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The Libyan Petroleum Industry in the Twenty First Century: the Upstream, Midstream and Downstream Handbook

**by
Waniss Otman & Michael Bunter**

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The Libyan Prime Minister

I am pleased to introduce this Handbook on Libya's upstream, midstream and downstream oil sectors which, it is hoped, will succeed in galvanising renewed interest in the Libyan hydrocarbon industry. It has been expertly conceived and planned by its leading author, Waniss Otman, a Libyan national who is a petro-economist with a background in the technical, legal and economic evaluation of investment in the Libyan oil and gas sector. Co-author Michael Bunter is a British petroleum geologist with more than 35 years of international oilfield experience, including three years in Libya between 1968 and 1970.

It is crucial that this industry is managed both prudently, to safeguard the vital resources of the Libyan people, and at the same time dynamically, utilising both the valuable Libyan human resources currently available within the country, as well as cutting edge technology and processes now available, but until comparatively recently denied, to Libya because of international sanctions.

It is clear from recent Libyan initiatives to attract potential investors, exemplified in the EPSA-IV round of bids opened in Tripoli on 29 January 2005, that a high level of interest has been generated among IOCs wishing to participate in a new phase of development in the country's oil and gas industry.

This Handbook analyses in considerable detail the history and current status of the oil and gas industry in Libya since its inception over 50 years ago, and provides valuable insights and data on the physical development of the industry. Equally important it has, in depth, examined the gradual evolution of the fiscal regime of the Libyan government, from the original Mineral Law of 1953 to the present generation of EPSAs. In doing so it has provided a valuable database which intending investors can utilise to examine their options for investment in the country and its future.

Libya is unlike its North African neighbours in that its population is relatively small. However, traditionally Libyans have been traders and travellers, moving in the pursuit of business throughout the Arab world as well through southern borders to its African neighbours. In this respect its strategic location in the centre of the southern Mediterranean coastline cannot be overemphasised.

Intending investors in the oil and gas sectors in particular and other economic sectors in a deregulated and diversified economy should not ignore this vital fact.

Significant future investment opportunities also exist in the gas sector, with its diversification both domestically, as it is integrated into the national power grid through gas-powered generators, as well as for export, as exemplified by the successful Western Libyan Gas Project. In a diversified economy there are also very real opportunities in the power transmission, manufacturing, telecommunications, fishing, tourism, and of course agribusiness sectors, as the full potential of the great Man Made River Project is realised.

It is therefore my hope that this key work will provide an impetus to the development of the oil and gas sector, which in turn will assist in the diversification of the other important sectors of the Libyan economy.

Dr. Shukri Ghanem

The Libyan Prime Minister

The Libyan Minister of Energy

As the year 2005 begins we anticipate significant changes in Libya's oil and gas sector. In geographical terms much of the country remains unexplored, and with the successful conclusion of the recent successful EPSA-IV on 29 January 2005, it is clear that American IOC majors are serious about re-entering Libya to develop this sector.

Since the beginnings of the petroleum industry in Libya in the 1950s, it has witnessed many important developments, both fiscal and technological, and is now set to embark on an exciting new phase in hydrocarbon exploration, development and production.

The Libyan Government has stated that it wishes present production levels of around 1.5 mm b/d to rise by around 30 per cent, to 2mm b/d, by the year 2005-2006. In order to achieve this we do not underestimate the future challenges, arising both from the legacies of the sanctions period, as well as the very rapid pace of technological change within the industry.

In this connection I am happy to introduce this Handbook which attempts to present a comprehensive analysis of the Libyan oil and gas industry and its current and potential future development. This work also analyses in detail important milestones achieved in this sector in Libya, several of which have provided guidance to other producing nations in realizing development goals and gaining sovereignty over their natural resources.

I am also pleased that the authors have, at considerable depth, analysed the underlying factors driving the oil and gas sector in Libya. They have, by closely observing both the upstream and downstream sectors, outlined future scenarios and solutions in line with the Libyan Government's current energy policies.

By examining in detail the past and current fiscal policy of the Libyan Government, they have demonstrated that in a rapidly changing world host countries now have to regularly review their fiscal policies in line with constantly evolving geopolitical and technological scenarios in the global oil and gas industry.

The emergence in the mid 1990s of the West Libyan Gas Project illustrates the desire of the Libyan Energy policy makers to give more priority to development of the country's massive gas resources, and significant investment opportunities are also available to foreign investors in this sector.

Libya, after more than five decades in the oil business, now has approximately 93 per cent Libyan personnel working in the petroleum sector, engaged at all levels – as experts in their respective fields, and as skilled and semi-skilled personnel in the oilfields. This is a commendable achievement, and to potential investors it translates into cost-effectiveness through the availability of affordable and well trained personnel for their future investments.

My appreciation goes to the leading author, Waniss A. Otman, a Libyan petro-economist with a background in the technical, legal and economic evaluation of investments in the Libyan oil and gas sector. Co-author Michael Bunter is an English petroleum geologist with over 35 years of international oilfield experience, including three years in Libya between 1968 and 1970, and his contribution in this handbook on the geological perspective in Libya is also appreciated.

Professor Fathi Shatwan
The Libyan Minister of Energy

The Chairman of the Libyan National Oil Corporation

As has been explained by my colleagues in the previous forewords, the recent changes internationally and locally in the improvement of political relations with western Governments has had a huge impact on the Libyan oil and gas industry. Currently large investment opportunities are available to international oil companies to participate in an attractive and stable environment.

