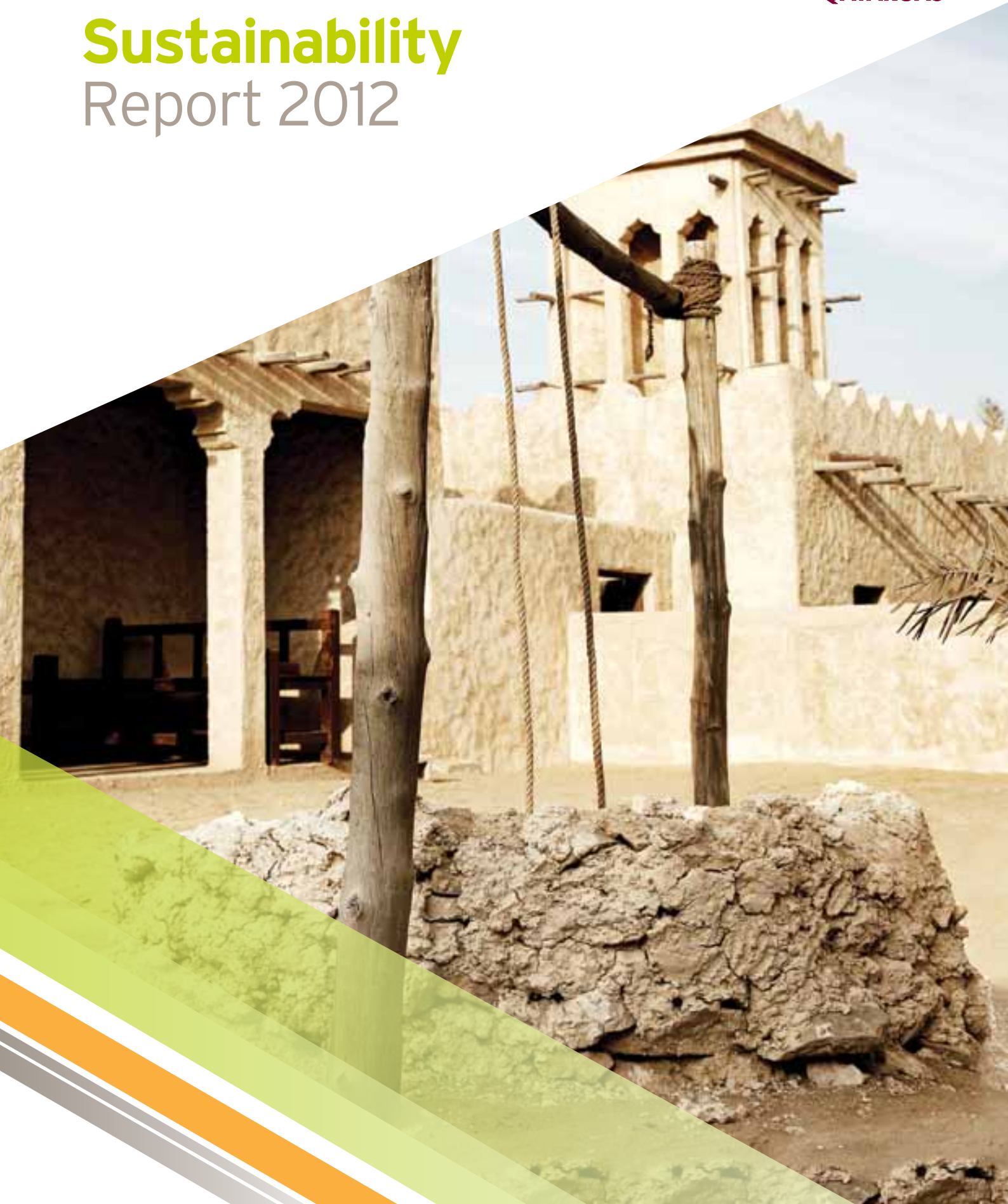


# Sustainability Report 2012



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- 17 trees,
- 3.3 cubic yards of landfill space,
- 4,000 kWh of energy,
- 7,000 gallons of water.

(Source: U.S. Environmental Protection Agency)



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## STATEMENT FROM THE CHIEF EXECUTIVE OFFICER



This is our third annual Sustainability Report. Looking back on the progress we have made so far, I am sincerely proud of the achievements we made in 2012 on our Corporate Social Responsibility (CSR) agenda and am pleased to share them with our stakeholders and the general public.

For Qatargas, having just completed its transition from a very hectic project development phase involving the quadrupling of production to become the largest LNG producer on earth, 2012 marks the first full year with all Qatargas ventures operating at or near full capacity. While firmly rooting our leadership in the global LNG industry, this achievement was made possible thanks to sustainable management efforts to foster a creative corporate culture, operational excellence, effective compliance management, shared communications, and our social contribution activities. Our success is a credit to the dedication and loyalty of our employees, shareholders and customers.

**We in Qatargas are committed to business processes that focus on operating efficiency, investment in people, correct ethical conduct, innovation, safe working practices, and CSR. In our pursuit of this objective, I can say with all surety, and as this report clearly indicates, that we've made some good progress in areas such as water and energy management and the health of our workforce.**

Corporate social responsibility may be defined as the actions we take to promote and protect the environmental, social and economic interests of the communities we deal with, whether directly or indirectly, and the future generations our activities may impact. A key element in this area is our pledge to conduct our business in a manner that embeds sustainability across the Company and promotes continuous improvement in all our business practices and operations.

Our mid-term sustainability targets are defined within Qatargas' vision 2015 "to be the world's premier LNG company". The vision and targets are also in line with and complement the intentions of the Qatar National Vision (QNV) 2030, a holistic approach to the development of the State of Qatar. Qatargas' perennial objective as a respected citizen of the State is to play an integral supporting role in the success of QNV 2030 which capitalises on the country's abundant natural resources to drive Qatar towards the creation of a diversified, knowledge-based economy. Moving forward, Qatargas will continue to focus its efforts on the four solid pillars that underpin all our business activities: our people, innovation, operating excellence and CSR.

**Sustainability and CSR are and will remain non-negotiable priorities for our Company. This is more than just "doing the right thing." When a company like ours commits to sustainability, it is making a promise to conduct its business in a way that endows beneficial change on everyone it touches - customers, consumers, shareholders, employees, communities and the natural resources we share with the broader world.**

At Qatargas, our success and the social well-being of the communities in which we operate go hand in hand. Playing an increasingly global role, we need to be viewed as a sensitive and generous corporate citizen everywhere we operate, a company with a strong sense of corporate social responsibility in our country and in all the countries we operate. Minimising our environmental impacts, creating a safe and diverse workplace and doing our part to encourage fit and active lifestyles are all part of the integrated and comprehensive approach to CSR that is helping us bring our vision to life. Our corporate strategy and our approach to sustainability are closely interlinked. Meeting the world's growing energy needs in economically, environmentally and socially responsible ways will continue to be our mission.

I would like to thank everyone for the support and interest you have shown in Qatargas. I appreciate your continuing support and encouragement in our endeavour to create a brighter, more prosperous future for all. I am delighted to present our third Annual Sustainability Report.

**Khalid Bin Khalifa Al-Thani**  
**Chief Executive Officer**



## ABOUT THIS REPORT

Welcome to Qatargas' third annual Sustainability Report covering our activities in the State of Qatar. The report focuses specifically on achievements and performance during the 2012 calendar year but also includes key historical events in addition to looking ahead to our future activities.

### Defining Report Content

The content of this report is based on the Global Reporting Initiative (GRI) 3<sup>rd</sup> Generation (G3.1) Sustainability Reporting Guidelines 2011 and the International Petroleum Industry Environmental Conservation Association / American Petroleum Institute (IPIECA/API) Oil and Gas Industry Guidance on Voluntary Sustainability Reporting 2010. GRI G3.1 is a globally recognised framework for reporting on an organisation's economic, social, and environmental performance whereas IPIECA/API guidance is considered as a reference in the oil and gas industry. A GRI and IPIECA/API content index is included at the end of this report.

### Materiality

This report intends to cover all core and additional indicators of the above guidance documents. However, only sustainability topics that are material to our activities and deemed critical by our stakeholders are thoroughly addressed in the report. Non-material issues are mentioned in passing but not addressed in detail.

### Stakeholder Inclusiveness

We have identified and considered our key stakeholders, and we have outlined in the report how the Company engages them, identifies their priorities and responds to the issues raised by them.

### Completeness and Boundaries of this Report

The report covers all our operations in Qatar - Qatargas 1 (QG1); Qatargas 2 (QG2); Qatargas 3 (QG3); and Qatargas 4 (QG4) - offshore platforms and onshore LNG Trains 1 to 7; the Laffan Refinery; Ras Laffan Terminal Operations (RLTO) - the storage and loading facilities located at Ras Laffan port), as well as transportation activities from and to Qatar by our LNG ships. Qatargas activities and facilities outside Qatar are excluded from the scope of this report.

The following limitations apply with regard to the scope of this report:

- Contractors, suppliers and clients' data are not included in this report unless otherwise stated;
- Environmental data disclosed in this report cover production facilities, namely QG1, QG2, QG3, QG4, the Laffan Refinery and RLTO. Non-production facilities (i.e. offices and workers' camps) are excluded as their environmental impact is negligible compared to production facilities;
- Labour practices data cover all Qatargas' employees based in Qatar as registered in the payroll.

### Data Measurement Techniques

Quantitative data disclosed in this report originate from various sources:

- Economic data are extracted from our finance IT system;
- Production data originate from our production database;
- Labour practices data are extracted from our human resources IT tools;
- Environmental data is determined through direct measurement, calculation on the basis of specific or standard conversion factors and estimates depending on parameters.

Environmental data is currently consolidated and processed manually from a number of source systems, and Excel / Word spreadsheets are used to support calculations and reporting. We are in the process of transitioning to a secure centralised Environmental Data Management System (EDMS) with data feeds from existing systems and highly visual and intuitive interfaces, such as dashboards and a Geographic Information Systems (GIS). We plan to have the EDMS fully implemented in 2014.

### Assurance

The content of this report has been reviewed by the HSE Regulations and Enforcement Directorate (DG) of our major shareholder, Qatar Petroleum (QP).

### GRI Application Level

Based on our own assessment of this report content against the GRI criteria, we have self-declared our third Sustainability Report as Application Level 'A'.

We welcome your feedback on this Sustainability Report. Please direct any questions or comments regarding the report to: [infos@qatargas.com.qa](mailto:infos@qatargas.com.qa)



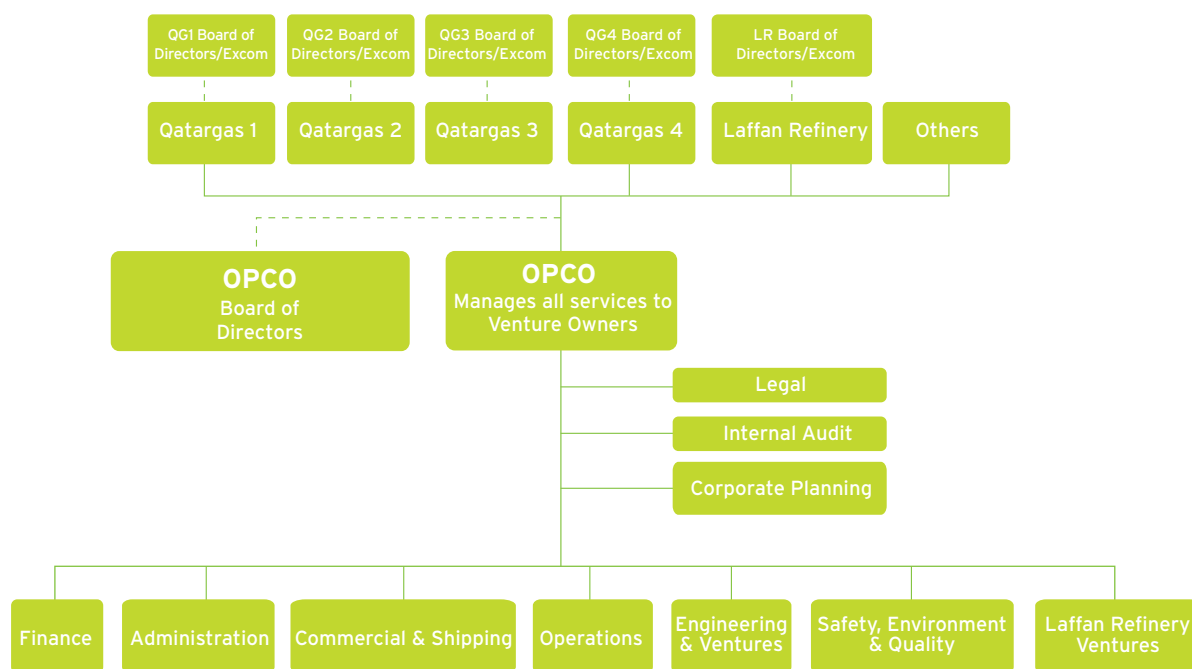
## ABOUT QATARGAS

*“We are the world’s premier LNG company.”*

Since our establishment in 1984, Qatargas has become the largest LNG producer in the world, providing reliable energy security globally. Our success is a credit to the dedication and loyalty of our employees, shareholders and customers – we have much to be proud of.

The operational structure of Qatargas and the ownership of each Qatargas company are summarised below.

### Qatargas Operational Structure



### Ownership of Qatargas' Companies

Shareholders' Identity	Percentage of ownership						
	QG1 Downstream	QG1 Upstream	QG2 Train 4	QG2 Train 5	QG3 Train 6	QG4 Train 7	Laffan Refinery
<b>Qatar Petroleum</b>	65%	65%	70%	65%	68.5%	70%	51%
<b>ExxonMobil</b>	10%	10%	30%	18.3%	-	-	10%
<b>Total</b>	10%	20%	-	16.7%	-	-	10%
<b>Mitsui</b>	7.5%	2.5%	-	-	1.5%	-	4.5%
<b>Marubeni</b>	7.5%	2.5%	-	-	-	-	4.5%
<b>ConocoPhillips</b>	-	-	-	-	30%	-	-
<b>Royal Dutch Shell</b>	-	-	-	-	-	30%	-
<b>Idemitsu</b>	-	-	-	-	-	-	10%
<b>Cosmo</b>	-	-	-	-	-	-	10%

Qatargas' headquarters is located in Doha and all our production operations (offshore platforms, onshore LNG Trains and refinery) are located in Qatar. Liaison offices are located in the United States of America (USA), Japan and China.

## Our LNG Facilities

After the successful completion of all our expansion projects, we are now the world's largest LNG producer. Qatargas currently operates four LNG facilities – namely Qatargas 1 (QG1); Qatargas 2 (QG2); Qatargas 3 (QG3); and Qatargas 4 (QG4) – consisting of both offshore and onshore operations.

The North Field Bravo offshore complex, located approximately 80 kilometres northeast of Qatar's mainland, is the heart of the Qatargas offshore operation. Commissioned in 1996 for QG1, the main facilities in this complex include living quarters, two production facilities platforms, three wellhead platforms and one remote platform located about five kilometres away. The three platforms installed for QG2 are remotely operated from North Field Bravo, while a further three platforms, which are shared between QG3 and QG4, are operated remotely from the onshore control room. A total of 85 production wells have been drilled and supply 7,300 million standard cubic feet (MMScf) from nine offshore platforms to seven onshore LNG trains via subsea pipelines.

Qatargas' onshore operations occupy a site within Ras Laffan Industrial City (RLIC) on a plot of land 3.9 square kilometres in area. QG1 consists of three trains with a capacity of 10 million tonnes per annum (MTA) of LNG.

In 2009, Trains 4 and 5 of Qatargas 2, each with a capacity of 7.8 MTA, started operating bringing the combined production capacity of Qatargas to 26 MTA. QG2 was the world's first fully integrated value chain LNG venture as it includes the UK's South Hook LNG Terminal in Milford Haven, Europe's largest LNG re-gasification Terminal.

In late 2010, Train 6 (QG3) started producing LNG followed by Train 7 (QG4) in early 2011. Qatargas' Trains 6 and 7 each have a capacity of 7.8 MTA. The overall production capacity of all trains combined is now 42 MTA of LNG, making Qatargas the largest LNG producing company in the world.

QG2, QG3 and QG4 all utilise the same Air Products proprietary (APX) process technology, which allowed Qatargas to achieve a fundamental milestone for the LNG industry by increasing the size of the Trains to a record new level of 7.8 MTA for each Train. This also helps to achieve economies of scale and integration which puts Qatargas ahead of its competitors.

The Qatargas expansion projects also led to the construction of facilities for expanded LNG storage and loading, including five 145,000 cubic metre tanks and three LNG berths, a 12,000 tonnes per day common sulphur system serving all Ras Laffan ventures and an export pipeline and mooring buoy for loading condensate ships some 55 kilometres offshore.

"ExxonMobil's relationship with Qatargas is especially significant as it marked our company's first joint venture in the State of Qatar. We are proud to be a shareholder in a company that operates to such high standards, providing the world with the energy it needs to grow and prosper."

Barton Cahir,  
President and GM of ExxonMobil Qatar



### Qatargas LNG Facilities - Fast Facts

Parameter	Qatargas 1	Qatargas 2	Qatargas 3	Qatargas 4
Number of LNG trains	3	2	1	1
Capacity of each train	3.3 MTA	7.8 MTA	7.8 MTA	7.8 MTA
Number of ships	11	14	10	9
Capacity of each ship	137,500 m <sup>3</sup>	210,000 - 266,000 m <sup>3</sup>		
Date of first cargo shipped	1996	2009	2010	2011
Main markets	Japan, Spain	UK, Europe, Asia	Global	Global

There are also a number of synergies that have been put in across QG2, QG3 and QG4 assets as well as flare minimisation built into the operational philosophy across all assets.



## Laffan Refinery

Laffan Refinery, Qatar's first condensate refinery, started production in September 2009. The refinery has a nameplate processing capacity of 146,000 barrels per stream day (bpsd) and processes field condensate produced from both Qatargas and RasGas facilities. It is one of the largest condensate refineries in the world.

The Laffan Refinery helps to capture synergies and opportunities from the development of the North Field, Qatargas, RasGas and other Ras Laffan City ventures. It consists of process units including utility systems, distillation units, naphtha and kerosene hydrotreaters, a hydrogen unit and a saturated gas plant producing naphtha, kerojet, gasoil and LPG. The refinery's production capacity is 61,000 bpsd of naphtha, 52,000 bpsd of kerojet, 24,000 bpsd of gasoil, and 9,000 bpsd of LPG.

Plans to expand the condensate refining capacity are currently on-going. A second refinery, known as Laffan Refinery 2, is expected to be fully operational by 2016 and will be able to process an additional 146,000 bpsd.



## Qatargas Fleet

Qatargas has the largest chartered fleet of liquefied natural gas carriers in the world. The majority of the fleet, including the 19 Q-Flex, 13 Q-Max and 11 conventional Q-Fleet ships are on long-term charters to the QG ventures. Additionally, short term in-chartered vessels are utilized as needed.



## Other Key Information

Other key Company information is provided in the table below.

### Scale of Qatargas

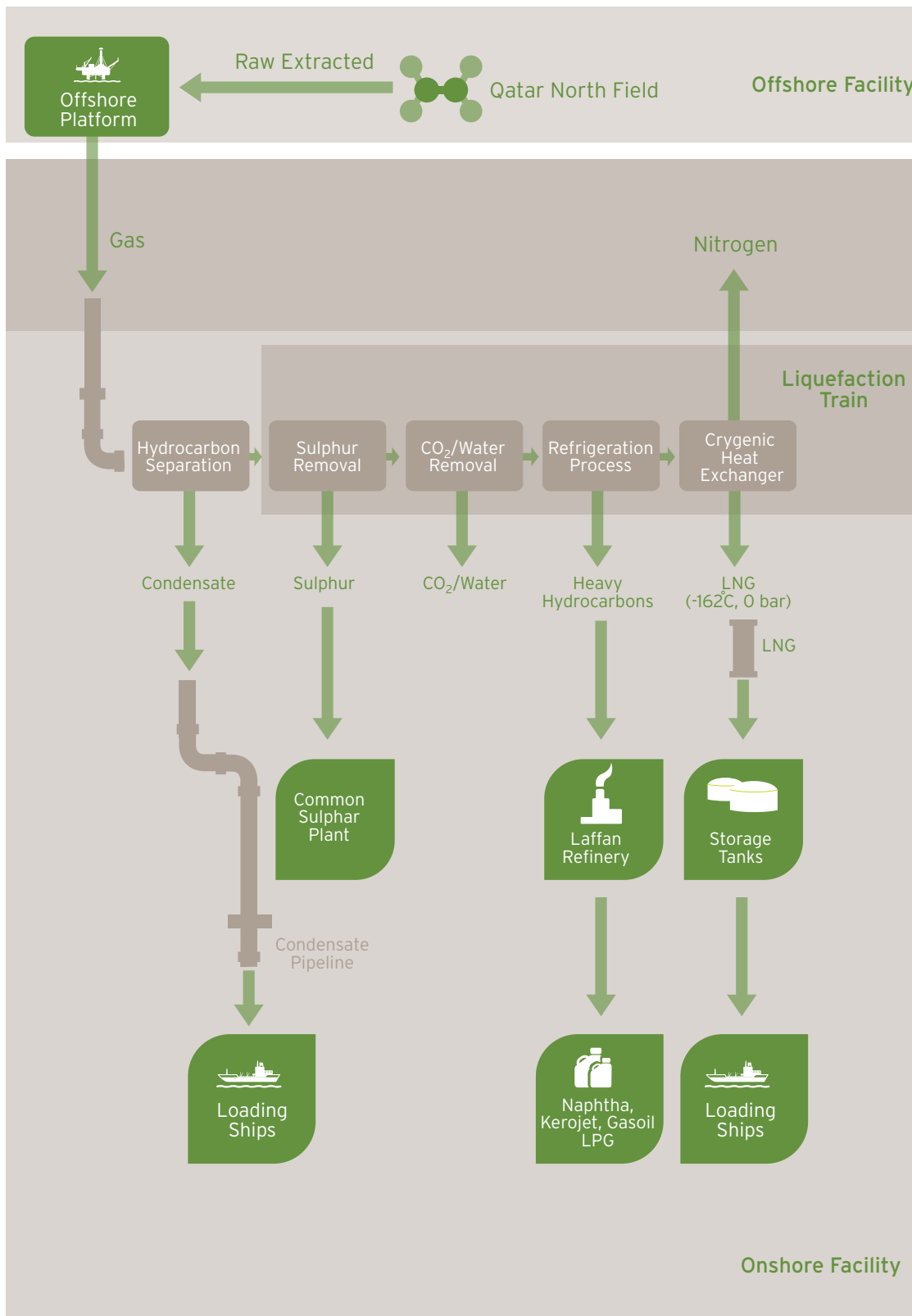
Company information	Unit	2010	2011	2012
Number of employees by end of year	#	2,758	2,755	2850
Production	-	-	-	-
LNG	Million tonnes	24.3	40.1	40.0

## What we do

We produce, market and ship LNG and other gas derived products (condensate, propane, butane, sulphur, helium, naphtha, kerojet, gasoil) to our global customers in a timely manner.

## Our Production Process

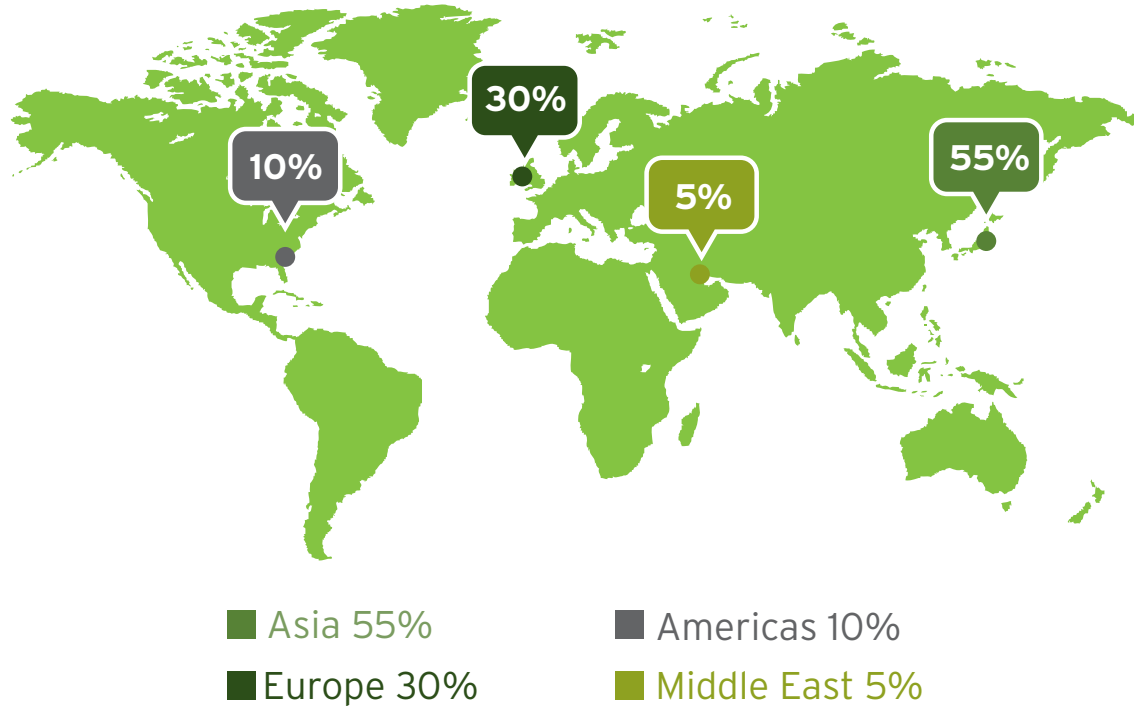
The production process is summarised below.



## Our Markets

We deliver LNG and other products to our customers, which are mainly power and gas utility companies, all over the world. Countries served include Japan, Spain, United Kingdom, France, USA, Canada, Mexico, United Arab Emirates (UAE), China, Greece, Netherlands, and Thailand.

The figure below provides the geographic breakdown of markets served in 2012.



Geographic Breakdown of Markets Served

## Key Milestones in 2012

Qatargas maintained a high level of excellence and continued to grow its operations in the past year. There were no notable organisational or operational changes within Qatargas during the last year.

The following is a list of significant activities in 2012:

- **January:** Qatargas signed an Engineering, Procurement and Construction (EPC) contract with Samsung Engineering Ltd. for a Diesel Hydrotreater Unit that will treat 54,000 bpsd of diesel, from high-sulphur into ultra-low-sulphur diesel fuel, at the Laffan Refinery.
- **June:** Qatargas 1 entered into a new long term LNG Sales and Purchase Agreement (SPA) with the largest Japanese LNG buyer, Tokyo Electric Power Company (TEPCO). Under this new agreement together with existing arrangements, Qatargas will supply approximately 2 million tonnes of LNG to TEPCO in 2012 (i.e. 5% of Qatargas' total production capacity).
- **September:** Qatargas 3 signed a new long term LNG SPA with Kansai Electric Power Company (KEPCO) of Japan. Under the terms of the agreement, Qatargas 3 will deliver 0.5 million tonnes per annum (MTA) of LNG for a period of 15 years starting from 2013.
- **September:** the first delivery of LNG was delivered to China National Offshore Oil Corporation (CNOOC)'s Zhejiang LNG Terminal. The arrival also marks the visit of the first Q-Max LNG vessel, the largest class of LNG carriers in the world, to one of CNOOC's owned and operated terminals in China.
- **November:** Qatargas announced the delivery of the first ever cargo of LNG to Singapore next year. The cargo, expected to be delivered during the first quarter of 2013, will be used to commission Singapore's LNG Corporation Pte Ltd's LNG Terminal being built on Jurong Island, Singapore.
- **December:** Qatargas announced the signing of a long term LNG SPA between Qatar Liquefied Gas Company Limited 3 (Qatargas 3) and PTT Public Company Limited of Thailand. Under the terms of the agreement, Qatargas 3 will deliver two million tonnes per annum (MTA) of LNG for a period of twenty years beginning from 2015. The agreement marks PTT's first long term LNG SPA.

