# Tax Equity Modelling for Solar Projects

- 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
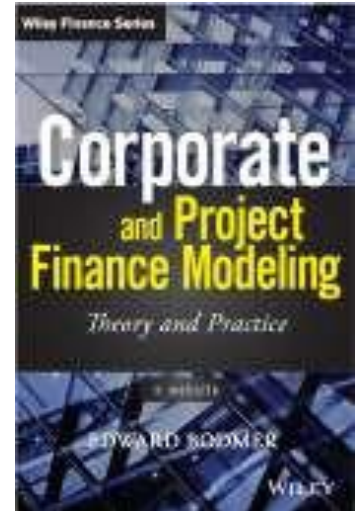
Faculty: Edward Bodmer
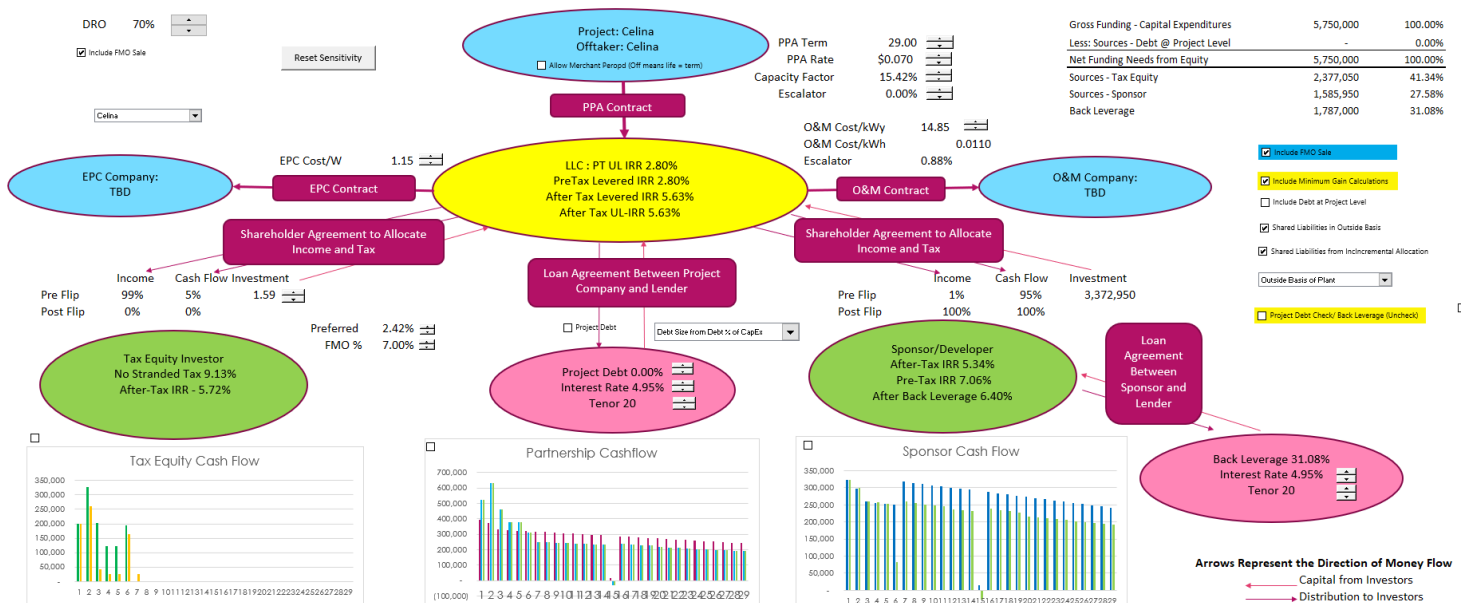
Course Overview

Financial Analysis and Modelling of Solar Tax Equity Partnerships is a unique digital course that covers practical and theoretical issues associated with tax equity from A-Z. The course is structured into five separate two-hour sessions with an extra half hour question and answer period. In the course you will learn the mechanics and strategic implications of alternative contract structures through building a comprehensive financial model. You will see how to create and understand how different financial structures (e.g. project debt and back leverage) affect the returns for tax equity investors and developers under alternative resource scenarios. By walking through a complete financial model in an intensive manner, the course will provide you with detailed understanding of how constraints in U.S. partnership tax law affect the financing and economic analysis of solar projects.

