Renewable Energy for Climate Action 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 for Climate Action Training Course designed to build the knowledge and skills needed to accelerate the clean energy transition, climate action, decarbonization, net-zero development, energy resilience, and sustainable development. Renewable electricity is expanding rapidly worldwide, with renewables accounting for 31.7% of global electricity generation in 2024, while demand for skilled workers across renewable energy, grids, and energy efficiency continues to grow. The course therefore connects renewable energy technologies, climate mitigation, energy efficiency, smart grids, energy storage, green hydrogen, electrification, climate finance, and policy with practical approaches for implementing climate solutions.

Participants will explore how solar PV, wind energy, battery storage, distributed energy systems, smart-grid technologies, digitalization, AI-enabled energy management, Power-to-X, and green hydrogen can support resilient low-carbon economies. The programme emphasizes hands-on learning, case studies, group problem-solving, project development, scenario analysis, and real-world applications, reflecting current industry training trends toward practical and standardized clean-energy skills.

Programme Curriculum

Renewable Energy for Climate Action 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 the role of renewable energy in global climate action and decarbonization.
2. Analyze solar PV, wind, hydropower, geothermal, and emerging clean-energy technologies.
3. Evaluate energy storage solutions and their role in renewable-energy integration.
4. Explain smart grids, grid flexibility, digitalization, and distributed energy systems.
5. Apply energy-efficiency and electrification strategies to reduce emissions.
6. Assess the potential of green hydrogen and Power-to-X for hard-to-abate sectors.
7. Develop approaches for climate-resilient and reliable energy systems.
8. Examine climate policy, energy regulation, NDCs, net-zero pathways, and carbon reduction strategies.
9. Identify opportunities for climate finance, green investment, ESG, and sustainable infrastructure.
10. Use AI, IoT, data analytics, and digital technologies to improve renewable-energy performance.
11. Evaluate renewable-energy projects using technical, economic, environmental, and social criteria.
12. Design practical clean-energy and climate-action roadmaps for organizations and communities.
13. Strengthen green skills, leadership, innovation, and cross-sector collaboration for the energy transition.

Target Audience

1. Renewable energy engineers and technical professionals
2. Energy and sustainability managers
3. Climate-change and environmental professionals
4. Government policymakers and public-sector officials
5. Utility, grid, and energy-sector professionals
6. Project developers, investors, and climate-finance professionals
7. NGOs, development organizations, and community-energy practitioners
8. Researchers, consultants, educators, and professionals transitioning into clean energy

Course Modules

Module 1: Climate Change, Energy Transition & Renewable Energy Fundamentals

- Climate science, **global warming, mitigation, adaptation, and climate resilience**
- Energy-related greenhouse-gas emissions and the pathway to **net zero**
- Role of renewables in the **Paris Agreement, NDCs, and sustainable development**
- Global **energy transition** trends and clean-energy deployment
- **Case Study:** Renewable-energy expansion and climate-action opportunities in Africa

Module 2: Solar Energy & Photovoltaic Systems

- **Solar PV fundamentals**, system components, design, and performance
- Utility-scale, commercial, residential, and **off-grid solar** applications
- Solar resource assessment and system optimization
- Solar O&M, lifecycle management, and **digital performance monitoring**
- **Case Study:** Solar mini-grids supporting energy access and climate resilience

Module 3: Wind, Hydro & Other Renewable Energy Technologies

- **Onshore and offshore wind** technologies and project considerations
- Hydropower, geothermal, biomass, and other renewable-energy options
- Resource assessment and technology selection
- Environmental, social, and operational considerations
- **Case Study:** Hybrid renewable-energy systems combining solar and wind resources

Module 4: Energy Storage, Smart Grids & Renewable Integration

- **Battery energy storage systems (BESS)** and emerging storage technologies
- Renewable intermittency, flexibility, balancing, and demand management
- **Smart grids, microgrids, distributed energy resources, and grid modernization**
- Digitalization, IoT, forecasting, and **AI-enabled energy management**
- **Case Study:** Battery storage improving renewable integration and grid flexibility

Module 5: Green Hydrogen, Power-to-X & Sector Coupling

- Fundamentals of **green hydrogen** production using renewable electricity
- **Electrolysis, Power-to-X, e-fuels**, and industrial applications
- Sector coupling across **power, transport, heating, and industry**
- Hydrogen economics, infrastructure, markets, and sustainability considerations
- **Case Study:** Renewable-powered hydrogen production for industrial decarbonization

Module 6: Energy Efficiency, Electrification & Low-Carbon Solutions

- Energy-efficiency strategies for buildings, industry, and infrastructure
- **Electrification**, heat pumps, electric mobility, and clean-energy systems
- Demand-side management and energy-performance optimization
- Low-carbon technologies and **sectoral decarbonization**
- **Case Study:** Combining energy efficiency and renewable electricity to reduce organizational emissions

Module 7: Climate Finance, Policy, ESG & Renewable-Energy Project Development

- Renewable-energy **project development and investment fundamentals**
- Climate finance, green bonds, blended finance, and sustainable investment
- **ESG, climate risk, carbon markets, and sustainable procurement**
- Policy, regulation, incentives, and enabling environments for clean energy
- **Case Study:** Financing a renewable-energy project through blended climate finance

Module 8: Climate Action Strategy, Resilience & Implementation

- Developing organizational and community **climate-action strategies**
- Renewable-energy roadmaps, **decarbonization pathways, and net-zero planning**

- Climate-risk assessment and **energy-system resilience**
- Monitoring, reporting, verification, KPIs, and **impact measurement**
- **Case Study:** Developing a renewable-energy climate-action roadmap for a city, organization, or community

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

Start Date	End Date	Location	Price
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:

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