



PROGRAM ON ENERGY AND
SUSTAINABLE DEVELOPMENT



JAMES A. BAKER III
INSTITUTE FOR PUBLIC POLICY
ENERGY FORUM



geopolitics of gas
working paper series

LIQUEFIED NATURAL GAS FROM QATAR: THE QATARGAS PROJECT

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Liquefied Natural Gas from Qatar: The Qatargas Project

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December 2004

Prepared for the *Geopolitics of Natural Gas Study*, a joint project of the Program on Energy and Sustainable Development at Stanford University and the James A. Baker III Institute for Public Policy of Rice University.

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About the Geopolitics of Natural Gas Study

Natural gas is rapidly gaining in geopolitical importance. Gas has grown from a marginal fuel consumed in regionally disconnected markets to a fuel that is transported across great distances for consumption in many different economic sectors. Increasingly, natural gas is the fuel of choice for consumers seeking its relatively low environmental impact, especially for electric power generation. As a result, world gas consumption is projected to more than double over the next three decades, rising from 23% to 28% of world total primary energy demand by 2030 and surpassing coal as the world's number two energy source and potentially overtaking oil's share in many large industrialized economies.

The growing importance of natural gas imports to modern economies will force new thinking about energy security. The Energy Forum of the James A. Baker III Institute for Public Policy and the Program on Energy and Sustainable Development at the Stanford University Institute for International Studies are completing a major effort to investigate the geopolitical consequences of a major shift to natural gas in world energy markets. The study utilizes historical case studies as well as advanced economic modeling to examine the interplay between economic and political factors in the development of natural gas resources; our aim is to shed light on the political challenges that may accompany a shift to a gas-fed world.

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This paper was written by a researcher (or researchers) who participated in the joint Baker Institute/Stanford PESD *Geopolitics of Natural Gas Study*. Where feasible, this paper has been reviewed by outside experts before release. However, the research and the views expressed within are those of the individual researcher(s), and do not necessarily represent the views of the James A. Baker III Institute for Public Policy or Stanford University.

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Liquefied Natural Gas from Qatar: The Qatargas Project

Kohei Hashimoto, Jareer Ellass and Stacy Eller

Introduction

The Qatargas LNG project is suggestive of the many political, economic, and technical challenges inherent to first-in-country LNG export projects. In the chapter that follows we examine the myriad factors that stalled the export of Qatar’s massive gas resources for over 25 years from their first discovery in 1971—as well as the alignment of political and economic interests that ultimately moved the project forward in the early 1990s. The Qatargas case is also a study of a “last-of-a-kind” LNG projects. This case and the earlier Arun study (Chapter 3 of this volume) bookend the period of Asia Pacific LNG projects characterized by the sole dominance of Japanese gas buyers with robust Japanese government support.

The North West Dome gas structure was discovered off the coast of Qatar by Shell in 1971, in the course of the company’s prospecting for oil (see Figure 1). An oil field would have been a much-preferred find at the time. Gas was not a priority for the newly independent country awash in oil revenues. Oil exports were garnering the tiny country of 200,000 people US\$2 billion per year in 1975, growing to over US\$5 billion per year in 1980.

Only when the oil revenues started to fade in the early 1980s did gas exports rise in importance to the all-powerful Emir. Still, progress proceeded slowly. The Emir sought analysis and input from foreign advisers. Early plans prioritized domestic gas development over gas export projects. However, as the enormity of the North West Dome (now North

Field) became more apparent, proposals were developed to export gas both as LNG and via pipeline to Gulf neighbors and beyond.

In 1984, a joint venture was finally established in 1984 to export Qatari gas as LNG. Japanese buyers expressed interest, but before a deal could close an escalation of the Iran-Iraq War spread to neutral shipping traffic in the Persian Gulf. In the spring of 1984, Saudi and Kuwaiti oil tankers were sunk as both Iraq and Iran escalated the conflict into the Gulf. The incidents heightened Japanese concerns about security of supply and the ability to protect the costly LNG infrastructure and ships.

LNG exports to Japan were also forestalled by stagnating Japanese energy demand that left limited room for new project supply. The signing of the sales and purchase agreement for Australia's North West Shelf project in 1985 filled a narrow niche for new LNG supply to Japan during this period the late 1980s. Qatar and the foreign partners waited nearly another decade for security in the Gulf region to settle—and for a new opening to develop in the Japanese market large enough to take the lumpy first deliveries from another new greenfield LNG project.

Regional tensions played an important role in forming Qatar's natural gas export strategy. In 1984, the Iran-Iraq War was in its fourth year, and the fledgling Gulf Cooperation Council (GCC) was in its relative infancy, having been formed in 1981 as a political entity of six Arab neighbors (Qatar, UAE, Bahrain, Kuwait, Saudi Arabia and Oman) to protect themselves from the two powerhouses in the region—Iraq and Iran. The sinking of Saudi and Kuwaiti oil tankers was ample evidence to the Qataris that the GCC lacked the collective military capabilities to ward off threats from its warring neighbors. Indeed, in those early years, the GCC's central focus was on serving as the mediator in the conflict between Iraq and Iran.

The GCC's preoccupation with mediation efforts for the war also left it with little time to establish the kinds of economic institutions that might have promoted regional gas pipeline development until the war ended in 1988.

The Iran-Iraq War and the escalation to the tanker attacks convinced Qatar that alliances with Saudi Arabia could not protect the tiny emirate from either a territorial attack by a belligerent Iran or Iraq or from the economic catastrophe should the emirate's oil exports be cut off, as oil revenues comprised some 90% of the government income during this period. Qatar began to feel that sitting passively as a satellite of the Saudi kingdom, in effect having to blindly follow the Gulf producer's lead in political and economic policies, was not in the country's best long term interests.

The Kuwaiti experience in the Tanker War suggested to Qatari leaders that alliances beyond the GCC might best provide for the country's security needs. As Kuwaiti tankers were increasingly targeted around Gulf Arab ports, the Kuwaiti government aggressively sought international intervention in the fall of 1986. Under Operation Earnest Will, the U.S. began escorting re-flagged Kuwaiti vessels in July 1987.¹ It soon became evident to the Qatari leadership that gas resources might allow it to cultivate important ties with foreign powerbrokers, both East and West.

Border disputes and bilateral political tensions between Qatar and some of its key Gulf Cooperation Council neighbors stymied the development of cross border gas pipeline projects to export Qatari gas through most of the 1980s and into the 1990s. Ambitious plans to send

¹ John Partin, History and Research Office, USSOCCOM, Special Operation Forces in Operation Earnest Will, Prime Chance I, April 1998, p. 5-7; Also, Hassan Hamdan Al-Alkim, "The Arabian Gulf at the New Millennium: Security Challenges" Iran, Iraq and the Gulf Arab States, ed. Joseph Kechichian, New York: Palgrave, 2001.

natural gas to Israel and then on to Southern Europe also ran up against political barriers as the project was considered contingent on the Arab-Israeli peace process which devolved in the late 1990s, in the wake of a wave of violence between Israel and the Palestinians that was still unresolved in early 2005.

Production of gas from the giant North Field ultimately did not begin until the early 1990's. Qatar General Petroleum Corporation (QGPC, now QP) initiated a three phase plan to: (1) develop gas production for domestic consumption (in power, desalination, fertilizer and petrochemicals), (2) build an export pipeline to deliver gas to neighboring Dubai, Bahrain, Saudi Arabia and Kuwait (an alternative plan to supply Pakistan was pursued for several years and even a plan to supply Israel considered), and (3) build an liquefaction facility for the export of LNG.

Phase one of North Field development was inaugurated in 1991, financed with calls on future oil revenues. Phase two of the North Field development called for a US\$2 billion pipeline to supply 10 Bcm per year to the east and 16.5 Bcm per year to the west. The project was dubbed the GCC pipeline, as it was discussed at the Gulf Cooperation Council, the forum of countries that would be connected by the pipeline grid. The GCC grid was hampered from the very outset by a number of political obstacles. Saudi Arabia made major gas finds in 1990 and was reluctant to grant transit rights for the pipeline; Kuwait was invaded by Iraq later that year. A border dispute frustrated relations between Bahrain and Qatar. Finally, Dubai was not willing to pay much for gas largely to be used for miscible injection to enhance its oil production.² Two other pipelines were also discussed during this period, a

² Dubai was reportedly only willing to pay \$1 per MMBtu in the early 1990s, a price that was not suitably attractive to Qatar. Also, Abu Dhabi was less than cooperative on the transit of an undersea pipeline through its waters to Dubai, as it had aims selling its own gas to its neighboring emirate.