## Awards, Certifications and Conferences

Qatargas received several awards in 2012, which are summarised in the table below.

### Awards and Certifications Received by Qatargas in 2012

Awarding Entity	Achievement
Qatar University	Qatargas Chief Executive Officer, Khalid Bin Khalifa Al-Thani was the recipient of the "Excellence in Gas Processing Practice" Award at the 3 <sup>rd</sup> International Gas Processing Symposium in March. The award was presented in recognition of the Qatargas CEO's leadership role in Qatargas' innovations that have had a significant impact on the company's operations and on the gas processing industry in general.
Green Award Foundation	In 2012, in continuation of the Qatargas initiative, twenty-seven (27) additional vessels in Qatargas' fleet of chartered LNG carriers received the certification from the Green Award Foundation for vessel compliance with global environmental regulations and safety standards. Initially, four (4) vessels received certification in 2011 which brings the current total to 31 vessels which are now accepted into the Green Award certification scheme. This represents the largest LNG chartered fleet of vessels to achieve this distinction.
The City & Guilds, UK	Qatargas is the first ever company outside of Europe to have trained up in-house City & Guilds, assurance scheme assessors. Qatargas' Ras Laffan Terminal Operations (RLTO) team embarked upon a "Terminal Training Assurance Scheme" in early 2011 comprising three stages: Training, On-The-Job Assessment and Examination leading to certification by the City & Guilds of London Institute, UK.
Global Gas Flaring Reduction (GGFR) Partnership of the World Bank	Qatargas was presented with the prestigious "Award for Excellence in Flaring Reduction" by Global Gas Flaring Reduction (GGFR) Partnership in November 2012. The GGFR, a World Bank led initiative, is a globally recognised flare mitigation Programme within the oil and gas industry.






Awarding Entity	Achievement
2012 European Gas Conference	Qatargas CEO, Khalid Bin Khalifa Al-Thani, was presented with the coveted title 'European Gas Conference - Executive of the Year' during an awards ceremony on the sidelines of the 2012 European Gas Conference in January 2012. The Award was in recognition for his passion in leading a world class company, with a vision to be the world's premier LNG Company by 2015.
Ministry of Energy and Industry	Qatargas received a certificate in the category of 'Support and Liaison with the Education Sector', during the Energy and Industry Sector's 2012 Annual Award Ceremony
Joint Commission International (JCI), US	Qatargas' Doha Medical Centre was awarded the coveted Joint Commission International (JCI) accreditation in 2012. The certification is recognised in the United States and internationally, as a symbol of quality reflecting an organisation's commitment to meeting a range of challenging performance standards that deliver patient safety and effective care of the highest quality and value.
Institution of Chemical Engineers (IChemE) and Institution of Engineering Technology (IET)	Qatargas became the first company in Qatar in 2012 to achieve accreditation for its professional engineers development programme, from the Institution of Chemical Engineers (IChemE) and Institution of Engineering Technology (IET). Qatargas Operating Officer - Engineering and Ventures, Sheikh Khalid Bin Abdulla Al-Thani, received the Certificate of Accreditation on behalf of Qatargas, at a special ceremony in February 2012.

In 2012, Qatargas participated in several key national and international conferences and exhibitions as summarised in the table below.

#### Participation in Conferences and Exhibitions in 2012

Event	Dates	Location	Key outcomes
1 <sup>st</sup> Qatar Petroleum Occupational Health Conference	20 - 21 March	Doha, Qatar	A useful interactive event comprising workshops, presentations of professional papers, panel discussions and networking sessions.
Annual Qatar Process Safety Symposium	26 March	Doha, Qatar	Qatargas made presentations on how the Company manages safety and monitors safety performance, elaborating on the 'Qatargas Incident and Injury Free' (IIF) culture and the various safety-related programmes and initiatives in place across Qatargas' operations
Society of International Gas Tanker and Terminal Operator (SIGTTO)	27 - 28 March	Doha, Qatar	57 <sup>th</sup> Panel Meeting promoting best practices and exchange of technical information and experiences across members of the industry, to enhance the safety and operational reliability of gas tankers and terminals.
World Gas Conference (WGC)	4 - 8 June	Kuala Lumpur, Malaysia	Participation and sharing of best practices updates in the LNG industry
System Application and Products (SAP) MENA Conference	12 June	Doha, Qatar	Networking with SAP specialists in order to share best practices and sector knowledge.
26 <sup>th</sup> GASTECH Conference and Exhibition	8 - 11 October	London, United Kingdom	The conference provided insights into some of the key issues that may impact the natural gas industry in the future. From Qatargas' Human Resources (HR) perspective, it was a good networking platform for creating brand awareness and attracting potential candidates.



Event	Dates	Location	Key outcomes
CIPD Annual Conference and Exhibition	6 - 8 November	Manchester, United Kingdom	Understanding the latest developments in HR and Learning & Development (L&D) and acquiring best practice exposures and advice from leading organisations.
Industry Health Advisors Forum Qatar Industry Health Advisors Forum (IHAF) No 15 (Hosted by Directorate of HSE Regulations and Enforcement)	21 November	Doha, Qatar	Qatargas' Senior Industrial Hygienist presented a paper on the Company's Hearing Conservation Programme, and shared information on initiatives in Qatargas considered as best practices within the industry.
Kuwait 1 <sup>st</sup> Enterprise Risk Management (ERM) Conference	26 - 28 November	Kuwait	Communication regarding the sharing of ERM knowledge with other stakeholders, e.g. Qatar Petroleum in order to share best practices, strategies and tools to promote and bolster ERM efforts.
Qatar Sustainability Expo	26 November - 7 December	Doha	Qatargas showcased its important environmental initiatives at the exhibition, through replicas, posters and films as a key side event of the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) 18 event held in Doha.

Event	Dates	Location	Key outcomes
Qatar Petroleum Occupational Health Nursing Scientific Seminar	10 December	Doha, Qatar	The Senior Industrial Hygienist presented a paper on Occupational Health & HSE Collaboration Programme, sharing an integrated system in managing occupational health with safety at the workplace.
The 10 <sup>th</sup> Gulf Water Conference	22 - 24 April	Doha, Qatar	Qatargas was the Gold Sponsor of the conference and presented a paper in one of the technical sessions shedding light on the Waste Water Treatment Unit for its LNG Mega Trains.



## Case Study: 'Qatar Sustainability Expo'

At this event, held in conjunction with Conference of the Parties (COP) 18, the United Nations (UN) Climate Change Conference, Qatargas showcased its important environmental initiatives at the exhibition through models, posters and films. These included a model of the \$1billion Jetty Boil-Off Gas (JBOG) Recovery Project which, when completed in 2014, will significantly reduce flaring during the ship loading process. It has been estimated that this initiative will save enough LNG to power more than 300,000 homes.

Posters of other environmental initiatives such as the Greenhouse Gas (GHG) Management Programme, Wastewater Management Strategy and Flare Reduction Programme were also displayed. The posters highlighted key improvements being made by Qatargas to help set the standard for environmental performance.

The event also saw the first screening of Qatargas' films highlighting its environmental performance as well as offering an overview of the JBOG Project. The films contain explanations of how Qatargas' projects are making a significant impact in protecting the environment under the theme *"Because our Environment Matters."*





# MANAGING SUSTAINABILITY

## *Continuing our sustainability journey*

### Our Vision and Commitment to Sustainability



Qatargas' commitment to sustainable development is embedded in the Company's Direction Statement. The Direction Statement provides employees and management with a reliable roadmap to follow and is key to establishing alignment and commitment within the organisation. It unifies and commits people toward a common purpose and establishes what we stand for as the premier LNG Company.

At the beginning of 2012, the Qatargas Management Leadership Team re-visited the Direction Statement to ensure that our vision, mission and values continue to remain aligned with the Company's declared aspiration to become the world's premier LNG Company and to contribute towards a sustainable future for Qatargas and Qatar. As a result of this review, the Direction Statement has been slightly modified to re-emphasise in particular the importance and value we place on social responsibility, respect for our people, regulatory compliance and open communication.

Qatargas focuses its efforts on the four pillars which underpin all our business activities: our people, corporate social responsibility, innovation and operating excellence.

### Risks and Opportunities Arising from Sustainability Trends

Qatargas is the world's largest supplier of LNG and the Company transports its products around the globe. As such, Qatargas' reputation as one of the most reliable LNG exporters might well be affected by any incidents, operational or otherwise, that could impair this performance.

Qatargas is focused on maintaining a sustainable business. This, the Company believes, can only be accomplished by maximising the potential of the young national workforce available. What Qatargas seeks to develop is the natural flair of entrepreneurship, national pride and ambition of young Qataris, by engaging at every phase of their transition into the world of work.

### Our Organisation and Mechanisms to Manage Sustainability

#### Qatargas Management System for Continuous Improvement (QMSI)

Quality and sustainability at Qatargas are managed as part of an integrated management system, through the Qatargas Management System for Continuous Improvement or QMSI which is directly linked to our Direction Statement. Our QMSI is a tool which helps to coordinate business plans for the whole Company and to align objectives across the organisation. It has been widely accepted in the region as a leading best practice and has enabled a positive environment for continual improvement to develop.

A Corporate Initiative was formally launched in 2011 to upgrade the existing Management System and in late 2012, an enhanced Qatargas Management System (QGMS) framework and governance structure received approval for testing in a series of business process pilots that were initiated at year-end.

Qatargas 1, Qatargas 2, Qatargas 3 and the Laffan Refinery are all currently certified as detailed below. The certifications include those common facilities of storage and loading that are fully managed by Qatargas Operating Companies (OPCO's). Qatargas 4 is scheduled for the same certification audits in 2013.

- International Organisation for Standardisation (ISO) 9001:2008 - Quality Management System;
- ISO 14001:2004 - Environmental Management System - Qatargas was the first company in Qatar to be certified to ISO 14001 in 2000;
- Occupational Health and Safety Assessment Specification (OHSAS) 18001:2007- Occupational Health and Safety Management System.

In addition, the Qatargas state-of-the-art laboratory in Ras Laffan is accredited for ten different tests under ISO 17025.

### Corporate Social Responsibility Initiative

For Qatargas, Corporate Social Responsibility (CSR) is about our way of doing business. We want to continue to be a profitable company, but at the same time we also wish to be a company that conducts its business in an ethical, responsible manner, caring for our people, their families, the environment and the communities around us.

The Corporate Social Responsibility Initiative Team (CSRIT) was established in January 2009 under a mandate from Qatargas' CEO with the objectives to review, assist and guide the CSR framework development and implementation at Qatargas.

The CSRIT based its work on a benchmarking exercise undertaken in 2007- 2008 and focused on 48 identified CSR performance elements distributed among the four pillars of CSR: Governance and Conduct, Financial and Economics, Social, and Environment.

### Qatargas CSR Performance Elements

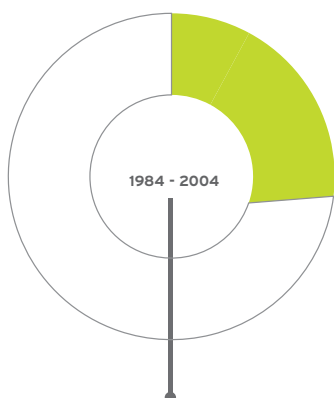


For each element, performance sheets were developed to identify what the element means to Qatargas, where we are in terms of management of the element, what are the areas of improvement, which metrics are to be used to measure performance, and responsibilities for implementation of further actions. These performance element sheets provided key planning and guidance documents for CSR implementation across the Company.

As a result of this work, the CSRIT proposed several key recommendations which have been completed or are currently under implementation, such as establishing a CSR Leadership Committee, appointing a CSR Co-ordinator, and developing and integrating a CSR Implementation Plan.



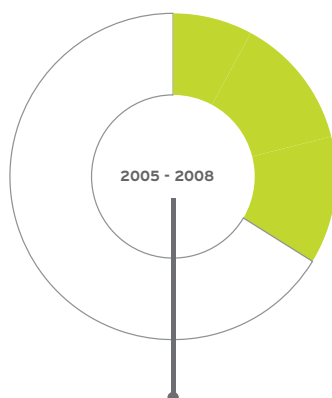
## Our Sustainability Journey



1984 - 2004

### Production capacity 6 MTA

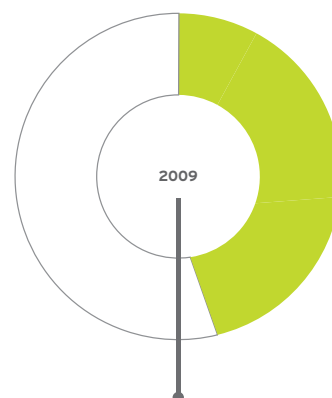
- \*2002: Introduction of QG Incident & Injury Free program
- \*2002: Initiation of a hawksbill sea turtle monitoring study
- \*2000: ISO 14001 certification for QG1
- \*1996: First cargo shipped
- \*1984: Establishment of Qatargas



2005 - 2008

### Production capacity 10 MTA

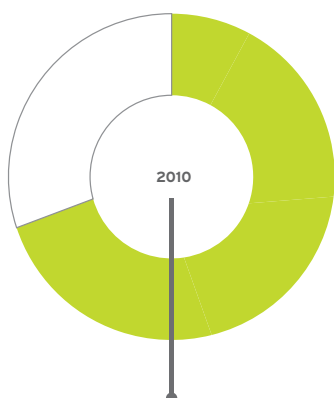
- \*2008: Delivery of the first Q-Max vessel
- \*2007: Launch of the Coral Relocation Program
- \*2007: Conduct Sustainability Benchmarking Exercise and Identify Sustainability Gaps and Opportunities
- \*2007: Delivery of the Q-Flex vessel
- \*2005: Completion of the debottlenecking project



2009

### Production capacity 26 MTA

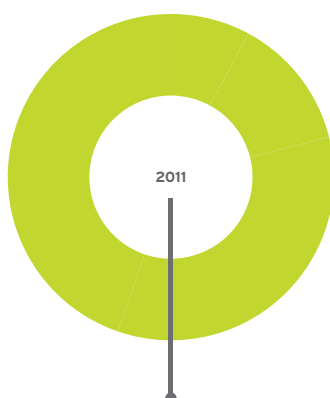
- \*Inauguration of QG2
- \*Start-up of Laffan Refinery
- \*Establishment of the Corporate Citizenship Initiative Team



2010

### Production capacity 34 MTA

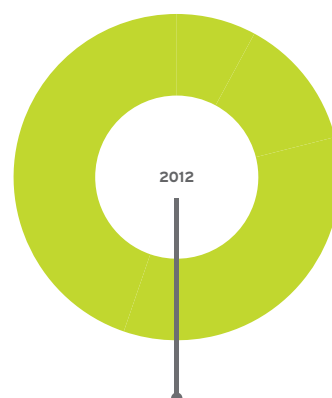
- \*Start-up of QG3
- \*Won award in recognition of our efforts in Supporting Qatarisation
- \*ISO 14001, OHSAS 18001 and ISO 9001 for QG1 & QG2
- \*Implementation of our Social Investment Policy and Procedure



2011

### Production capacity 42 MTA

- \*Start-up of QG4
- \*Completion of the Common Sulphur Project
- \*Delivery of LNG to new markets (Netherlands, Greece, Thailand)
- \*First Corporate Citizenship Report
- \*Certification from the Green Award Foundation for our chartered LNG carriers



2012

### Production capacity 42 MTA

- \*First full year with all Qatargas ventures operating at or near full capacity
- \*Won the prestigious "Award for Excellence in Flaring Reduction" by Global Gas Flaring Reduction (GGFR) Partnership of the World Bank
- \*Initiation of a Business Continuity Program
- \*Certification from the Green Award Foundation for 27 additional chartered LNG carriers



### Premier LNG Producer

- \*2015: Be the world's premier LNG company, known for its people, innovation, operating excellence and corporate social responsibility
- \*2014: Completion of the Jetty Boil Off Gas Recovery Project
- \*2013: Plateau Maintenance Project operational

2013 - 2015



### QNV 2030

- \*Qatargas will play an integral part of Qatar National Vision (QNV) 2030 for the Human, Social, Economic and Environmental Development of the State of Qatar

2016 - 2030

## Sustainability Targets and Performance

Each year, Qatargas analyses its operations in order to participate in a study comparing multiple companies that produce LNG and other gas derived products. This study allows Qatargas to compare its activity in efficiency, manpower, costs, asset management, environment, safety and health to that of its competitors. Qatargas consistently performs above the industry average in efficiency in this study. Qatargas has also expanded its benchmarking efforts to other areas of the business, such as offshore, refinery and terminal operations. This enhanced knowledge of the Company's performance compared to its competitors, enables Qatargas to maintain its position as a world class LNG producer.

Our sustainability targets and performance for 2012, along with our vision 2015 targets, are summarised below.

### Sustainability Targets\* and Performance 2012

Key Performance Indicator	Performance 2012
<b>Total Recordable Injury Frequency<sup>1</sup> (-)</b>	1.38
<b>Loss of Primary Containment (#)</b>	1
<b>GHG<sup>2</sup> emission intensity (t GHG / t products<sup>3</sup>)</b>	0.46
<b>Late Deliveries (#)</b>	3
<b>Off-specification Deliveries (#)</b>	0
<b>Sales Volume (million tonnes of all products)</b>	58.2

1. Total count of fatalities, permanent/total disabilities, lost workday, restricted workday, and medical treatment cases per million man-hours; Includes contractors
2. Greenhouse Gas
3. LNG for trains, other gas related products for Laffan Refinery

*\* Our mid-term sustainability targets are defined within Qatargas' vision 2015 to be the world's premier LNG company. The vision and targets are also in line with the Qatar National Vision (QNV) 2030, a holistic approach to the development of the State of Qatar through its four pillars - Human, Social, Economic and Environmental Development - and that defines the long term outcomes for the country.*

Capitalising on its abundant natural resources and with energy continuing to propel Qatar forward, QNV 2030 aims at building a diversified knowledge-based economy that uses new technologies with high human development and inter-generational equity.

Qatargas' near and long term objective is to play an integral supporting role in the success of the QNV 2030.





# GOVERNANCE

*Shareholders' approved plans and working programmes guide our management*

## Governance Structure

The governance structure differs for each Qatargas company and is organised as follows:

- Qatargas Operating Company Limited (QG OPCO): Board of Directors, Services Co-ordination Forum, Audit Committee, Chief Operating Officers (Engineering & Ventures, Administration, Finance, Operations and Commercial & Shipping);
- QG1, QG2, QG3, QG4: Board of Directors, Executive Committees, Chief Operating Officers;
- Laffan Refinery: Board of Directors, Executive Committee, Finance Committee, Chief Operating Officer.

The highest governance body of each Qatargas company is the Board of Directors. Members of the Board are nominated by the shareholders as per the relevant Joint Venture Agreement (JVA). Shareholders determine the qualifications and expertise of the individual nominees. The number of independent Board members for each Company is summarised in the below table.

### Independent Board Members for each Company

Qatargas company	No. of independent Board members
<b>QG OPCO</b>	10
<b>QG1</b>	10
<b>QG2</b>	10
<b>QG3</b>	10
<b>QG4</b>	9
<b>Laffan Refinery</b>	8

Independent Board members refer to members who do not form part of the executive management team. The Chairman of the Board of Directors is in particular not an executive officer of the Company.

Committees which form part of Qatargas governance structure are detailed below.

### Description of Qatargas Committees

Committee name	No. of members	Independent members	Mandate	Responsibility
<b>QG1 Executive Committee</b>	7	Except for the CEO, all members are Shareholders' representatives	Delegated by the Board to exercise the powers specified in the Executive Committee procedures	Share with the Board the responsibility for reviewing and approving Company's financial, social and environmental performance
<b>QG2 Executive Committee</b>	9			
<b>QG3 Executive Committee</b>	8			
<b>QG4 Executive Committee</b>	7			
<b>Laffan Refinery Executive Committee</b>	9			

<b>Laffan Refinery Finance Committee</b>	8	All members are Shareholders representatives	Recommends to the Board in certain financial and accounting matters	Assists the Board in handling economic and financial issues
<b>QG OPCI Audit Committee</b>	4	All members are Shareholders representatives	Assist the Board in fulfilling its oversight responsibilities on financial reporting process, internal controls, audit process and monitoring compliance with laws	Provides support in implementation of appropriate internal controls
<b>Ethics and Conflict of Interest Committee</b>	6	All members are Company employees	Assess and investigate suspected violations related to ethics and conflicts of interest	Ensure application and respect of Ethics Policy

Qatargas management is guided by strategies, plans and working programmes approved by shareholders through shareholders meetings, resolutions and shareholders working teams. Qatargas financial, social and environmental performance is presented to and discussed with the Board quarterly.

There is no linkage between compensation for board members, senior managers and executives and Qatargas' performance (including social and environmental performance), as remuneration is fixed. There is currently no formal process in place for evaluating the board members' own sustainability performance.

## Conflict of Interest

Qatargas' Code of Business Ethics Policy establishes clear rules of conduct in order to avoid conflicts of interest. As a general rule, employees or their immediate families shall not have direct or indirect interest in any entity or business enterprise that has current or prospective dealings with the Company.

All employees have to complete and submit annually by 31 January of each year the Annual Certification Statement to certify they have read and understood the principles of the Code of Business Ethics Policy and that they will comply with these.

In addition, all employees shall complete and submit the Annual Conflict of Interest Declaration by 31 January of each year for the preceding year. The employees shall declare in the Annual Conflict of Interest Declaration gifts received or offered, any employments outside Qatargas, any interests in entities doing business with Qatargas and relatives working with Qatargas.

Qatargas' Ethics and Conflict of Interest Committee is responsible for ensuring application and respect of the Ethics Policy, and for reporting and investigating any case of violation with regard to conflicts of interest.

"It is important in any organisation that seeks to have a compliant workforce to educate its employees on what needs to be complied with and why. It is only through upgrading people's knowledge that they begin to see the true value of what an organisation is trying to enforce and will therefore be more likely to support it."


Abdulaziz Al-Mannai, Qatargas Human Resources Manager, on the importance of compliance within Qatargas

## Internal Audit

The Qatargas Internal Audit Function (IA) has been established by the Board of Directors (BOD), with the purpose of assisting the BOD and Management in the accomplishment of their objectives.

The IA govern themselves by adherence to the Institute of Internal Auditors' "Code of Ethics" and conduct their work in accordance with the 'Standards for the Professional Practice of Internal Auditing' established by the Institute of Internal Auditors.

The IA is authorised by the BOD to carry out a broad programme of operational, financial, compliance, fraud and systems audits covering all activities of the company, its subsidiaries and ventures.



All activities within Qatargas and its ventures are subject to an internal audit review at least every four years. A risk-based 4-year rolling audit plan is prepared accordingly by the IA, reviewed by the Management Leadership Team and approved by the Board Audit Committee (BAC).

Special reviews / investigations / consultancies are also conducted by the IA as required by the management or the BAC. The audit reports are communicated to the management, the BAC and the BOD.

### Internal Statements and Codes

Internally developed statements of mission or values, codes of conduct, and policies relevant to sustainability performance include:

- Qatargas Direction Statement, which describes our Vision, Mission and Covenants;
- Code of Business Ethics Policy;
- Internal Audit Charter;
- Employee Relations Policy;
- Social Investment Policy;
- Safety, Health, Environment and Quality Policy;
- Safety, Health and Environment Committee Charter; and
- Enterprise Risk Management Process.

These documents are fully implemented and cover all employees and activities within Qatargas.





## ENERGY AND WATER MANAGEMENT

Energy and Water Management are the key focus areas of our this year's report.

Qatargas has a long-term view in investing in measures to become more energy efficient and to reduce our carbon emissions. Energy Management finds special emphasis in our report where we describe the various initiatives undertaken by Qatargas in this regard. We uphold the highest standard of energy use, responsible energy management and energy conservation, as a responsible promoter of energy, with an unwavering commitment to the care and the protection of the environment for generations to come. We track our energy consumption (both direct and indirect) as well as our flare emissions. We have developed a Flare Management Plan (FMP) as a part of the management and oversight strategy to minimise flaring associated with Qatargas activities. For further details on energy management in Qatargas, please refer to the Environment Section.

We, at Qatargas, also understand the importance of responsible water use and its conservation for the future generations. This report contains our approach on efficient Water Management and also discusses the initiatives undertaken by Qatargas in this regard. We record information regarding all water abstracted and discharged by our production facilities. Qatargas developed an approach for enhanced water treatment via the use of Membrane Bio Reactor (MBR) technology. For further details on this case study as well as all other information related to water management, please refer to the Environment Section.

## HEALTH OF WORKFORCE

Health and well-being is one of the top priorities within our company and we work to promote disease prevention and greater awareness of important health issues. We are also focused on continually improving our performance through accreditation and other efforts so that we can help the people we serve be healthier.

For details regarding the health statistics of Qatargas employees, initiatives regarding the various health management activities and programmes conducted by our medical department to assist workforce members and their families regarding serious diseases, please refer to the People Section.



## COMMITMENTS AND ENGAGEMENTS

*Engaging stakeholders for operational excellence and improvement opportunities*

### Commitments to Internal / External Initiatives

Qatargas subscribes to following charters, initiatives and programmes:

Charter / Initiatives / Programmes	Date of Adoption	Countries / Operations of Application	Stakeholders Involved	Voluntary / Mandatory
<b>Mutual Aid Agreement</b>	1997	Qatar	Ras Laffan Industrial City, Qatargas and RasGas	Mandatory
<b>Laffan Environmental Society (LES) Charter</b>	1999	Qatar	All Ras Laffan Industrial City based end users, Ministry of Environment, QP	Mandatory
<b>Qatar's Energy &amp; Industry Sector 'Women in the Workforce' Initiative</b>	2010	Qatar	Professional National females in Qatargas and other companies in the Energy and Industry Sector	Voluntary
<b>Ras Laffan Industrial City Community Outreach Programme (RLIC COP)</b>	2010	Qatar	Northern Communities of Qatar, All Ras Laffan Industrial City based end users, Ministry of Environment, QP, Qatar Social Development Centre	Mandatory
<b>The Chartered Institution of Chemical Engineers (IChemE)</b>	2011	International	Engineering community under Engineering & Ventures Group at Ras Laffan	Voluntary
<b>The Institution of Engineering and Technology (IET)</b>		International		
<b>Ras Laffan Industrial City Risk Management Forum</b>	2011	Qatar	All Ras Laffan Industrial City based end users	Mandatory
<b>Ras Laffan Industrial City Fire Management Forum</b>	2011	Qatar	All Ras Laffan Industrial City based end users, Ministry of Environment, QP and DG	Mandatory
<b>Education Outreach Programme</b>	2012	Qatar	Qatari National High School Students studying at various Local High Schools in Qatar	Voluntary

Qatargas is a member of the Training and Development Liaison Committee (TDLC) which promotes best practice in training and development in Qatar's energy and industry sector.

