through links

Use of trade receivables to access Euro funds

Indian companies want to make use of Euro earnings to borrow Euro debt

- Only applicable to corporate borrowing
- Only applicable to companies that have substantial net foreign currency denominated receivables
- Advantages
  - Currency matching of loan and payments eliminates depreciation risk
- Drawbacks
  - Receivables by their nature are short-term in nature, measured in weeks rather than years
  - Thus, can be unpredictable over the long-term
  - May create a tenor mismatch between the very long maturities required for funding long-lived fixed assets
- Cautions
  - Need to provide sufficient cash flow buffer to cover variations in sales, cost of goods sold, exchange rate fluctuations over time
  - Lenders will still want to know how the funds are going to be used and will price risk in accordingly

CDM: an environmental value-adder

- **Certified Emission Reduction certificates (CERs)**
  - CERs have potential of *enhancing* project level cash flow
    - Lenders do not view them as a substitute for underlying economics, despite the 'additionality' requirement under CDM
  - Extremely difficult to fund a project on the basis of CER cash flow – especially for wind project loans
    - Post-2012 uncertainty
    - Need to verify delivery; nature of wind introduces uncertainty
    - Currently taxed in India like a dividend
  - CER cash flow can be used as *additional* security to support debt, but not likely as the *basis* for borrowing
  - Equity would need to take the CER risk

Project Finance: pros and cons

Challenges

- Higher transaction cost
- Need for more detailed project-level analysis/due diligence
  - Wind resource
  - Technology
  - Contracting
- Restrictive covenants
  - Cash flow requirements
  - Security
  - Dividends
- Default triggers often beyond borrowers control
  - Counterparty actions
  - Government policy changes

Benefits

- Potential to achieve higher leverage than possible/desirable within a corporate entity
- Better capital efficiency for corporate
- Ability to isolate risk of project away from corporate balance sheet
- Ease to create, enter, and trade out of joint ventures

Project Finance: how to make it happen?

- **Create scale in the investment**
  - Larger projects better able to absorb the costs and effort of PF
  - Use open access transmission rights to create larger 'virtual' farms
- **Use SEZs to enhance economics**
  - Develop as part of SEZ power supply infrastructure
  - Create renewable energy SEZs
  - Wheel power to SEZs
- **Mitigate risks**
  - Insurance products
  - Guarantee structures
  - Tap industrial power purchasers to increase credit quality / diversify
- **Transmission access critical**
  - Need fair, balanced and reasonable policy and pricing
- **Tap renewable equity and bilateral funds**
  - Equity is receptive to wind
  - Certain bilateral development agencies have removed tie to national investors in favor of supporting renewable energy

Investcos – a solution to Indian wind dilemma?

- **An investment company is a special purpose company that is used to invest in a series of wind projects**
- **Investcos may be a way to tap true limited recourse finance**
  - Greatest hurdle already surmounted: Projects already completed on corporate balance sheets
    - Indian wind turbine manufacturers in developing their own wind farms have made use of their own capital resources to complete projects
  - Provides means to unlock fiscal potential / increase financial efficiency in current assets; creates potential to
    - Leverage existing assets
    - Use existing assets as collateral/cash flow base for new projects
  - Ability to bundle projects together that may be of sub-optimal scale on an individual basis
  - Creates an off-balance sheet funding source for new project development

How to make use of Investcos

- **Sell equity stakes in the newly-formed Investco**
  - Injection of existing assets and/or development projects can help improve attractiveness
- **Define expected investment commitments from the Investco**
  - Can require subscription to a specific capital commitment
  - Can create tranches/rounds of funding
- **Fund new projects**
  - Equity from Investco
  - Shareholder loans from Investco – either senior or subordinated
- **Project funding options remain flexible**
  - Presence of an Investco does not preclude involvement of joint venture partners at the project level
  - Individual projects can raise project-level debt
- **Supplemental financing and/or refinancing**
  - Additional equity raising can be done from private or public markets
  - Investco itself can be leveraged to increase reach of capital

Recommendations

- **Policy innovation**
  - **Fair and reasonable open access wheeling tariffs are essential**
    - Allows link between good wind sites and consumers
    - Direct sales will help alleviate pressure on SEBs to meet feed-in tariffs
  - **Transmission infrastructure enhancements urgently needed**
    - Entire regions should benefit from the availability of renewable energy
    - Bottlenecks negatively impact economics and detract from investment
  - **Shift incentive focus to encourage longer-term investments**
    - Accelerated depreciation benefit not conducive for long-term sustainability

Recommendations

- **Investor innovation**
  - **Creative bundling and investment structuring will allow the scale necessary to project finance wind farms**
    - Investcos
    - Virtual windfarms via transmission links
    - Repowering
  - **Make use of SEZs**
  - **Cooperation between European investors – whether utilities, IPPs or financial entities – can then be tapped to:**
    - Make more efficient financing packages
    - Fund additional investment in a cost-effective manner

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Supplemental Material

- Current industry project funding structure in India
- Risk factors
- Cost of capital
- Receivables financing
- Investco structures