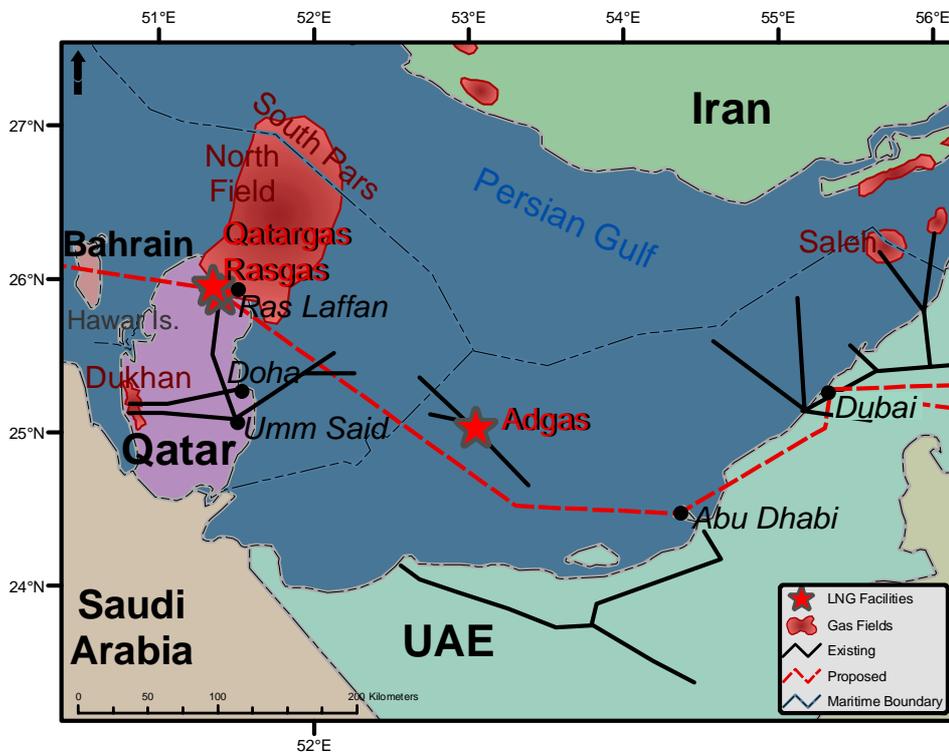
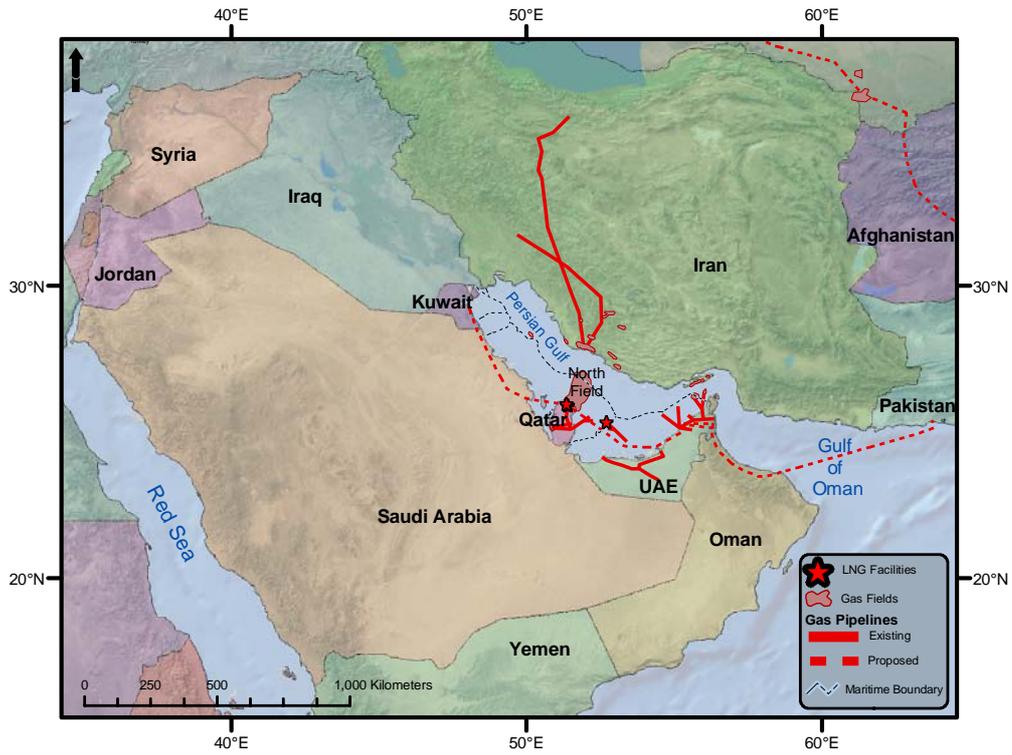
1,600 kilometer pipeline under the Gulf from Doha to Karachi and an even more politically ambitious pipeline to Israel. Neither project advanced beyond early proposals.

The LNG export facility that became Qatargas was to be phase three of the North Field development. The large-scale gas export project would not have succeeded had it not been for the intervention of U.S. major Mobil, which came to the rescue of Qatargas following the abrupt departure of BP in 1992, as well as the symbiotic relationship of Japanese trader Mitsui Bussan and Japanese utility Chubu Electric, which produced key financial backing and concrete long-term sales agreements. As a major American oil firm with expertise in LNG, Mobil brought financial backing as well as political security of a U.S. firm involved in a large-scale project within the Emirate that appealed to the Qataris. Mitsui and Chubu, through their relationship with Qatargas, saw the project as an important new foothold for them into the global gas market.

Qatargas set the stage for a continuing series of major investments by U.S. major Mobil (later U.S. super-major ExxonMobil). Important ties have been built between Qatar, the U.S. and Japan as the major offtaker from the project.

The GCC pipeline and other pipeline export alternatives remain in various stages of discussion and design. Qatar's conflicts inside the GCC, especially with Saudi Arabia, closed off any possibility of a gas pipeline that would transit the GCC or Saudi Arabia in particular until recent years. These political problems gave impetus to alternative plans to export gas as LNG which did not require transit through any GCC neighboring countries. A fuller discussion of related events that affected the progress of the GCC pipeline and alternative gas export pipelines follows later in this paper.

Figure 1. Qatar and the Persian Gulf



Qatar: From Independence to Oil Bust (1971 – 1983)

Qatar has been inhabited for millennia, a part of the Persian Gulf trade route connecting Mesopotamia to the Indus Valley. The country was briefly under Turkish Ottoman rule from 1872 until the end of the First World War, when it became a British protectorate. The British recognized as ruler Sheikh Abdullah bin Jassim Al-Thani, a member of the Al-Thani family that had previously ruled the region of Doha, the present-day capital city.

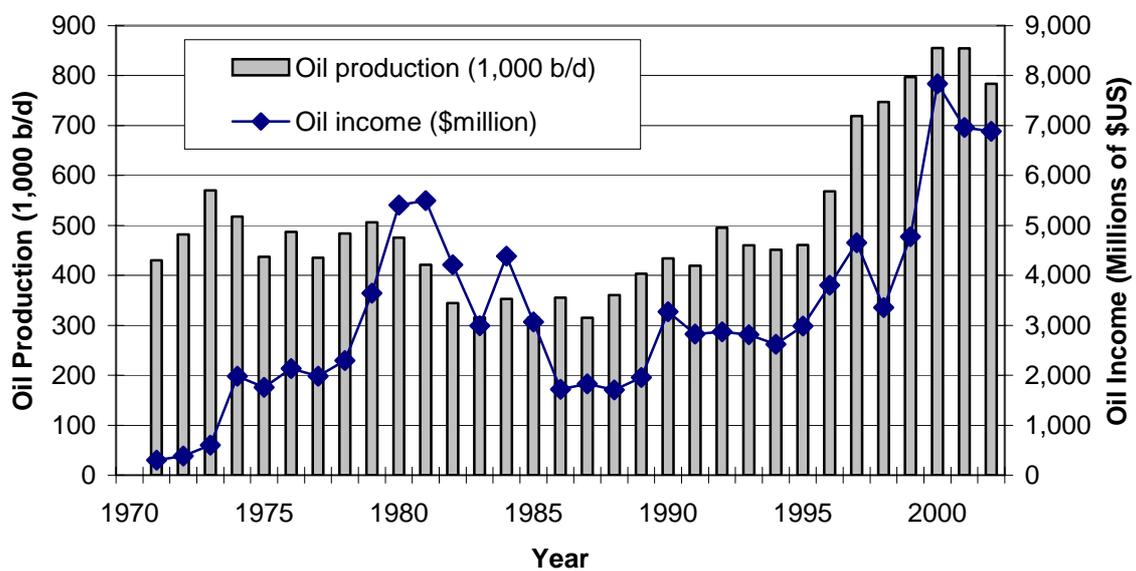
Later, when Britain announced its withdrawal from East of Suez in 1971, it proposed that Qatar merge with Bahrain and other emirates on the shore of so-called Trucial Oman. But due to rivalries with Abu Dhabi and Bahrain, Qatar chose to become a separate, independent emirate in 1971 under the rule of Ahmad Al-Thani. In February 1972, the Deputy Ruler and Prime Minister, Sheikh Khalifa bin Hamad, deposed his cousin, Emir Ahmad, and assumed power. This move was supported by the key members of Al-Thani family and took place without violence or signs of political unrest. A provisional constitution was enacted on April 19, 1972 (Kelly 1980).

In his first acts, Emir Khalifa expanded free public housing, introduced price controls on consumer goods and set up subsidized food cooperatives. He poured large amounts of money into education, health care, and other social programs to benefit less wealthy Qataris—and to solidify his support among the population of 130,000 (Crystal 1990).

Rapidly rising oil prices during this period provided the new Emir with ample funds to distribute. Oil revenues doubled from US\$300 million in 1971 to US\$600 million in 1973, and rose to nearly US\$2 billion in 1974—on basically flat production (see Figure 2). In 1974, Qatar followed the trend toward nationalization with other OPEC producers,

establishing state-owned Qatar General Petroleum Company (QGPC, today QP) with responsibility for exploration, production, refining, transportation and sales of Qatari oil and gas. By 1977, all privately held oil assets and claims had come under the control of QGPC, although foreign companies such as Shell and BP stayed on as contractors and advisors.

Figure 2. Qatar’s Oil Production and Revenues, 1971 through 2002



Source: (OPEC; OPEC; BP 2004)

Khalifa used the swelling oil revenues to initiate a rapid phase of industrialization focused on three areas: fertilizers, steel, and petrochemicals. Throughout this oil boom period, a rapid growth of employment in the government administration continued—which would later become a serious problem for Emir Khalifa (Crystal 1990).

Toward the end of the 1970s it became apparent that the glory days for Qatari oil production might not continue. International oil companies (IOCs) became dissatisfied with the service contracts awarded by QGPC, convinced that the potential for oil recovery was not there in the

aging oil fields. Oil production peaked in 1979, but revenues were temporarily propped up by the second oil crisis, a product of the revolution in neighboring Iran. When oil prices also began to fall in 1982 and 1983, the Emir found his promises to the population may have overstepped the potential of the country's limited oil endowment.³

After years of surpluses, in 1983 the government had a deficit of nearly QR8 billion (US \$2.2 billion, in 1983 real dollars). Major state investments in petrochemicals and steel foundered amid stiff competition and ailing global markets (Crystal 1990). Financially, the Qatari government was struggling with budget deficits and there were few signs that oil production would recover. Many other oil producers responded to the falling prices in the 1980s by raising output. With oil reserves down to 3.3 billion barrels in 1983, Qatar was forced to pursue alternative policies (BP 2004).

The Emir was forced to cut departmental expenditures, reduce state employment, and delay several major development projects. In May 1983, the first charges for the health care, water and electricity were introduced. By November 1983, the government had announced the layoffs of 3,000 state employees. These austerity measures were unpopular to a previously pampered population creating opposition in the general population and also in the ruling family itself, making the Emir's position vulnerable.

