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Global Workshop on
Grid-Connected Renewable Energy
Washington, DC

Overview of Financing Techniques for Renewable Energy Projects

Part I: Availability of Finance (Tuesday)

- Potential Sources of Funding
- Project Finance Structures
- The Role of Risk Mitigation
- Policy Interventions to Enhance Financeability
- Government Actions to Increase Liquidity

Part II: Contracting Issues (Wednesday)

- Anatomy of a Credit Agreement and other Financing Documents
- Power Purchase Agreements and other Key Project Documents
- Dispute Resolution

Part I: Availability of Finance
Tuesday, September 1

Taking Stock of the Current Environment (1)

- It is important to assess where your jurisdiction stands in terms of short-, medium- and long-term goals.
- One size does not fit all in renewable energy:
  - Small scale, off-the-grid projects can, in some situations, have the most significant development impact. These types of projects are not typically amenable to large-scale project financing, so donor funding, micro-credit, vendor financing and similar initiatives are key.
  - Utility scale, grid-connected projects can be good candidates for debt financing.

Taking Stock of the Current Environment (2)

- When it comes to seeking debt funding, there is currently a shortage of liquidity from private-sector banks, and the terms offered are stringent (with higher pricing, higher fees and shorter tenors than what has been seen in recent years).
- The renewable energy sector has been particularly hard hit by the liquidity crisis. (Among other things, banks have always been reticent to take on technology risk and renewables are often dependent on subsidies to be cost-competitive).

Taking Stock of the Current Environment (3)

- But, renewables are a stated priority for many multi-laterals and development-oriented sources of public funds and are the focus of stimulus plans.
- The likelihood of carbon credits (and imposing carbon costs on non-renewable projects) also increases the commercial appeal of renewables. (But the post 2012 availability of credits is a concern).
- The countries represented here have great potential for continued investment in renewables.

Potential Sources of Financing

- Project Finance Lenders
- Commercial Banks (relationship banks)
- Bonds
- Pension and insurance funds
- Infrastructure-specific funds
- Multilaterals (direct lending; grants)
- Multilaterals (A/B loan syndication)
- Export Credit Agencies (guarantees)
- Export Credit Agencies (direct lending)
- Non-traditional sources: hedge funds, mezzanine debt, project parties
- In-country development banks or special purpose funds

Financing Structures for Renewable Energy

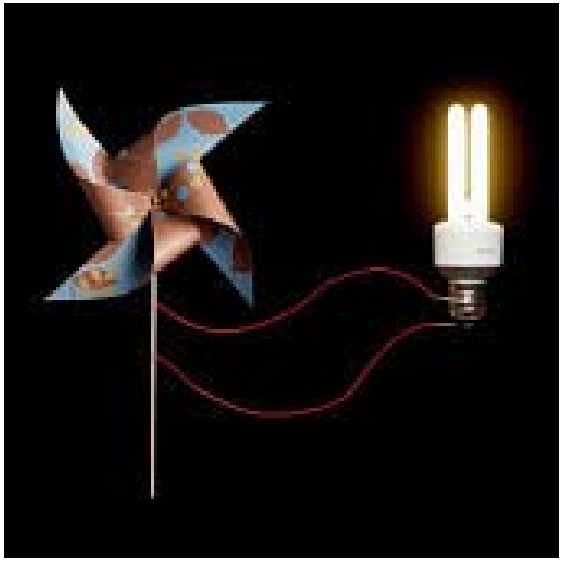
- Smaller-scale, off-the-grid projects require funding sources that have low transaction costs.
- When we speak of utility-scale renewable energy projects, complex project finance structures are common and can be cost-effective.
- What makes a “bankable” project?

Basic Premise (RE)

- Generally speaking, project finance structures that have been used in “traditional” energy (particularly power projects) can be adapted to renewable energy projects.

What is project finance?

Project finance is limited recource or non-recourse financing based on the merits of a project rather than the general corporate credit of the project sponsors.



What does that mean?

- Lenders and other funding sources look to a particular project and the money (cash flow) it will generate.
- This is different from general corporate finance where the borrower is an existing company with a balance sheet.

