

An Overview of Qatargas with an Emphasis on Sulphur Production, Handling & Export

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Sulphur Overview

Sulphur Production in the Oil & Gas Industry:

- “The oil and gas industry *is* the sulphur industry” – *The Sulphur Institute*
- Discretionary sulphur (mined Frasch and pyrites) production declining
- More sour (vs. sweet) gas and oil is being processed
- Stricter environmental regulations for sulphur emissions (bunker fuels, diesel, gasoline, etc.)
- Of the 65.1 MMT of sulphur produced in 2003, 43.9 MMT (67%) was sulphur that was recovered as a direct result of the gas and oil industry

Sulphur Consumption in the Fertilizer Industry:

- In 2003 the manufacture of fertilizer was responsible for approximately 56% (33.4 MMT) of the world's sulphur consumption
- Sulphur is now recognized as the 4th major plant nutrient

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Qatargas General Information



Overview:

- 3 LNG Trains
- Produce over 8.5 Million Metric Tonnes (MMT) of LNG in 2004
- Produce over 55,000 BBLS per day of field and plant condensate
- Produce approximately 450 MT per day of sulphur

Key LNG Customer's of the Company:

- Chubu Electric
- 7 other Japanese Buyers
- Gas Natural
- British Petroleum

Key Milestones in the Company's History:

- May 13, 1992 first long term SPA with Chubu Electric (4 MMT) signed
- December 31, 1994 second long term SPA with 7 other Japanese Buyers (2 MMT) signed
- September 26, 1996 loading of the first condensate cargo
- November 15, 1996 first LNG production
- December 26, 1996 the first cargo of LNG departed from Ras Laffan
- February 26, 1998 the first sulphur cargo was loaded
- April 24, 2003 500th LNG delivery under our Japanese long term SPAs

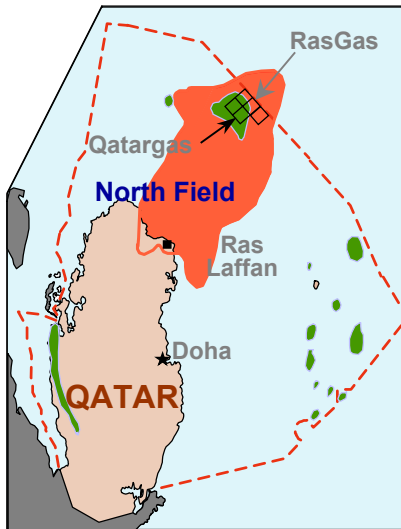
Qatargas Project: Shareholders



MITSUI & CO. LTD.

	Upstream	Downstream
Qatar Petroleum	65%	65%
Total	20%	10%
ExxonMobil	10%	10%
Marubeni Corp.	2.5%	7.5%
Mitsui & Co. Ltd.	2.5%	7.5%

The North Field



- Discovered in 1971
- World's Largest Non-Associated Gas Field
- > 900 Trillion Cubic Feet (TCF) in total proven reserves
- QP started using the gas for domestic requirements in 1991
- Qatargas was the next project to start using the gas in 1996 when first gas from NFB was received onshore
- QG requirement for initial 3 LNG trains for 25 years is only approx. 1% of this amount

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Qatargas LNG Overview



Gas



LNG



**Gas
Production**

**Gas Treating &
Liquefaction**

- QG block is located approx. 80 km offshore
- 20 separate wells
- Relatively shallow water (approx. 53 M)
- 32" pipeline brings approx. 1,500 MMSCF of gas onshore each day
- 95 staff located offshore

- Field condensates are first stripped out, stabilized, and stored for later export
- Gas is treated (must remove all impurities) and then is liquefied using a mixed refrigerant cycle
- Sour gas stream is generated into liquid sulphur
- Plant condensate is removed during the liquefaction process
- Tremendous amount of utilities required to make LNG (power, cooling water, fire protection, etc.)

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Qatargas LNG Overview (cont.)



- LNG is stored in specially constructed tanks onshore prior to export
- QG currently has one berth dedicated for LNG export
- QG have 10 LNG vessels currently dedicated to our Japanese LNG sales contracts
- Current vessels are 138,000 cu3 capacity
- Roundtrip to Japan is approx. 31 days
- LNG is often referred to as a "floating pipeline"

- Unloading facility to berth and unload LNG vessels
- Specially constructed storage tanks
- Vaporizers convert the LNG back to gas
- Gas is sent to power plants or sent into pipelines to the end consumer
- "Cold" energy from the LNG can be used for freezing, CO2 refrigeration, sea water desalination, etc.
- Developing offshore terminals to accept the import of LNG

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Qatargas Sulphur Handling & Export



- Liquid sulphur is produced as a result of the Claus process and is stored in this tank



- Liquid sulphur is formed into granules



- Solid sulphur goes to the truck loading station



- Loaded into Trucks

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Qatargas Sulphur Handling & Export (cont.)