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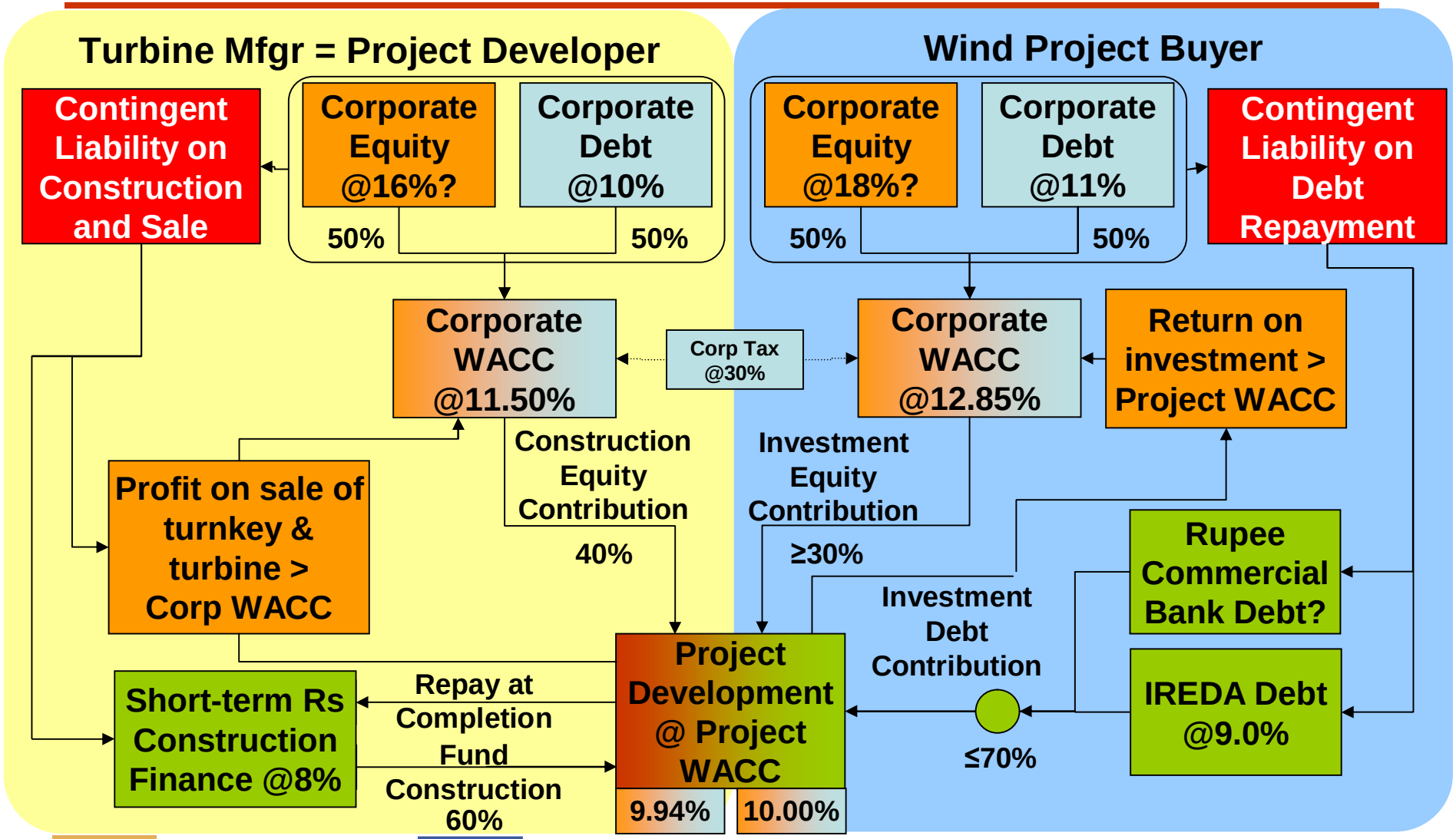
Current industry project funding structure in India

India wind project investment format



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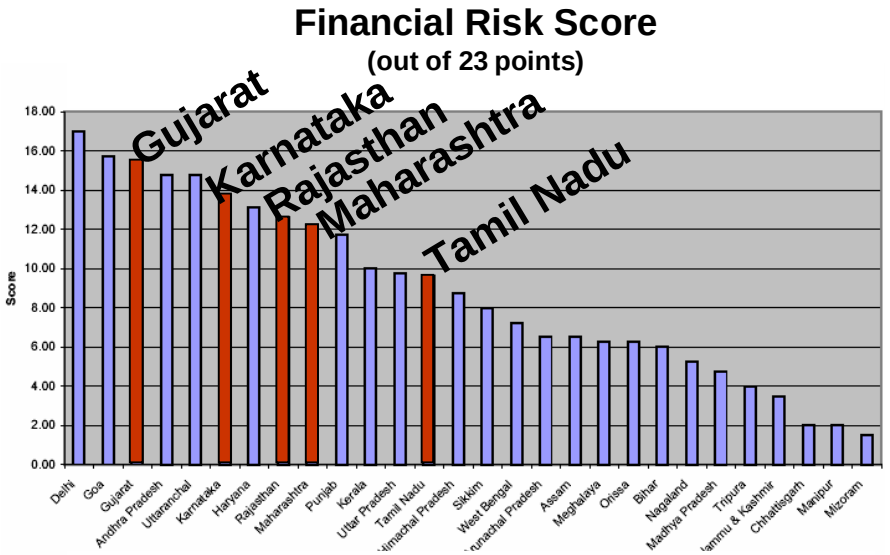
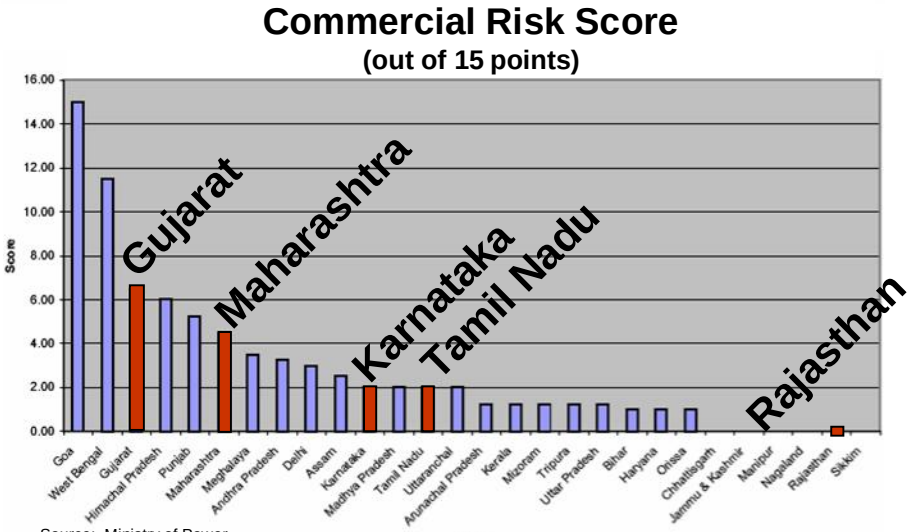
Risk Factors

Credit risk

- SEB/Utility credit risk is the number one issue impacting the attractiveness of the Indian wind sector
- Payment risk under PPA's is the key criteria lenders use to assign lending margins
  - Alternatively, they will seek on-going support from equity or other guarantors, increasing cost
- MoP's on-going SEB score card assessment illustrates the level of commercial development required
  - The top 5 wind states are shown





Source: Ministry of Power

Financial risk scores are out of 23 points. All except five states scored below 50% on this metric.

