

*Detailed Risk Analysis and Mitigation for Oil and Gas Assets*

# Managing Risk in Today's Oil & Gas Business

*A Lagos Seminar for Oil and Gas Executives, Advisors, Investors and Government Officials*

## WHY ATTEND THIS SEMINAR AND WHAT ARE THE BENEFITS?

With finances under pressure, investors and management must be more selective by focusing on the right assets, upgrading their portfolios and reducing risk. Risk assessment is fundamental and the mitigation of unacceptable risk is a 'must'.

The benefits of this seminar, outside of networking, to the individual and their employer, are notably:

- Greater confidence in assessing risk and making decisions amidst uncertainty
- Improving their ability to select the best projects
- Identifying how to create value through portfolio optimisation
- Understanding the value of information in decision making, and how to find and use the right information
- Familiarity with the tools and techniques used in evaluations

**OIL PRICE** Portfolio Optimisation  
**FISCAL RISK** CAPEX  
**Commercial Risk** Expected Monetary Value  
 Economics **POLITICAL RISK**  
**CONTRACTUAL DUE DILIGENCE** DATA FLOW & VALUE  
**Subsurface Risk** OPEX  
 NET PRESENT VALUE **Resources & Reserves**  
**EXPROPRIATION RISK**  
**Decision Risk and Analysis** Production Profile

## SEMINAR DATES:

11-12 September 2017

Cost: \$2,990 per person.

25% discount if you book more than four places.

To book please email:

[info@richardson-oilandgas.com](mailto:info@richardson-oilandgas.com)

Delegates from the following companies have attended our training:



## SEMINAR FORMAT

- 2 highly qualified speakers
- Combination of case studies, workshops and exercises over two days
- Cocktail reception and networking event at the end of Day One
- Full pack of programme material, including risk matrix checklist for future appraisals
- Easy post-event access to speakers for additional consultation

### WHY THIS SEMINAR IS RELEVANT TODAY

- The key issue in today's oil and gas business, aside from low commodity prices and stressed balance sheets, is risk management. Whether the decision is to drill, invest or sell, risk is ever present and changes with new information.
- Risk is everywhere in the oil and gas business – technical and operational, financial, political, environmental, commercial - these affect almost every decision taken by industry executives, investors and energy officials.
- Understanding these risks, and having the confidence to manage them, is an essential requirement for today's decision-makers.
- This seminar will provide the confidence and knowledge required to make good decisions, by identifying and evaluating the various risks involved.

### ABOUT WARREN BUSINESS CONSULTING

- We focus on helping talented individuals develop their career in oil and gas.
- We believe that a successful career depends on a thorough understanding of the industry's complexities, being able to work across multiple functions.
- Since 2006, hundreds of aspiring managers have been on our courses, in various locations around the world, as part of their career development.
- As well as public "MBA in Oil and Gas" courses, we run courses on **Contracts and Negotiations**, **Project Governance**, and **Leadership**, and we also deliver in-house courses customised to meet the clients' specific requirements.
- Our portfolio of products is expanding rapidly so please check the website for the latest developments.

**For further information, email us at:**  
**[training@warrenbusinessconsulting.com](mailto:training@warrenbusinessconsulting.com)**  
**or call +44 203 239 0807**

## OUR WORLDWIDE COURSE LOCATIONS



In partnership in Lagos with



[www.richardson-oilandgas.com](http://www.richardson-oilandgas.com)

Our local agent in Lagos

[www.emrng.com](http://www.emrng.com)  
[info@emrng.com](mailto:info@emrng.com)



## TACKLING THE RISKS ALONG THE INVESTMENT APPRAISAL PROCESS

### DAY ONE

Fiscal Regimes  
& the Commercial  
Framework

Subsurface Risks  
& Opportunities

Fundamentals of  
Upstream  
Investments

Risk Evaluation  
& Mitigation

End of Day One Networking Reception

### DAY TWO

Introduction to  
Country Risk

Political &  
Economic Factors

Country Risk  
Mitigation

Asset Valuation &  
Risk Checklist



### SEMINAR DIRECTORS

#### John Weston

After 12 years with BP (UK and Brazil) evaluating licence round bids, discoveries, field developments and a regional review of Brazil's Atlantic Margin, John worked with Gaffney Cline & Associates (GCA) and Schlumberger GeoQuest Reservoir Technologies, managing a major JV project in Venezuela and a unitisation in Norway. In over 10 years with GCA as Senior Technical Manager, Brazil Country Manager, and Technical Director, he managed numerous projects including CPRs, reserve audits and upstream portfolio evaluations in the UK and internationally as well as regional studies (especially South America and Africa) for NOCs, Majors and Independents. He managed the first four Licence Round promotions on behalf of the Brazilian National Petroleum Agency, leading to the successful licensing of 88 blocks with significant signature bonuses and Minimum Work Programme commitments. He also managed the Reserves Certification of ca. 90% of Petrobras' fields in connection with their IPO on the New York Stock Exchange. In the last decade John has built and sold an independent oil company in the UK and runs a vibrant consultancy business.



#### Rob Marshall

Rob has worked both as a consultant and company executive integrating external scenario analysis into corporate strategy and investment evaluation. He has extensive experience in industries facing major challenges: UK automotive (BL Cars early 80s); Italian aerospace (Agusta Helicopters early 90s).

Currently he collaborates with IHS, providing its clients with systems for using country risk assessments in the financial evaluation of individual projects and company portfolios. Clients are global players in oil & gas, mining, power generation, mobile telecom, etc. and projects have included ventures in Venezuela heavy oil, African iron ore and Asia hydroelectric. He has provided global forecasts to industrial, financial & government clients when Chief Economist for DRI and has advised two African governments on fiscal terms for mining investments.

