Qatar's gas revolution

Having risen rapidly to become the LNG-export industry's world leader, growing domestic gas demand has spurred a change in Qatar's priorities. By Justin Dargin, research fellow, Dubai Initiative, Harvard University

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Qatar was a relatively late entrant to the gas industry, but is now a leading producer. In recent years, the country has positioned itself to take advantage of rising global gas demand and its huge natural gas reserves.

The country's proved reserves account for nearly 14% of the world total, according to Cedigaz. Its estimated 25.46 trillion cubic metres (cm) of gas are the third largest in the world, behind Russia and Iran. Qatar's reserves – mostly to be found in the offshore North Field, the world's largest non-associated gas-field – exceed the entire reserves of the Americas, western Europe and sub-Saharan Africa combined, while its reserves-to-production ratio is estimated at greater than 100 years.

Qatar compares favourably with its two closest competitors, providing a secure investment climate for investors: its gas sector is not groaning under international sanctions, as is Iran's; nor has Qatar incurred opprobrium for its actions in international markets, as has Russia.

Driven by a strong pro-market philosophy, Qatar leads the world in LNG production and is involved in every sector of gas trade: LNG, gas-to-liquids (GTL) and pipeline supply. The International Energy Agency predicts Qatar could secure one-fifth of world gas trade by 2030 (see Figure 1).

From Shell's discovery of the North Field, in 1971, it took 26 years for Qatar to launch its first LNG plant in early 1997 – the 7.7m tonnes a year (t/y) three-train Qatargas facility. It took only 12 years to expand production to 53.6m t/y (see Table 1).

While buffeted by the global economic downturn, Qatar has remained focused on its ambitious LNG plans to raise capacity to 77m t/y by 2012 – over three times greater the next largest exporter, Malaysia. Qatar's rising gas-export business has supported its lead over its Gulf neighbours, most of which have struggled during the recession, with many projects cancelled as a result of the credit freeze. Qatar, meanwhile, registered economic growth of 11% in 2009.

And the benefits of Qatar's prodigious LNG production have not rewarded only a few narrow industries. Revenues have been invested in sectors as diverse as education, infrastructure growth and international equity acquisitions in large multinational corporations.

One sour note is Iran's repeated accusation that Qatar is siphoning Iranian gas from its portion of the North Field, known as South Pars. Iran claims South Pars gas is migrating at an extremely fast rate to the Qatari side, leaving Iran with a low-quality sour gas, which is more difficult to produce.

In a significant development, Kuwait became the Middle East's first LNG importer in 2009. Under a five-year contract, Kuwait agreed to import nearly 1.6m t/y from RasGas. Kuwait had initially hoped to import Qatari gas through a subsea extension of the Dolphin pipeline project, which delivers Qatari gas to the UAE. But the plans were scrapped following Saudi Arabian objections over the pipeline route.

Under a second regional deal, Dubai has signed a 15-year agreement with Qatargas to supply 1.5m t/y from 2010. And RasGas' chief executive, Hamad Rashid Al Mohannadi, says more regional LNG contracts are possible. According to Wood Mackenzie, a consultancy, rising gas demand in the Mideast Gulf will see the region's share of global LNG exports fall by 10-12% between 2012 and 2020.

Of Qatar's own rising domestic demand, energy minister Abdullah Al-Attiyah, says: "We need the gas. We have to give domestic supply priority." Official Qatari forecasts predict demand will nearly triple by 2012, from 45m cm/d to 133m cm/d.

Qatar's power sector is single most gas-hungry industry. Generating capacity is set to rise to 13 gigawatts (GW) by 2014, from a mere 1.2 GW in 1997. This year alone, Qatar will add 3.2 GW of gas-fired capacity, at a projected cost of $2.2bn.

