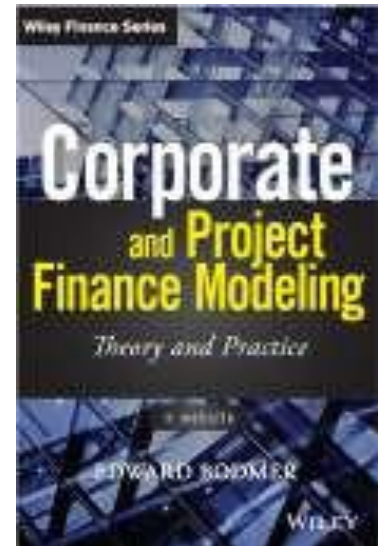
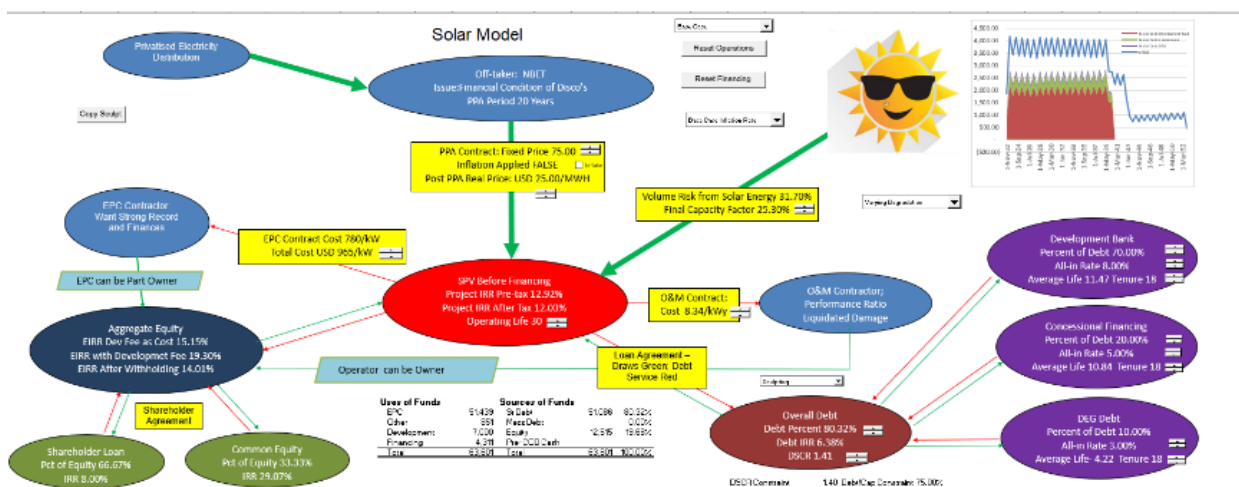


Project Finance Modelling for PPP, Infrastructure and Energy

- Highly Interactive Hands-on Course with Strict Limit on Participants
- All Modules are Live Stream (No Videos)
- Learn how to navigate and find key files in resource library
- You Work on Models During Five Sessions and Course Customised According to Your Pre-Course Question Responses
- Learn How to Be a Creative and Innovative Modeller without the Typical Blah Blah Blah



Faculty: Edward Bodmer



Course Overview

Project Finance Modelling is a digital class that will provide you with the ability to understand nuances of project finance theory through creating and understanding project finance models. Through working through the construction of models in a hands-on environment, you will be better able to quantify risks of different types of projects and you will be able to use models to assist in the negotiation of contracts.

The course is designed so that you understand the importance of: (1) structuring models with transparent formulas and a sheet structure that makes sense; (2) debt sizing using alternative methods including sculpting; (3) developing the funding parts of the model before commercial operation and problems with circular references that arise from interest during construction fees and the debt service reserve account; (4) building flexible models with effective summary statistics.

The course will show you how to construct that models are accurate with effective error checks that verify the model; so that your models can incorporate complex cash flow waterfalls, alternative funding cascades and sculpted repayment techniques; and so that your models will be transparent and clear to understand by users. Additionally, attendees learn how to use advanced techniques to resolve circular references associated with funding of a project and debt sculpting that use VBA functions rather than macros.

