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IFC- ESMAP RENEWABLE ENERGY TRAINING PROGRAM

Overview of Private Project Financing

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June 16-18, 2014
Washington DC

Private Project Financing

Project Finance

- Long-term infrastructure financing based on non-recourse or limited recourse structure
- Project **DEBT** and **EQUITY** paid back from **Project Cash Flows**
- Financing secured by project assets and revenue-producing contracts, not sponsor's balance sheet
- Lenders receive lien on all project assets and can assume control of project if project company has difficulties complying with loan terms
- Special purpose entity created for each project

Private Project Financing

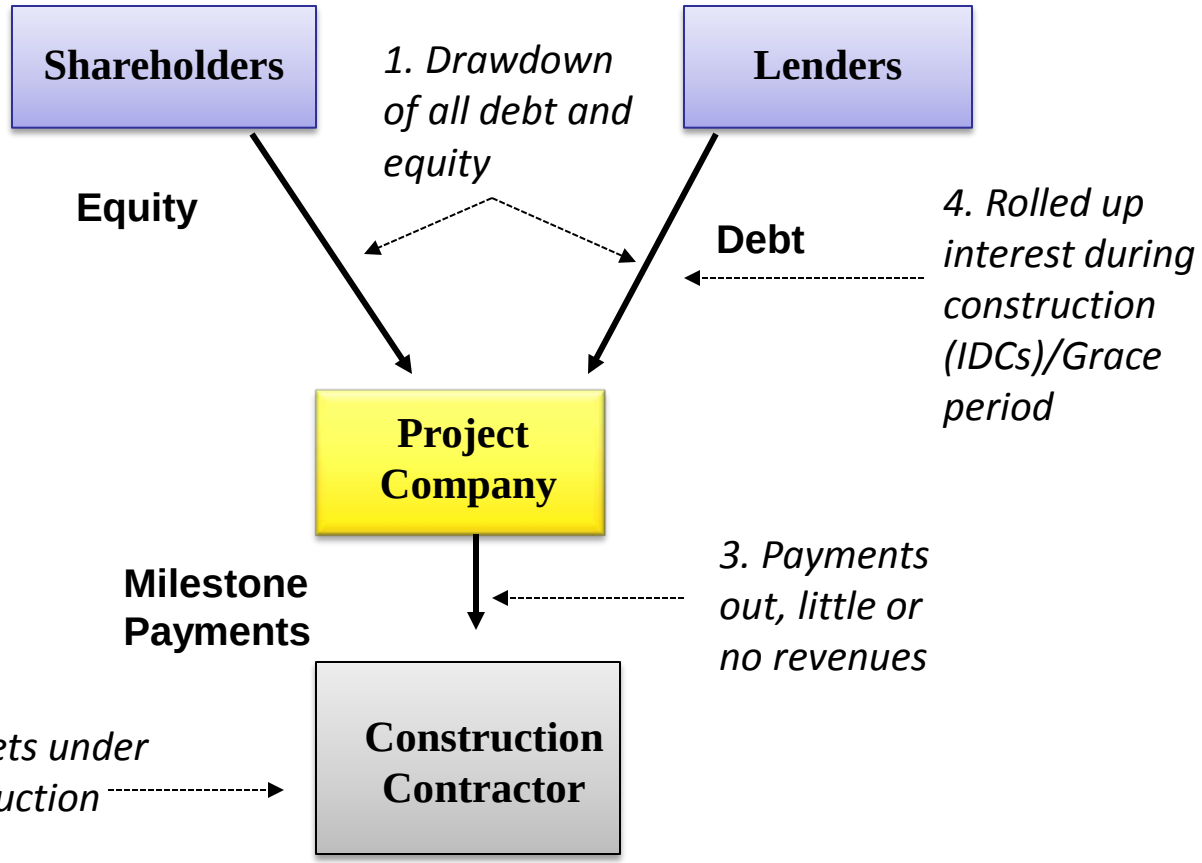
Project Finance

- Projects evolve through two distinct stages: **construction** and **operation**
- Financing “made to measure” – structuring tends to be costly; only justifiable for large-scale projects
- Bulk of investment aimed at tangible assets
- Project’s assets pledged to lenders/creditors
- High leverage (70:30 / 80:20)
- Long-term (20 + years)
- Limited life-span - only purpose of financing is to complete project

Private Project Financing

Construction Phase

Construction represents risk intensive phase of project



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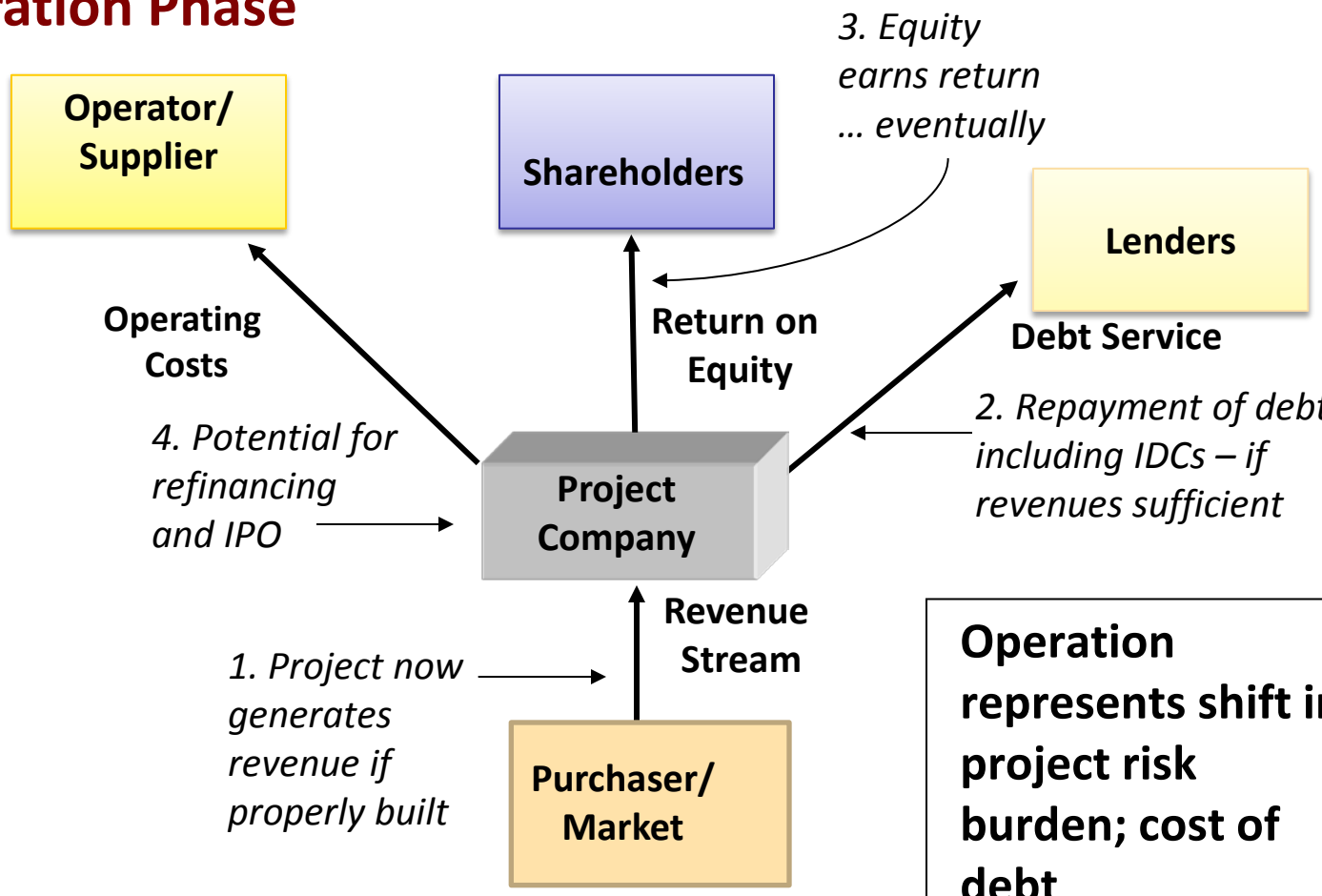
Operation Phase



