Energy Technology Forecasting and Assessment: Strategic Insights for Future Energy Landscapes

Course general description:

This advanced 5-day intensive course provides comprehensive insights into energy technology forecasting, market analysis, and strategic assessment. Participants will explore cutting-edge methodologies for analyzing, predicting, and evaluating emerging energy technologies, market trends, and complex global energy systems. The course bridges technical understanding with strategic planning, offering a holistic approach to understanding the dynamic global energy ecosystem.

Audience:

This course is designed for:

1. Energy sector strategists
2. Technical consultants
3. Policy makers
4. Research and development professionals
5. Investment analysts
6. Energy market researchers
7. Corporate strategic planners
8. Academic researchers in energy technologies
9. Government energy policy specialists

Course objectives:

1. By end of the course participants will gain:
2. Develop sophisticated energy technology forecasting models
3. Analyze complex energy market dynamics
4. Assess technological innovations and their potential impacts
5. Apply advanced quantitative and qualitative assessment methodologies
6. Understand global energy transition strategies
7. Evaluate economic, technological, and environmental interdependencies
8. Create comprehensive energy technology assessment reports

Course duration:

5 days

Course location:

Dubai

Course contents:

Day 1: Fundamentals of Energy Technology Forecasting

- Introduction to energy technology forecasting
- Historical perspectives and evolution
- Key methodological approaches
- Fundamental forecasting principles and frameworks
- Quantitative forecasting techniques
- Statistical modelling
- Time series analysis
- Regression and predictive modelling
- Tutorial: Basic forecasting model construction
- Case Study: Historical energy technology predictions

Day 2: Market Dynamics and Technology Assessment

- Global energy market structures
- Technology readiness levels
- Innovation ecosystem analysis
- Technological diffusion models
- Economic evaluation frameworks
- Technology cost curve analysis
- Performance metrics and benchmarking
- Competitive landscape assessment
- Tutorial: Technology readiness assessment
- Case Study: Emerging energy technology evaluation

Day 3: Advanced Forecasting Methodologies

- Qualitative forecasting techniques
- Delphi method
- Scenario planning
- Expert judgment frameworks
- Machine learning in energy forecasting
- Artificial intelligence techniques
- Big data analytics
- Predictive modeling approaches
- Tutorial: Scenario development workshop
- Case Study: AI-driven energy forecasting

Day 4: Strategic Assessment and Risk Analysis

- Technology risk assessment
- Geopolitical factors in energy markets
- Environmental impact evaluation
- Sustainability metrics
- Investment decision frameworks
- Portfolio analysis techniques
- Strategic technology selection
- Long-term planning methodologies
- Tutorial: Strategic technology assessment
- Case Study: Complex risk modelling

Day 5: Future Energy Landscapes and Comprehensive Analysis

- Future energy technology trends
- Disruptive innovation analysis
- Cross-sector technology integration
- Global energy transition strategies
- Comprehensive assessment frameworks
- Integrated forecasting methodologies
- Strategic recommendation development
- Reporting and communication techniques
- Comprehensive Final Examination
- Course Review and Closing Discussion

Methodology:

- 50% lectures & concepts

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

Course code: (TPR0013)