Gas Exports in the 1980s: A Missed Opportunity

Until 1980 the leadership of Qatar was not prepared for export-oriented gas development plans. Oil was flowing and its price rising, while the costs of developing any gas project were large. However, when oil production began to decline Qatar's massive gas reserves—

³ Qatar was never endowed with overwhelming oil resources. In 1980, Qatari reserves were estimated at 3.6 billion barrels compared to 30 billion barrels in neighboring United Arab Emirates (BP 2004).

estimated to be in excess of 3 Tcm in 1980—became an obvious target to offset falling oil earnings (BP 2004).

The Qatari government had expropriated the North Field in the late 1970s, although Shell continued to provide technical support. In this context, Shell was asked to evaluate alternatives for exploiting the North Field. As the natural gas business was entirely new to the Qataris at that time, the studies in 1980 entailed providing estimates of requirements for gas domestic gas consumption, e.g. electricity and water, before any thought could be given to exports. Comparative studies were made of many different LNG configurations, a methanol plant, an aluminum smelter and a further petrochemical complex (Wybrew-Bond 2003).

Several sources suggest that the lack of institutionalized decision-making in Qatar likely stalled progress in negotiating the complexities of LNG development during this period. Emir Khalifa maintained a commanding position in every corner of the Qatari politics, society and economy. The Emir strictly controlled money supply in such a personal way that Khalifa himself signed all checks over U.S. \$50,000 (MEED 1983). Lack of institutionalization was pointed out as a reason for delay in decision-making in every corner of Qatari society; all operations ceased if the Emir was not available or willing to focus on an issue (US Embassy Doha 1983). One of Shell's executives involved at the time notes discussions on the gas utilization were "further delayed by the presence of a number of expatriate Arab advisers who were not unnaturally intent on protecting their positions and so raised question after question to justify their presence which often planted seeds of doubt and confusion in the Qatari decision makers' minds" (Wybrew-Bond 2003).

The outcome of the lengthy discussions—including Shell, Qatari ministers and expatriate Arab advisors—was a plan that sought to optimize the management of the country’s gas resources for both domestic consumption and LNG exports. Due to QGPC’s lack of gas experience, foreign partners were required to proceed on any of the development plans.

In 1982, Shell, BP and CFP (now Total) were each offered 7.5% equity stakes in a joint venture with QGPC to develop the North Field and an LNG export project as a result of a competitive selection process. The understanding was that the foreign players would provide their much-needed technical services at cost. Shell, however, exited Qatar for a variety of reasons, focusing their efforts on the development of more promising resources in Australia—while BP and CFP stayed on in Qatar (Wybrew-Bond 2003).

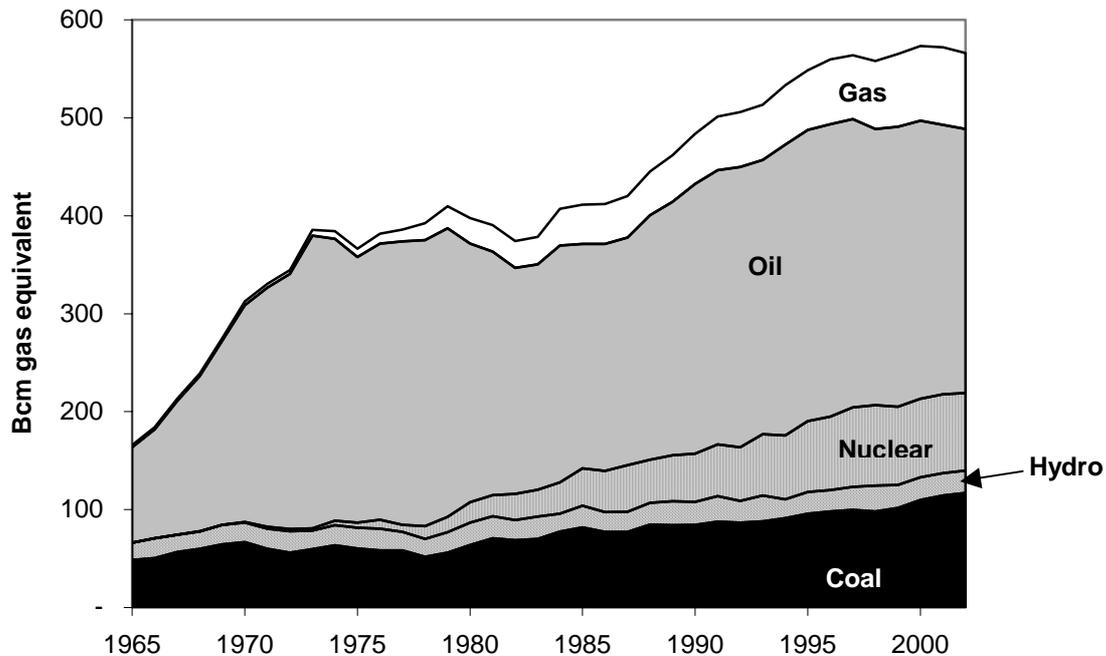
Shell’s exit further shook up progress on gas development plans, given the company’s close involvement since discovering the North Field in the 1970s. Still, in 1984 a joint-venture agreement was signed between QGPC, BP, and CFP (Total) officially establishing Qatar Liquefied Natural Gas Company Ltd., “Qatargas” and laying plans for the development of North Field. The search was on for a buyer.

Early Japanese Interest in Qatargas

First expressions of interest in LNG exports from Qatar came from Japan. The Japanese economy had boomed in the post-war period, with energy demand growing at over 10% per year through the 1960s (see Figure 3). The oil price shocks of the 1970s stalled this rapid growth—as the Japanese economy was nearly 80% dependent on imported oil. The legacy of this experience made the Japanese government steadfast in its determination to move away from Middle East oil dependence. At the same time, new air pollution regulations forestalled increases in coal consumption. With gas (and nuclear) the only major energy supply options,

Japanese gas and electric companies garnered government support to bankroll a number of new LNG gas supply projects in the late 1970s and early 1980s.

Figure 3. Primary Energy Consumption by Fuel in Japan, 1965-2001



Source: (BP 2004)

Japanese players were key drivers in all of the international LNG projects serving the Asia-Pacific during this period. Financially secure Japanese electric and gas companies offered long-term contracts for purchases, and the Japanese government offered favorable financing via loans and export credits. With this support, the first shipments of LNG to Japan came from Alaska in 1969. Later the Japanese supported LNG projects in Brunei (1972), Abu Dhabi (1977), Indonesia—Badak and Arun (1977, see Chapter 3, this volume), and Malaysia (1983). Nearly three-fourths of global LNG shipments went to Japanese buyers in the first half of the 1980s (CEDIGAZ 2000).

In 1984, the inertia to continue to expand LNG imports led two groups of the Japanese trading companies—one comprised of Mitsubishi Shoji, Mitsui Bussan and Itochu and the second including Marubeni and Nissho Iwai—to enter negotiations with QGPC for the acquisition of the remaining 15% equity stake in the US\$6 billion Qatargas LNG export venture (MEES 1984). The Qatargas negotiations were not occurring in a vacuum, however. As negotiations proceeded slowly with Japanese buyers in Qatargas, events both near and far ultimately forestalled the Qatargas project for nearly a decade.

Security was a primary concern. Since its discovery, the boundary of the North Field has been a subject of contention with Iran.⁴ More importantly, the Iran-Iraq War (1980-1988) increased Japanese concerns about the security of further energy imports from the Persian Gulf. When oil tankers in Qatar's neighborhood became a favorite target of both warring parties in 1984—the short-term prospects for Qatargas dimmed considerably. Thirty-nine commercial ships were attacked in the Persian Gulf in 1984, with the attacks escalating through the end of the war in 1988 (El-Shazly 1998). Indeed, no LNG shipments from Abu Dhabi to Japan (over 2 mtpa) were disrupted in 1984 or later in the war, but Japanese LNG buyers had other options that did not involve sending more US\$300 million LNG tankers into war zones.

With Qatargas plodding forward, the North West Shelf LNG project in Australia was also angling to serve the Japanese market. Shell, BP, Chevron and Japan's two largest trading houses, Mitsubishi and Mitsui – both with extensive experience in the LNG business – were

⁴ Tensions with Iran over rights to the North Field have clouded development of the North Dome since its inception. When Shell suggested, at the very beginning of the North Field development, that the field might extend into Iranian territory, orders were given from the highest levels of the Qatari government to exclude any such possibility from any maps.⁴ The North Field/South Pars gas reserves were clearly demarcated in a maritime border deal in the late 1980s. Still, in April 2004, Iran accused Qatar of overproducing its share of natural gas from the giant offshore North Field that straddles the Qatari-Iranian border, warning that Iran would resort to “other ways and means of resolving the issue” if Qatar did not enter new negotiations about regulating production from the field (Oil Daily International 2004).

all deeply involved in the North West Shelf project. In 1981, the Japanese LNG buyers had committed in principle to long-term sales contracts from the North West Shelf. However, slower than expected growth in gas demand caused Japanese buyers be timid in signing a new contract, temporarily delaying the Australian project (Feltham 2002).

The energy price increases of the early 1980s were stalling energy demand growth in Japan, just as both the North West Shelf and the Qatargas projects were mobilizing to secure long-term contracts with Japanese utilities. Japanese gas consumption, supplied almost entirely by imported LNG, had grown at a blistering 25% per year in the period from 1972 through 1980. Then from 1981 to 1983, gas growth slowed to a relatively anemic 2% per year and the projected needs for new LNG imports deflated considerably (JCCME 1991).

Thus, when eight major Japanese gas and electric utilities finally signed long-term sales and purchase agreements in 1985 with the North West Shelf project for a massive 6 mtpa deliveries which was later expanded to 7 mtpa, Qatargas was forced to wait until a new opening for gas deliveries developed again in Japan.

