TRAINING TITLE
ENERGY TECHNOLOGY FORECASTING AND ASSESSMENT

Training Duration
5 Days

Training Venue and Dates

Ref No. EE085	Energy Technology Forecasting and Assessment	5	20th-24th Jan. 2025	$5,500	Dubai, UAE

In any of the 4 or 5-star hotels. The exact venue will be informed later.

Training Fees
- **$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch**

Training Certificate
Define Management Consultants Certificate of course completion will be issued to all attendees

Target Audience:
- **Middle and senior management personnel involved in strategic planning, technology development, and sustainability initiatives.**
- **Professionals seeking to enhance their knowledge and skills in evaluating and integrating emerging energy technologies aligned with sustainability goals and climate change mitigation strategies.**

Program Description:
This intensive 5-day program equips participants with the necessary knowledge and analytical tools to forecast future trends in energy technology development. The program emphasizes the critical role of technology assessment in guiding strategic decision-making, considering the evolving energy landscape, sustainability imperatives, and climate change challenges. Participants will explore a range of promising energy technologies across various sectors, assess their environmental and economic feasibility, and develop strategies for integrating these technologies into operations to achieve long-term sustainability goals.
The program utilizes a blend of interactive lectures, case studies, group discussions, practical exercises, and potential guest presentations from industry experts (subject to approval).

Learning Objectives:
- **Understand the key drivers shaping future energy demand and supply, including population growth, economic development, and climate change considerations.**
- **Develop an analytical framework for forecasting the evolution of energy technologies across various sectors (e.g., renewable energy, energy storage, carbon capture utilization and storage).**
- **Evaluate the technical and economic feasibility of emerging energy technologies, considering factors like cost, efficiency, environmental impact, and scalability.**
- **Analyze the potential social and regulatory implications of implementing new energy technologies within the oil and gas industry.**
- **Develop strategies for integrating promising energy technologies into operations to reduce greenhouse gas emissions, enhance energy efficiency, and contribute to a sustainable energy future.**
- **Foster a culture of innovation and technological readiness within to adapt to a rapidly evolving energy landscape.**

TRAINING METHODOLOGY
A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

All presentations are made in excellent colourful power point. Very useful Course Materials will be given.
- **30% Lectures**
- **30% Workshops and work presentation**
- **20% Group Work & Practical Exercises**
- **20% Videos & General Discussions**

Course Outline (5 Days):
Day 1: Setting the Stage: The Evolving Energy Landscape and Climate Change (8 hours)
- **Module 1: Global Energy Trends and Challenges (Morning)**
  - o **Overview of global energy demand and supply projections, considering population growth, economic development, and urbanization trends (2 hours).**
  - o **The urgency of climate change mitigation and the role of the energy sector in reducing greenhouse gas emissions (2 hours).**

- o **International energy policies and regulations shaping the transition towards a low-carbon economy (2 hours).**
- **Module 2: Introduction to Energy Technology Forecasting (Afternoon)**
  - o **Concepts and methodologies for forecasting technological advancements in the energy sector (2 hours).**
  - o **Understanding the role of technology forecasting in strategic decision-making for energy companies (2 hours).**
  - o **Case studies of successful applications of technology forecasting within the oil and gas industry (2 hours).**

Day 2: Exploring Emerging Energy Technologies Across Sectors (8 hours)
- **Module 3: Renewable Energy Technologies (Morning)**
  - o **Overview of various renewable energy technologies (e.g., solar, wind, geothermal, biomass) and their potential for large-scale deployment (2 hours).**
  - o **Technological advancements and cost reductions in renewable energy sectors, considering recent trends and future outlooks (2 hours).**
  - o **Integration of renewable energy sources into operations: opportunities and challenges (2 hours).**
- **Module 4: Energy Storage Technologies (Afternoon)**
  - o **The critical role of energy storage technologies in enabling a clean energy transition (2 hours).**
  - o **Evaluation of different energy storage options (e.g., batteries, pumped hydro, compressed air) and their suitability for various applications (2 hours).**
  - o **Assessing the feasibility of energy storage solutions for grid integration and peak demand management (2 hours).**

Day 3: Exploring Emerging Energy Technologies Across Sectors (Continued) (8 hours)
- **Module 5: Carbon Capture, Utilization, and Storage (CCUS) Technologies (Morning)**
  - o **The importance of CCUS technologies in achieving net-zero emissions and mitigating climate change (2 hours).**
  - o **Reviewing different CCUS capture technologies (e.g., post-combustion capture, pre-combustion capture) and their potential applications (2 hours).**
  - o **Exploring opportunities for utilizing captured carbon dioxide (CO_2) for enhanced oil recovery (EOR) or other industrial processes (2 hours).**
- **Module 6: Energy Efficiency Technologies (Afternoon)**
  - o **The importance of energy efficiency in reducing overall energy consumption and environmental impact (2 hours).**

o **Assessment of various energy efficiency technologies applicable across the oil and gas value chain (e.g., advanced refining processes, digitalization for optimization) (2 hours).**
o **Developing strategies for implementing energy efficiency measures operations to improve sustainability performance (2 hours).**

Day 4: Assessing and Integrating New Technologies (8 hours)
- **Module 7: Technology Assessment Framework (Morning)**
  o **A structured approach for evaluating emerging energy technologies, considering technical, economic, environmental, and social (TEES) factors (2 hours).**
  o **Life Cycle Assessment (LCA) as a tool for assessing the environmental impact of energy technologies throughout their life cycle (2 hours).**
  o **Case studies of technology assessment applied to real-world energy projects (2 hours).**
- **Module 8: Integrating New Technologies into Operations (Afternoon)**
  o **Developing a roadmap for technology integration, considering strategic objectives, sustainability goals, and risk tolerance (2 hours).**
  o **Overcoming barriers to technology adoption within the oil and gas industry (e.g., upfront costs, regulatory uncertainty) (2 hours).**
  o **Developing strategies for managing the transition to new energy technologies, including workforce training and infrastructure development (2 hours).**

Day 5: The Future of Energy: Innovation and Collaboration (8 hours)
- **Module 9: Fostering a Culture of Innovation (Morning)**
  o **The importance of innovation in accelerating the development and adoption of clean energy technologies (2 hours).**
  o **Strategies for promoting a culture of innovation, including encouraging collaboration and risk-taking (2 hours).**
  o **Exploring potential partnerships with research institutions, startups, and technology providers for collaborative innovation (2 hours).**
- **Module 10: Conclusion and Future Outlook (Afternoon)**
  o **Recap of key learnings from the program and their application to sustainability goals (2 hours).**
  o **Emerging trends shaping the future of the energy sector and their implications for ong-term strategies (2 hours).**
  o **Developing action plans to integrate energy technology forecasting and assessment into decision-making processes (2 hours).**

NOTE:

Pre & Post Tests will be conducted.

Case Studies, Individual and group Exercises, Project works (making into groups), Role plays, Group Discussions, Last Reviews, and assessments will be carried out.

===================================