Qatargas' Head of Qatarization and National Development has continued, from 2010, and throughout 2011- 12, to sit on the Board of Trustees of the Qatar Independent Technical School (QITS), to provide support and direction to this important element in the local Education Sector. Measures were taken to establish internal task forces to support and improve the school's provisions in different areas.

Qatargas is a member of the International Petroleum Industry Environmental Conservation Association (IPIECA) and a sustaining member of the American Society for Quality.

Qatargas also sits as the Vice Chair on the International Gas Union Taskforce that looks after Human Capital Development in the Gas Industry.

## Stakeholder Engagement

Shareholders are identified and agreed by Qatar Petroleum (QP) based on selection criteria set out by QP. Identification of other stakeholders (e.g., employees, contractors, suppliers) is undertaken by relevant groups within the Company and based on standards set out in Company's policies and procedures such as contracting procedures, marketing policies, human resources policies, etc.

Where appropriate, Qatargas liaises with RasGas regarding mutual operational excellence and improvement opportunities.

Stakeholder groups with whom Qatargas engages and the means of engagement are summarised in the table below. The Qatargas website, the QG Pioneer magazine, strategic global media communications and advertising strategy (print, broadcast & local) serve as a means of engagement across all stakeholder groups.

"Total is very satisfied with the professionalism of the Qatargas team, their achievement and the transparency of the information that we get as shareholders."

Stephane Michel  
MD, Total E&P Qatar



## Stakeholder Engagement

Stakeholder group	Means of engagement
<b>Shareholders</b>	<ul style="list-style-type: none"> <li>• QG respective Board Meetings</li> <li>• Discussions</li> <li>• Official engagements – e.g. signings</li> <li>• Shareholder meetings, agreements and relations</li> <li>• Coordinated crisis communications</li> <li>• Sponsorship collaborations</li> <li>• QG Contribution towards QP Annual Report</li> <li>• Quarterly Performance Reviews (QPRs)</li> <li>• Strategic contract advertising strategy (Print, Broadcast and Local)</li> </ul>
<b>Employees</b>	<ul style="list-style-type: none"> <li>• Internal communications strategy including the QG intranet and internal magazine</li> <li>• Specific Qatargas All email</li> <li>• Employee Communications – News updates</li> <li>• Employee Opinion Survey</li> <li>• Town Hall Meetings</li> <li>• CEO Forum for National Trainees and Graduates</li> <li>• Long Service Awards, Team and Spot Awards</li> <li>• Premier Leadership Event (PLE) Meetings</li> <li>• Quarterly Performance Review group meetings</li> <li>• Objectives Management System</li> <li>• CEO Address to new joiners on the QG intranet</li> <li>• PR Spotlight</li> <li>• Policies &amp; Procedures</li> <li>• Monthly Key Messaging Pack (for senior management)</li> <li>• HR Induction/ Corporate Welcome Programme for New Joiners</li> <li>• Learning &amp; Development Programmes, Learning Souq, Website and Helpdesk</li> <li>• Interactive security announcements and safety exercises</li> <li>• 'Ask the CEO' on the QG website</li> <li>• Toolbox Talks</li> <li>• Departmental Away-Days for Information sharing and team building</li> <li>• Employee Self Service (ESS), Manager Self Service (MSS) Online</li> <li>• HR Service Desk</li> <li>• Learning and Development Helpdesk</li> <li>• Learning Community Day</li> <li>• Walk-in Open Clinics</li> <li>• Qatarization Forum for National Trainees and Graduates</li> <li>• Lunch and Learn Sessions</li> <li>• "Bite size sessions" for National graduates</li> <li>• Social platforms – Gala Dinner; Family Days; National Sport Day; Social Clubs, Winter Camp</li> </ul>

<b>The Energy Industry</b>	<ul style="list-style-type: none"> <li>• Conferences and exhibitions</li> <li>• Key-note Address in global events</li> <li>• Strategy advertising communications in industry related platforms</li> <li>• Energy related &amp; general publications, Delivery of technical papers</li> <li>• Sponsorship collaborations (e.g. SIGTTO etc.)</li> <li>• Strategic global media communications</li> <li>• Strategic contract advertising strategy (Print, Broadcast and Local)</li> </ul>
<b>Suppliers / Contractors</b>	<ul style="list-style-type: none"> <li>• Contractual arrangements &amp; tender process</li> <li>• Third party endorsements</li> <li>• Safety communications and related initiatives and programmes (e.g., Incident and Injury Free (IIF); Safety Training Observation Programme (STOP); Hydration)</li> </ul>
<b>Customers</b>	<ul style="list-style-type: none"> <li>• Global customer relations</li> <li>• Conferences and exhibitions</li> <li>• Site visits</li> <li>• Contractual arrangements</li> <li>• Customer Meetings / Presentations (e.g. in Japan)</li> <li>• Signing Ceremonies</li> <li>• Generic Publications</li> <li>• Periodic Safety Alerts</li> <li>• Strategic global media communications</li> <li>• General publications</li> <li>• Material Safety Data Sheets (MSDS)</li> <li>• Strategic advertising strategy (Print, Broadcast and Local)</li> </ul>
<b>Government / Authorities</b>	<ul style="list-style-type: none"> <li>• Strategic government affairs/relations in conjunction with QP and the State of Qatar</li> <li>• Through appointed embassies in Qatar and around the world in conjunction with QP and the State of Qatar</li> <li>• Site Visits</li> <li>• Coordinated Crisis Communications Planning</li> <li>• Participation in Qatar National Vision (QNV) 2030</li> <li>• Projects in collaboration with Qatar Government</li> <li>• Contribution to the development of the State's new environmental guidelines</li> <li>• Strategic advertising strategy (Print, Broadcast and Local)</li> </ul>



<b>Local Communities</b>	<ul style="list-style-type: none"> <li>• As a member of the RLIC Community Outreach Programme (COP)</li> <li>• Site Visits</li> <li>• Continual community needs assessment</li> <li>• Annual events (e.g., Career Fair, Environment Fair)</li> <li>• Sponsorships</li> <li>• Educational Programmes</li> <li>• Strategic advertising strategy (Print, Broadcast and Local)</li> </ul>
<b>General Public</b>	<ul style="list-style-type: none"> <li>• Social investment programmes: sports and cultural event sponsorships, school donations, generic health and safety campaigns</li> </ul>
<b>Media</b>	<ul style="list-style-type: none"> <li>• Strategic global media engagement programmes</li> <li>• Site Visits</li> <li>• Media communications (press releases; holding statements; interviews)</li> <li>• Publications, Fast Fact Sheets</li> <li>• Press Conferences, Briefings</li> <li>• Communication Plans</li> </ul>
<b>Non-Governmental Organisations</b>	<ul style="list-style-type: none"> <li>• Where appropriate, approved relations</li> <li>• Contribution support to local NGO's</li> <li>• Presentations - Educational Programmes</li> </ul>
<b>Students / Pupils</b>	<ul style="list-style-type: none"> <li>• Events (e.g. Career Fair)</li> <li>• Educational initiatives (e.g., Scholarships, Internships, Outreach Programmes)</li> <li>• Introductions to QG</li> <li>• Recruitment Campaigns</li> <li>• Donations and sponsorships to the education sector (schools and universities)</li> </ul>

Key topics raised by stakeholders in 2012 include:

- Our major stakeholder Qatar Petroleum and its HSE Regulations and Enforcement Directorate (DG) has requested Qatargas to produce this third Annual Sustainability Report for the year 2012, with a focus on energy, water management and health;
- The Al Khor Community in Ras Laffan raised issues with regard to flaring and air quality, waste management, job opportunities and capacity building of the local community in northern Qatar, which Qatargas addressed accordingly;
- Our customers and the general public increasingly enquire about sustainability initiatives at Qatargas, in particular with regard to environmental protection and social investments;
- Issues raised by employees related to communications, work organisation, training and development and performance management and actions were taken by Qatargas management to address these issues (refer to the 'People' section and Case Study below for more details).

## Communications within Qatargas

It became evident from the '2011 Employee Opinion Survey' that internal communication within Qatargas needed some improvement. Some staff offered the view that they could not always speak openly, fully contribute or get involved in decisions impacting their job. In response to this feedback, a cross-functional team of employees looked into ways and means of enhancing the Company's communication provisions and came up with five recommendations regarding planning procedures, tools, training and communication values to provoke a change in culture and behaviours in line with our newly revised Covenant in the Qatargas Direction Statement to: "Openly communicate and share information".

The recommendations were endorsed by senior management, further refined in workshops and actions were initiated. One key action was to define a set of six Qatargas Communication Values and to provide guidance on the observable behaviours that each one of us should display in line with those values. In a diverse organisation like Qatargas, it is vitally important to maintain a coherent Qatargas messaging and communications system, culture and processes that reflect our values as an organisation. We need to develop an organisational environment where people feel they are valued, where their contributions are considered seriously, and where they are encouraged to stand up and communicate their ideas and thoughts freely. To help achieve this goal, all Qatargas employees will be required to adhere to the six Communication Values and linked behaviours indicated in the diagram below.





## ECONOMICS

*Our economic benefits have the potential to reach beyond the State of Qatar*

### 2012: Key Highlights

- Qatargas consistently provides above budget revenues to the State of Qatar and Qatargas shareholders
- 57% of our procurement budget was spent on local suppliers and contractors based in Qatar
- Over 40% of Qatargas management positions are currently filled by Qatari employees.

Qatargas, as a non-publicly traded company, with QP as a major shareholder, is not required to publicly disclose its financial data as per Qatar Law and other pertinent regulations.

### Risks, Opportunities and Financial Implications of Climate Change

As part of our GHG Management strategy we have conducted an extensive review of the potential risks, opportunities and financial implications which arise due to potential climate change and greenhouse gases. These risks can be categorised into three main categories: regulatory, financial/business and physical.

The regulatory risks which may arise are mainly due to the national, regional, sectoral and international regulations of GHG emissions to which the State of Qatar is a signatory. For example, since the State of Qatar is a signatory of the Kyoto Protocol it will abide and implement regulations related to the reduction of national GHG emissions in the future.

The business risk mainly revolves around the reputation, competitive ability, legal standing and political views of companies that show a lack of concern for excessive emissions associated with climate change.

Qatargas has conducted a thorough literature review with regards to the impacts posed by potential climate change for the Arabian Gulf region. It was concluded that the predicted risks for harming Qatargas facilities, assets and operations are low within their operating lifetimes.

Qatargas also analysed the potential business opportunities arising from climate change. An analysis performed by Qatargas revealed that there is a potential to invest in the Clean Development Mechanism (CDM) projects and the purchase of CDM Certified Emission Reductions (CERs) because of their credibility in the market place and the reputational benefits of such an investment. Qatargas is closely monitoring the regional and international trends associated with GHG management and participating increasingly proactively with industry associations and other key local stakeholders to ensure that it is prepared to meet GHG emissions targets and related challenges.

Qatargas has started evaluating the potential financial implications of climate change and anticipate sharing some of our findings in future reports.

## Market Presence

### Local Content and Procurement

In terms of procurement of services and materials, Qatargas advertises procurement through open tenders in both Arabic and English local newspapers. This encourages local suppliers and contractors to bid. Qatari suppliers and contractors are provided with price preference according to local law. Whenever possible, Qatargas endeavours to source the work locally. It is usually the case that specialised services and technological upgrades require international service providers to be approached.

In 2012, 57% of our procurement budget (including service contracts and purchase of materials) was spent with local suppliers and contractors based in Qatar.

Prior to the award of any contract, all sourcing is subject to evaluation against pre-determined criteria, such as financial performance, HSE record and experience. This provides an equal opportunity for all participating contractors and assures the quality of the products and services.



### Local Hiring

The Qatargas Qatarization strategy remains constant in terms of attracting and developing a talented National workforce. Our strategic target is underpinned by detailed plans that are both strategic in terms of their application across Qatargas but also reach down to each individual's personal development plan.

As our business continues to grow and attract investment, our resourcing plan needs to be closely aligned. In 2012, we saw additional requirements in Ventures and Engineering to meet project and reliability needs. This focus on establishing the right support structures also led to additions in Operations as well as in the business support functions of Finance, IT and Administration. Another business change that has emerged is the increase in other operators' assets being transferred to Qatargas to operate on their behalf. All these changes were accompanied by

a review of our Qatarization needs and the plans were accompanied by a reassessment of our Trainee and Graduate requirements and Qatarization targets adjusted to reflect the revised staffing in 2012. Our Qatarization plans have been reviewed and targets adjusted to ensure that our 2020 Qatarization strategic objective is met. These Plans have been developed, at departmental level, consistent with future resource planning through to 2020.

In 2012, we undertook bi-annual, cross-functional reviews and stewardship across all organizational Groups. This ensures we maintain clarity of understanding of the National labour market, the activities required of Qatargas to attract, train, develop and qualify our National employees to ensure they are placed in permanent positions and ultimately achievement of their full potential.

Qatargas participates in various events such as the annual Qatar Career Fair, university career fairs, sponsored events and other targeted campaigns in a bid to attract qualified and committed national job seekers. The recruitment division has strong relationships with universities and high schools in the country to source national talent, where equal opportunity is given to both female and male graduates.

40.1% of Qatargas management positions (i.e., CEO, COOs, Venture Managers, Departmental and Division Managers) are currently filled by Qatari employees.



### Indirect Economic Impact

Qatargas does not formally measure the indirect economic effect of its activities at both local and national levels. However, a joint survey is being currently conducted at Ras Laffan with RLIC Community Outreach Programme, of which Qatargas is a member.

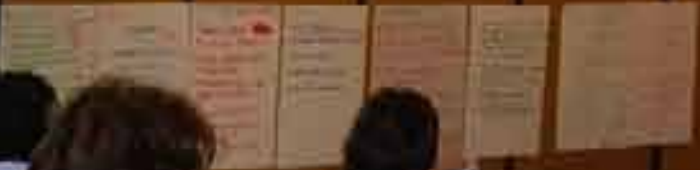
Indirect benefits include:

- The development and creation of jobs in the Ras Laffan area;
- Provision of high level employment work opportunities for Qatari Nationals as part of the Qatarization Programme;
- The creation of contracting service opportunities for projects and on-going operations support; and
- The long term job creation, market development and stability creation for Qatargas suppliers.

Since Qatargas also delivers to global clients, the indirect economic benefits have the potential to reach far beyond the State of Qatar.



# ERM & risk registers



# RISK MANAGEMENT AND PROCESS SAFETY

*Leadership journey towards success and 'Incident and Injury Free' work culture*

## 2012: Key Highlights

- Initiated the Business Continuity Management (BCM) Programme across the organisation
- Launch of 'ERM Sharepoint' - a corporate repository for all risk registers and risk reports
- Experienced one Tier 1 and five Tier 2 Process Safety Incidents (PSIs)
- Implementation of Process Safety Programme (PSP) is on track - 40.5 % completed.

## Enterprise Risk Management

In 2012 the Qatargas Enterprise Risk Management (ERM) Programme completed its roll out to the entire organisation. The Qatargas ERM process is based upon the international ISO 31000:2009 standard on Risk Management.

This ERM process enables Qatargas to:

- Identify risks in every department / group;
- Evaluate and prioritise risks in a consistent manner;
- Take action to mitigate threats and maximise opportunities;
- Have conversations about risk management across departments using a common language and method of assessment; and
- Consolidate risks across Qatargas, and highlight key ones for attention

At the operational level, the heads of the various groups / assets / projects / departments are the Risk Champions for their business units and take ownership of their risk registers. They assign Risk Management Co-ordinators (RMC) who facilitate, maintain and update their risk registers. At the strategic level, the Management Leadership Team (MLT) are custodians of the strategic risk register.

The ERM Steering Committee (consisting of MLT members and others) provides overall direction and oversight to the ERM process and programmes.

In 2012, the ERM Programme achieved the following:

- Risk reviews were undertaken at operational and strategic levels every quarter;
- The 'ERM Sharepoint' was launched - this is a corporate repository for all risk registers and risk reports;
- The second Risk Management Co-ordinators' (RMCs) Conference was held in November. The conference was attended by Qatargas' Risk Management Co-ordinator network and risk management teams from QP and RasGas. With a vision to promote and enhance risk management practices in the oil and gas business in Qatar, the conference opened further dialogue channels between these key stakeholders;
- Several risk workshops were organised within Qatargas in co-ordination with different departments to improve the risk awareness culture and facilitate the prioritisation of risks; and
- Via a tendering process, undertook an extensive evaluation of competing ERM database systems to replace spread-sheets for managing risks and associated actions.

Going forward, training courses on ERM are being developed in association with the Learning and Development (L&D) department for all Qatargas employees. As mentioned above, an automated ERM system/database will be implemented within Qatargas. This will be a major advance in terms of facilitating the management of risks, actions and associated communication across Qatargas departments. The RMC conference and quarterly departmental/group risk workshops would also continue to take place.

## Business Continuity

The objective of the Business Continuity Management (BCM) Programme is to provide a framework for building organizational resilience with the capability of an effective response that safeguards the interests of key stakeholders, reputation, brand and value creating activities. It aims at enabling Qatargas to effectively respond to crisis situations and disruptive events.

Integrated with the ERM, BCM provides a holistic management approach that assesses the impacts to business operations that key threats, if realised, might cause.

Key components of the BCM Programme, include:

- **Crisis Management:** The strategic management, co-ordination and structured response to a major crisis such that it is effective, timely, and seeks to avoid or minimise damage to the organisation's profitability, reputation, or ability to operate.
- **Business Continuity Plans:** Comprehensive plans at organisational and departmental levels that set out procedures and actions that seek to continue or restore operations in the event of a disruption.

The scope of the BCM Programme includes the entire value chain of Qatargas.

In 2012, Qatargas launched the BCM development and implementation project by arranging a series of awareness sessions across the organisation regarding the need of having a BCM Programme in place.

As an initial step, the BCM related initiatives already existed within the organisation were assessed for further improvement. The followings are the key achievements:

- The Cyber-Security related IT Disaster Recovery Plan was reviewed and a roadmap for enhancement proposed;
- In collaboration with the SEQ Department, the Incident Management Structure was reviewed and updated; and
- Established the methodology and set out criteria that will be employed during the analysis phase of the project.

## Emergency Response

The Qatargas Emergency Management Services (EMS) employs dedicated staff to raise fire safety awareness among employees and the outside community to be of assistance in enforcing fire safety codes and standards. The EMS division has participated in delivering Fire Safety education sessions to various schools in Al-Khor Community and across the State of Qatar to enhance the fire safety concept among society, as part of Ras Laffan Industrial City's Community Outreach Programme (RLIC-COP) and in line with our wider CSR initiative. The sessions focus on the basic fire-fighting topics such as the fire triangle, classes of fires, principles and methods of extinguishing fires, home fire safety tips and organising emergency evacuation drills. The Programme includes detailed demonstration and practical use of fire equipment in particular fire extinguishers. The active participation by Qatargas in these sessions is part of our CSR initiatives and we are keen to utilise every available opportunity to spread key messages about fire safety in our community. Fire safety is considered as a very important area and people of all ages must be made aware of. And equally important is educating the young generation in aspects of personal safety and wellbeing to help them to be responsible citizens in the future.

Furthermore, the EMS division participated in the "Firefighter Fit" worldwide programme organised by the Qatar Civil Defense which involves various types of competitions among emergency services providers across the State of Qatar and is mainly designed to assess the firefighters' fitness and skills to fight fire and save lives. The EMS division achieved a remarkably high score in this competition and has the intention to continue its participation in forthcoming programmes as well.

Within the Qatargas' Al Khor Community, the proactive work done by the EMS division, coupled with other initiatives by the Community management, has witnessed a continuing fall in the number of kitchen fires.

Overall, in Qatargas premises, the recent bench marking study shows a downward trend in the numbers of fires, and this has coincided with the high volume of fire inspection and Fire Awareness Training Programme the division is carrying out within the Company. Our initiative to deploy the initial response team within 5 minutes of travel time to 90 percent of the incidents was a success in the past year.

This was the first time a scientific method of evaluation of emergency response time was established in Qatargas.

Since the Qatargas facility is expanding in size and its complexity, it is more important than ever that staff are fully prepared, trained and able to respond when emergencies do occur. Significant work has also been undertaken to ensure that the EMS continues to protect QG assets in the event of a major incident affecting the reliability of the Plant. The division also received very positive responses from a recent in-house Company-wide survey. Moreover, self-assessment process is going on in every part of our emergency response and associated activities in the bid to achieve sustained excellence in the area of emergency response management services.

## CASE STUDY

### Human Resources Emergency Preparedness

The HR Department ran their annual Emergency Preparedness training in June, 2012. This was delivered by an external provider over two days and included specialist training on communicating with grieving relatives as well as providing the opportunity to undertake three Crisis Exercise Drills: *Salama*, *Wadi* and *Al Rayyan*.

During the exercises, the prevailing scenarios required the HR Manager to mobilise four teams within the HR Cell, namely the Relatives Response Team, the Hospital Liaison Team, the Family Liaison Team and the Evacuation Reception Team. Systems and protocols were tested and the appropriateness of current tools evaluated which led to clear and necessary actions for immediate preparedness improvement as well as themes for on-going investment.

One of these key themes centres on data, specifically the accuracy of employee contact details within the HR systems, without which the HR Cell Relative Response team cannot contact employee relatives in a time of crisis. During the exercise, employees were requested to check personal and emergency contact details at the earliest and to update those details as soon as their circumstances change using the Employee Self Service (ESS). The outcome of this exercise has led to an improvement in our overall HR preparedness for the future.



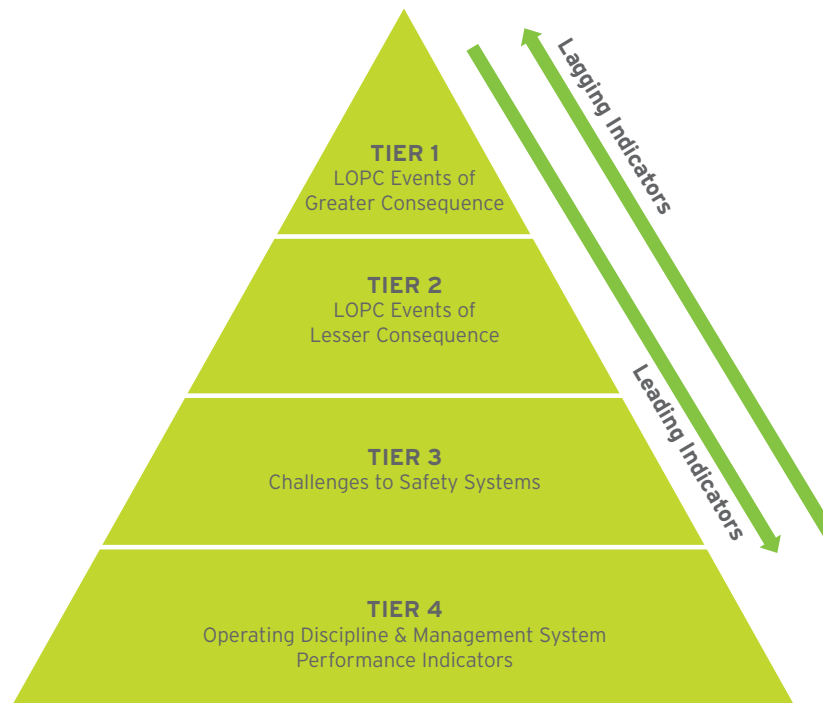
## Process Safety and Asset Integrity

*'Process safety is a disciplined framework for managing the integrity of operating systems and processes that handle hazardous substances. It relies on good design principles, engineering, operating and maintaining practices'* - International Oil and Gas Producers Association (OGP).

Process safety deals with the prevention and control of incidents that have the potential to release energy or hazardous materials. Such incidents can cause toxic effects, fire or explosion and could ultimately result in serious injuries, property damage, lost production and environmental impacts.

Tier 1 and 2 process safety events as defined at Qatargas, in line with API Recommended Practice 754 (API RP 754), are summarised in the below table:

- A Tier 1 process safety event is an unplanned or uncontrolled loss of primary containment (LOPC) release of any material, including non-toxic and non-flammable materials, from a process that results in severe consequences, i.e. fatality, lost time injury, community evacuation, costs greater than 50,000 USD, or release in one hour period of more than 5 kg of toxic material, 500 kg of flammable gas / vapour, 1000 kg of flammable liquids, or 2000 kg of combustible liquids;
- A Tier 2 process safety event is broadly defined as an order of magnitude less severe than the Tier 1 criteria above.



### Tier 1 & 2 Process Safety Events in 2012

Type of event	No. of events in 2012
<b>Tier 1 Process Safety Event</b>	1
<b>Tier 2 Process Safety Event</b>	5

We experienced one Tier 1 process safety event in 2012 when fire and explosion occurred in one of the tug boats that was near Single Point Mooring (SPM) 1. We have taken this incident very seriously and will strive to prevent any such future occurrence.

We also experienced five Tier 2 process safety events during the past year which are related to gas releases within storage and loading areas and onshore LNG facilities.

## Leading & lagging KPI's

Qatargas has a robust mechanism to monitor, report, and analyse a set of carefully chosen leading and lagging Key Performance Indicators (KPI) to provide on-going assurance that risks are being adequately controlled, and to provide an early warning should there be any deterioration of controls.

The KPI's are covering operational integrity (e.g. Compliance operating procedures, compliance to Operating window, plant design and modification, emergency preparedness, permit to work), mechanical integrity (e.g. inspection and maintenance, ignition source prevention, instrument and alarm) and personnel integrity (e.g. competence, training, management commitment and incident reporting).

Both leading and lagging Process Safety KPIs are set in a structured and systematic way within the whole process safety management system. They act as system guardians providing assurance to confirm that the Process Safety Risks are controlled and Leading KPI provide a warning that problems are starting to develop. Leading KPIs used at Qatargas are inspired by the leading metrics from API RP 754 Tier 3 (Challenges to Safety System) and Tier 4 (Management System Performance) and were adapted to match Qatargas risks and specificities.

## Process Safety Programme

Qatargas Process Safety Programme (QG-PSP) is one of the initiatives to achieve the Qatargas Vision 2015 to become the world's premier LNG Company. QG-PSP will be rolled out at every operating asset within Qatargas. In 2012, the programme (targeted for completion in four years) achieved 40.5% completion. We have a target of implementation of 70% of the PSP by the end of 2013.

