**Quick links:**

<table>
<thead>
<tr>
<th>By title</th>
<th>By page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquiring and divesting oil and gas assets and companies</td>
<td>Page 6</td>
</tr>
<tr>
<td>Aviation jet fuel</td>
<td>Page 19</td>
</tr>
<tr>
<td>Benchmarking performance of oil and gas assets and companies</td>
<td>Page 8</td>
</tr>
<tr>
<td>Budgeting, planning and forecasting for the oil and gas industry</td>
<td>Page 16</td>
</tr>
<tr>
<td>Certificate in Oil and Gas</td>
<td>Page 34</td>
</tr>
<tr>
<td>Economics of the Oil Supply Chain</td>
<td>Page 28</td>
</tr>
<tr>
<td>Enhanced Oil Recovery (EOR): Technical and Commercial Perspectives</td>
<td>Page 21</td>
</tr>
<tr>
<td>Exploration and production of oil and gas: Technical and commercial perspectives</td>
<td>Page 22</td>
</tr>
<tr>
<td>Floating and subsea oil and gas technologies and installations</td>
<td>Page 23</td>
</tr>
<tr>
<td>Geopolitics, risk and opportunity in the oil and gas industry</td>
<td>Page 14</td>
</tr>
<tr>
<td>International natural gas and LNG markets: Pricing and Competitive Drivers</td>
<td>Page 25</td>
</tr>
<tr>
<td>Natural gas and LNG technologies and supply chains</td>
<td>Page 26</td>
</tr>
<tr>
<td>Negotiating techniques for the oil and gas industry</td>
<td>Page 12</td>
</tr>
<tr>
<td>Oil and gas fiscal designs and systems</td>
<td>Page 13</td>
</tr>
<tr>
<td>Oil and gas industry fundamentals (3 days)</td>
<td>Page 4</td>
</tr>
<tr>
<td>Oil and gas industry fundamentals (4 days)</td>
<td>Page 5</td>
</tr>
<tr>
<td>Oil and gas project and operations management</td>
<td>Page 15</td>
</tr>
<tr>
<td>Overview of the international upstream oil and gas industry</td>
<td>Page 24</td>
</tr>
<tr>
<td>Planning and economics of refinery operations</td>
<td>Page 20</td>
</tr>
<tr>
<td>Portfolio management of oil and gas assets</td>
<td>Page 10</td>
</tr>
<tr>
<td>Practical workshop: Excel analysis of oil, gas and power supply chains</td>
<td>Page 7</td>
</tr>
<tr>
<td>Price Risk Management in the Oil Industry</td>
<td>Page 30</td>
</tr>
<tr>
<td>Strategic management of oil and gas assets and companies</td>
<td>Page 11</td>
</tr>
<tr>
<td>Structuring and negotiating effective oil and gas transactions and deals</td>
<td>Page 9</td>
</tr>
<tr>
<td>Supply and distribution: organisation, operations and economics</td>
<td>Page 18</td>
</tr>
<tr>
<td>Trading Oil on International Markets</td>
<td>Page 29</td>
</tr>
<tr>
<td>Unconventional petroleum resources and their exploitation</td>
<td>Page 27</td>
</tr>
<tr>
<td>Valuation and risk analysis of oil and gas assets</td>
<td>Page 17</td>
</tr>
</tbody>
</table>
2015 Calendar

**February**

**2–4 February**
Acquiring and divesting oil and gas assets and companies

**23–25 February**
Oil and gas industry fundamentals

**March**

**2–3 March**
International natural gas and LNG markets: Pricings and competitive drivers

**4–6 March**
Strategic management of oil and gas assets and companies

**9–11 March**
Oil and gas industry fundamentals

**23–26 March**
Practical workshop: Excel analysis of oil, gas and power supply chains

**30 March–1 April**
Unconventional petroleum resources and their exploitation

**April**

**13–15 April**
Exploration and production of oil and gas: Technical and commercial perspectives

**16–17 April**
Structuring and negotiating effective oil and gas transactions and deals

**20–24 April**
Economics of the oil supply chain

**27 April – 1 May**
Trading oil on international markets

**May**

**19–22 May**
Oil and gas industry fundamentals

**June**

**1–2 June**
Benchmarking performance of oil and gas assets and companies

**8–11 June**
Portfolio management of oil and gas assets

**8–12 June**
Price risk management in the oil industry

**15–18 June**
Geopolitics, risk and opportunity in the oil and gas industry

**22 June**
Enhanced Oil Recovery (EOR): Technical and commercial perspectives

**23–25 June**
Budgeting, planning and forecasting for the oil and gas industry

**July**

**13–16 July**
Oil and gas fiscal designs and systems

**September**

**2–4 September**
Oil and gas project and operations management

**14–17 September**
Supply and distribution: organisation, operations and economics

**21–23 September**
Oil and gas industry fundamentals

**24–25 September**
Floating and subsea oil and gas technologies and installations

**28–30 September**
Negotiating techniques for the oil and gas industry

**October**

**5–9 October**
Economics of the oil supply chain

**12–16 October**
Trading oil on international markets

**20–23 October**
Planning and economics of refinery operations

**26–28 October**
Acquiring and divesting oil and gas assets and companies

**November**

**3–6 November**
Natural gas and LNG technologies and supply chains

**9–13 November**
Price risk management in the oil industry

**10–12 November**
Valuation and risk analysis of oil and gas assets

**23–26 November**
Oil and gas industry fundamentals

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In association with:
Fundamentals

Oil and gas industry fundamentals

3 days

23–25 February 2015, London, UK
9–11 March 2015, Aberdeen, UK
21–23 September 2015, London, UK

EI member £2,300.00 (£2,760.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)

About this course

This course comprehensively covers the key sectors of the oil and gas industry from exploration through to fuel retailing. It addresses conventional and unconventional reserves and resources, drilling and production processes and facilities, economic fiscal and risk issues, transportation, refining, liquefied natural gas, gas to power, gas-to-liquids, petrochemicals, wholesale product markets, contracts, physical and paper trading, refining, distribution logistics, emerging markets technologies, competition with alternative energies, environmental, safety and security issues. This provides understanding and insight to the processes, drivers, threats and opportunities associated with the core industry activities.

Participants will gain an appreciation of the principal activities in the international upstream, midstream and downstream petroleum industry and an understanding of how these interrelate.

The course is interactive with a range of thought-provoking exercises and various presentation media, including short videos.

Who should attend?

• Those seeking a broader knowledge of the oil, gas and energy industry and markets
• New recruits to oil, gas and energy companies
• Analysts, planners, traders, sales, marketing, engineering, refining, communications, public relations and commercial personnel
• Those requiring an understanding of the oil, gas and energy value chain
• Financial and legal professionals
• Ministerial, governmental, industry bodies and development agency staff
• Consultants providing services to oil, gas and energy organisations.

Oil and gas industry fundamentals - Topics include:

Day one:
Supply chains and upstream
• Structure of oil and gas supply chains and organisations
• Exercice: supply chain issues and choke points
• Costs and upstream performance benchmarks
• Petroleum system: oil and gas resource formation and location
• Crude oil, gas and natural gas liquid (NGL) properties and types
• Conventional and unconventional resources
• Petroleum exploration techniques: reconnaissance, seismic and drilling
• Video: deepwater drilling techniques and equipment
• Exercice: contingencies for extreme risks
• Production processes and equipment: onshore and offshore
• Project planning and managing field developments
• Video: offshore production platform
• Sub-surface and above-ground risks and opportunities
• Roles for OPEC (oil) and GECEF (gas)
• Economic evaluation of field developments
• Video: deepwater FPSO offshore west Africa
• Upstream fiscal terms, production sharing agreements
• Sources of finance and financial structures
• Exercice: rationalise an upstream asset portfolio
• Petroleum reservoir drive mechanisms and secondary recovery
• Enhanced oil recovery techniques
• Safety, security, environmental and decommissioning issues

Day two:
Natural gas, midstream and refining
• Natural gas: processing, storage, and specification
• Liquefied natural gas (LNG)
• Video: LNG properties and infrastructure
• Regional gas markets, hubs, NGLs and contracts
• Exercice: LNG netback prices
• Shale gas, coal bed methane and gas hydrate resources
• Gas-to-power and gas-to-liquids (GTL)
• Video: GTL Fischer-Tropsch technology
• Marine transportation of crude oil and products (Worldscale)
• Pipelines, rail and transportation
• Storage and marine export terminal
• Video: construction of transcontinental pipeline in Caspian Region
• Exercice: pipeline risk profile
• Refinery separation, cracking, reforming and blending processes
• Video: refinery conversion processes
• Refined products, trade movements and their demand trends
• Refinery economics, gross product worth, crack spreads and margins
• Refinery optimisation and safety
• Exercice: selling a refinery
• Petrochemical feedstock, processes, products and markets

Day three:
Unconventional oil, downstream, trading and sustainability
• Unconventional oil resources: oil sands and bitumen
• Mature and immature oil shales and their global potential
• Heavy oil upgrading and syncrudes
• Video: Canadian oil sand operations
• Sustainability, public relations and community issues
• Exercice: addressing community issues
• Physical markets, pricing, price trends and transaction terms
• Product marketing, supply and distribution logistics
• Wholesale petroleum product markets: aviation, marine, LPG, bitumen
• Forward price curves and their influence on trading strategies
• Markets displaying contagion and backwardation
• Trading exchanges and over-the-counter (OTC) transactions
• Paper markets for trading and hedging
• Trading instruments: forwards, futures, swaps and options
• Exercise: hedging strategies
• Retailing road transport fuel
• Biofuels: ethanol and biodiesel renewable fuel obligations
• Roles for convenience stores, non-fuel products and unmanned forecourts
• Competition from coal, renewables and alternative energies
• Challenges of greenhouse gas (GHG) emissions
• Carbon capture and sequestration (CCS) with enhanced oil recovery options
• Video: CCS
• Exercise: SWOT analysis of industry
• Future scenarios for the oil and gas industry
• RetoCHANTS of global primary energy mix to 2050

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This course will contribute to your CPD.
# Oil and gas industry fundamentals

## 4 days

**19–22 May 2015, London, UK**  
**23–26 November 2015, London, UK**

**El member £3,100.00 (£3,720.00 inc VAT)**  
**Non-member £3,300.00 (£3,960.00 inc VAT)**

### About this course

This course comprehensively covers the key sectors of the oil and gas industry from exploration through to fuel retailing. It addresses conventional and unconventional reserves and resources, drilling and production processes and facilities, economic and fiscal issues, transportation, refining, liquefied natural gas, gas to power, gas-to-liquids, petrochemicals, wholesale product markets, contracts, physical and paper trading, refining, distribution logistics, emerging markets technologies, competition with alternative energies, environmental, safety and security issues. This provides understanding and insight to the processes, drivers, threats and opportunities associated with the core industry activities.

Participants will gain an appreciation of the principal activities in the international upstream, midstream and downstream petroleum industry and an understanding of how these interrelate.

The course is interactive with a range of thought-provoking exercises and various presentation media, including short videos.

The 4-day format allows more time for exercises and details.

