



Consilience Energy Advisory Group Limited





CEAG at a Glance

- > A specialist consultancy with in-depth knowledge of all aspects of global energy markets and trading
- > Founded in 1999 and 100% owned by its founding partners, Liz Bossley and John Walmsley
- > Consultant team has more than 120 years of senior industry experience between them
- > Clients include oil majors, E&P companies, utilities, market authorities and regulators, professional advisory firms and financial institutions
- > Our expertise covers oil, natural gas, power, shipping, emissions and weather derivatives
- > Services include advice, litigation support and education and training
- > More than 100 articles on energy markets and trading published in specialist press

Consilience

The name of our business derives from a scientific term first coined by the philosopher William Whewell in the 19th century. Meaning literally “a jumping together”, consilience refers to the practice of bringing together and unifying knowledge from a range of different scientific disciplines – an approach made popular more recently by the distinguished scientist and environmentalist E.O.Wilson. A multi-disciplinary approach that can harness knowledge from finance, economics and the physical sciences is essential, in our view, to an understanding of today’s energy markets.



Liz Bossley Chief Executive Officer



Introduction

The Need to Keep Pace with Changing Markets

The speed at which the nature and structure of energy markets are changing around the globe is unprecedented. Any company that wants to compete effectively in the global energy market today needs to understand – and be able to adapt to – the dynamics of this new era. Trading skills and risk management techniques are a strategic must in this fast-changing environment.

Our purpose at CEAG is simple. We exist to provide clients with cutting edge knowledge, advice and solutions that will enable them to prosper in this new world. The value we add derives from the unrivalled knowledge, skills and contacts of our network of consultants, all of whom have many years of senior industry experience behind them.

We see our job at CEAG as keeping pace with the many changes that are transforming the way in which energy is priced and brought to market. We offer clients advice on how to maximise the opportunities and minimise the risks of this new pricing and trading environment.

The results of our work feed through directly to the bottom line. The reality is that an ability to manage pricing risk and to trade successfully are no longer optional extras for energy companies. They are necessary conditions for competitive success. At the same time litigation and regulation are both on the increase and pose a growing threat that companies need to know how to manage.

These are some of the most important trends affecting world energy markets:

1. Energy markets are becoming more global and more interconnected. As a result prices for all kinds of energy are increasingly based on market prices, not on long term or fixed rates.
2. Advances in technology are transforming the way that all markets operate, with the result that sophisticated forms of contract and innovative trading strategies are becoming increasingly common.
3. Life-of-field contracts with fixed terms are being replaced by more sophisticated and flexible contractual arrangements that encompass the use of derivatives and make knowledge and effective trading disciplines a necessity.
4. There is an ongoing revolution in the range and sophistication of risk management techniques now available to companies and their managements. The challenge for companies is to know which ones work and which ones do not.
5. The physical and financial barriers that once separated the oil, natural gas and power markets are gradually disappearing. Best practice today can only be rooted in an understanding of these different markets and how they interconnect.
6. With increasing complexity and globalisation has come an increase in litigation. Contracts worth hundreds of millions of dollars are now routinely disputed and settled at law. Companies without the best legal advice and market expertise are inevitably at risk.

7. All market participants are faced with a huge increase in the volume of regulation, from both national and international bodies. This is particularly true of environmental regulation, which increasingly transcends national borders.

Managers in the energy business need strategies and expertise to deal with all of these trends – and the message for anyone involved with energy markets today is: when it comes to change, we ain't seen nothing yet.

The ratification of the Kyoto protocol, for example, will shortly lead to the advent of International Emissions Trading in carbon dioxide equivalent (CO₂e). No fewer than 96% of total CO₂ emissions in developed (so-called 'Annex 1') countries are produced by the energy sector. Yet how many companies are fully prepared for this change?

The gathering pace of the European Gas and Electricity Directives and the prospect of cross-border regulation of commodity trading also threaten to change the rules of the game. As with new trading technologies, those who do not understand what is happening – and what they can do about it – are bound to lose out.