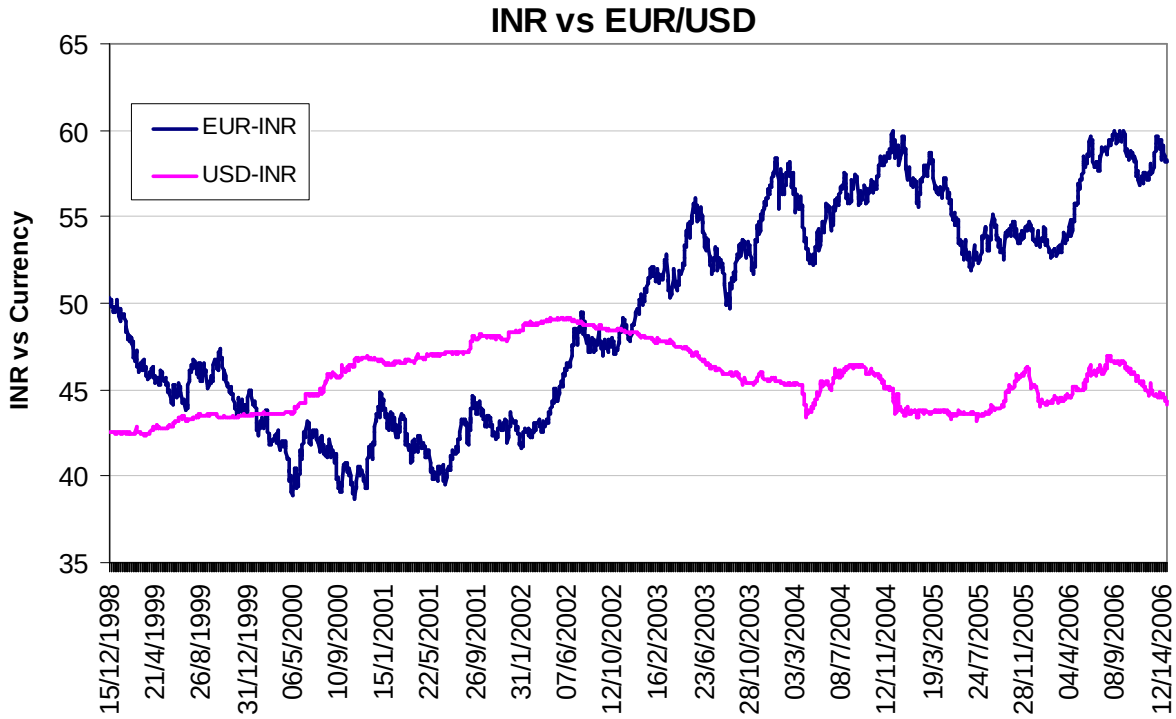
Commercial viability scores are out of 15. The status of the public utilities is plainly evident from this metric.

Policy risk

- Credit risk is related closely to Policy risk
- Currently policy supports are needed to make renewable energy viable
  - Feed-in tariffs support renewables development
    - These tariffs range from INR2.50-4.00/kWh – well above average conventional on-grid tariffs to wholesale generators
    - Some of these tariffs have unlimited escalation over the life of their PPAs
- Renewables subsidy/incentive programmes have potential to exacerbate the fiscal deficit woes at SEBs/utilities
  - Ultimately require additional direct subsidy from State budgets
  - States with the largest renewable portfolios are the most at risk
- On-going cost of supporting large-scale renewable energy portfolios needs to be assessed
- There is significant political risk associated with renewables programmes
  - Changes of government could see revision of the incentives depending on fiscal and economic climate at the time

Currency risk

- Euro-INR exchange rates have experienced significant volatility over time
  - 20%+/- over 1998-2006
- A EUR loan entered into in 2000 would require 50% more INR today
- Absence of a deep, long-term and cost-effective swap market does not allow investors viable options to lay-off currency risk



Historic exchange rate data source from www.OandA.com

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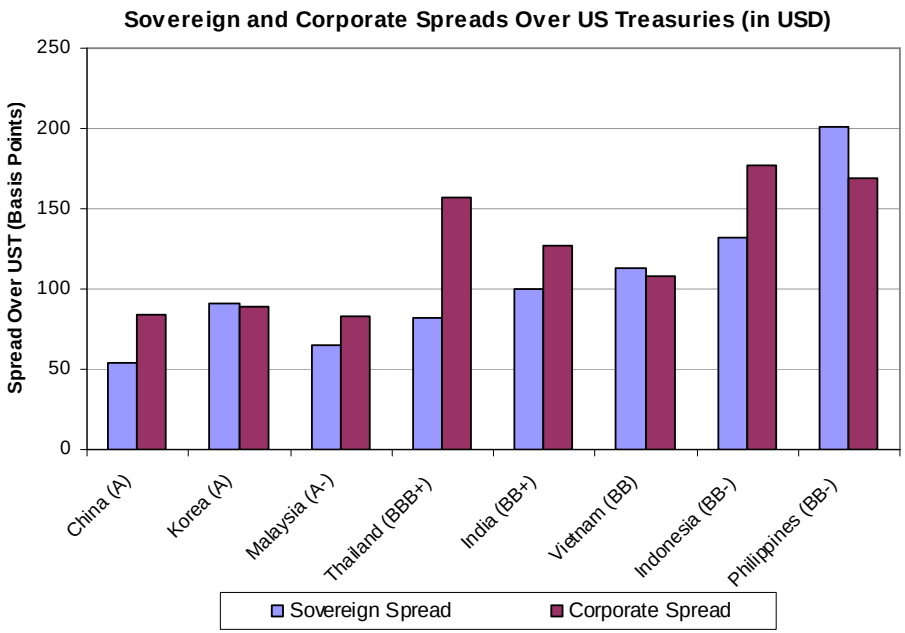
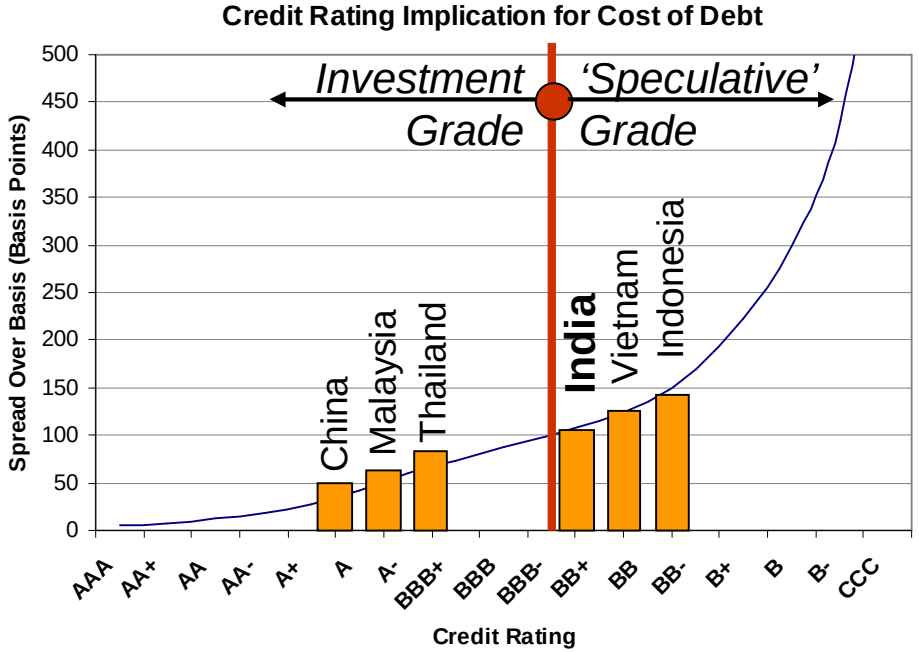
Cost of Capital

