



Training Program:

Renewable Energy and Sustainability

Navigating the Transition to a Sustainable Energy Future

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Introduction:

The global transition to a sustainable energy future has begun. Renewable energy is fast growing at an astonishing pace, information technologies are revolutionizing electricity trade and management, and competitive electricity markets are driving unprecedented change in electricity generation choice. These rapid changes create countless opportunities for those firms and individuals that understand how and why these changes are happening, anticipate where energy markets are headed, and innovate new solutions and approaches that meet energy-related needs. Conversely, the transition will leave behind those that fail to keep up.

Succeeding in this rapidly changing world requires a solid knowledge base in energy fundamentals, energy technologies, and energy markets; and the skills to use this knowledge to assess new business opportunities. This training course provides both that essential knowledge and those critical skills. After completing this training course, you will understand “why” the energy system is changing, “where” it is headed, “what” it means for your career and your firm, and “how” to successfully navigate the ongoing transition to a sustainable energy future.

TRAINING METHODOLOGY:

This training course will use a thoughtful combination of lectures, structured discussion, roleplay, case studies, and exercises. The participants will have opportunities to assess the ongoing energy transition means for their firms, analyze implications of new technologies, and conceive imaginative solutions to energy business challenges.

Who Should Attend?

This training course is targeted at professionals new to the energy industry, and those in both modern and traditional energy firms needing to better understand and respond to the rapid changes in the energy industry.

Objective:

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



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- Assess why the energy system is changing, and what it means for you and your organization
- Quantitatively evaluate sustainable energy options including renewables, energy efficiency, and electrification
- Explain how information technologies are transforming the electricity system
- Analyze how policies such as auctions and energy targets can be leveraged for success
- Assess and interpret trends and forecasts that tell us about the future of energy
- Predict where the energy-related opportunities lie, and know how to take advantage of them

Course Outline

DAY ONE: ENERGY FUNDAMENTALS

- Energy Problems and Solutions
- World Energy Overview
- Energy Fundamentals Review
- Country-Specific Energy Overviews
- Electricity Fundamentals
- Electricity Industry Structure

DAY TWO: RENEWABLE ENERGY TECHNOLOGIES AND TRENDS

- Renewable Energy (RE) Basics
- Renewable Energy (RE) Myths and Challenges
- Renewable Energy (RE) Technologies
- Economic Analysis of Renewable Energy (RE)
- Renewable Energy (RE) Forecasts and Scenarios

DAY THREE: DISTRIBUTED RENEWABLES AND GRID INTEGRATION

- Distributed Systems and Microgrids
- Rooftop Photovoltaics (PV) Technologies and Trends
- Rooftop Photovoltaics (PV) Case Study Analysis
- Grid Integration: Problem and Solutions

- Storage Technologies and Trends
- Hybrid Power Plants

DAY FOUR: INFORMATION TECHNOLOGIES (SMART GRID) AND ENERGY POLICY

- Electrification Trends and Implications
- Electric Vehicles as Distributed Storage
- Demand Response (DR)
- Energy Policy Levers and Tools
- Auctions
- Feed-in Tariffs and Net Metering

DAY FIVE: ENERGY EFFICIENCY AND SUSTAINABLE ENERGY FUTURES

- Energy Efficiency Overview and Technologies
- Megawatts: Theory and Practice
- Energy Efficiency - Business Models and Case Studies
- Elements of a Sustainable Energy Future
- Data Sources and Analysis Tools

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