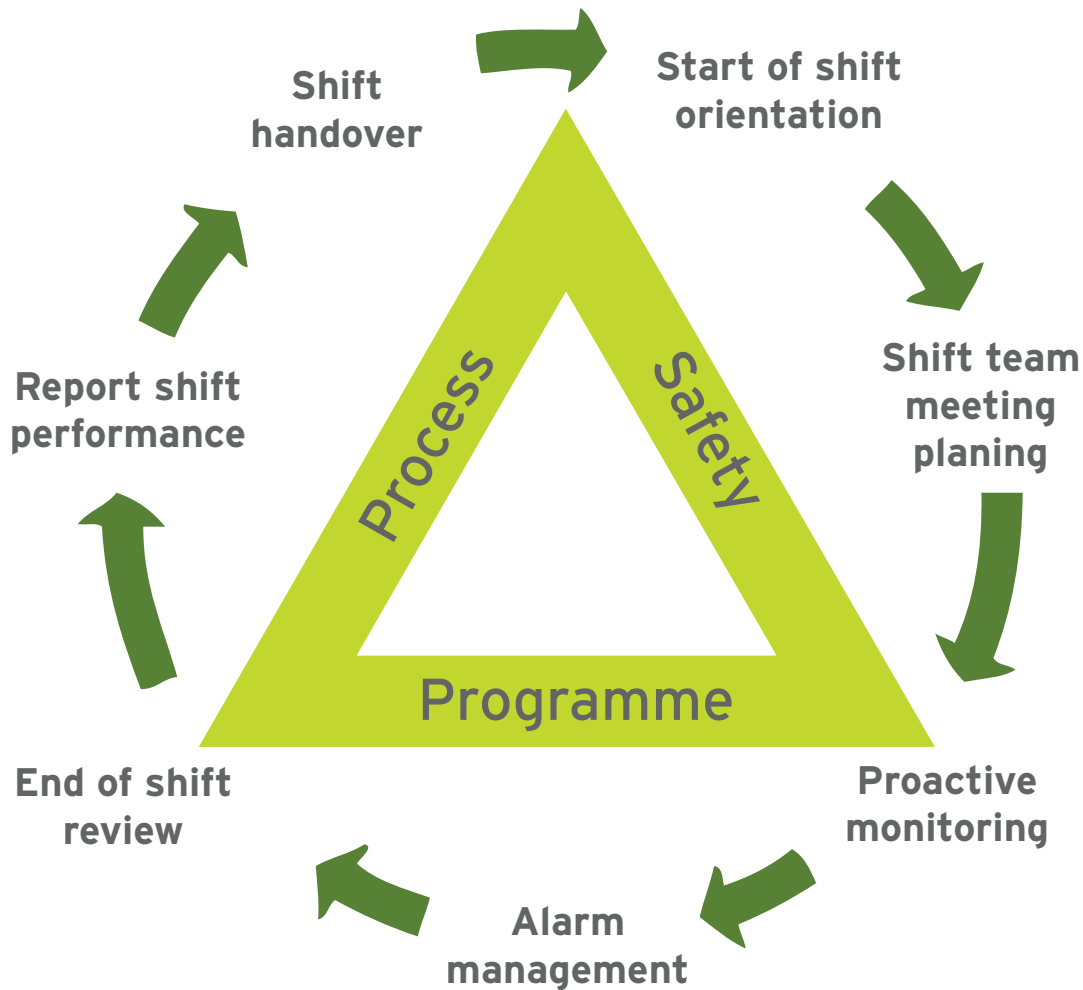
QG PSP is a structured programme to operate within well-defined and understood operating limits, practice situational awareness, conduct proactive monitoring and manage abnormal situations. The programme has the following objectives:

- Determine the operating limits and set corresponding alarms.
- Standardize certain types of communications and planning within, across, and beyond shifts.
- Manage situational awareness.
- Enable proactive monitoring of the process and selected equipment.
- Define a common method for managing abnormal situations



## Shift cycle Process:

### a) Standardize situational awareness & reporting



1. Assets use standardised shift report with the same key elements: HSE, Process Safety Status, Process Variables, Operating Observations, Maintenance & Equipment status, Interfaces and Shift handover.
2. E-Shift reporting has been introduced in all onshore assets LNG trains, Laffan Refinery, Ras Laffan Terminal Operations, LNG Storage & Loading. The offshore assets are planned in 2013.

### b) Training and Audits

The following were achieved in 2012:

1. All Assets are currently using the Shift Cycle Process (communication process within and across the shifts).
2. Approximately 700 operators (Shift Personnel) were trained for the shift cycle process (94%).
3. Process Safety Programme Handbooks & Training material were developed and distributed.

### c) Effective Alarm Management

This involved developing and maintaining of an alarm philosophy, data collection and benchmarking of systems, performing alarm resolution, alarm review and rationalisation. In addition to these measures, ensuring alarm reviews were done on a periodic basis and audits were conducted to verify the Alarm Management Process.

Milestones achieved in Alarm Management included:

- Number of alarms per hour reduced by 50%;
- Common Alarm procedure has been approved and rolled-out;
- Alarm servers for monitoring alarms were installed in all Onshore facilities, offshore to following in 2013; and
- Alarm Documentation & Rationalisation (D&R) workshops have started in onshore assets to review the operating window and alarm point in line with newly approved alarm procedure.

## CASE STUDY

### Qatargas delivers key presentations at Annual Qatar Process Safety Symposium

Qatargas participated in the Annual Qatar Process Safety Symposium held in Doha on the 26<sup>th</sup> March, 2012. The event titled "The Importance of Leadership Commitment in Making Safety a Core Value" was co-hosted by Texas A&M University at Qatar (TAMUQ) and ConocoPhillips Qatar.

Qatargas' Chief Safety, Environment and Quality Officer in his presentation outlined how Qatargas manages safety and monitors safety performance, elaborating on 'Qatargas Incident and Injury Free' (IIF) culture and the various safety programmes and initiatives in place across Qatargas' operations. Also representing Qatargas at the event was the Jetty Boil-Off Gas (JBOG) projects' Head of Safety, Health, Environment and Security. He presented an overview of the JBOG Project, highlighting the safety aspects and the excellent safety performance achieved.

The event, attended by more than 100 participants from Qatar and abroad featured some 18 speakers presenting on topics including incident case studies, best practices in process safety, incident investigations and safety success stories. The event gathered distinguished speakers from countries including the USA, UK, UAE and Indonesia.





## ENVIRONMENT

*Committed to the highest standard of environmental performance*

### 2012: Key Highlights

- Qatargas was awarded the 2012 'Excellence in Flare Reduction Award' by the World Bank Global Gas Flaring Reduction (GGFR) Programme.
- The total quantity of gas flared at Qatargas facilities has reduced by 21% in the last three years.
- The Jetty Boil-Off Gas Recovery (JBOG) Project attained 80% completion.

### Management of Environmental Aspects

Being an industrial leader goes hand-in-hand with a commitment to responsible development and to achieving excellence in environmental performance.

Environmental aspects at Qatargas are managed using a dynamic Aspects and Impacts Register in accordance with the ISO 14001 Environmental Management System Standard. This segregates environmental aspects into operational areas and categorises aspects according to media, activity, products and services, and risk, taking into account impact severity and probability of occurrence.

Qatargas facilities have an integrated ISO certification of its quality (ISO 9001:2008) and environmental management systems (ISO 14001:2004) as well as OHSAS 18000 Occupational Health and Safety Management system. Compliance to these international standards verifies that policies and procedures are in place to control all aspects of Qatargas activities and effectively manage their environmental effects.



## Compliance with Environmental Laws

Compliance with applicable State of Qatar environmental legislation and international conventions ratified by the country is an essential part of the Qatargas operating philosophy.

All Qatargas operated facilities submit Consent to Operate (CTO) applications to the Ministry of Environment (MoE) annually and operate under requirements approved in these CTOs. Our Environmental Affairs Division provides support and guidance on all issues related to environmental legislation including preparation and submission of CTOs. Once approved CTOs become legal documents which ensure that Qatargas assets perform and report in compliance with environmental regulations.

Each CTO has a specific set of environmental monitoring and reporting requirements which are submitted to the MoE on a quarterly basis. These reports provide evidence of compliance to air, water, waste management, noise and other environmental standards, as well as providing updates on voluntary environmental improvement initiatives. The MoE carries out periodic inspections to our facilities to verify the information provided.

Qatargas is also involved in a number of State of Qatar environmental initiatives including long term engagement in climate change strategies and flaring reduction objectives.

We take initiatives to comply with evolving flaring, water treatment and cooling water discharge requirements and are involved in a number of Best Available Technique (BAT) implementation projects such as introduction of pulse-chlorination, a membrane bio reactor wastewater treatment system and studies on flare reduction possibilities.

The long term cooperation with the MoE helps to ensure better understanding and compliance with environmental legislation and we work hard on this engagement process to build capacity and a strong and beneficial working relationship with our regulators.



## Energy

Qatargas primary energy consumption relates to internal fuel gas combustion. Fuel gas is burned to produce the necessary electricity, heat and steam for the production process. Gasoil is only used for on-site mobile sources (company vehicles, forklift trucks, etc.) and emergency generators, and its consumption is negligible compared to fuel gas.

There is no primary energy consumption from renewable sources at Qatargas. There is currently no formalised company research, plans or initiatives related to alternative or renewable energy sources.

Electricity and steam used at QG1, QG2, QG3, QG4, the Laffan Refinery and Ras Laffan Terminal Operations (RLTO) are mainly generated internally from fuel gas combustion and are therefore accounted for in the primary energy consumption. The Laffan Refinery and RLTO however purchase some electricity from the grid for internal use.

Direct and indirect energy consumption at Qatargas facilities in 2012 are summarised in the table below. Direct energy consumption was seen to increase by 15% between 2011 and 2012. This is mainly due to the fact that QG3&4 commenced normal operations in April 2011 and hence the total fuel consumption figure reported for 2011 was for 9 months only, and not the entire year. Taking this into consideration, it has been estimated that the actual increase for the period 2011 - 2012 is around 4-5%, primarily due to the fact that there were fewer LNG train trips in 2012 which contributed to higher availability of the LNG Trains, and hence higher fuel gas consumption in 2012 compared to 2011.

### Energy Consumption for Qatargas Facilities in 2012

Energy type	Unit	Qatargas 1	Qatargas 2	Qatargas 3&4	Laffan Refinery	RLTO	Total
Internal fuel gas (excluding flaring)	GJ	74,783,229	82,654,242	102,415,024	6,903,505	22,927	266,778,927
Purchased electricity	MWh	-	-		115,445	63,561	179,006

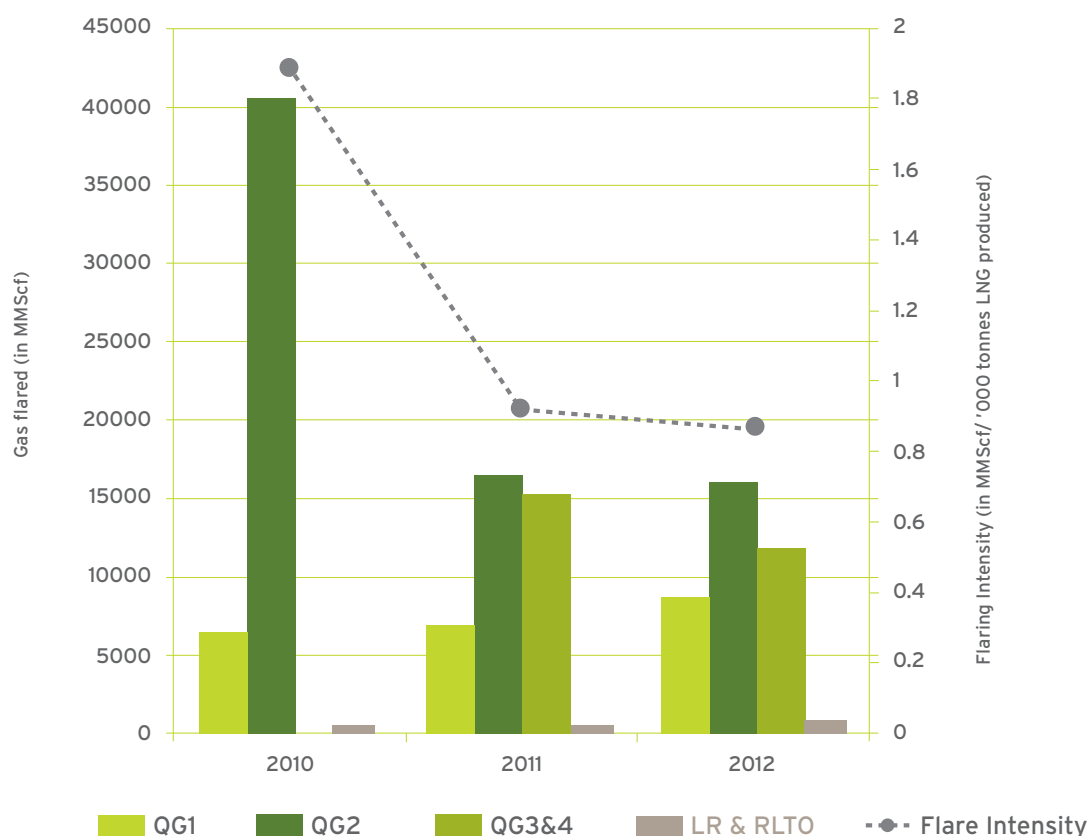
In addition to the above energy use, fuel gas is flared as part of the production process. Gas can be flared under routine cases (such as purge and off-plot jetty and tankage flaring) or under non-routine cases (such as necessary safety releases and emergency depressurisation). We have made some corrections in the way of reporting flaring data (i.e. break-up of routine and non-routine) for 2011 and summarised the quantities of flared gas under routine and non-routine causes for 2011 and 2012 in the table below. In 2012, 58% of the gas was flared under routine conditions, compared to 56% in 2011.

## Gas Flared at Qatargas Facilities in 2012

Facility	2011		2012	
	Routine causes (Purge + Off-plot Jetty and Tankage) (MMScf)	Non-routine causes (MMScf)	Routine causes (Purge + Off-plot Jetty and Tankage) (MMScf)	Non-routine causes (MMScf)
<b>Qatargas 1</b>	4,422	2,532	4,220	4,467
<b>Qatargas 2</b>	11,607	4,992	8,067	7,965
<b>Qatargas 3&amp;4</b>	5,667	9,724	8,996	2,878
<b>Laffan Refinery and RLTO</b>	344	307	466	374
<b>Total</b>	22,039	17,555	21,749	15,684

The flaring trend between 2010 - 2012 is shown in the graph below.

## Flaring Trend 2010 - 2012 at Qatargas Facilities



The total quantity of gas flared at Qatargas facilities was reduced by 21% during the last three year period (2010 - 2012) even though LNG production increased substantially during the same period with QG3 and QG4 coming online in 2011. In addition, Qatargas further reduced its flaring by 5% between 2011 and 2012, though LNG production decreased only marginally (0.2%). This performance was achieved due to the efficiency of our continuous efforts to reduce flaring.

Our flaring intensity (MMScf gas flared per thousand tonnes of LNG produced) has reduced by 52% during the last three year period.

## Flare Management within Qatargas

In 2010 Qatargas developed a Flare Management Plan (FMP) as part of the management and oversight strategy to minimise flaring associated with its LNG processing facilities which comprise of seven LNG Trains, including the world's largest LNG (mega) Trains - Trains 4 to 7 commissioned during 2009 - 2011.

The FMP is driven by a number of internal and external incentives which include the Qatargas Direction Statement, the State of Qatar MoE standards, the Ministry of Energy and Industry directives, requirements of the Qatargas Consent to Operate Environmental Permit, shareholder flare minimisation and reporting requirements, operating philosophy and the Company's desire to reduce its carbon footprint. Qatar is a part of the World Bank GGFR initiative. At the State level, environmental protection, including flaring minimisation is also a requirement enshrined in the Qatar National Vision 2030.

The FMP allows Qatargas to determine how best to minimise flaring while considering the need for asset integrity and process safety, operating flexibility, and the potential future opportunities to monetize carbon emissions in an evolving global carbon trading market.

A multi-disciplinary Flare Management Team (FMT) comprising key disciplines including Operations, Process Engineering, Hydrocarbon Allocation, Maintenance, Reliability and Environmental Affairs supports it. The FMP Charter outlines the framework and scope of the Group's activities ranging from Flare Minimisation reviews during planned plant shutdowns to verification of the accuracy of metering system performance.

Engineering projects on enhanced acid gas recovery and Operational Excellence initiatives on source reduction and plant reliability at the existing Trains 1 to 3 have successfully reduced flaring by almost 70% with an equivalent reduction, notably in GHG emissions. The newly commissioned mega-trains are the largest ever built and present a potentially challenging flaring footprint due to the significant scale-up in facility and unit sizes and throughput capacities. Source reduction and plant reliability plans have been progressed since 2010 to reduce the flaring at these trains.

As part of its overall flare minimisation strategy, Qatargas is also progressing flare gas recovery studies, which are expected to eventually realise major engineering projects and recover large portions of gas otherwise flared at the LNG facilities.

The on-going Jetty Boil-Off Gas (JBOG) project engineered and pioneered by Qatargas and scheduled for completion in 2014 at the Qatargas LNG loading facilities is expected to reduce JBOG flaring by over 90%, gas which otherwise would be flared will be recovered for reuse in process facilities.

The culmination of the source reduction, plant reliability and engineering projects at Qatargas is expected to reduce and maintain the total flaring at acceptable long term target levels.

A prelude to tracking performance and initiating flare reduction programmes is accurate estimation of flared volumes from flaring sources involved. A series of measuring devices based on ultrasonic measurement principles are provided for measuring flared gas volumes. These systems undergo a robust preventive maintenance and calibration programme, ensuring the measurements are as accurate as possible.

These flare meter measurements are utilised at Qatargas by the Production Allocation Group, Operations and the Environmental Affairs Division to process flaring reports to key stakeholders, including Qatar Petroleum, the MoE, peer group benchmarking exercises and other shareholders.

Key drivers behind this reduction were multi-disciplinary Flare Management Teams (FMTs) established for each LNG asset, fewer LNG train trips and reduced shutdown flaring. Flare tracking and monitoring practices were likewise enhanced - flaring performance is now reported on a weekly, monthly and quarterly basis. Qatargas was awarded the 2012 'Excellence in Flare Reduction Award' by the World Bank Global Gas Flaring Reduction (GGFR) Programme.

"Qatargas has an active Corporate Social Responsibility Programme which is an integral part of our business operations and management strategy. As a key element of this, we are developing a comprehensive greenhouse gas management strategy and have established significant flare reduction, recycling and waste management practices."

Randy Stadler, Qatargas Chief Safety, Environment and Quality Officer

Qatargas has completed an overall Flaring Reduction Feasibility Study which has identified flare reduction solutions for all Qatargas LNG assets, including Qatargas' mega-trains. These solutions are being implemented in the following phases:

- Phase 1: Consists of reducing baseline purge and burnback flaring, and is expected to be completed in 2013. It is anticipated that with completion of this plan, the current baseline flaring from QG2 and QG3&4 will be reduced by approximately 70%; and
- Phase 2: This is a long term effort and primarily involves interconnections within process units at a train to transfer off-spec gas that would otherwise be flared during process upsets. The plan also envisages feed gas interconnections between various LNG assets to offset any gas that would otherwise be flared. This phase is currently in the execution planning stage.

There is no cold venting of gas at Qatargas facilities.



## An insight into the Jetty Boil-Off Gas Recovery (JBOG) Project (2012 Updates)

### Overview:

Qatar produces 77 million tonnes of LNG per annum, and is the largest provider of LNG in the world. The world's largest man-made harbour in Ras Laffan City, located 80km north of Doha, has six LNG loading berths. During loading of the liquefied gas in the LNG ships, a portion of the minus 160°C liquid boils off, as it comes into contact with the warmer ship tank. This boiled off gas is currently being flared at the berth because there is no outlet for this low pressure gas. The average flow rate of the boil-off gas is 100 million standard cubic feet, which has the potential to produce around 750MW of power.

In line with Qatar's National Vision to produce and supply clean energy to the world, Qatar Petroleum and the Ministry of Environment (MoE) decided to recover the flared gas at the LNG berths to the maximum extent practical. This intent gave birth to the Jetty Boil-Off Gas Recovery Project in 2007. A Pre-FEED design had been done by RasGas, and the project was handed over to Qatargas in June 2007.

The JBOG Project when fully implemented will save the emission of 1.6 million tonnes of carbon dioxide into the atmosphere. One trillion cubic feet of gas will be saved for the State of Qatar over a period of 30 years. It is one of the largest investments for flare reduction in the world.

### Current Status, Progress and Completion:

This USD1bn project is currently 80% complete and its completion is expected in early 2014.



## Climate Change

### Our Greenhouse Gas Emissions

The Qatargas GHG emissions inventory was developed based on the European Union (EU) Monitoring and Reporting Guidelines (MRG) 2007. Reference was also made to the internationally recognised World Resources Institute and World Business Council for Sustainable Development (WRI/WBCSD) GHG Inventory Protocol. The inventory includes Scope 1, 2 and 3 GHG emissions. Scope 1 and 2 emissions are determined directly from production and consumption data related to offshore gas production and onshore processing to produce LNG, related by-products including sulphur, propane, butane, LPG and condensate and refined products including naphtha, kerojet, LPG and gas oil. Additional Scope 3 emissions are determined based on plant vehicle and bus usage, administration reports pertaining to office buildings and travel reports related to business air travel.

The GHG inventory includes all operating assets, namely QG1, QG2, QG3, QG4, the Laffan Refinery, and the common storage and loading facility in Ras Laffan Port (RLTO).

Carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ) and nitrous oxide ( $\text{N}_2\text{O}$ ) are the most relevant GHGs related to production activities of LNG. These gases occur from the production and consumption of energy. Total  $\text{CO}_2$  emissions include inherent or formation  $\text{CO}_2$  (that is naturally present in the North Field gas),  $\text{CO}_2$  generated from fuel combustion and flaring,  $\text{CO}_2$  resulting from chemical process operations and  $\text{CO}_2$  resulting from fugitive emissions. Total  $\text{CH}_4$  emissions include unburned  $\text{CH}_4$  contained in combustion emissions and  $\text{CH}_4$  resulting from fugitive emissions. All  $\text{N}_2\text{O}$  emissions are generated in combustion activities. The inventory does not include sulphur hexafluoride ( $\text{SF}_6$ ), perchlorofluorocarbons (PFCs) and hydrofluorocarbons (HFCs).  $\text{SF}_6$  is used in some electrical equipment, and its use is carefully controlled. There are no significant PFCs or HFCs emissions in LNG production.

Direct scope 1 GHG is summarised in the below table in  $\text{tCO}_2\text{eq}$ , taking into account the Global Warming Potential (GWP) of each considered GHG. These include all GHG emissions released on-site from sources controlled by Qatargas, and specifically include those related to gas-fired equipment, process flares and inherent  $\text{CO}_2$  removed from the inlet feed gas. Transport of product (shipping) is accounted in scope 3 emissions as it is not operated by Qatargas.

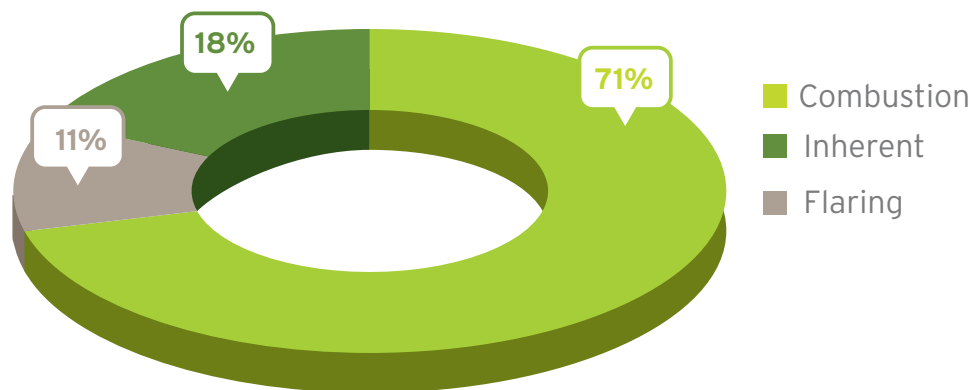


### Direct Scope 1 GHG Emissions from Qatargas Facilities in 2012

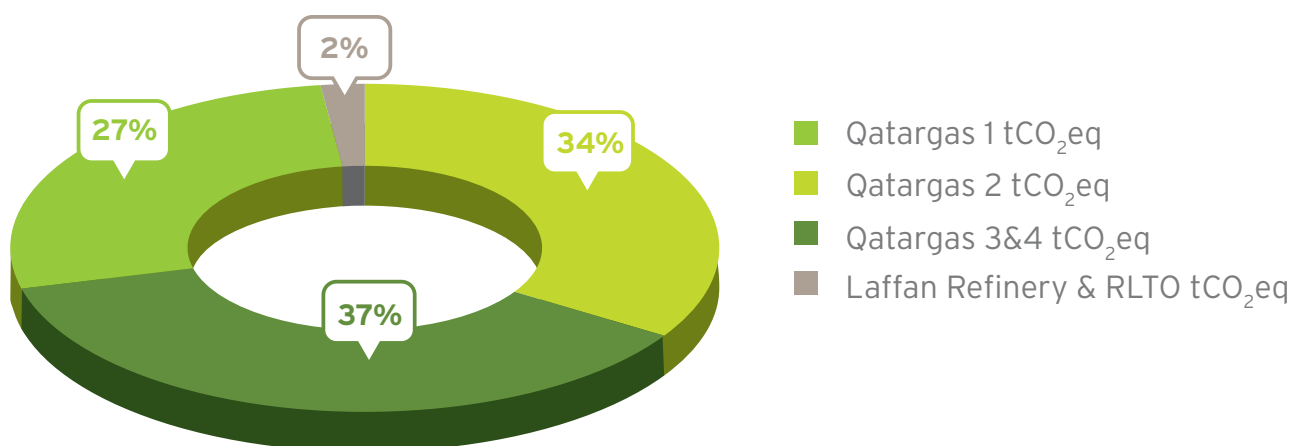
Facility	Unit	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total
Qatargas 1	tCO <sub>2</sub> eq	5,006,895	59,106	22,077	5,088,078
Qatargas 2	tCO <sub>2</sub> eq	6,308,026	111,736	24,798	6,444,560
Qatargas 3&4	tCO <sub>2</sub> eq	6,976,115	76,857	31,099	7,084,071
Laffan Refinery	tCO <sub>2</sub> eq	393,585	1,271	1,928	396,784
RLTO	tCO <sub>2</sub> eq	7,143	904	0	8,047
<b>Total</b>	tCO <sub>2</sub> eq	18,691,764	249,874	79,902	19,021,540

CO<sub>2</sub> represents 98.3% of our direct GHG emissions, while CH<sub>4</sub> accounts for 1.3% and N<sub>2</sub>O for the remaining 0.4%. The distribution of our Scope 1 GHG emissions per source and facility is provided in the graph below.