Credit rating vs debt cost of capital

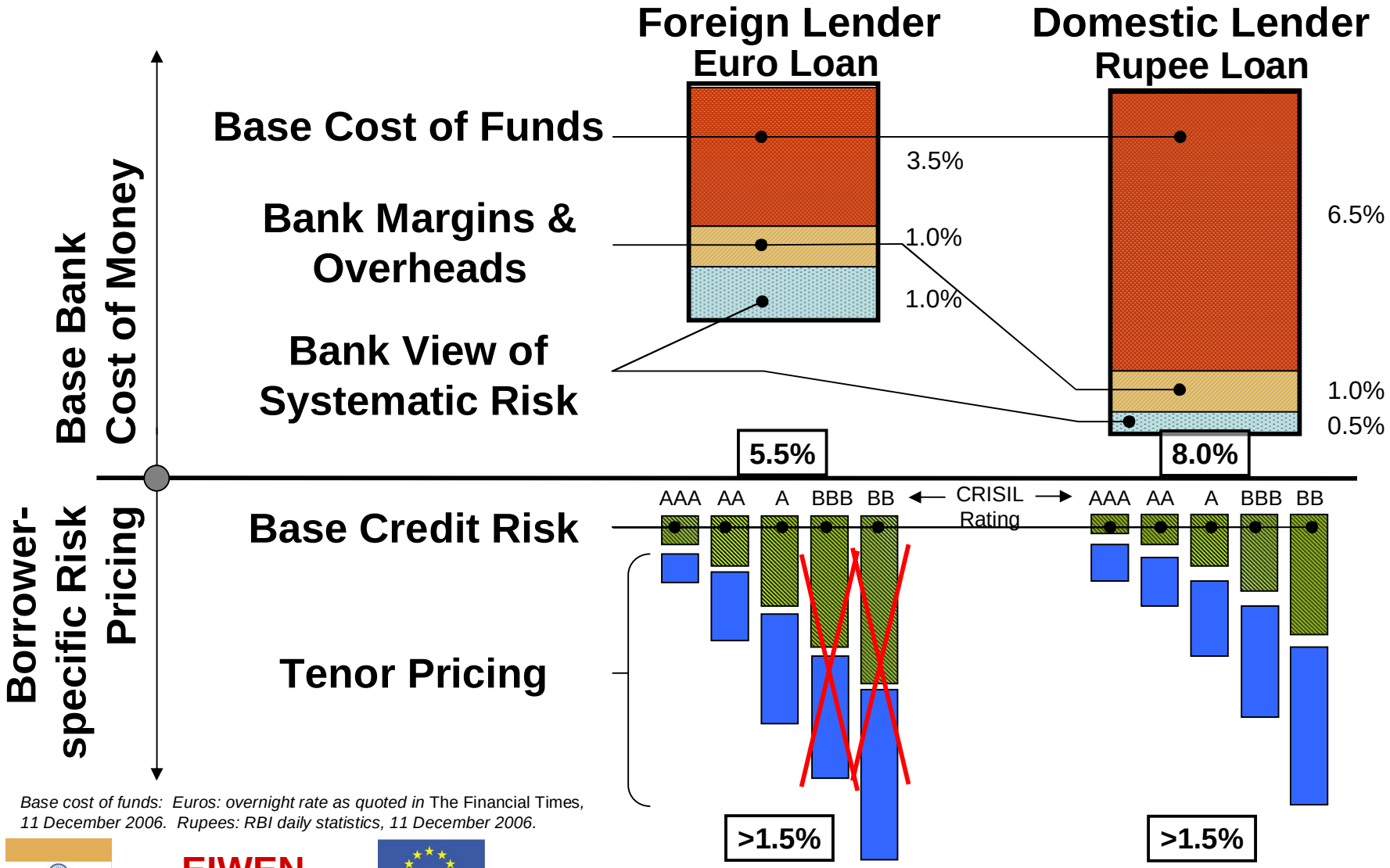
- The debt capital markets require exponentially higher risk margins as credit ratings drop
- In India's case, its BB+ sovereign rating adds a minimum of 100 bp to the cost of borrowing at the sovereign level
- For sub-sovereign debt (e.g. utilities, SOEs), this spread can be considerably higher





