

<b>NAME</b>	Chris Brown
<b>PRESENT POSITION</b>	Director, Stonedown Limited
<b>NATIONALITY</b>	British
<b>QUALIFICATIONS</b>	Chartered Engineer, Member of the Institution of Chemical Engineers  BSc, Chemical Engineering, 1 <sup>st</sup> Class Hons, University of Edinburgh, 1984
<b>DATE OF BIRTH</b>	8 <sup>th</sup> October 1961

## **SUMMARY**

### ***Key competencies and expertise:***

- Extensive oil and gas sector experience
- Industry training
- Transaction/M&A support
- Strategy development
- Business development and client relationship management

Chris Brown is a founding director of Stonedown Limited. He has spent his whole career in the petroleum and petrochemicals industries, both in downstream operating companies and in business consultancy and training roles. He has particular expertise in the downstream oil sector economics including market and production analysis, strategic planning and investment analysis.

During over 20 years in consultancy, Chris has undertaken a wide range of assignments around the world in these industries, reporting at clients' executive board and senior management level. These have ranged from high level strategic analysis and corporate planning, industry restructuring, support to privatisation and M&A, asset and operations optimisation. Through his work on privatisations and industry restructuring he has extensive experience in advising companies on adapting as markets deregulate. He also has substantial experience in petroleum product pricing issues.

## **PROFESSIONAL EXPERIENCE**

2002-present	Director, Stonedown Limited
2000-2002	Director, Wood Mackenzie
1996-2000	Arthur Andersen, Senior Manager
1992-1996	Chem Systems, Senior Consultant
1987-1992	KBC Process Technology, Senior Consultant
1984-1987	Esso Petroleum Limited, Process Engineer

## **CAREER HIGHLIGHTS**

### ***Stonedown, London***

Chris has established his own consulting business, aimed primarily at providing independent advisory services and training to the oil industry and associated energy sectors. He is currently working with a client in developing its investment strategy and has recently completed projects on fuel oil strategy. He has worked with clients managing a performance management project for a leading central European oil company and in developing portfolio optimisation for a major international oil company.

He has been retained to advise on several transactions concerning oil company assets in the CIS, Europe and Asia. He has also undertaken a number of studies for governmental bodies looking at regulatory and compliance issues concerning the downstream oil sector.

In 2009 Chris became an external consultant for the faculty of the Centre for Energy, Petroleum and Mineral Law and Policy (CEPLMP) at the University of Dundee.

***Wood Mackenzie, London***

Chris was responsible for business development within the Downstream consulting team with specific focus on central and Eastern Europe and the FSU. He provided extensive due diligence support for Deutsche Bank's sales mandate of the Croatian national oil company INA. He was also involved in a variety of refining and petroleum product market studies, including several GTL project studies.

***Arthur Andersen, London***

Chris Brown was a Senior Manager in the Strategy, Finance and Economics division of the Andersen Business Consulting Practice and a key member of the Energy and Utilities Consulting Group. His project work included oil industry privatisation advice (Bulgaria and Croatia, merger and acquisition support (UK and Ireland) and many industry restructuring projects and strategic studies (throughout Europe, the Middle East and Asia).

***Chem Systems Limited, London***

Chris was a Senior Consultant and a key member of the Energy and Refining Business Practice. The main areas of consulting were economic analyses, strategic and commercial reviews, investment planning, operations optimisation and project evaluation. He has worked extensively in the refining and retail/market sectors of the oil industry in Western, Central and Eastern Europe, CIS, the Middle East, Africa and South East Asia.

***KBC Process Technology Limited, London***

Chris was a Senior Consultant working predominantly in refining optimisation and operations planning. He gained extensive experience in Europe, India and the Americas using KBC's proprietary software in areas including refinery scheduling and planning, investment appraisal and feedstock selection.

***Esso Petroleum Company Limited***

Chris was a process engineer at Esso's Fawley refinery in the UK, one of the largest and most sophisticated refineries in Europe. He provided engineering support on major processes including distillation and lube oil units.