Key Players

- **Project Company/Borrower**
  - **Special purpose company**
- **Shareholders/Sponsors**
  - Operator
  - Passive investor
- **Offtaker (utility)**
- **Host Government**
- **Construction contractor**
- **Supplier(s) of inputs (feedstock, parts, maintenance)**
- **Lenders (may include private banks, mutilaterals, ECAs)**

What are creditors worried about…?

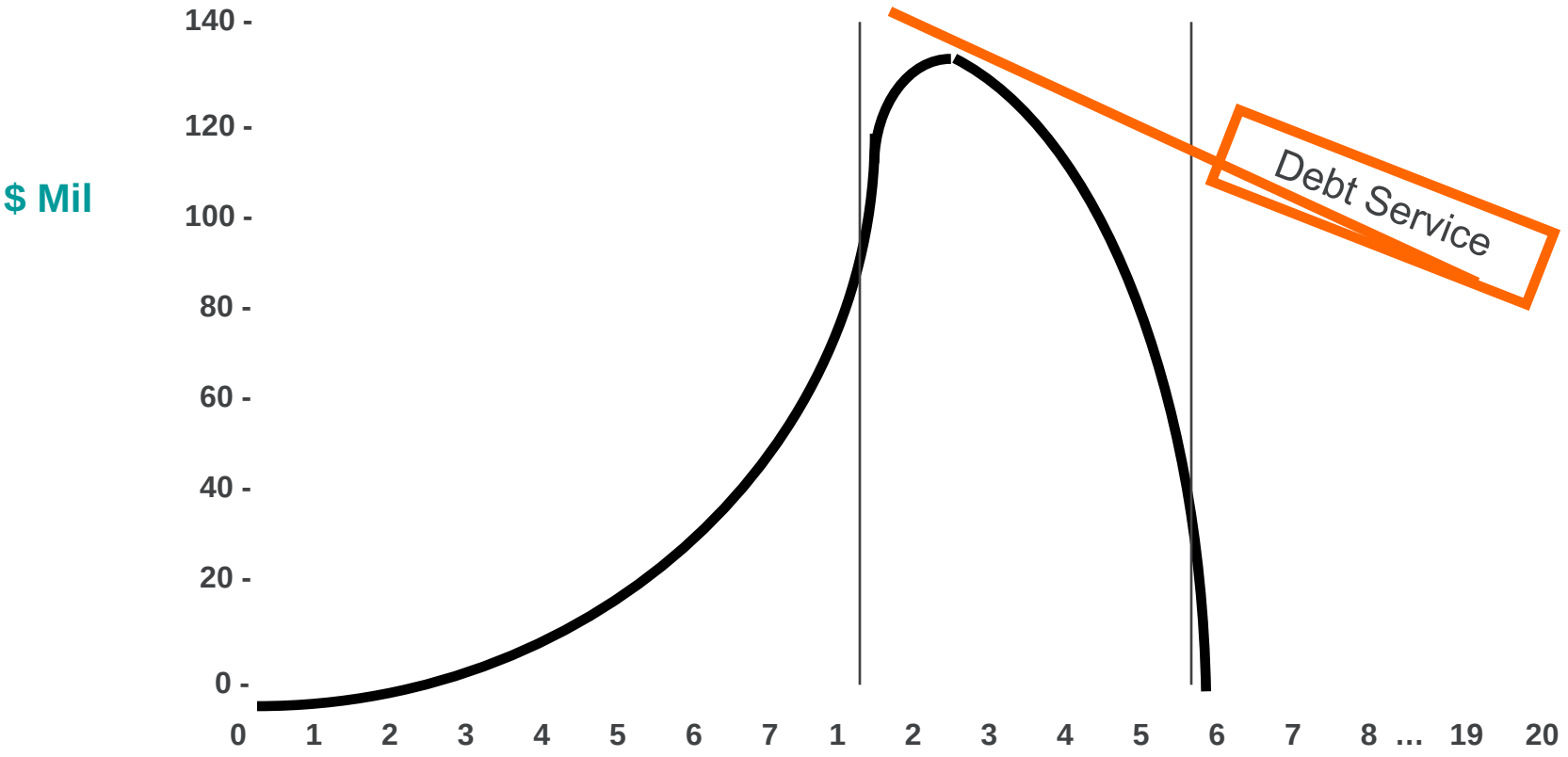
- Being repaid
- Managing the risk of not being repaid
- Getting credit committees or other stakeholders to approve the transaction
- Getting other banks to participate in the syndicate or “club”
- Public sector lenders also have other mandates (e.g., development impact, promotion of exports, environmental goals)

