Climate Change and Energy

Decarbonizing Energy Economies with Renewable Energy

Introduction

With improved knowledge of debt/equity ratios, credit enhancement, and end-user creditworthiness assessments, investors will be able to de-risk and increase the returns on their renewable energy investments.

The public and private sector participants in this Course N Carry training program will get a better understanding of, and ability to develop, and apply strategies to de-carbonize energy economies based on affordable, locally sourced renewable energy sources. These tactics are essential weapons in the fight against the very real threat that climate change poses to both the current and future generations of humans. Moreover, when implemented properly, renewable energy can frequently result in cost savings for end users. For instance, in many situations today, solar energy is less expensive than traditional energy obtained from the power grid. This renewable energy source can be just as dependable as power from the grid if it has energy storage.

It will have a firm understanding of how to incorporate renewable energy consumption into the traditional energy paradigm in a way that benefits society and the environment.

Objectives

The participants will gain a deeper understanding of global energy trends, an understanding of how the release of carbon dioxide into the atmosphere is causing "intergenerational inequity" among future generations, knowledge of methods to decarbonize economies, the ability to evaluate, develop, and finance renewable energy projects on the basis of technical and financial considerations, the creation of an environment that is favorable to the scaling up of renewable energy, and the capacity to make well-informed decisions by utilising data from the best information sources in the world

Participants in this Course N Carry training course will be capable of the following by the end:

- Draw a distinction between the effects of climate change and the production and use of conventional energy.
- Gain a deeper understanding of how decarbonising economies can benefit from energy efficiency, renewable energy, reducing emissions from deforestation (REDD), and carbon capture and sequestration.
- Perform fundamental evaluation and development of renewable energy projects.
- Recognise how low-carbon energy initiatives can be made possible by renewable energy laws, legislation, and procurement paradigms.
- Determine which finance strategy, depending on the circumstances, could best help them achieve their goals.
- Gain access to the greatest data collection globally to increase understanding of energy and climate change.

Training Methodology

This training session will provide participants with comprehensive training on the subject matter, using a range of tried-and-true adult learning teaching and facilitation methodologies, along with a quick evaluation of their names, roles, and areas of interest. In addition, it includes case studies, films, interactive debates, interactive graphics, photos, charts, and references to other websites. The PowerPoint will emphasise informative graphics and be visually beautiful and captivating.

Organizational impacts

The employees' attendance at this training course will benefit the organisation because it will enable them to contextualise their role within the larger energy and climate change domain defined by multinational organisations that have invested a great deal of time, effort, and money in creating and implementing effective strategies.

The following knowledge and skill sets can be utilised by the organisation:

- Evaluating the amount of carbon present in both traditional and renewable energy sources
- Understanding how resources are transformed into electricity, heat, cooling, or other energy products using energy producing technologies
- Recognising the role that high-carbon resources have in intergenerational inequality and climate change
- Having the ability to evaluate, create, fund, and incorporate renewable energy systems
- being aware of the business model that would most suit their organization's needs in terms of institutional expertise, risk tolerance, and capacity to invest in renewable energy systems
- Utilising the laws, rules, policies, and support systems already in place to establish a climate that is favourable to low-carbon energy
- Gaining access to some of the greatest information available worldwide will deepen their understanding of energy and climate change and, as a result, help them make more educated decisions for their company, family, communities, and nation.

Personal Imapct

Through the application of their newly acquired knowledge and skill set, the participants will be able to lead within their organisation and further their careers through moral and useful value-added.

This training program will directly benefit the participants since it will enable them to:

- Learn more about the energy and climate change-related technological, economic, market, policy, regulatory, environmental, and social concepts.
- Oversee long-term energy planning and resource management programmes that promote the prudent use of resources by diversifying portfolios and developing low-carbon plans.
- Examine how they "reduce the footprint" of their houses and companies by using renewable energy.
- Different business models for renewable energy make the most use of current resources and risk tolerance.

Who should attend?

People who work in the energy industry, especially those in finance, accounting, and performance measurement professions, will find this Course N Carry training course to be very beneficial.

