Wind Farm Financial Modeling Training Course

Professional Development Training Course Outline

Category	Renewable Energy	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Wind Farm Financial Modeling Training Course provides a practical, industry-focused framework for evaluating the financial viability, bankability, and investment potential of onshore and offshore wind projects. Participants learn how to translate wind resource assessments, energy yield, CAPEX, OPEX, PPA structures, project finance, debt sizing, taxation, and operating assumptions into an integrated financial model. Modern renewable-energy models commonly connect production forecasts to project cash flows and evaluate metrics such as LCOE, NPV, IRR, debt service coverage ratio (DSCR), and equity returns.

The course emphasizes bankable financial models, investment decision-making, revenue optimization, risk analytics, scenario analysis, and financing strategy. Participants work through realistic wind-farm case studies covering PPA and merchant revenues, construction-period financing, debt sculpting, P50/P90 production scenarios, sensitivity analysis, inflation, currency exposure, refinancing, and exit valuation. These areas are increasingly important as renewable projects face changing construction costs, power-price uncertainty, and evolving contractual structures; recent research also highlights the role of PPAs and other contracts in stabilizing cash flows and supporting project-finance capacity.

Programme Curriculum

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Course Duration

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Course Objectives

1. Build bankable wind farm financial models using structured project-finance principles.
2. Develop detailed CAPEX, OPEX, DEVEX, and decommissioning cost models.
3. Forecast wind-farm generation using capacity factor, availability, degradation, and energy-yield assumptions.
4. Calculate and interpret LCOE, NPV, project IRR, equity IRR, and DSCR.
5. Model Power Purchase Agreements (PPAs), cPPAs, merchant revenues, and price escalation.
6. Structure project finance debt, repayment schedules, debt sculpting, and reserve accounts.
7. Apply P50/P90/P99 production scenarios to assess bankability and financing capacity.
8. Evaluate WACC, cost of debt, cost of equity, leverage, and capital structure optimization.
9. Perform sensitivity analysis, scenario modeling, tornado analysis, and stress testing.
10. Assess electricity-price, curtailment, production, construction, FX, inflation, and counterparty risks.
11. Evaluate onshore versus offshore wind economics and technology-driven cost differences.
12. Create investment-ready outputs for lenders, sponsors, investors, developers, and investment committees.
13. Improve financial model governance, transparency, auditability, and decision intelligence.

Target Audiences

1. Renewable Energy Project Finance Professionals
2. Wind Farm Developers and Project Managers
3. Investment Banking and Infrastructure Finance Analysts
4. Energy Investment and Private Equity Professionals
5. Commercial Banks and Renewable-Energy Lenders
6. Financial Analysts and Corporate Finance Professionals
7. Energy Consultants and Independent Advisors
8. Government, Utility, and Energy-Policy Professionals

Course Modules

Module 1: Wind Farm Project Economics & Financial Modeling Foundations

- Wind-farm development lifecycle
- Financial-model architecture, assumptions, timelines, and model integrity.
- CAPEX, OPEX, DEVEX, ABEX, working capital, and contingency modeling.
- Understanding LCOE, NPV, IRR, WACC, and cash-flow drivers.
- **Case Study:** Build the initial economic model for a 300 MW onshore wind project and assess project viability under alternative cost assumptions.

Module 2: Wind Resource, Energy Yield & Production Modeling

- Modeling installed capacity, capacity factor, availability, wake losses, curtailment, and degradation.
- Linking technical energy forecasts to financial-model generation schedules.
- Developing P50, P90, and P99 production scenarios for lender analysis.
- Evaluating turbine performance, resource uncertainty, and production risk.
- **Case Study:** Compare P50 and P90 generation scenarios and determine their effect on revenue, DSCR, and debt capacity. P50/P90 analysis is widely used in renewable-project risk and financing assessments.

Module 3: Revenue Modeling, PPA & Merchant Power Markets

- Structuring fixed-price PPA, cPPA, indexed PPA, CfD, and merchant revenue models.
- Modeling escalation, volume risk, curtailment, imbalance, and capture-price effects.
- Understanding offtaker credit risk and contractual revenue certainty.
- Forecasting merchant-tail revenues after contractual periods.
- **Case Study:** Compare a 20-year fixed-price PPA with a merchant-exposure strategy and evaluate impacts on project IRR and cash-flow volatility.

Module 4: Project Finance, Debt Sizing & Capital Structure

- Building debt schedules, interest calculations, repayment profiles, and reserve accounts.
- Debt sizing using DSCR, CFADS, tenor, leverage, and lender constraints.
- Applying debt sculpting to match repayment with project cash generation.
- Modeling sponsor equity contributions and financing fees.
- **Case Study:** Size senior debt for a wind farm using P90 generation and a minimum DSCR requirement, then compare alternative leverage levels.

Module 5: Financial Statements, Tax & Investor Returns

- Developing integrated income statement, cash-flow statement, and balance-sheet schedules.
- Modeling depreciation, taxes, financing costs, and tax-related benefits.
- Calculating project IRR, equity IRR, NPV, payback, and cash-on-cash returns.
- Evaluating sponsor returns under alternative capital structures.
- **Case Study:** Assess how changes in leverage and depreciation assumptions affect sponsor equity returns and project valuation.

Module 6: Risk, Sensitivity Analysis & Scenario Modeling

- Building base, upside, downside, and stress-case scenarios.
- Performing sensitivity analysis on CAPEX, OPEX, energy yield, PPA price, WACC, and financing costs.
- Developing tornado charts, break-even analysis, and risk matrices.
- Quantifying key bankability and investment risks.
- **Case Study:** Stress-test a wind farm against simultaneous CAPEX inflation, lower generation, and reduced power prices to identify the project's financial breaking points.

Module 7: Advanced Wind Farm Valuation & Investment Decisions

- Comparing onshore and offshore wind project economics.
- Evaluating technology choices, turbine configurations, and project-life assumptions.
- Applying WACC, discounted cash flow valuation, and investment hurdle rates.
- Assessing refinancing, acquisition, portfolio, and exit scenarios.

- **Case Study:** Compare two wind-farm investment opportunities with different CAPEX, capacity factors, financing structures, and PPA terms, then recommend the stronger investment case.

Module 8: Integrated Bankable Model & Investment Committee Case

- Constructing a complete wind farm financial model from assumptions through investor returns.
- Linking technical, commercial, financing, tax, and valuation schedules.
- Creating dashboard KPIs, lender outputs, investment summaries, and model checks.
- Performing final scenario, sensitivity, and model-audit testing.
- **Case Study:** Build and defend a complete 25-year wind-farm investment model, including PPA revenues, P50/P90 scenarios, project debt, DSCR, NPV, IRR, LCOE, sensitivities, and an investment recommendation.

Training Methodology

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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