### Who should attend?

- Those seeking a broader knowledge of the oil, gas and energy industry and markets
- New recruits to oil, gas and energy companies
- Analysts, planners, traders, sales, marketing, engineering, refining, communications, public relations and commercial personnel
- Those requiring an understanding of the oil, gas and energy value chain
- Financial and legal professionals
- Ministerial, governmental, industry bodies and development agency staff
- Consultants providing services to oil, gas and energy organisations

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### Oil and gas industry fundamentals - Topics include:

#### Day one: Supply chains and upstream

- Structure of oil and gas supply chains and organisations
- Exercise: supply chain issues and choke points
- Costs and upstream performance benchmarks
- Petroleum system: oil and gas resource formation and location
- Crude oil, gas and natural gas liquid (NGL) properties and types
- Conventional and unconventional resources
- Petroleum exploration techniques: reconnaissance, seismic and drilling
- Video: deepwater drilling techniques and equipment
- Exercise: contingencies for extreme risks
- Production processes and equipment: onshore and offshore
- Project planning and managing field developments
- Video: offshore production platform
- Sub-surface and above-ground risks and opportunities
- Roles for OPEC (oil) and GECEF (gas)
- Economic evaluation of field developments
- Video: deepwater FPSO offshore West Africa
- Upstream fiscal terms, production sharing agreements
- Sources of finance and financial structures
- Exercise: rationalise an upstream asset portfolio
- Petroleum reservoir drive mechanisms and secondary recovery
- Enhanced oil recovery techniques
- Safety, security, environmental and decommissioning issues

#### Day two: Natural Gas, Unconventional Resources and Midstream

- Natural gas: pipelines, storage, and specification
- Liquefied natural gas (LNG)
- Video: LNG properties and infrastructure
- Regional gas markets, hubs, NGUs and contracts
- Exercise: LNG netback prices
- Shale gas, coal bed methane and gas hydrate resources
- Gas-to-power and gas-to-liquids (GTL)
- Video: GTL Fischer-Tropsch technology
- Marine transportation of crude oil and products (worldscale)
- Oil and gas pipelines, rail and road transportation
- Storage and marine export terminals
- Video: construction of transcontinental pipeline in Caspian Region
- Exercise: pipeline risk profile
- Sources of finance and financial structures
- Unconventional oil resources: oil sands and bitumen
- Mature and immature oil shales and their global potential
- Heavy oil upgrading and syncretics
- Video: Canadian oil sand operations
- Sustainability, public relations and community issues
- Exercise: addressing community issues

#### Day three: Refining, petroleum products and downstream

- Refinery separation, cracking, reforming and blending processes
- Video: refinery conversion processes
- Refined products, trade movements and their demand trends
- Refined economics, gross product worth, crack spreads and margins
- Exercise: refinery strategy
- Refinery optimisation and safety
- Video: refinery accident
- Exercise: selling a refinery
- Product marketing, supply and distribution logistics
- Wholesale petroleum product markets: aviation, marine, LPG, bitumen
- Petrochemical feedstock, processes, products and markets
- Video: steam reforming to produce olefins
- Refinery economics, gross product worth, crack spreads and margins
- Exercise: refinery optimisation and safety
- Refinery optimisation and safety
- Oil and gas pipelines, rail and road transportation
- Storage and marine export terminals
- Video: construction of transcontinental pipeline in Caspian Region
- Exercise: pipeline risk profile
- Sources of finance and financial structures
- Unconventional oil resources: oil sands and bitumen
- Mature and immature oil shales and their global potential
- Heavy oil upgrading and syncretics
- Video: Canadian oil sand operations
- Sustainability, public relations and community issues
- Exercise: addressing community issues

#### Day four: Trading and sustainability

- Trading and sustainability
- Physical markets, pricing, price trends and transaction terms
- Exercise: sales contract terms
- Forward price curves and their influence on trading strategies
- Markets displaying contango and backwardation
- Trading exchanges and over-the-counter (OTC) transactions
- Paper markets for trading and hedging
- Trading instruments: forwards, futures swaps and options
- Exercise: hedging strategies
- Competition from coal, renewables and alternative energies
- Challenges of greenhouse gas (GHG) emissions
- Carbon capture and sequestration (CCS) with enhanced oil recovery options
- Video: CCS
- Exercise: SO2 analysis of industry
- Future scenarios for the oil and gas sectors
- Forecasts of global primary energy mix to 2050

- Exercise: retail fuel strategy
Analysis, commercial, contracts, economics, and fiscal

Acquiring and divesting oil and gas assets and companies

2–4 February 2015, London, UK
26–28 October 2015, London, UK

El member £2,300.00 (£2,760.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)

About this course
Access to quality, international producing assets and reserves combined with infrastructure synergies, economies of scale and rapid growth potential are the key factors driving companies towards asset and corporate acquisitions. On the other hand, portfolio rationalisation, lack of materiality and harvesting value in times of volatile commodity prices drive companies to divest assets, companies and, in some cases, seek mergers.

Whether you are a buyer or seller the acquisition and divestment process in the oil and gas industry requires careful management and a structured approach if values are to be maximised and deals completed in an efficient manner and timeframe.

This course develops the theme of optimising corporate and portfolio value, focusing on the role of business development to ensure long-term growth and improved returns through the careful selection and structure of acquisitions, divestments and, in some cases, mergers. It concentrates on process and the recognition of the factors driving companies to acquire, divest or merge.

The principles, skills and techniques required for successful acquisition and divestment activity apply to both large and small companies.

Who should attend?
This course is designed for a multi-disciplined audience from commercial, technical, corporate, business development, economics, human resources, planning, strategy, portfolio, financial, legal and risk management backgrounds.

Course content addresses issues and skills relevant to professionals and support staff involved in mergers, acquisitions and divestment activities from across the industry. This would include, but not be limited to: acquisition advisers, asset managers, analysts, bankers, buyers, economists, engineers, geologists, financiers, insurers, investors, lawyers, negotiators, planners, portfolio managers, and risk analysts.

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Acquiring and divesting oil and gas assets and companies – Topics include:

Day one:
Acquisition and divestment drivers and industry performance
• Factors driving oil and gas companies to acquire, divest or merge
• Exercise: identifying transaction types
• Review of a wide range of recent oil and gas industry transactions
• Key performance indicators relevant to acquisitions and divestments
• Exercise: evaluation of key performance indicators
• Historical performance of oil and gas acquisitions and divestments
• Oil and gas price forecasting to value upstream oil and gas assets
• Identifying and exploiting asset and corporate synergies
• Case studies: mergers of major oil and gas companies
• Desktop corporate and asset valuation models – inputs and outputs
• Exercise: SWOT analysis of acquisition/divestment participants
• National oil companies (NOCs) acquisition and divestment strategies
• Privatisation and partial privatisation of national oil and gas companies

Day two:
Structured approach to acquisition and divestment process
• Asset valuation process – fair market value and other approaches
• Probabilistic models for reserves valuation
• Simulation approach to establishing asset and corporate values
• Recognising and accounting for risk and opportunity
• Risk factors applied to valuations of different categories of reserves
• A structure acquisition of divestment process
• Information Memoranda (IM), data rooms and due diligence
• Exercise: competitive bidding
• Reserves audits and valuations associated with upstream deals
• Independent engineering, environmental and safety audits
• Exercise: compare Competent Person’s Reports (CPIs)
• Formulating proposals: offers and counter-offers
• Letters of intent outlining agreement terms subject to conditions
• Preferential rights or pre-emptive rights or rights of first refusal

Day three:
• Sale and purchase agreements (SPA)
• Exercise: review a pro-forma SPA
• Conditions precedent determining if and when deals may close
• Representations warrants, covenants and indemnities
• Effective dates for transactions and their significance
• Identifying and addressing trailing liabilities
• Completion of agreements – what this usually entails
• Farm-out and asset swap agreements: structures and objectives
• Exercise: evaluate terms for farm-in/farm-out agreement

Analysis, commercial, contracts, economics, and fiscal

Acquiring and divesting oil and gas assets and companies

2–4 February 2015, London, UK
26–28 October 2015, London, UK

El member £2,300.00 (£2,760.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)
Practical workshop: Excel analysis of oil, gas and power supply chains

23–26 March 2015, London, UK
EI member £3,100.00 (£3,720.00 inc VAT)
Non-member £3,300.00 (£3,960.00 inc VAT)
Includes demonstrations with Excel Add-in Crystal Ball

About this course
This course provides hands-on instruction for building, developing and applying spreadsheet economics, risk, finance and decision evaluation models to a range of projects from the oil, natural gas and power supply chains. It is built around a series of workbook modules compatible with Excel 2010, 2007 and 2003 versions.

Delegates are required to bring their own laptop computers loaded with a functioning version of Excel (i.e. 2003, 2007 or 2010 version) for use during the course. Delegates are provided with a number of spreadsheet workbooks to load and then evaluate with structured exercises. Some basic knowledge of operating Excel software is required, but detailed computer modelling expertise is not essential. The emphasis is on fit-for-purpose gas industry model applications rather than developing spreadsheet skills, but both should be part of the learning outcomes.

The course is broken down into approximately one-quarter theoretical instruction and three-quarters practical hands-on facilitated spreadsheet model evaluation. Brief PowerPoint presentations are delivered to review the industry topics covered and these will lead swiftly into the practical sessions. The economic analysis theory sections also aim to provide insight to the key economic issues impacting the supply chains covered.

Many companies make extensive use of proprietary economic modelling software, often requiring macros to be built to evaluate case-specific problems. In such cases, even though spreadsheets may not be used routinely, it is of enormous benefit for analysts and decision-makers to understand how such models can be built, developed and manipulated on a spreadsheet platform. Spreadsheets in conjunction with built-in functions, add-ins and VBA macros provide an extremely powerful platform for such analysis. The course’s practical sessions will demonstrate how such features can be simply and effectively harnessed to build quite sophisticated, but highly functional, analytical models.

Who should attend?
Commercial, technical and financial analysts, economists, planners and decision makers plus others working in the oil, gas and power industry wishing to develop practical economic analytical skills using spreadsheets to evaluate natural gas projects.

Excel analysis of oil, gas and power supply chains – Topics include:

Day one:
Oil and gas project analysis
• Overview of cash flow analysis and discounting techniques
• Cash flow model for oil and gas exploration, development and production
• Fiscal models for tax and royalty and production sharing terms
• Excel's VLOOKUP function aids models with sliding scales
• Rate building models (tariff calculations) for midstream infrastructure
• Levelised and rolled-in tariffs

Day two:
Pricing issues and sensitivity and scenario analysis
• Inflation, money of the day versus real terms
• Selecting alternative multi-year pricing profiles
• Excel's spinners and choose function
• Netback pricing models
• Establishing break-even prices
• Using Excel's solver and goal seek functions
• Requirements for sensitivity and scenario analysis
• VBA Macros: powerful dimension to Excel's sensitivity and scenario analysis
• Cost and revenue components for constructing a Gas Liquefaction plant
• LNG Shipping and netback price model
• Risk analysis, probabilities and expected monetary values

Day three:
Decision trees and simulation
• Building oil and gas production profiles using decline equations
• Decision trees and their application
• Dynamic graphics with updating labels driven by spinners
• Monte Carlo simulation method and input distributions
• Demonstrations with Excel Add-in Crystal Ball
• Statistical analysis of simulation outputs
• Refinery economics: Gross Product Worth (GPW) and margin analysis
• Power generation, debt finance and hedging
• Cash flow model for Combined Cycle Gas Turbines (CCGT)
• Cash flow model for coal-fired power plant
• Carbon Capture and Sequestration (CCS) models
• Cash flow Model for full-cycle nuclear power plant
• Cash flow model for offshore wind farm
• Debt financing upstream oil and gas projects
• Evaluating hedging alternatives
• Profit and loss model for futures markets

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About this course
Almost all successful oil and gas organisations are measured-managed using key performance indicators (KPIs) to guide their strategy, decision making and operations business planning. Benchmarking KPIs helps to monitor an organisation’s performance on an on-going basis. Benchmarking at the project, asset and corporate levels involves a range of techniques that provide performance comparisons that can help to generate better performance. The course is focused mainly on the upstream industry and also addresses midstream and downstream benchmarking issues and approaches. It includes case studies, videos and exercises in addition to presentations and is relevant to international and national organisations.

Course notes are issued in digital format.

Day one:
What to measure and how to measure it
- Monitoring performance along oil and gas supply and value chains
- The five distinct stages to the benchmarking process
- Strategic analysis required to select key performance indicators (KPIs)
- Financial and non-financial KPIs
- Key financial measures from various stakeholder perspectives
- Key non-financial measures relevant along the oil and gas supply chains
- Benchmarking costs: capex, opex, tariffs and costs of supply
- Health, safety, security and environment KPIs
- Triple bottom line focus aids sustainability and community benchmarking
- Issues specific to unconventional oil and gas exploration
- Monitoring corporate social responsibility (CSR) performance

Day two:
Case studies and practical applications
- Original benchmarking analysis of 28 large and mid-sized listed companies
- Selecting an appropriate peer group of companies to compare with
- Multi-year performance analysis for nine large international oil companies
- Financial and non-financial performance of upstream independents
- KPIs that aid with acquisition and divestment decisions
- Benchmarking operational performance for a range of upstream projects
- Benchmarking downstream facilities and the gas to power supply chain
- Blind benchmarking studies and their merits
- Balanced scorecards and other techniques that align strategy and performance
- Benchmarking and long-term strategic and portfolio cycles

Who should attend?
This course is designed for a multi-disciplined audience with diverse technical, financial, commercial, corporate, operations and planning backgrounds from various sectors of the oil and gas industry. The course content covers financial and non-financial key performance indicators avoiding unnecessary jargon or financial and technical terminology. This course is suitable for a range of professionals working within oil and gas companies, including: analysts, geologists, engineers, planners, asset, financial and operations managers and their support staff.