Late 1980s: Gas Development Begins to Take Shape

Domestic Production and Pipeline Options

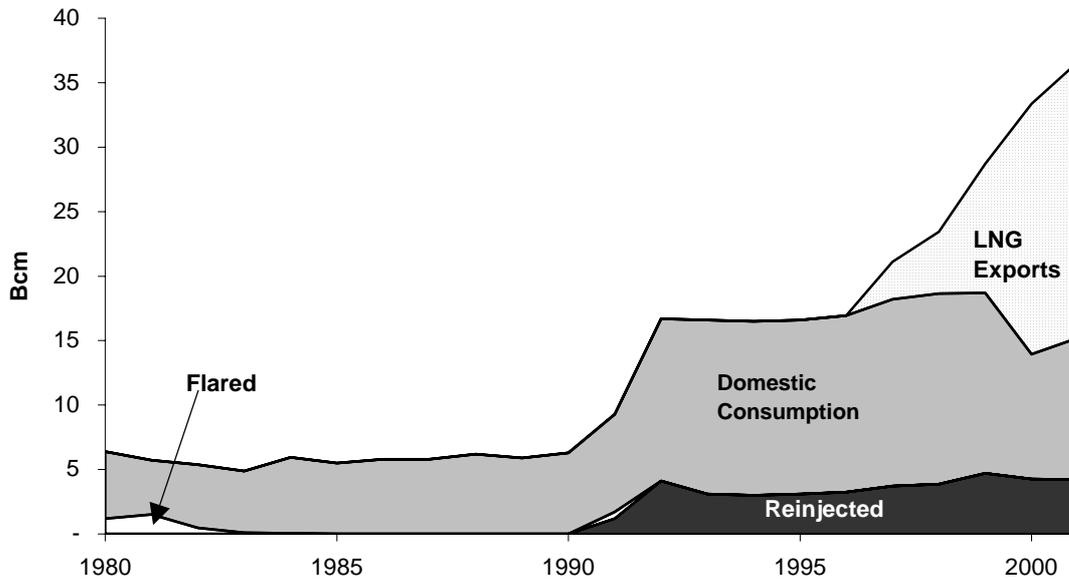
Discussions on LNG and pipeline export projects continued in the latter half of the 1980s, albeit slowly. In the summer of 1987, QGPC began the “Phase 1” development of the North Field for domestic consumption. Short on cash, QGPC used an innovative financing technique introduced in the 1980s, obtaining loans backed by future oil sales. In 1987 and 1988 QGPC announced plans to use proceeds from 40,000 b/d of oil exports (1/10th of total production) to fund the development of the North Field. As planned costs rose on phase 1

through 1990, the remaining two-thirds of financing for the US\$1.3 billion project came from a US\$400 million syndicated Euroloan and a US\$400 million loan from Arab Petroleum Investments Corporation (Apicorp) (Source: Arab Oil and Gas Directory).⁵

This first phase of the North Field development faced several delays prior to its targeted startup in 1990 due to technical problems and Iraq's invasion of Kuwait. Fourteen of the 16 production wells in phase 1 suffered from cement casing leaks. Then, a week prior to the revised start-up on August 3, 1990 it was discovered that chemicals had leaked into an onshore pipeline and the North Field had to be shut in (WGI 1990). The exodus of contractors from the region during the Second Gulf War further postponed the start of production (OGJ 1991). Finally, on September 3, 1991, the 20th anniversary of Qatari independence and 20 years after the discovery of the North Field, gas production was underway (see Figure 4). Phase 1 production produced about 8.6 bcm per year of raw gas, yielding 7.8 bcm per year of lean gas and 35,000 barrels per day (b/d) of condensate. Most of the dry gas was supplied to local power stations and industrial plants and the remainder was injected in the Khuff reservoir underneath the onshore Dukhan oil field, Qatar's only other source of non-associated gas and is now used as a strategic reserve.

⁵ These upstream investments (and financing) would later prove critical to the development of the Qatargas LNG project.

Figure 4. Natural Gas Output in Qatar, 1980-2001



Source: (OPEC; BP 2004)

Phase 2 of North Field development was to export gas via pipeline to nearby GCC countries Saudi Arabia, Kuwait, Bahrain and Dubai (U.A.E.), starting in 1996. The construction cost of US\$2 billion was to be divided by the six participants. This was considered a much more feasible undertaking compared to LNG facilities requiring investments on the order of U.S. \$5 billion (two times total Qatari national income in 1991) to produce 4 mtpa (less than 6 bcm per year).

The original plan of a Qatari gas export pipeline was advanced at a GCC summit meeting in November 1989. In the following year Saudi Arabia, Kuwait, Bahrain and UAE (Dubai) showed interest to import some 20 bcm per year of North Field gas. This U.S. \$2 billion project was expected to have approval of these four nations at the GCC summit of December 1990.

Ultimately, political barriers stalled the pipeline project. The pipeline project was planned at during one of the most difficult periods in the history of the Persian Gulf. Saudi Arabia, once said to be interested in importing natural gas for domestic consumption, made major domestic gas finds in early 1990. As a result Saudi was reluctant to grant transit rights for Qatari gas, which effectively killed off the Kuwait option before Kuwait was invaded by Iraq in the August 1990. Demand from Bahrain was small and a border dispute over the Hawar Islands raised tensions. The Iraqi invasion of Kuwait and the subsequent Gulf War, combined with lingering border disputes among members, stalled proposals well into the 1990s.

The political problems surrounding a regional pipeline grid in the 1980s and early 1990s gave further impetus to plans to export gas as LNG. By shifting its energy export portfolio to natural gas, Qatar was able to move away from heavy dependence on oil, a commodity whose fate was dominated by Saudi Arabia. Saudi Arabia had little influence in the world of LNG, and Qatar's move to become a major gas exporter fit with the Emir's desire to be more independent of the Saudi orbit and to attain economic and security relationships that were outside of direct Saudi influence.

Qatargas Makes a Comeback

BP and Total (formerly CFP) remained engaged in Qatar after the project stalled in 1985, hopeful for an opportunity to move forward again on the Qatargas LNG project. By the late 1980s projections began emerging from Japan and Asia suggesting that a window was opening for new LNG shipments. New buyers were entering the market. South Korea started importing LNG in 1986 and Taiwan in 1990 increasing pressures on Japanese buyers to lock up future supplies. Total LNG demand in the Asia Pacific region was projected to grow to 57 mtpa by the year 2000, while maximum production capacity of existing LNG

facilities was estimated at only 42 mtpa. The 15 mtpa gap suggested a healthy window of opportunity for Qatargas.⁶

Japanese trading company Mitsui Bussan reentered discussions with the Qatargas partners in 1989, while Marubeni had never strayed far from Qatar, peddling the country's oil. Mitsui had helped to develop the Abu Dhabi LNG and the North West Shelf Australia projects and brought much needed coordinating experience and influence to the proposed Qatargas project.

The important role of the trading companies and their relationship with Japanese buyers (in this case Chubu Electric) can hardly be overstated. Japan's public electric and gas utilities, were the main buyers of LNG in the world at the time and thus had a commanding position in determining the success of any new LNG projects as Qatargas organizers were trying to get their project off the ground in the late 1980s. The great credit strength and influence of Japanese trading companies and financial institutions were also critical to promote a successful grassroots LNG project in the 1980s.

Still, Qatar was a relatively poor country with less important reserves of oil and no experience in the LNG business. The risks of a new venture in unproven Qatar—and in the volatile Gulf region—led Japanese companies to look at other sources of gas production such as Canada, Alaska, or Iran.

In order to build confidence among Japanese buyers, especially between long-term purchaser and investors into the Qatar greenfield project, Japanese trading companies or *Sogo Shosha* played a decisive role. In Qatargas and previous Japanese LNG import projects, the *Sogo*

⁶ Tadahiko Ohashi, "Prospects of Energy and Qatar LNG," Tokyo Electric Monthly, May 1989, p. 32.

Shosha have acted as the “glue” to connect LNG users and the supplier as well as financial institutions, both official and private, or security firms together to form a feasible chain of actors. Involvement of Mitsui Bussan was one of the most decisive factors for the success of the Qatargas LNG project.

In the 1970s, Japanese customers initially enjoyed the competition among rival sellers, while they prioritized buying LNG en bloc. But by the mid 1980s and early 1990s, Japan began to experience regional buyer competition. In Japan, domestic rivalries shape three distinct groupings in the world of electric power generation companies. Each of three major electric power companies in Japan—Tokyo Electric Company, Kansai Electric Company, and Chubu Electric Company—built relationships with specific trading firms for LNG supply. Tokyo Electric has long been a recipient of LNG from Brunei and Malaysia through trader Mitsubishi Shoji. Kansai Electric has special relations with Nissho Iwai through developing Indonesian LNG (see Chapter 3, this volume), and Chubu Electric had long sought its own LNG project through Mitsui Bussan.

Each of the electric companies did buy gas from “competing” projects—as Chubu did from Australia, and Indonesia at the time. Chubu Electric sought a project where it could assume the role as lead buyer—a position it sorely lacked.

Throughout the 1980s, Chubu Electric eyed in vain resources in Western Canada (where it had come close to agreement on the Dome LNG project in 1985 before it ultimately failed), Alaska, Russia (Sakhalin), Thailand, Burma, Papua New Guinea, and Iran. Excluding Russia and Iran, these countries could not support the long-term provision of large gas volumes that Chubu demanded. Sakhalin had potential, but due to the territorial dispute between Japan

and Russia over the Northern Territories talks stalled until the Soviet Union crumbled.⁷ No viable option was proposed in Iran during this period—due to the war with Iraq and subsequent reconstruction.⁸ Paring away these options rendered Qatar’s North Field an increasingly attractive option, despite regional security concerns. Chubu had essentially shopped around the Pacific Basin and come back to Qatar again.

It was felt that the North Field was one of the only viable projects of the day that could satisfy Chubu Electric’s desire to import 4 to 6 mtpa of LNG for 20 years. The fact that it was a greenfield project that required a huge investment even encouraged Chubu’s interest. Chubu’s sales and purchase agreement for all of the initial capacity and its relationship with Mitsui, would give Chubu substantial control, at least during the early stages of field of development. Also, in Chubu’s eyes, committing to a project that was struggling to find a buyer mean that the Japanese firm might gain an upper hand in price and transport cost negotiations (J-EXIM 2003). Security concerns were also somewhat allayed by the massive U.S. military presence in the Gulf (especially Qatar) for the liberation of Kuwait. This security umbrella likely comforted Chubu as it signed a letter of intent for long-term deliveries from the Qatargas project in 1991 on the day the land offensive to recapture Kuwait started.