COURSE OBJECTIVES

- Understand how alternative financial structures affect the returns to tax equity investors and developers in renewable energy projects.
- Gain skills in practical aspects of modelling that allow you to efficiently create models and present scenarios the illustrated Please enter the course objectives here.
- Evaluate the effects of limits on use of tax benefits accruing to tax investor on returns from items including income allocation, stop loss provisions, excess dividends and deficit reduction obligations.
- Understand the relationship between financing and stranded taxes driven by minimum gain and allocated liability provisions.
- Develop hands-on model structure with pre-tax returns, returns not limited by tax constraints, allocations of cash flows to different investors and finally, effects of constraints on tax deductions from partnership tax rules.
- Be able to construct a model that includes evaluation of sensitivity with respect to yield, operation and maintenance, capital expenditures, electricity prices and degradation.
- Contrast and understand the effects of yield-based flip structures that are often used in wind projects with time-based flip structures that are common in solar projects.

COURSE OUTLINE AND SESSIONS

The separate on-line sessions the following. Each session is expected to last for approximately two hours before the question and answer period.

Session 1: Introduction and Computation of Pre-Tax IRR from Provided Inputs

o **Case study of working with completed model to understand the course structure**

  ✓ Selection of different projects
  ✓ Effect of different tax equity investment
  ✓ Effect of project debt versus back-leverage
  ✓ Sensitivity to resource assessment, PPA rate, EPC cost and O&M cost
  ✓ Stranded tax, deficit restoration and fair market sales option impacts on IRR

o **Tools to make your solar tax equity modelling efficient**

  ✓ Using generic macros
  ✓ Sensitivity factors with forms
  ✓ Table of contents
  ✓ Use of template with titles

o **Creating pre-tax pre-leverage cash flow from electricity price, capacity factor, capital expenditure and operation and maintenance expenses**

  ✓ Review key outputs of the solar model provided
  ✓ Outline Structure of the model corresponding to diagram
  ✓ Compute Energy Generation, Revenues, Operation and Maintenance Expenses in Annual Model
  ✓ Compute the pre-tax IRR sensitivity
  ✓ Include the pre-tax IRR in the diagram outline

  ✓ Other factors to include in the model such as inverter replacement

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

Session 2: Allocation of Income and Cash Flow to Tax Equity Investor and Developer

o **Case study of key investor outputs and parameters of a tax equity model**

  ✓ Review key outputs of the solar model provided
  ✓ Compute IRR to tax investor and contrast with ROI
  ✓ Understand the pattern of cash flows to tax equity investor
  ✓ Introduction to stranded taxes to tax investor and the effect on returns

o **Essential structure of a solar tax equity model**

  ✓ Review different completed models
  ✓ Find the pre-tax project IRR for the partnership
  ✓ Understand the hypothetical after-tax IRR
  ✓ Review diagram of project and allocation of income and cash flow using different percentages
  ✓ Presentation of after-tax IRR to tax investor without stranded tax
  ✓ Presentation of after-tax IRR to tax investor with stranded tax
  ✓ Presentation of IRR to developer/sponsor

o **Incorporating tax depreciation and ITC to evaluate hypothetical after-tax project returns**

  ✓ Computing MACRS rates
  ✓ Timing of ITC in periodic model
  ✓ Adjustment to tax basis for investment tax credit
  ✓ Computing alternative depreciation with and without half year convention
  ✓ Calculating hypothetical after tax IRR at project level
  ✓ Review diagram of project and allocation of income and cash flow using different percentages

o Allocating cash flow and income to tax equity investor and developer using ratios consistent with IRS safe harbour provisions

  ✓ Understand allocation of inputs and structure including preferred yield
  ✓ Allocation of cash flow with preferred yield
  ✓ Allocation of income with tax depreciation and investment tax credit
  ✓ Provision for tax investor sale with fair market value option

o **Computing the Tax Investor and Developer IRR Before Stranded Taxes**

  ✓ Compute and present initial investment of Tax Investor and Developer
  ✓ Compute the cash flow before-tax and IRR for both investors
  ✓ Compute after-tax cash flow and IRR for both investors
  ✓ Provision for tax investor sale with fair market value option

Session 3: Computing Inside Basis (704b), Deficit Reduction Obligation and IRR's with Stranded Tax

- o **Discussion of Inside Basis, Stranded Taxes, Tax Investor IRR and Outside Basis**

  - ✓ Difference between Inside and Outside Basis
  - ✓ Tax Theory and Economic Substance in Project
  - ✓ Limitations on Capital Versus Dividends
  - ✓ Implications of Inside and Outside Basis on Tax Investor IRR
  - ✓ Allocation of Project Balance Sheet
  - ✓ Illustration of Format in Different Models