A wide spectrum of energy and climate change experts from the public, commercial, and association sectors can benefit from this Course N Carry training course, but the following will be especially beneficial:

- Regulators and Policymakers in Energy
- Changes in Climate Regulators and Policymakers
- Leaders of the National and Subnational Governments
- Developers of Renewable Energy Projects
- Associations for the Renewable Energy Industry
- Renewable Lenders and Financial Institutions
- Equity Investors in Renewable Energy
- Industry Sector Associations for End Users

Course Outline

Day 1

Worldwide Energy Resources: Production, Distribution, and Final Uses:

- Coal
- Gas and oil

- Nuclear Power Solar Energy Wind Power Biomass Biofuels Hydrogen Production Technologies
- Combustion: Engines, Turbines, Boilers, and Steam Generators
- Power and Heat Together
- Photovoltaic Solar (PV)
- Solar Power Concentration (CSP)
- Wind Generators
- O-TEC, Wave, and Current Geothermal Fuel Cells
- Networks for the Transmission and Distribution of Power
- SDG: Energy Access Transmission Lines with a kV range, related land requirements, and associated thermal energy losses are the goals.
- Distribution kV Range Rates of Collection
- Normalisation
- Energy at the End of Use: Efficiency Comes First for Heating, Cooling, and Process Heat Net - Zero Energy
- District Energy; Off-Grid vs. On-Grid; Residential; Commercial & Institutional; Industrial Transportation; Energy Storage and Control Systems

Day 2

Sustainable Development Goals (SDG): The Problem with Carbon

- Mitigation versus Adaptation to Climate Change
- Removal
- Drilling: Mountaintop Removal; Natural Gas vs. Renewable Energy; Carbon Content of Fossil Fuels
- Greenhouse gases & ozone
- Techniques for Decarbonising
- Efficiency in Energy Use
- Renewably Sourced Energy
- Cutting Down on Emissions from Forest Degradation and Deforestation (REDD)
- Cost Considerations for Carbon Capture and Sequestration
- Cost Information
- Countries that are Carbon Neutral
- Intergovernmental Panel on Climate Change (IPCC) of the United Nations
- The Interaction of Development Pathways, Climate, Emissions, and Risks: Features of Mitigation Pathways
- Benefits and Costs of Economic and Social Mitigation and Adaptation in the Framework of Development Pathways
- Measures for Mitigation and Adaptation in the Framework of Sustainable Development
- Funding and Assistance Methods

Day 3

Technical-Economic Factors to Take Into Account When Increasing Renewable Energy

- IPP vs. Decentralised against Centralised Renewable Energy: Applying Due Diligence to Make Renewable Energy Projects Bankable
- Preliminary Investigations
- In-depth studies of feasibility
- Facility for Project Preparation Technical Evaluation of Available Resources
- Worldwide Renewable Energy Atlas Requirements Local Data Acquisition Capacity Factors
- Converting Spreadsheet Analyses From CF
- Modelling Variable Renewable Energy and Economic Evaluation of Grid Stability
- The Price of Systems Using Renewable Energy
- Power Purchase Contracts
- De-Risking Devices
- Agreements for Put Call Options (PCOAs)
- Guarantees of Partial Risk (PRGS)
- Models of Sovereign Guarantee Financing Summary
- Ratios of Debt to Equity Credit Improvement
- Lease-based self-financed Project Finance Companies that Provide Renewable Energy Services (RESCO)
- Producers of Independent Power (IPP)
- PAYGO

Day 4

Establishing a Supportive Environment Appropriate for Expanding Renewable Energy via Integrated Resource and Resilience Management

- Long-Term Energy Planning for the Nation
- Facility Net Metering Community Energy Renewable Portfolio Standards Project Preparation
- Feed-In Tariffs
- The Single-Buyer Model
- Competitive Purchasing
- Public-Private Collaborations
- Private Sector Resources and Incentives
- Public Sector Resources and Purposes
- Energising the Government Sector

Day 5

The International Energy Agency (IEA) provides sources of data for informed decision-making about fuels and technologies.

- Examination

- Analysing Data
- Global Energy Prospects
- Agency for International Renewable Energy (IRENA)
- Profiles of Countries
- Corridors for Clean Energy
- Global Geothermal Alliance Legislative Assembly
- Roadmap for Renewable Energy (Remap)
- Assessments of Readiness for Renewables
- Lighthouses in Small Island Developing States (SIDS)
- The World Atlas of Renewable Energy
- Marketplace for Sustainable Energy
- Global Development Partners Encouraging the Mitigation of Climate Change via Renewable Energy
- Global Foundations Encouraging the Mitigation of Climate Change through Relevant Associations for Renewable Energy
- The C40 Covenant of Mayors
- Global Mayors for Climate and Energy Covenant
- International Solar Alliance, International Renewable Energy Alliance, and Global Climate Change Alliance

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