The Global Oil and Gas Industry: Stories from the Field

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Part 2 The Changing World of NOCs

Preface

Much has been written about the oil and gas industry over the years, so it is a legitimate question to ask, "Why another book on the oil and gas industry?" The thinking behind this book grew from our vantage point as educators and researchers with a deep interest in the global dimensions of the industry. Our perspective has been honed through decades of experience and discussion, on the ground and in the classroom, with industry professionals in executive programs for oil and gas executives, field studies from Kazakhstan to Norway to Chad; speaking engagements at industry forums; and rich interactions with industry experts as part of our own research programs. From these cumulative experiences and exposure to the industry, it became apparent that there are distinct and important pockets of knowledge about the role of oil and gas companies, the contexts they populate, and the technological innovations they have pioneered. It also seemed to us that a comprehensive discussion of the complex interactions between the discrete knowledge domains, such as external relations and governmental affairs, societal impact and community development, sustainability and environmental citizenship, economic viability and shareholder value, were quite rare or missing altogether. While much has been written about how the firms in the industry ought to operate, there is little on how they actually do operate. How do they set strategies, manage multiple stakeholders, and develop complex projects in places that seem to be inaccessible, within an industry that constantly challenges received wisdom? This book seeks to address this gap.

The book is a compendium of "stories" that illustrate, define, and analyze the key challenges facing the industry. It is organized around four key themes, with each theme related to the structure and operation of the global oil and gas industry. It opens with a series of stories that illustrate the macroeconomic forces that impact the industry, encompassing issues including governmental priorities, economic growth and poverty reduction, and creating new market structures. It then successively narrows the focus to individual firms in specific contexts dealing with critical decisions. For example, in exploring the theme of the national oil companies and the changing world in which they compete, we illustrate the competing pressures using studies covering companies with very different strategies, structures, and performance, such as Gazprom in Russia, Statoil in Norway, and Petrobras in Brazil. We explore contemporary challenges facing the industry, such as the incidence of megaprojects and their unique demands, the technical challenges of exploring in the Arctic, and the political challenges of doing business in frontier regions. The book closes with a series of studies that showcase "disrupters," or oil and gas companies that have gone against conventional wisdom to establish competitive positions in the industry.

Using stories drawn from Reliance in India, Kosmos in Ghana, and Mitchell Energy in the United States, the book provides a nuanced picture of the ways in which disrupters have challenged orthodoxy in what is widely seen as an established and mature industry.

Because of the complexity of the industry, we have chosen to stay away from generic frameworks or simplifying mechanisms. Such approaches can diminish the complexity associated with the industry and force readers to subscribe to a generalized view of best practice. Instead, we let the subtleties and complexities play out in the stories presented. Having worked with companies from across the globe, we have seen that some of the sources of complexity present in this industry defy easy solutions. Our goal is to present the stories objectively and allow readers to learn from the experiences of the various companies involved. Accompanying each story, we provide a postscript discussing the events that followed after the end of the case time frame. The postscript notes include some general observations and lessons from the case studies. We have tried to tread a middle path between guiding the reader toward a set of conclusions derived from the stories and the presenting the stories as a series of events without thoughtful analysis or discourse. We believe this fosters self-discovery and a healthy intellectual debate that must precede any distillation of meaningful lessons learned.

The stories presented cover a wide swath of the globe where oil and gas companies operate. We provide a wide range of events, experiences, and managerial challenges independent of geography. The stories encompass organizations large and small, novel and traditional, and state- and privately owned. They cut across the distinct components of the industry value chain from upstream to downstream. Our intellectual journey has generated insights into an industry of tremendous importance to the contemporary world. It is our hope that readers will also walk away with equally enriching insights about the oil and gas companies and the complex world that they populate. The readers who should find this book useful include the following:

- Oil and gas industry professionals, including general staff, management, and professional and technical personnel interested in learning more about their current industry
- Public and private sector individuals engaged or associated with the global oil and gas industry, including regulators, policy makers, consultants, journalists, and government employees
- Business students in energy programs and oil and gas industry courses
- The general public interested in learning more about one of the world's highest profile and most global industries in greater depth from a business perspective, not a technical one

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Enron and the Dabhol Power Company

In September 2001 Enron Corporation (Enron) was embroiled in a long-running dispute with various levels of government in India. The dispute involved the Dabhol Power Company (DPC), the manager/operator of a 2,184-megawatt (MW) power project in the Indian state of Maharashtra. With Phase II of the multibillion dollar project 95% complete, Enron announced that it would sell its DPC stake due to payment disputes with its sole buyer, the Maharashtra State Electricity Board (MSEB), and the failure of the Indian central government to honor its counter-guarantee.[1]