The authors of this Handbook have comprehensively described the Libyan oil and gas industry in detail which will provide illumination to the companies that are willing to work with us. Also, I would like to thank the authors for their efforts and the modern methods they used for analysing the importance of the Libyan oil and gas industry.

Finally, we are sending a message to all international oil companies that they are welcome to participate in the development of the Libyan oil and gas sector.

Abdulla Salem El-Badri

Chairman of the Libyan National Oil Corporation

Thomas W. Wälde

This Handbook concerns itself with the upstream, midstream and downstream sectors of the Libyan petroleum industry. It is the second of the series of petroleum Handbooks published by *Alexander's Oil and Gas Connections*, in association with *OGEL*, the Oil-Gas-Energy-Law online journal and by *B and R Co*, the British energy consultants, on countries with a significant oil and gas potential entering the international oil and gas markets. The Libya Handbook is published with the permission of the Libyan government and has been compiled from officially-released Libyan government statistics and information and from public domain material. The authors are **Waniss Otman** of the *Libyan Ministry of Energy* and the English writer **Michael A. G. Bunter**, who publishes extensively on technical aspects of the international oil industry, on petroleum licensing and on the geopolitics of oil and gas.

Our series of Handbooks explores the technical, legal/contractual, fiscal and geopolitical prospectivity of the countries which it evaluates and treats them in a manner which enables the International Oil Companies to measure their attractiveness as likely investment destinations. Mr Otman brings to this publication his experience as a senior Libyan government civil servant and Mr Bunter spent three years in Libya as an exploration geologist in the early days of its oil industry.

The Handbook is intended to introduce the potential petroleum investor in Libya to the technical, commercial, financial and legal aspects of doing business in the country's petroleum sector. This is particularly appropriate in the light of the paths to reform announced by the Libyan government and the country's improving business and geopolitical climate.

Professor Thomas W. Wälde

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About the Authors

Waniss A. Otman is a Petroleum-economist born in Libya and a member of various professional organisations worldwide. He has a BSc Degree in Petroleum Engineering (Libya), Masters Degree (MSc) in Gas Engineering (England), Master Degree (MSc) in Petroleum Economics and Engineering (Scotland), Master Degree (LLM) in International Law and Diplomacy (England). Presently he is in the final stage of his Doctoral programme, the main theme of study entails 'Economics, Legal and Technical Evaluation of Investment in the Libyan Oil and Gas Industry' (Department of Economics and Engineering, University of Aberdeen, Scotland). This perspective has strengthened his background in areas of risk and uncertainty analysis of the petroleum industry. Waniss has contributed immensely to the Libyan petroleum industry through several publications and presentations in world forums as well as to International Oil Companies. He has undisputed potential in the industry and is cutting a distinguished academic career in the sector. Currently Waniss is focusing his attention on economic aspects of the Libyan oil and gas industry and its future role in the economic diversification of Libya. He has undertaken the role of senior author of this Handbook. Currently, Waniss is employed with the Libyan Ministry of Energy, Investment and Economics Affairs Dep.

In the year 2004 Waniss was appointed by the Libyan Minister of Energy as a Member of The Higher Committee for Energy Strategies in Libya. This important think-tank is involved with all activities within the energy (renewable/non-renewable), and the oil and gas (exploration and production) sectors. He has recently been appointed as a Director of the Libyan Petroleum Agreements Evaluation and Studies Committee, which relates to the technical, policy and legal framework in the Libyan petro-economic sector under the Libyan Ministry of Energy.

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Michael Bunter is an English petroleum geologist with over 35 years of international oil fields experience including three years in Libya between 1968 and 1970. In 1974 he joined the American Oil Company CONOCO, working in Malaysia, Indonesia, the USA and Egypt and later on he joined a major British consultancy where he became Chief Petroleum Geologist. Since 1999 Mr Bunter has run his own independent British petroleum consulting group, B and R Co, specialising in advice to host governments in petroleum licensing and in the assessment of investment opportunities for International Oil Companies. He provides technical, fiscal, legal/contractual and geopolitical evaluations of petroleum investment opportunities world-wide. He is a regular contributor to the online journal of petroleum law OGEL and is an Honorary Lecture at the Centre for Energy, Petroleum Law and Policy at the University of Dundee, Scotland. He provides lectures world-wide on the monitoring of petroleum operations, on regulation, licensing and on negotiations and world's petroleum legal and contractual framework. He is the author of the standard textbook on petroleum licensing and of many other technical publications and training monographs.

In the present Handbook, the authors analyse Libyan investment opportunities in the Oil and Gas Sector. They discuss all aspects of the Libyan petroleum sector ranging from upstream, midstream and downstream evaluating technical, legal and commercial developments and their bearing on Libyan investment opportunities. Their Handbook is market-oriented and is primarily designed for the foreign investor interested in taking advantage of the recent major changes in Libya's geo-political circumstances. To a limited extent it might also be of assistance to Libyan government policymakers. In achieving set goals for the petroleum sector.

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- Professor Alexander Kemp, Professor of International Petroleum Economics and Official Historian of North Sea Oil and Gas, University of Aberdeen, Scotland
- Professor Thomas Wälde, Jean Monnet Chair for EU Economic and Energy Law CEPLMP Dundee, Scotland UK and EssexCourt Chambers, London

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