**SELECTED CONSULTING EXPERIENCE**

***Stonedown (2002-present):***

*Privatisation Assistance and M&A Support*

- Advisor on sale of a Central Asian oil company
- Valuation of a West African fuel storage and distribution company prior to partial sale
- Advisor to a potential investor in a European oil company
- Advisor to an Asian government on the privatisation of a state-owned refining company

*Strategy Development*

- Industry expert for a strategy and business development study for a major south-east Asian oil and petrochemicals company
- Several studies developing oil storage investment strategy, globally and specifically for Asia, the Middle East and Europe
- Managed a complex fuel oil strategy study for a major Russian oil company
- Managed project to develop portfolio optimisation across upstream, gas & power, downstream and LNG sectors for a major international oil company

#### *Portfolio/Investment Appraisal*

- Managed a market and investment analysis for a major international liquid products storage company
- Managed a large and complex review of a major European integrated oil company's portfolio
- Industry expert for a valuation of a potential new import/export terminal in Europe

#### *Oil Trading and Marketing Analysis*

- Project managed a study reviewing the marketing of crude oils and condensates for a major Middle Eastern NOC

#### *Market and Pricing Analysis*

- Extensive analysis of oil product trade patterns within Asia, the Middle East and Europe in support of oil storage investment strategies
- Analysis of product pricing regulation for the privatisation of an Asian state-owned refining company
- Provided expert input on price regulation as part of a review of oil industry regulations in a major Middle Eastern country
- Managed a Central European refined product export strategy study
- Analysis of product pricing regulation for the privatisation of an Asian state-owned refining company

#### *Regulatory and Compliance Analysis*

- Advised Croatian Government and State Oil company INA during the privatisation on the effects of price deregulation and market competition
- Provided expert input for the refining sector for a review of oil industry regulations in a major Middle Eastern country
- Conducted analysis of environmental regulation and compliance across the European refining industry for the European Commission

#### *Industry and Operations Analysis*

- Central European refinery performance measurement and benchmarking study.
- Environmental compliance of refineries with EU directives

#### *Training and Workshop Facilitation*

- Developed and ran a Refining Economics course in West Africa for a major oil company
- Ran courses on Fundamentals of the Refining Industry for a major Russian oil company
- Ran knowledge sharing and "skill-transfer" workshops for a major south-east Asian oil and petrochemicals company covering strategy and business plan development and investment appraisal

### ***Wood Mackenzie (2000-02):***

#### *Privatisation Assistance and M&A Support*

- Due diligence support for Deutsche Bank's mandate for the privatisation of INA

#### *Market and Pricing Analysis*

- Crude oil and condensate valuation and processing studies
- Gas-to-liquids product pricing study

### ***Arthur Andersen (1996-2000):***

#### *Privatisation Assistance and M&A Support*

- Industry specialist for the engagement to privatise the Bulgarian downstream oil and petrochemicals industry.
- Industry specialist on an asset disposal project for a major European oil company.

#### *Strategy Development*

- Ran strategy workshops for various oil companies in Europe and Asia up to board level

- Managed strategy review project for National Oil Company in approach to privatisation including one-on-one daily contact with Director of Refining (now CEO)
- Worked on a major strategy study for a Central European oil company, focusing on optimising refinery configurations and evaluating investment options - Investment options evaluated totalled around \$500 million with results presented to company board

#### *Business Plan Development*

- Led the development of a business plan for the post-acquisition operation of a major petrochemical company. Presented to board and shareholders.
- Managed a review and revision to the business plan for an upstream oil sector service company. Presented to Chairman and shareholders.

#### *Re-engineering*

- Managed a project for business process re-engineering for the refineries of a Central European oil company. Identified areas of cost reduction and revenue improvement. Project savings identified in the order of \$50 million.