Sources: *Credit ratings: Standard & Poor's; Sovereign spreads: www.asianbondsonline.adb.org 5 January 2007;
Corporate spreads: HSBC Asian US Dollar Bond Index,.3 January 2007 (HSBC proprietary corporate proxies)

Debt cost of capital – Corporate Finance



Base cost of funds: Euros: overnight rate as quoted in The Financial Times, *11 December 2006. Rupees: RBI daily statistics, 11 December 2006.*

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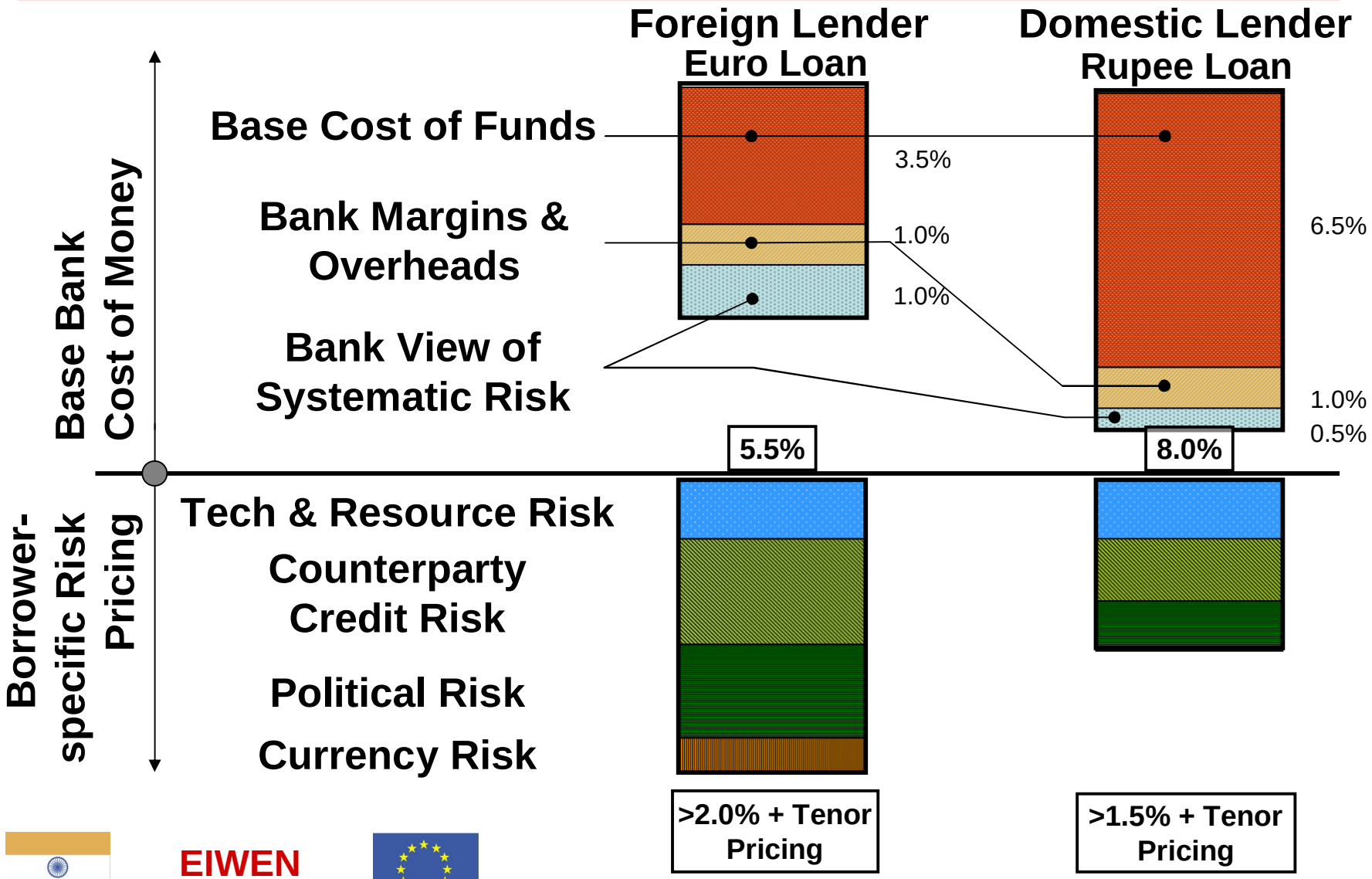
Debt cost of capital – Project Finance



