Industrial Energy Auditing Training Course

Professional Development Training Course Outline

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

Course Introduction

Industrial Energy Auditing Training is designed to equip professionals with advanced skills in energy efficiency analysis, carbon reduction strategies, industrial sustainability, and cost optimization techniques. The course focuses on modern ISO 50001 energy management systems, decarbonization pathways, net-zero manufacturing, and smart energy monitoring technologies used across industrial facilities.

With rising global energy costs and increasing pressure for ESG compliance, carbon neutrality, and climate risk mitigation, organizations are prioritizing skilled energy auditors. This training empowers participants to conduct detailed thermal audits, electrical load assessments, compressed air system evaluations, and process optimization studies to significantly reduce energy waste and improve operational performance.

Programme Curriculum

Industrial Energy Auditing Training Course

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Course Duration

5 days

Course Objectives

1. Master industrial energy auditing methodologies aligned with ISO 50001
2. Perform electrical energy consumption analysis and load profiling
3. Conduct thermal system efficiency evaluation in industries
4. Identify energy conservation opportunities (ECOs) in plants
5. Implement carbon footprint measurement and reduction strategies
6. Develop net-zero and decarbonization roadmaps for industries
7. Optimize compressed air, steam, and HVAC systems efficiency
8. Apply energy benchmarking and KPI tracking systems
9. Use advanced energy auditing instruments and software tools
10. Conduct waste heat recovery and energy reuse analysis
11. Design energy management systems (EnMS) for industries
12. Ensure ESG compliance and sustainability reporting standards
13. Improve ROI through energy cost reduction projects

Target Audience

1. Energy Managers & Sustainability Officers
2. Industrial Engineers & Maintenance Engineers
3. Electrical & Mechanical Engineers
4. Environmental Health & Safety (EHS) Professionals
5. Plant Managers & Operations Supervisors
6. Renewable Energy Consultants
7. ESG & Carbon Reporting Specialists
8. Technical Auditors & Energy Consultants

Course Modules

Module 1: Fundamentals of Industrial Energy Auditing

- Energy flow analysis in industries
- Types of energy audits
- Energy balance concepts
- Industrial benchmarking techniques
- Audit reporting structure
- **Case Study:** Energy baseline assessment in a textile manufacturing plant reducing 18% energy waste.

Module 2: Electrical Energy Systems & Load Analysis

- Power factor improvement techniques
- Load profiling and demand analysis
- Motor efficiency optimization
- Harmonic distortion analysis
- Energy metering systems
- **Case Study:** Cement plant reducing peak demand charges by 22% through load shifting.

Module 3: Thermal Systems & Heat Transfer Efficiency

- Boilers and furnace efficiency evaluation
- Insulation and heat loss reduction

- Thermodynamic efficiency principles
- Waste heat recovery systems
- Fuel optimization techniques
- **Case Study:** Steel plant recovering waste heat to reduce fuel consumption by 15%.

Module 4: Compressed Air & Utility Systems Optimization

- Leak detection techniques
- Compressor efficiency analysis
- Pressure optimization strategies
- Air distribution system audit
- Utility benchmarking
- **Case Study:** Automotive plant reducing compressed air energy cost by 30%.

Module 5: HVAC & Building Energy Performance

- HVAC load calculations
- Chiller plant optimization
- Air handling unit efficiency
- Smart building controls
- Energy-efficient retrofits
- **Case Study:** Pharmaceutical facility reducing HVAC energy use by 25%.

Module 6: Renewable Energy Integration in Industries

- Solar PV integration strategies
- Biomass and waste-to-energy systems
- Hybrid energy systems
- Energy storage solutions
- Grid interaction optimization
- **Case Study:** Food processing industry integrating solar PV to offset 40% grid consumption.

Module 7: Carbon Accounting & ESG Compliance

- Carbon footprint calculation methods
- Scope 1, 2, and 3 emissions analysis
- ESG reporting frameworks
- Sustainability KPI tracking
- Net-zero transition planning
- **Case Study:** FMCG company achieving ISO 14064 compliance and 20% emission reduction.

Module 8: Energy Management Systems & Digital Auditing Tools

- ISO 50001 implementation
- IoT-based energy monitoring
- AI-driven energy analytics
- Smart dashboards & reporting tools
- Predictive energy optimization
- **Case Study:** Electronics manufacturing plant using IoT analytics to reduce energy cost by 28%.

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- 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

Start Date	End Date	Location	Price
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:

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