Renewable Energy Project Controls 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

Renewable Energy Project Controls Training Course is designed to equip project professionals with practical, future-focused capabilities for controlling the cost, schedule, risk, performance, and delivery of solar, wind, battery energy storage, hybrid renewable energy, and grid-integration projects. As renewable energy projects become increasingly data-driven, project teams need stronger capabilities in Earned Value Management (EVM), Critical Path Method (CPM), cost forecasting, schedule analytics, risk management, digital project controls, BIM, dashboards, and performance optimization. Current industry and research trends increasingly connect AI, BIM, digital twins, predictive analytics, and real-time monitoring with improved project decision-making and sustainability outcomes.

The course combines established project-controls practices with emerging AI-enabled and digital-energy technologies, helping participants understand how to establish baselines, monitor progress, forecast outcomes, manage change, and communicate actionable performance insights. Learning is reinforced through practical exercises and renewable-energy case studies covering utility-scale solar PV, wind farms, battery energy storage systems (BESS), hybrid renewable projects, and transmission/grid connection. The emphasis is on transforming project data into timely management decisions, supporting schedule certainty, cost control, risk-informed planning, carbon-conscious delivery, and digital transformation across the renewable-energy project lifecycle.

Programme Curriculum

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Course Duration

5 days

Course Objectives

By the end of the course, participants will be able to:

1. Develop integrated renewable-energy project controls frameworks covering scope, cost, schedule, risk, and performance.
2. Build robust Work Breakdown Structures (WBS) and cost-loaded project schedules.
3. Apply Critical Path Method (CPM) and schedule-performance analytics to identify delivery constraints.
4. Implement Earned Value Management (EVM) and calculate CPI, SPI, ETC, EAC, and related KPIs.
5. Develop reliable cost estimates, budgets, forecasts, and cash-flow projections for renewable projects.
6. Apply quantitative risk analysis, Monte Carlo simulation, and risk-based contingency planning.
7. Establish effective change control, variation management, and baseline governance.
8. Integrate procurement, engineering, construction, commissioning, and grid-connection milestones into project controls.
9. Use dashboards, data visualization, and predictive analytics to improve project decision-making.
10. Understand applications of AI, BIM, digital twins, and automation in modern project controls.
11. Develop performance-management systems and early-warning indicators for schedule and cost deviations.
12. Evaluate project performance using productivity, energy-yield, sustainability, and carbon-related KPIs.
13. Produce an integrated project-controls reporting and management system suitable for renewable-energy projects.

Target Audience

1. Renewable Energy Project Managers
2. Project Controls Managers and Engineers
3. Planning and Scheduling Engineers
4. Cost Engineers and Quantity Surveyors
5. Project Management Office (PMO) Professionals
6. Engineering, Procurement & Construction (EPC) Professionals
7. Renewable Energy Developers and Asset Owners

8. Consultants, Contractors, and Energy-Transition Professionals

Course Modules

Module 1: Renewable Energy Project Controls Fundamentals

- Project-controls lifecycle for **solar, wind, BESS, and hybrid projects**
- Project governance, controls strategy, and management systems
- Scope management, WBS, CBS, OBS, and responsibility matrices
- Project baselines, KPIs, milestones, and control accounts
- **Case Study:** Establishing the project-controls framework for a utility-scale solar PV project

Module 2: Planning, Scheduling & Critical Path Management

- **CPM, PERT, milestones, float, dependencies, and schedule logic**
- Baseline schedules and integrated master schedules
- Engineering, procurement, construction, commissioning, and handover sequencing
- Schedule progress measurement and **look-ahead planning**
- **Case Study:** Recovering schedule delays on a wind-farm construction project

Module 3: Cost Engineering & Financial Controls

- Cost estimating, budgeting, cost coding, and control accounts
- **CAPEX, OPEX, cash flow, commitments, accruals, and forecasting**
- Cost variance analysis and forecast-at-completion techniques
- Contingency, escalation, allowances, and cost-risk integration
- **Case Study:** Controlling cost growth on a large-scale solar-plus-storage development

Module 4: Earned Value Management & Performance Analytics

- **PV, EV, AC, CPI, SPI, ETC, EAC, and VAC**
- Earned-value baselines and performance measurement
- Physical progress versus financial progress
- Trend analysis and **early-warning indicators**
- **Case Study:** Using EVM to diagnose cost and schedule performance on a solar EPC project

Module 5: Risk, Uncertainty & Change Management

- **Risk registers, risk owners, probability-impact analysis, and risk response**
- Quantitative risk assessment and **Monte Carlo simulation**
- Schedule and cost contingency management
- Change orders, variations, claims, and baseline change control
- **Case Study:** Managing supply-chain, permitting, and weather risks on a wind project

Module 6: Digital Project Controls, AI & Data Analytics

- **AI-enabled project controls and predictive analytics**
- BIM, Common Data Environments (**CDEs**), and digital information management
- **Digital twins, automation, dashboards, and real-time project monitoring**
- Data quality, interoperability, visualization, and management reporting
- **Case Study:** Applying AI-BIM analytics to identify schedule and risk trends in renewable-energy construction. Recent research demonstrates growing integration of AI and BIM for scheduling, risk

classification, and sustainability analysis.

Module 7: Renewable Energy Performance, Sustainability & Grid Integration

- Project KPIs for **energy yield, availability, productivity, quality, and reliability**
- Grid-connection milestones, commissioning, testing, and energization
- Carbon, sustainability, and lifecycle-performance considerations
- Renewable-energy forecasting, curtailment, and operational interfaces
- **Case Study:** Coordinating controls for a solar PV, BESS, and grid-integration project

Module 8: Integrated Project Controls Reporting & Executive Decision-Making

- Developing **integrated project-controls dashboards**
- Executive reporting, variance narratives, and corrective-action plans
- Trend forecasting, scenario analysis, and recovery planning
- Project closeout, lessons learned, and controls maturity assessment
- **Case Study:** Executive project review for a multi-billion-dollar renewable-energy portfolio

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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