



*Training Course:*  
***ASSESSING, DEVELOPING, AND FINANCING  
CLEAN ENERGY PROJECTS***

*15 - 19 July 2024  
Kigali (Rwanda)*

## Training Course: ASSESSING, DEVELOPING, AND FINANCING CLEAN ENERGY PROJECTS

Training Course code: EW234790 From: 15 - 19 July 2024 Venue: Kigali (Rwanda) - Training Course Fees: 7140 € Euro

### Introduction

This training course will help the public and private sectors leverage global best practices to evaluate, structure, and finance clean energy projects to assess its technical and economic feasibility and see what threats need to be mitigated to maximize returns. Clean energy projects can use local resources—ranging from solar irradiation to wind to natural gas to running water—to diversify energy resource portfolios; to make a community more resilient and energy self-reliant; to create value locally in terms of local tax revenues, local industries, and local services; and reduce transmission losses which can sap 20% of the energy potential traversing those lines through heat loss at times of peak load. If a clean energy project is feasible, it can be financed through various structures to assign risk fairly, leverage interested parties' strengths to find financing solutions, and find that fabled win-win with a bankable project that benefits all parties.

The participants will be conversant in topics ranging from distributed vs. centralized energy paradigms, to T&D losses, low-risk business models to finance clean energy, to Power Purchase Agreements.

### Course Objectives

The participants will benefit from gaining a working knowledge of clean energy resources and technologies that can convert those resources into usable energy in homes, businesses, institutions, industries, and even entire cities; assessing the enabling environment of policies, legislation, regulatory regimes, grants and loans, and other indicators of the public sector's commitment to promoting and installing clean energy—whether it is for economic development, environmental, social justice, or risk mitigation purposes; being able to assess, develop, and finance renewable energy projects on technical, economic environment bases; and making informed decisions on the later phases of clean energy project development, financing, and de-risking to create solid investments with reasonable returns.

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

- Better understand clean energy resources and conversion technologies
- Know how to assess the public sector's commitment to and support of clean energy in the long run, and their motivations behind this commitment
- Understand the link between an end user's load profiles and the most appropriate configuration of clean energy technologies, energy storage systems, advanced controls, and grid connectivity Conduct basic clean energy project assessment and development
- Know the various de-risking tools and approaches to increase investor and lender confidence, maximize returns, and create win-wins for all vested parties

### Training Methodologies

The participants in this training course will receive thorough training on the subject, utilizing various proven adult learning teaching and facilitation techniques, including a brief assessment of participant names, roles, and interests. It also contains charts, illustrations, pictures, embedded website hyperlinks, videos, case studies, practical problem-solving sessions, and interactive discussions. The PowerPoint will be engaging and esthetically

appealing with a focus on information graphics.

## Organizational Benefits

The organization will benefit from sending the employees to attend this training course as they will be able to contextualize the roles within the wider energy sector related to clean energy project resource assessment, conversion technology appropriateness, project assessment and development, and conventional and innovative financing approach tailored to various scenarios—including clean energy investments to meet corporate Environmental, Social, and Governance ESG and Corporate Social Responsibility CSR goals.

The organization can leverage knowledge and skillsets, such as:

- Knowing how energy generation technologies convert clean energy resources into electricity, heat, cooling, or other energy products in a safe and profitable manner
- Being able to assess, develop, finance, and integrate clean energy systems into existing energy paradigms to the benefit of investors, lenders, end-users, and society
- Drawing on existing policies, regulations, legislation, and support mechanisms to create an enabling environment for clean energy projects
- Knowing which business model would best meet their organizations' capacities, institutional knowledge, and risk appetite for investing in renewable energy systems
- Learning more about blended finance using a company's existing capital or capital investment funds, investor equity stakes, lender loans, credit enhancements, concessional lending, land, and other ways in which clean energy deals can be structured and financed

## Personal Benefits

The participants will be able to leverage their gained knowledge and skillset to become a leader in their organization and advance their careers based on ethical and practical value-add.

