Floating Solar PV Systems Development 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

Floating Solar PV Systems Development Training Course provides a practical, industry-focused pathway for professionals seeking advanced capabilities in floating photovoltaic (FPV) project development, renewable energy, clean energy transition, and utility-scale solar power. As land constraints, water-resource optimization, and decarbonization targets accelerate the adoption of floating solar, FPV systems are emerging as a strategic solution for reservoirs, hydropower facilities, irrigation ponds, quarry lakes, and other suitable water bodies. This course examines the complete FPV project lifecycle, from site identification and feasibility assessment through solar resource analysis, floating-platform engineering, mooring and anchoring, electrical design, energy yield assessment, environmental and social considerations, financial modeling, procurement, construction, commissioning, and operations & maintenance (O&M).

Participants will gain the knowledge and practical frameworks required to evaluate, design, develop, finance, and manage bankable floating solar projects while addressing technical, environmental, regulatory, and commercial risks. Through case studies, project-development exercises, technical scenarios, group discussions, feasibility assessments, and industry best practices, learners will explore how floating solar can be integrated with hydropower, battery energy storage systems (BESS), smart-grid technologies, and hybrid renewable energy systems. The course emphasizes digital project development, climate resilience, water-energy nexus strategies, ESG performance, energy efficiency, lifecycle optimization, and sustainable infrastructure, enabling participants to contribute effectively to the rapidly expanding global floating solar PV market.

Programme Curriculum

Floating Solar PV Systems Development Training Course

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Course Objectives

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

1. Understand the principles, technologies, market trends, and global growth drivers of Floating Solar PV (FPV).
2. Conduct site screening, feasibility studies, GIS-based assessment, and solar resource evaluation for potential water bodies.
3. Assess water-body characteristics, bathymetry, wind, waves, water levels, evaporation, and climate risks affecting FPV systems.
4. Develop preliminary floating PV system designs, including modules, floats, walkways, inverters, transformers, and cabling.
5. Evaluate mooring and anchoring systems for different reservoir and water-environment conditions.
6. Apply energy yield modeling, performance analysis, and loss assessment to optimize FPV project output.
7. Integrate FPV with hydropower, battery energy storage, smart grids, and hybrid renewable energy systems.
8. Identify and manage environmental, social, biodiversity, water-quality, and ESG risks.
9. Develop CAPEX, OPEX, LCOE, financial models, project economics, and investment cases for FPV projects.
10. Understand power purchase agreements (PPAs), tariffs, auctions, procurement, contracts, and bankability requirements.
11. Plan EPC execution, marine logistics, installation, commissioning, health and safety, and quality assurance.

12. Establish effective operations, maintenance, asset management, monitoring, predictive maintenance, and lifecycle strategies.
13. Apply international best practices, digital technologies, climate-resilient design, and innovation strategies to develop commercially viable FPV projects.

Target Audience

1. Renewable Energy Developers and Independent Power Producers (IPPs).
2. Solar PV Engineers, electrical engineers, mechanical engineers, and civil/structural engineers.
3. Hydropower Professionals and utility/grid planning specialists.
4. Project Managers, EPC managers, construction managers, and asset managers.
5. Energy Consultants, feasibility-study specialists, and technical advisors.
6. Investors, Banks, Project Finance Professionals, insurers, and infrastructure funds.
7. Government Officials, Regulators, Utilities, municipalities, and energy-policy professionals.
8. Environmental, ESG, Sustainability, Procurement, and Operations Professionals involved in renewable-energy projects.

Course Modules

Module 1: Floating Solar PV Fundamentals, Market & Technology Landscape

- FPV fundamentals.
- Global FPV market trends.
- Technology architecture.
- Innovation trends.
- Case Study: Review of a utility-scale reservoir floating solar project and lessons learned in technology selection, scalability, and project development.

Module 2: Site Identification, Feasibility & Solar Resource Assessment

- Site screening methodology.
- GIS and remote sensing.
- Hydrological and environmental assessment.
- Solar resource and energy assessment.
- Case Study: Conduct a pre-feasibility assessment for a reservoir FPV site, including site constraints, preliminary capacity, and development risks.

Module 3: FPV System Design, Floating Platforms & Mooring

- System design.
- Floating-platform engineering.
- Mooring and anchoring.
- Extreme-condition design.
- Case Study: Compare mooring and anchoring strategies for a large reservoir experiencing substantial seasonal water-level changes.

Module 4: Electrical Integration, Energy Yield & Grid Connection

- Electrical architecture.
- Energy yield modeling.
- Grid integration.
- Hybrid systems.

- Case Study: Develop an FPV-hydropower hybrid concept designed to improve renewable-energy generation and grid flexibility.

Module 5: Environmental, Social, ESG & Regulatory Considerations

- Environmental impact assessment.
- Water-energy nexus.
- ESG frameworks.
- Permitting and compliance.
- Case Study: Assess environmental and stakeholder risks associated with deploying FPV on a multi-use water reservoir.

Module 6: Project Economics, Financing & Commercial Structuring

- Project economics
- Financial modeling
- Commercial structures
- Bankability and risk allocation
- Case Study: Build a simplified financial model for a utility-scale FPV project and evaluate project viability under different tariff and CAPEX scenarios.

Module 7: EPC, Construction, Installation & Commissioning

- Project execution strategy
- Marine logistics
- Health and safety
- Commissioning
- Case Study: Develop an FPV construction and commissioning plan for a large reservoir, identifying critical-path activities and installation risks.

Module 8: Operations, Maintenance, Digitalization & Future FPV Innovation

- O&M strategies
- Digital asset management
- Performance optimization
- Lifecycle management
- Case Study: Analyze an underperforming FPV plant using operational data to identify faults, improve availability, and optimize lifetime energy production.

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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