

Training Course Syllabus



ENERGY PROJECT FINANCE, ANALYSIS & STRUCTURING

COURSE #: F100

Course Description

- Location: VCA Green Training Facility
 - Date: 2 days
 - Four modules
 - Each module is 4 hours long
 - Total course length is 16 hours
- Specialization Badge Available: *Energy Project Finance Analyst*
 - Level of Training: Introductory & Intermediate
 - Prerequisites: HP12C calculator
 - 2.0 CEU's for entire course

The course is required for taking further energy *financing* courses offered by the Green NRG Institute. The course gives a basic overview of how to use the HP12C financial calculator in preparation for the advanced energy financing and analysis courses. The central theme of the course is “Time Value of Money” or TVM. TVM is used in calculating all analysis of the financial impact of implementing energy efficiency or energy generation projects used by energy professionals. Focus is on both even and uneven cash flows that result in a projects Return on Investment (ROI), Net Present Value (NPV), and Internal Rate of Return (IRR). Training consists of both pre-tax and after-tax analysis.

The course is designed to help readers learn about the HP12C as a tool for energy project financing and to gain experience in its use. They do not replace the manuals offered by HP but offer a hands-on way to learn some of the many HP12C features—in particular those needed by practitioners of energy projects. Subsequent energy training courses will use all the basic functions the student will learn in this four-module course.

The course is broken down into 4 training modules with an optional certification examination given at the end of the 16 hours of training.

Major Content Areas, Topics & Objectives (See specific module course content below)

- Introduction to the Learning Modules
 - Operating Modes & Clearing Procedures
 - Using Memories to Solve Problems
 - Time Value of Money (TVM)
- Level Payment Finance Calculations
 - Uneven Cash Flow Yield Analysis
 - Net Present Value (NPV) Analysis
 - Internal Rate of Return (IRR) Analysis
 - Lease Functions

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| <ul style="list-style-type: none"> • Tax Implications & Structuring • Amortization & Depreciation • Present Value of Annuities • Calculating Finance Transaction Dates | <ul style="list-style-type: none"> • Points & Loan Fees • Percentages • Cost, Price, Markup & Margins • Energy Project Proposals |
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Training Partner/Instructor

Gene Beck, CEM, CLP, Executive Director of Green NRG Institute

Sponsors

- Green NRG Institute and VCA-Green

Who Should Attend

Anyone who wants to learn how to understand the finance side of energy projects and what makes them so attractive in the energy sector. This includes the core concepts of time value of money, analyzing both even and uneven cash flow yields, roles of depreciation and amortizations, tax implications to the yield curves in energy projects, and how to take all that information and put it into energy project proposals and requests for quotes. Students will use the HP12C calculator to learn these fundamentals such that the principals learned can be used in advanced courses offered by Green NRG.

Required Text/Supplies

An HP12C calculator is required for the course. All course material will be provided in a 3-ring course workbook and additional reference material is provided in both print and digital media.

Role of the Course in a Program of Study

- Certificate of Sustainable Building Practitioner (CSBP®)
- ISO 50001 Energy Management
- Other Professional Certifications
- Practical Business Applications

Course Support Material Provided

- 3-ring course handbook
- Agenda for each module and slide decks
- Multiple handouts in each module
- Short quiz at end of each module
- Course evaluation exam when finished for certification
- Certificate of completion
- Formal certification if student receives passing grade of over 70% on final exam as a “Certified Energy Project Analyst”

Class Rules of Conduct

- All cell phones must be in mute mode during class times
- Recording of the class in any manner is prohibited
- All classes will start promptly at the noticed time
- Networking with other students is encouraged
- Parking instructions will be provided with the registration confirmation
- Business casual attire is suggested for comfort in the classroom

Further Information

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Note

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Students with disabilities who require reasonable accommodations in order to participate in course activities or meet course requirements should contact the instructor or designate during regular office hours or by appointment.

Course Content



After completion of all four modules and successfully passing an exam you will earn the "Energy Project Finance Analyst" badge of certification.