Operation represents shift in project risk burden; cost of debt

Private Project Financing

Key Stakeholders

Sponsor	• Equity investor(s) / owner(s) of Project Company – single party, or consortium • May act as sub-contractors, feedstock providers, or offtaker to Project Company • Government/Procurer may also retain ownership stake in project and be a Sponsor
Procurer	• Municipality, department of state responsible for tendering project to private sector, running tender competition, evaluating proposals and selecting preferred Sponsors to implement project
Government	• Contractually provides undertakings to Project Company, Sponsors, or Lenders ; may include credit support for payment obligations (real or contingent)
Contractors	• Substantive performance obligations to construct and operate the project (EPC, O&M)
Supplier / Offtaker	• Typically in utility, industrial, oil & gas and petrochemical projects • Contractually obligated to 'offtake' (purchase) product or service produced by the project • Feedstock/Offtake contracts are a key area of lender due diligence; critical to the overall economics of the project (i.e. the input and output prices of the goods or services being provided)
Lenders	• Commercial banks and/or multilateral agencies and/or export credit agencies and/or bond holders

Key Participants to a Project Finance

Project Sponsors - provide equity to project; have experience in particular area of project focus

- High correlation between lead sponsors' core area of expertise and project focus increases chance of success
- In emerging markets, lenders and government want to see EPC contractor with 'skin in the game' and fees gives parties comfort contractor will work more diligently to secure its own equity returns from the project

Key Participants to a Project Finance

Third Party Contractors

- **EPC contractor** responsible for delivering fully operational facility – on date-certain, fixed-price basis
- **Operation and Maintenance (O&M) operator** operates and maintains project assets upon completion of construction and entering into commercial operation.
  - O&M operator - may be member of sponsor group, but always with particular expertise operating and maintaining assets similar to the project

Private Project Financing

Key Participants to a Project Finance

Lenders – provide debt capital to project

- Ensure risks allocated to project company are in turn passed on, as much as possible, to the various subcontractors (EPC, O&M)
- Interested in financial strength and technical capability of subcontractors, and terms of project contracts
- Bankability – availability of banks willing and able to provide project financing
- "step in rights" – allowing lenders to step into shoes of project company in the event of non-performance

Key Participants to a Project Finance

Off-taker- provides cash revenues; basis of financing

- Creditworthiness: cash-flow readily available, in full, on time
- External credit support required to underpin creditworthiness and mitigate risk of non-payment