Participants will personally benefit from this training course because it will empower them to:

- Gain a deeper understanding of the technical, economic, the marketplace, policy, regulatory, environmental, and social concepts related to clean energy investments as a corporate strategy
- Understand the ways in which renewable energy can be developed and integrated into the conventional energy paradigm to make a positive effect on the environment and society
- Prioritize various clean energy business models that best leverage existing resources and address risk appetites
- A base of knowledge that can help them decide on possible career choices or new focal areas

## Target Audience

This training course is ideal for corporations interested in investing in clean, renewable energy as an environmentally and socially responsible measure and public and private sector stakeholders who can assess, develop, and finance those investments.

This course is suitable for a wide range of energy and climate change professionals from the public, private, and association sectors, but will greatly benefit:

- Corporations interested in Environmental, Social, and Governance ESG Drivers and Screens
- Corporations engaged in Corporate Social Responsibility CSR
- Parties interested in Accessing ESG and CSR Bonds

- Commercial, Institutional, and Industrial End-Users users of the projects' generated energy
- End-user Market Sector Associations
- Clean Energy Product Manufacturers
- Clean Energy Services Offerors
- Clean Energy Project Developers
- Clean Energy Financial Institutions and Lenders
- Clean Energy Equity Investors
- Clean Energy Industry Associations
- Credit Enhancement Service Providers
- National and Sub-National Elected Officials
- Public Sector Agency, Ministry, and Authority Officials
- Electric Utilities and Regulators

## Course Outlines

### Day 1

#### CLEAN ENERGY RESOURCES

- Clean Energy Resources Overview
- Solar
- Wind
- Water
- Biomass
- Biofuels
- Hydrogen
- Natural Gas
- Resource Information, e.g., from the International Renewable Energy Agency IRENA
  - Country Profiles
  - Clean Energy Corridors
  - Global Geothermal Alliance
  - Renewables Readiness Assessments
  - Small Island Developing States SIDS Lighthouses
  - Global Atlas for Renewable Energy
  - Sustainable Energy Marketplace
- Localized Clean Energy Resource Data
- Capacity Factors
- Geographic Dispersion

### Day 2

#### CLEAN ENERGY GENERATION TECHNOLOGIES

- Centralized vs. De-centralized Generation
- Renewable Energy Generation Technologies
  - Solar Photovoltaic PV
  - Concentrating Solar Power CSP
  - Wind Turbines
  - Geothermal
  - Hydropower dammed and run-of-river
  - Wave, Current, and O-TEC
  - Fuel Cells

- Hydro/Solar Seasonal Complementarity
- Natural Gas Energy Generation Technologies
  - Natural Gas Combustion: Boilers, Steam Generators, Turbines, and Engines
  - Natural Gas Combined Heat & Power
- District Energy, Cooling, and Heating
  - Campuses
  - Industrial parks
  - Cities
- Energy Storage Technologies
- Ride-through vs. Short-term vs. Long-term Dispatch Needs
- Flywheels
- Lithium-Ion
- Nickel-cadmium
- Lead Acid
- Vanadium Flow Batteries
- Iron Flow Batteries
- Pumped Hydro
- Dammed Hydro
- Clean Energy Data from the International Energy Agency IEA
  - Fuels and Technologies
  - Analysis
  - Data
  - Analysis
  - World Energy Outlook

### Day 3

## EVALUATING CLEAN ENERGY PROJECTS

- Market Assessment
  - Trends in Energy Use
  - Need for Storage Based on Load Profiles
  - Avoided Grid Electricity Tariffs
  - Time of Use/Time of Day Rates
  - Market Sector Strength and Projected growth
  - Ability to Pay
- Enabling Policy & Regulatory Environment
  - Policy Price Support Mechanisms
    - Single-Buyer Paradigm
    - Renewable Portfolio Standards
    - Feed-In Tariffs
    - Competitive Procurement
    - Grant Programs
    - Subsidy Programs
  - Net Metering
  - Community Energy
  - Time of Use/Time of Day
  - Taxes
  - Depreciation/MACRS
- Making Renewable Energy Projects Bankable Through Due Diligence
  - Modeling
  - Project Preparation Facility