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Structuring and negotiating effective oil and gas transactions

16–17 April 2015, London, UK
EI member £1,500.00 (£1,800.00 inc VAT)
Non-member £1,700.00 (£2,040.00 inc VAT)

About this course
Achieving successful deals in the oil and gas industry with long-lasting successful outcomes typically requires innovation, creative thinking, negotiation skills and a clear understanding of risked value in uncertain and volatile markets. This course considers a wide range of industry-specific deal structures and the issues associated with them. The content involves presentations, case studies and exercises.

Who should attend?
This course is designed for a multi-disciplined audience from commercial, technical, corporate, negotiation, planning, portfolio, financial, legal and risk management backgrounds. The course content addresses issues and skills relevant to professionals and support staff involved in transaction-related activities from across the industry (i.e. upstream to downstream).

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Structuring and negotiating effective oil and gas transactions – Topics include:

Day one:
Strategy-driven transactions
• Varied nature of oil and gas deals and transactions
• Underlying issues, synergies and drivers for transactions
• Different perspectives of NOCs, major IOCs, independents and utilities
• Steps involved in typical acquisition and divestment asset and corporate deals
• Planning for transaction negotiations
• Pitfalls for buyers in competitive auctions
• Lessons to learn from game theory
• Risk mitigation strategies that preserve flexibility and optionality
• Hedging without sacrificing potential upside
• Negotiating strategies to achieve workable and lasting deals
• Joint venturing to make an acquisition
• Farm-in and farm-out deals
• Valuing carried and promoted interests
• Deferred considerations and earn-outs
• Controlling or securing access to infrastructure

Day two:
Innovative and creative deal structures
• Swapping assets and portfolio approaches to transactions
• Issues of pre-emption by existing partners and governments
• Selling non-strategic assets from an acquired asset portfolio or company
• Using simulations to identify exposure to uncertainty
• Key financial and non-financial performance indicators for assessing deal values
• Leveraging deals with debt and project finance
• Capturing tax synergies and other fiscal incentives
• Recognising capital gains liabilities and other transaction tax implications
• Formulating proposals and securing exclusivity
• Team negotiations, team roles and interpersonal behaviour
• Identifying contingent and trailing liabilities
• Post-closure management issues that impact long-term deal values
• Dealing with time constraints and deadlock in negotiations
• Closing and completing deals
Portfolio management of oil and gas assets

8–11 June 2015, London, UK
El member £3,100.00 (£3,720.00 inc VAT)
Non-member £3,300.00 (£3,960.00 inc VAT)

About this course
Successful oil and gas organisations constantly review, value and risk their assets with a view to optimising the overall performance of their asset portfolio. This activity requires a strategic approach to managing uncertainty, exploiting synergies to ensure that the portfolio maintains a balanced and diversified mix of assets.

Modern portfolio techniques involve the construction of sophisticated models to value risk and characterise alternative combinations of assets. Such models can provide a range of graphical displays to aid decision-making, such as feasible envelopes and efficient frontiers defined in terms of financial and non-financial metrics over defined planning horizons. A combination of linear and non-linear optimisation algorithms are used to help select potentially high-performing asset combinations.

This course addresses portfolio management from theoretical and practical perspectives applicable to assets from along the oil and gas supply chain. Exercises concentrate mainly on upstream asset portfolios, but do address the involvement of midstream and downstream assets and other non-petroleum energy assets in the context of balanced portfolios. Course materials include presentations, exercises and discussions facilitating delegate participation. The course information should help delegates to identify and select appropriate portfolio management techniques to suit their particular mix of assets.

Course notes are issued in digital format.

Who should attend?
This course is designed for a multi-disciplined professional audience drawn from portfolio, economic, technical and strategic analysts and managers involved in portfolio management; corporate and asset team members involved in acquisitions; disposals and optimisation of oil and gas assets.

Attendees should include:
Economic, technical and strategic analysts and managers involved in portfolio management; corporate and asset team officers. Other relevant categories include:
- Asset, Portfolio and Corporate managers; and team members
- Economic, technical, and strategic analysts and managers of oil and gas companies, institutions financing such companies, and analysts of the oil and gas sector
- The skills and industry insight provided by the course will be of value to corporate, portfolio and asset-based decision-makers

Portfolio management of oil and gas assets – Topics include:

Day one:
Fundamentals of strategic portfolio management
- Why a portfolio approach is needed for asset and corporate management
- Exercise: diversifying risk
- Portfolio characterisation: special requirements of upstream asset portfolios
- Strategic dimensions to portfolio construction and business development
- Exercise: portfolio planning and rationalisation
- Capital allocation issues for asset portfolios
- Exercise: making choices using efficient frontiers
- Background to modern portfolio theory
- Exercise: asset correlation and risk
- Access to resources and sustainability scenarios
- Key success factors and winning portfolio combinations
- Exercise: rationalising an upstream portfolio based on risk and value
- Organisational issues associated with portfolio management teams

Day two:
Portfolio analysis techniques and tools
- Asset synergy: selecting assets to fit with an existing portfolio
- Exercise: recognising performance trends
- Portfolio approach to implementing a quantified strategy
- Portfolio uncertainty and probability of achieving key strategic targets
- Exercise: estimating under conditions of uncertainty
- Exercise: interpreting portfolio characteristics from statistical distributions
- Exercise: evaluating performance of alternative asset combinations
- Balanced scorecard technique as a portfolio management tool
- Exercise: bidding for assets in competitive situations
- Techniques to identify optimum portfolios
- Exercise: rank and cut optimisation
- Linear and non-linear optimisation techniques compared

Day three:
Asset, Portfolio and Corporate Risk Management
- Competitive bidding theory versus practice
- Risk preferences impact portfolio management decisions
- Exercise: identifying facets of uncertainty/risk
- Above-ground and sub-surface risks and opportunities
- Probabilities and expected values used to evaluate upstream assets
- Enterprise risk management: rational oil company case
- Exercise: impact of optionality on decision-making
- Methodology for risked portfolio-simulation models
- Simulation analysis of a hypothetical portfolio of upstream assets
- Exercise: simplistic Monte Carlo simulation analysis
- Combining simulation, optimisation and risk and strategy analysis
- Portfolio approach to acquisition and divestment decisions
- Portfolio requirements of unconventional oil and gas assets
- Exercise: key performance indicators at asset level
- Assessing third party portfolio performance and value
- Exercise: valuing IOCs by extrapolating balance sheet metrics
- Overcoming human resistance to portfolio management
- Challenges to successful portfolio management
- Dealing with an asset crisis
- Portfolio impacts of extreme asset risks and catastrophes
- The importance of midstream infrastructure in balancing risk
- Embracing modern portfolio management techniques

Day four:
Integrating portfolio valuation, risk and the human dimension
- Portfolio analysis tools: software options
- Video: complexity of some offshore assets
- Portfolio requirements of unconventional oil and gas assets
- Exercise: key performance indicators at asset level
- Assessing third party portfolio performance and value
- Exercise: valuing IOCs by extrapolating balance sheet metrics
- Overcoming human resistance to portfolio management
- Challenges to successful portfolio management
- Dealing with an asset crisis
- Portfolio impacts of extreme asset risks and catastrophes
- The importance of midstream infrastructure in balancing risk
- Embracing modern portfolio management techniques

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Portfolio management of oil and gas assets

8–11 June 2015, London, UK
El member £3,100.00 (£3,720.00 inc VAT)
Non-member £3,300.00 (£3,960.00 inc VAT)
Strategic management of oil and gas assets and companies

4–6 March 2015, London, UK
EI member £2,300.00 (£2,760.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)

About this course

Selecting, planning and implementing strategy are critical functions for petroleum organisations confronted with dynamic markets and increasing international competition from new entrants in upstream and downstream sectors. Effective strategic management is the key to aligning stakeholder expectations with corporate capabilities, performance and market conditions.

Successful oil and gas companies constantly review, evaluate and benchmark performance of their prevailing strategies with a view to optimising performance of their asset portfolios over short, medium and long-term planning horizons. Moreover, strategy and risk management can be effectively integrated as the primary driver to steer business planning, budgeting and asset portfolio management.

This course addresses strategy in the practical context, focusing upon the broader petroleum industry issues of portfolio opportunities, risks, change, performance and organisation. Several videos of high profile international projects and short exercises are used in the course to elicit key strategic approaches relevant to real situations along oil and gas supply chains.

Who should attend?

This course is designed for a multi-disciplined audience from strategic planning, portfolio management and corporate sectors of the oil and gas industry, including both professional and support staff. The skills and industry insight provided are also of value to divisional asset and business unit managers and decision-makers.

Attendees should include:

• Analysts and managers involved in planning, implementing, supervising and directing strategy
• Business development specialists
• Upstream, midstream and downstream professionals and decision-makers
• Corporate and asset team members involved in acquisitions, disposals and business re-engineering initiatives.

Strategic analysis, design and direction

Day one:

• What is strategic management and why is it important?
• Generic upstream and downstream petroleum strategies
• Exercise: identifying strategic objectives
• Analysing strategic environments – external and internal
• Resources’ capabilities – financial, human, facilities and data
• Commonly used strategic analysis techniques
• Strategy and business development
• Exercise: SWOT analysis
• Recognising and exploiting synergies and alliances
• Identifying and focusing upon core competencies
• Teams, teamwork, leadership and motivation
• Exercise: teams and joint-ventures in competition
• Strategic options and organisational design
• Extracting value along oil and gas supply chains
• Competitive strategies in refining and fuel retailing

Day two:

• Building and monitoring business plans and budgets
• Identifying uncertainty: risks and opportunities
• Case Study (with video): Understanding asset risks of transnational pipelines
• Contingencies to cover probability-of-occurrence-extreme-impact risks
• Exercise: oil and gas hedging strategies using derivatives
• Measured management, benchmarking and key performance indicators
• Exercise: rationalise an upstream oil and gas asset portfolio
• Optimising performance of oil and gas asset portfolios
• Distinguish portfolio risks from asset risks
• Asset correlation (dependency) and risk
• Exercise: asset diversification to reduce risk
• Measurements of uncertainty that do not penalise the upside opportunity
• Exercise: complexity of quantifying risk
• Efficient frontiers and feasible envelopes applied to portfolio decision-making
• Portfolio optimisation linked to quantified corporate strategies
• Simulation and statistics to quantify strategic portfolio performance
• Acquisitions, divestments and mergers to improve strategic performance

Day three:

• Managing strategic change and human obstacles to change
• Corporate dynamics and inherent resistance to change
• Exercise: promoting a global mind-set to recognise opportunities
• National oil company strategies and competencies
• Balanced scorecard approach aids the implementation of strategic change
• Aligning operations, accountability and sustainability to strategy
• Consequence of major accidents (with video)
• Linking strategy and enterprise risk management
• Multi-directional communications throughout organisations
• Exercise: strategic issues for asset performance reviews and business plans
• Cultural issues – corporate and national
• Integrating qualitative and quantitative analysis
• Improving quality and timing of decision-making: decision trees
• Applying strategy to direct business planning and budget cycles
• Overcoming human obstacles to strategic change

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Negotiating techniques for the oil and gas industry

About this course
This course provides industry insight to negotiations by combining detailed knowledge of negotiating situations that commonly arise at various points along oil and gas supply chains with the most effective negotiating techniques, strategies and tactics applied in such circumstances.

Over three days the course covers key negotiation techniques and issues in a sequence of presentations, examples, video clips and exercises (some short, others longer involving team efforts) from which feedback is provided. Delegates will learn practical negotiating skills and gain insight to the negotiating requirements of the oil and gas industry.

Who should attend?
This course is designed for a multi-disciplined audience from all sectors of the oil and gas industry, including both professional and support staff. Individuals from diverse commercial, technical, marketing, corporate, operations, human resources, labour, community relations, HSE, planning, financial, legal and risk management backgrounds could benefit from the content.

Course content addresses issues and skills relevant to professionals and support staff working with or negotiating contracts and agreements or working in project teams from across the industry.