Key Benefits

- Understand project finance models in the context of finance theory related to

subtle issues associated with contract structuring, debt sizing, debt funding, debt repayment, debt servicing costs and credit enhancements.

- Interpret models developed by other people and add master scenario pages to any model using case studies of actual models.
- Create flexible models with effective summary statistics to evaluate alternative timing, operating assumptions, financial structures, re-financing and contract pricing.
- Work through the difficult problems in project finance modelling including:
 - Complex cash flow waterfalls with balloon payments and mini-perm structures
 - Sizing of debt with capitalized interest and alternative drawdown schedules
 - Flexible debt sculpting with income taxes
- Understand the benefits of creating user defined functions rather than copy and paste macros to resolve any circular reference problems in project finance models including funding problems and debt sculpting
- Learn Excel techniques with some VBA to make better presentations from models and to make models more transparent and efficient

Module 1: Model Structure and Alternative Excel Techniques

The digital class begins with introductory comments about the importance of sensible structuring of the model and individual sheets in your model. Different model and sheet structures are demonstrated for alternative models demonstrating poor and good practices. In this initial session, inputs will be provided for a model and participants will work through selected equations to derive pre-tax operating income and capital expenditures. You will also establish a master timeline and structure equations using the timeline.

Review of Model Structure

- Alternative Model Structures in Actual Models
 - Fundamental difference between project finance and corporate finance
 - Alternative model structures – time or cash flow
 - Different structures for calculation sheets
 - Types of Assumptions set-ups
 - Incorporation of scenarios
 - Summary presentations
 - Modelling as incorporating EPC, O&M, Loan Agreement and other contracts in the context of project operations
- Structure of Model, Assumptions and Sheets in Exercise File
 - Illustration of style
 - Use of partner macros for formatting
 - Use of partner macros for copying to the right
 - Rational for assumptions set-up
 - Model structure set-up with sculpting
 - Sheet set-up for transparency
 - Table of contents

Flexible Timing in Project Finance Models

- Review of Timing Flags in Different Models

- No master timeline
- Separation of calculations pre-COD and post-COD
- Pages with timing flags
- References to timing flags
- Formulas for timing flags
- Construction of master timeline
 - Importance of master timeline
 - Construction of timeline
 - Formatting of timeline
 - Potential for operations with different timing from financing

Modelling Operations, Capital Expenditures, Revenues and Expenses

- Alternative Operating Calculations
 - Computation of capacity and energy
 - Modelling monthly variation in semi-annual or quarterly model
 - Examples of presentation of battery use
 - Challenges with scheduled outages
 - Summary for revenues and expenses
- Capital Expenditures (EPC Contract)
 - Benchmarking and presentation of total cost
 - Development costs and construction costs
 - Separate spreadsheet page for different capital expenditure components
 - Modelling and presentation of S-curve
 - Incorporation of capital expenditures in exercise
 - Introduction to short-cuts and tools
- Operating Cost (O&M Contract)
 - Inflation and macro-economic assumptions discussion

- Incorporation of macro-economic assumptions in model
- Review of actual models and date inputs and timing
- Modelling project phases with switches and timing switches
- Modelling delay risk and flexible construction periods and S-curves
- Revenue, Cash Flow and Project IRR (Revenue Contract, Commodity Prices)
- Alternative inflation rates and macro-economic scenarios
- Computing bid prices using NPV and IRR
- Using flags for expiration of contracts
- Incorporating alternative scenarios efficiently
- Computing pre-tax IRR and bid price



**No Muting and Interruption
Encouraged**

Interactive Sessions with
Participants Sharing Screen and
Questions Encouraged at Any time

Module 2: Debt Sculpting and Sizing from Cash Flow and Introduction to Circular References

The second module of the digital class addresses debt sizing and sculpting using cash flow. Reasons for addressing the debt sizing before discussing model funding, taxes and other issues is to introduce the fundamental formulas for sculpting and provide a basis for more complex cases that will be addressed in subsequent sections. In the sculpting section you will be introduced to the five aspects of debt that need to be modelled including debt sizing, debt funding, debt repayment, interest and fees and debt protections.