Foreign investor equity return requirements

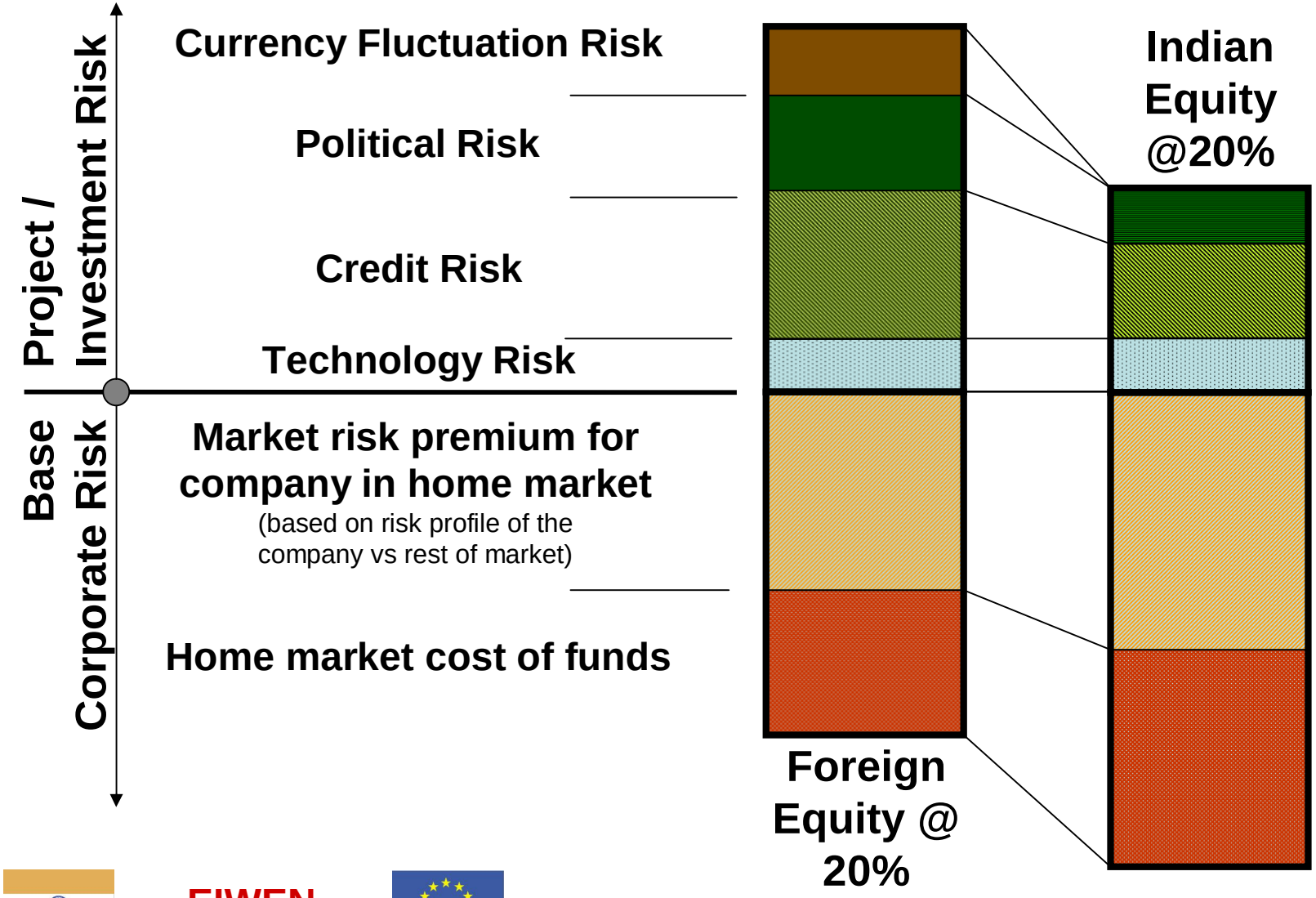
- Need to look at a cross-border investment from the perspective of the foreign investor's home market
  - What is needed to satisfy shareholder requirements in their home country?
- For most Western investors, the historic required return for a β=1.0 investment in India is around 20-21%; currently, given that Western equity markets have returned about 15-16% in 2006, expected returns from India are likely to be higher

Expected Equity Market Returns for Investments in India & Belgium

	Investment Destination			Expected Home Mkt Return
Investor Origin	India	Belgium	Difference	
Australia	21.50%	12.12%	9.38%	12.95%
Canada	20.79%	10.75%	10.04%	10.18%
France	21.52%	12.58%	8.94%	12.34%
Germany	20.57%	11.26%	9.31%	11.14%
Japan	18.17%	8.96%	9.21%	10.02%
United Kingdom	19.60%	11.88%	7.72%	11.41%
Credit Rating	BB+	AAA		

Source: based on analysis conducted by Ibbotson Associates in their publication International Cost of Capital Perspectives Report 2005, available for a charge from www.ibbotson.com. The website discusses the analytic methodology in more detail.

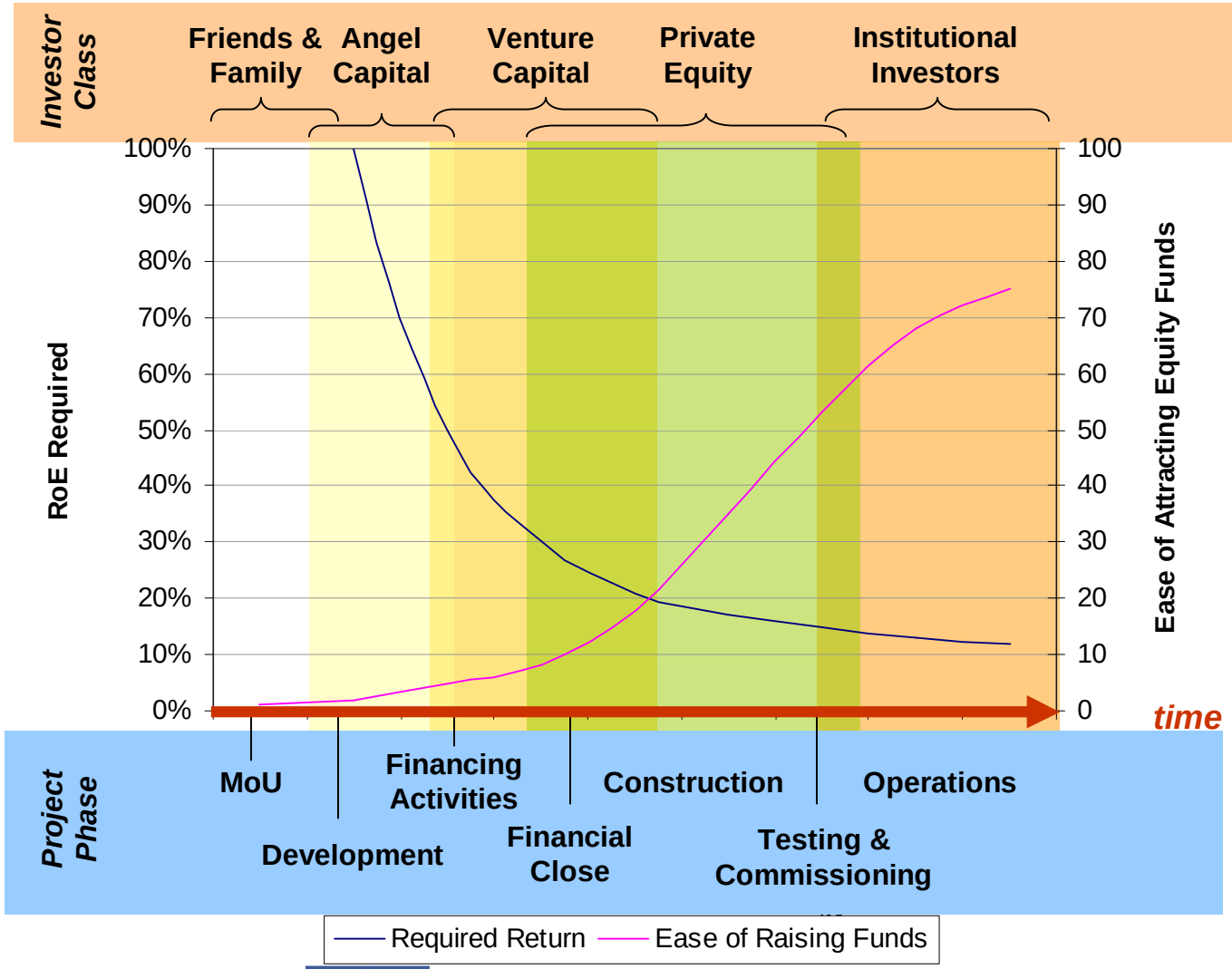
Equity cost of capital – not created equal