End-users – government, tax payers, consumers

- ultimate beneficiaries of project; actual users of completed asset or services

Private Project Financing

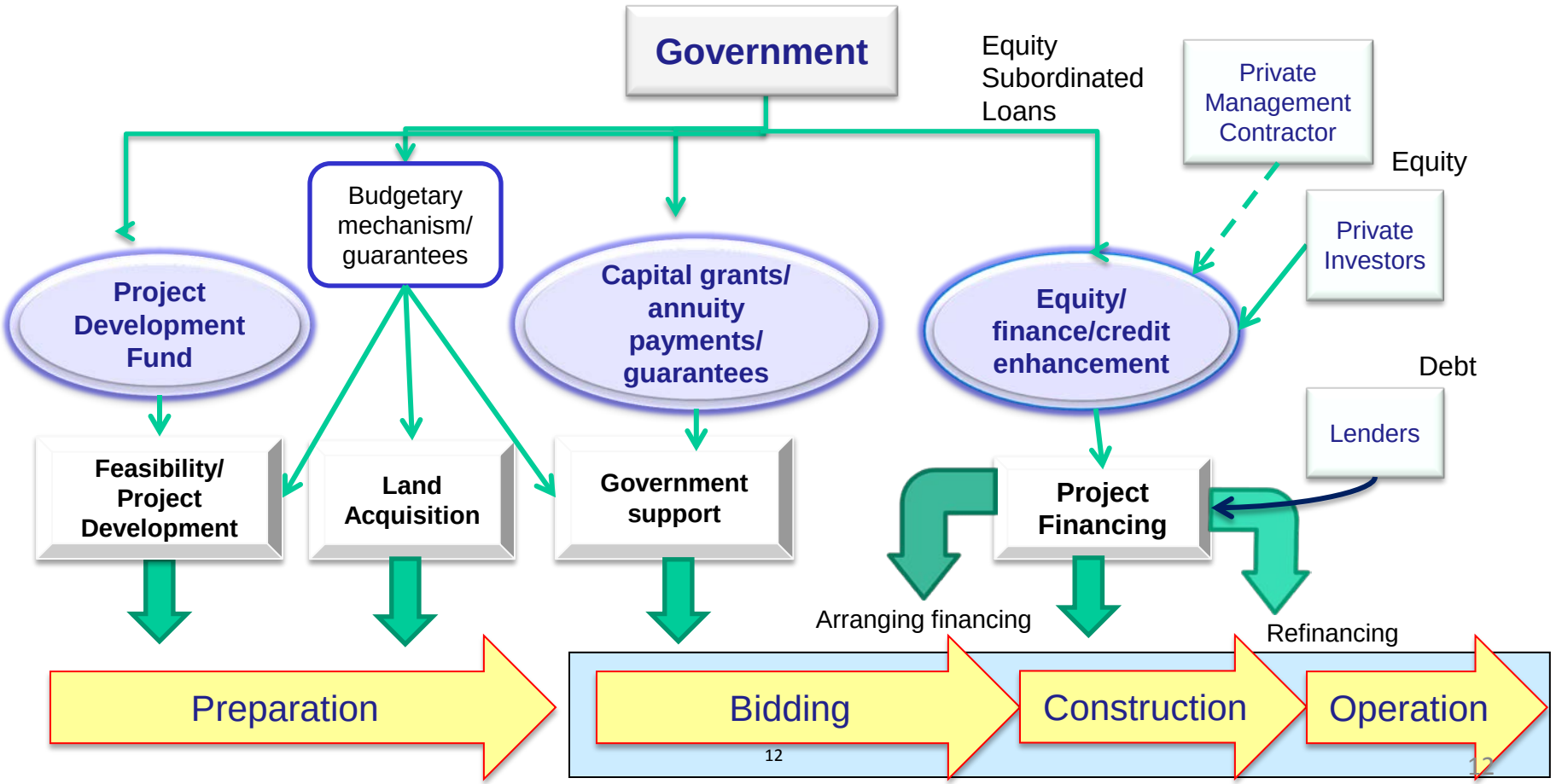
Key Participants to a Project Finance

Market Regulator - governmental entity providing market oversight

- Regulation by contract, law or appointment of an industry regulator
- More developed markets have regulatory oversight
- Emerging markets have newly instituted processes
- Body of experience limited with greater emphasis on contractual arrangements

Private Project Financing

Government - the first "P" in PPP



Private Project Financing

Private Sector – the second "P"

Risk management

- Procurement efficiency – cost and time of construction, financing, operation and maintenance
- Design/construction/operation – single point
- Performance criteria
- Discipline/due diligence/project assessment

Innovation/technology

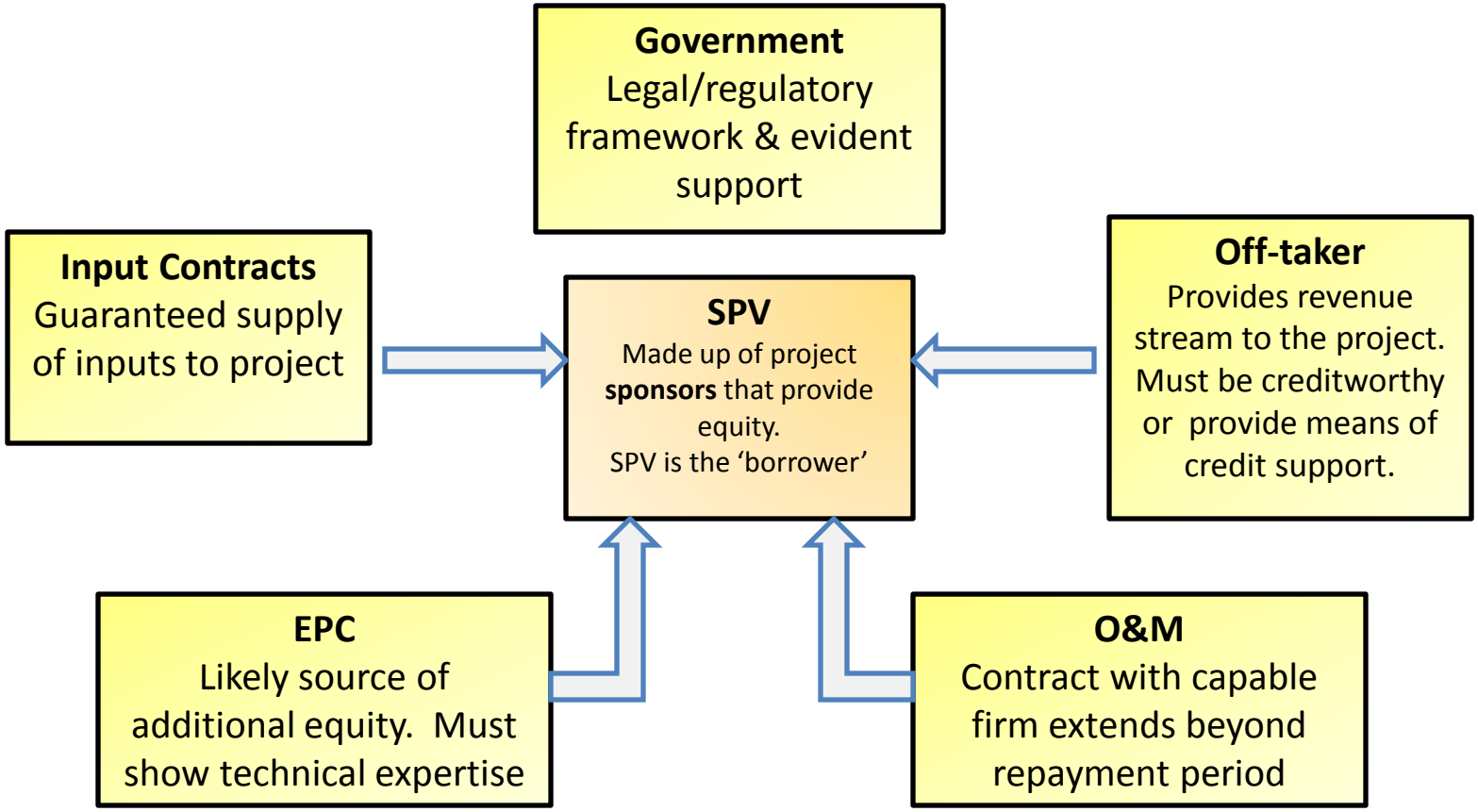
- Though maybe not fast moving technology (long-term contract)

Finance

- Governance
  - Accountability
  - Performance standards
- New sources/fiscal space
  - FDI
  - Local financial markets

Private Project Financing

Basic Transaction Structure



Private Project Financing

Sources of Finance

Government (taxpayer) financing - *Borrower is Government*

- Public sector lending, grants, subsidies or guarantees of indebtedness;
- Risk free rate, resource allocation, fiscal space, efficiency

Corporate financing - *Borrower is Investor*

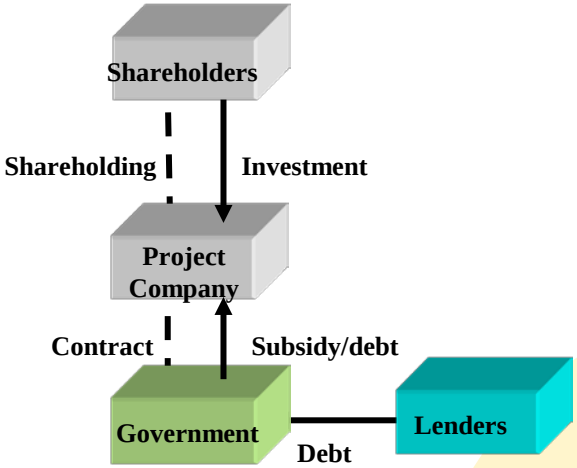
- Financing to the project company or a sponsor company against proven credit risk and ongoing business.
- Cost of money due to lost opportunities

