



TM208: Understanding the Future of Energy

Training Description:

Energy Industry is profoundly complex and interrelated – it is not just a problematic engineering challenge but a multi-dimensional social, political, environmental, and economic problem with mutual dependencies. Energy is critical to this civilization. It raises questions on using natural sciences, social science, resource management, and economics to solve some of our planet's most pressing concerns, from climate change to food security. Energy encompasses crude oil, refined products like gasoline and diesel, power, coal, natural gas, nuclear and renewable energy sources. And it also includes the business of energy from an operational standpoint. Examining the future of energy and energy technologies are essential. Changes that are coming will have significant implications for corporations, industries, and entire economies. The future dynamics of the oil and gas supply will change. And these changes are likely to succeed the changes of recent years that we have seen during the so-called shale revolution.

Oil demand and natural gas demand are likely to rise sharply in the decade ahead, with China, India, emerging Asia, and other emerging markets at the epicenter of the surge in demand growth. Meanwhile, the most significant sources of additional marginal supply for oil and natural gas are set to come from the United States, which has historically been a significant net importer of hydrocarbons. This situation is a substantial change with the economy, supply chain, and even national security ramifications. The push against CO2 emissions and a push toward clean energy are likely to force a policy move away from coal across economies. This training course will critically examine future energy trends and highlight energy technologies options, opportunities, and risks.

Training Objectives:

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

- ✓ Understand the future trends of the Energy industry
- ✓ Be aware of Climate Change and the threat to food security
- ✓ Analyze the various options, opportunities, and risks in each trend
- ✓ Determine Green hydrogen currently produced from electrolysis is a high-cost option; explore the possibilities of reducing the cost with innovative technologies
- ✓ Design to rectify the current limitations and provide flexible and high-density power
- ✓ Identify to produce a secure, resilient, and decarbonized energy system

Personal Impact:

- ✓ Master the core competencies of the current and future energy technologies
- ✓ Analyze the various options, opportunities, and risks in each trend
- ✓ Sharpen the business skills by learning those techniques that improve capital productivity, return on investment, and operational excellence.
- ✓ Understand the value chain optimization in Energy Industry and apply it at the workplace to enhance shareholders' value.
- ✓ Be fully cognizant of success factors of the Energy Industry's different categories – oil & gas Companies, Refining & Petrochemical Companies, and Renewables their relative strengths and weaknesses.

Organisational Impact:

- ✓ It offers a broader management perspective of the global energy business
- ✓ Highlights the success factors in each category of several business models

- ✓ Defines how innovations in energy technologies help drive job growth and economic growth and improve living standards worldwide.
- ✓ Clarifies how we can achieve these goals while delivering value to shareholders.
- ✓ Inculcates the corporate culture of effectively dealing with the core issues, tactics, and essential concepts of successfully running the energy business

Training Designed for:

This course is intended for Business Development Professionals in Energy Industry, Corporate Planners, Investment Analysts, Oil & Gas Directors would appreciate the gist of a comprehensive energy study program. More senior Oil & Gas executives are intrigued by the various clean energy concepts and utilize their resources to produce Hydrogen and move forward with the Energy Industry transformation. To fully understand the future technologies, Geologists, Engineers, Financial Analysts, Accountants, Lawyers, IT technicians, and Managers in the Oil & Gas energy sector, this must include Project managers, Engineers, Supply Planners & Scheduling Professionals, Traders, and Sales Personnel. As the industry transforms, Auditing personnel, Compliance officers, Equity analyst and Bankers, Joint Venture officers, Negotiators, and Contracting professionals.

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.” (This hands-on, highly-interactive training includes simulator, real-life case studies and exercises).

This training course is available upon request in English or Arabic. Content, location and duration can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

❖ THE ENERGY INDUSTRY AND ITS IMPACT

- Overview of this Course
- Energy and Technology – The Critical Element of Corporate Success
- Convention and Unconventional Oil & Gas, and LNG Industry
- The problem of Climate Change
- What is Global Warming?
- The Clean Air Act
- The Detrimental Impacts
- The Food Security of the World

DAY TWO:

❖ THE TRANSFORMING ENERGY FUTURE

- The Future of Oil Supply Dynamics
- The Future of Natural Gas Supply Dynamics
- The Future of Natural Gas Demand Dynamics
- The Future of Energy Mix

- The Future of Oil Demand Dynamics
- What is fossil fuels' future?
- Energy Demand-Side Technologies
- Energy Supply-Side Technologies

DAY THREE:

❖ THE CLEAN ENERGY OPTIONS AND OPPORTUNITIES

- Trends in Clean Energy and Renewables
- Wind, Solar and Wave Energy
- Hydroelectric and Geothermal Power
- Waste to Energy
- Biomass & Biogas
- Carbon Capture & Storage
- Moving Energy around
- Hydrogen Fuel and Hydrogen Fuel Cells
- Ammonia and Ethanol
- Financing Renewable Energy
- The basic problem
- Command & Control Solutions

DAY FOUR:

❖ HUGE ENERGY IS NEEDED

- Nuclear Energy – Fission, Fusion, or Modular
- What works and does not work?
- Benefits and costs
- Recent Accidents and Challenges
- Where do different countries and regions stand?
- Is the Future of Cars All-Electric?
- The possible Scenarios
- The three futures of Flight
- Aviation – smaller and spread out?

DAY FIVE:

❖ THINKING OUTSIDE THE BOX

- The Carbon footprint of Space Travel
- The four 'C's of the energy transition
- Fifth-generation heat
- Does Covid-19 change everything?
- Cities Planning
- Will future energy still come in vanilla?
- Resilience needs to be built into Systems.
- How will energy look in 2031-2040?
- Black (or green) swans in technology

❖ Course Conclusion

❖ POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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