### Scope 1 GHG Emissions per Source

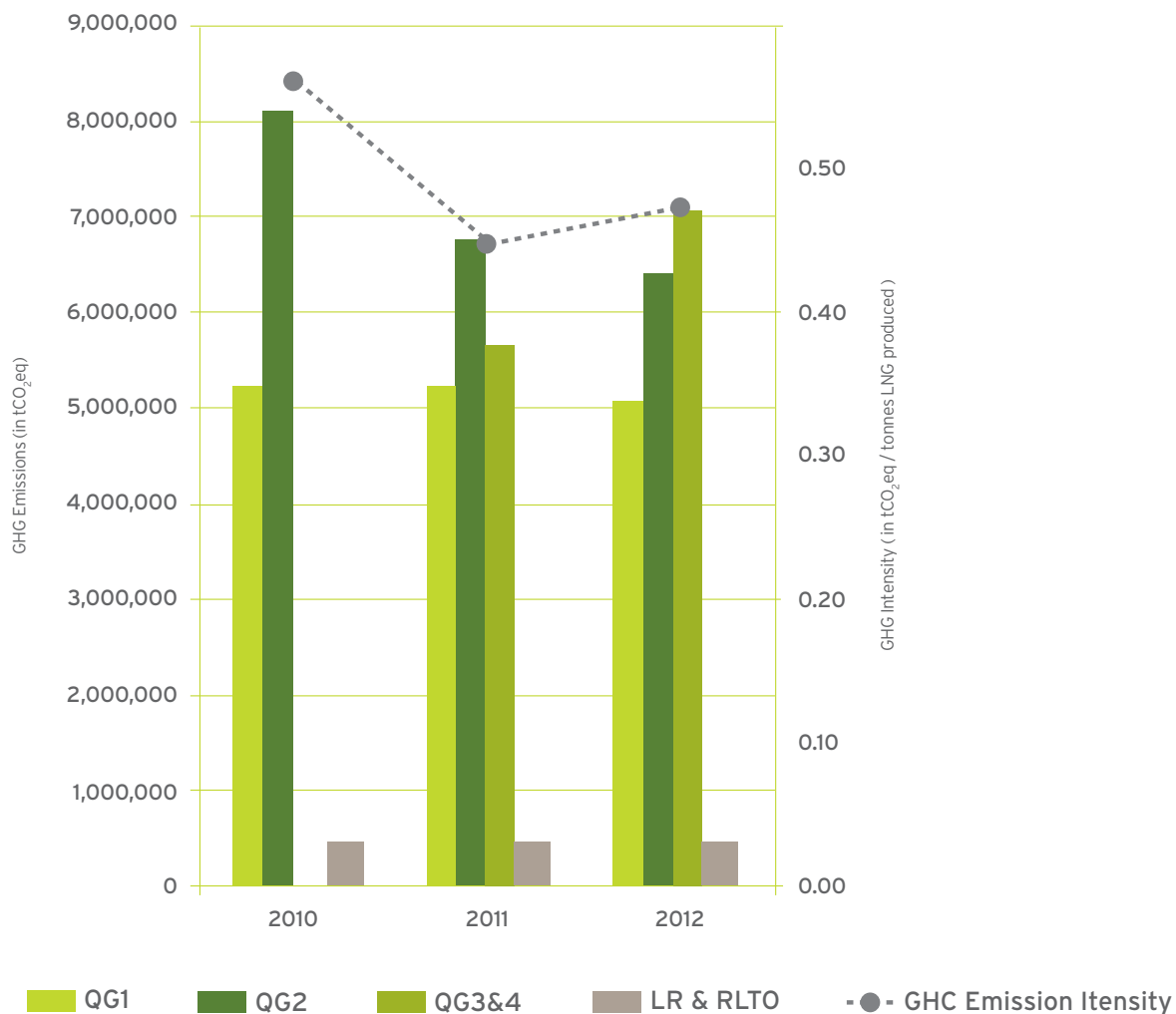


### Scope 1 GHG Emissions per Facility



The Scope 1 GHG emissions trend between 2010 - 2012 is shown in the graph below.

#### Scope 1 GHG Emissions Trend 2010 - 2012 at Qatargas Facilities



The total reported Scope 1 GHG emissions at Qatargas facilities increased by 5% between 2011 and 2012. This apparent increase is due to the fact that GHG emissions reported for QG3 and 4 only covered three quarters of the year in 2011 (QG4 was started-up in first quarter 2011, and GHG emissions were reported only from second quarter onwards), thus leading to an apparent 26% increase in GHG emissions at QG3&4 between 2011 and 2012. Prorated to a full year, QG3&4 GHG emissions have actually decreased by approx. 5% between 2011 and 2012. QG1 and QG2 GHG emissions were reduced by 3% and 21% respectively in the last three year period. There was also an 11% decrease in GHG emissions in the Laffan Refinery and RLTO between 2011 and 2012.

LNG production increased by 65% between 2010 and 2011 with the start-up of QG3 and QG4, and then stabilized in 2012. Our total Scope 1 GHG intensity (tCO<sub>2</sub>eq per tonne of LNG produced) has reduced by 14% between 2010 and 2012.

Electricity and steam used at QG1, QG2, QG3, QG4 and the Laffan Refinery are generated internally from fuel combustion and are therefore accounted for in Scope 1.

The Laffan Refinery and RLTO however purchase some electricity from the grid. In 2012, 179,006 MWh were purchased and consumed, leading to emissions of 89,570 tCO<sub>2</sub>eq. In addition, 185,412 tCO<sub>2</sub>eq were related to cooling water imported from RLIC Common Cooling Water System and to desalinated water. These Scope 2 indirect GHG emissions amount to 274,982 tCO<sub>2</sub>eq and represent 1.4% of the total Scope 1 GHG emissions.

Scope 3 GHG emissions are released from sources not directly controlled by Qatargas and include GHG emissions from products transportation, air business travel and employee commuting with rented buses. Scope 3 GHG emissions are summarised in the table below.

### Indirect Scope 3 GHG Emissions

Source	GHG emissions (tCO <sub>2</sub> eq)	Calculation methodology
Product transportation	6,254,646	IPCCC 2006 Guidelines for National Greenhouse Gas Inventories, Volume 2 Energy
Air business travels	2,799*	DEFRA, Methodology Paper for Transport Emission Factors 2008
Bus employee commuting	2,528*	American Petroleum Institute 2009

*\* These have not been assessed in the current year and are based on a study conducted in 2010*

Business travel and employee commuting appear to be negligible compared to product transportation (less than 0.1%).

More information is provided in the section on environmental impact of transportation.

### Our GHG Management Strategy

Qatargas has pioneered the GHG Management strategy within the industrial sector in Qatar. Qatargas recognises that the proactive preparation for potential future carbon management and regulations is better achieved by understanding and managing GHG emissions profile. To achieve this we have embarked on a long term GHG Management strategy, which has been divided into 3 phases, as detailed below:

- Phase I involved understanding the GHG issue, preparing an action plan, and focusing on internal capacity building through the discussion of trends and development in GHG policies, projects and markets; and analysed the impact of climate change on Qatargas operations. It also reviewed potential opportunities to reduce GHG emissions and participate in the global carbon market.
- Phase 2 involved preparing a detailed and thorough annual reporting plan, quality manual, and a GHG measurement manual based on QP and EU guidelines. In fulfilment of this plan, emissions inventory for all Qatargas facilities (LNG Trains, Laffan Refinery, RLTO) – covering Scope 1, 2 and 3 emissions were prepared. These reports and the emissions inventory were subjected to a rigorous audit process for years 2010, 2011 and 2012 by QP and their auditors (SGS). Qatargas has received certification for year 2010 and 2011 and is well on its way to receive certification for 2012 reporting. Qatargas also conducted LNG Benchmarking and has set applicable KPI's (Key Performance Indicators) for our GHG numbers with respect to production. Qatargas now has a GHG Specialist to oversee GHG related issues.
- Phase 3 is currently being initiated and will assess carbon reduction opportunities and abatement techniques via sustainability assessment and engineering studies and also look at Life Cycle Assessment (LCA). Plans are also in place to have a wider outreach and be in alignment with the existing GHG Management global platform.

## Initiatives to reduce Greenhouse Gas Emissions

The following initiatives were undertaken during the past year:

- Initiatives which were mostly related to operational controls and source reduction as part of the Qatargas Flare Management Strategy were implemented;
- Long term phased engineering projects (as part of the Qatargas Flare Management Strategy) and the JBOG Recovery Project are also being progressed; this will help reduce GHG emissions further.



Climate Change refers to the long term change in climatic patterns attributed directly or indirectly to anthropogenic activity. Due to increasing strong scientific evidence throughout the years the United Nations (UN) became an early player in addressing climate change concerns. Since 1995, the UN holds annual meetings known as 'the Conference of the Parties' (COP) under the UN Convention on Climate Change to assess progress in dealing with climate change. The COP adopts decisions and resolutions which get published in its reports.

Qatar, under the chairmanship of HE Abdullah bin Hamad Al-Attiyah, was the proud host of the COP18 which took place from 26 November to 7 December 2012 in Doha. Qatargas had a designated area at the Qatar Sustainability Expo. The prime attraction was Qatargas' USD 1 Billion Jetty Boil-Off Gas (JBOG) recovery project, which helps reduce flaring during the ship loading process. Once online, this project is expected to reduce carbon dioxide emissions by up to 1.6 Million tonnes per annum, approximately 90% of the current scenario. In addition, Qatargas highlighted its key environmental focus areas as well as the major improvements it made to help set standards for environmental performance.

In addition to the above, Qatargas made two presentations at the COP18 side event discussing 'LNG GHG Management strategies' & 'Natural Gas as a Global Sustainable Energy Future'. As an outcome of COP18, Qatargas as a key local, regional and global player looks forward to align itself with the aspirations of its key shareholders and stakeholders in order to progress outcomes of the "Doha Climate Gateway".

## Air Emissions

Qatargas strives to manage air emissions through the use of advanced emissions management and abatement techniques. Reducing emissions is among the highest priorities, and we are actively working with our partners and industrial neighbours to achieve this goal.

Non-GHG emissions relevant to Qatargas operations are:

- Sulphur dioxide (SO<sub>2</sub>) which originate primarily from the gas treatment (sulphur extraction process);
- Nitrogen oxides (NO<sub>x</sub>) which originate primarily from fuel gas combustion and flaring; and
- Volatile organic compounds (VOC) which originate primarily from fugitive emissions (from valves, flanges, seals, and emissions incurred during loading and unloading activities).

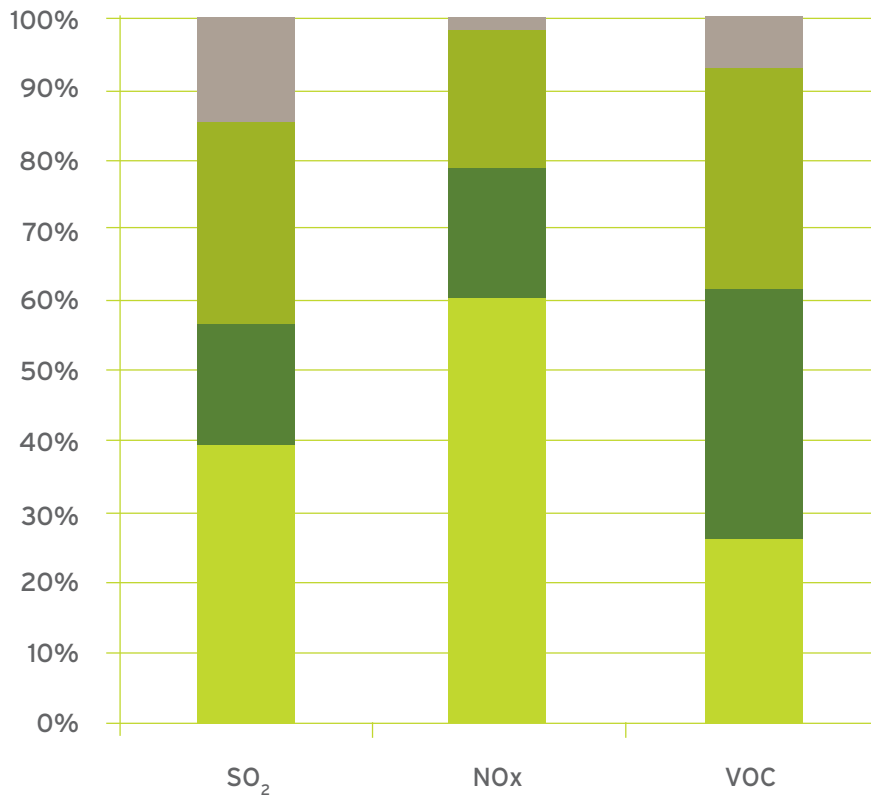
Air emissions from Qatargas facilities in Ras Laffan in 2012 are summarised in the table and graph below. Air emissions from ships for transportation of products are provided in the section on the environmental impact of transportation.

### Air Emissions from Qatargas Facilities in 2012

Air pollutant	Unit	Qatargas 1	Qatargas 2	Qatargas 3&4	Laffan Refinery	RLTO	Total
<b>Sulphur dioxide (SO<sub>2</sub>)</b>	tonnes	5,494	2,448	3,967	2,124	0	14,033
<b>Nitrogen oxides (NO<sub>x</sub>)</b>	tonnes	7,003	2,057	2,327	168	1	11,556
<b>Volatile organic compounds (VOC)</b>	tonnes	303	404	367	83	0	1,157

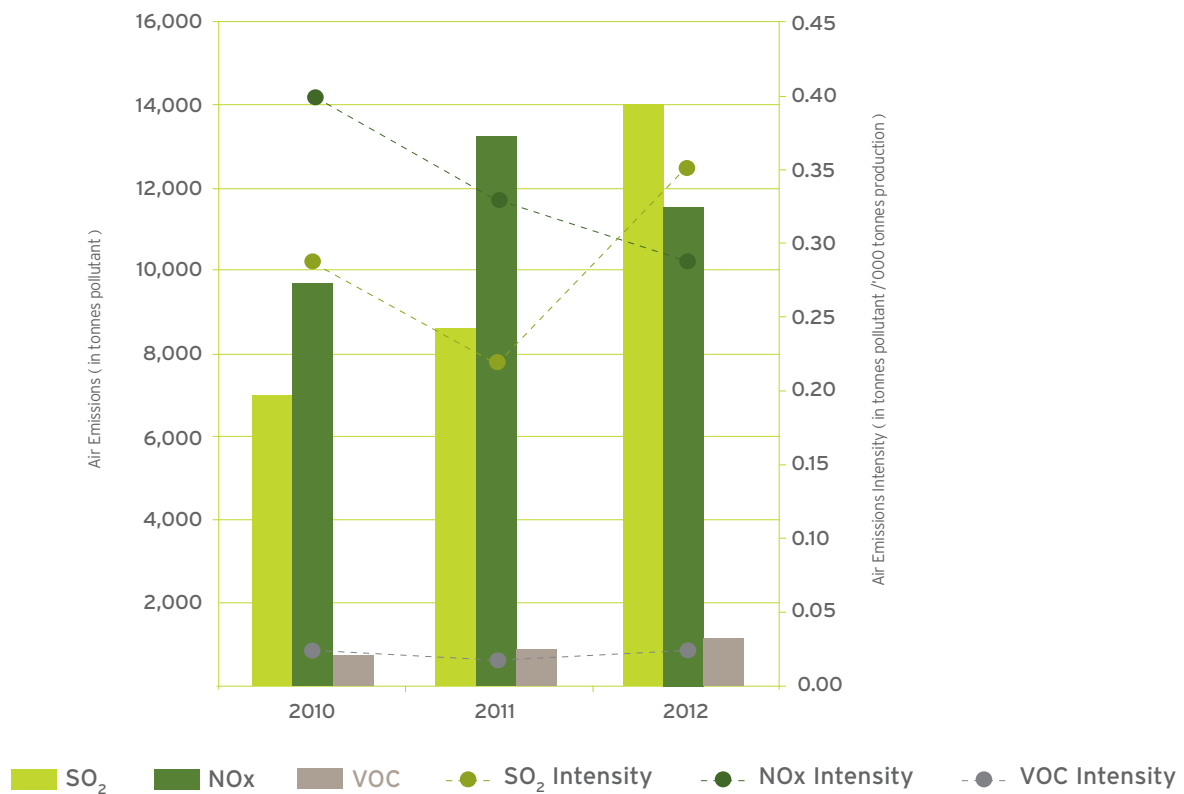
The SO<sub>2</sub> and NO<sub>x</sub> from QG2 and QG3&4 are lower than those from QG1, primarily due to the use of more efficient technologies and burners. The SO<sub>2</sub> emissions from QG3&4 are higher than those from QG2 as a result of the gas composition, where QG3&4 have a higher H<sub>2</sub>S content of inlet gas.

### Distribution of Air Emissions per Facility (2012)



The air emissions trend between 2010 and 2012 is shown in the graph below.

### Air Emissions Trend 2010 - 2012 at Qatargas Facilities





Air emissions at Qatargas facilities increased by 62% for SO<sub>2</sub> and 29% for VOC between 2011 and 2012 whereas the LNG production only reduced marginally (0.2%). The primary reasons behind the increase in SO<sub>2</sub> emissions during the last year were QG2 major shutdown (first Mega-Train total shutdown) and several process upsets observed at LNG assets and Laffan Refinery leading to significant increase of sour/acid gas flaring and consequently SO<sub>2</sub> emissions. Improvement in the reporting process led to an increase in the VOC emissions. In 2012, we were able to include all sources completely and accurately in comparison to what was done in 2011. The NO<sub>x</sub> emissions decreased by 13% as compared to the previous year, as a result of the NO<sub>x</sub> reduction initiatives undertaken at QG1.

As a result of the above, air emissions intensities (tonnes pollutant per thousand tonnes of LNG produced) improved by 28% for NO<sub>x</sub> during the last three year period. The VOC intensity witnessed no significant change in past three years whereas the SO<sub>2</sub> emission intensity witnessed a rise of 21% during the period of 2010 - 2012.

Other initiatives to reduce air emissions in 2012 include the progress of Qatargas Leak Detection & Repair (LDAR) Programme which commenced in 2011. In 2012, the programme was extended to all Ras Laffan Terminal Operations tank farms and the Common VOC Facility, with the first round of monitoring expected to be completed in 2013 for the facilities newly included in the programme. In addition, a re-monitoring programme was initiated at the LNG assets and the Laffan Refinery in late 2012, which will be completed by mid-2013. Annual re-monitoring will subsequently be conducted.

Qatargas does not use Halon or Chlorofluorocarbons (CFC) in its installations. Qatargas uses R-22 (Hydrochlorofluorocarbon - HCFC) in some HVAC (Heating, Ventilation, and air conditioning) units which will be progressively phased out. Most of the other areas use only hydrofluorocarbons (HFC such as R-134a) for which currently there is no restriction. HCFC and HFC emissions are limited and result primarily from the routine maintenance of air conditioning systems (leak repairs and top-up of HVAC equipment).

Qatargas was the first company in Qatar to establish an ambient air quality monitoring programme. The results have provided important information to help set the agenda for future controls on air emissions for all Ras Laffan industries.

## Materials

Direct input materials used in our products are limited to the gas we extract at our offshore platforms. In 2012, we extracted raw gas from the Qatar North Field that, once treated, led to the production of 40 million tonnes of LNG, and various other by-products (condensate, sulphur, propane, butane, naphtha, etc.).

Indirect purchased materials include chemicals and a variety of process equipment and components.

None of the direct and indirect materials used are recycled input materials.

## Waste

Qatargas produces hazardous and non-hazardous waste as a result of our operations at the Ras Laffan facilities, including our LNG Trains, the Laffan Refinery and RLTO. Smaller waste quantities also arise from our offshore production platforms. Wastes are produced during the construction, start-up, commissioning, operation and maintenance of our facilities.

Hazardous wastes include used oil, spent process filters, dry sludge, methanol, spent mercury filters, and molecular sieves. Non-hazardous wastes include scrap metal, office and canteen waste, paper and cardboard, anthracite and sand, cooking oil and concrete. Quantities of hazardous and non-hazardous wastes produced at Qatargas facilities in 2012 compared to 2011 and 2010 are summarised in the table below. Waste quantities from ships for transportation of products are provided in the section on environmental impact of transportation.

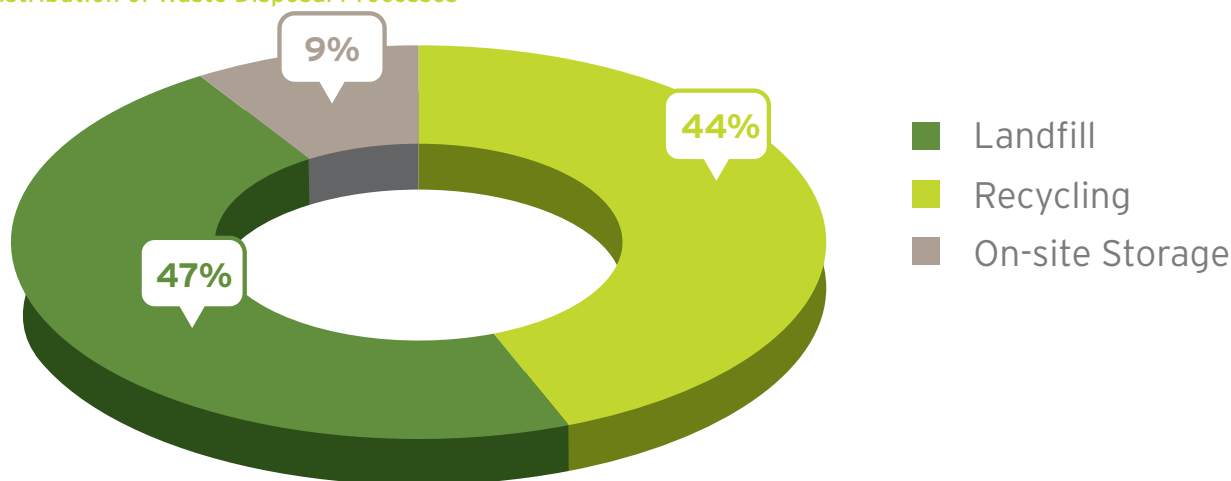
### Waste Quantities from Qatargas Facilities

Category of waste	Quantity in tonnes		
	2010	2011	2012
Hazardous waste	521	1,172	4,099
Non-hazardous waste	2,610	2,626	5,500
Total	3,131	3,798	9,599

In 2012, we experienced a complete QG2 shutdown (both trains 4&5), which was the first major shutdown for the mega-trains and led to the generation of significant quantities of waste, predominantly scrap metal and molecular sieves, thus explaining the major rise in waste generation in the year 2012.

We regularly review our waste management practices based on the 'reduce - reuse - recycle' principle. Recycled wastes include scrap metal, used oil, office waste paper and cardboard, empty drums and broken concrete. Wastes that cannot be recycled are temporarily stored on-site and/or landfilled in compliance with the government regulations. The distribution of disposal processes for waste produced by our facilities in 2012 is presented in the below figure.

#### Distribution of Waste Disposal Processes



We temporarily stored on-site 9% of waste produced in 2012 resulting in a recycling rate of 44%, slightly higher than last year (40%). The remainder of the waste (47%) reached the landfill.

#### Spills

No reportable spills were recorded for any Qatargas activity in 2012. Spill management and recovery are part of Qatargas emergency response plans.

#### Water Withdrawal and Discharge

All water abstracted and discharged by our production facilities in Ras Laffan and offshore originates from and is routed to the Arabian Gulf. In 2012 we were supplied with 2.64 million m<sup>3</sup> of desalinated seawater for use mainly as process water and also for sanitary purposes to a lesser extent. We also abstracted 3,761 million m<sup>3</sup> of seawater to serve as non-contact cooling water, all of which was subsequently returned to the sea.

In 2012, 30,262 m<sup>3</sup> of wastewater (predominantly clean process streams) was re-used for irrigation. Apart from this, water is discharged to the Arabian Gulf either directly for non-contact cooling water and storm and process water streams, or after treatment for process and sanitary wastewater. Qatargas also utilises a deep injection well as a means of disposing of process wastewater. Volumes of water discharged by Qatargas onshore and offshore facilities in 2012 compared to 2010 and 2011 are summarised in the below table by the type of discharge.

## Water Discharge from Qatargas Facilities

Type of discharge	Volume in m <sup>3</sup>		
	2010	2011	2012
Produced water (discharged offshore)	86,925	91,344	95,976
Process wastewater (deep injection wells)	932,934	1,242,659	1,291,751
Non-contact cooling water (to sea)	2,432,821,231	3,301,622,029	3,761,689,363
Sanitary wastewater (to sea after treatment*)	13,586	57,284	52,925
Clean process (e.g. boiler blowdowns, condensate regenerate water) and storm water (to sea)	Not reported	813,436	801,629
<b>Total</b>	<b>2,433,854,676</b>	<b>3,303,826,752</b>	<b>3,763,931,644</b>

\* Sanitary wastewater from all QG facilities (QG1, QG2, QG3&4, LR and RLTO) is sent to the QG1 Sanitary Wastewater Treatment Plant for treatment and subsequently discharged to sea as it does not meet the MoE irrigation water quality standards. The effluent treatment plant is currently being upgraded to a Membrane Bioreactor as part of a Compliance Action Plan agreed with the MoE in order to meet irrigation standards.

## CASE STUDY

### Enhanced Water Treatment via Membrane Bio Reactor Technology

The Qatar National Vision 2030 (QNV 2030) established a framework of programmes and projects to support sustainable development goals. A key element identified in the strategy is the development of advanced wastewater treatment facilities which is guided by the National Development Strategy (NDS), 2011 - 2016. It is anticipated that by 2014, Qatar will have established an independent regulator to help accelerate reforms of the water sector governed by a National Water Act. This is a new piece of legislation currently being developed, will establish a system of quality requirements, discharge controls and incentives for water conservation, creating an integrated governance framework for water regulation. Therefore, Qatargas aligned its advanced wastewater treatment with the QNV 2030. As a key stakeholder in this process, Qatargas is developing a range of integrated wastewater treatment projects which are designed to meet and exceed the rapidly developing water production and wastewater management regulations.

Qatargas developed an approach for enhanced water treatment via the use of Membrane Bio Reactor (MBR) technology. This technology uses man-made membranes made up of a polyvinylidene fluoride (PVDF) polymer which screen compounds such as tiny suspended solids and use microbes to breakdown pollutants while allowing water to pass through. The Qatargas MBR uses advanced membrane aeration controls optimizing operational efficiency, which helps offset costs associated with the membrane system while reducing operational energy costs and associated greenhouse gas emissions (GHG), achieving a reduced footprint compared to conventional wastewater treatment systems. MBR is identified as BAT for wastewater treatment and Qatargas' proposed use of this technology was the first of its kind in Qatar, as well as the LNG industry.

Due to the success of pilot plants conducted by Qatargas, it is expected that the first of the planned full scale MBRs at Qatargas will be on stream in 2014 coinciding with the new water regulation in Qatar.

More than 99.9% of water abstracted and discharged relates to non-contact cooling seawater, the remaining part being treated sanitary and process water.

The two main water discharge streams, non-contact cooling water and process wastewater volumes increased respectively by 14% and 4% between 2011 and 2012.

Both non-contact cooling water and process wastewater are monitored for quality before discharge or deep well injection to ensure compliance with the government regulations specified in respective asset CTOs.

## Biodiversity

Biodiversity is one of the many environmental elements included in Qatargas' CSR initiatives. Qatargas recognises that our operations are in continuous interaction with the environment and that our onshore facilities in Ras Laffan and offshore platforms may affect the marine and terrestrial biodiversity present in the vicinity of our activities, unless responsible environmental management practices are implemented. We operate in or near ecologically-sensitive environments in particular the Arabian Gulf which is home to coral reef habitats, seagrass and various wildlife species, including endangered species such as the hawksbill sea turtle, sea snakes, whale sharks and endangered cetaceans (whales and dolphins).

Qatargas has been a pioneer in biodiversity and the protection of wildlife and their habitats in Qatar since its inauguration in 1996. Recognizing the importance of coral reef habitats in the Arabian Gulf to overall biodiversity Qatargas has continued with the Coral Relocation Project Monitoring and Assessment project in collaboration with the MoE. Qatargas relocated approximately 4,500 living hard corals from the near-shore portion of the QG 2, QG 3&4 and Common Condensate Single Point Mooring Project pipeline corridors offshore of Ras Laffan Industrial City (RLIC) to a coral reef area known as Fasht al Hurabi. Monitoring has been conducted at six month intervals from 2009 to September 2012.