Project financing - *Borrower is SPV*

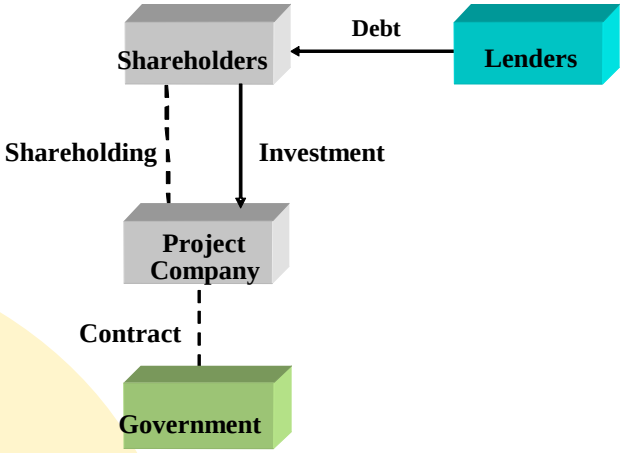
- Limited recourse off balance sheet financing to a special purpose vehicle project company (SPV) relying primarily on future cash flow of the project for repayment.
- Cost of money, WACC/leverage

Private Project Financing

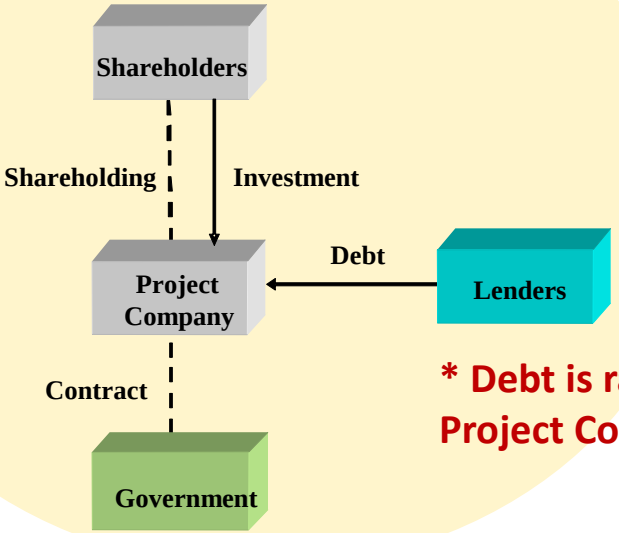
Government Finance



Corporate Finance



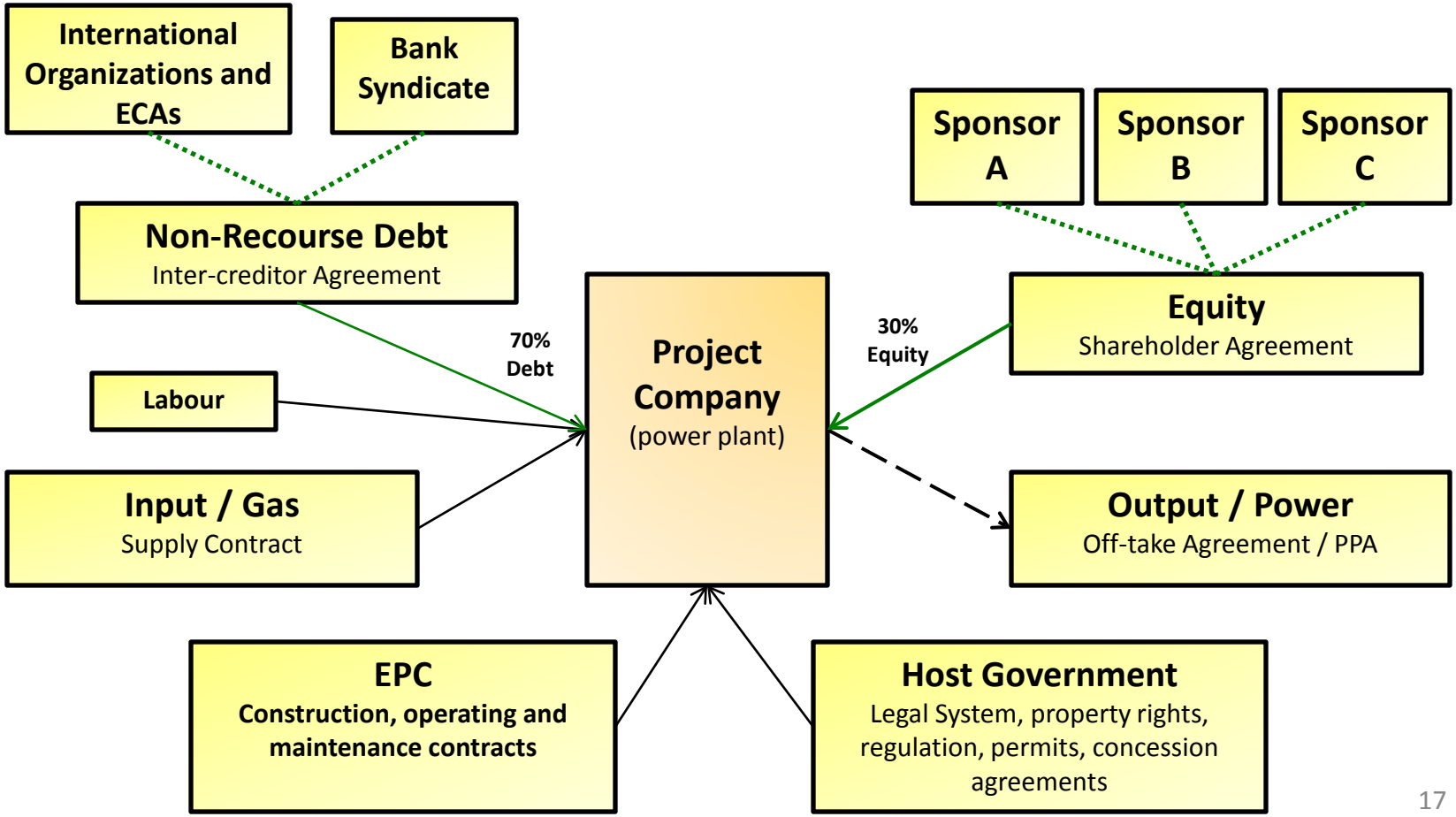
Project Finance



*** Debt is raised at the Project Company**

Private Project Financing

Basic Project Finance Structure



Private Project Financing

Corporate Finance vs. Project Finance

Item	Corporate Finance	Project Finance
Usage	Multipurpose	Single purpose
Duration	Variable	Long-term and limited by the lifetime of the project
Financial Structure	Debt-holders not related	Debt-holders tied by general agreement
Risk analysis	Highly dependent on financial statements and cash flow	Highly dependent on financial statements and cash flow In addition, technical considerations, contractual agreement and the debt structure are very important
Liquidity of financial instruments	Can be high if negotiated on capital markets	Generally low, as the financial agreement is private, made to measure and filled with contractual relationships
Financial costs	Relatively low	Relatively high, owing to both the structuring costs and the low liquidity of the instruments
Room for management to make decisions	Plenty if company has open capital	Little, owing to the rigid contractual structure
Agency costs	High if company has open capital	Low, as the contractual structure leaves little margin for independent action by the partners

