Understanding the Future of Energy Navigating the Global Energy Transition

Course general description:

This comprehensive course explores the rapidly evolving energy landscape, examining current trends, emerging technologies, and future scenarios in the global energy sector. Participants will gain insights into renewable energy systems, energy storage technologies, smart grids, and the economic and policy frameworks shaping the energy transition. The course combines theoretical understanding with practical applications to provide a holistic view of the future energy landscape.

Audience:

This course is designed for:

1. Energy Industry Professionals
2. Policy Makers and Regulators
3. Business Development Managers
4. Investment Analysts
5. Environmental Specialists
6. Sustainability Managers
7. Engineering Professionals
8. Corporate Strategy Teams
9. Energy Consultants

Course objectives:

1. Understand global energy transition trends and drivers
2. Evaluate different renewable energy technologies and their applications
3. Analyze energy storage solutions and their role in future energy systems
4. Assess the impact of digitalization and smart grid technologies
5. Understand energy policy frameworks and market mechanisms
6. Evaluate investment opportunities in the energy sector
7. Analyze environmental and social implications of energy choices
8. Develop strategies for energy transition

Course duration:

3 days

Course location:

Dubai

Course contents:

Day 1: Global Energy Transition and Renewable Technologies

- Global energy landscape overview
- Energy transition drivers
- Climate change and decarbonization
- Future energy scenarios
- Technology innovation trends
- Renewable energy technologies
- Solar photovoltaic and thermal
- Wind power systems
- Hydroelectric power
- Geothermal energy
- Biomass and waste-to-energy
- Integration challenges and solutions

- Case Study: Renewable Energy Project Analysis
- Group Exercise: Technology Assessment

Day 2: Energy Storage and Smart Systems

- Energy storage technologies
- Battery systems
- Pumped hydro storage
- Hydrogen storage
- Thermal storage
- Grid integration strategies
- Smart grid technologies
- Digitalization in energy systems
- Demand response
- Virtual power plants
- Microgrids and distributed energy
- Case Study: Energy Storage Implementation
- Group Exercise: Smart Grid Design

Day 3: Policy, Economics, and Future Scenarios

- Energy policy frameworks
- Market mechanisms
- Carbon pricing
- Investment trends
- Business models innovation
- Future energy scenarios
- Energy security considerations
- Environmental impacts
- Social implications
- Course review and synthesis
- Final Assessment

Methodology:

- 50% lectures & concepts
- 10% Videos
- 15% Case studies
- 15% Exercises & Quizes.
- 10% Discussions

Course code: (TPR0014)