Risk Identification and Management

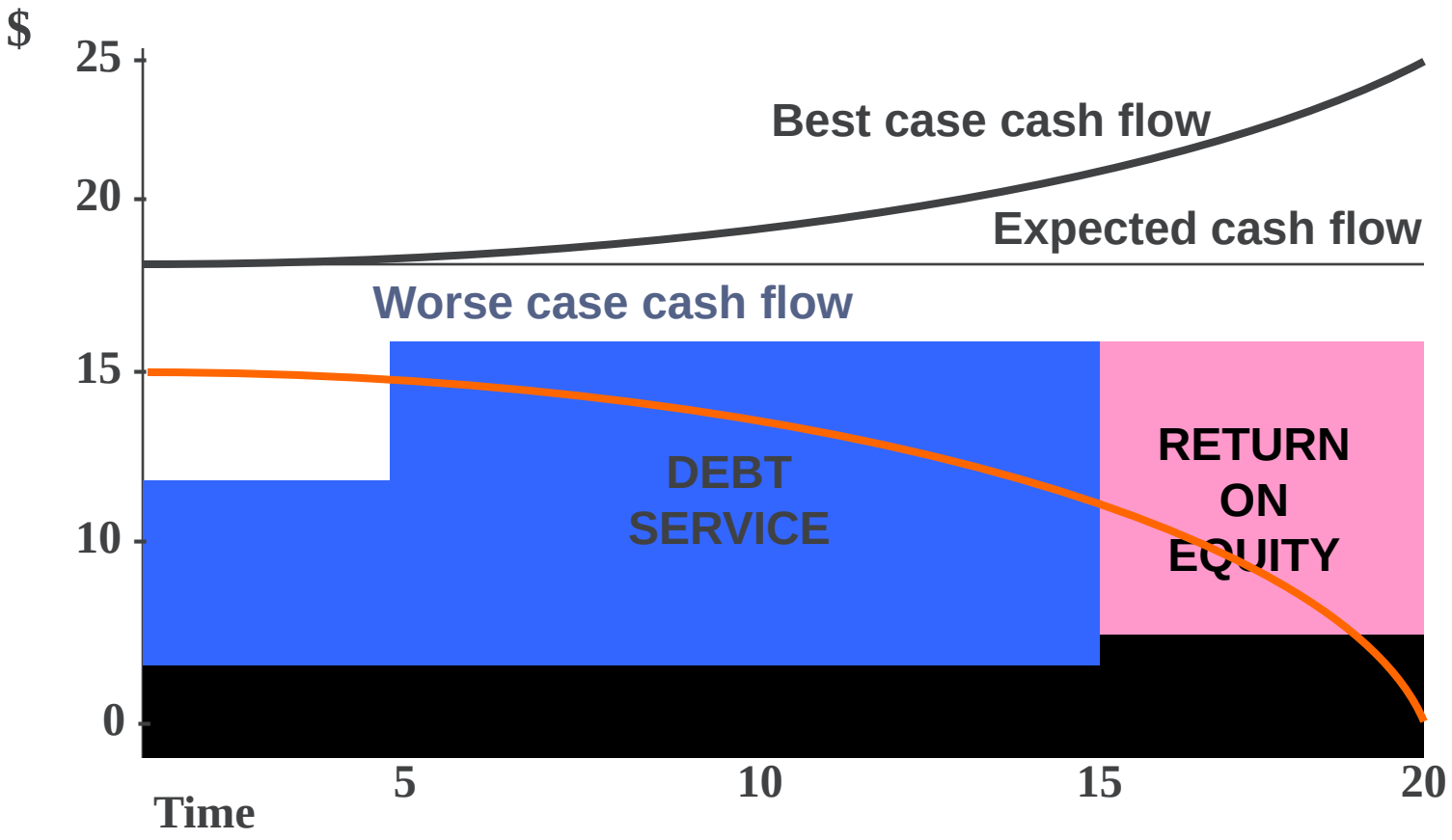
- Lenders typically divide project risks in two phases:
  - Pre-completion
  - Post-completion

Risk Identification - Periods

Construction/Development **Start-up** **Operating**



Cash Flow


$
25
20
15
10
0
Best case cash flow
Expected cash flow
Worse case cash flow
DEBT SERVICE
RETURN ON EQUITY
5
10
15
20
Time

What are pre-completion risks?

