Renewable Energy Construction Management 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 Construction Management Training Course is designed to equip professionals with practical knowledge and strategic capabilities for planning, delivering, controlling, and optimizing renewable energy infrastructure projects. As the sector increasingly adopts solar PV, wind power, battery energy storage, smart grids, digital twins, Building Information Modeling (BIM), artificial intelligence (AI), IoT, predictive analytics, and sustainable construction, construction managers need an integrated understanding of technical delivery, project controls, procurement, risk, quality, safety, and sustainability. Recent industry and research developments highlight BIM, AI, digital twins, predictive maintenance, connected jobsites, and data-driven project management as important directions for renewable-energy and construction delivery.

The course combines renewable energy engineering fundamentals with modern construction project management, enabling participants to manage projects from feasibility and design through procurement, construction, commissioning, handover, and lifecycle optimization. Participants explore project scheduling, cost control, contract management, supply-chain resilience, HSE, ESG, carbon management, quality assurance, stakeholder engagement, digital construction, BIM coordination, AI-assisted decision-making, and performance monitoring. Practical case studies are incorporated throughout the training to connect concepts with realistic solar, wind, battery-storage, and hybrid renewable-energy projects. The growing convergence of BIM, digital twins, AI, and real-time data is creating new opportunities for better collaboration, forecasting, cost control, and operational resilience.

Programme Curriculum

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Course Duration

5 days

Course Objectives

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

1. Understand the renewable energy project lifecycle from feasibility to commissioning and operations.
2. Develop effective project execution strategies for solar, wind, BESS, and hybrid energy projects.
3. Apply BIM and digital construction principles to renewable-energy project coordination.
4. Use AI, predictive analytics, and data-driven decision-making to strengthen project controls.
5. Develop integrated cost, schedule, resource, and performance management systems.
6. Apply risk management and resilience strategies to complex renewable infrastructure projects.
7. Strengthen procurement and supply-chain management amid changing global market conditions.
8. Implement effective quality assurance and quality control (QA/QC) processes.
9. Integrate HSE, ESG, sustainability, and carbon-management requirements into project delivery.
10. Improve contract administration, claims management, and commercial governance.
11. Apply digital twins, IoT, and real-time monitoring concepts to project and asset management.
12. Coordinate multidisciplinary teams using lean construction, collaboration, and stakeholder-management techniques.
13. Develop practical strategies for on-time, on-budget, safe, sustainable, and high-performance project delivery.

Target Audience

1. Renewable energy project managers and construction managers
2. Civil, electrical, mechanical, and renewable-energy engineers
3. EPC and EPCM professionals
4. Project controls, planning, and scheduling specialists
5. Quantity surveyors, cost engineers, and commercial managers
6. Procurement, contracts, and supply-chain professionals

7. HSE, QA/QC, ESG, and sustainability professionals
8. Developers, consultants, investors, government agencies, and energy-sector decision-makers

Course Modules

Module 1: Renewable Energy Construction Project Fundamentals

- Renewable energy technologies and infrastructure project lifecycle
- Solar PV, wind, BESS, hybrid, and distributed-energy project characteristics
- Feasibility, site assessment, permitting, and development milestones
- EPC, EPCM, design-build, and other project-delivery models
- **Case study:** Development and construction planning for a utility-scale solar PV project

Module 2: Project Planning, Scheduling & Project Controls

- Work Breakdown Structures (WBS) and integrated project execution plans
- Critical Path Method (CPM), milestones, resource loading, and baseline schedules
- Earned Value Management (EVM) and performance measurement
- Progress tracking, dashboards, forecasting, and schedule recovery
- **Case study:** Recovering a delayed renewable-energy construction project using integrated project controls

Module 3: Cost Management, Estimation & Commercial Control

- CAPEX/OPEX estimation and renewable-energy cost structures
- Budget development, cash-flow forecasting, and cost baseline management
- Change orders, variations, contingency, and cost forecasting
- Lifecycle costing and value engineering
- **Case study:** Managing cost escalation and budget pressure on a wind farm EPC project

Module 4: Procurement, Contracts & Supply-Chain Management

- Procurement strategies for PV modules, turbines, transformers, cables, batteries, and balance-of-system components
- Vendor evaluation, technical specifications, logistics, and expediting
- EPC contracts, FIDIC principles, commercial risk, and claims
- Supply-chain resilience, localization, and long-lead-item management
- **Case study:** Managing procurement delays for critical equipment on a renewable-energy project

Module 5: Construction Execution, Quality & HSE

- Site mobilization, construction sequencing, logistics, and field coordination
- QA/QC plans, inspections, testing, commissioning readiness, and documentation
- Construction safety, environmental controls, and risk-based HSE management
- Productivity, workforce coordination, and site performance
- **Case study:** Implementing quality and HSE controls during a large-scale solar construction program

Module 6: BIM, AI, Digital Twins & Smart Construction

- BIM applications for design coordination, quantities, scheduling, and construction management
- Digital twins for real-time asset and project-performance visibility
- AI, machine learning, predictive analytics, and automated decision support

- IoT, drones, computer vision, connected jobsites, and digital reporting
- **Case study:** Using BIM and digital-twin concepts to improve renewable infrastructure coordination and lifecycle management

Module 7: Risk, Sustainability, ESG & Stakeholder Management

- Project risk identification, assessment, mitigation, and risk registers
- ESG integration, environmental management, and carbon reduction
- Climate resilience and renewable infrastructure risk
- Stakeholder engagement, community relations, and regulatory coordination
- **Case study:** Managing environmental, stakeholder, and schedule risks on a wind-energy development

Module 8: Commissioning, Handover & Lifecycle Performance

- Pre-commissioning, testing, energization, commissioning, and performance verification
- Punch lists, documentation, as-built information, and handover
- Performance guarantees, reliability, availability, and acceptance criteria
- Operations and maintenance transition and predictive maintenance
- **Case study:** Commissioning and operational handover of a solar-plus-battery energy project

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

Ready to enroll or request a customized program? Book online or contact us:

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