Now with an interested buyer, pressure was on the partners of the Qatargas LNG project to finalize the long negotiated project structure. The major stumbling block for BP and Total was access to the potentially lucrative gas production segment of the project. The 1984 Joint Venture Agreement, provided each with a 7.5% stake in the LNG plant and no share in the

⁷ The Sakhalin project came alive after the collapse of the Soviet Union in 1991, and current plans are to export LNG to Japan starting in 2007.

⁸ Iranian LNG projects were later halted when the U.S. imposed sanctions starting in 1993 and tightened in 1996.

upstream gas production. QGPC had allocated a block within the North Field to supply Qatargas and did the initial feasibility study work on the upstream development itself.

Early plans to supply Chubu called for a 4 mtpa scheme expandable to 6 mtpa. Based on interviews with BP executives involved at the time, the economics of the project under the existing tax and 1984 Joint Venture Agreement were not promising. “Even with a US\$0.50/MMBtu into plant gas price (indexed to LNG price), a 35% tax rate and a 10-year tax holiday the 4 mtpa scheme was marginal” (Shepherd 2004). BP’s analysis suggested that participation in gas production would improve their position, and thus sought improved tax terms and an integrated project where BP and Total would a share in the upstream and LNG plant. According to BP sources, the Qatari government “was making progress” on creating such an “integrated project” and did improve the terms for gas sales to the project (Shepherd 2004). Before new terms could be agreed upon, Total unilaterally negotiated its own production sharing agreement (PSC) with QGPC—giving it a commanding role among the outside investors in the upstream segment of the project. Total sought to persuade BP and the Japanese trading houses to take a share, which they all refused.

BP, which was suffering a cash crisis which imposed severe restrictions on its ability to invest in new projects, announced its withdrawal from the Qatargas consortium in January 1992, frustrated by the lack of progress in achieving suitable terms and unwilling to take the share in the PSC offered by Total. The project appeared in jeopardy with the first cash calls for front-end engineering and design (FEED) on the horizon. Chubu Electric persisted however, signing the sales and purchase agreement in May 1992 with the remaining Qatargas partners (Total, Mitsui and Marubeni) to supply 4 mtpa of LNG over a 25-year period beginning in 1997 (Oil & Gas Journal 1992).

Just as the Qatargas project was getting underway, another consortium was lining up to take Qatari gas to Europe. The Qatar Europe LNG Company was formed in late 1991 as a partnership between QGPC (65%), U.S. Hunt Oil (5%) and Italian conglomerate ENI's Snamprogetti (30%). The consortium planned to construct two liquefaction trains at the largely Italian-built port of Ras Laffan⁹, and ship 5.7 mtpa of LNG through the Suez Canal to a new terminal in Ravenna on Italy's northern Adriatic coast. Snam and Italian state power generator Enel were to be the main gas buyers.

Eurogas also proposed future increases in capacity to raise total gas output to 10 mtpa per year in order to supply gas to central Europe and planned to use larger 200,000 m³ capacity tankers to cut transport costs. An agreement was made with Suez Canal authorities to provide for discounted tolls.

At the time, Eurogas appeared to possess several advantages to the established Qatargas consortium looking to sell to Japan. The equity stake of the gas buyer, Snam, gave Eurogas an apparent jump on Qatargas, which, despite a purchase commitment from Japan's Chubu Electric, was dogged by organizational problems and foot dragging by foreign partners (WGI 1992a).¹⁰ The exit of BP had left the Qatargas consortium without leadership from a player with greenfield LNG experience, with the exit of BP. Coincidentally, energy major Mobil Oil

⁹ Although the Eurogas LNG project would ultimately fail—the development at Ras Laffan did not. As early as 1990, the Qatari government began promoting a major new industrial development to be called Ras Laffan Industrial City. Plans were developed by Bechtel and Ras Laffan was to be the site of all the new major gas developments, including Qatargas. The extra cost of the Ras Laffan development (US\$900 million) further frustrated BP. The Ras Laffan project ultimately went forward, with the government footing the bill for the port development costs and providing a significant stimulus to the Qatargas and subsequent Rasgas projects (Shepherd 2004).

¹⁰ It is worth noting that Italy's purchase 6 mtpa of LNG from Qatar could have set a new benchmark for European gas prices. Italy's probable acceptance of a base price of well over \$3 per mmbtu not only shifted markets up to a level where costly LNG schemes were economic, but also struck a blow at long-distance gas pipeline projects from Iran and Russia (Petroleum Intelligence Weekly 1992a). The Eurogas project was eventually abandoned when Enel, initially 40% buyer of Eurogas LNG, began to scale back its gas-buying plans in 1994. Enel was about to be privatized, and was thus tightening its expansion plans—which would no longer be state-financed. Snam, opted for increasing the purchase of Russian piped gas from 6 bcm to 20 bcm out to 2000, further reducing the need for LNG imports.

was looking for a new LNG project to replace the Arun project where the reserves were facing decline.

Mobil to the Rescue

As Qatargas was struggling to move forward—now without BP—Mobil Oil was facing a dilemma of its own in Indonesia. Mobil was an early and successful entrant in the LNG business with its 35% interest in Indonesia’s Arun field, commissioned in 1978 (Chapter 3, this volume). Having paid off its capital costs by the early 1980s, Arun was an important contributor to Mobil’s corporate cash flow. However, Arun’s remaining gas reserves were depleting quickly, totaling only 7.8 bcm in 1992. This resource base was insufficient to extend existing Mobil LNG supply contracts to Japan, and options to expand the Arun project were limited (WGI 1992b).¹¹

By contrast, Mobil executives saw Qatargas as a viable alternate supply source. In addition to diversifying its LNG holdings away from the declining Arun field, an investment in Qatargas could be utilized to expand its global customer base. Qatar’s reserves in 1990 were estimated to be over 6 Tcm (BP 2004), which would offer a sufficiently long project life and opportunities to expand annual export volumes over a long period of time from a geographic location that would make deliveries to Europe feasible.

In August 1992 Mobil announced its entry into the Qatargas project with a 10% interest and improved terms. Total retained its 20% share in the upstream segment of the project through its PSC; Mitsui and Marubeni maintained their original 7.5% stake in the downstream and

¹¹ Indonesia’s state-owned Pertamina approached Mobil about taking a large minority stake in its Natuna island LNG project. Pertamina’s idea was to pipe Natuna gas to Arun, allowing it to expand exports. But since the Natuna project was previously structured with then-independent Exxon Corporation possessing the other 50% interest, and the Natuna field contained in excess of 70% carbon dioxide making it a very expensive proposition to develop, Mobil steered clear. Understandably, Mobil was not interested in a project to liquefy Exxon’s gas, and the high project costs were unlikely to persuade it otherwise (WGI 1992b).

were also awarded small 2.5% stakes in the PSC (see Table 1). To meet Mobil’s demands of a greater interest in the development of the North Field, Mobil was also awarded a 30% stake in a second LNG project to be developed in the future. This second LNG export project would later be dubbed Ras Laffan LNG or Rasgas (WGI 1992b). When the structure was finalized in January 1993, Mobil was assigned the lead role in all liquefaction operations. The original shareholding structure was maintained for the Qatargas plant and sales.

Table 1. Qatargas Ownership Structure

	Gas Production PSC Contractors	Qatargas LNG Plant and Sales
QGPC	65.0%	65.0%
Total	20.0%*	10.0%
Mobil	10.0%	10.0%*
Mitsui	2.5%	7.5%
Marubeni	2.5%	7.5%

*Responsible for leading operations.

Project Economics

Acquiring the final sales and purchase agreement from Chubu Electric in May 1992 was essential in moving the project forward from the initial planning stage, but accommodating the needs of the Japanese electric utility and investors provided its own challenges. The structure of the contract was designed to emphasize security of supply over price and lifting flexibility. The Japanese partners insisted on a very conservative design philosophy using tried and true frame 5 gas turbines and emphasizing redundancy over innovation and cost savings. Initial plans called for two 2 mtpa liquefaction trains¹², adding a third 2 mtpa train when Chubu exercised its option on for these additional volumes in September 1993. Chubu then brokered the additional 2 mtpa to seven other Japanese companies to retain its leadership (see Table 2).

¹² Some evidence suggests that larger trains might have been feasible and more economical (Troner, 2003).

The Qatargas partners had assurances that they would have a market for the volumes, Chubu was backing take-or-pay terms on nearly all 6 mtpa from the eventual three train project. However, the buyers for the last 2 mtpa could not agree to a pricing formula for Qatargas deliveries. As construction got underway in 1994, Mobil and the project lenders sought financial security in the form of a guaranteed minimum floor price for offtake. There was no precedent for such a floor price in Japanese LNG purchases, and with little pressure to accept the non-Chubu buyers refused these terms and a contract price remained elusive (WGI 1994b). The final price was left to be determined shortly before first delivery on the expectation, according to insiders, that it was to be “competitive” with other LNG sold into Japan (Shepherd 2004).

Table 2: Qatargas Sales Contracts as of 1994

	Volume (tonnes/year)
Train 1 (1997 – 2021)	
Chubu Electric	2,000,000
Train 2 (1997– 2021)	
Chubu Electric	2,000,000
Train 3 (1998 – 2021)	
Tohoku Electric Power	520,000
Osaka Gas	350,000
Tokyo Gas	350,000
Kansai Electric Power	290,000
Tokyo Electric Power	200,000
Toho Gas	170,000
Chugoku Electric Power	120,000
Total	2,000,000

Source: (MEED 1995)

Lacking a floor price, Qatargas partners faced increased pressures to keep costs down. The project benefited from playing suppliers off each other to lower fixed costs for the project. Qatargas’ tender for the liquefaction plant led to a successful award to Japan’s Chiyoda who

bid to do the work for \$1.39 billion, well below competitors M.W. Kellogg Co. and Foster Wheeler who were used to having a lock on such construction projects (WGI 1993; Hillman 1994).