Review of Debt Inputs and Term Sheet

- Five Key Provisions of Loan Contracts
 - Debt Size from maximum debt to capital or minimum DSCR
 - Debt Funding with pro-rata, up-front contributions and EBL
 - Debt Repayment: Tenor and Type
 - Interest Rates and Fees
 - DSRA, Covenants and Sweeps
- Assumptions Set-up and Term Sheet
 - Debt sizing and two constraints
 - Debt funding and use of up-front equity percent
 - Debt tenure, sculpting and mini-perm
 - Swap rates, step-up credit spreads and fees
 - DSRA with letter of credit or cash funded

- Cash sweeps and covenants

Debt Size Equations from Sculpting

- Debt Size from Cash Flow
 - Inputs for maximum debt to capital and minimum DSCR
 - Formula for size of debt from NPV of cash flow
 - Setting-up debt repayment flag
 - CFADS without taxes over repayment period
 - Using SUMPRODUCT for varying interest rates
- Debt balance after COD for verification
 - Setting-up balances
 - Flag for period before COD
 - Using Flag for funding at COD
 - Repayment from sculpting formula
 - Verification of debt closing balance

Introduction to Funding and Circular References

- Computing Debt Size
 - Sources and Uses Example
 - Problems with Use of Iteration Button
 - Demonstration of data table and goal seek
 - Copy and Paste Method and Problems
 - Creating a UDF and Parallel Model with a Program

Module 3: Funding Analysis Before COD and Debt Accounts

The third module of the digital class addresses debt and equity funding during the pre-COD period and the resulting circular references. A summary sources and uses of funds is introduced as a technique to compute the debt size, evaluate circular references and evaluate the pro-rata versus up front funding. The period by period funding is then developed with flexible approaches.

Summary Sources and Uses

- Summary Sources and Uses Statement
 - Reasons for Summary Sources and Uses
 - Incorporation of Development Fees and Other Adjustments
 - Computing Debt with Different Debt Sizing Methods
 - Calculation of Pro-Rata Percentages
 - Interest Rates and Fees
 - DSRA, Covenants and Sweeps
- Computing Pro-Rata Ratios
 - Computing the Amount of Up-Front Equity from Total Equity
 - Remaining Equity for Pro-Rata Calculation
 - Addition of Debt to Pro-Rata Calculation
 - Equity Pro-Rata and Debt Pro-Rata Percentages

Funding Needs and Funding Sources

- Computing Periodic Funding Needs and Sources
 - Setting-up Funding Needs without Circular Reference Problems
 - Computing Up-Front Equity from Commitment in Summary Sheet
 - Evaluating the Remaining Equity to Fund
 - Computing Equity Funding with MIN Function
 - Using Pro-Rata Percentages and Debt
- Setting-up and Equity Balances
 - Equity Balance with Up-Front Equity
 - Debt Balance with Interest and Fees
 - Allocation of Interest to Interest During Construction
 - Up-Front Fees and Commitment Fees
 - Debt Repayments with Alternative Sculpting Assumptions

Resolution of Circular Reference with Copy and Paste and UDF

- Structuring Circular Reference from Funding
 - Causes of Circular Reference
 - Presenting Total and Difference in the Summary Page
 - Writing a Macro for Setting Fixed Value to Equal Computed Value
 - Effects of Copy and Paste on Model
 - Using the Template UDF to resolve circular references

Module 4: Cash Flow Waterfall Post COD, Income Taxes and Credit Protections

The fourth module of the digital class addresses cash flows after the COD period, income taxes and the equity cash flow. In the module you will work through alternative debt repayment methods including using fixed sculpting repayments for risk analysis. Challenges arising from the DSRA account and income taxes are also introduced. In the sculpting section you will be introduced to the five aspects of debt that need to be modelled including debt sizing, debt funding, debt repayment, interest and fees and debt protections.