In response to the ongoing dispute, Enron CEO Kenneth Lay sent a strongly worded letter to India's Prime Minister Atal Bihari Vajpayee, questioning the government's willingness to honor its contracts and its future ability to attract foreign investment. Lay wrote:

> *Our experience would indicate that contracts with governmental authorities in India really do not seem to represent anything more than a starting point for a later renegotiation and are broken by Indian governmental authorities whenever and as often as they prove inconvenient or burdensome.*

Enron Corporation

Houston-based Enron, formed in 1985 in a merger between InterNorth, Inc. and Houston Natural Gas Corp., was involved in various worldwide energy industries. In the 1990s Enron coined the slogan "Creating Energy Solutions Worldwide," and its stated vision was to become "the world's leading energy company—creating innovative and efficient energy solutions for growing

had always been opposed to the project for various reasons, including the social and environmental aspects, alleged bribes, the project's cost, and the lack of competitive bidding. The BJP/Shiv Sena campaign strategy painted the Congress (I) Party as antipoor, corrupt, and partial to foreign firms. This platform evidently appealed to Maharashtrians. On March 13 the election results were announced. The BJP/Shiv Sena coalition won 138 of 288 seats in the election and, with the help of several independent members, formed the new government. The Shiv Sena's Manohar Joshi became the new chief minister.

Not long after the election, Enron CEO Kenneth Lay noted, "If something happens now to slow down or damage our power project, it would send extremely negative signals to other foreign investors."[14]

Construction begins

On March 2, 1995, Enron completed the financing for Phase I of the Dabhol project. Phase I financing would come from the following sources:

- A 12-bank syndication led by the Bank of America and ABN-AMRO (loans of $150 million)
- US Export-Import Bank ($300 million; arranged by GE and Bechtel)
- The United States–based Overseas Private Investment Corp. ($298 million)
- Industrial Development Bank of India ($98 million)

Construction was soon underway. But, almost simultaneously, the new state government in Maharashtra, in keeping with its campaign promises, decided to put the project under review.

The Munde Committee

One week after coming to power, Deputy Chief Minister Gopinath Munde, who was also the state BJP president, ordered a review of the Dabhol project. The committee formed to carry out the review had two members from the BJP and two from the Shiv Sena. Munde, a known critic of Dabhol, was the committee chair. An open invitation to individuals to appear before the committee was followed up by letters to the MSEB and Dabhol Power Company. The committee was scheduled to submit its report by July 1.

Over the next few months, the committee held more than a dozen meetings and visited the site of the power plant. The committee was assisted by five state government departments: energy, finance, industries, planning, and law. All requests for appearances before the committee were granted. Among those making depositions were environmental groups, energy economists, a former managing director of the Mumbai Suburban Electric Supply Company,

As a result of the congressional selection of Sánchez de Lozada over Evo Morales in August 2002, the newly formed government was a coalition. The coalition had three widely publicized objectives: (1) economic reactivation (fiscal stimulus); (2) elimination of governmental corruption; and (3) social inclusion, specifically the voice of the indigenous peoples. By February 2003 the situation had worsened. Bolivian President Sánchez de Lozada had proposed an income tax of 12.5% on the Bolivian middle class to fill the growing government deficit. Evo Morales and his followers objected. Riots ensued in La Paz, resulting in a number of deaths. Sánchez de Lozada's government, which had acknowledged publicly that it supported the Chilean pipeline route, held on to its power by the smallest of margins.

The Camisea threat

> *The lack of decision of the port by which the Bolivian gas should be exported is causing a strain in the agreement between the Consortium and Sempra Energy, the main issues being the price at the delivery point that would vary depending on which port is chosen. The exclusivity agreement is also in play, if Bolivia misses this window of opportunity it would have to wait fifteen years before it would be able to attempt to enter the California market again, making Bolivia dependent on Brazil as its main purchaser of natural gas. The most pressing matter is that there are four other countries competing for the California market, such is the case of Peru (Camisea), Russia (the Sakhalin Islands), Australia (Western Shelf), and finally Indonesia (Botang). Camisea of Peru is the more developed in regards to the project than Bolivia, and the Sakhalin Islands is the one that has the most advantages, as it is closer to the California coast, and it already counts with a liquefaction plant.*
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> —"Pacific LNG Project," Indacochea & Asociados, Abogados, October 2002

In March 2003, in an attempt to provide a third-party opinion, the Bolivian government published the results of an independent consulting company's assessment of the pipeline path alternatives. The report, produced by US consultants Global Energy Development, supported the Chilean path. Without committing, the Bolivian authorities publicly acknowledged that the Chilean pipeline route made more economic sense. The report also noted the competitive threat posed by Peru's Camisea field.