28–30 September 2015, London, UK
EI member £2,300.00 (£2,760.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)

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Negotiating techniques for the oil and gas industry – Topics include:

Day one: The negotiating process and key skills
- Negotiations in the context of the oil and gas industry
- The need for structured planning and clear communications
- Exercise: bargaining and compromise in securing drilling resources
- Harnessing cooperative, adversarial and competitive approaches
- Game theory – its relevance to some oil and gas negotiations
- Exercise: prisoners’ dilemma game
- Empathising with positions of other parties
- Setting objectives and agendas
- The importance of listening and questioning
- Exercise: negotiating commercial terms of an upstream permit
- Negotiating mergers, acquisition and divestments
- Researching the other parties – identifying their preferences
- Pitching the first offer or proposal
- Exercise: qualities required to be a good negotiator

Day two: Strategic approaches and innovative solutions
- Tried and tested negotiating strategies and tactics and responses to them
- Negotiations with communities; case studies Niger Delta and Queensland
- Lessons to be learned from Machiavelli’s “The Prince”
- Broadening the solution and enlarging the rewards
- Exercise: negotiating with a disgruntled community
- Negotiating strategies to achieve workable and lasting deals
- Win-win solutions versus zero-sum outcomes
- Zones of possible agreement (ZOPA) and bottom lines
- Negotiating joint-venture operating agreements
- Exercise: competitive bidding and EPC contract terms
- Sole risk and non-consent options and dispute resolution
- Procurement and tendering negotiation issues
- Exercise: negotiating terms for a farm-out deal
- Negotiating power and perceptions of it
- Negotiating with financial institutions to secure debt
- Culture and ritual impact negotiating tactics and outcomes

Day three: Team versus individual approaches and closing deals
- Team negotiations, team roles and interpersonal behaviour
- Personality types and psychology can guide tactics
- Communicating and understanding signals
- Using body language and other non-verbal indicators
- Exercise: identifying body language combinations
- Posturing, manipulation and diverting attention from key issues
- Exercise: negotiations in a labour dispute (management versus workforce)
- Dealing with late stage surprises
- Recognising and exploiting time pressure
- Dealing with deadlock or threats of it
- Exercise: negotiating access to midstream infrastructure
- Dealing with impromptu and telephone negotiations
- Closing deals and recognising how and when to do so
- Exercise: negotiations between LNG supplier and buyer
- Documenting and learning from previous negotiations
- Benchmarking and improving performance in negotiations
Oil and gas fiscal designs and systems

13–16 July 2015, London, UK
El member £3,100.00 (£3,720.00 inc VAT)
Non-member £3,200.00 (£3,960.00 inc VAT)

About this course
The fiscal terms and structures of upstream permits and agreements between investors and governments determine whether a specific oil and gas field can be developed on a commercial basis and how costs and profits will be divided over the field's life cycle.

Comparisons of the economic performance of production sharing contracts (PSCs), tax and royalty, service, risk and joint-venture contracts identify strengths, weaknesses, risks and opportunities associated with specific contracts. The roles played by national oil companies (NOCs), indigenous companies and communities is increasing and issues of fiscal stability are challenging for both international oil companies (IOCs) and governments.

There are many contractual issues, going beyond just the fiscal terms, that must be considered when designing and negotiating upstream agreements. These are identified during the course and reinforced through the use of examples and exercises.

The course features presentations, exercises and case studies.

Course notes are issued in digital format.

Who should attend?
This course is designed for a multi-disciplined audience with diverse commercial, technical, corporate, operations, planning, legal and risk management backgrounds from the oil and gas sector. Course content addresses issues and skills relevant to professionals working with or negotiating upstream petroleum contracts and licences, including: analysts, accountants, asset managers, bankers, contractors, economists, engineers, geologists, government regulators and representatives, financial controllers, insurers, investors, lawyers, national oil company and ministry personnel, negotiators, planners, portfolio managers, project managers, risk analysts, strategists and taxation administrators and advisors.

Course notes are issued in digital format.

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Day one:
Key features of upstream licence agreements

• Upstream fiscal designs: their objectives and concepts
• Contracting host government and international oil company perspectives
• Concepts of economic rent and why governments seek to optimise it
• Petroleum legislation and issues it needs to address
• Review the content of a generic petroleum law
• Title to resources, legal jurisdiction and offshore complexities
• Mineral interest agreements: concessions, licences and leases
• Production-sharing contracts (PSCs): origin, rationale and structure
• Review content of a model production sharing contract
• Establishing title to resources and reserves
• Work and financial commitments, guarantees and schedules
• Contract duration and relinquishment schedules
• Progressive and regressive taxation mechanisms
• Spectrum of taxation instruments applied
• Fiscal stability versus instability and asset appropriation
• Flexible drivers and sliding scales to adjust fiscal instruments
• Cost recovery mechanisms: cost oil and gas, uplift and amortisation

Day two:
Establishing meaningful and workable contracts

• Competitive bidding rounds, ‘Winner’s curse’ versus bidding realities
• Review of competitive bidding case studies
• Signature and other bonuses
• Managing E&P licence agreements: accountability and control issues
• Purpose of the Joint Operating Agreement (JOA)
• Review of the content of a model JOA
• Authorising and budgeting for expenditure
• Joint-venture operating and accounting principles
• Authority for expenditure, cash calls, liftings and billings
• Procurement and tendering issues
• Foreign exchange and cost allocation
• Limits on cost recovery, production allocations and tax allowances
• Ring fencing of costs and revenues
• Interface with supplier and service company agreements

Day three:
Managing and financing upstream contracts

• Comparison of generic fiscal designs from selected countries
• Local content, indigenous suppliers and community issues
• Operating and management committees and voting rights
• Integrating other contracts with upstream licensing terms
• Farm-out agreements: roles of farmor and farnee
• Review the content of model farm-out agreement
• Unitisation agreements and case studies
• The regressive nature of royalties and options to mitigate it
• Progressive taxes and their impacts on fiscal performance
• Options for financing field developments and contractual issues
• Loan interest tax treatments: deductions, allowances and credits
• The regressive nature of royalties and options to mitigate it
• Managing and financing upstream contracts

Day four:
Dealing with state involvement and disputes

• Carrier interests, back-in and buy-back concepts
• Equity participation involving state-owned companies
• NOC and IOC relationships and joint-ventures
• Rights of assignment, pre-emption and divestment issues
• Some governments invoke their rights of pre-emption
• Planning negotiations
• Negotiating strategies and tactics to achieve workable terms
• Team negotiations
• Cultural issues impacting contract negotiations
• Sole risk and non-consent options
• Dispute resolution and arbitration
• Approval of field developments and other work programme
• Safety, environment, decommissioning and trailing liability issues
• Documentation and learning from contractual experience
Geopolitics, risk and opportunity in the oil and gas industry

15 – 18 June 2015, London, UK
EI member £3,100.00 (£3,720.00 inc VAT)
Non-member £3,300.00 (£3,960.00 inc VAT)

About this course
Geopolitical issues form an important component of the overall uncertainty in which the industry operates around the world and frequently determine the long-term success or failure of specific oil and gas ventures.

Risk and opportunity are multi-faceted phenomena impacting all sectors of the oil and gas industry in a variety of ways, with geopolitics being a key facet. It is essential that the less tangible political, geopolitical and extreme risk exposures need to be adequately considered when investment decisions are made.

The course consists of a balanced mix of presentations, of interactive exercises, some illuminating video clips and spends the last quarter of each day with up-to-date regional reviews from across the world.

Who should attend?
The course is structured to appeal to a multi-disciplined audience with diverse commercial, technical and professional backgrounds and experience levels from within oil and gas companies and government departments. However, a range of professionals from the industry support and service sectors (e.g. economics, banking, insurance, legal, negotiation and public relations), including governmental and non-governmental agencies, could gain a deeper understanding of the uncertainties facing all sectors of the oil and gas industry.

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Geopolitics, risk and opportunity in the oil and gas industry – Topics include:

Day one:
Global mind-set and risk analysis
- Approaching oil and gas ventures with a global mind-set
- A common language for risk, opportunity and uncertainty management
- Less tangible political, fiscal, market and trading uncertainties
- Quick-look country risk/ opportunity assessments
- Political risk rating systems
- Risks associated with costs of supply
- Qualitative approaches to analysing uncertainty, risk and opportunity
- Catastrophic risks: exposure to low-probability but high-impact events
- Credit rating agencies and country risk
- Semi-quantitative approaches to analysing risk
- Regional case reviews:
  - Central Asia to Europe pipelines
  - Caspian Sea landlocked countries
  - India
  - United States, Canada and Mexico; unconventional sources

Day two:
Risk mitigation and decision-making
- Protecting the assets: risk mitigation by safety management systems
- Milestone, holistic and systematic approaches to risk management
- Consequences of long-term community unrest
- Defining context and involvement in risk/opportunity management
- FEED, EPC and construction risk management processes
- Competitive bidding for contracts
- Identifying and analysing specific risks – roles for expert panels
- Performing and interpreting quantitative risk analysis
- Geopolitics of Eastern and Western Europe’s gas supply
- Ranking potential events and constructing risk opportunity profiles
- Decision trees aid risk analysis of alternative outcomes – regional case reviews:
  - OPEC, GECF (Gas Exporting Countries Forum) and Reserves
  - North Africa
  - Russia and Arctic Ocean continental shelf
  - West Africa: oil, gas and LNG

Day three:
Many facets of risk
- Real options for complex and phased decision analysis
- Politics and risks of emissions targets, climate policies and carbon capture
- Insurance and contracting strategies to mitigate and transfer risk
- Terrorism, piracy, kidnapping, extortion and other security risks
- Devising risk mitigation and opportunity exploitation strategies
- Risk-sharing and alliances to improve commitment and spread risks
- Political conflict and confrontation
- Risks associated with project finance in petroleum industry
- Competitive bidding theory versus practice
- Regional case reviews:
  - Colombia
  - Venezuela
  - Panama Canal
  - Trinidad
  - Iran
  - Qatar
  - UAE
  - Oman
  - Iraq (Kurdistan)
  - Syria
  - Turkey
  - Central and Eastern Africa

Day four:
Integrated approaches to geopolitics and risk
- Risks associated with estimating and controlling project costs
- International oil and gas company performance risks
- Risk and valuation modelling of oil and gas asset portfolios
- Exploiting unconventional oil: environmental and geopolitical risks
- Canada’s oil sands: national and corporate risks
- Relevance of enterprise approach to risk management
- Cross-border permit unitisation disputes and resolutions
- National oil/gas company strategies, acquisitions and privatisations
- Corporate and individual appetites and preferences for risk
- NOC and IOC attributes compared
- Corporate governance issues for the industry: Enron case study
- Regional case reviews:
  - Alaska’s stranded Arctic gas
  - Australia
  - South America: Southern Cone
  - China
  - Japan and Vietnam
Oil and gas project and operations management

2–4 September 2015, London, UK
EI member £2,300.00 (£2,760.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)

About this course
Project and operations management play major roles in determining the success or otherwise of oil and gas projects and companies. Key project and operations management skills and techniques relevant to the oil and gas industry include: planning, estimating, modelling, organising and controlling resources and schedules, with a view to optimising performance and quality. In addition, teamwork, problem solving, motivation, contracts, negotiations, risk management and handling data and documentation are essential requirements for successful projects and operations.

The skills taught are oil-and-gas-industry specific and can be widely applied at upstream, downstream and corporate levels. It focuses on integrating knowledge of projects and operations along oil and gas supply chains.

Who should attend?
This course is designed for a multi-disciplined audience from the project and operations sectors of the oil and gas industry, including both professional and support staff. The skills and industry insight provided are also of value to corporate staff involved in project management and planning.

Attendees should include:
• Managers, supervisors and project/operations team members involved in planning, implementing, supervising and directing operations and projects.
• Upstream professionals, such as engineers, geoscientists and planners.
• Downstream professionals, such as facility engineers and plant operators.
• Corporate and asset team members involved in oil and gas assets.

