Power, Electricity and Industry Infrastructure Training Course

Professional Development Training Course Outline

Category	Engineering	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In an era of rapid energy transition and technological disruption, the **power, electricity, and industry infrastructure** sectors are undergoing a fundamental transformation. The traditional centralized model is evolving into a more decentralized, digitized, and decarbonized network, driven by the imperative of **sustainability** and the rise of **renewable energy sources**. Power, Electricity and Industry Infrastructure Training Course provides a strategic, business-focused perspective on this complex landscape, moving beyond technical engineering to encompass the critical aspects of finance, management, and policy. It's designed to equip professionals with a holistic understanding of the entire value chain, from power generation and **smart grid** integration to infrastructure **asset management** and **digital transformation**.

This intensive **5-day course** is a vital program for navigating the complexities of modern energy systems. Participants will gain a comprehensive overview of the market dynamics, regulatory frameworks, and emerging technologies that are shaping the future of these industries. We'll delve into the practical application of business principles to real-world challenges, using **case studies** to analyze successful strategies in project finance, risk management, and **sustainable infrastructure development**. The curriculum is curated to empower participants to make informed, strategic decisions, lead effectively in a changing environment, and drive organizational growth by leveraging **data analytics** and **innovation**.

Programme Curriculum

Power, Electricity and Industry Infrastructure Training Course

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Course Duration

5 days

Course Objectives

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

1. Analyze the global energy transition and its impact on power, electricity, and infrastructure.
2. Evaluate the business models and financial viability of renewable energy projects.
3. Understand the role of smart grids and microgrids in modern electricity distribution.
4. Identify key technologies driving digital transformation in industrial infrastructure.
5. Develop effective project management and risk management strategies for large-scale infrastructure projects.
6. Assess the importance of cybersecurity in protecting critical energy infrastructure.
7. Apply principles of asset management and operational efficiency to power plants and grids.
8. Formulate strategic plans for sustainable development and corporate social responsibility (CSR).
9. Leverage data analytics and AI for predictive maintenance and operational optimization.
10. Comprehend the intricacies of energy policy and regulatory compliance.
11. Master the fundamentals of project finance and investment appraisal for infrastructure.
12. Explore the potential of decentralized energy and energy storage solutions.
13. Enhance leadership and strategic decision-making skills in a dynamic industry context.

Organizational Benefits

- Upskilling the workforce with a blend of technical and strategic business acumen.
- Improving operational efficiency and productivity through the adoption of new technologies.
- Enhancing the company's ability to navigate market changes and capitalize on growth opportunities.
- Fostering a culture of innovation and forward-thinking leadership.
- Strengthening the organization's capacity for risk management and crisis response.
- Boosting employee retention and engagement by investing in professional development.
- Positioning the company as a leader in sustainable and digitally-advanced infrastructure.
- Enabling informed decision-making that drives profitability and long-term value.

Target Audience

- Engineers and technical professionals transitioning into management roles.

- Project Managers involved in energy and infrastructure projects.
- Managers and Supervisors in power, utility, and industrial sectors.
- Financial Analysts and Investors in the energy space.
- Consultants and Advisors specializing in energy and infrastructure.
- Policymakers and Regulators in the energy sector.
- Business Development and Strategy Professionals.
- Entrepreneurs and business leaders in the energy and infrastructure domain.

Course Outline

Module 1: The Global Energy Landscape & Market Dynamics

- Global energy trends: The shift from fossil fuels to renewables.
- Market liberalization and deregulation models.
- The role of geopolitics in energy security and pricing.
- Demand forecasting and energy market analysis.
- **Case Study:** The impact of fluctuating LNG prices on European power markets.

Module 2: Power Generation & Renewable Energy Integration

- An overview of traditional and renewable energy generation technologies.
- Grid integration challenges and solutions for intermittent sources.
- Energy storage systems (ESS) and their economic viability.
- Project financing for large-scale solar and wind farms.
- **Case Study:** Financing and developing a 500 MW offshore wind farm project.

Module 3: Electricity Transmission & Smart Grids

- Fundamentals of power transmission and distribution networks.
- Introduction to Smart Grid technology and its components.
- Microgrids and their applications in enhancing resilience.
- Cybersecurity threats and defenses for the power grid.
- **Case Study:** Implementing a smart meter rollout and its challenges.

Module 4: Digital Transformation & Industry 4.0

- The Internet of Things (IoT) and its application in industrial infrastructure.
- Artificial Intelligence (AI) and data analytics for predictive maintenance.
- Digital twins and their use in asset management.
- Automation and robotics in power plant operations.
- **Case Study:** Using AI to optimize maintenance schedules for a gas turbine fleet.

Module 5: Project Management & Risk Management

- Agile project management for complex infrastructure projects.
- Risk identification, assessment, and mitigation strategies.
- Stakeholder management and public-private partnerships.
- Legal and contractual frameworks for project execution.
- **Case Study:** Managing project delays and cost overruns on a new substation construction.

Module 6: Financial Management & Investment Appraisal

- Financial modeling for power and infrastructure projects.
- Capital budgeting and investment decision criteria.
- Project finance structures and non-recourse financing.
- Valuation techniques for energy assets.
- **Case Study:** Valuing a distributed energy resource (DER) portfolio for acquisition.

Module 7: Asset Management & Operational Excellence

- Lifecycle asset management from design to decommissioning.
- Strategies for maximizing operational efficiency and reliability.
- The importance of maintenance and spare parts management.
- Optimizing supply chain and procurement in the energy sector.
- **Case Study:** A comprehensive asset management plan for a national transmission network.

Module 8: Sustainable Business Strategy & Leadership

- Developing a corporate social responsibility (CSR) framework.
- ESG (Environmental, Social, and Governance) principles and their role in investment.
- Change management and leading teams through energy transition.
- Strategic planning and competitive analysis in a dynamic market.
- **Case Study:** Developing a corporate strategy to achieve **Net Zero** emissions by 2050.

Training Methodology

The course employs a highly interactive and practical methodology to ensure a deep and lasting learning experience. This includes:

- **Interactive Lectures** and facilitated group discussions.
- **Real-world case studies** and problem-solving workshops.
- **Practical exercises** and group activities.
- **Q&A sessions** with industry experts.
- **Videos** and multimedia presentations.
- **Role-playing** and simulation exercises.

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:

Register Online Now

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