Energy Storage Investment Analysis 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

Energy Storage Investment Analysis Training Course provides a practical, investment-focused framework for evaluating opportunities across the rapidly expanding battery energy storage system (BESS), grid-scale energy storage, renewable energy integration, and energy transition markets. Participants learn how to assess the technical, commercial, financial, and regulatory factors that determine whether an energy storage project can create sustainable returns. The course covers lithium-ion batteries, long-duration energy storage (LDES), battery energy storage systems, utility-scale storage, distributed energy resources (DERs), solar-plus-storage, wind-plus-storage, ancillary services, capacity markets, energy arbitrage, revenue stacking, and merchant storage. Through financial models, investment scenarios, market analysis, and real-world case studies, learners develop the ability to transform complex storage-market data into bankable investment decisions.

As global electricity systems accelerate toward decarbonization, electrification, renewable power deployment, grid flexibility, and net-zero targets, energy storage is becoming a strategic asset for utilities, investors, developers, infrastructure funds, banks, policymakers, and energy companies. This course equips professionals with advanced skills in BESS project finance, investment appraisal, CAPEX/OPEX analysis, levelized cost of storage (LCOS), NPV, IRR, payback analysis, sensitivity analysis, risk assessment, revenue forecasting, degradation modeling, project bankability, and investment due diligence. Participants will examine representative case studies covering utility-scale BESS, solar-plus-storage, merchant batteries, and long-duration storage to understand how market conditions, technology selection, financing structures, and policy incentives influence investment returns.

Programme Curriculum

Energy Storage Investment Analysis Training Course

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Course Duration

5 days

Course Objectives

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

1. Analyze the global energy storage market, growth drivers, emerging technologies, and investment trends.
2. Evaluate BESS investment opportunities using structured commercial and financial frameworks.
3. Assess battery technology selection, performance characteristics, degradation, and lifecycle economics.
4. Calculate CAPEX, OPEX, LCOS, NPV, IRR, payback period, and project returns.
5. Build investment cases for utility-scale battery energy storage systems.
6. Analyze energy arbitrage, ancillary services, capacity markets, and revenue stacking opportunities.
7. Evaluate solar-plus-storage and wind-plus-storage investment models.
8. Apply project finance, debt structuring, equity analysis, and bankability principles.
9. Conduct scenario modeling, sensitivity analysis, and stress testing for storage investments.
10. Identify market, technology, regulatory, operational, and revenue risks affecting BESS projects.
11. Assess emerging long-duration energy storage (LDES) opportunities and investment potential.
12. Develop investment recommendations using data-driven decision-making, financial modeling, and due diligence.
13. Present a comprehensive energy storage investment strategy aligned with energy-transition and net-zero objectives.

Target Audiences

1. Energy and renewable energy investment professionals
2. BESS project developers and owners

3. Utility and power-sector executives
4. Infrastructure and private-equity investors
5. Commercial and investment bankers
6. Energy consultants and financial analysts
7. Government, regulators, and energy-policy professionals
8. Engineers, project managers, and entrepreneurs entering the energy-storage sector

Course Modules

Module 1: Energy Storage Market & Investment Landscape

- Global BESS market growth, investment trends, and market drivers
- Energy transition, grid modernization, electrification, and renewable integration
- Overview of lithium-ion, sodium-ion, flow batteries, thermal storage, and LDES
- Storage value chains, market participants, and emerging business models
- Case Study: Investment opportunity assessment for a utility-scale BESS supporting a renewable-heavy power grid

Module 2: Battery Technology & Project Economics

- Battery capacity, power rating, efficiency, cycle life, and state of charge
- Battery degradation and its impact on project economics
- CAPEX/OPEX, replacement costs, augmentation, and lifecycle planning
- Technology selection based on project requirements and investment objectives
- Case Study: Comparing lithium-ion and long-duration storage technologies for a 20-year investment horizon

Module 3: BESS Revenue Streams & Revenue Stacking

- Energy arbitrage and wholesale electricity-market opportunities
- Frequency regulation and ancillary services
- Capacity payments, grid services, and demand-response opportunities
- Revenue stacking and optimization of multiple storage applications
- Case Study: Financial comparison of a merchant BESS using energy arbitrage versus a diversified revenue-stacking strategy

Module 4: Financial Modeling & Investment Appraisal

- Building BESS financial models and project cash-flow forecasts
- NPV, IRR, payback period, profitability, and return-on-investment analysis
- LCOS and comparative economics of storage technologies
- Scenario, sensitivity, and downside-case analysis
- Case Study: Investment committee analysis of a 100 MW/200 MWh battery project

Module 5: Project Finance & Bankability

- Debt financing, equity financing, project finance, and capital structure
- Debt-service coverage, leverage, covenants, and financing assumptions
- Offtake agreements, tolling structures, and contracted-revenue models
- Bankability requirements, financial due diligence, and lender considerations
- Case Study: Structuring debt and equity for a solar-plus-storage project seeking institutional financing

Module 6: Risk, Regulation & Investment Due Diligence

- Technology, market, merchant-price, degradation, and operational risks
- Regulatory frameworks, market participation, and policy incentives
- Supply-chain, procurement, warranty, and performance risks
- Insurance, safety, cybersecurity, and environmental considerations
- Case Study: Investment due diligence for a BESS project facing uncertain market revenues and changing regulations

Module 7: Renewable Energy Integration & Emerging Storage Models

- Solar-plus-storage, wind-plus-storage, hybrid renewable projects, and microgrids
- Grid flexibility, transmission constraints, curtailment reduction, and congestion management
- Long-duration energy storage and future grid applications
- Distributed storage, behind-the-meter systems, and virtual power plants
- Case Study: Evaluating a solar-plus-BESS project designed to reduce renewable curtailment and improve grid reliability

Module 8: Investment Strategy, Valuation & Final Case Study

- Developing investment theses for storage portfolios
- Valuation, exit strategies, portfolio diversification, and strategic partnerships
- Comparing contracted, regulated, and merchant BESS investment models
- Building an investment recommendation supported by financial and market evidence
- Case Study: Complete investment analysis of a multi-project BESS portfolio, including valuation, risks, returns, financing strategy, and 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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