Transportation was anticipated to be nearly 40% of delivered costs. The longer distances from Qatar to Japan—increasing fuel consumption and requiring more tankers—placed further pressures on the project to cut costs (see Table 3).¹³ After getting the market quotations of about US\$300 million for each of the seven LNG tankers needed for the project, Qatargas persuaded Japanese firms Mitsubishi Heavy Industries, Mitsui Engineering, and Kawasaki Heavy Industries to reduce the price in line with the US\$250 million levels Abu Dhabi was able to attain from Finland’s Kvaerner during a competitive period among shipyards with spare building capacity (WGI 1993).

Table 3: LNG Shipping Costs to Japan (Sedegaura)

	US\$/MMBtu*
Arun	0.51
North West Shelf	0.54
Kenai	0.55
Oman	0.81
Qatar/Abu Dhabi	0.91

*Includes cost of LNG consumed during transport. Does not including port costs.

Source: (CERA 1992)

In addition to these cost savings, condensate sales were essential to project economics. Proceeds from 50,000 b/d of condensate stripped from gas produced in the North Field were used to fund upstream development costs borne by the PSC partners and QGPC.

Financing

The Japanese government played a critical role in ensuring the Qatargas project was able to

¹³ Estimated travel time for the 5,150 nautical mile journey to Japan is nearly 3 weeks for each of the seven vessels required for the original 4 mtpa project design (Troner 2003).

find adequate financing—following in the tradition of almost every previous LNG project built to serve the Japanese market (see Box 8.A). The engagement of Japanese firms in every segment of the project—from investors to contracted construction firms to transporters to key buyers—enabled Japanese financial institutions to provide the vast bulk of financing and eased the hurdle point that might have been required to find broader backing (Petroleum Intelligence Weekly 1994). Financing plans for the first two trains of the Qatargas venture were finalized in December of 1993. The Japanese Export-Import Bank (J-EXIM) agreed to provide the bulk of financing for the original 4 mtpa US\$2.9 billion liquefaction train to be constructed at Ras Laffan. J-EXIM provided US\$1.6 billion in loans, with the remaining US\$400 million provided by a consortium of Japanese banks including Bank of Tokyo, Industrial Bank of Japan, Fuji Bank and Sakura Bank. The remaining 30% of the cost of the liquefaction train was to be covered by the shareholders (FT 1995).¹⁴ The project represented a major commitment of the Japanese government to Qatar and the Middle East—through its support of the J-EXIM loans.

Seven new LNG tankers were dedicated to the Qatar to Japan route. Qatar Shipping Company was established as a new private company, owned by National Navigation & Transport (15%), QGPC (10%) and 300 private investors (75%) (WGI 1992b).

Finally, upstream investment costs for the project—drilling, wells, and a pipeline to deliver gas to Ras Laffan—were projected at US\$1.2 billion. European banks were to provide US\$700 million in commercial loans with the US\$500 million of equity contributions from the PSC partners (Hillman 1994).

¹⁴ J-EXIM later provided all of the \$US 550 million debt financing (70% total cost) for the third 2 mtpa train. Shareholders provided the remaining 30% (FT 1996).

Box 8.A. Japanese Financing for LNG Projects: From Brunei to Qatargas

Historically, LNG development and trade has required integrated contracts, with sellers, buyers and financiers bound together in long-term agreements for up to 25 years. In the case of Japanese involvement in the LNG affairs in the past there are three key players: (1) a purchase commitment from Japanese users; (2) official financial agencies to support the investment; and (3) Japan's general trading companies (*Sogo Shosha*) that served as lead organizers or "the glue" for the project.

An examination of all greenfield LNG projects (except Alaska) built to serve the Japanese market—from Brunei and Indonesia in the late 1970s through Qatargas—shows three general patterns. In the first kind of structure, a single Japanese sponsor provides a third party loan, as in the case of Abu Dhabi and Malaysia, or a loan in accordance with the sponsor's share, as in the case of Brunei. In these cases, financial risk was borne by the sponsors in proportion to their share. There are also cases, as in Malaysia, in which the Export-Import Bank of Japan (J-EXIM hereafter) directly financed the gas-producing country's portion of the sponsor loan, with a guarantee provided by the host country's government.

The second type LNG project structure uses a Japanese special purpose company to provide loans to the LNG venture party. This structure is unique to the Bontang and Arun LNG projects in Indonesia (see Chapter 3, this volume). In these cases, a Japanese special purpose finance company, JILCO, provided direct loans to Pertamina to finance the liquefaction plant investment. Financing for JILCO came directly from J-EXIM and a group of associated commercial banks. The main shareholders of JILCO—and thus the guarantors of the J-EXIM loans—were Japanese electric power and gas enterprises, whose investments were in turn backed with overseas investment insurance provided by the Ministry of Trade and Industry (MITI). The unique Indonesian structure required the strong backing of the Japanese government—which was readily available after the 1973 oil shock.

Finally, there is a case in which funds are shared by multiple unincorporated joint ventures. This is the case in the North West Shelf Australia LNG project, where each sponsor bore one-sixth of the funding required for each of the development phases—gas development, liquefaction plant, and shipping. Project finance supported by J-EXIM was introduced for the first time, financing the Japanese sponsor portion (Aoki 1995)

In each of three financing arrangement styles, the Japanese government contributed some form of financial support. In fact, in six of the seven LNG projects in which Japan has participated—Brunei, Abu Dhabi, Indonesia (Badak and Arun), Malaysia, and Australia—all (with the exception of Train F of Indonesia and Alaska) have been principally supported by J-EXIM.

Additional government support is also evident in the form of insurance provided by the Ministry of Trade and Industry (MITI), guarantees provided by Japan National Oil Corporation (JNOC) or co-financing from J-EXIM—the latter playing an important role in securing the participation of Japanese commercial banks in financing the projects.

Price Revisited

The long running battle over prices was not easily finalized. With construction proceeding on the liquefaction trains and loading terminal in 1994 and 1995, there were signals that gas demand in Japan was again stagnating. The Japanese economy was in recession and low oil prices had Japanese buyers rethinking their preference for LNG. Japanese LNG buyers uniformly campaigned against higher formula based pricing with guaranteed minimums, arguing the method was neither justified by efficiency gains in power generation, the environmental advantages of gas, nor higher project costs (WGI 1994b).

Japanese buyers were also hesitant to pay a premium for Middle East gas due to perceived concerns of security of supply from the Gulf. Memories of two regional wars in the previous decade left a lasting impression, and internal events in Qatar in 1995 likely heightened concerns further. In June of that year, Crown Prince Sheikh Hamad Bin Khalifa Al-Thani, armed forces commander and defense minister, staged a bloodless coup while his father, Emir Sheikh Khalifa Bin Hamad Al-Thani, was en route to a vacation in Geneva. The coup shook Qatar relations with its Gulf neighbors, but the Qatargas project itself was not disrupted. In fact, the new Emir Hamad was a strong advocate of expanding gas exports and ties to the West—although the uncertainty around the coup no doubt made negotiating a pricing deal that much harder for the Qatargas partners.

The challenge was that Qatargas was seeking to continue the old practice of the newest project getting the highest price, while Japanese buyers were trying to engineer a downward movement in LNG prices (Shepherd 2004). Qatargas had been started in the “old” era of Asian LNG projects, where Japanese buyers were willing to pay a hefty premium for supply security. By 1997 Asian LNG markets were awash with new offers from proposed projects at

Sakhalin, Yemen, Oman, and Australia. New buyers in South Korea and Taiwan (and later India and China) were competitively shopping among these new potential suppliers, and Chubu and the other offtakers were not keen to accept prices that would place Qatargas deliveries at the top of a declining Asian market.

Qatargas was in a bind. In late 1996, Korean Gas Corp. (KOGAS) demanded the elimination of the minimum price in its contract as a pre-condition to doubling its planned purchases from what was to be the second major Qatari LNG export facility—Rasgas. When KOGAS obtained these terms from Rasgas leaders QGPC and Mobil, it became increasingly unlikely that Chubu and the Japanese buyers would agree to such a price floor for their purchases from Qatargas (APS 1997). When the first cargo from Qatargas arrived in Japan aboard the tanker Al-Zubbarah in January 1997, there was still no agreement on a pricing formula. A provisional price of \$4.10 per MMBtu delivered (CIF) was agreed upon for the first three months of deliveries.

Based on the January 1997 price of the Japanese Crude Cocktail (JCC) of roughly \$23 barrel—to which the price of all other Japanese LNG was linked—the prevailing price for the rest of Japan’s LNG was around US\$4.40 per MMbtu. In these conditions, Chubu was well-positioned to negotiate a pricing formula in its favor. Perhaps not surprisingly, the provisional price of US\$4.10 was extended through September 1997 when the parties still could not agree on a formula price. However, the incentive for Chubu to move to the traditional oil-price linkage was raised considerably during the summer of 1997, when the JCC price dropped to US\$17 per barrel and with it other oil-linked LNG deliveries to Japan fell to around \$3.50 per MMbtu. The pressure to settle the pricing terms eventually brought Qatar’s Energy Minister to Japan in October of 1997 to negotiate on behalf of Qatargas. Finally, near the end of 1997 a price was agreed that brought Qatargas to Japan near the

middle of the market,¹⁵ in line with prices from Australia's North West Shelf project, but just below the most recent Adgas project in Abu Dhabi (APS 1997; MEES 1997; Reuters 1997; Shepherd 2004).

Alternative Projects: Politics Outweighs Economics

GCC Pipelines

In the 1980s, as Qatar began to look seriously at gas export projects, it was proposed that 8 Bcm a year of North field gas could be exported via pipeline to nearby countries such as Saudi Arabia, Kuwait, Bahrain and Dubai. However, the project was blocked by political considerations and economic factors. A related project to pipe Qatari gas to neighboring states and then on to Pakistan also remained stalled through the 1980s and 1990s due to similar economic and political challenges.

In the late 1980s, as the Qatargas partners were angling to solidify the LNG export project, there were also hopes for a regional GCC gas pipeline. But other factors came into play to delay the project from moving forward. Saudi Arabia made significant domestic gas discoveries; and the Gulf War and the subsequent reconstruction period complicated Kuwait's participation.