- Cost overruns/delays
- Performance risk (e.g., construction contractor)
- Design and technology failure
- Environmental, regulatory or permitting issues
- Political and social risk
- Business and legal climate (including enforceability of contracts, transparency of institutions)

What are post-completion risks?

- Operating risk
- Cost and availability of feedstock/inputs
- Price and demand for offtake/power
- Counterparty risks (can customers pay?)
- Political and social risks
- Business and legal climate (including enforceability of contracts, transparency of institutions)

Risks Common in Renewable Energy

- **Regulatory**
  - Will incentives remain in place?
  - Will project continue to be considered “sustainable”?
- **Technology**
  - Is the technology proven? At commercial scale?
- **Weather**
  - Will there be sufficient, steady wind, sunlight or water?
- **Price pressure**
  - Are inputs (commodities, labor, maintenance), available at a reasonable and predictable price?
- **Revenue Stream**
  - Long-term offtake or PPA in place?
  - Can the offtaker terminate or reduce tariffs?
  - Long-term purchase of renewable energy credits?

Types of Political and Social Risk

- Change in law
- Change in public opinion
- Currency
  - Inconvertibility
  - Transfer risk
  - Devaluation
- Expropriation
- Security & political violence

Policy Actions to Aid Financeability

Renewable Energy Policy

- Tariff Structures and demand support (favorable feed-in tariffs, ability to set higher tariffs for renewables, RPS/RES requirements for utilities)
- Regulatory support (e.g., permitting and land use assistance)
- Allowance of long-term power purchase contracts
- Clear and favorable rules for ownership of carbon credits and other renewable energy benefits

General Legal and Business Landscape

- Enforceability of contracts, reliability of institutions.
- Transparency of regulation and clarity of regulatory and permitting processes
- Allowance of foreign investment/ownership and protection against expropriation
- Creditor protection and clear rules for creating and enforcing security interests
- Predictability of taxes and government charges.

Government Actions to Create Liquidity

- Tax credits, grants, and other direct support
- Loan guarantee programs
- Direct lending

Overall View

- Availability of finance is scarce and lenders are not looking to “push the envelope.”
- Therefore, renewable projects are most interesting when they are accompanied by contractual strategies to limit technology risk, performance risk and payment risk.

To be continued…

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Part II:
Contractual Issues in Project Finance
Wednesday, September 2

Key Agreements

- Project Documents
- Financing Documents
- Credit Support

Key Project Documents (1)

During the financing, the key project documents are analyzed to identify risks and, if well-designed, can manage the risks to the project.

- Power Purchase Agreement (PPA)
  - Commitment of power purchaser to purchase power and of project company to sell power
  - Specified range of power output
  - Designated period of time, including start date
  - Agreed tariff structure, may include:
    - Capacity (fixed) tariff
    - Energy dispatch (variable) tariff

PPA Considerations

- The PPA is the cornerstone contract for utility scale energy projects
- PPAs encompass system design and purchasing
- Allows stable delivery of energy - with little upfront costs to the offtaker (utility customer, government)
- System owner assumes the risk and responsibility of ownership
- No customer capital investment – system owner “owns”, operates and installs equipment
- Cost controls - locks in fixed long-term customer energy rates; includes negotiated escalation rate; typically between10 and 20 year terms
- System owner accomplishes system certifications and regulatory requirements

PPA Considerations (continued)

- System monitoring, service and maintenance
  - System owner monitors energy production and system health
  - No customer maintenance cost – owner maintains the equipment
- System owner optimizes tax incentives and tariffs
- PPAs place a heavy emphasis on maximum energy production and delivery
- Renewable Energy Certificates (RECs) and carbon credits
- System can be purchased when the contract term ends - Part of the end-of-term options
- Minor issues can turn to bigger challenges – if not anticipated
  - i.e., insurance, property & sales tax, zoning, repairs