#### *Oil Trading and Marketing Analysis*

- Managed a review of oil trading practices in a major Asian oil company and presented to company board and to Ministry of Oil and Gas

#### *Market and Pricing Analysis*

- Advised the Croatian Government and State Oil company INA in the lead up to privatisation on restructuring pricing mechanisms for products ex-refinery and for wholesale sales
- Advised the Bulgarian Government during the privatisation of the Bourgas refinery on issues concerning ex-refinery product pricing and the effects of operation in a deregulated market environment

### **Chem Systems (1992-96):**

#### *Portfolio/Investment Appraisal*

- Managed a Bulgarian gasoline supply study, including refinery investment project evaluation, blending optimisation, review of reformer operations and gasoline market analysis, reporting up to Ministry level in Bulgaria
- Managed project to assess the costs to refineries of complying with evolving environmental regulations in the European Union including cost comparison between countries and significance to refining margins and overall profitability (presented to three Ministries and Industry representatives in Germany)
- Led a feasibility study, based on complex LP model analysis, for major Russian refinery investment project. This covered technical and economic analysis for a \$250 million investment programme
- Feasibility study for a West European hydrocracker project - reported to chairman of the company
- Feasibility study for a Middle Eastern refinery
- Far East refinery investment study

#### *Market and Pricing Analysis*

- Managed a programme of an annual review and projection of global refining margins and regional petroleum product pricing
- Led a Middle East lube oil market study including analysis of regional markets and base oil margins
- Managed an analysis of changing hydrogen demand in European refineries due to "cleaner fuels". Reported to directors of major international industrial gases company
- Global market studies for MTBE supply and demand for potential Middle East producers
- Asian refinery and petroleum product market study
- European lubricant, white oil and wax processing study
- Crude oil and condensate valuation and processing studies
- Economic analysis of lube oil refineries versus fuels refineries
- Alcohols and ethers for gasoline blending study

#### *Regulatory and Compliance Analysis*

- Managed a study for the German Ministry of Economics considering the cost of compliance for EU refineries with environmental regulations

#### *Industry and Operations Analysis*

- Ran a review of the structure and profitability of the West European refining industry

#### **KBC (1987-92):**

#### *Industry and Operations Analysis*

- Developed a refinery feedstock evaluation system based on a non-linear modelling system, enabling a refinery to select from a range of crude oils and other feedstocks those that were most economically attractive, within the refinery's technical constraints
- Developed process optimisation tools for distillation, catalytic cracking and visbreaking process units
- Implemented a refinery scheduling tool providing production targets for key process units and blending operations on a large complex refinery

#### **PUBLICATIONS/PAPERS**

*Interviews on BBC News 24* – interviews on the likely effect on oil prices of a war with Iraq and OPEC's response to high prices, January 2003, March 2003, London.

*Interview on BBC Breakfast Business News* – interview on the likely effect on oil prices of a war with Iraq, November 2002, London.

*"Central and East European Refining Industry Healthcheck"* Paper presented at the Hart's European Fuels Conference, May 2002, Brussels.

*"Challenges and Opportunities for the European Refining Sector"* Paper presented at the IP Conference, February 2002, London.

*"Privatisation in Central and Eastern Europe - the current status"* Paper presented at the Central European Chemicals Conference, April 1999, Budapest.

*"What Over-capacity? – Understanding the real Causes of Poor Refining Margins"* Paper presented at the Capacity and Margins in European Oil Refining Conference, November 1997, London.

*"Balancing Capacity in European Oil Refining"* Paper presented at the Capacity, Pricing & Margins in European Oil Refining III Conference, May 1997, London.

*"Privatisation in the Oil Sector"* Paper presented at the Arabian Oil and Gas 96 Conference, Muscat, September 1996.

*"Effects of Environmental Legislation on Competitiveness in the EU Oil Industry"* Paper presented at the German Ministry of Economics' Symposium, Bonn, September 1995.

*"Western European Refining in a Global Context - is a Decade of Restructuring about to Pay off?"* Paper presented at the Institute of Petroleum, Energy Economics Group, London, June 1994.

*"The Benefits of Data Reconciliation"* Paper presented at the UNTEC 1990 Conference, Barcelona, September 1990.

*"Refinery Yield Predictions"* Article in the World Refinery Survey 1990, a Petroleum Times Business Review, published by Whitehall Press, April 1990.