All modules are 4 hours in length. The class is held every other week. Makeup classes via a live video conference call can be arranged if you are not able to attend a class once between module classes. A short quiz is provided at the end of each module to assess your comprehension of the modules content. Answers are provided and all quizzes including the final exam are open workbook exams. No questions will be asked that are not in the workbook or provided in handouts during the classes. All students will be required to take each of the modules in sequence to qualify to take the final exam and earn final certification. A passing rate of 70% is required on the final exam. A 3-ring binder workbook will be provided for all class material. Instructor time permitting, one-on-one course assistance can be arranged.

Module 1—Introduction: 4.0 hours, .5 CEUs on completion

- Overview of the five learning modules
- Anatomy of an Energy Project
- How the HP12C functions as a calculator for energy projects
- Special symbols used on the HP12C
- Special key combinations on the HP12C
- Operating modes and clearing procedures
 - Number representation
 - Settings and annunciators
 - Memory organization and the five basic TVM (time value of money) financial parameters
- Using memories to solve problems
- Using register contents
- Understanding register arithmetic
- Basic arithmetic concepts
- RPN and the order of operations
- Practice solving basic arithmetic problems

- Basic loan calculations
 - Understanding time value of money (TVM)
 - Cash flow diagrams and sign conventions
 - Practice solving loan problems
- TVM basics
 - TVM calculations
 - TVM sign conventions and payment modes
 - Practice solving simple interest problems
 - Practice solving compound interest problems
- Financial analysis of projects with fixed payments and solving for:
 - Present value
 - Interest rate
 - Payments
 - Terms
 - Future (balloon) payments
- Review of Module 1
- Short Quiz

Module 2—NPV, IRR & Lease Functions: 4 hours, .5 CEUs on completion

- Analyzing energy projects that have uneven cash flows
- Net Present Value (NPV) calculations on energy projects
 - Cash flow and NPV calculations
 - Energy cash flow diagrams
 - The HP12C cash flow approach
 - Practice solving NPV energy project problems
 - How to modify cash flow entries
- Internal Rate of Return (IRR) calculations on energy projects
 - Cash flow and IRR calculations
 - Energy cash flow diagrams
 - The HP12C cash flow approach
 - Practice solving IRR energy project problems
 - How to modify cash flow entries
- Solving and analyzing lease payment structures
 - Lease payments
 - The HP12C TVM
 - Practice solving for the payments on a lease
- Introduction to lease structures
 - Types of leases
 - Effects on financial statements
 - Effects on tax returns

- Introduction to effects of tax on TVM payment structures
- Review of Module 2
- Short Quiz

Module 3—Amortization & Depreciation: 4 hours, .5 CEUs on completion

- Understanding financial statements
- Amortization
 - Concepts behind amortization methods
 - The HP12C amortization approach
 - Practice amortizing loans
 - Principal
 - Interest
- Depreciation
 - Purpose of depreciation
 - Types of depreciation
 - Depreciation differences between:
 - Federal
 - State
 - Property Tax
 - Accounting
 - Tax returns
 - Depreciation on the HP12C
 - Practice solving depreciation problems
 - Additional information
- Review of Module 3
- Short Quiz

Module 4—Dates, Points & Loan Fees, Percentages: 4 hours, .5 CEUs on completion

- Date functions on the HP12C
 - Managing Dates
 - Calculating with dates
 - Dates on the HP12C
 - Date representation on the HP12C
 - Practice solving problems involving dates
- Borrowing with loan fees (points)
 - The HP12C TVM model
 - Cash flow diagrams and sign conventions
 - Practice solving borrowing structures with points and fees
- Percentage functions and calculations
 - Percent computations
 - The HP12C percent computation methods

- Practice with percentage calculations
- Review of module 4
- Short Quiz

Review of 4 Previous Modules & Final Exam

Review of all previous modules

Test preparation

Written test for specialty badge certification *“Energy Project Finance Analyst”*