Day one:
Project management in an oil and gas industry context
• Overview of project and operations management process and skills
• Project structures: activity stages and decision gates
• Planning: an essential requirement of projects and operations
• Offshore field development
• Videos: Deepwater drilling and offshore field development
• Exercise: estimating under conditions of uncertainty
• Cost estimating and approval/authorisation for expenditure
• Project management frameworks: PMBOK, PRINCE and Six Sigma
• Resource scheduling exercise: developing Gantt charts
• Key attributes of high-performing project managers
• FEED and EPC contracting in the oil and gas industry
• Video: gas liquefaction (LNG) plant construction project
• Quantifying risks and opportunities
• Exercise: evaluating extreme risks and contingencies
• Strategies to reduce risk and enhance opportunities

Day two:
Detailed planning, analysis and modelling
• Project networks and critical path analysis
• Exercise: precedence diagram construction and critical path determination
• Flawless start-up concept
• Videos: gas processing plant case study
• Parallel engineering and problems that arise
• Probabilistic approach to project cost-time forecasting
• Chemical plant construction: alternating critical paths simulated
• Review of project planning, scheduling and risk-analysis software
• Cost-time control: milestone monitoring, earned value and achievement analysis
• Contracts and procurement: issues and risks
• Exercise: tendering, competitive bidding and bid evaluation
• Resource procurement and the supply chain
• Contracts that share risk: alliance, incentive and gain share contracts

Day three:
Performance and problem solving
• Project team organisation, teamwork and motivation
• Large-scale deepwater FPSO project developments and operations
• Leadership, direction and management skills
• Data management, relational databases and documentation
• Project and operations risk registers and risk assessment methodology
• Exercise: ongoing operating performance monitoring and targets for a producing field
• Delegating and assigning responsibilities effectively
• Quality, health, safety, security and environmental systems
• Managing pipeline and other transportation assets
• Key performance indicators for measuring operating performance
• Problem solving versus decision-making
• Structured and systematic approaches to problem solving
• Innovation and creativity
• Confronting a crisis and contingency planning
• Securing project closure and learning from the outcomes
• Delivering project and operational objectives

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Budgeting, planning and forecasting for the oil and gas industry

EI member £2,300.00 (£2,760.00 inc. VAT)
Non-member £2,500.00 (£3,000.00 inc. VAT)

About this course
All organisations operating in the oil and gas sector must regularly develop, manage and adjust budgets and forecasts to reflect changing market conditions and their competitive performance. To do this successfully and establish credible budgets and business plans that function as useful and user-friendly management tools to monitor and help improve performance, it pays to be aware of and incorporate best budgeting, planning and forecasting practices.

This course provides participants with insight and understanding of the budgeting process and the key planning and forecasting techniques that should be used to successfully build and manage reliable budgets and business plans. This enables fit-for-purpose budgets and business plans to be developed that robustly model complex, but realistic, situations in a flexible and auditable manner.

The course involves a mixture of presentations, exercises and worked examples in Excel spreadsheet models.

Courses notes are issued in digital format.

Who should attend?
This course is designed for technical, planning and financial specialists and others with budget and planning responsibilities. The course avoids technical and financial jargon and is therefore also suitable for non-technical and non-financial participants.

Whether you are an international oil company (IOC), a national oil company (NOC) or a service provider to such companies, budgeting, planning and forecasting are essential facets of business management that need to be mastered and understood in the specific context of the oil and gas sector.

This course will contribute to your CPD

Day one:
Strategic dimensions to budgeting and planning
• Budgeting as part of the strategic and business planning cycles
• Setting budget targets and goals: balanced scorecards
• Scenario planning for uncertain futures
• Planning requirements along the oil and gas supply chains
• Budget responsibility centres
• Zero-based and performance budgeting versus incremental budgeting
• Activity-based budgeting
• Contractual and fiscal influences on budgeting requirements
• Production sharing agreement (PSA) components
• Joint-ventures and mineral interest agreements
• Joint operating agreements and joint-venture budgets
• Authorisations for expenditure (AFE)
• Procurement, invoicing, payment cycle and cost control
• Essential financial considerations: balance sheets, profit, loss, cash flow
• Accounting and audit procedures

Day two:
Forecasting and benchmarking
• Estimating and forecasting requirements
• Most forecasts are wrong! But many can still be useful
• Factoring in uncertainty: risk and opportunity
• Benchmarking and gap analysis
• Financial key performance indicators (KPIs) favoured by the industry
• Non-financial KPIs favoured by the industry
• Safety, environmental and stakeholder KPIs
• Budgeting for downtime: planned and unplanned
• Corporate, social responsibility (CSR) and community requirements
• Triple bottom line and sustainability criteria
• Life-cycle analysis (LCA), efficiency and emissions
• Capitalisation and leveraging debt and equity
• Consolidating budgets for multiple assets in a portfolio

Day three:
Production, cost and price factors
• Petroleum-volume accounting
• Forecasting production profiles and decline curves
• Lifting and billing
• Incorporating a range of cost and price forecasts
• Nominal and real values
• Flow of funds through a generic oil and gas company
• Capital and operating cost components
• Contractual framework and project execution sequence
• Milestone monitoring
• Achievement analysis and earned value concepts
• Revenue and profit margin planning
• Netback price calculation
• Working capital requirements
• Budget analysis and calculating variances using spreadsheets
• Aids to help present complex budgets in digestible terms
• Reports regulating budgetary performance

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Valuation and risk analysis of oil and gas assets

10–12 November 2015, London, UK
El member £2,300.00 (£2,760.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)

About this course
Valuation of upstream, midstream and downstream assets is an essential requirement of decision-making for the oil and gas industry. This course discusses the fundamental variables and issues associated with petroleum asset valuations and provide an appreciation of how to assess the key uncertainties involved.

The course is pitched to appeal to professionals with a large range of technical and commercial backgrounds and varying levels of experience, seeking insight to the broad range of asset valuation techniques required across the industry. In addition, the course provides details of the micro-economic issues facing oil and gas asset operators.

The course incorporates a sequence of short exercises and case studies to reinforce the tools and techniques discussed.

Course notes are issued in digital format.

Who should attend?
This course is designed for a multi-disciplined audience with diverse oil and gas, financial, petroleum economics, technical, strategic planning, risk management and operational backgrounds.

Course content addresses issues and skills relevant to professionals working within oil and gas companies, government agencies (national oil and gas companies and ministries) and the support and service sectors to the industry.

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Valuation and risk analysis of oil and gas assets - Topics include:

Day one:
Basic analysis and valuation techniques
• The need for oil and gas asset valuations and petroleum economics
• Project cash flow and income components
• Distinguishing cash flow and other measures of profitability
• Petroleum resources and reserves categories and their valuation
• Discounting and time-value considerations
• Forecasting field production profiles and decline mechanisms
• Rates of return of investments
• Pay-out times and break-even points
• Profit to investment ratios
• Capital budgeting techniques and yardsticks
• Which oil and/or gas price forecasts should be used to value assets?

Day two:
Constructing asset valuation models
• Valuing incremental investments
• Inflation, buying power, money of the day and real values
• Applying inflation indices
• Upstream fiscal terms and agreement types
• Production sharing and cost recovery
• Funding criteria: the cost of capital
• Hurdle rates of return and appropriate discount rates
• Asset finance alternatives used by the oil and gas industry
• Equity and debt cash flow analysis
• Manipulating the present value formula, annuities and levelised costs
• Sensitivity, scenario and simulation techniques
• Probabilistic methodology and techniques for valuation and risk analysis
• Components of Monte Carlo simulation models
• Gross product worth and refining margins

Day three:
Dealing with uncertainty, hedges, options and portfolios
• Valuations incorporating risk and opportunity analysis
• Decision analysis, decision trees and flexibility
• Sub-surface risk in oil and gas fields
• Above-ground uncertainties impacting oil and gas assets
• Risked valuation of a farm-out opportunity using a decision tree
• Valuing a deepwater oil and gas field development
• Hedging oil and/or gas price: evaluation of paper instruments
• Real options and complex decision analysis techniques
• Investment analysts’ perspectives of oil and gas company values
• Extrapolation of balance sheet metrics to estimate oil company values
• Valuation and risk analysis software suitable for oil and gas assets
• Risked valuation and optimisation of petroleum asset portfolios
• Diversification as a risk reduction tool
**Supply and distribution, aviation**

**Supply and distribution: organisation, operations and economics**

14–17 September 2015, London, UK

EI member £3,100.00 (£3,720.00 inc VAT)
Non-member £3,300.00 (£3,960.00 inc VAT)

About this course

In the chain between oil rig and customer lie a number of functions, all of which have an effect on the final margin available to the marketers. When it comes to marketing the finished product, Supply and Distribution (S&D) are the core functions delivering the goods to the right place, at the right time, in the right quantity and at the right price.

This course is designed for those who are or will be operating in the S&D functions and will provide the background knowledge to allow them to take the right decisions on how to supply the network at the right cost. The course will also benefit those involved in functions which interface with S&D and who wish to improve their understanding of their impact on their business.

A brief introduction to refining will be provided for those who are new to the business or who may have forgotten the basics of turning crude into finished product. This will highlight the strengths and weaknesses of the different refineries and the effect these can have on their output, leading to the need to source product from different locations at different times.

Fuel specifications will be reviewed and the impact of differing requirements for different markets discussed. Sourcing product will be examined, whether available from a parent company refinery, purchased on the open-market and stored in third party facilities, purchased ex-rack, handled on a throughput basis or exchanged both nationally and internationally.

Primary supply mechanisms, pipelines, ship, rail or road, are a core function and the options will be reviewed along with the impact they have on the economics of the market and their influence on the layout of the network. Terminal location and network planning will be examined along with the effect of competitor locations, exchange opportunities, and environmental considerations and legislation.

During a visit* to Vopak Thames Terminal, London facility, the course will consider the substantial influence terminal design: tank numbers and capacity, loading rack configuration, staffing levels, safety issues and training, has on the efficiency of operations.

The final link in the chain is the transport operation where in-house operations compete with contract haulage. The overall effect of the network and its impact on routing, load optimisation and backhauling operations will be discussed, as well as the benefits of multi-shift delivery patterns.

The course will also review benchmarking techniques allowing you to assess how you are performing against your competitors and where opportunities exist for improvement.

The subject will be considered from a national and international perspective.

Who should attend? (limited to 12 delegates)

- Logistics and distribution personnel, contractors, managers with network planning, supply and transportation responsibilities
- Marketing managers and planners
- Supply, logistics and distribution analysts
- Major oil companies’ personnel with strategic or operational roles
- Finance and performance measurement managers

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### Aviation jet fuel

**30 September – 2 October 2015, London, UK**

**El member £2,300.00 (£2,760.00 inc VAT)**

**Non-member £2,500.00 (£3,000.00 inc VAT)**

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#### Delegates will learn:

- The jet engine, its underlying principles and fuel requirements
- The critical characteristics of jet fuel, including additives
- Industry best practice adopted in the supply, handling and use of aviation fuel
- Real-life problems associated with the contamination of fuel and solutions to remedy them
- The practical side of operations at an airport storage depot and a laboratory
- Aviation fuel standards, traceability and quality assurance.

#### About this course

This course is designed to provide a technical overview and to introduce delegates to the many facets of the Aviation Jet Fuel business – a business which operates at a truly global level. It will not only examine the workings of the modern jet engine and its relationship with fuel product quality, but will build the picture as to why, unlike some fuels, jet fuel specification, production and handling are critical to the continuing success of the aviation industry. It explores components of the business from several key perspectives, including oil company fuel suppliers and civilian and military users.

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### Aviation jet fuel – Topics include:

**Day one**

- The jet engine – Starting with the basics of how a jet engine works and examining why fuel parameters are critical.
- Production of fuel – Looking at major aspects of production of fuel, the refining processes used, and examining the current and possible future sources of jet fuel.
- Contaminants – Description of contaminant types in jet fuel and their prevention and control, including particulate, water, other fuels, additives, and microbial contamination.
- Specifications and standards – Why specifications are required and how they are developed. Jet fuel procurement specifications and fuel handling standards will be explained.
- Filtration – Description of Energy Institute standards. Explanation of the fundamentals of filtration and filtration types and how they are used.
- Additives – A look at what additives are permitted in jet fuel, their purpose and their use in manufacturing and distribution operations.
- Field tests – An overview of various field tests in preparation for demonstration and use on day 2.

**Day two**

- A visit to an airport storage facility – Field test demonstration, including hands-on testing. Airport fuel farm guided tour with explanation of equipment and procedures.
- Static electricity – A guide to identifying and controlling risks.
- Laboratory visit – Demonstration of laboratory test methods, sampling equipment, product quality defect investigations, and microbial testing.

**Day three**

- Storage, distribution and quality control – A discussion of operational challenges in distribution systems. A guide to equipment and best practice.
- Fuel receipt, refueller loading and into-plane refuelling – Overview of standard practices
- Certification and record keeping – Fuel Traceability and Quality Assurance
- Certification and product quality workshop – A chance for attendees to participate. The focus will be on product authentication and product quality data verification.
- Inspections (IATA, JIG, CAA) – Maintaining and developing best practice.
- Safety – An overview of industry standards and how the previous three days learning is applicable to safety.
Refining
Planning and economics of refinery operations

20–23 October 2015, London, UK
EI member £3,100.00 (£3,720.00 inc VAT)
Non-member £3,300.00 (£3,960.00 inc VAT)

About this course
This intensive, four-day course will enable delegates to understand the essential elements of refinery operations and investment economics, to review the various parameters which affect refinery profitability and to develop a working knowledge of the management tools used in the refining industry.