- o **Computing Income Re-Allocation from Inside Basis 704(b) Constraints**

  - ✓ Starting with Project Balance Sheet
  - ✓ Notion of Adding Sub-total Lines into Accounts
  - ✓ Sub-Total for Negative Balance
  - ✓ ITC Basis Adjustment to Inside Basis
  - ✓ Other Adjustments to Inside Basis for Deemed Sale, Depreciation, Implications of Inside and Outside Basis on Tax Investor IRR

- o **Computing the Deficit Reduction Obligation to Reduce Exposure to the Effects of Income Re-Allocation**

  - ✓ Basis for Computing the Deficit Reduction Obligation

- ✓ Application of DRO to Reduce Effects of Income Allocation
- ✓ Effects of DRO on Developer
- ✓ Presentation of DRO on Inside Basis
- ✓ Tax Equity IRR with the Effects of DRO

No Muting and **Interruption** Encouraged

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

Session 4: Computing Outside Basis, Step-Up Gain from Excess Dividends and Suspended Loss

- o **Discussion of Outside Basis versus Inside Basis**

    - ✓ Outside Basis as Tax Basis of Assets
    - ✓ Difference Between Inside Basis and Outside Basis
    - ✓ Notion that Outside Basis Cannot Be Negative
    - ✓ Order of Inside Basis and Outside Basis in Models
    - ✓ Difference Between Excess Dividends and Suspended Loss
    - ✓ Effect of DRO on Outside Basis

- o **Computing Outside Basis with 734(a) and Suspended Loss**

    - ✓ Starting with Equity Investment, Income, Cash Dividends and Basis Difference
    - ✓ Multiple Sub-totals in Outside Basis for 734 Test and Suspended Loss
    - ✓ Test for Excess Dividends and Deemed Sale
    - ✓ Use of Sub-Total and MAX Function
    - ✓ Computation of Second Sub-Total for Suspended Loss
    - ✓ Use of Suspended Loss Tracking Account for Use of Suspended Loss
    - ✓ Computation of Depreciation on Deemed Sale from Surplus Dividends

- o **Tax Investor IRR with Both Inside and Outside Constraints**

    - ✓ Effect of Excess Dividends on IRR
    - ✓ Effect of Suspended Loss on IRR
    - ✓ Relation Between the DRO and Suspended Loss on IRR
    - ✓ Presentation of IRR and Sensitivity Analysis

- o **Computation of Developer IRR**

    - ✓ Reason for Computation of Inside Basis and Outside Basis for Developer
    - ✓ Computation of Pre-tax IRR for Developer
    - ✓ Computation of After-tax IRR for Developer

Session 5: Addition of Project Level Debt and Back-Leverage Debt to Solar Model with Tax Equity

o **Discussion of Debt Financing for Solar Projects**

  ✓ Project Level Debt and Preferred Yield for Tax Equity Investor
  ✓ Notion of Back Leverage with Repayment from Developer Dividends
  ✓ Preferences of Lenders and Tax Equity Investors from Credit Standpoint
  ✓ Effect of Project Debt on Investor IRR from Stranded Taxes

o **Setting-up Debt Account**

  ✓ Adjusting Sources and Uses of Funds
  ✓ Computing Debt Balances and Interest Expense
  ✓ Alternative Debt Sizing from DSCR or Debt to Capital
  ✓ Debt Balances at Project Level and for Back Leverage
  ✓ Cash Flow Waterfall from Project Level Debt
  ✓ Net Equity Cash Flow to Developer after Back Leverage

o **Effect of Debt on Capital Accounts**

  ✓ Computation of Shared Liabilities from Income Allocation
  ✓ Shared Liabilities from Project Debt and Not Back Leverage
  ✓ Modelling Shared Liabilities
  ✓ Calculation of Minimum Gain and Effect on Capital Accounts
  ✓ Effect of Asset Sale on Minimum Gain Account

BACKGROUND OF THE TRAINER

Edward Bodmer is a world leader in financial modelling, project finance analysis and corporate valuation theory and practice. He has been a financial advisor for many project finance, tax equity and M&A transactions and he has taught hundreds of courses on an assortment of financial modelling, financial analysis and energy analysis topics. Mr. Bodmer has developed a website on financial modelling and financial theory that is one of the most frequented websites in the world for project finance analysis and renewable energy. He has created innovate modelling and valuation techniques that address financial modelling methods, capital structure theory, project finance structuring, terminal valuation and other subjects. Mr. Bodmer has created a unique modelling framework to address complex tax equity structures, debt sculpting, difficulties with copy and paste solutions to circular references, consistent model verification and alternative methods for solving classic project finance structuring problems. More information can be found on his website www.edbodmer.com.