Renewable Energy Trading and Markets 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 Trading and Markets Training Course provides a practical, market-focused understanding of how electricity generated from solar, wind, hydro, battery energy storage systems (BESS), and hybrid renewable assets is priced, contracted, traded, optimized, and integrated into modern power markets. The course responds to major developments shaping the 2026 energy landscape, including renewable intermittency, negative power prices, grid congestion, flexibility markets, energy storage, corporate Power Purchase Agreements (PPAs), hybrid PPAs, demand response, ancillary services, guarantees of origin, and 24/7 clean-energy matching. Growing renewable penetration is increasing the importance of flexibility, storage, and sophisticated market participation, while emerging commercial models are moving beyond traditional pay-as-produced PPAs toward structures that better manage price and volume risk.

The training combines energy-market theory, commercial strategy, trading simulations, portfolio optimization, regulatory analysis, risk management, and real-world case studies to help participants understand the complete renewable energy value chain from project development and market access through bidding, scheduling, hedging, settlement, and revenue optimization. Particular attention is given to BESS optimization, renewable capture prices, curtailment, congestion, balancing markets, PPAs, virtual PPAs, Contracts for Difference (CfDs), renewable certificates, and data-driven energy trading. The course can also provide valuable regional context for emerging markets such as Kenya, where high renewable penetration makes open access, flexibility, storage, ancillary services, and evolving electricity-market frameworks increasingly important.

Programme Curriculum

Renewable Energy Trading and Markets Training Course

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Course Duration

5 days

Course Objectives

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

1. Understand renewable power markets, electricity trading mechanisms, and market design.
2. Analyze day-ahead, intraday, balancing, ancillary-service, and flexibility markets.
3. Evaluate renewable generation forecasts and manage intermittency and forecasting risk.
4. Structure and assess PPAs, virtual PPAs, hybrid PPAs, and CfDs.
5. Analyze negative pricing, capture rates, cannibalization, and price volatility.
6. Develop strategies for BESS optimization, energy arbitrage, and revenue stacking.
7. Understand grid congestion, curtailment, transmission constraints, and flexibility solutions.
8. Apply portfolio optimization and renewable asset valuation techniques.
9. Assess market, credit, volume, basis, imbalance, and regulatory risks.
10. Understand renewable energy certificates, guarantees of origin, and clean-energy attributes.
11. Apply data analytics, AI-enabled forecasting, and digital energy-trading concepts.
12. Evaluate commercial opportunities created by electrification, EVs, data centers, and flexible demand.
13. Build integrated renewable trading and revenue-optimization strategies using practical case studies.

Target Audience

1. Renewable energy developers and project managers
2. Energy traders and power-market analysts
3. Utilities, independent power producers, and electricity retailers
4. Energy procurement and corporate sustainability professionals
5. Investment, banking, and infrastructure-finance professionals
6. Regulators, policymakers, and energy-market institutions

7. Battery storage, grid, and flexibility-market professionals
8. Consultants, engineers, economists, and energy-sector professionals

Course Modules

Module 1: Renewable Energy Markets Fundamentals

- Renewable electricity value chains and market participants
- Wholesale electricity-market structures and market coupling
- Solar, wind, hydro, and hybrid generation characteristics
- **Merit order, marginal pricing, price formation, and market signals**
- **Case Study:** How increasing solar and wind penetration changes wholesale power-price patterns

Module 2: Renewable Power Trading and Market Operations

- Day-ahead and intraday electricity trading
- Balancing markets and imbalance management
- Forecasting, bidding, nominations, and scheduling
- **Algorithmic trading and data-driven market decision-making**
- **Case Study:** Managing forecast deviations for a utility-scale wind portfolio

Module 3: PPAs, Virtual PPAs and Renewable Contracting

- Physical PPAs and virtual/synthetic PPAs
- Fixed-price, indexed, floor, collar, and market-linked structures
- **Hybrid PPAs and flexibility-backed contracting**
- Contract risk allocation, settlement, guarantees, and credit considerations
- **Case Study:** Structuring a solar-plus-storage PPA for a large electricity consumer

Module 4: Battery Energy Storage and Flexibility Markets

- **BESS economics, dispatch, and energy arbitrage**
- Ancillary services and balancing opportunities
- Revenue stacking and multi-market optimization
- State of charge, degradation, cycling, and operational constraints
- **Case Study:** Optimizing a grid-scale battery across energy and ancillary-service markets

Module 5: Renewable Pricing, Risk and Revenue Optimization

- Renewable capture prices and capture-rate analysis
- **Negative electricity prices and price cannibalization**
- Volume, basis, imbalance, credit, and market risks
- Hedging strategies and portfolio diversification
- **Case Study:** Reducing revenue volatility for a wind-and-solar portfolio during periods of negative pricing

Module 6: Grid Integration, Curtailment and Market Flexibility

- Grid congestion and transmission constraints
- Renewable curtailment and redispatch
- Demand response and flexible consumption
- Storage, interconnection, and grid-support services
- **Case Study:** Using battery storage and flexible demand to reduce solar curtailment

Module 7: Renewable Certificates, Carbon Markets and 24/7 Clean Energy

- Guarantees of Origin and renewable energy certificates
- Clean-energy attribute tracking and certification
- **Hourly matching and 24/7 carbon-free energy concepts**
- Carbon markets and renewable-energy claims
- **Case Study:** Designing an hourly clean-energy procurement strategy for a data center

Module 8: Advanced Renewable Trading Strategy and Future Markets

- **AI, machine learning, forecasting, and energy-market analytics**
- Virtual power plants and distributed energy resources
- EVs, smart grids, prosumers, and demand-side flexibility
- **Portfolio optimization and automated trading strategies**
- **Case Study:** Building a renewable-plus-BESS virtual portfolio for multi-market revenue optimization

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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