Who should attend?
• Technical, operating and engineering personnel working in the refining industry
• Analysts and planners
• Trading and commercial specialists

Delegates will learn:
• How to assess the latest trends in product specifications, process unit yields and refining schemes
• How to calculate product value, refinery margins and process unit margins
• How costs and margins compare
• How to simulate refinery operations and product blending
• How to optimise refinery operations, crude oil selection and product manufacturing
• How to analyse marginal costs from the optimisation of an LP model
• How to schedule refinery operations from the monthly plan to daily operations
• How to evaluate the profitability of a new process unit.

Planning and economics of refinery operations – Topics include:

Technical résumé
• Review of petroleum products’ applications, characteristics and specifications
• Main refining process units.
• Refining schemes
• Basic economics of the various process units

Refinery margins and costs
• Crude oil, product markets and prices
• Analysis of refining costs
• The calculation of refining margins
• How refining margins have developed

Refinery simulation
• Simulation of product manufacturing using spreadsheets
• Analysis of the main constraints affecting product manufacturing

Present situation of the refining industry
• The development of refining capacities, product demand, different refining schemes and conversion plants

Optimisation of refinery operations
• Basics of Linear Programming (LP)
• The ‘Simplex’ method.
• Simplified example of refinery modelisation
• Analysis of an LP solution: material balance, marginal costs, opportunity costs, incentives to construction
• Sensitivity analysis

Construction of a new process unit
• Economic evaluation
• Basics of profitability analysis
• Case study: construction of a new isomerisation unit
  – simulation of material balance
  – cash flow calculation
  – investment and cost
  – Internal Rate of Return calculation

Scheduling of refinery operations
• Review of scheduling problems
• Control of results and practical application in a refinery

How to improve refinery profitability
• Future of the refining industry. Forecast development of oil consumption
• Environmental constraints. Impact on refining economics
• How to schedule refinery operations from the monthly plan to daily operations
• How to evaluate the profitability of a new process unit

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Upstream
Enhanced oil recovery (EOR): Technical and commercial perspectives

20 June 2015, London, UK
EI member £750.00 (£900.00 inc VAT)
Non-member £850.00 (£1,020.00 inc VAT)

About this course
Enhanced oil recovery (EOR) involves a diverse set of methods that are evolving due to technology developments and greater knowledge from ongoing applications. As many large fields (onshore and offshore) age, with substantial resources left in the reservoir, significant opportunities exist to apply EOR. Attend this course to learn about the technical and commercial issues associated with the various EOR methods and how and where those methods are and could be applied.

Who should attend?
This course is designed for a multi-disciplined audience with diverse technical, commercial, corporate, operations and planning backgrounds from various sectors of the oil and gas industry. The course content covers the technologies avoiding unnecessary jargon or complex scientific details where possible. Commercial factors, risks and opportunities are highlighted for the methods considered. This course is suitable for a range of professionals working within upstream companies, including: analysts, geologists, engineers, planners and their support staff as well as commercial analysts and asset managers.

Enhanced oil recovery (EOR): Technical and commercial perspectives – Topics include:

• Distinct primary, secondary and tertiary phases of oil field recovery
• Review of enhanced oil recovery (EOR) techniques and their applications
• Geographic distribution of existing EOR projects
• How modern fracture stimulation technologies are expanding EOR boundaries
• Thermal EOR methods: steam injection and combustion technologies
• Gas injection EOR methods: miscible and immiscible petroleum and nitrogen
• CO2 Gas injection EOR methods including carbon capture and storage (CCS)
• Low-salinity water flooding
• Chemical EOR methods: alkanes, surfactants and polymers
• Offshore applications and pilot studies for chemical and water EOR methods
• Microbial EOR (MEOR) methods: diverse approaches and potential
• Combining different EOR methods in a certain reservoirs
• Opportunities and risks for future potential EOR applications

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Exploration and production of oil and gas: Technical and commercial perspectives

13–15 April 2015, London, UK
EI member £2,300.00 (£2,740.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)

About this course
The continued evolution of exploration and production technologies helps to decrease risk, reduce costs and enhance commerciality of operations in challenging environments and in the face of substantial risks. The E&P industry continues to confront these difficulties in order to replace existing reserves and to find and develop new resources.

Technologies play key roles in constraining costs and enhancing recovery and profitability and ensure the long-term viability of many projects. Knowledge of these technologies and their commercial implications is important for the technical teams, their support staff and the decision-makers that are involved in deploying and investing in E&P projects.

This course familiarises delegates, avoiding jargon and corporate bias, with the key upstream technologies, processes and facilities applied to find and exploit conventional and unconventional oil and gas resources. It also identifies the risks and opportunities associated with alternatives available.

The course involves presentations, videos and case studies from around the world.

Course notes are issued in digital format.

Who should attend?
This course is designed for a multi-disciplined audience from technical, project, operations and commercial sectors of the oil and gas industry, including both professional and support staff. The skills and industry insight provided are also of value to corporate staff involved in exploration and production.

Exploration and production of oil and gas: Technical and commercial perspectives - Topics include:

Day one: Exploration prior to drilling
- Resources and reserves: future of exploration and production
- Basin analysis and modelling to locate prospective play trends
- Sub-surface characteristics of petroleum systems
- Reconnaissance with magnetic and gravity surveys
- Other remote sensing techniques and geochemical surveys
- Seismic methods to define prospect location and geometry
- Advantages of 3D and 4D seismic technologies
- Direct hydrocarbon indications from seismic attribute data
- Micro-seismic technologies for shale gas
- 4C seismic exploits shear waves to extract detail
- Seismic visualisation and 3D immersive environments
- Controlled-source electromagnetic and magnetotelluric surveys
- Integrated reservoir modelling, simulation and software options
- Reservoir drive mechanisms and production decline profiles

Day two: Exploration and development drilling
- Drilling techniques, equipment and types of wells drilled
- Types of onshore and offshore drilling rig and well designs
- Mud systems, pressure control and blow-out preventers (BOPs)
- Well bore casing, tubing and expandable tubulars
- Deviated horizontal drilling
- Drill bits, geo-steering and bio-steering
- Side-tracking wells and under-balanced drilling
- Coiled tubing and multi-lateral drilling
- Deepwater drilling and subsea well technologies
- Well trajectory planning and measurement while drilling (MWD)
- Wireline logging and formation testing
- Roles of contractors, suppliers and materials procurement
- Incentivised drilling contracts and alliances to share risk
- Shale gas and coal-bed methane exploitation
- Unconventional oil sand and bitumen exploitation

Day three: Field development and production
- Development options, field cycle costs and performance standards
- Licensing, unitisation and fiscal constraints
- Processing well fluids to deliver sales quality oil and gas
- Issues specific to gas fields and natural gas liquids (NGLs) and condensates
- Fixed platform options for shallow water offshore fields
- Floating facilities: Tension Leg Platforms (TLP) and spar platforms
- Floating Production Storage and Offloading (FPSO) facilities
- Integrated subsea production infrastructure and technologies
- Subsea separation, compression and pumping advances
- High pressure/high temperature field developments
- Case studies and videos from the North Sea, West Africa and Gulf of Mexico

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Floating and subsea oil and gas technologies and installations

24–25 September 2015, London, UK
EI member £1,500.00 (£1,800.00 inc VAT)
Non-member £1,700.00 (£2,040.00 inc VAT)

About this course
This course concisely reviews the key components of floating production systems and their associated subsea facilities. The material draws from a wide range of fields around the world operating such systems. Floating production systems have applications in both deep and shallow water, large and small oil and gas fields and benefit from both flexibility and manoeuvrability. The floating production, storage and offloading systems (FPSOs) have evolved over recent decades and, when integrated with subsea infrastructure, now offer diverse development options in a wide range of offshore environments. Field developers continue to place more process infrastructure on the sea bed to optimise field production and resource recovery. The pros and cons of various floating and subsea systems are compared with the aid of case studies and videos.

Who should attend?
This course is designed for a wide range of technical and non-technical professionals. It explains engineering jargon. It is suitable for participants wishing to understand the types of facility employed in floating and subsea production systems, the function of their various components, how such systems are integrated and work in practice and the issues they need to confront and overcome.

Floating and subsea oil and gas technologies and installations – Topics include:

Day one:
Floating and subsea facility components
- Offshore production challenges and field development issues
- Floating versus fixed platform solutions
- Topsides: modular components and their functions
- Floating production facilities: TLPs, Spars, Semi-subs and FPSOs
- Storage, offloading and product export
- Converting marine crude oil tankers into FPSOs
- Subsea design components and engineering
- Well templates, well heads and production trees
- Manifolds and riser systems
- Marine hulls versus cylindrical FPSOs – climatic issues
- Flowlines, umbilicals and pipelines
- Offloading buoys, turrets, disconnectable buoys and mooring systems
- Case studies and videos: Northwest Europe and Gulf of Mexico

Day two:
Operations, risks, costs and regulations
- Flow assurance: inhibiting wax, scale and hydrates
- Managing production decline: injection and pressure support
- Handling produced water
- Well workovers, service vessels and remotely operated vehicles (ROVs)
- Vessel stability and hydrodynamic studies
- Capital and operating cost components and issues
- Floating gas liquefaction (FLNG) vessels and technologies
- Risks and risk management
- Regulation, safety and environment
- Corrosion management and coatings
- Decommissioning
- Case studies and videos: West Africa and Latin America

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Overview of the international upstream oil and gas industry

About this course
The upstream oil and gas sector is the most profitable but riskiest part of the oil and gas industry. In recent years, there have been significant technological breakthroughs (e.g. multi-stage fracture stimulation, subsea facilities, seismic resolution) and some setbacks (e.g. high profile well blowouts, cost overruns and commercial/fiscal disputes) that have changed the way business is conducted.

This course integrates the wide-ranging technical aspects with the complex fiscal, financial and risk management realities that now confront the industry. It provides an overview of the upstream sector in lay terms from technical, commercial and financial perspectives. It is designed for a multi-disciplined audience with varying levels of previous experience wishing to gain an integrated overview of the key issues and drivers.

Who should attend?
This course is designed for a multi-disciplined audience with diverse commercial, technical, corporate, operations, planning and trading backgrounds from various sectors of the oil and gas industry. Course content addresses the key issues and skills relevant to professionals working within organisations involved in upstream activities, including analysts, asset and portfolio planners, bankers, economists, financial administrators, traders, geologists, engineers and their support staff, insurers, lawyers, and risk managers.

29 October 2015, London, UK
EI member £750.00 (£900.00 inc VAT)
Non-member £850.00 (£1,020.00 inc VAT)

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Gas

International natural gas and LNG markets: Pricing and competitive drivers

2–3 March 2015, London, UK
EI member £1,500.00 (£1,800.00 inc VAT)
Non-member £1,700.00 (£2,040.00 inc VAT)

About this course
Variable energy drivers in the three main gas consuming markets (Asia, Europe and North America) result in different price indexation preferences in regional pipeline gas and LNG sale and purchase agreements. The divergence in gas prices in these three markets, influenced by shale gas supply in North America and growth in LNG infrastructure, has driven a growth in short-term and medium-term LNG trading and cargo redirections in recent years fueling more competitive markets.

Through a series of presentations, case studies and exercises delegates are provided with the necessary commercial and technical information with which to analyse gas and LNG markets and pricing.

Who should attend?
This course is designed for a multi-disciplined audience with some prior basic knowledge of the natural gas industry. It is focused on establishing value and cost components of the supply chain segments from gas producers through to gas consumers. The knowledge and industry insight provided by the course is of value to economic and commercial analysts, risk managers, gas traders, gas portfolio managers, gas strategists, contract, finance and legal professionals.