Source of Finance Implications

Project	Public	Private
selection	Political/social returns	Commercial returns
Governance	Public sector/utility	Public/private – performance oriented
Procurement	Construction input price – lack of funding for maintenance	Cost of service, whole of life management
Cost over-runs	Public purse – tendency to manage through change orders	Additional capital required – tight risk allocation on contractor
Delays	Political implications	Significant financial losses - focus on completion

Source of Revenues

Users

- Tariff profile – cross-subsidies
- Cost of access for new consumers (water and power)

Taxpayers

- General tax base revenues
- Specific tax base revenues
- Vehicle tax
- Betterment levies, e.g. adjacent property owners

Private Project Financing

Contractual Matrix: Non-Loan Documents (Project Agreements)

- Pre-development Agreement
- Shareholder's Agreement
- Concession / License
- Construction Contract: cost-plus, fixed price turnkey, EPC-M
- Supply Agreement: long-term, spot, take-or-pay
- Sales Agreement: PPA, off-take
- Operating Agreement: incentives, penalties
- Insurance Packages: *construction phase* - all risk, marine cargo, delay in start-up; *operational phase* - banker's clauses

Lender's Security

Key mechanisms lenders use to secure lending:

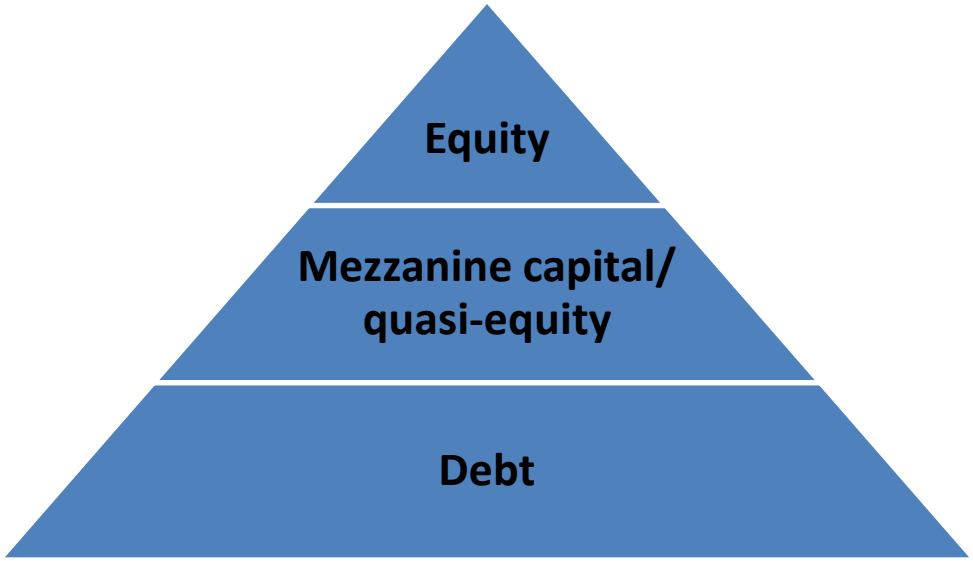
- Share Pledge and Retention
- Guarantees and Indemnities
- Mortgages and Charges
- Assignment of Accounts, Proceeds, Revenues
- Direct Undertakings and Collateral Agreements
- Standby Equity or Debt
- Default, Cross-Default and Step-in Rights

Project Financing and Risk Allocation

Project financing is an exercise in the equitable allocation of a project's risks between the various stakeholders of the project

Risk Profile and Capital Types

- Project Gearing: Debt/Equity Ratio
- Project with minimum risk attract highest volume of debt
- The higher the Risk, the more Equity required



Highest Risk
- Return Expectation 15%+

Medium Risk
- Return Expectation 8%-15%

Lowest Risk
- Euribor/Libor + 1.5%/3.0%

*returns are in USD

Risk Allocation and Mitigation

3 Major Risks to Allocate

- Pre-Completion Risk
- Operating Risk
- Market Risk

Risks Arising Due To Nature of IPPs

- Foreign Exchange Risk
- Fuel Risk
- Political Risk

Interface Risks

- **Off-take Agreements** – projects rely on timely and reliable purchase from creditworthy off-taker (a state-owned entity)
- **Connecting Infrastructure** – supply and evacuation infrastructure; who is responsible for funding; will it be completed prior to project operations, what conditions for use
- **External Interface Risks** – Project designed as an integrated whole. Private sector manages the risks of integrating such different components.
- **Supply Agreements** – are necessary inputs secured in sufficient quantities for sufficient period of time

Sovereign and Non-Sovereign Risks

Country (Economy wide) Risks

"sovereign risks"

- **Political Risk** (expropriation, political violence, Gov't breach)
- **Regulatory Risks** (pricing formulas, right of way, currency convertibility & transfer)
- **Legal Environment** (rule of law, judicial system, access to justice and arbitration)

Project Specific Risks -

"non sovereign risks"

- **Completion Risk** (engineering & construction cost, time, performance, defects)
- **Operational Risk** (technology, quality, cost, technical & operational know-how)
- **Environmental and Social Risk** (future liabilities, project delays, costs overruns)
- **Credit Risk** (project leverage)