Key Project Documents (2)

- Construction Agreements (EPC - Engineering, Construction and Procurement)
  - Is it a fully “wrapped” EPC with a credit-worthy contractor?
  - If not, who bears technology and start-up risks?
- Operating and Maintenance (O&M) Agreement
  - Provide employees
  - Manage and operate the plant
  - Allocation of responsibility between project company and operator
  - Predictable annual fees

Key Project Documents (3)

- Real estate matters (leases, easements)
- Other Input Agreements (e.g., Biomass Supply, landfill gas purchase)
- Maintenance Agreements
- Insurance
- Payment Guarantees

Key Financing Documents

- Loan agreement
- Security documents
- Consents to the grant of security (e.g., assignment of the PPA)
- Disbursement Agreement
- Inter-creditor Agreements
- Possibly: Sponsor support agreements, payment guarantees and other forms of credit enhancement

The financing documents help to limit the risk to the lenders.

Anatomy of a Credit Agreement

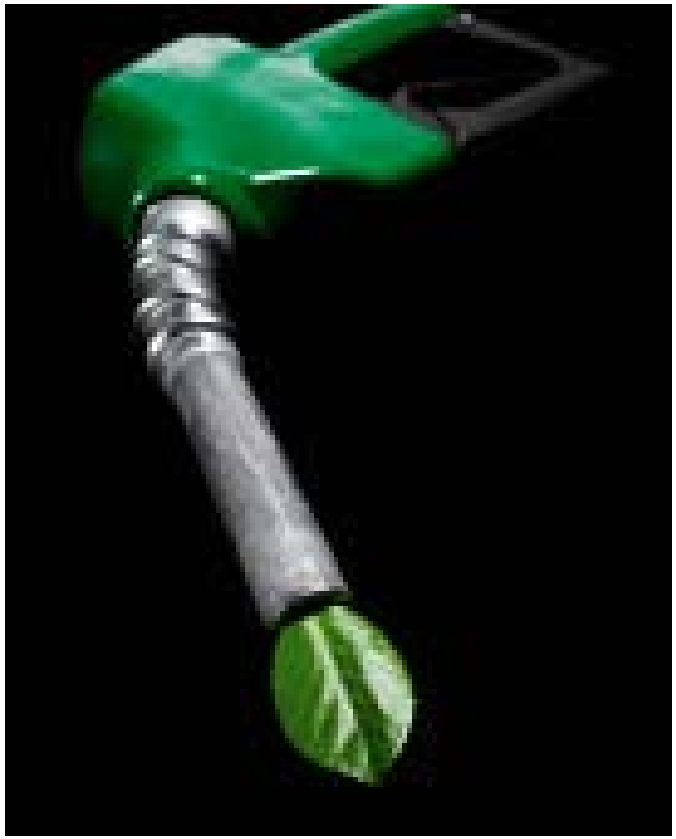
- Terms of the Loan and Repayments
  - If there is a mini-perm, is it “soft” or “hard”?
- Conditions Precedent
- Representations and Warranties
- Affirmative and Negative Covenants
- Events of Default
- Miscellaneous (including assignment, indemnities, expenses)

Anatomy of a Disbursement Agreement

- Construction Account
- "Waterfall" Accounts
- Sweeps
- Subdebt Issues
- Insurance Proceeds
- Reserve Accounts

Anatomy of a Security Package

- All assets security agreement
- Equity pledge
- Mortgage and other real estate documents
- Consents
- Account Control Agreements
- Project Party Guarantees
- Subdebt Intercreditor Agreement



Types of Credit Enhancement

- Solid offtake arrangements (PPA)
- Sponsor support arrangements
- Third party guarantees, letters of credit, etc.
- Risk Insurance (Political risk, currency risk, performance risk)
- Other Insurance
- Derivatives

Dispute Resolution

- Consider the proper forum and methods to resolve disputes that could occur:
  - Among Project Parties
  - Between Project Company and Lenders
  - Among Project Company, Lenders and Host Governments

Question and Answers

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