Modelling the Cash Flow Waterfall, Taxes and Alternative Debt Repayments

- Cash Flow Waterfall and Taxes
 - Fundamental Cash Flow Waterfall Layout
 - Depreciation on Base Assets for Income Taxes
 - Depreciation on Financing Items
 - Computation of CFADS
 - Debt Service in Cash Flow Waterfall
- Modelling Cash Flow Waterfall with MIN and Max
 - Application of MIN and MAX to Compute
 - Debt funding and use of up-front equity percent
 - EBL with switch
 - Debt tenure, sculpting and mini-perm
 - Swap rates, step-up credit spreads and fees
 - DSRA with letter of credit or cash funded
 - Cash sweeps and covenants

DSRA and Balance Sheet

- Modelling the DSRA
 - Setting-up DSRA Requirements after Debt Balance

- Splitting-up the DSRA flow pre-COD and Post-COD
- Pre-COD flows in the Cash Flow and Post-COD flows in the Cash Waterfall
- Option for DSRA with a Letter of Credit
- Circular Reference Problems from the DSRA
- Balance Sheet Modelling
 - Setting-up the Balance Sheet
 - Use of Balance Sheet in Project Finance Modelling
 - Filling in the Balance Sheet with Closing Balance Accounts
 - Setting up Equity Account from Dividends and Income
 - Balance Sheet Tests in Model

Alternative Debt Repayment Modelling and Risk Analysis versus Structuring

- Modelling Different Options for Debt Repayment
 - Setting up Debt Repayment Options
 - Fixed Repayment and Fixed Debt Service
 - Fixing the Sculpting from Base Case Structuring
 - Making the Fixed Payments Structured to Compute Delays
 - Risk Analysis with Fixed Payments
- Modelling Defaults and Repayments
 - Reasons for Modelling Defaults and Repayments
 - Setting-up Default Balance
 - Including Defaults in Waterfall
 - Including Repayments in Waterfall
 - Interest on Defaulted Debt in Cash Flow

Module 5: Financial Ratios, Scenario Analysis, Model Presentation and Advanced Issues

The fifth model addresses alternative methods to present financial ratios and risk analysis using scenario analysis. The sensitivity and scenario analysis is taught using unique methods whereby you can create a project finance structure diagram and illustrate different risks. The advanced project finance modelling issues include sculpting with multiple debt issues, using an equity bridge loan, sculpting with curved DSCR's and re-financing.

Computing and Presenting Financial Ratios

- Different IRR Statistics
 - After-tax Project IRR and Equity IRR
 - Debt IRR pre-tax and after-tax
 - DSCR, LLCR and PLCR
 - Understanding and Interpreting LLCR and PLCR
 - Average Debt Life
- Presentation of Outputs and Scenario Analysis
 - Graph of CFADS and Debt Service
 - Sensitivity on Variables with Re-set Button
 - Setting-up Scenario Analysis with Scalar Variables

- Setting-up Scenario Analysis with Time Series Variables
- Combining Scenario Analysis with Sensitivity Analysis
- Presentation of Results in a Diagram

Advanced Project Finance Modelling Issues

- Complex Sculpting Issues
 - Sculpting with Multiple Debt Issues
 - Sculpting with Balloon Payment
 - Sculpting and Mini-Perm
 - Sculpting with Maximum Debt to Capital Constraint and Minimum DSCR
- Other Complex Project Issues
 - Equity Bridge Loan
 - Project Cost Adjustments for Capitalised Interest on Selected Issues
 - DSRA cash flow Adjustments to DSCR
 - Complex Working Capital Issues
 - LLCR Calculations with Multiple Debt Issues
 - Flexible Re-Financing and Income Taxes



**Poll Surveys and Emails
for Priority of Subjects**

We use Pre-course Surveys for Each Session; Zoom Polls and Other Methods to Assure we Cover Specific Subjects of Interest