For all these reasons, participants in the energy markets need the best advice and the best knowledge of current practice that they can find. Our job – and our purpose – is to provide it. If you need a knowledge-led solution to an energy trading or logistics problem, we are confident that CEAG can help you.

Liz Bossley Chief Executive, CEAG



What we do

Our work is of four main types:

- 1 Policy advice and review
- 2 Litigation support
- 3 Education and training
- 4 Articles and publications

Our clients include oil majors, independent E&P companies, utilities, trading market authorities, financial institutions and energy trading companies. We are happy, if requested, to work alongside other consultants and professionals, such as law firms and accountants.

CEAG is based in London, United Kingdom, and works extensively with businesses and professionals from Europe, the United States and the Far East. Our outlook and expertise is international, reflecting the global nature of the energy industry.

1 Advisory Services and Support

Policy Formation and Review

- > Board level analysis and assessment of strategic options
- > Preparation and review of policy and procedure documentation
- > Strategic analysis of potential markets
- > Advice on regulatory requirements and practice

Organisational Support

- > Assessment of staffing needs
- > Procedures, manuals and systems
- > Crude oil assay analysis and valuation
- > Benchmarking studies/departmental reviews
- > Hands on implementation as required

Trading and Marketing

- > Hedging strategies, both short and long term
- > Oil price formation and marketing analysis
- > Gas and power purchasing analysis
- > Issues relating to pipelines and tariffs
- > Project financing using the forward curve

Negotiations and Contracts

- > Gas, oil and power contracts (short and long-term)
- > Pipeline and tariff agreements
- > Lifting agreements and allocation agreements
- > Contracts of affreightment

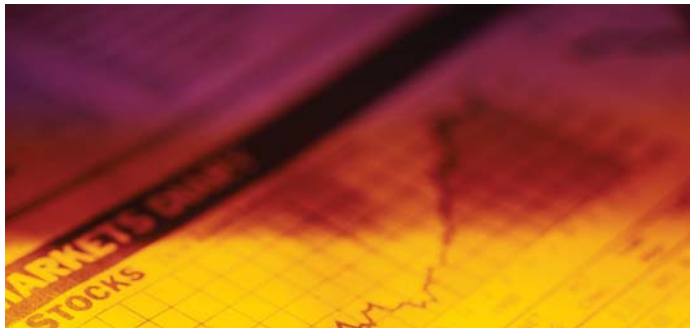
2 Litigation Support

We are commissioned regularly on a confidential basis to act as advisors and/or expert witnesses on matters involving litigation both in the High Courts and in arbitration panels. This is one of the fastest growing areas of our business, and reflects the fact that accurate management of complex legal issues has become an integral aspect of performance in the energy industry.

Recent examples of our work include:

- > A fuel oil and crude oil pricing dispute taken to arbitration
- > A legal dispute about non-delivery of equipment
- > Litigation over tanker and joint venture agreements
- > Litigation concerning misappropriation of oil
- > Litigation involving the European gas 'take or pay' contracts

The sums involved in complex litigation cases can be substantial, running into hundreds of millions of dollars. We provide expert testimony on such issues as pricing trends, valuation and current best practice on trading and contracts.



3 Education and Training

The modern business environment demands tight budgetary control, multi-skilling and staff rotation. This places a premium on organisational continuity and the ability to bring staff quickly up the learning curve to operational effectiveness.

