Energy Security and Energy Policy: Supply Risk, Strategic Reserves and Fuel Pricing

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Introduction:

Energy security and energy policy decisions now carry higher stakes: oil and gas price shocks, blocked sea lanes, tight power reserve margins, fuel subsidy costs and new dependencies on critical minerals can each disrupt supply and public budgets. Many energy bodies still judge security of supply with a few import figures and react to shocks without tested stock, pricing or diversification plans. This Core Concept course equips ministry, utility and national energy company staff to measure supply risk, size strategic reserves, reform fuel pricing and choose policy instruments. Participants produce an Energy Security Assessment and Policy Options Paper.

Course Objectives:

- Measure the energy security of a national energy system across availability, affordability, reliability and sustainability using import dependency, diversity and stock cover indicators
- Analyse how crude oil, refined product, natural gas and LNG prices form and model the volume and price effect of a supply disruption
- Size strategic oil and gas reserves and design an emergency response plan combining stock draw, demand restraint and fuel switching
- Evaluate diversification of sources, transit routes, fuels and storage to reduce single points of failure in energy supply
- Design domestic fuel allocation, fuel price reform and subsidy phase-down options and test electricity system adequacy under variable renewables
- Select and evaluate energy policy instruments and present them in an Energy Security Assessment and Policy Options Paper

Target Audience:

- Energy ministry policy and planning units responsible for security of supply, fuel mix and sector strategy
- Utility and grid planning managers responsible for generation adequacy, reserve margins and fuel supply to power plants
- National energy company supply, trading and logistics managers responsible for crude, product and gas flows
- Fuel pricing, subsidy and economic analysis managers responsible for domestic energy prices and fiscal cost
- Energy emergency and contingency planners responsible for stockholding, disruption response and fuel rationing plans

Course Outline:

Day 1: Energy Security Dimensions and National System Diagnostics

- Four Dimensions Framework: Availability, Affordability, Reliability and Sustainability
- Short-Term Versus Long-Term Security of Supply: Shock Response and Investment Adequacy
- National Energy Balance and Import Dependency Ratios by Fuel
- Energy Security Indicator Dashboard: Supply Diversity Index, Spare Capacity and Stock Cover
- Baseline Supply Vulnerability Diagnostic for Oil, Gas, Power and Refined Fuels

Day 2: Oil and Gas Market Structure, Price Formation and Disruption Scenarios

- Crude Oil Market Structure: Benchmark Grades, Term Contracts and Spot Cargo Trading
- Natural Gas and LNG Pricing: Oil Indexation, Hub Pricing and Contract Flexibility Clauses
- Spare Production Capacity, Refinery Margins and Product Balance Effects on Supply
- Supply Disruption Typology: Maritime Chokepoints, Pipeline Outages, Cyber Attacks and Extreme Weather
- Disruption Impact Model: Volume Loss, Price Spike and Duration Scenarios

Day 3: Strategic Reserves, Emergency Response and Supply Diversification

- Strategic Petroleum Reserve Design: Government, Agency and Industry Stockholding Models
- Stock Cover Sizing in Days of Net Imports and Days of Consumption
- Emergency Response Toolkit: Coordinated Stock Draw, Demand Restraint and Fuel Switching Protocols
- Supply Diversification Matrix: Supplier Origins, Transit Routes, Fuel Types and Storage Options
- Gas Storage, LNG Import Flexibility and Interconnector Contingency Plans

Day 4: Fuel Pricing Policy, Power System Adequacy and Transition Supply Risks

- Domestic Fuel Allocation Mechanisms: Feedstock Quotas, Administered Prices and Priority Sectors
- Fuel Price Reform and Subsidy Phase-Down Sequencing with Targeted Household Support
- Electricity System Adequacy: Reserve Margin, Loss of Load Expectation and Capacity Mechanisms
- Variable Renewables, Battery Storage and Flexibility Sources in Power Supply Security
- Critical Minerals Concentration, Hydrogen Supply Chains and Carbon Market Policy Links

Day 5: Case Work: Energy Security Assessment and Policy Options Paper

- Case Energy System Brief: Fuel Mix, Import Corridors, Stock Levels and Power Demand Growth
- Energy Security Risk Register and Likelihood-Impact Scoring for the Case System
- Policy Instrument Selection Matrix: Regulation, Market Mechanisms, Fiscal Tools and Public Investment
- Policy Evaluation Criteria: Cost-Effectiveness, Distributional Impact and Implementation Feasibility
- Energy Security Policy Options Paper Presentation and Ministry Panel Challenge

Skills You Will Gain:

- Energy Security Indicator Analysis
- Oil and Gas Price Formation Analysis
- Supply Disruption Modelling
- Strategic Stockholding Design
- Fuel Subsidy Reform Planning
- Generation Adequacy Assessment
- Critical Mineral Dependency Screening
- Energy Policy Instrument Appraisal

Why Attend This Course:

- Return with an Energy Security Assessment and Policy Options Paper built on a case energy system and ready to adapt to your own
- Replace headline reactions to price and supply shocks with tested stock draw, demand restraint and fuel switching plans
- Brief decision makers on the fiscal and social trade-offs of fuel price reform with clear sequencing options
- Compare supply security practice with peers from ministries, power utilities, gas companies and national oil companies

Conclusion:

Secure energy supply depends on measured risk, sized reserves, sound pricing and a power system with enough margin. The one week move from the four dimensions of energy security and national indicators, through oil and gas price formation and disruption scenarios, to strategic reserves, emergency response and diversification, then to fuel allocation, subsidy reform, electricity adequacy and new transition dependencies. The final day applies these methods to a case energy system and produces an Energy Security Assessment and Policy Options Paper for a ministry panel.