Qatar was thus left with few regional options. A smaller project to Dubai was proposed, but the high costs of bringing only 6.2 bcm per year of gas via pipeline to Dubai made the project uncompetitive with alternatives. Dubai sought 3 bcm per year of gas for a miscible gas injection project to slow the decline in its oil production and ensure sufficient supply for its own industries and utilities but was only willing to pay less than \$1 per mmbtu, insufficient

¹⁵ According to industry analysts the formula price in Qatargas was set according to $14.85 \text{ JCC} + 90$, where JCC is in \$US per barrel and the resultant price would be in US cents per MMBtu (Shepherd 2004).

to cover the pipeline capital costs of a line from Qatar. Plans for a project to pipe Qatari gas on from neighboring Gulf States to Pakistan also languished with the setbacks to the initial GCC line.

At the time Qatar was moving ahead with its ambitious gas agenda, it was facing a series of territorial conflicts with Saudi Arabia, putting pressure on the already fractious relationship. In September 1992, a confrontation between Bedouins resulted in a minor clash between the two neighbors, resulting in the death of two Qataris and the kidnapping of a third (Cordesman 2003). This small incident reflected Qatar's contention that the kingdom was infringing on Qatari territory by building roads and facilities in the border area and it prompted Qatar to suspend a 1965 border agreement between the two sides that had never been ratified. Qatar also pulled its participation in the GCC's ongoing Peninsula Shield exercises, which were designed to protect the borders of Saudi Arabia and Kuwait against Iraq.

Despite mediation efforts, there were further clashes, including an incident in October 1993 that resulted in several more deaths and a handful of border skirmishes that occurred in 1994. A diplomatic row caused Qatar to boycott the November 1994 GCC summit conference (Cordesman 2003).

By 1995, relations between Saudi Arabia and Qatar boiled over again when the Emirate questioned the choice of a Saudi candidate to take over the position of secretary general of the GCC. Although the GCC had no formal rules regarding the nationality of the secretary general, Doha claimed that the rotation should be conducted alphabetically, which conveniently would favor a Qatari choice, as the previous job holders had been Kuwaiti and Omani, respectively. Faced with strong opposition by Saudi Arabia and its allies, the new Emir and his foreign minister walked out of the GCC meeting (Cordesman 2003).

There were other political reasons behind the opposition to the Qatari candidate. Emir Hamad had angered the Kingdom and other GCC states by being the first Gulf state to establish economic ties with Israel, agreeing in October of 1995 to a letter of intent to supply Qatari gas to Israel. This was a bold indication of Qatar's pursuit of a maverick foreign policy that would be at odds at times with the GCC and evidence that Qatar would pursue alternative markets for its gas if the closest markets via the GCC would not be available.

Following the December 1995 GCC meeting, Saudi Arabia made a public statement of welcoming the deposed Qatari emir, Sheikh Khalifa, as did the governments of Bahrain and the UAE, which gave the former ruler the opportunity to claim he was determined to come back to power.

Ties between Doha and Riyadh degenerated even further in February 1996, when Qatar's Emiri Guard arrested hundreds of supposed coup plotters suspected of having support from neighboring states (MEES 1996). Before things could spiral too far out of hand, Qatar conceded to an agreement in March 1996 with the other GCC states that the position of secretary general within the organization would be selected through an alphabetical rotation and that the secretary general would serve no more than two three-year terms. Unfortunately, for Qatar, the fact that a Saudi then held the post meant that every other member state of the GCC would have a representative in the post before Qatar came up through the alphabetical rotation.

This strategic decision apparently led the way for Saudi Arabia, Bahrain and the UAE to endorse Sheikh Hamad's rule and for Bahrain to agree to Qatar's request that the long-standing Bahrain-Qatari dispute over territorial ownership of the Hawar Islands be

adjudicated by the International Court of Justice, which led to a March 2001 ruling giving Bahrain sovereignty over the main island in dispute.¹⁶

In recent years, as relations inside the GCC have improved and regional demand for gas increased, some elements of the regional gas pipeline have moved ahead. In December 1998, the UAE Offsets Group (UOG), a UAE state-backed corporation, signed an agreement with Qatar to be the sole supplier and marketer of Qatari gas to the UAE and Oman. UOG then signed preliminary memorandums of understanding with Qatar, Oman and Pakistan in June 1999. In December 2002, the project started in earnest when Qatar and the Dolphin joint venture, comprised of the UAE Offsets Group (UOG) and France's TotalFinaElf, signed a 25-year development and production-sharing agreement to pipe as much as 21 Bcm per year of Qatari gas across the Gulf to Abu Dhabi by mid-2005.

Through the project, Qatari political links with the UAE and Oman would strengthen, with Qatari gas flowing through a newly built subsea pipeline to the UAE built and operated by Dolphin Energy, with the line extending to Oman and perhaps ultimately Pakistan. This economic link between the three Gulf neighbors underscores the political benefits that Qatar will derive. The pipeline project links Qatar to its neighbors in a manner that does not involve Saudi political, economic or territorial participation, giving these three Gulf countries autonomy in a critical development that leaves out the Saudi kingdom.

The push for the UOG's Dolphin Project was the result of the powerful backing of key players in the region and the fact that this project, unlike others proposed during the same timeframe, succeeded was largely due to the top Gulf leadership. The UOG's patron was Sheikh Mohammed Bin Zayed Al-Nahayan, chief of staff of the UAE Armed Forces and son

¹⁶ Al-Ahram Weekly. "Gulf emirates settle dispute." Rasha Saad. March 22-28, 2001.

of UAE President Sheikh Zayed Bin Sultan Al-Nahayan, but the Dolphin Project also clearly had the full support of the Qatari emir and Omani Sultan Qaboos Bin Said.¹⁷

In the lead up to the MOU signings, the respective Gulf states worked to resolve long-standing border disputes. In May of 1999, the UAE and Oman signed an agreement to demarcate their border at Umm Zummul, where the borders of Saudi Arabia, Oman and the UAE meet. That border agreement – which was formalized in December 2003 -- was followed in June 1999 by Qatar and Saudi Arabia agreeing to delineate their shared 60 km land/sea border, which led to the final border accord signed between the two in March 2001. The resolution of the numerous border issues can be attributed to the leadership of de facto Saudi ruler Crown Prince Abdullah Bin Abdul-Aziz Al-Saud, who was determined to settle these long-standing conflicts within the Gulf states, as he assumed more power.

In a separate agreement, Qatar gave Dolphin rights to build a 434 km underwater pipeline running from the Ras Laffan terminal to Tawilah in Abu Dhabi, allowing for surplus volumes of Qatari gas to be exported. The Dolphin group awarded Foster Wheeler and Sofresid a \$10 million upstream front-end engineering and design contract, and started drilling the first of 16 exploration wells in 2002. Most of the gas will be consumed in Abu Dhabi for power and water generation, but some is to be sold to Dubai for domestic industry.

In addition, Qatar Petroleum and Exxon-Mobil East Marketing Ltd. partnered in 2000 to form the Enhanced Gas Utility (EGU) project. This US\$1.2 billion project will develop North Field gas for domestic use as well as for export via pipeline to Bahrain and Kuwait. In 2002, an agreement was signed with Bahrain to provide from 5 to 8 Bcm of North Field gas per

¹⁷ The Middle East. “Dolphin project surges ahead.” Neil Barnett. February 2000.

year as a part of project to construct a regional pipeline grid. Under this agreement, gas deliveries were expected to start in 2006.

Additionally, the Gas Sale and Purchase Agreement was signed with Kuwait in July 2002, and a US\$500 million project to construct 600 km underwater pipeline connecting Ras Laffan and Ras al-Zoor was unveiled. The pipeline would provide 10 Bcm of natural gas to Kuwait starting from 2005. However, the recall of the Saudi Ambassador to Doha in October 2002 following Saudi accusations that the Qatari government had allowed the Al-Jazeera television network to broadcast programming that slandered the Saudi royal family, including its founder, has raised questions about whether the line to Kuwait will be completed.¹⁸ Qatari officials expressed concerns at the time that the diplomatic row should not affect the 580-km subsea gas pipeline project that has to cross Saudi territorial waters in order to reach Kuwait.

Plans to extend the Oman pipeline leg to Pakistan remained stalled to date. Pakistan's financial difficulties and competition of possible gas imports to Pakistan from Iran weigh into the deliberations for moving the ambitious pipeline project forward (EIA 2004). By contrast to the large and established Japanese market, the Pakistani market is not well developed. In addition, questions remain about whether Pakistan's financial situation, the size and nature of future Pakistani gas demand, regulatory and legal structures for sales to Pakistan, and stability of the Pakistani government.

A "Peace Pipeline" to Israel?

Another later pipeline project, a line to extend to Israel, also remains on hold. The decades-old plan for a long-term gas supply arrangement to Israel may have been too ambitious a

¹⁸ Middle East Economic Survey. "Saudi Arabia, Qatar Commence Talks Aimed At Improving Diplomatic Relations." June 21, 2004.

concept to put into practice given the political realities in the region and the pressure Doha felt from its GCC neighbors as well as other Middle East nations. The proposal came out of slightly improved relations between the GCC and Israel and the prospects of a substantive Palestinian-Israeli peace. Indeed, the signing of the letter of intent between Qatar and Israel in November 1995 came two months after the GCC endorsed revoking aspects of the economic boycott on Israel and one month after the Qatari foreign minister expressed Doha's support for the cancellation of the primary economic boycott on Israel.¹⁹

In April 1996, Israeli Prime Minister Shimon Peres made the first official visit by an Israeli premier to Qatar, and an Israeli trade mission opened in Doha in the spring of 1996. However, a few months later, Israel declared that the letter of intent had expired and in November of that year, Doha insisted that any concrete deal with Tel Aviv would be dependent upon progress in the Palestinian-Israeli peace process. Momentum on a Qatari-Israeli gas deal was further slowed when Qatar joined the other members of the Arab League in March 1997 in calling on an end to normalization of ties with Israel and the closure of mutual trade and representative offices as a result of escalating violence between Israeli and Palestinians in the West Bank and Gaza.²⁰

By November 2000, continued deterioration in Israeli-Palestinian relations prompted Qatar formally to close the Israeli trade mission following extreme pressure from Saudi Arabia, Syria and others who were threatening to boycott the Organization of Islamic Conference (OIC) summit that was to be hosted by Doha later that month. That meeting, in particular, was convened by the OIC to discuss Israeli violence following the onset of the second *Intifada*, which was spurred on by then Israeli opposition leader Ariel Sharon's visit to the Al-

¹⁹ Jewish Telegraphic Agency. "Israel and Qatar sign oil deal from Amman confab." Naomi Segal. November 3, 1995.