We provide experienced speakers and trainers for both in-house and external audiences. We also specialise in targeted training and coaching programmes for individuals or teams. These include:

- > Individual briefings for incoming managers and directors
- > Basic practical training for new employees
- > Group understanding and teamwork exercises

Specialist topics we currently offer packages on include:

- > Trading the Brent/Forties/Oseburg grade option contract
- > Integrating trading and operational departments
- > North Sea terminal procedures and operations
- > European gas pipeline and tariff operations
- > Oil price formation/crude oil valuation
- > Marketing, trading and hedging strategies
- > Trading European gas/trading European power
- > Trading in the UK under the NGTA and NETA regime
- > Crash course in emissions trading

4 Articles and Publishing

Articles

We provide a range of commentary and analysis on matters of significance to the energy industry. These are published regularly in a range of specialist journals. Our databank has more than 100 important copyright-protected articles that have been published over the last three years. Our articles cover a diverse range of topics, including:

- > How the legislative framework for gas and power in the UK and Europe has evolved
- > The development of physical and financial tools for use in oil price formation
- > Discussion and analysis of the developing weather and emissions markets
- > Regulation of the energy markets
- > Risk management for energy traders and managers

All 100 articles are accessible via our website; www.ceag.org. A search facility allows clients and other interested parties to find articles on specific topics.

Books/research studies

Recent examples of our full-length books and research studies:

“Trading Natural Gas in the UK”

A 20,000 word study reviewing the history of privatisation in the UK and the introduction of the Network code. Commissioned and published by Robert Mabro, Director of the Oxford Institute for Energy Studies (December 1999).

“The Hole in the Barrel”

A 60,000 word study combining a policy overview of the Brent oil market and a detailed review of the tools deployed in the market. Published by Cambridge Energy Research Associates (CERA). The study correctly forecast the need for a change in the marker crude (December 2000).

“Bossley’s Energy Conversions”

A 100 page book, published jointly by CEAG and Petroleum Economist, that offers readers a comprehensive guide to industry conversions, including coal, nuclear and emissions, with human scale analogies for non-specialist managers and advisors (March 2002).



Liz Bossley Chief Executive Officer



John Walmsley Executive Chairman

Founding Partners

Liz Bossley Chief Executive Officer

Liz has a 25 year career in international energy markets, spanning trading and marketing, management of marketing departments and extensive experience of negotiating transportation, lifting and joint venture agreements. Her theatres of experience include the UK, Norwegian, Danish and Dutch sectors of the North Sea, the Gulf of Mexico, the Mediterranean market and the Far East.

She began her career at the British National Oil Corporation trading state participation, royalty and equity oil on behalf of the British Government. After a brief spell in the City of London as an oil analyst, she joined Enterprise Oil plc as Head of Marketing, where she was responsible for selling the group's crude oil and related products, amounting to 10% of total UK North Sea production.

In addition to providing business advisory services, Liz has acted as an expert witness in a range of trading disputes. She is a regular conference speaker and contributor to industry journals. She is the author of "The Hole in the Barrel," "Trading Natural Gas in the UK" and "Bossley's Guide to Energy Conversions."

John Walmsley Executive Chairman

John has 30 years of experience in international oil and gas industry management. He was an Executive Director of Enterprise Oil plc from 1984–1993. As Managing Director, Finance and Business Development, he was responsible for finance, business development, marketing, investor relations and corporate affairs.

From 1994–1998 he was Chief Executive of Hardy Oil and Gas plc, a listed UK independent oil company with operations in the UK, North Sea, the Gulf of Mexico, Australia, India and Pakistan.

Before that he spent 11 years with Arthur Andersen, where he was a Corporate Tax Partner, specialising in international oil and gas taxation. For many years he was Chairman of the UK Oil Industry Accounting Committee. He was appointed a non-executive director and chairman of the audit committee of Seaboard plc before privatisation.



Jennifer Anderson Senior Consultant



Les Cambridge Senior Consultant



Sam Murray Senior Consultant



Senior Consultants

Jennifer Anderson Senior Consultant

Jennifer is our lead consultant on issues involving long term natural gas contracts. Before joining CEAG, she enjoyed a distinguished career in the UK and European gas industry, being personally involved in many of the biggest transactions involving the purchase and supply of gas between Europe and the UK. She was a founder member of the European Gas Consortium and its chairman from 1998 to 2000. The Gas Consortium consists of a group of leading European users and suppliers of gas that deal with regulatory authorities.