- Trucks transport sulphur to port



- Sulphur is stored in silo awaiting export



- Sulphur is loaded onto bulk carriers via the shiploader

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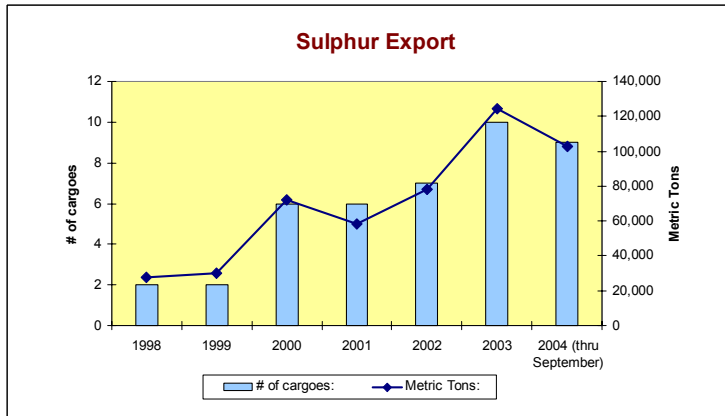
Qatargas Typical Sulphur Specification



Color:	Bright Yellow
Type:	Granulated Sulphur in Bulk
Purity (on dry basis):	99.8% wt Min.
Organic Matters:	500 PPMW Max
Ashes:	300 PPMW Max
H ₂ S:	10.0 PPMW
Acidity as H ₂ SO ₄ :	50.0 PPMW
Chloride as CL:	5.0 PPMW
Moisture Content:	0.50 % wt Max
Commercially Free from Arsenic, Selenium, and Tellurium	

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Majority of cargoes have been destined for India

Debottlenecking Project:

- Upgrading the Mixed Refrigerant gas turbines and compressors and increasing the power of the propane cycle by replacing the main and booster compressors with larger units
- When completed it boost the 3 existing LNG trains total capacity to approx. 9.2 MMTPA
- Scheduled for completion in early 2005

Qatargas II Project:



- Multi Billion Dollar Project
- Shareholders: 70% Qatar Petroleum, 30% ExxonMobil
- June 2002 shareholders sign Heads of Agreement (HOA)
- Focusing on economies of scale - two 7.8 MMTPA LNG Trains will be the largest LNG trains ever built to be coupled with the world's largest LNG ships ever built (200-250 km³ each)
- Various agreements almost finalized, Front End Engineering Design (FEED) completed
- Winter 2007/2008 first gas sales
- Receiving terminal in the UK (Wales) is being built to receive the gas

Qatargas Expansion Activities (cont.)



Laffan Refinery:

- Shareholders: 80% Qatar Petroleum, 10% Total, 10% ExxonMobil
- Project launched in November 2002
- Designed to process 140,000 barrels per day of unsweetened condensate into naphtha, kerosene, gasoil, LPGs
- Startup in late 2007/early 2008

Qatargas 3 Project:



- Multi Billion Dollar Project
- Shareholders: 70% Qatar Petroleum, 30% ConocoPhillips
- Project launched in July 2003 when a HOA was signed between the two shareholders
- Focusing on economies of scale – one 7.8 MMTPA LNG Train to be coupled with the world's largest LNG ships yet to be built (200-250 km³)
- First gas sales targeted for 2009
- Gas destined for delivery into the USA

All four of these expansion projects will produce additional sulphur that will be recovered, formed, and exported

No plans at present for Qatargas to use Acid Gas Injection (AGI)

Qatargas' Viewpoint towards Sulphur



Industry Involvement:

- Qatargas believes that it is important to be a responsible member of the sulphur producing community
- Promote sulphur consumption to keep supply & demand in balance
- Qatargas (via Qatar Petroleum) has recently joined *The Sulphur Institute*
- Worked with the IFA to provide data on our sulphur production

Marketing Beliefs:

- Qatargas supports a fair and steady pricing policy for sulphur
- Look for win-win relationships
- Interested in long term relationships

Reference Material



Useful Internet Sites:

Qatargas:

www.qatargas.com

South Hook LNG (QGII):

www.southhooking.co.uk

Qatar Petroleum:

www.qp.com.qa

Ras Laffan Industrial City:

www.raslaffan.com

The Sulphur Institute:

www.sulphurinstitute.org