Camisea was a large gas deposit in the Ucayali Basin, on "the wrong side of the Andes" as it was often described. Located deep in the cloud forest in eastern Peru, natural gas had been discovered by Shell in 1981 in two fields, San Martin and Cashiriari, situated on opposite banks of the Camisea River. The development rights were originally held by a JV between Shell (UK/Netherlands)

By 2010 Tengiz was exporting 400,000 bopd via the CPC Pipeline (at capacity) and another 300,000 bopd (plus sulfur and liquefied petroleum gas, LPG) by rail.[9] The rail routes were complex: 200,000 bopd went north around the Caspian and across Russia to the Black Sea, while the other 100,000 bopd traveled south to a Kazakh port on the Caspian and then across the Caspian Sea by barge to Baku. From there it was loaded once again on railcars for passage to the Black Sea port city of Batumi in Georgia. Rail transportation continued to be costly, roughly $6/bbl, and capacity limits were in sight.

The Russian government announced it would soon begin the expansion of the CPC. TCO responded soon after that it would begin a major expansion of Tengiz, estimated at $16 billion, but only if a number of other new issues were settled with a variety of government ministries. Issues to be settled included the following:

- **Export tax.** The Kazakh Oil and Gas Ministry announced in July that it was re-imposing an export tax on all hydrocarbons, and Tengiz would have to pay. Previously the JV had not been subject to the tax. TCO argued that it had a permanent exemption under its operating agreement.
- **Illegal production.** The Oil and Gas Ministry launched a criminal investigation against TCO in July for what it termed "illegal production," for producing oil and gas from depths at Tengiz not allowed under its production agreement. TCO argued that the production agreement had no such restrictions.
- **Illegal flaring.** The Kazakh Environmental Ministry imposed a $1.4 million fine on TCO for gas flaring. TCO, which had recently finished a $258 million investment in gas capture and recycling facilities, explained that the flaring was the result of an emergency situation.
- **International employee work permits.** The Kazakh Labor Ministry announced in August that all international employees of TCO would be required to have both work visas and work permits. The work permits, never required before, were customarily much more difficult to obtain.

Despite Chevron's continuing problems with the Kazakh government and the difficulty in producing and moving ever-greater volumes of crude from Tengiz, the development was an economic windfall to Kazakhstan. As illustrated in Figure 3–4, cumulative payments to Kazakhstan totaled $15 billion in 2013, roughly 10% of the country's GDP. Since start-up, TCO had contributed $90 billion to Kazakhstan.

by local governments, later to be transformed into local, government-owned private companies.

Consumers had to be convinced to use natural gas, and their cooking, hot water, and heating appliances would have to be converted. By 1969 about 80% of Dutch houses were connected to the grid and 60% were heated with gas. Gas was also accepted very quickly by industrial users and by the agricultural sector, especially greenhouses. This was followed by the rapid development of a large export-oriented greenhouse agricultural industry. The power sector converted to natural gas much faster than originally expected.[11]

A challenge in building a gas market is to balance supply and demand in such a way that there is optimal capacity utilization to cover high fixed costs while maintaining a sufficient profit margin. Since the Groningen gas would be used for domestic heating, there would be large seasonal variation in demand. A seasonal pattern creates challenges for the coordination of marketing and investment planning for production and transport capacity.[12] Fortunately, the geology of the Groningen field and the investment in production capacity allowed for a balance in supply and demand. Rather than building expensive storage capacity, the Groningen field itself was used for storage.

Export markets

To create exports markets, Shell and Exxon concluded that pipelines should be built from the Dutch border into Belgium, France, Germany, and other European countries. If successful, this would be the beginning of an integrated European gas network.

When Shell and Exxon began their European marketing efforts, NAM had not yet received a production concession, and it was by no means assured that the parent organizations were prepared to commit to the large investment necessary for pipeline construction. Not surprisingly, the initial response from Belgian, French, and German gas companies was, "Shell and Exxon will never market gas in our territory."

Getting past the initial negative response required long and complex negotiations. Ultimately, Shell and Exxon prevailed by convincing the governments and gas companies that an integrated approach, with large companies playing a key role in creating the market, could be very profitable. Shell and Exxon ended up with major stakes in Distrigas in Belgium and Ruhrgas and Thyssengas in Germany, and gas was being sold to Gaz de France. Dutch gas exports to Germany started in 1964. Exports to Belgium commenced in 1966, and exports to France followed in 1967. In the 1970s, export contracts were signed in Italy and Switzerland. Since the late 1960s, between 30% and 40% of Dutch gas has