# DAILY PROGRAMME

## DAY ONE

### Introduction

#### Key terms and concepts

- Definitions: risk, loss, uncertainty, probability
- Investment decisions & risk: exploration; development

#### Types of Risk

- Sub-Surface: find oil & gas in commercial volumes?
- Contractual: enforce all project agreements?
- Political & Economic: delays, higher costs, income loss?

#### Investment Value and Risk

- Cash flows, IRR, discount rate, NPV
- Potential & expected losses, risk premium
- Lower oil price increases importance of risk assessment

#### Introduction to Country Risk

- Investment evaluation, project management, strategy
- Categories: politics, security, economics

#### Granting Instruments and Fiscal Regimes

- Granting Instruments – concession, PSC, lease, JV, etc.
- Fiscal Regime – main functions
- Concession & Production Sharing – main features, advantages, disadvantages
- Other Mechanisms – service contract, JV, technical

#### Fiscal Risk in Oil & Gas

- Potential impact, recent cases
- Royalty/tax, PSA/PSC, hybrid PSA – impact on risk
- Factors affecting risk, potential upside

## DUE DILIGENCE ON SUB-SURFACE RISKS AND OPPORTUNITIES

### Petroleum Resource Management System

- Reservoirs, Reserves, Resources
- Sources of Uncertainty – volumes, values
- Appraisal Case Studies – geology, technical, costs
- Monte Carlo – uncertainty & probability, asset life-cycle
- Production Forecasts – decline curve, technology
- Geological & Economic Chance of Success (GCoS/ECoS)

### The Fundamentals of Upstream Investments

- Cash Flow Components & Project Phases
- NPV & Internal Rate of Return
- NPV sensitivities – oil price, delays, costs, discount rate
- Exercises in GCoS & ECoS
- Expected Monetary Value (EMV) Methodology

### Risk Evaluation and Mitigation

- Bayes Theorem – conditional probability, risk tree
- Utility & Option Theory
- Types of Analysis & Decision Making
- Decision Trees – real options
- Decision Trees – risk/uncertainty & EMVs, utility case
- Typical/Bad Practice in Decision & Risk Analysis
- Portfolio – theory, optimisation, evaluation
- Capital Planning – investments, asset valuation

*(exact running order subject to change)*

## DAY TWO

### Due Diligence on Commercial Framework & Contracts

#### Commercial Framework

- Asset Life Cycle – key agreements by phase
- Licence & Joint Operating Agreement (JOA)
- Construction & Tie-in Agreement
- Non-Technical Due Diligence – the steps
- Commercial Risk and Opportunity
- Commercial Risk Matrix – the six areas
- Risk Management & Mitigation – JOA, lifting & sales, transport & processing, property, partners, etc.

#### The Sale and Purchase Process

- Public and limited processes explained
- Finding your way through the Dataroom
- The right questions to ask and the right way to ask them
- Counterparty engagement – commercial negotiation

#### ASSESSMENT OF COUNTRY RISK

##### General Considerations

- Differences from assessing sub-surface risks
- Government behaviour key to many risks
- Public & private sources of country intelligence

##### Other Government Policy Risks

- Contracts – definition, types of impact, causes
- Expropriation – different types, recent trends
- Regulatory – definition, impact, assessment

##### Risks to Security & Order

- Political violence – assessing risk, impact by asset type
- Social disorder – categories, measuring risk & impact
- Natural disaster – insurance, impact on project

##### Economic Policy & Conditions

- Fund transfer – profit remittance, risk factors
- Costs – types, local content rules, risk & impact
- Exchange rates – impacts, company risk policies
- Market demand – effect on different project types

##### Corruption

- Impact on project execution & costs and reputation

##### Country Risk in Financial Evaluation

- Investment return, spread & risk premium
- Risk events, expected cash flows
- Risk-adjusted NPV/IRR, country risk premium
- Greenfield v. Acquisition/Farm-In
- Onshore v. Offshore and Oil v. Gas
- Sovereign risk: poor indicator of upstream risk

##### Country Risk Mitigation

- PSA/PSC – types of protection, arbitration
- Project structure, government relations
- Company actions: financial, legal, security

##### Pulling It All Together

- Key “take-aways” from both days
- Risk check list
- Conclusion

## BOOKING

**Price: \$2,990+VAT (where applicable)\***

Booking complete upon payment.

**Included in the price:** Tuition, course materials, lunches and refreshments

**Discounts (one discount per booking only):**

- 25% discount for a booking of more than 4 places from the same company

### 3 easy ways to book:

1. Tel: **+234 1 453 2725 or +234 701 860 9228**  
**or +234 802 224 2975**
2. Email: **info@richardson-oilandgas.com**
3. Online: **www.warrenbusinessconsulting.com**

### 4 easy ways to pay:

1. Bank Transfer
2. Cheque
3. Credit Card
4. Online

We will send you an invoice on receipt of your booking and confirm your place on receipt of your payment. If you have to cancel your place the following policy will apply: cancellation within 1-14 days of the programme start: 100% charge; 15-30 days: 50% charge; 31+ days: 10% charge. A colleague can take your place, subject to a 10% administration charge. Warren Business Consulting reserves the right to change or cancel any part of the published programme due to unforeseen circumstances and is not liable for any costs incurred by delegates in the unfortunate event that a course is cancelled. Delegates are responsible for arranging their own travel and accommodation and for obtaining visas, and medical and travel insurance.

\*The amount of VAT you are charged will be determined when your invoice is raised. Our VAT number is 211 1256 70

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