"We are concerned about biodiversity and are involved in a number of marine conservation projects, including coral restoration and protection and beach clean - ups, aimed at supporting turtle conservation. We are actively involved in biodiversity education and awareness programmes and support all aspects of environmentally responsible behaviour"

James Baldwin,  
Qatargas Environmental Manager

The coral monitoring at the relocation site has a number of important outcomes.

- It provides a continued assessment of the only permanently marked coral community surveys in Qatar. Through this initiative, we continue to provide a time lapsed assessment of the value of coral relocation programme as a mitigation option for pipeline impacts on the near-shore environment and helps to build critical knowledge of the response of the marine environment to habitat compensation methods, building valuable scientific knowledge to an important environmental management aspect of marine conservation;
- Through this work we are also providing valuable synergies between industry and the environmental regulatory and conservation agencies in Qatar; and
- Further monitoring is of particular value following successive coral bleaching events as it provides valuable data on the response of sensitive coral species to the climatic warming effects in the atmosphere and oceans and can assist policy makers in managing such effects on biodiversity and management of ecological resources.



Below are selected examples of biodiversity projects which Qatargas continues to support. These projects involve close cooperation with wildlife authorities, the MoE, the local community, and other key interested parties to ensure proper planning and execution of environmental protection measures. These include environmental protection guidelines; Environmental and Social Impact Assessment (ESIA); prevention, mitigation and control; monitoring; decommissioning; contribution to science and technology cooperation and capacity building.



## Examples of Qatargas' Biodiversity Projects

Qatargas' ongoing support for the Ras Laffan City Environmental Society (RLCES). Qatargas was a founder member of the association. Activities supported or led by Qatargas include turtle monitoring and beach protection projects, quality monitoring stations and their management.

The Qatargas LNG Expansion Projects (Qatargas 2 and Qatargas 3 & 4) Coral Translocation Project (at Fasht Al Hurabi). Qatargas has been voluntarily working with the MoE to monitor the success of the coral translocation since 2008 and will soon start biannual 10<sup>th</sup> monitoring session. This provides a unique record of this initiative which provides valuable information on the health of coral reef biodiversity in Qatar's coastal waters

Qatargas is also engaged in a range of environmental education programmes with schools in Qatar to highlight the important role that industry should play to ensure responsible development and biodiversity protection and advocates this as a good corporate citizen, by passing on knowledge and industry expertise.



## Environmental Impact of Transportation

Transportation activities in Qatargas include: the transportation of products, business travel and employee commuting (via the use of leased buses). In comparison to product transportation, the environmental impact of business travel and employee commuting is negligible. This section focuses on the activity of marine transportation of LNG even though efforts to improve efficiency in all transportation modes are regularly evaluated and, where suitable opportunities exist, they are adopted.

The Qatargas Shipping Department is part of the Commercial and Shipping Group. The organization of the department consists of the Shipping Department Manager, Fleet Operations Division Manager, Fleet Planning & Analysis Division Manager, Post Construction Team Division Manager, Head of Ship Contracts and Head of Marine Risk & Quality.

Qatargas 1 utilizes a Q-Fleet which consists of 11 conventional vessels, each with a capacity of 137,500 m<sup>3</sup>, and an additional short-term chartered vessel with a capacity of 126,300 m<sup>3</sup>.

The year 2012 marked the first full year with all ventures operating at or near full capacity. This allowed for greater utilisation of the chartered fleet to deliver the expanded production of LNG. The majority of the additional volumes were delivered in a more efficient and environmentally sensitive manner through the use of two new classes of LNG vessels designed and built specifically for Qatargas. The 19 Q-Flex and 13 Q-Max vessels are more efficient and produce fewer environmental emissions on a cargo-ton mile basis. This is achieved due to the increased cargo capacity of the vessels which is between 210,000 and 266,000 m<sup>3</sup>. The Q-Max is 80% larger than the conventional Q-Fleet ships and consumes 40% less energy per cargo-ton mile which equates to a comparable reduction in air emissions.

These new vessels include several innovative features which allow the maximization of cargo deliveries while ensuring a high level of safety, reliability and environmental performance. Among them are:

- Twin engine and shafts to ensure maximum propulsion safety and reliability;
- Slow speed diesel engines have a greater thermal efficiency than steam turbines and are therefore more fuel efficient;
- Cargo re-liquefaction plants return boil-off to the cargo tanks and therefore maximize the quantity of LNG delivered; and
- Underwater coatings using the latest technology silicon anti-fouling system to prevent marine growth on the hull, which not only enhances the speed and performance of the vessel, but is also less harmful to the marine environment since it does not release biocides into the sea like typical hull coatings.





During 2012, Qatargas also utilised six short-term in-chartered conventional vessels.

The Qatargas fleet (2012) is summarised in the table below:

#### Qatargas Fleet

Type	Vessels #	Delivery years	Ventures	Maximum capacity (m <sup>3</sup> )
<b>Standard Q-Fleet</b>	11 + 1	1996 - 2004	QG1	126,300 - 137,500
<b>Q-Flex</b>	19	2007 - 2009	QG2, 3, 4	210,000 - 216,000
<b>Q-Max</b>	13	2008 - 2010	QG2, 3, 4	263,000 - 266,000
<b>In-Charter</b>	6	2011 - 2012	QG2, 3, 4	138,100 - 165,700

The environmental impacts of Qatargas shipping fleet are summarised in the below table:

#### Environmental Impact of Transportation

Impact	Unit	Conventional	Q-Flex / Q-Max*	In-Chartered	TOTAL
<b>Vessel</b>	#	12	32	6	50
<b>Distance Travelled</b>	Nm	1,564,251	3,431,794	375,257	5,371,302
<b>Energy use</b>	GJ	24,435	54,221	6,675	85,331
<b>NOx emissions</b>	T	16,958	115,717	5,030	137,705
<b>SOx emissions</b>	T	10,536	84,127	3,084	97,747
<b>CO<sub>2</sub> emissions</b>	T	1,627,625	4,178,719	448,302	6,254,646
<b>CAT2 to CAT6 waste discharged to sea</b>	m <sup>3</sup>	326	906	94	1,326
<b>CAT1 and other waste incinerated</b>	m <sup>3</sup>	394	1,553	191	2,138
<b>CAT1 and other waste disposed ashore</b>	m <sup>3</sup>	223	2,698	172	3,093
<b>Special waste disposed ashore</b>	Kg	348	9,219	1,351	10,918
<b>Refrigerant gas replaced in fridges and HVAC</b>	Kg	765	5,707	227	6,699
<b>Ballast water exchanged and discharged to sea</b>	T	6,493,202	20,140,117	2,005,271	28,638,590

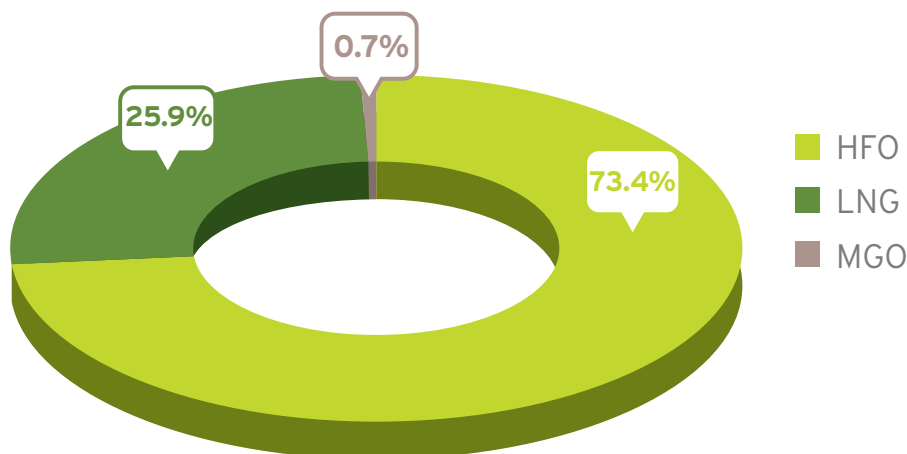
\* The Q-Flex / Q-Max vessels are owned by Nakilat who also report their environmental effects in their Sustainability Report.

CAT1 wastes which include plastics and other non-hazardous wastes are either incinerated or disposed ashore. The CAT2 to CAT6 wastes are comprised of paper products, rags, glass, metal, bottles, crockery, food residues and certain types of incinerator ash which are disposed outside of designated Special Sea Areas as far as practicable from the nearest land but not less than 25 nautical miles from shore. Special wastes which include aerosol, batteries, medical waste, chemical, test gas cylinders and other similar harmful substances are disposed of onshore.

The refrigerant gases R404A for fridges and R407C for HVAC are not ozone depleting substances which are covered by the Montreal protocol but are however GHGs which are covered by the Kyoto Protocol.

Energy used primarily includes Heavy Fuel Oil (HFO), Marine Gas Oil (MGO), and LNG. Certain designated areas mandate the use of low sulphur fuels, the total consumption of which is currently negligible in comparison to the above identified fuel types. In these limited circumstances, Low Sulphur Heavy Fuel Oil (LSHFO) and Low Sulphur Marine Gas Oil (LSMGO) are utilized.

#### Distribution of Energy Use for the Shipping Fleet



*Note: The Q-Flex / Q-Max vessels do not use LNG as fuel*

Qatargas continually investigates options which allow the reduction of NO<sub>x</sub>, SO<sub>2</sub>, and CO<sub>2</sub> emissions which arise from the LNG vessels in anticipation of changes to environmental regulations. These options include:

- Conversion to slow speed diesel engines to burn LNG (Main Engine Gas Injection ME-GI); and
- Application of exhaust emission abatement technology.

## CASE STUDY

### Low Sulphur Marine Gas (LSMGO) Usage & Operational Best Practice Potential Savings

Qatargas has identified a variance in the on-board use of Low Sulphur Marine Gas (LSMGO) during loaded and ballast passages. It has been identified that through well managed ship operations and proper usage of LSMGO the environmental performance of Qatargas chartered shipping can be enhanced. This can be achieved through improved on-board procedures and zero capital investment. Qatargas analysed over 15,000 daily reports from the fleet and identified operations which consumed 17,837 MT of LSMGO.

It has been determined from benchmarking of the vessels that consumption of LSMGO and resultant emissions could be reduced by adopting operational best practices across the fleets. The reduction in environmental impact is due to the following predicted reduction in the emissions of NO<sub>x</sub> (143 tonnes), SO<sub>x</sub> (2.5 tonnes), CO<sub>2</sub> (8,086 tonnes).

## Use of Gas Burning Mode at Ras Laffan for Conventional QG-1 Vessels

Qatargas Shipping has engaged with the Japanese Owner / Operators (NYK, K-Line and MOL) to pursue the use of gas burning during loading at Ras Laffan. This will lead to the reduction of Heavy Fuel Oil (HFO) consumption by utilising the gas which would otherwise be flared. On 10 Q-Fleet conventional vessels, Low Load Gas Mode (LLGM) software modification was incorporated. This enables the vessels to carry out continuous gas burning at Ras Laffan from berthing to un-berthing. The use of gas in boilers while loading resulted in the reduction of HFO consumption, which is estimated to be 1,400 MT/annum. This resulted in the reduction in the emissions of NO<sub>x</sub> (122 tonnes), SO<sub>x</sub> (98 tonnes) and CO<sub>2</sub> (4382 tonnes) in 2012.

## Environmental Impact of Products and Services

Initiatives undertaken by Qatargas to reduce our environmental impacts during production of LNG are described in the previous sections.

No formal initiatives have been undertaken to mitigate the environmental impacts of LNG during use by the final client. However, natural gas offers a number of environmental benefits over other sources of energy, particularly other fossil fuels. Natural gas is in particular the cleanest of all the fossil fuels, emitting significantly less CO<sub>2</sub>, SO<sub>2</sub> and NO<sub>x</sub> emissions than oil and coal. Through the production and distribution of LNG, Qatargas is thus participating in the global transition to a less carbon intensive economy.

## Environmental Expenditures

In 2012, Qatargas devoted more than USD 3.9 million to environmental related expenditures, as detailed in the table below.

### Environmental Expenditures in 2012

Category	Expenditures in USD
Environmental management	140,000
Greenhouse Gas Emissions	127,000
Other Air Emissions	686,000
Wastewater Treatment	10,000
Waste Management	2,631,000
Biodiversity Protection	278,000
Environmental Monitoring (Groundwater)	80,000
<b>Total</b>	<b>3,952,000</b>



## PEOPLE

### *Building a competent and successful workforce*

#### 2012: Key Highlights

- Opening of Qatargas Doha Clinic to extend the primary occupational and emergency services for Doha based employees.
- Launch of **Supervising the 'Qatargas Way'**, a mandatory set of training modules for those in the supervisory position.
- 8% increase in training hours provided to employees in comparison to last year.
- Qatargas offshore operations completed ten years without a Lost Time Incident (LTI) in April.

### Management of Labour Practices Aspects

Qatargas believes that its primary strength stems out of the excellence and diversity of its workforce. In order to ensure continued success, it is the duty of the management team to create a corporate culture which has the ability to both attract and retain the right calibre of people.

Qatargas has established a series of human resources policies and procedures which are managed by:

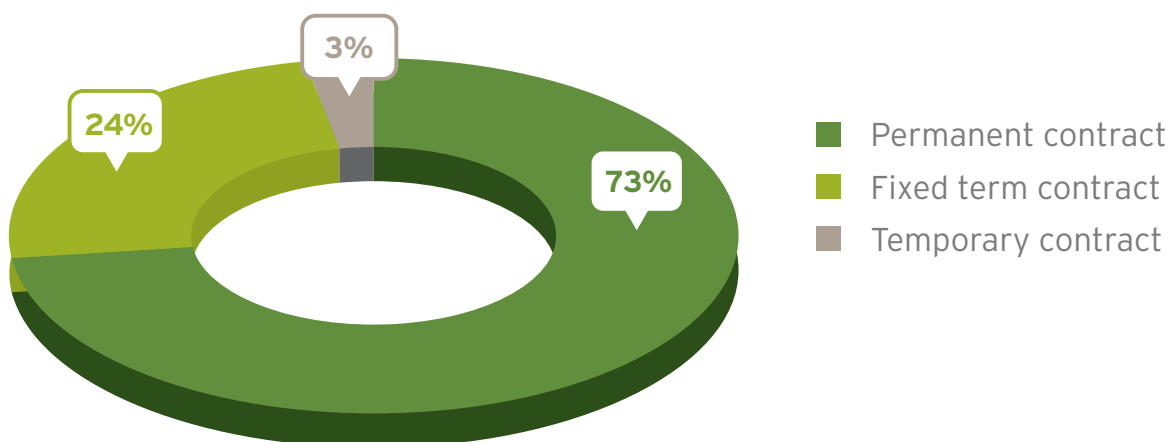
- Human Resources (HR) Department, directed by the HR Manager and five direct functional Heads of Division;
- Learning and Development (L&D) Department, directed by the L&D Manager and four direct functional Heads of Division;
- Medical Department for health aspects, directed by the Chief Medical Officer;
- Safety Team within the SEQ Department, directed by the Chief SEQ Officer; and
- Office of Legal Counsel for legal issues.

In continuation with previous years, in 2012 the key focus for labour practices was our Qatarization Programme, Training & Development programmes and recruitment strategies.

### Employment Conditions

As of the end of 2012, Qatargas employed a workforce of 2,850 employees. All the employees at Qatargas are full time employees and 73% of them have permanent contracts. The graph below summarises the distribution of the workforce per contract type.

Our Workforce by Contract Type as of end 2012



The turnover has risen significantly compared to previous years, with an overall turnover rate of 14.26% in 2012. This number is largely influenced by the percentage of employees over 50 years old who have left Qatargas (30.9%). The number and rate of employees leaving the company in 2012 by gender and age group is provided below.

#### Turnover in 2012

Category	Number of employees who left (1)		Turnover rate (1)/(2)	
	2012	2011	2012	2011
Male	190	79	7.3%	3.1%
Female	23	13	8.8%	5.4%
<30 years old	22	13	6.3%	3.6%
30-50 years old	55	66	2.7%	3.3%
>50 years old	136	13	30.9%	3.2%

Qatargas employees are provided with competitive employment packages. The standard benefits provided include:

- Life insurance (under Qatargas insurance scheme);
- Health care (medical and dental coverage);
- Disability/invalidity (under Qatargas insurance scheme);
- Leave policies (which include annual, sick, compassionate, maternity and paternity leaves);
- Retirement provisions (pension for Nationals and end of service benefits for non-Nationals);
- Education assistance (for primary and secondary school, but currently not for university); and
- Accommodation (monthly allowance or residence leased by Qatargas).

In 2012, all female employees entitled to parental leave took a maternity leave, and 87.5% returned to work afterwards. The one-year return to work rate after parental leave (i.e., the ratio of number of female employees that were still employed twelve months after their return to work divided by the number of female employees that returned to work after maternity leave) was 100% in 2012. Similar statistics are not formally recorded yet for male employees.

#### Occupational Health and Safety

Health and safety are core values which lie at the top of our priorities. We are committed to the health and safety of our employees, our contractors and our local communities.

Health and Safety dialogues are conducted at different levels:

- **Company level:** The Safety, Health and Environment (SHE) Committee was created with the vision “to be the team that will establish, uphold and enforce the highest safety, health and environmental standards in the oil and gas industry at Qatargas in order to make Qatargas injury and incident free”. The SHE Committee solicits employee feedback through surveys, questionnaires and plant tours.
- **Management Level:**
  1. **Qatargas 1 Asset Leadership Team:** The medical department is represented in this forum. Health concerns and industrial hygiene issues are cascaded through this forum as needed. In 2012, hearing conservation and respiratory protection concerns, in addition to the new heat stress guidelines published by the Enforcement Directorate (DG) and Supreme Council of Health were addressed.
  2. **Monthly department safety meetings:** the Medical Department is represented in this forum (operations, maintenance). Health concerns and industrial hygiene issues are cascaded through this forum as needed.
  3. **Road Shows:** The Medical Department conducts on site dialogues and presentations. In 2012, the Medical Department conducted 11 health awareness workshops, 32 lectures and 85 food safety & hygiene inspections.
  4. **Combined Heat Stress/First Aid/Cardiopulmonary Resuscitation (CPR) Mandatory Training:** completed for all personnel who are required to undertake and published 45 health hand outs both for the employees and dependents.
  5. **Managing Heat Stress and Acclimatisation Training:** Shutdown contractors have to undergo training/ refresher training on managing heat stress and acclimatisation. Daily random Fit-to-Work screening has been conducted on the performing party relative to their work activity.

Contractors working for Qatargas adhere to standards for medical, food and camp services. Specifically, mass

screening for contractor workforce is being conducted. In 2012, 17,000 medical screenings were conducted for Qatargas projects' contractors.



## Safety

Qatargas has embarked on a unique initiative – the 'Incident and Injury Free (IIF) Programme' that seeks to eliminate incidents, and promotes a no-blame culture, under which anyone can stop work for a safety concern and would not be blamed for that. Moreover, emphasis is laid on reporting all incidents, however simple they may appear, and lessons are shared with all employees and contractors.

Regrettably, in 2012, seven fatalities and three LTIs were recorded for Qatargas contractors for the existing operations within a total of more than 36 million hours worked.

A total number of 50 work-related recordable injuries (including cases requiring medical treatment or more and excluding first aid cases) were recorded for Qatargas employees and contractors, leading to a total recordable injury frequency (TRIF) of 1.38. Only 5 out of the 50 work-related injuries were for Qatargas employees.

"In addition to embracing the 'Incident and Injury Free' (IIF) values and culture, the main factors that contributed towards the outstanding performance on the shutdown were – planning, preparation and team work. The excellent team spirit demonstrated by the various Qatargas teams, together with the professionalism of all the individuals involved has been instrumental in our success."

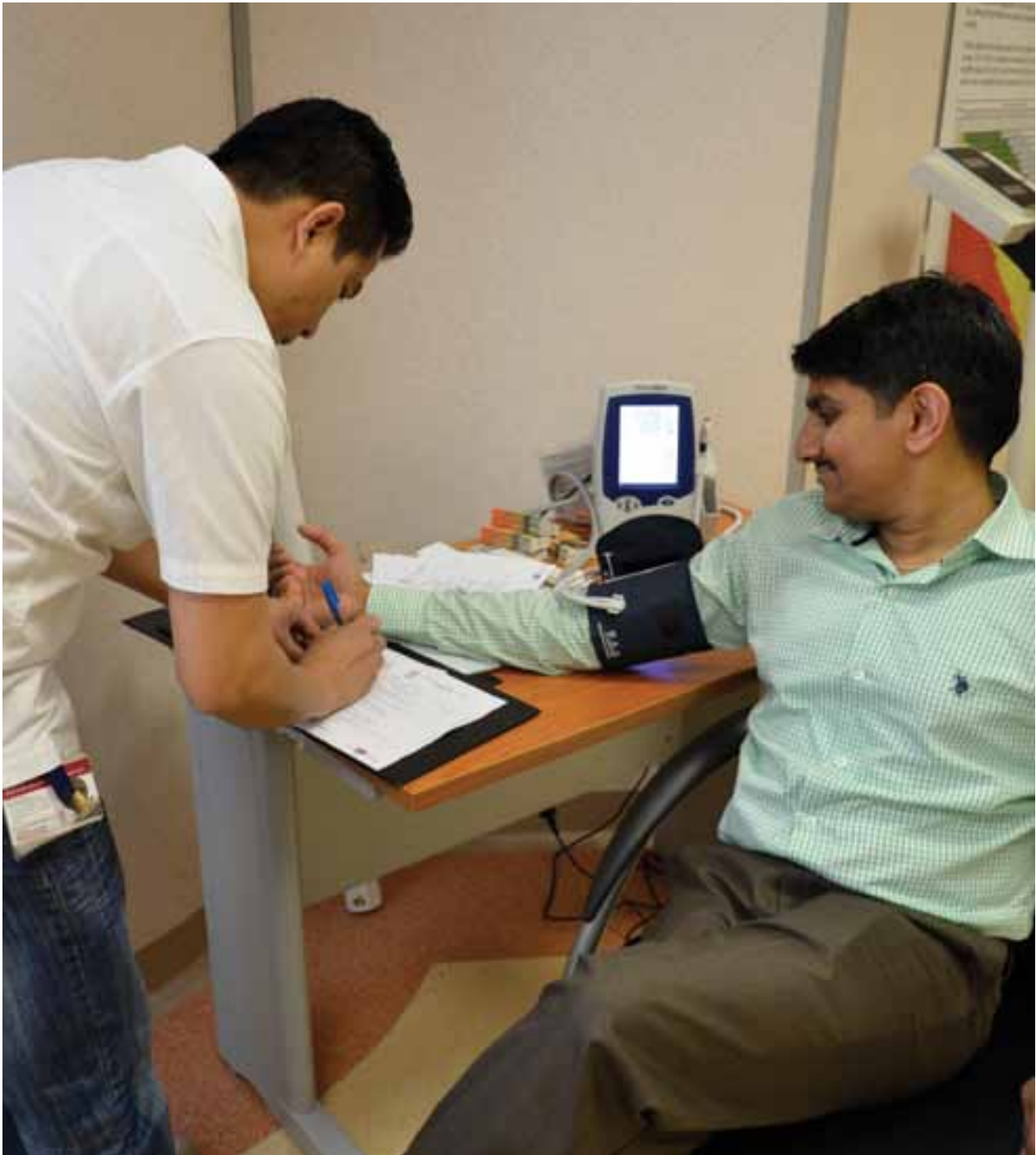
Abdel Hamid Boutalbi, Qatargas Shutdown Manager, on successful completion of Qatargas 1 planned maintenance shutdown activities

## Health

The health and well-being of our employees is also one of our top priorities. No case of lost time occupational illnesses has been recorded for Qatargas employees or contractors in 2012. Two recordable occupational illness cases were recorded in 2011 which were primarily related to heat stress. However, none were recorded in 2012.

The total number of sickness absence days for our employees amounted to 4,057 days, representing an average of around one and a half sick leave days per employee in 2012. This also represents an average of only 338 sickness absence days per month, greatly exceeding our target of 688 sick leave days or less per month.

Qatargas has a dedicated medical department that has the task of maintaining the physical, mental and social well-being of its employees and their dependents. It does so through its clinics located offshore, in Doha and Ras Laffan. The services provided by the Medical Department range through occupational, emergency and primary healthcare.



## 1<sup>st</sup> Qatar Petroleum Occupational Health Conference

Qatargas participated in the 1<sup>st</sup> Qatar Petroleum Occupational Health Conference held under the patronage of His Excellency Dr. Mohammed Bin Saleh Al-Sada, Minister of Energy and Industry, during 20 – 21 March in Doha. Held under the theme **“Towards a healthier workforce”**, the conference featured professional paper presentations, panel discussions, networking sessions, lectures, case study discussions and interactive workshops.

Dr. Osama Ibrahim, Qatargas Chief Medical Officer, presented a paper titled *“Medical Challenges in Mega LNG Train Shutdowns”*. The paper discussed the various programmes and measures put in place by the Qatargas Medical Department to ensure the health and safety of employees and contractors, especially during the planned maintenance of LNG trains, which involve hundreds of people working round the clock. Various aspects of health and hygiene, such as fitness for work, heat stress, noise exposure, respiratory exposure, ergonomic hazards and food safety and hygiene hazards were addressed.

Regional and international experts in occupational health spoke at the conference. The conference focused on a wide range of topics, including workplace health promotion programmes, the cardiovascular disease burden in the workplace, work-related stress in the oil and gas industry, and industrial hygiene regulatory framework and compliance. The conference provided an opportunity to present and discuss scientific research efforts to identify best practices and unveil innovative programmes for safeguarding the health and safety of employees.



The health management activities conducted at Qatargas are guided by the Occupational Health Protection Policy. The policy ensures that health management processes cover exposure monitoring, hazard recognition, hazard evaluation, health risk assessment and prioritisation, hazard control and medical surveillance. This policy is supported by several procedures such as the Qatargas Industrial Hygiene Procedure, Periodic Medical Examination Procedure and Pre-employment Procedure.

“Achieving the accreditation involved intensive preparation by the medical team over the past year to ensure that we were able to pass the first audit that was concluded by the JCI team on March 1, 2012. The surveying team was impressed with the standard of medical services provided and asserted that we have raised the bar for primary health care services.”

Dr. Osama Ibrahim, Qatargas Chief Medical Officer, on Doha Medical Centre's receiving the JCI accreditation

The three priority health challenges identified at Qatargas in 2012 are respiratory protection, hearing conservation and heat stress management.

The following are the initiatives undertaken regarding the various health management activities being undertaken within Qatargas:

### Respiratory Protection:

- Monitored the quality of breathable air in breathing apparatus sets, of confined space environment and of inhalable airborne contaminants;
- Conducted ambient and personal exposure to VOCs in the refinery and during loading, and to sulphur dust in the plant and during loading;
- Fitness tests prior to using respiratory protection, lung function test (spirometry) were conducted; and
- Reviewed respiratory protection equipment and strictly enforcing the Facial Hair Policy.
- Camps, food safety and hygiene:
- Monitored food safety and hygiene practice on food handlers;
- Conducted camp inspection on accommodation, food safety, hygienic sanitation condition and health facilities to workforce (85 plant, offshore and Al Khor kitchen inspections were conducted in 2012);
- Restricted the use of unacceptable food preservatives and meat imported from non-halal practices;
- Checked the quality of potable water;
- Provided medical and recreation facilities for the workforce;
- Conducted surveys on food quality and services; and
- Provided training for food handlers on Food Safety and Hygiene.