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Gas

International natural gas and LNG markets: Pricing and competitive drivers – Topics include:

Day one:
Natural gas and LNG supply chains, markets and upstream issues
• Three distinct natural gas markets: Asia, Europe and North America
• Major gas pipeline supply chains: North America, Europe and China
• LNG supply chains spanning the globe
• The increasing impact of LNG in regional gas market
• Long-term versus short-term strategies for buyers and sellers
• Arbitrage and swap opportunities in LNG trading
• Contractual relationships along the supply chains
• Operating in both sellers’ markets and buyers’ markets
• Economics of upstream gas supply to liquefaction projects
• Production profiles, reserves and process losses
• Factors influencing capital and operating costs of gas supply chains
• Flexibility of destination: FOB, ex-ship and re-routing
• Gas and LNG storage, hubs and gas specifications
• Cost of supply and break-even prices
• Competitive issues: LNG versus pipeline gas

Day two:
Competition, pricing, financing and contractual issues
• Gas-to-power, gas-to-liquids and gas-to-petrochemicals
• Competition between gas, coal, nuclear and renewables
• Spark spreads and competing fuels for power generation
• Value differences in gas specifications and natural gas liquid components
• LNG shipping vessels and economies of scale
• Impact of boil-off in LNG transport and storage
• LNG ship ownership versus chartering
• LNG netback pricing, cost deductions and profitability
• Gas price indexation and pricing reopener clauses in long-term agreements
• Financing and risk issues for large-scale gas export projects
• Key gas sale and purchase agreement (SPA) terms
• Mitigating and exploiting price volatility
• Regional impact of exports of North American gas indexed to Henry Hub pricing
• Minimising the impact of contract breaches
• Regional market drivers that prevent global LNG pricing
Natural gas and LNG technologies and supply chains

3–6 November 2015, London, UK
El member £3,100.00 (£3,720.00 inc VAT)
Non-member £3,300.00 (£3,960.00 inc VAT)

About this course
Modern technologies and increasing infrastructure have enabled LNG to emerge from a strategic energy source into one that now competes in terms of price and supply with pipeline gas in most regions of the world. Global demand for gas and LNG is changing and diversifying significantly, particularly in Asia, United States and Europe. In addition to traditional gas markets (i.e. use as a fuel for industry, space heating and power generation), gas and its natural gas liquid components are now being more widely used as feedstock for producing a range of high-value liquid fuels and petrochemicals.

Through a series of presentations, case studies and exercises, delegates are provided with insight into the technologies and supply chains involved in the modern natural gas and LNG industries.

Technical sections of the course are presented in non-technical language to accommodate a multi-disciplined audience.

Who should attend?
The course should benefit professionals from a range of technical and commercial backgrounds and with varying levels of gas industry experience. There is a broad skill-set required for companies operating across the gas supply chains that includes: petroleum resource managers, process and marine engineers, economics and commercial analysts, risk managers, contract, legal, strategic planning and finance professionals. This course is designed to address that skill-set and, with the aid of case studies, provide a global perspective to the industry, presenting numerous international examples that illustrate the opportunities and threats confronting the natural gas and LNG industries.

Technical sections of the course are presented in non-technical language to accommodate a multi-disciplined audience.

Day one:
- Supply chains, industry development, processes and markets
  - Characteristics and properties of natural gas and LNG
  - Components of natural gas and LNG supply chains
  - Market segments, trends and forecasts for the industry
  - Competition LNG versus pipeline gas and shale gas
  - Case study: gas liquefaction plants in Qatar
  - Evolution of the LNG industry and markets
  - Japan and Korea LNG markets, contracts and pricing
  - Liquefaction process options: mixed refrigerant and cascade processes
  - Liquefaction plant cost components and trends
  - Phases of technology improvement and economies of scale
  - LNG receiving terminal components and re-gasification and technologies
  - Case study: UK LNG receiving terminals
  - LNG for long-term storage and peak shaving back-up supplies

Day two:
- Competition, shipping, storage and gas supply strategies
  - The European gas import market: LNG and pipeline competition
  - LNG shipping technologies, vessels and market issues
  - Impacts of boil-off gas on LNG shipping economics
  - Shipboard regasification vessels (SRVs) and re-liquefaction options
  - Gas ports, ship to ship transfers and ships used for LNG storage
  - Onshore LNG storage tanks, stock and throughput issues
  - Price indexation and netback pricing
  - Economics of gas supply chains
  - Floating liquefaction (FLNG): competing technologies and emerging projects
  - North American LNG evolution and market impact of shale gas
  - Case study: Russia – gas pipeline and LNG projects expanding its global reach
  - Project planning, FEED and EPC contracting for liquefaction plants
  - Case study: gas exports from Trinidad and emerging projects in Colombia and Venezuela
  - Gas case study: gas liquefaction in Norway – Snøhvit

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Day three:
- Contracts, safety, finance and regional case studies
  - Gas project and supply contract structures and drivers
  - Take-or-pay, force majeure and operator’s liabilities
  - Review of gas and LNG sale and purchase agreement terms
  - Growing gas import markets in China and India
  - Gas liquefaction export project proposals, western and eastern Canada
  - Case study: Alaska LNG and gas pipeline aspirations
  - Environmental and safety issues for LNG facilities
  - Spark spreads: gas versus other power generation fuels
  - Liquefaction projects in West Africa: Angola, Nigeria and Equatorial Guinea
  - LNG exports from Peru open up South American gas exports
  - LNG facilities in UAE, Kuwait, Oman and Yemen
  - Operating and developing LNG projects: Australia – North West Shelf
  - Australia’s coal bed methane LNG export projects in Queensland
  - Papua New Guinea liquefaction project exports first LNG in 2014
  - Liquefaction facilities in south-east Asia: Malaysia, Indonesia and Brunei
  - Iran spends more than a decade negotiating potential gas export projects

Day four:
- Gas resources and processes to monetise them
  - Shale gas resources of North America
  - Shale gas exploitation technologies and economics in the United States
  - Shale gas potential in other regions and their exploitation challenges
  - Technical and geopolitical issues for stranded gas resources
  - Gas-to-liquids (GTL)
  - Fischer-Tropsch (FT) and synthesis gas, products and providers
  - FT-GTL case studies (Malaysia, Qatar, Nigeria and South Africa)
  - Methanol, Dimethyl Ether (DME) and other petrochemical products
  - Increased roles for ethane and natural gas liquids as petrochemical feedstocks
  - Catalysts, pilot plants, technical developments
  - Compressed natural gas (CNG) for bulk gas transportation
  - Gas hydrate resources and their potential
  - SWOT analysis of the global natural gas industry
Unconventional petroleum resources and their exploitation

30 March–1 April 2015 London, UK
EI member £2,300.00 (£2,760.00 inc VAT)
Non-member £2,500.00 (£3,000.00 inc VAT)

Unconventional petroleum resources and their exploitation – Topics include:

Day one:
Description of unconventional gas resources
- What are unconventional petroleum resources?
- Resources versus reserves measures and conventions
- Unconventional gas resources: shale gas, tight gas, coal bed methane, hydrates
- Geographic distribution of unconventional resources
- Supply and demand for unconventional gas in North America
- Shale gas play concepts for all major US formations
- North America’s shale gas and oil industry
- Cost of supply relative to natural gas prices
- Natural gas liquids from shale feeding petrochemical plants
- Shale gas project cash flow analysis
- Can shale gas be commercially exploited in Europe?
- Coal bed methane feedstock for LNG projects in Queensland, Australia

Day two:
Technology and global perspectives for unconventional gas and oil
- Drilling, well construction, risks and well spacing
- Hydraulic fracture stimulation, fluids and reservoir performance
- Micro-seismic fracture mapping techniques
- Geochemistry and thermal maturity of potential shale gas formations
- Isotope markers to reveal best productive zones
- Environmental issues: surface, groundwater and waste issues
- Shale gas and oil plays around the world
- Coal bed methane feedstock for LNG projects in Queensland, Australia
- Unconventional supply implications for conventional gas sources
- Opportunities and challenges for unconventional gas

Day three:
Shale oil, bitumen, oil sands, heavy oil and enhanced oil recovery techniques
- Global distribution of unconventional oil resources
- Shale oil and natural gas liquids exploitation and opportunities
- Oil sands and bitumen exploited in Canada and Venezuela
- Environmental issues and sustainability of oil sands mining
- Supply costs compared to conventional oil
- Extraction, upgrading and refining processes
- Contentious public relations position of IOCs regarding oil-sand investments
- Transportation, market and political issues for Canadian oil sands
- Carbon capture initiatives for Canadian oil sands
- Immature oil shales and technologies that could potentially unlock them
- Steam-assisted gravity drainage (SAGD)
- Cyclic steam stimulation
- Typical recoveries from conventional oil reservoirs
- Opportunities for heavy oil enhanced oil recovery (EOR) projects
- EOR technologies: chemical flooding, miscible displacement; thermal recovery

Who should attend?
This course is suitable for technical and non-technical professionals working in the oil and gas industry. As well as technical material the course addresses commercial, strategic and sustainability/public relations issues relevant to financiers, economists, strategists, bankers, planners and lawyers as well as geoscientists and engineers.

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This course will contribute to your CPD
About this course

This course will examine the various activities of the Invincible Energy Company to explore the economic forces which drive the oil supply chain. They will concentrate on the main areas of risk and opportunity from the crude oil supply terminal, through transportation, refining and trading to the refined product distribution terminal.

During their time in Invincible’s refinery, delegates will learn about the quality aspects of product supply. They will study refinery process economics and the effects of upgrading. Blending to meet quality requirements at optimal cost will be examined.

Delegates will construct and negotiate a processing deal. They will then follow the crude oil to and the refined products from the refinery and look at the economics of various alternatives.

International markets and trading will be studied, together with the various methods of price risk management.

This course is the essential foundation for people entering the oil industry or those moving into the commercial area from upstream or downstream; those who interface with the commercial aspects of the oil industry in banks, accountancy practices and other organisations.

Course Accredited By The Solicitors Regulation Authority (SRA) – 30.5 SRA CPD Points

Who should attend?

Those new to the oil industry or those moving into the commercial area from upstream or downstream; those who interface with the commercial aspects of the oil industry in banks, accountancy practices and other organisations.

What will you learn?

By the end of the course you will be able to:

- Value different types of crude oils
- Calculate freight costs using Worldscale
- Assess the economics of refinery upgrading
- Perform blending calculations on all main fractions
- Construct and negotiate a processing deal
- Calculate a trading margin
- Carry out basic hedging
- Construct a purchase and sale contract.

You will understand:

- How world oil markets operate
- The principles of chartering a ship
- The principles of oil refining
- Refinery economics and margins
- Product quality

Economics of the oil supply chain – Topics include:

**Oil Fundamentals**
- Oil price history
- World supply and demand
- Structure of world markets
- Price formation and reporting

**Crude Oil**
- Types of crude oil
- Evaluation of crude oils
- Crude oil markets
- Crude oil pricing

**Oil Refining**
- Distillation and reforming
- Treating and conversion
- Cracking
- Refinery economics and optimization
- Blending
- Refinery margins

**Logistics**
- Scheduling oil supplies
- Stocks and storage
- Losses
- Inland distribution

**Oil Products**
- Refined product quality and specifications
- Value of quality
- Downstream marketing

**Transportation**
- Oil tankers
- Freight and Worldscale
- Chartering a ship
- Pipelines

**Markets and Trading**
- International oil trading
- Mechanics of trading
- Contracts for sale and purchase
- Costs of trading

**Processing**
- Processing deals

**Price Risk Management**
- Identifying exposure
- Futures
- Swaps
- Basic hedging techniques

For more information please contact Nick Wilkinson
T: +44 (0)20 7467 7100
E: nwilkinson@energyinst.org
Trading oil on international markets

About this course
Delegates become part of Invincible’s trading team, taking decisions about the company’s activities to maximise profits through an understanding of the economics of trading and the management of inherent price risks. They trade the live crude oil and refined product markets worldwide under the guidance of tutors, reacting to events as they happen using real time information from Reuters and Telerate screens and daily price information from Platts and Petroleum Argus.

The economics of trading are fully studied with delegates negotiating and costing deals, calculating profitability, chartering a ship through a broker and examining the legal and operational aspects of trading. Price risks are identified and managed using the futures, forwards and over-the-counter markets.

Delegates also prepare a tender. The separation of price risks from supply risk is discussed.

Invincible’s corporate position is marked to market and reviewed daily. Market conditions are discussed to gain an understanding of how prices are established on the international markets and what factors influence price movements.

Exercises are performed in syndicates, with comprehensive debriefs studying the consequences of the decisions made.

The course expects a high degree of participation from delegates and there is a high staff-to-pupil ratio.

Who should attend?
Anyone coming into trading from elsewhere in the industry; those in supply and marketing functions looking for a wider understanding of the market; those in oil companies, banks, law firms, accountancy practices, the media and elsewhere who interface with traders and trading; those moving into oil markets from the financial markets or elsewhere.

Course Accredited By The Solicitors Regulation Authority (SRA) – 30.5 SRA CPD Points

What will you learn?
By the end of the course you will be able to:
• Minimise the operational and counterparty risks.
• Negotiate, cost and compare deals, directly and through a broker.
• Write a contract for the purchase and sale of crude oil and refined products.
• Calculate freight costs using Worldscale and charter a ship.
• Trade futures and forward markets for hedging and price risk management.
• Calculate the profitability of deals.
• Manage a corporate position.
• Prepare and evaluate a tender.