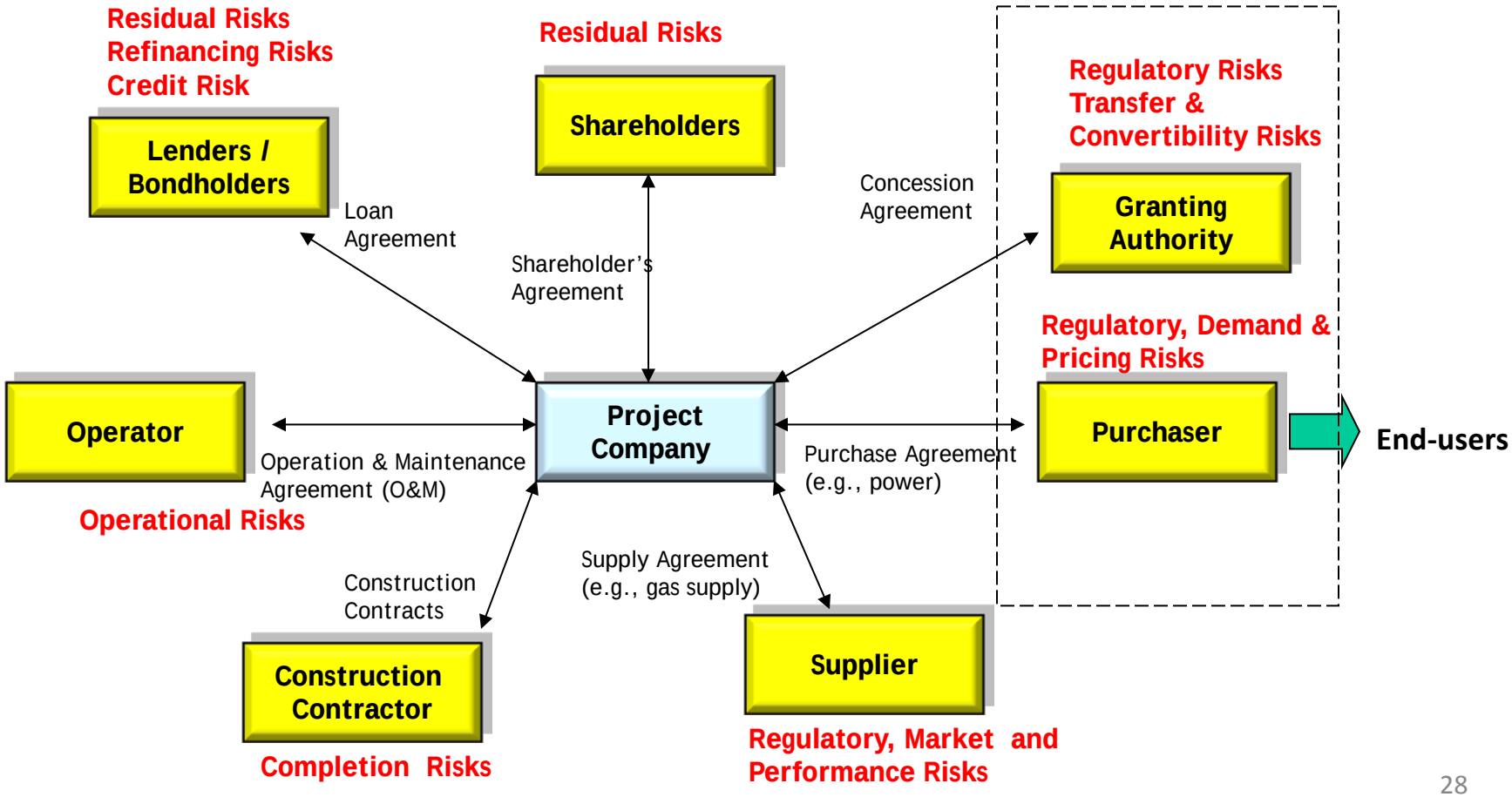
Demand Risk (traffic/usage)

Environmental Risk (past liabilities)

Pricing Risk (regulated and non-regulated)

Financial Risk Inflation, refinancing risk, interest rate and exchange rate fluctuations

Sovereign and Non-Sovereign Risks



Private Project Financing

Construction Risk Mitigation

- **Contractual arrangements** and associated **guarantees**
- **Lines of credit** and contingency funds - cost increases or contingencies
- **Insurance** – Contractor's All Risk, Delay in Start-up, Marine Cargo
- **Contingent and callable equity**

Operational Risk Mitigation

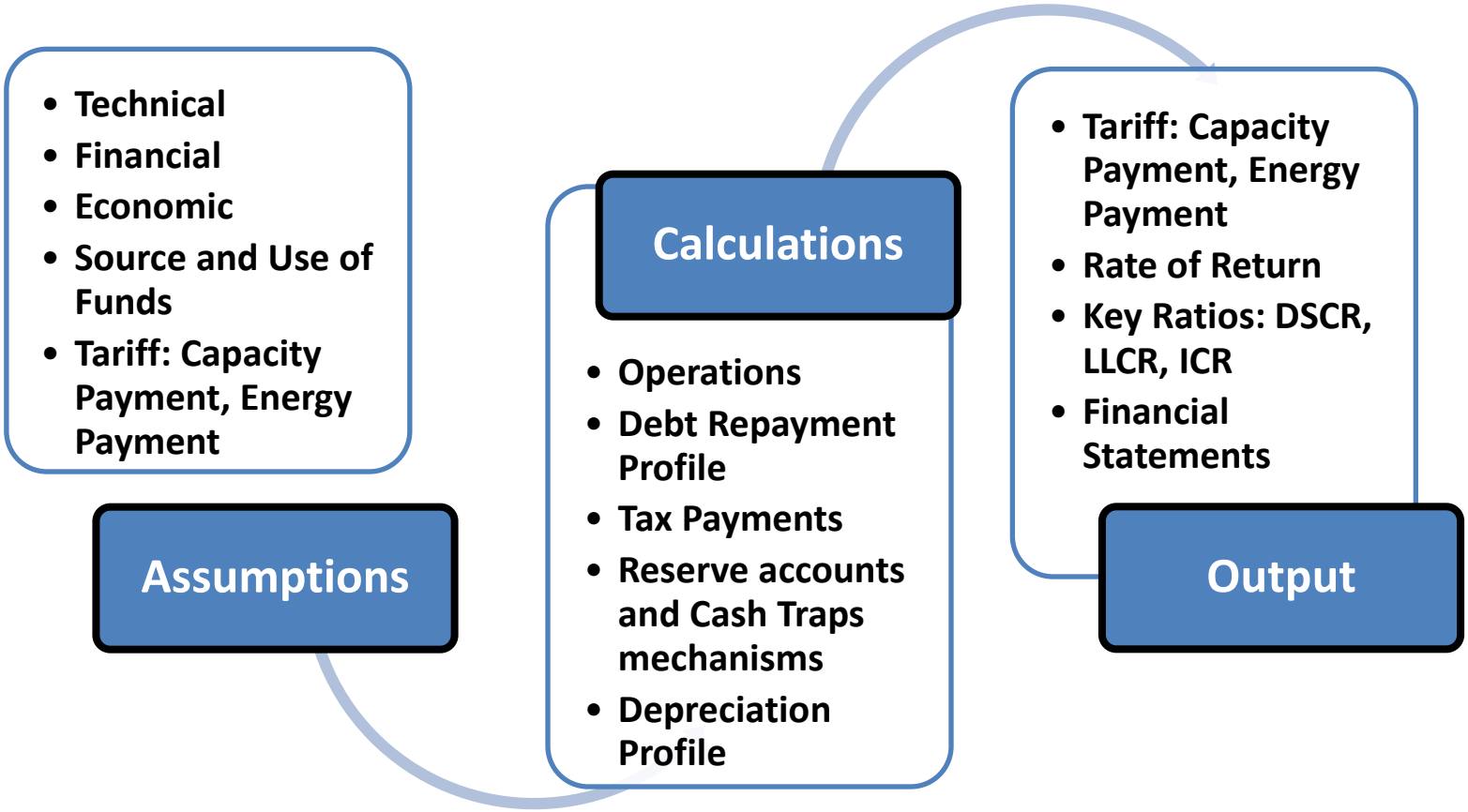
- Contractual arrangements (**take-or-pay**, put-or-pay, and pass-through)
- Contingency reserves to cover debt service or extraordinary maintenance
- **Cash traps** - where the cash-flow margins or debt service cash reserve account is insufficient to cover required lender margins
- **Insurance** - property damage, loss of revenue, business interruption
- Third-party **guarantees**