- ODI Model
- Load Assessment
  - Electricity, Heating, Cooling, and Process Heat
  - Net - Zero Energy
  - Residential
  - Commercial & Institutional
  - Industrial
    - Electricity
    - Process heat
    - Cooling
  - Electric Vehicle Charging
  - Energy Storage and Controls Systems
- Technical Feasibility
  - Available Resources
    - Global Atlas for Renewable Energy
    - Need for Local Data Acquisition
  - Capacity Factors
    - Translating CF Into Spreadsheet Analyses
  - Variable Renewable Energy and Grid Stability
  - Modeling, e.g., with PV Syst, System Advisor Model
- Economic Feasibility
  - Clean Energy Cost Trends
  - Power Purchase Agreements
  - The Creditworthiness of the End-user/Off-taker
  - Cashflow
  - Metrics, e.g., ROI and payback

## Day 4

### DEVELOPING CLEAN ENERGY PROJECTS

- Permits, ESIA, etc.
  - Contract Enforceability
- Regulatory Steps
  - Ease of Doing Business Rating
  - ESIA
  - Land permits
  - Air permits
  - Contract Enforceability
  - Grid impact studies
  - PSS/E model
- Electricity Transmission & Distribution Grid
  - Off-Grid vs. On-Grid
  - Grid as Battery/Buffer
  - Islanding
  - Advanced Controls Systems
  - Energy Access
  - Grid Arrival
  - Ability to Pay
    - DISCO
    - Cultural Sensitivities
    - Cost-Reflective Tariffs

- Collection Rates
  - Customer Regularization
- DISCO/Generator/Procurement Agency/Investor/Lender chain
- Financing Next Section and Procurement
- Centralized vs. IPP vs. de-centralized
- Power Purchase Agreement
  - Single-buyer
  - Feed-in Tariffs
  - RPS SRECs
  - Competitive procurement, e.g., Reverse Auction
  - IPPs
- Commissioning
- Operations & Maintenance
  - Contract
  - Optimizes Performance and Returns
- Decommissioning

## Day 5

### Debt/Equity Ratios

- ROI, Payback Period, et al. metrics
- Financing Models Overview
  - CAPEX
  - Debt-Equity Ratios
  - Self-Financed
  - Project Financing
  - Leasing
  - Renewable Energy Service Companies RESCO
  - Independent Power Producers IPP
  - PAYGO
  - Crowdfunding
- Public-Private Partnerships
  - Private Sector Assets and Motivations
    - Access to Capital and Credit
    - Skilled Workforce
    - Know-How
  - Public Sector Assets and Motivations
    - Land
    - Municipal/Green Bonds
  - Models:
    - BOT build-operate-transfer
    - BOOT build-own-operate-transfer
    - BOO build-own-operate
    - BLT build-lease-transfer
    - DBFO design-build-finance-operate
    - DBOT design-build-operate-transfer
    - DCMF design-construct-manage-finance
- ESG Bonds
  - Visa Expands Commitment to Sustainability Through Inaugural \$500 Million Green Bond Issuance
  - Google parent Alphabet Inc. Issuance aligns with growing investor focus on social and environmental matters at very low rates

- Corporate Sustainability Responsibility
- De-Risking Instruments
  - PCOAs
  - PRGs
  - PRI
  - Sovereign Guarantee
  - Credit Enhancement
  - Project Financing
  - Project Preparation Facility



## Registration form on the Training Course: ASSESSING, DEVELOPING, AND FINANCING CLEAN ENERGY PROJECTS

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

### Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....  
Position: .....  
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Personal E-Mail: .....  
Official E-Mail: .....

### Company Information

Company Name: .....  
Address: .....  
City / Country: .....

### Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....  
Position: .....  
Telephone / Mobile: .....  
Personal E-Mail: .....  
Official E-Mail: .....

### Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
- ☐ Please invoice me
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### Easy Ways To Register

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