**Hearing Conservation:**

- Conducted personal monitoring of noise exposure on high risk group;
- Conducted road show and training to raise awareness on protection of exposure to noise;
- Evaluated/re-evaluated hearing protection equipment relative to noise mapping;
- Conducted periodic noise mapping and audiometric tests;
- Conducted periodic boundary noise monitoring to ensure compliance to RLIC Noise Regulation;
- Noise Mapping contouring for all facilities uploaded on the intranet available to all in identifying high noise area and hearing protection requirements before entry into the areas;
- Re-visited hearing protection equipment to ensure the Noise Reduction Rating (NRR) was sufficient to prevent noise induced hearing loss; and
- Conducted counselling on those with detected temporary threshold shift and repeated audiometry and conducted retraining on proper use of hearing protection.

**Heat Stress:**

- Issue daily heat stress Short Message Service (SMS) alert;
- Initiated a heat stress web page to update all on new guidelines by Supreme Council of Health or other regulating authorities;
- Issued a live Weather Update on the Intranet;
- Monitoring of work rest shelter temp/ventilation, of body core temperature;
- Training on prevention from heat related illness;
- Monitoring fitness to work in hot environment;
- Combined heat stress/first aid/CPR mandatory training conducted on all operations and maintenance personnel; and
- Developed work rest cycle and duration working in confined area.

**Ergonomics:**

- One-hour training sessions were conducted on office ergonomics and proper manual handling for the HR, C&S and Corporate Planning personnel;
- Developed workstation ergonomic self-assessment to strive to have more awareness on ergonomics; Re-visit and re-assess workstations with other issues and concern. The assessment enabled the participating employees to evaluate their sitting posture, workstation ergonomics and comfort, workplace ambient condition and any pre-existing medical conditions. After the completion of the self-assessment, the Industrial Hygienist assessed the workplace and consulted with the employees to further enhance the workplace ergonomics for the employees. In case of any disorder resulting from ergonomic issues, the employees would be referred to the medical doctor;
- Conducted ergonomic survey for the HR and C&S groups. 155 personnel participated in the work station ergonomics assessment;
- Conducted stress/fatigue assessment during QG2 shutdown. A total of 406 contractors were given a questionnaire regarding fatigue. The questionnaires were then assessed to learn the level of fatigue and the necessary measures undertaken to ensure that the shutdown runs smoothly; and
- Conducted monitoring of indoor air quality, thermal comfort and luminance of the workplace.

**Chemicals Management:**

- Periodic inspection of laboratory on proper storage, handling, testing of liquid/LNG products;
- Periodic inspection of warehouse to ensure proper storage of chemicals, labelling, secondary containment and emergency response contingency;
- Continue to update MSDS database with evaluation on consumable chemicals used;
- Monitoring radiation level in dental x-ray and potential exposure;
- Developed Health Risk Assessment (HRA) database;
- Conducted road shows and training on awareness in handling of hazardous chemicals or material; and
- Conducted periodic inspection on the warehouse and refinery.

### Occupational Health Screening:

- Periodic medical examination annually or every two years depending on the employee's age (1,600 examinations conducted in 2012);
- Conducted eye test, blood grouping;
- Conducted fit-to-work prior to perform critical activity;
- Conducted daily mass random screening on fit-to work on shutdowns contractors;
- Conducted health heart screening campaign;
- Conducted counselling on obese or diabetic employees on diet control and healthy lifestyle; and
- Conducted pre-placement or return to work from medical condition medical screening.

## CASE STUDY

### Qatargas Doha Head Office Clinic

The Qatargas Doha Clinic in the head office officially opened on June 13, 2012. The main aim of this health facility is to extend the primary, occupational and emergency services for Doha based employees. The clinic not only manages acute cases which require immediate attention, but also other ailments causing disruptions at work. Already, the clinic has attended over 2,000 cases in 2012. In addition to its clinical roles it also focuses on health promotion and has conducted 10 health awareness workshops. The most relevant being: 'Healthy Hearts Check', 'Healthy living' & 'Healthy Food'. This clinic also handles Periodic Medical Examinations and Pre-Employment Medical Examination. The clinic is an integral part of the Emergency Response Committee, providing consultative services as and when required. To facilitate continuous improvement, the Medical Centre conducts daily random on-site satisfaction surveys to get immediate patient feedback and implement corrective action if needed. The main benefit of this clinic is that it eliminates the need for Offshore and Doha based employees to travel to Ras Laffan for clinical treatment.

In order to promote a framework for risk reduction, establish a culture of patient and employee safety while contributing to patient satisfaction, the Doha Medical Centre was awarded the Joint Commission International (JCI) accreditation for Primary Care Centres on March 2, 2012. The certification is recognised in the United States and internationally as a symbol of quality that reflects an organisation's commitment to meeting certain performance standards that deliver safe and effective care of the highest quality and value.



## Qatargas Healthy Heart Campaign

Qatargas Medical Department has organised multiple healthy heart campaigns in different work locations throughout the past years. The prime objective of these mass screening activities is early identification of risk factors related to heart disease, namely obesity, high blood lipids, glucose and blood pressure and to diagnose as early as possible any concealed disorders among Qatargas employees. The valuable data obtained from this evaluation is electronically stored in the employee records and used as a platform to start a health plan aimed at minimising or eliminating the impact of any risk factors discovered.



Programmes conducted by our medical department to assist workforce members and their families regarding serious diseases are presented in the below table.

#### Health Programmes

Type of Programmes	Programme Description
<b>Education and Training</b>	<ul style="list-style-type: none"> <li>Occupational health awareness workshops and campaigns (15 workshops, five blood donations, one healthy heart campaign to identify cholesterol, hypertension and diabetes with 309 employees and contractors participants in 2012).</li> <li>Toolbox talks, road shows, email advisory.</li> <li>First aid and CPR training (78 sessions with 720 participants in 2012)</li> <li>Twenty emergency and pandemic preparedness drills.</li> <li>Promotion and set up of 'Health Food Corner' in plant cafeteria.</li> </ul>
<b>Counselling</b>	<ul style="list-style-type: none"> <li>One-on-one counselling during primary health care visits and annual periodic medical examination.</li> </ul>
<b>Prevention / Risk Control</b>	<ul style="list-style-type: none"> <li>Pandemic planning taskforce chaired by HSE Regulations and Enforcement Directorate (DG) to address potential pandemic risks (e.g., flu H5N1, H1N1).</li> <li>Promotion of healthy lifestyle and eating.</li> </ul>
<b>Treatment</b>	<ul style="list-style-type: none"> <li>Primary health services at the plant site and community (Doha and Al Khor Community).</li> </ul>

#### Labour Practices

According to Qatar law, collective bargaining is not allowed. Therefore, no Qatargas employee is covered by any collective bargaining agreements. However, a system has been set up where we can respond to employees who report their opinions and grievances (see 'Workforce Engagement' section).

In case of significant operational changes that could substantially affect employees, such as restructuring, outsourcing of operations, closures, expansions, new openings, takeovers, sale of all or part of the organisation, or mergers, notice is provided to impacted employees at least one month prior to the change, as stipulated in employment contracts, the Employee Relations Policy and the End of Service Benefits Policy.

## Diversity and Equal Opportunity

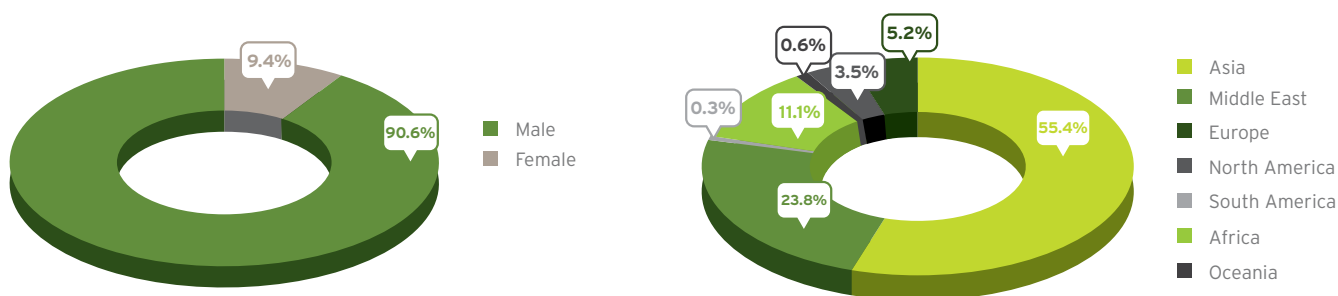
The Employee Relations Policy at Qatargas covers the issues of diversity, discrimination and harassment.

Qatargas employees are a diverse group of individuals representing more than 70 countries. One of the main goals is to ensure that new employees are integrated into the Qatargas culture; thus allowing us to take full advantage of the diverse set of experiences and ideas these people bring to us.

The distribution of the total workforce and of governance bodies members per gender, age and region of origin is provided in the below table and graphs.

### Our Workforce by Indicators of Diversity

Category	Employees #	Percentage	Governance Bodies Members #	Percentage
Male	2,582	90.6%	28	100%
Female	268	9.4%	0	0%
<30 years old	347	12.2%	0	0%
30 - 50 years old	2,064	72.4%	14	50%
>50 years old	439	15.4%	14	50%
Middle East	679	23.8%	9	32%
Asia	1,580	55.4%	8	29%
Europe	149	5.2%	5	18%
North America	100	3.5%	6	21%
South America	9	0.3%	0	0%
Africa	317	11.1%	0	0%
Oceania	16	0.6%	0	0%



At Qatargas, no difference is applied among employees on the basis of gender, age or origin. This is because we ensure equal opportunity for all employees. Salary grades & basic salaries (including minimum amount paid), are the same for both male and female employees.

Qatargas is committed to providing an environment that enables all employees to pursue their careers free from any form of discrimination. Discrimination is addressed in the Code of Business Ethics Policy and the Employee Relations Policy. Neither Qatargas, nor any employee, nor any person acting on behalf of Qatargas shall discriminate against any person with regard to employment or because of race, religious belief, colour, sexual orientation, physical disability, mental disability, marital status, age, ancestry or place of origin. Discrimination is not tolerated and Qatargas takes all necessary actions to avoid discrimination in the work place. No incident of discrimination was reported in 2012.

## Training and Development

### Training

Qatargas recognises the importance of employee training and development and has therefore established a Learning & Development Policy. This Policy sets procedures, selection criteria, fees and allowances which are associated with attendance at training sessions. The training offered by Qatargas is based on assessment of competence gaps and required strengths at all levels of the organisation.



### CASE STUDY

#### Roll-out of Training Catalogue, 2012

In order to ensure continuous improvement, the Learning & Development Department rolled out its first 'In-house Training Catalogue 2012' to all Qatargas employees. This catalogue is designed to provide the employees with a complete list and schedule of all internal training courses associated with the specified core and job generic competencies. In addition, a short synopsis is provided about the following developmental options:

- Qatargas' Learning Approach
- Skillsoft e-learning package
- Supervising the 'Qatargas Way'
- System Application and Products (SAP) training schedule
- Business Systems & Controls training schedule

This catalogue has proven to be instrumental in assisting individual development planning especially with respect to competence gaps closure and training needs assessment.

Training Programmes include soft skills courses to address the competence gaps to build core competencies (mapped to our core values) and job generic competencies. These courses are sourced from reputable providers and brought in-house on an annual basis by the L&D Department.

For technical discipline specific training, line supervisors assess technical competence gaps and recommend training for individuals who have technical development needs. Training is then procured by the L&D Department.

Specific focus is given in particular to the development of Nationals to meet the Company's challenging Qatarization targets and to accelerate the development of individuals identified in the Corporate Succession Plan for future leadership roles. The national graduates that are working towards fully qualified professional status have clearly defined Individual Development Plans (IDPs) that outline competencies to be acquired and training to be completed. The national trainees have their Technical and Further Education (TAFE) training Programmes prior to being confirmed in established positions. National graduates seeking international professional recognition are supported by Qatargas through registration in specific international professional institutions.

Qatari Nationals are provided with the opportunity to study for Higher National Diploma (HND), Bachelor and Master Degree Programmes at leading international universities and colleges, in Qatar and abroad, particularly in specialised disciplines deemed critical for Qatargas' business success. Upon successful completion of HND or Bachelor Degree Programmes, Nationals are provided with an IDP, and supervised by a Subject Matter Expert (SME), who coaches them throughout all the phases of their development plan, until they become "a fully established professional" in their chosen field of expertise.

National employees are provided opportunities to attend Short-Term Work Assignments (ranging from 3 months to 6 months) with shareholder companies, to learn from experienced professionals through exposure to different technologies and workplace scenarios. Upon completion of these work assignments, the National employees submit an 'End of Work Assignment Report'.

Qatargas has also made available a series of e-learning courses (related to both technical and soft skills) in a package known as 'Skillssoft'. These packages are competence based and allow individuals to learn at their own pace and evaluate themselves via online self-assessments at the end of each e-learning module.

Our very popular 'Lunch and Learn' sessions (short one hour sessions conducted during lunch time) were also continued through 2012 and delivered by members of different departments at Qatargas. These sessions, co-ordinated by the L&D department, have helped Qatargas employees to gain awareness with regard to the main processes and activities performed by different organisational departments and functional units. This allows the employees to understand how different departments function and allows for easier interactions between departments to deliver business results.

## CASE STUDY

### Effective Management with Supervising the Qatargas Way'

As a result of feedback from the 2011 Employee Opinion Survey, the Management Leadership Team rolled out a mandatory suite of modules collectively entitled "Supervising the Qatargas Way". All employees who have direct reports and are in a supervisory position are required to attend all modules in this programme. These modules are designed to train employees' competencies in key aspects of supervision in order to become more effective in their day to day roles. The modules include:

- Objective setting and monitoring
- Appraisal discussions
- Appraisal rating and ranking
- Competence assessment and development
- Communicating the Qatargas way
- The supervisors role in recruitment and interview process
- Effective induction for new employees
- Coaching for performance and development
- Building and managing effective diverse teams
- Work planning and tracking
- Delegation and the job handover process
- Problem solving and decision-making
- The supervisors role in appraisals, appeals and Performance Improvement Plans (PIP's)
- The supervisor's role in disciplinary and termination procedures.



Training hours provided to Qatargas employees in 2012 and related costs per employee category are presented in the table below. More than 67,984 hours of training were provided in 2012, an 8% increase compared to 2011. The average number of training hours per employee trained amounted to 34 hours (compared to 40 hours in 2011), representing approximately four days and a half per person, per year. The total cost for training provision was approximately 6.4 million QAR in 2012.

#### Training Hours and Costs in 2012

Employee category / level	Number of employees trained in 2012	Number of training hours	Average training hours per employee	Cost of training in Qatar Rials*
Senior Management	42	1,259	17.3	200,340
Middle Management	98	3,655	31.0	655,830
Professional	845	28,371	25.9	632,340
National Graduates	93	6,337	60.9	1,442,880
Trainees	18	3,292	45.7	546,480
Technical	622	16,179	14.7	1,874,340
Clerical	185	8,891	41.7	1,054,080
<b>TOTAL</b>	<b>1903</b>	<b>67,984</b>	<b>33.8</b>	<b>6,406,290</b>

Since Qatargas is a fairly young company, it has not yet developed a full transition assistance programme which can support career endings. There still exists no outplacement programme or policy or retirement planning. However, we offer a retirement bonus consisting of three months' final basic salary, which is offered to expatriate employees on indefinite contracts who have reached the retirement age of 60 years old.

#### Performance and Career Development

Qatargas' performance review process is undertaken as follows:

- At the beginning of each year, our Leadership Team, supported by our Corporate Planning Department, adjust the Business Plan and create Corporate KPIs that will drive delivery of the required results. Each Chief Operating Officer creates their personal KPIs/objectives from the Corporate KPIs, which are then cascaded down through the Department Managers, translating them into personal objectives for every employee linked to the Business Plan's KPIs.
- The Leadership Team and Department Managers submit progress updates to our Corporate Planning Department on a quarterly basis, using a traffic light notation. At our quarterly leadership events, each member of the Leadership Team explains any red, or amber items in their area, and the actions they plan to mitigate.
- At mid-year, a directive is issued that requires employees to have a mid-year review against their established objectives.
- At the end of the year the process is the same, everyone is required to hold an appraisal discussion with their line-supervisor, discussing completion (or otherwise) of their objectives, and demonstration of the Qatargas Core and Job Generic Competencies. Additionally, Managers who report directly to COOs have Core and Leadership Competencies against which they will be assessed. A performance rating is given which, when ranked and reviewed by the Leadership Team, informs the annual performance reward process.
- For people who do not achieve their objectives, or demonstrate Core & Job Generic competencies, there is a Performance Improvement Plan (PIP) process, governed by our Employee Performance Management Process.

## Career Development Review

Qatargas has a Talent Management and Corporate Succession Plan Process. This consists of the following elements:

- Assessment of consistent strong performers against three key indicators of potential (Thinking, Delivering and Influencing skills). Those assessed with potential to progress to higher levels in the organisation become part of the Qatargas Talent Pool.
- Within the Corporate Succession Planning process, each Group's Leadership Team identify their key/critical roles and map potential successors, from the Talent Pool.
- Career Development Plans are created for members of the Talent Pool to help them accelerate their leadership and technical skills so they can be ready to progress to a number of roles in the Corporate Succession Plan.

The status of the Career Development Plans for members of the Talent Pool and the risks and mitigating activity associated critical roles are reviewed and discussed by the Leadership Team bi-annually.

97.4% of the total employees of Qatargas received formal Performance Appraisal and Review in 2012. There were a few exemptions of seconded employees and employees on special assignments which counted as 2.6%.

## CASE STUDY

### Qatargas Internship Programme

The Qatargas Internship Policy was issued and implemented on 1<sup>st</sup> of January 2012. Every intern who joined the Programme was given an orientation to Qatargas along with a safety briefing. Interns were also registered for online safety courses which they had to complete on the first day of the internship.

In 2012, three Qatari National high school students attended short-term work experiences Programmes at Qatargas. Qatargas was the first Oil & Gas company to attend the Qatar Leadership Academy Career Fair which was held at the School's premises at Al Khor on 1<sup>st</sup> October 2012. The purpose was to attract and educate the School's cadets on the Internship and Scholarship opportunities available at Qatargas. In order to further attract high school students, Qatargas published its 2012 scholarship opportunities at the Qatar International School 2012 Year Book.

A 'Welcoming Qatargas Interns Event' was organised on 17<sup>th</sup> July 2012 by Qatargas for Qatari High School and University Interns. The purpose of the event was to get feedback from Interns regarding their Internship Programme and also to give them an overview about Qatargas.

### Qatari Nationals Development

Through its "Quality Qatarization" strategy, Qatargas is committed to creating a National workforce within Qatargas that is competent and successful and reflects both the skills needed to meet the Company's business objectives and fulfils their career expectations.



## Case Study: Qatargas launches dedicated page on Qatarization

Qatargas has launched a dedicated page on Qatarization on its website ([www.qatargas.com](http://www.qatargas.com)) with the objective of providing National job seekers with all relevant information and the facility to apply online for existing vacancies. The page provides sufficient information on the Qatarization strategy of the State of Qatar in general and talks about the specific elements of the Qatarization Programme at Qatargas.

The Qatarization page provides briefs about the Company's Qatarization strategy, the recruitment process at Qatargas, its Qatarization Division, and the awards won by the Company in this field. The Career Development Programme (CDP), offered by Qatargas to its national employees, is described in detail under four sub-titles: Graduate Programme, Trainee Programme, Future Leaders and Continuing Professional Development. The Company's international assignment Programme provides national graduates various opportunities to work alongside and learn from its shareholders like Qatar Petroleum, Total, ExxonMobil, Mitsui, Marubeni, ConocoPhillips, Shell, Idemitsu Kosan, and Cosmo Oil.

The page also lists all the benefits and perks that are offered to Qatari nationals working with the Company.

In 2012, National Training and Development Programme which enables National graduates to achieve fully qualified professionals status has been successfully implemented where the University National Graduates Development Programme follow an Individualized Development Plan (IDP) and the High School National Graduates Trainees follow an Individualized Training Plan (ITP) prior to moving into an established position. We have also developed a system for rewarding and recognizing Nationals for special contributions, with awards such as 'Best National under Development' and 'Best National under Training'.

Qatargas also proactively participates in the country's annual QP Career Fair, and our engagement continues to draw a large number of aspiring Qatari graduates from a variety of professional and technical disciplines who display a keen interest in the LNG sector.

As of December 2012, the percentage of Qatarization (numbers of Qatari employees compared to total number of employees) is 25.8%.

Targets have been specifically developed at departmental level consistent with planned staffing through to 2017.



## Workforce Engagement

### Employee Engagement Strategy



Components of our employee engagement strategy for the year 2012 include:

- **Town Hall (Annual)** – CEO and Leadership Team hold an open event, over several evenings, where all employees are invited to hear the Leadership Team talk of the progress against the Business Plan and then answer any questions from the floor;
- **Administration Survey (Annual)** – Internal survey to assess level of employee satisfaction with the Administration Group support services;
- **Employee Opinion Survey (Every two years)** – Our third Employee Opinion Survey was undertaken by a third party in 2011. Key themes identified, facilitated senior management sponsorship of a Programmed approach to address concerns; and
- **'Ask the CEO' Website** – On the Company intranet. Every employee has the opportunity to submit their questions in confidence, even anonymously if desired, to the CEO and receive a timely response.

### Employee Opinion and Grievance

During the induction process, all new hires are acquainted with the Qatargas policies relating to employee rights and privileges and channels to address grievances and concerns. Employees are encouraged by the CEO to speak out without fear of retaliation on any issue concerning them as a preface to Town Hall meetings, quarterly performance review meetings, employee surveys, and other channels of communication. Forums for Women, Graduates and Trainees encourage active and honest feedback is earnestly solicited on issues of concern to the parties involved.

Employees are also provided with an anonymous “hot line” to the CEO through the intranet portal enabling them to raise any issue or concern to the highest level with a defined and guaranteed response time. Employees have the right to appeal against disciplinary action for dismissal and to escalate grievances to higher authority within Qatargas.

This non-retaliation and grievance system covers all Qatargas employees. Approximately 10 formal issues, which are tracked through case management tools were raised through this system in 2012. Common issues related to communications, work organisation, training and development and performance management. Key issues raised and steps taken to address them are summarised in the figure below.

Relationship management and conflict resolution was a key theme for last year (either peer to peer or employee to supervisor). Such issues were resolved through education and also by facilitating honest discussions with employees. When such means do not yield positive results, the matter is escalated to a higher level and formal ‘dispute-resolution’ procedures are used.



## Key Issues Raised by Employees in 2012

### COMMUNICATION

To enhance internal communication within Qatargas

Six Qatargas Communication Values have been established and communicated throughout the organisation. These create clear standards about how we should communicate as employees working for a premier organisation.

A key process in the performance appraisal system is the process for ranking of appraisal ratings. To enhance the process facilitation of performance ranking sessions is now offered. The facilitation enabled constructive dialogue to take place to ensure fairness in the ranking process and a consistent approach practiced by all departments.

For the first time, an Internal Communication pack was created and distributed quarterly to all Managers within Qatargas incorporating all 'hot' topics and details of activities that are being discussed or taking place in a particular month and shares the Company's official views on these topics. This helps ensure the delivery of clear and consistent messaging by management to Company employees.

A new Internal Communications Policy & Procedure was developed which clarifies the range of communication channels available within the Company and creates clear expectations on what is required from employees. This policy is now going through the final approval process.

### Work Organisation

To enhance the way we work as an organisation

Last year our Qatargas Management System Initiative was introduced. This significant initiative aims to improve our ways of working in the organisation and make us more efficient and reliable at what we do. This initiative is now undergoing three pilots aiming to improve business processes.

For the first time, we have benchmarked through a consultancy firm our manning levels in the Business Support areas to identify strengths and areas of improvement. This exercise gave us an insight as to how we compare in terms of resource levels against others from both within and outside the industry.

### Performance Management Training & Development

How we manage training & development and how we recognise the good work of our employees.

A key process in the performance appraisal system is the process for ranking of appraisal ratings. To enhance this process, sessions are offered through constructive dialogues to ensure fairness in the ranking process and a consistent approach for all departments.

"Supervising the Qatargas Way" was launched for the first time. This Programme comprises a suite of 14 modules focused towards developing the skills of our supervisors. Over 800 Supervisors have been trained and the efforts will continue this year to cover more ground.

In order to make training more visible in Qatargas the learning and development team held two Learning Souks and two learning community days. The learning Souks are primarily used to market the services of L&D and offer advice and assistance to employees on a face-to-face basis.

The Reward & Recognition Policy was reviewed and enhanced significantly to strengthen the recognition and awards that we give to our employees.

The new Qatargas Individual Performance Management (IPM) system was launched on 13 January 2013. IPM replaced the old Objective Management System (OMS). IPM is a new SAP based tool used to record annual Objectives, Mid-Year Review and End-Year Appraisal and to help manage QG staff performance.

Responding to employee feedback, the Performance Management System was further enhanced to meet the needs of the growing Qatargas population and to have a more integrated implementation approach. The new IPM is far more robust and easier for employees to use.

L&D conducted open clinics for Managers, Supervisors and Focal Points on the "Objectives Setting" Phase in IPM covering the process and how to set SMART objectives.



## SOCIETY

### *Enriching communities while supplying energy to the world*

#### 2012: Key Highlights

- Community investments amounted to 7.35 million QAR
- Focus themes of the social investment Programme include education, community and environment
- No non-compliance with international or national laws and regulations

### Management of Society Aspects

Qatargas is aware that its operations play a very influential role in society and understands the importance of responsibility towards the people and societies in which the Company operates. The social aspects at Qatargas are covered by two main policies:

- Social Investment Policy and Procedure for social and community investment activities; and
- Code of Business Ethics Policy and other Company procurement, contracting and financial policies for corruption, anti-competitive behaviour and legal compliance aspects.

The Public Relations department manages the aspects of social investments while the Chief Operating Officer manages the Code of Business Ethics Policy.

### Local Community Impacts and Engagement

Since the Qatargas Plant is located in the north of Qatar, the Company as a good local corporate citizen has committed to helping develop and build the capacity of communities in the northern region. Qatargas has established a partnership with RLIC and Qatargas' peer RLIC-based producing companies to support the northern communities through the Ras Laffan Industrial City Community Outreach Programme (RLIC COP).

In order to implement and conduct the RLIC COP, the Ras Laffan City Community working group was established to work with the RLIC fence line communities. The mandate for the group's work is outlined in the RLIC COP Charter. The working group consists of members from the end-user companies within RLIC: Qatargas, RasGas, QP, ExxonMobil, Qatar Shell GTL, Dolphin Energy, and ORYX GTL.

The RLIC COP vision and objective is to create a respectful, trust-based partnership between industry and the community. Therefore, the main purpose of the outreach Programme is to coordinate and align the community engagements of the industrial city members end users with that of Al Khor, Al Thakira and other Northern Qatar communities.