Her earlier career included senior management positions at British Gas plc, where she was involved in the negotiation and purchase of long-term gas supplies from the North Sea; Powergen plc, where she led negotiations for the purchase of gas for the company's UK power stations and also set up the company's spot trading operations; TXU, where she negotiated the purchase of the Johnston assets and then, based in Geneva negotiated for gas supplies in Europe for CCGTs; and Electricité de France Trading, where she led negotiations with major European gas suppliers. This included transportation contracts to enable gas from the UK to reach Germany and gas from the Continent to reach the UK.

Les Cambridge Senior Consultant

Les is an experienced marketing executive in the oil and gas industry whose career has involved him in a wide range of marketing, pricing and technical issues in both the upstream and downstream industries. As Senior Trading Consultant at Enterprise Oil plc for five years until its takeover in 2002, he was responsible for valuing and forecasting prices of the group's crude oil production worldwide. Among other projects, he negotiated lifting agreements for the first export of domestic production from Italy and prepared a marketing study that had a decisive influence on the design of a floating offshore production system in Brazil. Enterprise Oil was a FTSE 100 company throughout this period.

Before that Les held a number of other positions in the marketing department at Enterprise Oil, which he joined from Texas Eastern where he was a special projects manager and responsible for the company's oil entitlements in Norway and the UK. He started his industry career as a process engineer at Mobil's Coryton Refinery before moving for ten years to Purvin & Gertz, an international consultancy which specialises in the downstream oil and gas business. While there his work included preparing crude oil valuations, asset valuations for insurance and acquisition purposes and studies of refinery economics.

Sam Murray Senior Consultant

Sam has an in-depth knowledge of the UK power market and extensive contacts within the industry and broking community following several years experience as a trader at Dynegy UK and TXU Europe Energy Trading. His knowledge base covers trading products and behaviour, price history, volatilities, the power generation sector, industry economics and financing, and regulatory issues. He is an expert in the theoretical and practical issues involved in trading both the physical and derivatives markets.

At Dynegy UK Sam was responsible for trading profitably the forward and options book of an aggressive US trading company. He also pioneered the use of spark-spread trading and ensured the company's readiness for NETA (New Electricity Trading Arrangements). In his earlier career at TXU Europe, he was promoted to the position of trader for the UK power book of a large vertically integrated energy business during a period of considerable change for the company and the market. As such he was responsible for managing large physical positions and also a successful speculative trading operation. He also represented the company in a series of negotiations on deals worth up to £150m each.



Regular Principals Include

Nicola Papacharalambous Consultant

Nicola is a natural scientist with 18 years of experience in the oil industry, initially at Phillips Petroleum, where she worked in both the treasury and supply/marketing departments, and subsequently at Enterprise Oil, where she held a series of jobs in the trading department. These included representing the company in negotiations over lifting procedures and operating and transportation agreements, and commissioning and overseeing computer systems for the allocation of North Sea shipments on an operated field.

Amanda Jones Research Consultant

Amanda joined CEAG from Merrill Lynch in London, where she was responsible for researching companies and industry trends within the oil and gas sector. She is a graduate of the University of Auckland in New Zealand.

Sarena Steeds Administrator

Sarena joined CEAG after administrative and secretarial positions at Ferghana Partners, where she was PA to the Managing Director, and Hardy Exploration and Production.

Greta Jacobs Energy Markets Consultant

Greta joined CEAG in October 2001. She specialises in providing advice and research on trading and risk management in the global energy markets, particularly the use of derivatives. Her earlier career was spent at Morgan Stanley in London, where she was responsible for marketing derivatives to European energy producers and consumers.

Peter Card Consultant

Peter has 28 years of experience in the trading and marketing departments of oil and gas companies, originally at Phillips Petroleum in the UK and overseas, and latterly at Petroplus Marketing and Reliant Energy Trading and Marketing.

CEAG has access to a network of other specialist consultants who work with us as needed.