Private Project Financing

Providing Risk Mitigation to Lenders and Investors

- Escrow account arrangements to cover payment risk
- Capital subsidies to the Project using the grants and subsidized loans available to Government
- Partial financing by ECAs and multilaterals
- World Bank guarantees for payment and termination risks
- MIGA Political Risk Insurance to cover residual risks

Structure of a Project Finance Model



Financial Ratios

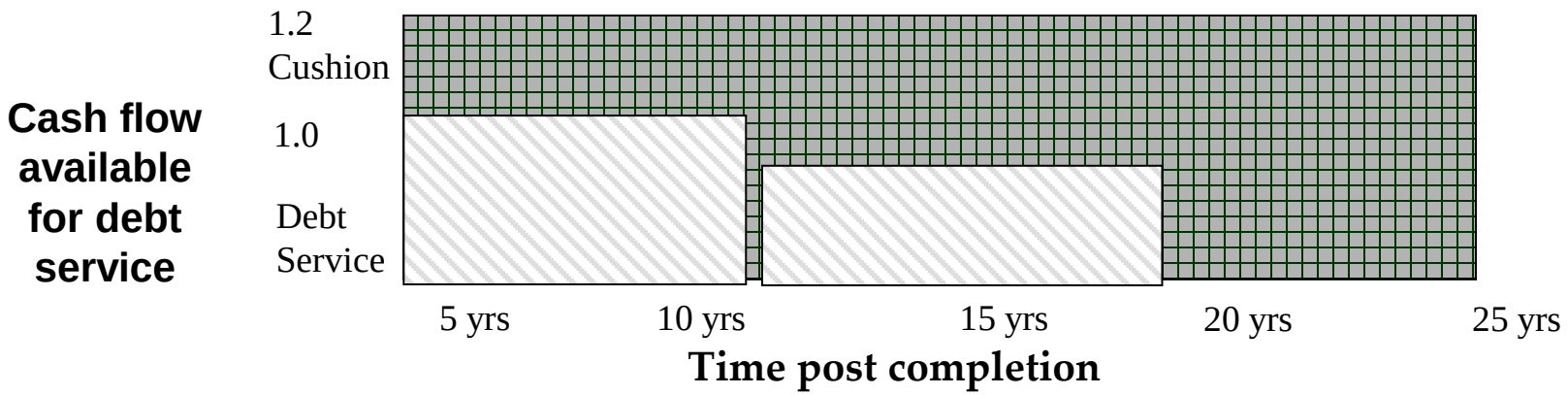
Quantify aspects of the project company's business and operations; analyze project's financial position

- Debt/Equity Ratio (D:E Ratio) - long-term debt / shareholders' equity
- Loan Life Cover Ratio (LLCR)- NPV of available cash for debt service up to the maturity of the loan, divided by the principal outstanding
- Debt Service Cover Ratio (DSCR) - ratio of total revenues available for debt service (net of operating costs, insurance premia, taxes, before equity distributions) compared to amount of debt service owed
- Rate of Return (ROR) - money gained or lost relative to amount invested
- Weighted Average Cost of Capital (WACC) - project company's cost of capital: the value of its equity plus the cost of its deb

Financial Ratios as Trigger Events

- Lenders use ratios in project monitoring and control.
- Breached ratios give lenders possible interventions - blocking dividend distribution, sweeping cash from existing accounts, applying reserve account money to debt service, taking control of additional rights of the borrower or its shareholder.
- If breaches persist, they become ‘events of default’ permitting lenders to accelerate, cancel outstanding loan amounts, suspended existing loans, or increase interest margin, recover additional investigation costs and other fees and fines.