The community outreach office provides the community with regular updates on RLIC's latest activities; thus acting as an information centre and a link between the industries and communities. It does so by holding educational and social events as well as offering development and capacity building opportunities. These events help bring together all community members.

The RLIC COP has partnered with the Living Earth Foundation (LEF) which is an international non-profit organisation and a respectful, trust-based partnership between industry and the community. This partnership serves as a method that allows better understanding of the various perspectives.

This assessment has helped Qatargas develop strategies and policies to address the issues expressed by the local community at large, and the northern community specifically, as shown in the below table.

## Community Issues and Related Solutions

Community issues identified	Solution implemented
<b>Air quality and impact on respiratory health.</b>	Flare reduction and the Common VOC project as well as the development of the GHG Management Strategy. Completion of the Jetty Boil Off Gas (JBOG) project by early 2014 will contribute significantly to improving air quality by saving the emission of 1.6 million tonnes of carbon dioxide into the atmosphere.
<b>Waste management in the northern area of Qatar.</b>	Development and implementation of waste management policy and procedures.
<b>Influx of expatriate labour force in the northern area of Qatar.</b>	Careful and sensitive management of access by large numbers of construction workers to local towns and the provision of buses for employees and contractors for transportation.
<b>Business opportunities, local content and job opportunities.</b>	Annual career fair for the public and specific fairs held in all the universities in Qatar. Prioritising local companies in the supply procedures and policies.
<b>Lack of communication and transparency between community and industry.</b>	Increased communication in local publications. Increased close interaction with the local community through events such as career fairs and environment fair, as well as regular face to face meeting with local community representatives with the RLIC COP. The RLIC COP office also serves as the link between RLIC and the northern community.
<b>Capacity building of local community</b>	Provision of special skills development courses for the local population as part of the RLIC COP projects

## Indigenous People and Involuntary Resettlement

No incidents of violations involving rights of indigenous people were reported in 2012.

Qatargas has no formal policies, programmes and/or procedures with regard to engaging with indigenous people. No case of involuntary resettlement was required by the company's activities in 2012 and there is no future plan involving involuntary resettlement

## Social Investment

In 2010, Qatargas initiated and implemented its Social Investment Policy. The objective of this policy is to outline the reasons for the programme and describe how the programme is operated and delivered. The policy also discusses attracting, reviewing, developing, awarding and monitoring of the social investment projects and corporate sponsorships undertaken by the company.

This policy will aid Qatargas in being recognised as a conscientious, responsible and responsive corporate citizen. It will achieve this by governing all of Qatargas operations both in Qatar and Internationally.

Focus themes and areas of the social investment programme for the period 2010-2012- include education, community (especially Ras Laffan Industrial City and Northern communities) and environment. Evaluation criteria have been developed to ensure that the best possible projects are supported by the company. Qatargas is supporting QNV 2030 through these strategic corporate social responsibility programmes.

In 2012, Qatargas offered sponsorships and donations as part of our CSR Programme to various events and initiatives which included school donations, road safety campaigns, sports and events sponsorships, and donations to local NGO's.

## A Flower Each Spring by Friends of Environment Centre

The 'A Flower Each Spring' Programme aimed at introducing the flora of Qatar in their natural habitat to the local community. Last Year, a plant named "*Ananasis setifera*" was chosen for the Programme. Several activities were organised which included field trips and festivals that focused on this plant. The participation of Qatargas in these initiatives helped develop environmental awareness for species conservation for both the community and Qatargas.

## Qatar-Japan 2012

Qatargas, as a strategic sponsor, supported the events and activities of the Qatar-Japan 2012 Programme. The aim of the Programme was to celebrate the 40 years of diplomatic relations between both countries by cultural events. Since Japan is one of Qatargas' foundation customers and the biggest importer of LNG, it is therefore important to familiarise both the Qatari and Japanese communities with each other's culture. The two major events that took place were the following:

1. 'Ferjaan in Tokyo' is a five day event held in Tokyo's Roppongi Hills, scheduled from September 27<sup>th</sup> to October 1<sup>st</sup> 2012. Ferjaan, which means 'neighbourhood' in colloquial Qatari Arabic, featured a 1,500 m<sup>2</sup> Cultural Village designed to showcase modern Qatari culture through a historically accurate representation of a souk, the traditional Arabic market place. The souk hosted exhibits from Qatari companies and a number of cultural projects. Accompanying this were Qatari entertainment, a number of informative talks and presentations and a selection of Qatari product presentations.
2. The Pearl Exhibition, an exhibition of natural pearls and pearl jewellery, was staged in the Hyogo Prefectural Museum of Art in Kobe, Japan from 28<sup>th</sup> July 2012 to 14<sup>th</sup> October 2012.



## Health and Safety Support

Ensuring the health and wellness of our own employees is permanent priority for Qatargas.

Also, our commitment to the healthy and safe lifestyle extends to the community around us. Therefore, we contribute to both major and minor programmes and events which benefit the community. Such programmes include collaboration with and support for the Qatar Diabetes Association, the Al Noor Institute, the Hamad Medical Corporation and the Supreme Council for Family Affairs.

Qatargas showed its support for the 1<sup>st</sup> International Paediatric Surgery Conference conducted by the Hamad Medical Corporation. This event facilitated the update and exchange of knowledge between paediatric surgeons from both Arab and non-Arab states. Qatargas also sponsored a table at the “Dream and Promise Benefit” held by the Children’s Brain Tumour Foundation. The contributions went for funding research on the treatment of brain tumours among children and the facilitation for the exchange of knowledge among experts in this field.

For the sixth consecutive year, the Traffic Department with the support of Qatargas has organised the ‘Ramadan Road Safety Campaign’. This campaign focused on raising the national awareness of road accident prevention. Motorists across the country will received ‘iftar’ packs along with the traffic awareness packs. Special traffic awareness Programmes were conducted in shopping malls with the appearance of well-known television figures. Qatargas also broadcast a special and, subsequently award-winning, television commercial titled “Was it Worth It?” as part of the Ramadan Road Safety Campaign.



## CASE STUDY

### Road Safety at Al Khor

Safety is a top priority for Qatargas and the Al Khor Community has undergone a number of improvements recently to ensure it is a safe environment in which to reside and work. First, a number of lights have been installed on the external perimeter road between the main Community entrance gates due to the many workers in the community that use this road by bicycle during the night. These lights have not only made the road a safer place for bicycle riders but have also improved the security of the Community and made it a safer road for residents to walk on. Another major improvement to this section of the road has been the issuance of a call-off contract to a local company to remove the sand off this road. During sandstorms, wind-blown sand often blocks this road creating a traffic hazard.



## Education Support

Qatargas is supporting education in Qatar as a major employer and contributor to the country's economy. We have a special focus on engineering in Qatar and promote it through supporting educational programmes and platforms that focus on the development of the engineering field in Qatar.

One of our engineering sponsorships has been on-going since 2004; where Qatargas has sponsored the research chair for engineering at Qatar University. The main aim of this support is to promote research in the discipline of engineering at the university. Qatargas is also one of the founding members of the Gas Processing Centre established in 2007 to address the problems, challenges and opportunities facing the State of Qatar's gas processing industry.

Donations and sponsorships for a number of educational institutions were made through 2012, including Texas A&M University, Qatar Independent Technical School and Qatar University.

"Supporting the education sector is a core element of our corporate social responsibility strategy at Qatargas. Continuing to invest in the education and training of young Nationals enables Qatargas to contribute towards achieving the goals of the National Development Strategy 2011- 2016 by increasing the prominence of technical education and vocational training programmes to prepare young Qataris to acquire the skills required for the industrial sector."

Ghanim Al Kuwari,  
Chief Operating Officer - Administration

We realise that investing in the future is related to investments in education and therefore have our Process Engineering and Environmental Affairs divisions regularly carry out educational seminars for students on energy and environmental related themes. The Qatargas' Learning & Development team regularly visit local schools to offer training and internship opportunities to promote Qatargas as an employer of choice amongst young Nationals.

## Events Sponsorship

Qatargas organised and sponsored numerous sports and cultural events during 2012 including:

- The Qatar Masters 2012;
- The American Chamber of Commerce Golf Tournament;
- The Doha Oilmen's Golf Tournament;
- The Ministry of Interior Internal Football Championship;
- The Junior Golf Programme.



## Relief Assistance

Qatargas employees have made a financial contribution in support of the Sheikh Thani Bin Abdullah Al-Thani Campaign to deliver aid to the victims of the sectarian violence in Myanmar.

Another financial contribution was presented to the Syria Relief Campaign. The objective of the campaign was to deliver emergency humanitarian aid to the tens of thousands of Syrian refugees that have been displaced by the violence occurring in their home country. Half of the donated amount was contributed by Qatargas employees and the other half of the sum was donated by the Company.



### Case Study: Syria Relief Campaign

Tens of thousands of Syrians have sought refuge in neighbouring countries due to the on-going violence in Syria. Qatargas employees have made a financial contribution to the Syria Relief Campaign which was undertaken by The Sheikh Thani Bin Abdullah Al-Thani Humanitarian Services. The campaign aims to deliver basic necessities such as food, clothing, medicines and shelter to those affected. Similar, humanitarian campaigns in the past have also attracted excellent response from Qatargas employees. A total of QAR 440,000 were donated, half of which was provided by Qatargas employees and the rest by the Company itself.



## Corruption

Qatargas operates in countries where corruption and bribery risks are considered limited. We implement appropriate policies and controls regarding bribery and corruption. To this day, no Qatargas operation has been formally assessed for risks related to corruption.

The main policy in place is 'The Code of Business Ethics' which provides general rules and requirements that ensure fiscal integrity. The policy also tackles the issue of bribery stating that employees must not offer or accept bribes in any form of either money or anything else of value which is used for the purpose of receiving favourable treatment.

Qatargas has an Ethics and Conflict of Interest Committee (ECIC), which assesses both actual and potential situations where bribery or corruption might have occurred. Their reporting process provides mechanisms for reporting and following up violations.

Disciplinary, criminal and/or civil proceedings may occur to violators of the Code of Business Ethics Policy. These actions may include termination of employment.

To this day, there is no official anti-corruption training programme at Qatargas. However, a number of training sessions were conducted by the ECIC on the ethics policy and an online ethics training programme was developed by both the Learning & Development Department and ECIC. 'Skillsoft' e-learning also has various course materials and resources relating to 'Anti-Corruption'.

Contractor staff working with Qatargas are required to complete the Annual Conflict of Interest Declaration and the Annual Certification Statement. All contractors providing services to Qatargas are expected to adhere to a code of conduct equivalent to Qatargas' Ethics Policy. These business ethics provisions are integrated with all significant Company contracts.

No employees were dismissed or disciplined for incidents of corruption in 2012, and no contracts with business partners were terminated or not renewed due to violations related to corruption.

No legal cases regarding corrupt practices were brought against Qatargas or its employees in 2012.

## Public Policy

Qatargas was not involved in significant public policy development and lobbying activities in 2012. Qatargas is liaising with appropriate authorities and consultants when exploring new products markets especially when associated with terminal construction.

Contribution to political parties is not allowed as per Qatargas' Ethics Policy.

## Anti-Competitive Behaviour

Qatargas ensures avoidance of anti-competitive behaviour by performing regular monitoring and audits and has implemented a robust firewall rule and procedure.

In 2012, no legal actions were brought against Qatargas with regards to anti-competitive behaviour and violations of anti-trust and monopoly legislation.

## Compliance with Laws and Regulations

The Qatargas Ethics policy states that it is the Company's policy to conduct its business in compliance with all laws, regulations and other legal requirements applicable to the Company in whatever world jurisdiction we are doing business.

Therefore, we request that employees exercise reasonable care to familiarise themselves with all applicable laws, regulations and Company policy and procedures in order to properly comply and abide by them.

Each employee has the responsibility of acquiring sufficient knowledge of the laws involved in each area relating to his or her particular duties in order to recognise potential dangers and to know when to seek the advice of in-house legal counsel.

Qatargas is obligated, under the Qatari Law, to report to the appropriate State authority certain breaches of Qatari law or regulation that has occurred. These include acts such as employee fraud, theft, and disclosure of confidential information.

Qatargas has not identified any non-compliance with international or national laws and regulations in 2012.

### **QATARGAS 10 GOLDEN BEHAVIOURS OF CONFORMANCE:**

1. Commit yourself to Qatargas Direction Statement, Vision and Objectives.
2. Behave in a safe manner, seek to stop others from committing unsafe acts.
3. Read, understand and comply with policies and procedures; complete all mandatory training.
4. Initiate Management of Change (MOC) for gaps you identify.
5. Lead others by the example of your good conformance behaviours.
6. Come to meetings on time and prepared - show respect for others.
7. Take responsibility for your actions.
8. Deliver against deadlines and commitments (do as you say).
9. Understand your internal and external customers' requirements; meet or exceed them.
10. Speak up: do not tolerate non-conforming behaviours in others.



# HUMAN RIGHTS

*Embedded in our Code of Business Ethics Policy*

## 2012: Key Highlights

- Qatargas maintains compliance with all laws prohibiting child and forced labour
- No specific issue has been encountered by Qatargas in terms of security and human rights in 2012.

## Management of Human Rights Aspects

Qatargas has addressed human rights issues as part of its Code of Business Ethics Policy. There is currently no separate Human Rights policy, goals and objectives in Qatargas. To this date, Qatargas' operations have not undergone any formal human rights reviews or impact assessments.

Qatargas has not reported any internal or external grievances related to human rights in 2012.

## Investment and Procurement Practices

Qatargas performs regular audits of its contractors and suppliers to ensure their compliance with clauses which are in all significant contractor and supplier contracts (e.g. timely pay of wages, applicable laws in relation to working hours, etc.). In 2012, no contracts were either declined or subject to other corrective actions as a result of human rights screening. There is currently no training on human rights aspects at Qatargas.

## Child, Forced and Compulsory Labour

Qatargas, in accordance with Qatari Laws requirements, maintains compliance with all laws prohibiting child and forced labour; and undertakes to suppress the use of child, forced or compulsory labour in all its forms.

Qatargas will ensure that no concession granted to private individuals or organisations with which it conducts business shall involve any form of child, forced or compulsory labour for the production or the collection of products which such private individuals or organisations utilise or in which they trade.

## Security and Human Rights

Our security department has an overall management system document that includes organisational structure, philosophy and formats for dealing with security risks and specific procedures related to security risks identified. However, Qatargas is not a participant in the Voluntary Principles on Security and Human Rights (VPSHR).

A series of Security policies and procedures have been developed by Qatargas which cover employees and visitors to the Ras Laffan and Doha locations, operations and projects.

By the end of 2012, Qatargas security personnel included 28 permanent staff and 250 contractors who ensure security controls at gates of Qatargas facilities in Ras Laffan and Doha, deliver gate passes to employees, visitors and contractors, manage the security card access control system and address all accident, incidents and emergency calls received on a twenty four hour basis.

The security and human rights training was received by all security personnel and contractors.

Qatargas is currently implementing a supply chain security risk management strategy for all its operations, using the following approach:

- Recognition of various operational and corporate key processes within Qatargas;
- Security risk management philosophy governing threats, risk identification, risk analysis, prevention and mitigation;
- Integration of security risk management into the Qatargas Enterprise Risk Management Programme through common approach to risk management principles (risk matrix, risk identification, risk registers, etc.);
- Objectives to achieve certification of ISO 28001:2007 - Security Management System for the Supply Chain.

No specific issue has been encountered by Qatargas in terms of security and human rights in 2012.



# PRODUCT RESPONSIBILITY

## *Managing our materials safely*

### 2012: Key Highlights

- All products' MSDS were developed and updated on intranet during the last three years.
- No complaints or notification of non-compliance with laws and regulations concerning the provision and use of the company's products and services

## Management of Product Responsibility

There are currently no formal product responsibility policies, goals and objectives at Qatargas.

Health and safety aspects of product responsibility are addressed by the Safety Department, whereas marketing communication and customer satisfaction are managed by the Commercial and Shipping Group.

## Products Health and Safety

No formal health and safety impact assessments are undertaken on our products. However we consider possible health and safety impacts of our products along the lifecycle from gas extraction to use of the products.

Qatargas maintains a database of MSDS for all its products produced and used at the site so that effective risk assessment and controls are in place to manage all materials safely. The MSDS database is a live document and is continually updated to ensure that it is current and accurate. Qatargas also subscribes to Chemwatch for reference to other chemicals.

Qatargas has a total of 215 MSDS' approved with Control of Substances Hazardous to Health (COSHH) sheet in 2012. MSDS were developed and uploaded on intranet during the last three years.

Qatargas has not identified any non-compliance with regulations and voluntary codes concerning the health and safety of products and services in 2012.

## Marketing Communication

No codes or voluntary standards relating to marketing communications are applied across Qatargas. Qatargas does not sell products banned in certain markets or that are the subject of stakeholder questions or public debate.

In the year 2012, Qatargas has not identified any non-compliance with regulations concerning marketing communications, including advertising, promotion, and sponsorship.

## Customer Satisfaction and Privacy

Qatargas has developed key performance indicators related to late and off-specification deliveries and handling of complaints to measure and follow-up customer satisfaction. Qatargas has not received any customer complaints in 2012.

No customer surveys are undertaken by Qatargas.

Protecting customer data and privacy are crucial in the way we conduct our business. Qatargas' Ethics Policy describes rules and requirements to be applied by all employees with regard to information confidentiality and disclosure. To preserve confidentiality, disclosure and discussion of confidential information is limited to those employees who need access to the information in the course of their work. Firewalls rules and procedures are in place to ensure safeguarding of commercially competitive, sensitive or confidential information. Qatargas moreover has advanced IT systems to protect data from external unauthorised access.

Qatargas has not received any complaints or notification of any breaches of customer privacy during 2012.

## Compliance with Laws and Regulations Regarding Company's Products

Qatargas has not received any complaints or notification of non-compliance with laws and regulations concerning the provision and use of the company's products and services during 2012.

## GRI & IPIECA/API Compliance Verification Index

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Core indicators are identified in <b>bold</b> ; DMA: Disclosure on Management Approach							

Based on our own assessment of this report content against the GRI criteria, we have self-declared our Corporate Social Responsibility Report as Application Level 'A'.

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# GLOSSARY OF TERMS

API	American Petroleum Institute	LEF	Living Earth Foundation
BAC	Board Audit Committee	LES	Laffan Environmental Society
BAT	Best Available Technique	LLGM	Low Load Gas Model
Bbls	Barrels	LNG	Liquefied Natural Gas
BCM	Business Continuity Management	LOPC	Loss Of Primary Containment
BIA	Business Impact Analysis	LPG	Liquefied Petroleum Gas
BOD	Board of Directors	LSFO	Low Sulphur Fuel Oil
Bpsd	Barrels Per Stream Day	LSMGO	Low Sulphur Marine Gas Oil
CDM	Clean Development Mechanism	LTi	Lost Time Injury
CDP	Career Development Programme	MBR	Membrane Bio Reactor
CEO	Chief Executive Officer	MDO	Marine Diesel Oil
CER	Certified Emission Reductions	MLT	Management Leadership Team
CFC	Chlorofluorocarbon	MM	Million
CH <sub>4</sub>	Methane	MMScf	Million Standard Cubic Foot
CNOOC	China National Offshore Oil Corporation	MOC	Management of Change
CO <sub>2</sub>	Carbon Dioxide	MoE	Ministry of Environment
COO	Chief Operating Officer	Mol	Ministry of Interior
CoP	Conference of Parties	MRG	Monitoring and Reporting Guidelines
COP	Community Outreach Programme	MSDS	Material Safety Data Sheet
COSHH	Control of Substances Hazardous to Health	MT	Metric Tonnes
CPR	Cardio Pulmonary Resuscitation	MTA	Million Tonnes Per Annum
CSP	Common Sulphur Project	N <sub>2</sub> O	Nitrous Oxide
CSR	Corporate Social Responsibility	NDS	National Development Strategy
CTO	Consent To Operate	NGO	Non Governmental Organisation
DEFRA	UK Department for Environment, Food and Rural Affairs	NO <sub>x</sub>	Nitrogen Oxide
DG	HSE Regulations and Enforcement Directorate	OGP	International Oil and Gas Producers Association
ECIC	Ethics and Conflict of Interest Committee	OHSAS	Occupational Health and Safety Assessment Series
EDMS	Environmental Data Management System	OPCO	Operating Company
EMS	Emergency Management Services	PFC	Perfluorocarbon
EPC	Engineering, Procurement and Construction	PIP	Performance Improvement Plan
ERM	Enterprise Risk Management	PLE	Premier Leadership Event
ESIA	Environmental and Social Impact Assessment	PMP	Plateau Maintenance Project
ESS	Employee Self Service	PSI	Process Safety Incident
EU	European Union	PVDF	Polyvinylidene Fluoride
FEED	Front-End Engineering Design	QAR	Qatar Rial
FMP	Flare Management Plan	QDMC	Qatargas Doha Medical Centre
FMT	Flare Management Team	QG	Qatargas
FSC	Forest Stewardship Council	QG-PSP	Qatargas Process Safety Programme
GGFR	Global Gas Flaring Reduction	QITS	Qatar Independent Technical School
GHG	Greenhouse Gas	QMSI	Qatargas Management System for Continuous Improvement
GIS	Geographic Information System	QNV	Qatar National Vision
GRI	Global Reporting Initiative	QP	Qatar Petroleum
GWP	Global Warming Potential	QPR	Quarterly Performance Review
HCFC	Hydrochlorofluorocarbon	QRC	Qatar Red Crescent
HFC	Hydrofluorocarbon	RALF	Receiving And Loading Facility
HFO	Heavy Fuel Oil	RCS	Risk Control System
HND	Higher National Diploma	RLIC	Ras Laffan Industrial City
HR	Human Resources	RLTO	Ras Laffan Terminal Operations
HRA	Health Risk Assessment	RMC	Risk Management Co-ordinator
HSE	Health, Safety and Environment	SAP	System Application and Products
HVAC	Heating, Ventilation and Air Conditioning	SEQ	Safety, Environment and Quality
IA	Internal Audit Function	SHE	Safety, Health and Environment
ICHEME	The Chartered Institution of Chemical Engineers	SF <sub>6</sub>	Sulphur Hexafluoride
IDP	Individual Development Plan	SIGTTO	Society of International Gas Tanker and Terminal Operator
IET	The Institution of Engineering and Technology	SME	Subject Matter Expert
IIF	Incident & Injury Free	SO <sub>2</sub>	Sulphur Dioxide
IPCC	International Panel on Climate Change	SPA	Sales and Purchase Agreement
IPIECA	International Petroleum Industry Environmental Conservation Association	tCO <sub>2</sub> eq	Tonnes Carbon Dioxide Equivalent
ISO	International Organisation for Standardisation	TAFE	Technical And Further Education
IT	Information Technology	TAMUQ	Texas A&M University at Qatar
ITP	Individual Training Plan	TDLC	Training and Development Liaison Committee
IUCN	International Union for Conservation of Nature	TEPCO	Tokyo Electric Power Company
JBOG	Jetty Boil-Off Gas	TRIF	Total Recordable Injury Frequency
JCI	Joint Commission International	UAE	United Arab Emirates
JVA	Joint Venture Agreement	UK	United Kingdom
KEPCO	Kansai Electric Power Company	UN	United Nations
KPI	Key Performance Indicator	US/USA	United States of America
L&D	Learning and Development	USD	United States Dollar
LCA	Life Cycle Assessment	VPSHR	Voluntary Principles on Security and Human Rights
LDAR	Leak Detection and Repair	VOC	Volatile Organic Compounds
		WBCSD	World Business Council for Sustainable Development
		WRI	World Resources Institute

**Butane**

Either of two isomers of a gaseous hydrocarbon, C<sub>4</sub>H<sub>10</sub>, produced synthetically from petroleum and used as a household fuel, refrigerant, and aerosol propellant and in the manufacture of synthetic rubber.

**Carbone Dioxide**

CO<sub>2</sub> is a colourless gas and the main greenhouse gas of concern as per the Kyoto Protocol. In oil and gas activities, CO<sub>2</sub> is mainly associated with fuel combustion and flaring.

**Chlorofluorocarbon**

Any of various halocarbon compounds consisting of carbon, chlorine, and fluorine, once used widely as refrigerants in cooling systems. CFCs are listed in Annex A or B of the Montreal Protocol on Substances that Deplete the Ozone Layer.

**Condensate**

A straw-coloured or colourless liquid hydrocarbon mixture of over approx. 500 API gravity, which may be recovered at the surface from some non-associated gas reservoirs.

**Corporate Social Responsibility**

Continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.

**Flaring**

A process of safe disposal of waste or unused/unusable gases required to ensure the safety and integrity of the facility.

**Global Warming Potential**

Total contribution to global warming resulting from the emission of one unit of a given gas relative to one unit of the reference gas, carbon dioxide, which is assigned a value of 1.

**Greenhouse Gas**

A gas that contributes to the greenhouse effect by absorbing infrared radiation. Atmospheric emissions of GHGs from oil and gas operations include CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions from combustion sources, gas flaring, or fugitive emissions.

**Hydrochlorofluorocarbon**

A compound composed of hydrogen, chlorine, fluorine, and carbon atoms; used as replacement for CFCs as refrigerants because of its lower ozone depletion potential.

**Hydrofluorocarbon**

Compound consisting of hydrogen, fluorine, and carbon; it is a fluorocarbon emitted as a by-product of industrial manufacturing that contributes to the greenhouse effect.

**LNG**

Natural Gas can be liquefied, e.g., at atmospheric pressure by cooling to about -160 °C (-256 °F). It consists of liquefied methane (C<sub>1</sub>) and ethane (C<sub>2</sub>) and sometimes includes propane (C<sub>3</sub>) and butane (C<sub>4</sub>).

**LPG**

Mixture of hydrocarbon gases (propane and butane) used as a fuel in heating appliances and vehicles. It is increasingly replacing chlorofluorocarbons as an aerosol propellant and a refrigerant to reduce damage to the ozone layer.

**Methane**

An odourless, flammable greenhouse gas, which is the major constituent of natural gas. In the oil and gas industry, CH<sub>4</sub> is mainly associated with fuel combustion, flaring, venting and fugitive emissions.

**Naphtha**

Any of several highly volatile, flammable liquid mixtures of hydrocarbons distilled from petroleum, coal tar, and natural gas and used as fuel, as solvents, and in making various chemicals.

**Nitrogen Oxides**

Chemical compounds of nitrogen and oxygen. NO<sub>x</sub> are produced primarily from the combustion of fossil fuels and contribute to the formation of ground level ozone.

**Nitrous Oxide**

A colourless greenhouse gas which is emitted as a combustion process by-product.

**Ozone Depleting Substance**

A compound that contributes to stratospheric ozone layer depletion.

**Propane**

A colourless gas, C<sub>3</sub>H<sub>8</sub>, found in natural gas and petroleum and widely used as a fuel.

**Sulphur Dioxide**

A colourless, extremely irritating gas produced by fuel combustion and by many industrial processes. In oil and gas activities, SO<sub>2</sub> results primarily from sulphur removal processes and the flaring of sour gas.

**Venting**

Process by which gas is released to atmosphere from an open pipe without combustion.

**Volatile Organic Compound**

Any organic compound with a vapour pressure of 0.01 kPa or greater, a temperature of 293.15 Kelvin or a corresponding volatility under specific conditions of use.

For more definitions, please consult our online glossary at: <http://www.qatargas.com.qa>

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