Renewable Energy Feasibility Studies 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 Feasibility Studies Training Course provides a practical, project-focused framework for assessing whether renewable energy projects are technically, financially, environmentally, and commercially viable. Participants learn how to transform an initial renewable energy concept into a robust feasibility assessment covering resource assessment, site selection, energy yield, technology evaluation, grid integration, CAPEX/OPEX, Levelized Cost of Energy (LCOE), financial modelling, risk analysis, ESG, permitting, and investment decision-making. The course reflects current industry priorities: solar PV and wind continue to drive renewable capacity expansion, while battery storage, grid flexibility, and transmission capacity are becoming increasingly important to successful project development.

The programme is designed around real-world project development and investment decisions, enabling learners to evaluate utility-scale, commercial and industrial, mini-grid, hybrid renewable energy, and energy-storage projects. Particular emphasis is placed on bankability, scenario analysis, sensitivity testing, stakeholder requirements, and evidence-based recommendations. These capabilities are increasingly relevant as renewable deployment expands and grid connection, flexibility, and storage become critical feasibility considerations; the IEA also highlights these issues in relation to Kenya's rapidly evolving renewable electricity system.

Programme Curriculum

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Course Objectives

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

1. Apply renewable energy feasibility assessment frameworks to new project opportunities.
2. Conduct solar, wind, hydro, biomass, geothermal, and hybrid resource assessments.
3. Evaluate site suitability, land requirements, infrastructure, and resource quality using modern assessment approaches.
4. Compare renewable technologies using technical performance, efficiency, reliability, and lifecycle considerations.
5. Develop preliminary energy yield assessments and production forecasts.
6. Evaluate grid connection, transmission constraints, curtailment, system flexibility, and energy storage requirements.
7. Estimate CAPEX, OPEX, LCOE, revenue streams, and project cash flows.
8. Build and interpret renewable energy financial models, including sensitivity and scenario analysis.
9. Assess commercial viability, bankability, investment readiness, and financing requirements.
10. Identify technical, financial, regulatory, environmental, social, and climate risks.
11. Integrate ESG, sustainability, climate resilience, environmental and social impact considerations into feasibility studies.
12. Prepare professional feasibility study reports, investment recommendations, and decision-support presentations.
13. Apply digital energy analytics, data-driven decision-making, and project-development best practices to renewable energy investments.

Target Audience

1. Renewable energy project developers and project managers
2. Energy engineers and electrical engineers
3. Civil, mechanical, environmental, and power systems professionals
4. Energy consultants and feasibility study specialists
5. Investors, financiers, lenders, and investment analysts
6. Government energy officials, regulators, and policymakers
7. Utility, EPC, IPP, and infrastructure professionals

8. Sustainability, ESG, climate finance, and energy-transition professionals

Course Modules

Module 1: Renewable Energy Feasibility Study Fundamentals

- Feasibility study lifecycle-**concept, pre-feasibility, feasibility, bankability, FID**
- Technical, commercial, financial, environmental, and regulatory feasibility
- Project development stages, decision gates, and key deliverables
- **Case Study:** Screening a proposed utility-scale solar PV project
- Developing a **feasibility study scope and evaluation framework**

Module 2: Resource Assessment and Site Selection

- Solar irradiation, wind resource, hydro, biomass, and geothermal assessment principles
- **GIS, satellite data, geospatial screening, meteorological datasets, and resource mapping**
- Land availability, accessibility, topography, infrastructure, and environmental constraints
- **Case Study:** Selecting the optimal site for a 100 MW solar PV project
- Creating a **site-selection decision matrix**

Module 3: Technology Selection and Energy Yield

- Technology comparison for **solar PV, wind, hydro, biomass, geothermal, and hybrid systems**
- Plant sizing, technology configuration, capacity factor, availability, and performance ratio
- Energy yield forecasting, losses, degradation, uncertainty, and P50/P90 concepts
- **Case Study:** Comparing fixed-tilt and tracking solar PV configurations
- Preparing a preliminary **annual energy production forecast**

Module 4: Grid Integration, Storage and System Flexibility

- Grid connection assessment, transmission capacity, voltage, power quality, and system constraints
- **Battery Energy Storage Systems (BESS)** and renewable energy hybridization
- Curtailment, congestion, demand response, ancillary services, and flexibility
- Grid-forming technologies and modern inverter-based renewable generation
- **Case Study:** Adding battery storage to improve the grid value of a solar project

Module 5: Financial Feasibility and Investment Analysis

- **CAPEX, OPEX, LCOE, NPV, IRR, payback period, DSCR, and project cash flow**
- Revenue modelling, tariffs, PPAs, merchant exposure, and market assumptions
- Financing structures, debt/equity considerations, and investment requirements
- Sensitivity analysis, scenario modelling, uncertainty, and financial risk
- **Case Study:** Financial viability assessment of a utility-scale wind farm

Module 6: Environmental, Social, ESG and Regulatory Assessment

- Environmental and Social Impact Assessment **(ESIA)** fundamentals
- Biodiversity, land use, water resources, community impacts, and climate resilience
- **ESG, sustainability, climate finance, safeguards, and stakeholder engagement**
- Licensing, permitting, policy, regulatory, and compliance requirements
- **Case Study:** Assessing environmental and stakeholder risks for a wind project

Module 7: Risk Assessment, Commercial Viability and Bankability

- Technical, financial, market, regulatory, construction, operational, and supply-chain risks
- **Risk registers, risk matrices, mitigation strategies, and sensitivity analysis**
- Bankability requirements and lender/investor due diligence
- EPC, O&M, warranties, insurance, contracts, and project-performance considerations
- **Case Study:** Bankability assessment of a solar-plus-storage project

Module 8: Feasibility Study Reporting and Investment Decision

- Structuring a professional **renewable energy feasibility study report**
- Executive summaries, technical findings, financial results, risks, and recommendations
- Data visualization, dashboards, decision matrices, and management presentations
- Go/no-go decision-making and **Final Investment Decision (FID)** preparation
- **Case Study:** Presenting a complete feasibility recommendation to an investment committee

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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