Practical Workshop: Building Excel Models of Oil and Gas Fiscal Terms

13–15 April 2010, London, UK

EI member £1,600.00 (£1,880.00 inc VAT) Non-member £1,800.00 (£2,115.00 inc VAT)*

***includes complimentary Affiliate membership to the Energy Institute**

A key task for oil and gas organisations working with upstream assets is to be able to understand and model the economic implications of varying fiscal terms on their projects. Proprietary software designed to analyse fiscal terms has many short-comings in this regard (e.g. black-box methodology and the need for expensive specialist software engineers to modify / update it). Most analysts need from time to time to build, and rapidly modify, their own models to facilitate detailed analysis. Excel offers the ideal platform for such work with its transparent and highly flexible functions, supplemented by excellent graphics and visual basic (VBA) macro options.

This course offers hands-on instruction for building, developing and applying spreadsheet models to analyse the economic performance of upstream fiscal terms. It is built around a series of workbook modules compatible with Excel 2007 and 2003 versions. **Delegates are required to bring their own laptop computers loaded with a functioning version of Excel 2003 or 2007 for use during the course.** Delegates are not confronted with one large complex model that is difficult to interpret and audit. Rather they are provided daily with a number of workbooks to load, evaluate and develop through structured exercises into increasingly sophisticated models. Some basic knowledge of operating Excel software is required, but detailed expertise is not essential, as the workbooks provided are concise, user-friendly and structured to explain their objectives in easy-to-follow steps. The emphasis of the workshop is on providing insight to fiscal analysis rather than developing advanced 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 development. Brief PowerPoint presentations are delivered to review the key fiscal elements involved in a wide range of upstream fiscal designs. The presentations provide delegates with useful insight into how upstream fiscal systems are structured. They address mineral interest (tax and royalty) and production sharing systems and the common components used in those alternatives around the world, including R-factors, rates of return and a range of depreciation methods. Investment yardsticks are developed in some workbooks to analyse fiscal performance. These include the discounted cash-flow metrics of net present value, rates of return, profit / investment ratios, payback time and financial exposure measures.

The models are developed from the perspective of investing companies and the government's (i.e. total government take and partial government take, e.g. state-owned company positions). Concepts of state-take percentages of revenues and cash-flows are developed. Some models address the issues of inflation and buying-power valuation and explain in simple terms how nominal (money-of-the-day) and real values are derived and their significance.

The workbook modules introduce the delegates to some powerful graphics' techniques and illustrate how visual basic (VBA) macros can greatly enhance the speed and power of many fiscal models. These enable wide-ranging sensitivity analysis to be conducted and displayed rapidly.

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 practical sessions will demonstrate how such features can be simply and effectively harnessed to build quite sophisticated, but highly functional, analytical models.

The training materials provided to delegates for this course are all in digital formats. The course workbooks should arm the delegates with easy-to-adapt tools for building their own fiscal models.

Detailed content covered by course

Day one – Key Features of Upstream Licence Agreements

- Common Types of Upstream Fiscal Design
- Contracts versus Licences and Licence Agreement
- Division of Economic Rent
- Royalty, Production Taxes and Income Taxes
- Progressive and Regressive Fiscal Elements
- Time Value, Discounting and Depreciation
- Economic Performance Measurements and Yardsticks
- Net Present Value (NPV) and Mid-year Discounting
- Investor's Rate of Return (IRR) and Payback
- Production Sharing Agreements and Contracts (PSA or PSC)
- Cost Recovery Allocations: Cost Oil and Cost Gas
- Profit Oil and Gas
- Revenue Split Flow Diagrams to Illustrate Fiscal Design
- Splitting the Proceeds of One Production Unit

Day two – Components of Multi-year Spreadsheet Fiscal Models

- Multi-year Production Sharing Contract Cash Flow Models
- Switching Production Data Profiles for Analysis Using CHOOSE Function
- Programming and Display Styles: Named Ranges Versus Nested IFs
- Gross and Net (of cost) Tax Bases
- Royalties and Their Regressive Nature
- Minor Fiscal Terms: Bonuses and Rentals
- Establishing Economic Limits and Field Shutdown / Abandonment Logic
- Fiscal Terms Driven By Production, Reserves and Economic Yardsticks
- Sliding Scales Using Simple and Compound VLOOKUP Function
- Annotating Dynamic Graphics driven by Spinners
- Inflation, Money of the Day versus Real Terms
- Issues Associated with Fiscal and Contractual Stability

Day three – Models to Interrogate Fiscal Performance and Risk

- Sensitivity Analysis Using Multipliers Driven by Spinners
- Using Solver and Goal Seek Excel Functions for Break-even Analysis
- Detailed Sensitivity Analysis Using VBA Macro
- Risk Analysis of Project Cash Flows
- Probabilistic Analysis
- Expected Value (EV) and Expected Monetary Value (EMV)
- Farm-out Analysis Using a Decision Tree
- Tax Floors and Ceilings
- Income Taxes, Carry-forward Losses and Time Limits on Tax Allowances
- Debt Supported Cash Flows
- Developing VBA Macros for Scenario Analysis

Who should attend this course?

This course is suitable for commercial, technical and financial analysts, tax accountants, economists, bankers, planners, lawyers and others working in the upstream oil and gas industry wishing to develop fiscal analysis skills using Excel spreadsheets to evaluate oil and natural gas projects. The material is designed to illustrate perspectives of oil and gas companies, governments, state-owned oil companies and those providing financial services to the industry.

For more information please contact Nick Wilkinson
t: +44 (0)20 7467 7100 f: +44 (0)20 7255 1472
e: nwilkinson@energyinst.org www.energyinst.org

Registration form

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.ukvisas.gov.uk/en/howtoapply/wheretoapply/**

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**

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: .....

Job title or present position: ..... Company/Organisation: .....

Name and address against which an invoice should be raised:.....

.....

t: ..... f: .....

e: .....

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: .....

Under UK Excise Regulations, delegates from all countries are required to pay VAT on any course taking place in the UK.

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

£.....

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.

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

Please enter your 3-digit* security code below. This will be deleted upon authorisation. *4-digits for Amex users.

Visa MasterCard Euro Card Diners Club Amex

Card No: _____ Start Date _ _ / _ _ Expiry Date _ _ / _ _ _ _ _ _ _ _

Credit/Charge card holder's name and address: .....

.....

Signature:..... Date: .....

Payment: Full payment must be received before a place can be guaranteed. Under UK Excise Regulations, delegates from all countries are required to pay VAT on any event taking place in the UK. 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 at the Energy Institute 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 GasTraining 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**

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. 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