Equity: Time of entry issues

- **The earlier in the development cycle, the higher the required return**
- **Limited number of investors interested in early stage project development – mostly entrepreneurs only**
  - Supply-demand-risk relationship dictates the need for higher return to such investors
- **Most investors in Asian infrastructure require project returns that are in the *high teens-to-low twenties***
  - Most of the these projects have cash flow coming from government or state-owned entities
  - If a given project has a long-run return in the higher range (i.e. 20%+) and an economic or political stress event occurs, that project is likely to be among the first to take the hit
  - Thus a reasonably low return needs to be targeted in order to maintain long-term viability of the asset
  - This is incompatible with many foreign investors needs/requirements

Equity fund source-stage-return relationship



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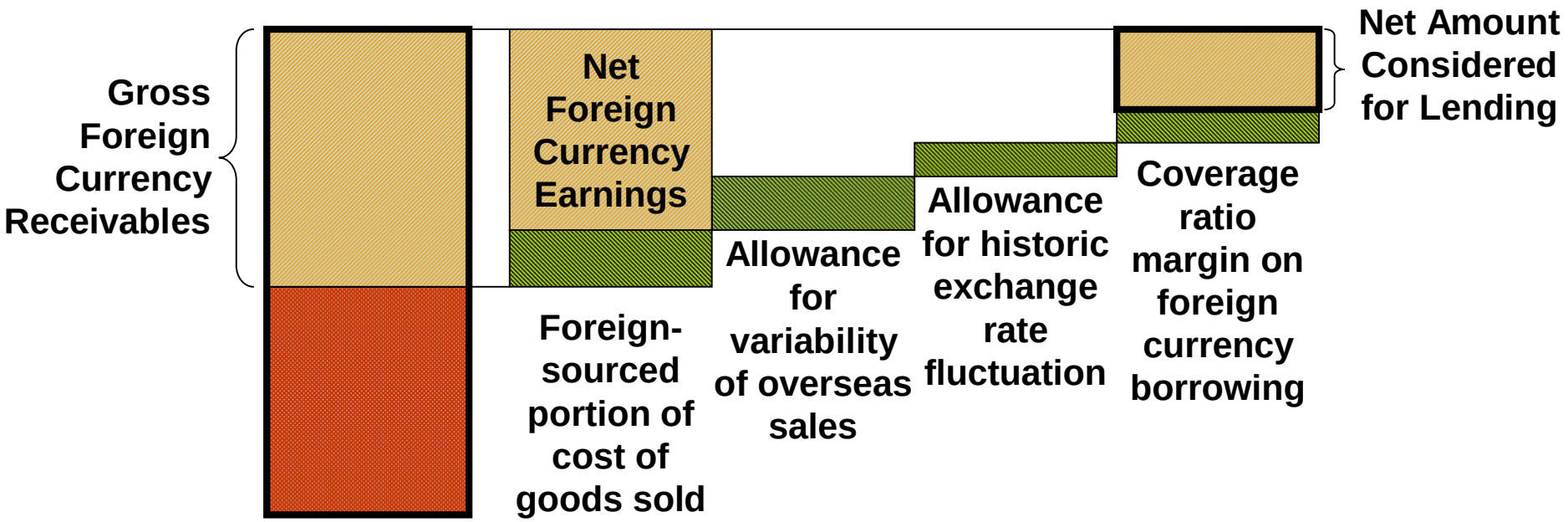
Receivables Financing

Receivables: downside credit risk analysis

- Only a fraction of a company's net foreign currency receivables can be considered as a basis for foreign currency loans
- Key considerations
  - Foreign currency receivables net of foreign cost of goods sold
  - Reliability of recurring net foreign currency earnings
  - Volatility in exchange rates
  - Ability of the company to cover foreign currency debt from all resources
- Term available on such loans will be limited