Financial Ratios - DSCR



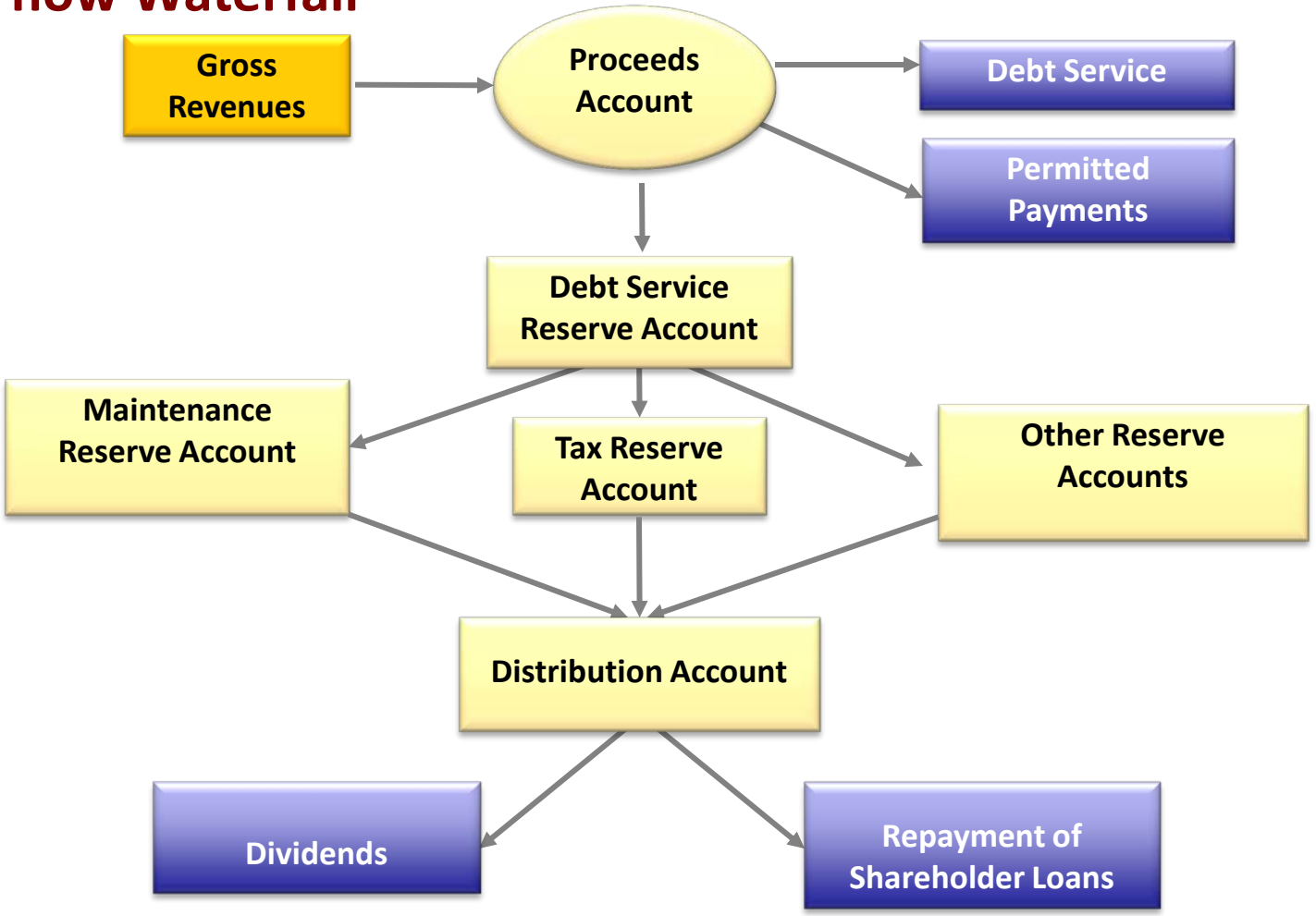
$$\text{DSCR} = \frac{\text{Revenues available for debt service}}{\text{principal + interest}}$$

Revenues available for distribution or other use (Cushion)

Revenues available for debt service

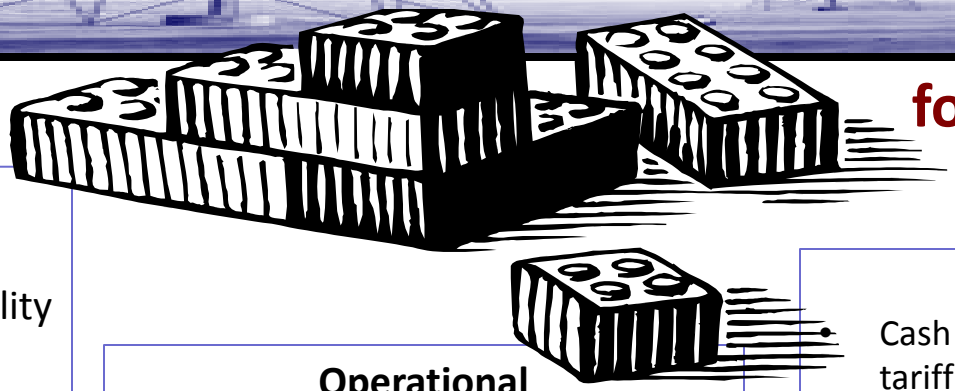
Private Project Financing

Cash-flow Waterfall



Private Project Financing

Building Blocks for Success



Investment

- Economic and political sustainability enhanced by a competitive selection process
- Government responsive to needs / time frames of investors
- Government guarantee of state-enterprise performance and revenue sufficiency
- Limited recourse financing

Operational

- Public and private participants
- Effective management and operational control of project and investment

Revenue

Cash flow sustainability: retail tariff levels and collection discipline adequate to meet cash flow needs

- Demand growth in line with projections, no oversupply or capacity utilization issues

Regulatory

- Regulatory commitment or long-term contract assurances
- Process for satisfactory and non-arbitrary adjudication of tariff adjustments and dispute resolutions

Government performance

- Commitments of state-enterprise performance and exchange conversion met
- Laws / contracts enforced

Project Finance Best Practice --

Sustainable investments depend on a balance between investment and development outcomes

Investment outcome

- Adequate return on investment
- Prospects for expanded investments

Development outcomes

- Reliable service
- Competitively priced service
- Timely service

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Power Purchase Agreements and Tariff Design

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Private Project Financing

Power Purchase Agreements

- Secures the project payment stream
- Between purchaser (often a state-owned electricity utility) and power producer
- Provides guarantees as to quantities purchased and price required to make project viable
- Protects against cheaper or subsidized competition
- Provides bulk purchaser or government purchasers seeking clarity as to volume and cost
- Gives Lenders comfort as to certainty of project revenue

Power Purchase Agreements – Key Provisions

- Sale of capacity and energy
- Charges for Available Capacity and Electrical Output
- Underperformance and delays by power producer
- Force majeure or purchaser breach of contract
- Testing regime
- Termination
- Project operation
- Change of law

Electricity Tariffs

The price of energy under a contract; includes two price components: a fixed charge and a variable charge.

- The **fixed charge** ('service charge' or 'daily supply charge') cost of supplying electricity or gas to off-taker, regardless of amount delivered
- The **variable charge** ('usage charge' or 'consumption charge') cost per kilowatt hour (c/kWh) for electricity and per megajoule (c/MJ) for gas

Rate Making Best Practices

Utility ratemaking

- Must ensure timely investment in critical infrastructure
- Reasonable assurance of cost recovery by the utility / producer
- Reflective of utility's economic costs and demand considerations
- Variations for residential, commercial, and industrial customers
- Variations for time-of-day, capacity, or nature of the supply circuit

Retail rate design

- must reflect the structure of wholesale power costs
- separate demand, energy, and customer charges
- usage-based volumetric rates
- Customer education relating to the need for rate restructuring must be given a high priority

Types of Tariffs

There are a range of different tariffs that can be included as a part of the **variable charge**:

- Single rate tariffs
- Block tariffs
- Off-peak tariffs
- Time of Use tariffs
- Renewable energy tariffs
- Price changes

Additional Charges included in Retail Tariffs

The actual electricity rate (cost per unit of electricity) a customer pays can be heavily dependent on customer charges, particularly for small customers

- Account establishment fees
- Exit fees
- Late payment fees
- Disconnection fees
- Reconnection fees
- Special meter reading fee
- Payment processing fee
- Late payment fee

Thank You