

Advanced Renewable Energy Project Finance & Analysis

Course Outline

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Day 1: Risk Allocation and the Project Finance Structure

1. Renewable Energy Project Finance—Key Definitions and Concepts

8:00-8:30 am

- What is project finance and why use project finance
- Key characteristics of renewable project finance structures
 - Why use SPVs/tax flow-through entities – limited partnerships and LLCs
- Understanding the roles of capital providers – arrangers, participants, underwriters, agent banks, tax equity, strategic equity
- Types of capital commitments – underwritten, best efforts basis, syndicated loans; market flex, club deals

2. Risk Evaluation in Project Financing

8:30-9:15 am

- Basic premise – allocate risk to the party best capable of managing that risk
- Identifying and quantifying risk
 - Development
 - Construction
 - Performance/Technology
 - Operations
 - Management
 - Fuel: supply/price for bioenergy projects
 - Offtake: volume/price
 - Spreads between input and output commodity price/volume

- Credit risk of/to various parties
- Interest rate volatility
- Tax regime/structure/rate

Morning refreshment and networking break

9:15-9:30 am

3. **Contract Structuring, Documentation, and Risk-Sharing**

9:30-10:45 am

- Commercial issues and risk allocation in project finance documentation
- Capturing key covenants and identifying potential complications
- Structuring project agreements to allocate/manage risk – who takes which risk and how do they “manage” these risks?
- Documenting the key project agreements
 - Power contract pricing and commodity risk
 - Harmonizing equipment warranties
 - Completion, cost overrun, and performance guarantees
 - O&M agreements
 - Force Majeure and Change of Law
 - Risk Management and insurance
 - Dispute resolution
- Ultimate objective: balancing risk and return
 - What are the different return thresholds to different parties and how does it correlate with the risk they take?

Exercise: *Price spreads, geotechnical risks, Force Majeure, Change of Law, and other unknown risks*

4. **Project Finance Structures/Terms**

10:45-Noon

- Who are the players—and what roles do they play?
 - Non/limited recourse senior secured bank debt
 - Non/limited recourse senior secured institutional debt
 - Mezzanine/sub debt
 - Equity bridge
 - Multi-tranche debt
 - Construction vs. term loan
 - Fully amortizing vs. mini-perm
 - Tax equity
- Matching investor risk appetites with project traits
- Banking security
- Intercreditor issues

Group Luncheon

Noon-1:00 pm

5. Example Debt Structure: Senior Secured Bank Debt

1:00-1:45 pm

- Sample Term Sheet
- Debt sizing – coverage ratios, leverage, credit requirements
- Reserve requirements
- Cash flow/cash trap
- Covenants and defaults
- Sensitivity analysis – how changes in key factors affect DSCR and equity IRR
- Introduction to the term sheet and project financial modeling, which will be discussed in more detail in Sec 6

Afternoon refreshment and networking break

1:45-2:00 pm

6. Project Financial Modeling and Analysis

2:00-3:00 or 3:30 pm

- Review of a generic project finance spreadsheet—understanding the key input/assumptions
 - Pre- and after-tax cash flow
 - Pre- and after- tax project return / IRR
 - Sensitivities and simulations--The relationship between leverage, return, DSCR and project viability
- GAAP vs. Tax financial statements
- Income statements and cash flow statements

Exercise: Cash flow and sensitivity analysis of a project finance debt structure

Day 2: How Financial Players Assess and Manage Risk

30 min intro and recap of Day 1, including review of modeling exercise

9:00-9:30 am

7. How Different Classes of Lenders Conduct Risk Analysis

9:30-10:00 am

- Commercial lenders' approaches to project credit analysis
- Use of capital markets
 - Rating agencies' approaches to project credit analysis
- Export Credit Agencies and project finance
- Development banks and their role in project finance

Morning refreshment break

10:00-10:15 am

8. The Role of Tax Equity

10:15-11:30 am

- Tax benefits – key driver in renewable project finance
 - Types of tax benefits – credits, grants, MACRS
- Debt and equity sources/types
- Alternative tax-based financing structures
- Key terms of tax equity structures

Exercise: *Determining the impacts of tax credits, accelerated depreciation, and tax code covenants*

Group Luncheon

11:30 am-12:30 pm

9. The Equity Investor's Perspective—Financial Yardsticks

12:30 -- 1:30 pm

- Financial yardsticks used by investors
- Main techniques for analyzing and assessing project risk
- Corporate cost of capital as a basis for evaluating project returns
- Trade off between leveraging equity returns and the need to provide credit support
- Subordinated debt vs. equity and factors affecting choices between them
- Developing an exit strategy

Example: *Leveraged Flip and Lease Structures*

10. Public Policy Support—The Impact of ARRA Stimulus Package on Renewable Project Financings

1:30 – 2:00 pm

- Impact of ARRA on lack of liquidity & tax-equity capacity
- How ARRA has contributed to a shift in capital structures
 - Impact of ITC vs. PTC
 - Near-term impact of Grants
- Loan guarantees

Afternoon refreshment break

2:00-2:15 pm

11. Public Policy Drivers— Renewable Portfolio Standards, Feed-In Tariffs, Carbon Trading

2:15-2:45 pm

- Effect of state Renewable Portfolio Standards
- Federal Carbon and Energy Legislation
 - Carbon trading
 - Carbon financing
 - Federal RPS
- Feed-In Tariffs
- Smart Grid, conservation, peak-shaving, and efficiency
- Impact on utility procurement
- Longer term view (prospects for continuing federal subsidies, loan guarantee market developments, etc)

12. Today's Project Finance Markets

2:45-3:30 pm

- Recent activity in and current status of the project finance markets
- Key participants/providers of capital in the project finance markets
- Factors driving demand for project finance—and the supply of commercial loans and equity investment
- Hurdles and opportunities in today's markets
- Where is the market headed?