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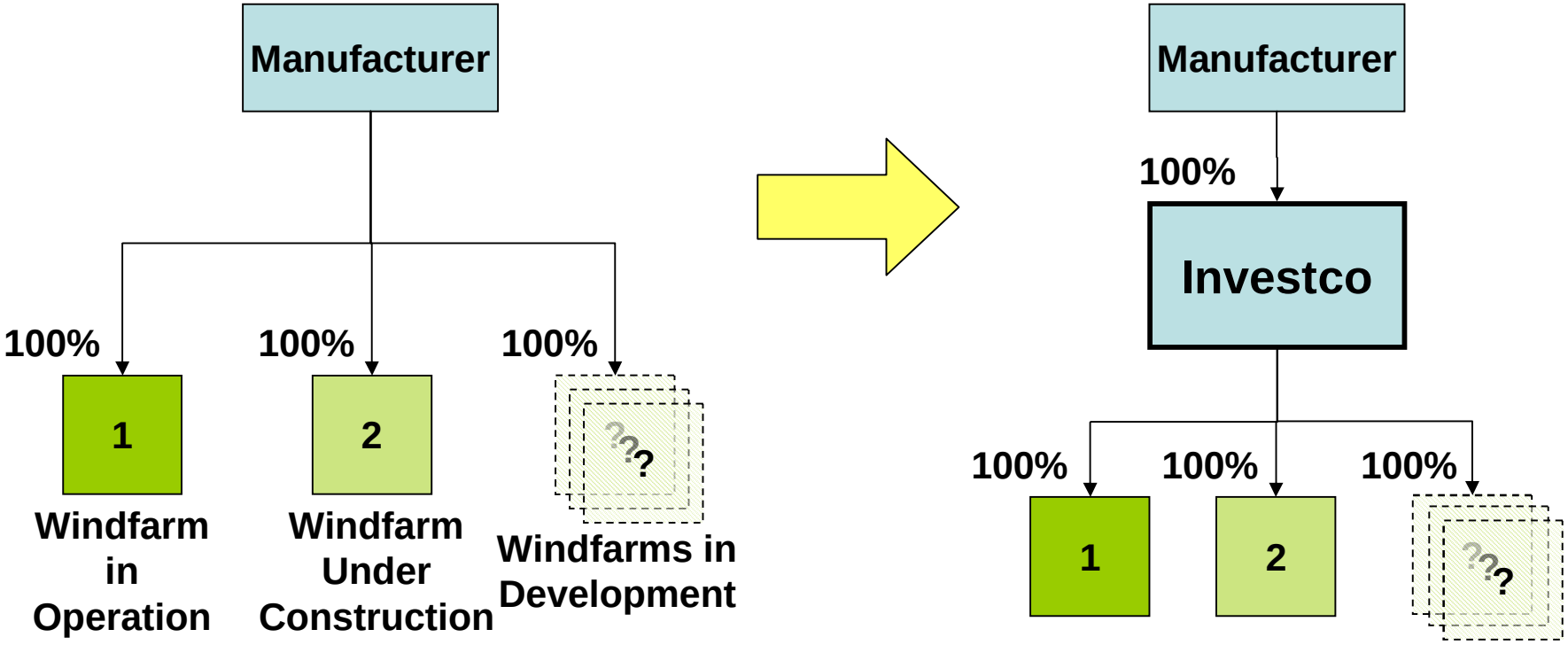
Investco Structures

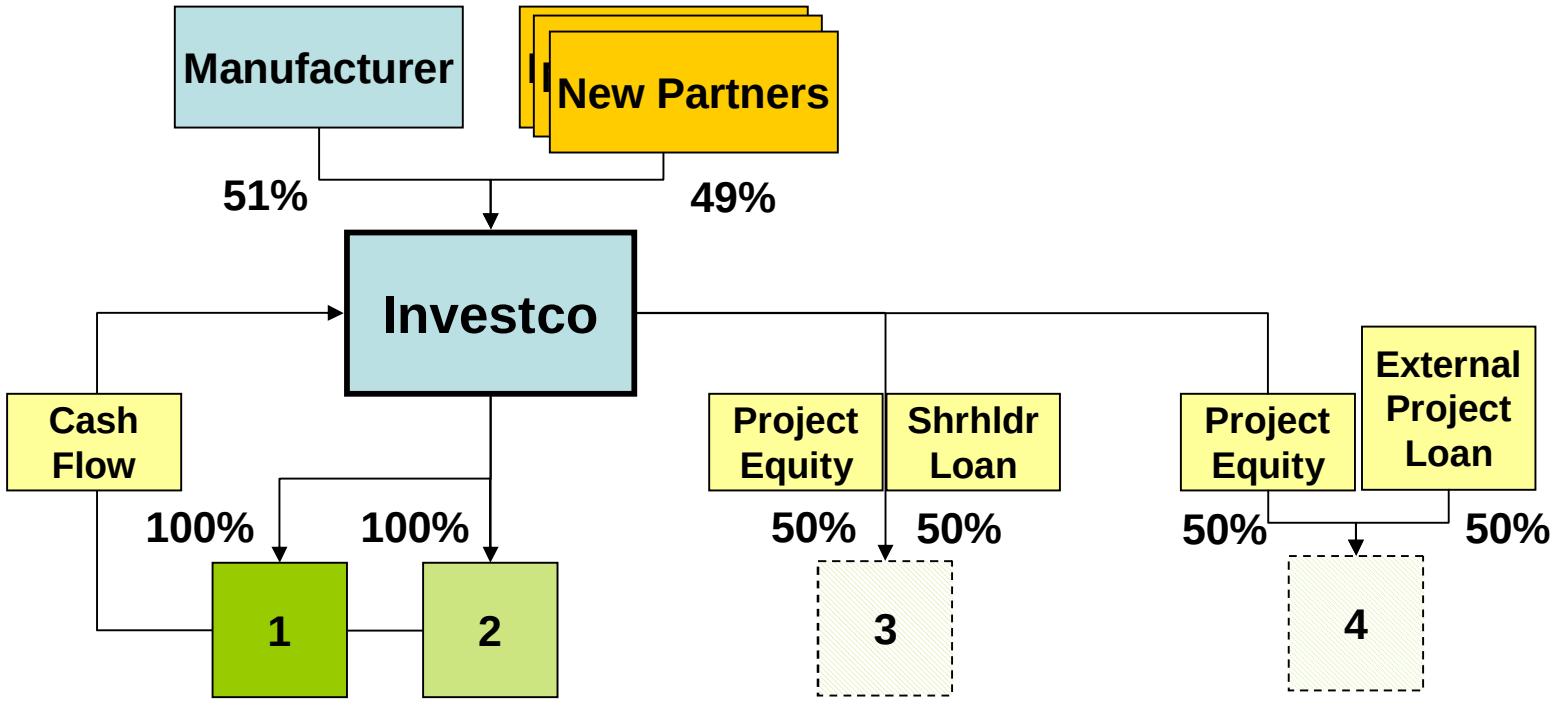
Investco step-by-step

- Take existing assets and inject them into an investco
  - Preferably a mix of operating assets and near-term completions
- Have one or more pipeline development prospects
  - Assign development rights in new projects to the investco



Investco: first stage project funding

- Initially, if necessary the Investco could fund projects from its own equity pool – comprised of New Partners' equity injection plus project cash flow
- 'Debt' can be sourced as either or a combination of shareholder loans or external, project-based debt
- Existing project cash flow is used as a quasi-corporate finance guaranteed source of support for new project loans



Investco: second stage funding

- As the Investco matures and operating cash flow improves, new funding options open
  - Investco corporate debt facility – revolving credit, longer-term loan/bond
  - Private placement of new shares
  - Initial public offering of the Investco