²⁰ Reuters. "Oman severs low-level ties with Israel." October 12, 2000.

Aqsa mosque in Jerusalem in late September of 2000. Although Qatar had steadfastly refused to sever economic ties with Israel up to that point, Doha became uncomfortable lending the appearance of tacit support of Israel during the renewed Palestinian uprising which had been viewed across the Arab world on regional satellite stations.

While the trade mission was closed in 2000, Israeli diplomats quietly remained in Doha, and Qatar continued to maintain links with Israel, conducting discrete negotiations with Tel Aviv. In fact, in May 2003, Qatar raised the prospects of boosting its relations with Israel should progress be made in the Middle East peace process. In an interview with Al-Jazeera, Qatari Foreign Minister Sheikh Hamad Bin Jassem Al-Thani said that, “We committed for a certain time to long talks with the Israelis because we must adopt practical steps to put an end to the killing between Israelis and Palestinians.”²¹

Although continuing Qatari-Israeli diplomatic relations mean that the pipeline project could some day be revived, it is unlikely that the project will move forward in the near term, given the deterioration of the Middle East peace process and bleak prospects for a peace agreement in the immediate term.

An LNG Boom

In the wake of Qatargas, Sheikh Hamad has moved aggressively to open up the oil and gas sector, inviting in international oil majors into joint-venture production deals, at a time when Saudi Arabia and others were reluctant to move quickly in this direction.

A debottleneck project on the three Qatargas trains, completed in 2002, brought all three to a working capacity of 2.88 mtpa for a total working capacity of 8.64 mtpa, resulting in spare

²¹ Agence France-Presse. “Qatar ready to boost ties with Israel if Mideast peace accelerates.” May 16,2003.

capacity (above nameplate) of 1.45 mtpa. In 2001, Gas Natural of Spain contracted for this spare capacity from 2001 to 2009, of which almost two-thirds would be delivered on an FOB basis. The contract was later extended to 2012 for 0.70 mtpa. And by 2005, another debottleneck will bring total working capacity to 10.32 mtpa, over 4.3 mtpa greater than the original long term supply contracts to Japan. Gas Natural contracted for another 1.45 mtpa for 20 years beginning in 2005. The overall cost of the debottleneck projects is anticipated to be less than US \$200 million, a mere fraction of the original project costs.

Term contracts account for 100% of nameplate capacity; however, spare working capacity allows Qatargas to sell several spot cargoes per year. Spot cargoes have reached major markets in Europe, Asia, and United States by purchases from Gas Natural, Chubu, and CMS, respectively. It is interesting to note that flexibility proved useful to the Japanese market during 2002 and 2003. Several LNG cargoes were diverted to Japan from Spain to help mitigate possible power generation shortages when Japan was forced to shut down its nuclear power plants due to safety concerns in 2002 and 2003.

Qatargas II, a separate 2-train project with capacity of nearly 16 mtpa, will have the first train online by 2008 and the second by 2010. The US\$25 billion Qatargas II project, composed of Exxon Mobil at 30 % and QP at 70 %, will be unique to the LNG market in several aspects. First, each train will have a capacity of up to 7.8 mtpa, substantially greater than the largest currently being used in Egypt at a capacity of 5 mtpa. In addition, it is the first project in which a partner will be the sole buyer on a take-or-pay basis. Exxon Mobil and QP plan to jointly own and operate a receiving terminal in Milford Haven, Wales to import the full volume of the project. At a cost of nearly US\$5 billion, a fleet of up to 16 vessels of

200,000-230,000 cubic meters is currently being built to accomplish this feat.²² There are currently talks with Total as an additional partner to increase the expansion by an equal sized third train. In July 2003, a heads of agreement was signed by ConocoPhillips and QP to pursue the Qatargas III project, which will consist of a new LNG train and terminal to be constructed at the Ras Laffan Industrial City. ConocoPhillips will purchase the full volume and regasify and market 7.5 mtpa within the U.S. by 2008 or 2009. The company has also proposed a 180,000 b/d GTL plant.

Conclusion

The twenty-six year delay between the discovery of the North Field in 1971 and the first exports of gas in 1997 is the product of domestic political and economic factors, as well as inter-state tensions and regional instability. During the 1970s, oil sales were booming and the North Field project was not deemed by the Emir to be suitably attractive to justify significant investment. The renovation of the oil industry and adding more oil reserves were the top priority. LNG projects required long lead times and high capital costs, meaning that Qatar faced great risks of becoming a debtor nation if such a project failed.

When oil revenues began to decline in the early 1980s and the impetus for gas development became more acute, a lack of institutional development—or more simply the vagaries of the Emir’s one-man rule—stalled Qatar’s LNG development plans. Meanwhile the embroiling “Tanker War” between Iran and Iraq in the Persian Gulf swayed Japanese investors away from the region and Japanese energy demand waned overall.

BP’s withdrawal from Qatargas in January 1992—based on its assessment of low returns and

²² Petroleum Intelligence Weekly, “Exxon Takes a \$25 Billion Bet on Qatar,” July 19, 2004.

BP weak cash position at the time—placed the project in jeopardy, but the engagement of Mobil later that year was critical to the viability of the Qatargas project, providing a strong signal to other investors about the security and stability of the country and project. Mobil was instrumental in rearranging the project organization to lower costs in a manner that could make the project internationally competitive. The entrance of U.S.-based Mobil provided additional international security benefits to Qatar as well. Qatargas thus became a joint project between QGPC, Mobil, Total, Marubeni and Mitsui. American, French, and Japanese interests were all represented—the American flag in particular provided major security benefits to Qatar. The American troop presence in the region, and in Qatar in particular, was at all time highs following the Gulf War in 1991.

Qatar had incentives to attract Mobil, as it hoped to strengthen its security relationship with the United States. The push to host U.S. troops was supported by Sheikh Hamad, who in the aftermath of the 1991 Gulf War, actively cultivated military ties with Washington as the Emirate’s defense minister. American commercial participation in Qatargas, as well as U.S. military support for Qatar’s overall national security and for the security of the GCC, gave comfort to potential Japanese participants who had previously feared too much political risk was associated with the LNG export project.

The Japan, with a view to diversifying LNG sources and ensuring a new long-term supply source in the face of new buyer competition for LNG from South Korea and Taiwan, strongly supported the project. Tokyo provided credit strength and commercial backing that was critical to the success of the Qatargas development. In Qatargas and previous Japanese LNG import projects, the trading companies have acted as the “glue” to connect LNG users and the supplier as well as financial institutions, both official and private, or security firms together to form a feasible chain of actors.

The success of the Qatargas project can be linked in great measure to its traditional organization where Japanese firms dominated sales, financing and construction, tapping government-backed financing support. This kind of Japanese-led, comprehensive program has not been repeated on the same scale in the increasingly competitive, market-oriented LNG market of the late 1990s. Japanese intervention to pay a security of supply premium appears to have reached a plateau, forcing suppliers to become more flexible in contract pricing and terms. Suppliers, under pressure from buyers, particularly in Korea and China, have increasingly switched to FOB sales, foregoing additional margins from shipping services. The transition to this increased commercial flexibility is evidenced in Qatargas' marketing efforts for additional volumes from debottleneck and expansion projects.

From the Qatari perspective, the shift in its energy export portfolio to natural gas has allowed it to move to a commodity less influenced by Saudi Arabia's leadership than oil, since the Kingdom had no plans to export natural gas abroad. The move to be a major gas exporter fit with Qatar's desire to become more independent of the Saudi Arabia's influence and to attain economic and security relationships that were outside of direct Saudi control. The gas policy first embraced by Qatar two decades ago has also helped the Gulf Emirate establish its own economic and military ties with Eastern and Western powers and, in particular, to strengthen its security relationship with the United States, outside the framework Saudi Arabia's orbit.

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Appendix A. Timeline of Important Events

1971		Discovery of the North West Dome (North Field) by Shell
1974		Qatar General Petroleum Company (QGPC) established
1977		Nationalization of Qatari oil industry. Japanese trading companies initiate contacts with QGPC.
1979		Oil production peaks and begins to decline (until 1986).
1980		Shell presents reports evaluating possible options for use of North Field
1981		Japanese buyers sign first commitments for LNG from North West Shelf LNG (Australia).
1982		Decision reached to proceed on LNG joint venture, QGPC retains 70% Shell, BP and CFP (Total) each offered 7.5% stake. Shell later withdraws.
1984		Qatargas officially established. Development of North Field officially decided by Qatar government. Only Marubeni participated from the Japanese group. Escalation of the "Tanker War" in the Gulf by Iran and Iraq
1985		Mitsubishi and Mitsui and Japanese buyers sign long-term contracts with North West Shelf LNG
1987		Phase 1 of North Field development started.
1989		Return of Mitsui to the Qatargas project
1990	Aug	Iraq invades Kuwait; Exodus of foreign contractors from the region
	Dec	Discussions on Phase II pipeline expected at GCC summit, distracted by Kuwait situation
1991		Letter of Intent signed by Chubu for 4 mtpa deliveries from Qatargas
		Total signs upstream PSC with QGPC
	Sept	Phase 1 production of North Field inaugurated
1992	Jan	Official retreat of BP from the Qatargas project
	May	Chubu Electric signs SPA for 4 mtpa from 1997 to 2021
	Aug	Mobil announces entrance to Qatargas
	Sept	Qatar Shipping Co. established
	Sept	Border disputes between Qatar and Saudi Arabia
1993	Jan.	Final shareholders meeting for Qatargas.
	Apr	First well spudded for technical evaluation
	Sept	Chubu exercises option to purchase additional 2 mtpa deliveries from third train
	Dec	US\$2 billion loan signed by consortium of Japanese private banks
1994	Jan	MITI backs JNOC US\$350 million financing for liquefaction plant and remainder of financing secured, led by J.P. Morgan
1995	May	Drilling operations commenced
	June	Sheik Hamad takes power from his father, Emir Sheik Khalifa
1996	July	First gas from the North Field received on-shore
	Sept	First condensate loaded for export
	Nov	First LNG vessel, Al-Zubarah delivered to Qatar
		Start up of LNG train 1, first LNG produced
1997	Jan	First LNG delivery to Chubu Electric