You will understand:
• How prices on the international free markets are established and what influences the markets.
• Crude oil pricing and trading.
• Refined product pricing and trading.
• How OTC markets trade.
• The legal aspects of trading and contracts.
• Oil trade finance and documentation.

Trading oil on international markets – Topics include:

Introductory Material
• Introduction to trading and markets
• Price reporting
• Pricing mechanisms

Crude Oil Trading
• International pricing of crude oils
• Crude oil trading
• Brent/BFOE market

Products Trading
• Mechanics of trading products
• Oil broking
• Costings
• Comparing alternative outlets
• Arbitrage trading
• Valuing product quality

Contracts And Trading
• Negotiating a deal
• Writing a contract
• Calculate the profitability of deals
• Spread trading
• Contango and backwardation
• Exchange for physical (EFP)
• Legal issues

Tendering
• Prepare and evaluate a tender

Chartering and Freight
• Calculating freight costs using Worldscale
• Chartering a ship
• Calculate demurrage
• Freight exposure and swaps

Performance and Credit
• Client/counterpart risk
• Documentation

Risk and Exposure
• Identifying and minimizing risks in trading
• Price exposure
• Separation of price and supply

Risk Management Instruments
• Futures markets
• Forward markets
• Swaps and OTC markets
• Introduction to Options
• Comparison of instruments

Trading Controls
• Manage a corporate position and mark to market

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e: nwilkinson@energyinst.org
Price risk management in the oil industry

8–12 June 2015, Cambridge, UK
9–13 November 2015, Cambridge, UK
EI member £3,750.00 (£4,500.00 inc VAT)
Non-member £3,800.00 (£4,560.00 inc VAT)

About this course
As part of a trading team delegates identify and manage the price risks of their trading book. The full range of derivative markets is traded, most of them in real time using the prevailing market prices obtained from Reuters, Platts and Petroleum Argus. Options are traded using a simulated trading programme.

Risk management instruments and markets are explained in full and strategies for their use for hedging and price management are studied and practised. The value of optionality is studied and technical analysis of the markets continues through the week. Management control and risk measures are also discussed. Delegates compare the performance of different instruments as market conditions change over time and learn how to choose an appropriate instrument to meet their objectives. The associated costs and risks are explained.

Numerous exercises are carried out in syndicates, with comprehensive debriefs studying the consequences of the decisions reached. The course expects a strong degree of participation from delegates and there is high staff to pupil ratio. Live futures markets are traded throughout the week.

Who should attend?
Those with an understanding of physical markets who wish to learn more about derivatives and hedging; those who interface with risk management from elsewhere in the industry, from banks, accountancy practices, law firms and other.

What will you learn?
By the end of the course you will be able to:
• Identify price exposure in your company’s activities.
• Analyse price charts.
• Trade futures, forward and swaps markets.
• Hedge cargoes and longer term positions using forwards, futures, swaps and options.
• Manage refinery margin risk.
• Use contracts for difference (CFDs and DFLs) to manage contango/backwardation risk in the dated/paper markets.
• Separate price and supply and maintain control over pricing using EFPs and triggers.
• Examine and compare the cost and effectiveness of different options strategies.

You will understand:
• The forces driving the physical, forward, futures and other derivative (swaps and options) markets.
• The mechanisms of trading on the forward markets and the associated risks and rewards.
• Option theory and factors determining options prices.
• The need for management and risk control systems.
• The role of the market makers and operation of the over-the-counter markets.

Price risk management in the oil industry – Topics include:

Risk identification
• Identifying risks in a corporate position
• Quantifying exposure
• Contango and backwardation
• Liquidity and basis risk

Risk management instruments and markets
• Futures markets
• Forward markets
• BFOE and dated Brent markets
• CFDs/DFLs
• Swaps and OTC markets
• Role of the market maker
• Comparison of instruments

Options
• Exchange and OTC options
• Options strategies
• Option pricing and the Greeks
• Tailored swaps and embedded options
• Using option pricing software
• Trading volatility

Optionality
• Identifying and valuing optionality in the oil markets

Risk management techniques
• Hedging with futures, swaps and forwards
• Hedging with options
• Spread trading
• Basis risk
• Refinery margin hedging
• Comparing hedging strategies
• Hedging in practice

Trading controls
• Clearing and exchanges
• Marking to market
• Value at Risk
• Management control

For more information please contact Nick Wilkinson
t: +44 (0)20 7467 7100
e: nwilkinson@energyinst.org
Registration form

To register, by post or fax, please complete this registration form in BLOCK CAPITALS and return it to the address below, together with payment of all fees.

Nick Wilkinson, EI Oil and Gas Training
Energy Institute, 61 New Cavendish Street
London W1G 7AR, UK
f: +44 (0)20 7255 1472

to register by email, please provide the same contact details (shown below), together with the relevant course details and send to: nwilkinson@energyinst.org
To book online, visit: www.energyinst.org

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I am/my employer is a member of the EI and entitled to the EI member’s rate.
EI Membership Number:  
Mr/Mrs/Miss/Ms/Dr/Other:
Name:  
Date of Birth if under 19 years of age:  
Job title:  
Organisation:
Name and address against which an invoice should be raised:
Name and address against which an invoice should be raised:
Mailing address for joining instructions (if different to invoice address above):
Please indicate if you have any particular dietary requirements:  
I confirm that I have read and agree to the conditions of registration as specified in the General Information section.
Signature:  
Date:  

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Course Title:  
Course date:  
Cost of course: £  
Less 10% discount for each subsequent delegate from the same company attending the same course on the same date £  

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Payment
Cheque
I enclose my remittance, made payable to the Energy Institute, for: Total Payment £ inc VAT.
The total amount may be paid by Sterling Cheque or Draft drawn on a bank in the UK.

Credit card
To pay by Credit, Debit or Charge Card, tick appropriate card name and give card details below:
Visa □ Mastercard □ Amex □
Card No:
Start Date:
Expiry Date:
Security code: (last 3 digits only, 4 if Amex):
Credit/Debit/Charge card holder’s name and address:
Signature:  
Date:  

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Data Protection Act
The EI will hold your personal data on its computer database. This information may be accessed, retrieved and used by the EI and its associates for normal administrative purposes. It will be used for these purposes in the EI’s legitimate interests. The EI also uses the personal data you provide to send you information about its services, events and conferences in which you may be interested, and to carry out your instructions and manage your account with the EI.
To book online, visit: www.energyinst.org

The EI would also like to share your personal information with carefully selected third parties in order to provide you with information on other events and benefits that may be of interest to you. Your data may be managed by a third party in the capacity of a list processor only and the data owner will at all times be the EI. If you are happy for your details to be used in this way, please tick this box.
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To book online, visit: www.energyinst.org

I am/my employer is a member of the EI and entitled to the EI member’s rate.

EI Membership Number: __________________________
Mr/Mrs/Miss/Ms/Dr/Other: __________________________

Name: __________________________
Date of Birth if under 19 years of age: __________________________
Job title: __________________________
Organisation: __________________________

Name and address against which an invoice should be raised:

Mailing address for joining instructions (if different to invoice address above):

Please indicate if you have any particular dietary requirements:

I confirm that I have read and agree to the conditions of registration as specified in the General Information section.

Signature: __________________________ Date: __________________________

Course Title: __________________________
Course date: __________________________
Cost of course: £ __________________________
Less 10% discount for each subsequent delegate from the same company attending the same course on the same date £ __________________________

Payment

Cheque
I enclose my remittance, made payable to the Energy Institute, for: Total Payment £ __________________________ inc VAT.
The total amount may be paid by Sterling Cheque or Draft drawn on a bank in the UK.

Credit card

To pay by Credit, Debit or Charge Card, tick appropriate card name and give card details below:

Visa ☐ Mastercard ☐ Amex ☐

Card No: __________________________
Start Date: __________________________ Expiry Date: __________________________
Security code: (last 3 digits only, 4 if Amex) __________________________
Credit/Debit/Charge card holder’s name and address:

Signature: __________________________ Date: __________________________

Data Protection Act The EI will hold your personal data on its computer database. This information may be accessed, retrieved and used by the EI and its associates for normal administrative purposes. It will be not distributed to third parties. If you are based outside the European Economic Area (the “EEA”), information about you may be transferred outside the EEA. The EI may also periodically send you information on membership, training courses, events, conferences and publications in which you may be interested. If you do not wish to receive such information, please tick this box ☐. The EI would also like to share your personal information with carefully selected third parties in order to provide you with information on other events and benefits that may be of interest to you. Your data may be managed by a third party in the capacity of a list processor only and the data owner will at all times be the EI. If you are happy for your details to be used in this way, please tick this box ☐.
General information

Entry Requirements
Whilst no formal qualifications are required in order to participate in our training courses, it is likely that applicants will have been educated to senior school level. In addition, applicants should have a reasonable ability to understand spoken and written English.

The ability to write in English would be useful but not essential.

Payment
Full payment must be received before a place can be guaranteed. Please note that VAT may be liable to amendment. All prices are correct at the time of going to press, but may be subject to change without prior notice.

Acknowledgement of registration
Confirmation of registration and a VAT receipt will be sent to all delegates. Joining instructions will be sent out prior to the start date of the course. If you have not received your acknowledgement seven days prior to the start date of the course, please contact EI Oil and Gas Training to confirm your booking.

Language and course materials
All presentations, course materials and supporting documentation will be presented in English. Audio-visual recording of presentations is strictly forbidden. Course materials cannot be purchased by non-attendees.

Cancellation
In the event of a delegate cancelling, a refund of the registration fee less a 20% administration charge will be made provided that notice is received in writing at least 28 days before the date of the course. No refunds will be paid after that date. However, course papers, as supplied to attendees, will be provided after the event.

Substitution
If you are unable to attend, a substitute delegate may attend in your place, provided that EI Oil and Gas Training team is notified in advance.

Enquiries
EI Oil and Gas Training, Energy Institute,
61 New Cavendish Street, London W1G 7AR, UK
t: +44 (0)20 7467 7100 ; f: +44 (0)20 7255 1472
e: nwilkinson@energyinst.org
www.energyinst.org

UK Entry Visas
Please note that there have been recent changes to the UK Entry Visa application system.

Given this, it now takes a minimum of 15 working days/3 weeks, to process any applications. If you wish to attend a course and need a visa, you are urged to apply at least 1 calendar month prior to the start date of the course.

Full information at: www.gov.uk/check-uk-visa
Certificate in Oil and Gas

Offered by: Energy Institute and DWA Energy Limited

Level 1: 20 separate units (approximately 2 to 3 hours to complete each unit).

Pre-course reading only required for those new to the industry or with little experience of certain sectors of the industry: Vaclav Smil “Oil: A beginner’s guide” (2008) (about 10GBP to buy).

Each unit consists of a file of 30 to 40 slides containing annotated images and/or concise descriptive text.

Level 1: Unit Titles

1. Oil and gas value chains and the resources and reserves that feed them
2. Organizations participating in the oil and gas industry and their characteristics
3. Subsurface petroleum systems and resource characteristics
4. Natural gas and the processes and infrastructure used to deliver it to market
5. Upstream oil and gas production processes and facilities
6. Portfolio perspectives for groups of oil and gas assets
7. Liquefied Natural Gas (LNG), Gas Contracts and Gas-to-Liquids (GTL)
8. Uncertainty management: risk and opportunity
9. Upstream petroleum economics and valuation
10. Oil and gas acquisition and divestment activities and strategies
11. Geophysical exploration and development techniques
12. Drilling technologies and their applications
13. Well logging, testing, completion and pumping technologies
14. Enhancing resource recovery, including fracture stimulation
15. Safety, environment and security factors
16. Upstream fiscal designs and joint venture relationships
17. Project management and facilities contracting
18. Midstream: Transportation and storage
19. Refining, refinery products and petrochemicals
20. Community and sustainability issues for the industry
To register: Email: nw Wilkinson@energyinst.org

Fees:

**EI Member:**

Single modules: 60.00GBP, including VAT, each.

20 Modules: 1100.00GBP, including VAT.

**Non-member:**

Single modules: 65.00GBP, including VAT, each.

20 Modules: 1200.00GBP, including VAT.

In order to qualify for the certificate delegates should complete any 16 of the 20 units, plus provide a brief written answer (maximum 200 words), in their own words, to a question related to each of the units they have participated in and completed (i.e. minimum of 16 questions to be answered to gain a certificate).