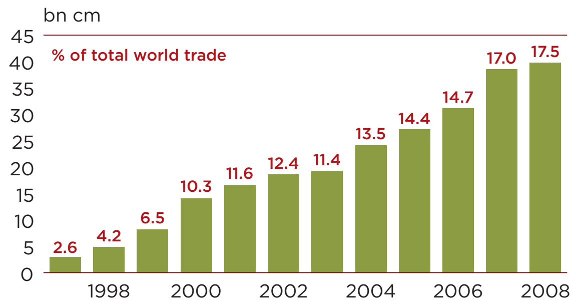
To help meet demand, Qatar Petroleum (QP) and ExxonMobil launched phase two of the Al-Khaleej gas project (AKG-2) to increase supply to the domestic market by 42.5m cm/d. As well

Table 1: Qatar's LNG-export capacity

Existing	Start-up	Number of trains	Capacity (million t/y)	Process method	Shareholders
Qatargas 1 T1-3	1997	3	9.5	APCI	QP 65%; Total 10%; ExxonMobil 10%; Mitsui 7.5%; Marubeni 7.5%
RasGas 1	1999	2	6.6	APCI	QP 63%; ExxonMobil 25%; Itochu 4%; LNG Japan 3%; Korea RasGas LNG 5%
RasGas 2 T1	2004	1	4.7	APCI	QP 70%; ExxonMobil 30%
RasGas 2 T2	2005	1	4.7	APCI	QP 70%; ExxonMobil 30%
Qatargas 2 T1	2009	1	7.8	AP-X	QP 70%; ExxonMobil 30%
Qatargas 2 T2	2009	1	7.8	AP-X	QP 65%; ExxonMobil 18.3%; Total 16.7%
RasGas 2 T3	2007	1	4.7	APCI	QP 70%; ExxonMobil 30%
RasGas 3 T1	2009	2	7.8	APCI	QP 70%; ExxonMobil 30%
Present capacity			**53.6**		
Under construction					
Qatargas 3	2010	1	7.8	AP-X	QP 68.5%; ConocoPhillips 30%; Mitsui 1.5%
Qatargas 4	2010+	1	7.8	AP-X	QP 70%; Shell 30%
RasGas 3 T2	2010	1	7.8	APCI	QP 70%; ExxonMobil 30%
Ultimate capacity			**77.0**		

Source: Petroleum Economist LNG Data Centre

Figure 1: Qatari LNG export history



Source: Cedigaz

as meeting local demand, AKG-2 reflects Qatar's aim to ensure optimal utilisation of domestic hydrocarbon resources. As the 2007 cancellation of ExxonMobil's Palm GTL project illustrates, domestic demand has higher priority than export projects.

And Qatar does not want to lock into a large number of export contracts only to find itself in the same position as the UAE and Oman – both contracted to export LNG, but both reliant on imports from Qatar to meet domestic shortages. Neighbours eagerly awaiting incremental Qatari gas supplies will probably be disappointed. And any available LNG cargoes for delivery to Gulf markets will be priced competitively.

But the rapid ascension of Qatar's gas-driven, LNG, GTL and pipeline export industries may have taken its toll. Questions raised over the sustainability of the North Field's reserves led to a 2005 moratorium on further development to allow detailed reservoir studies to be completed. Originally, the moratorium was planned to end in 2007, but that deadline has been repeatedly extended, most recently in 2008, until 2013-14.

Many geologists believe the field is a complex reservoir, which would increase extraction costs by necessitating enhanced production methods and additional wells. The moratorium studies should clarify the North Field's reservoir characteristics, but these studies cannot be completed until all projects allocated gas are on line. The last sanctioned pre-moratorium project was Barzan – another domestic supply development – and its impact on the field may not be fully ascertained until 2015.

Regardless of the North Field's prognosis, there is no doubt Qatar will exercise much more discernment over future gas allocation to its various projects. With its October 2006 announcement that the moratorium was to be extended for three years, QP issued a curt statement outlining Qatar's new position on exports: "If we decide after [the moratorium] to have new developments, the first priority will be securing sufficient reserves for our fast-growing power and desalination sectors, and for local industry development. Then we will think about exports."

The statement made quite clear that, even when the moratorium is lifted, export-led gas projects will be subordinated to domestic demand. Qatar for much of the late 20th century looked outward, but now it seems domestic priorities have precedence over further LNG expansion and regional exports. •

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Justin is also author of *The Dolphin Project: The Development of a Gulf Gas Initiative* (OIES Press Jan 2008); and *Desert Dreams: The Quest for Gulf Integration from the Arab Revolt to the Gulf Cooperation Council* (forthcoming summer 2010)