



# SUSTAINABILITY REPORT 2016

# ABOUT THIS REPORT

This is the seventh iteration of Qatargas' annual sustainability report which was first published in 2010. The 2016 report covers Qatargas' economic, environmental, and social performance during the year.

This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core option.

Qatargas invites stakeholders to share their questions, comments, and concerns. Any feedback on the contents of this report and the Company's sustainability performance is welcome through: [sustainability@qatargas.com.qa](mailto:sustainability@qatargas.com.qa)



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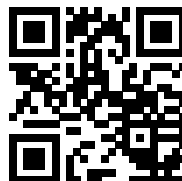
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4

PERFORMANCE  
HIGHLIGHTS  
FROM 2016

5

2016 AWARDS

6

MESSAGE FROM THE  
CEO

8

ABOUT QATARGAS

12

SUSTAINABILITY AT  
QATARGAS

18

GOVERNANCE AND  
RISK MANAGEMENT

22

ECONOMY

28

HEALTH AND SAFETY

38

ENVIRONMENTAL  
PERFORMANCE

50

OUR WORKFORCE

58

SOCIAL  
DEVELOPMENT

66

APPENDICES



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# PERFORMANCE HIGHLIGHTS FROM 2016

## BEST PERFORMANCE

IN THE TOTAL RECORDABLE INJURY  
FREQUENCY (TRIF) OF 0.56

## OPERATIONS RECORDABLE

INJURY PERFORMANCE SHOWED A 33%  
IMPROVEMENT RELATIVE TO 2015

## 138 DAYS WITHOUT RECORDED

INJURY AND LOST TIME INJURY (LTI)  
ACROSS ALL ASSETS OF  
QATARGAS

## 30 MILLION WORKING HOURS

FOR EMPLOYEES AND CONTRACTORS  
WITHOUT LTI

## ZERO HEAT STRESS

EVENTS AMONG EMPLOYEES

## REDUCTION OF TIER 1 AND TIER 2

EVENTS BY 80% RELATIVE TO 2015

## REDUCTION OF TIER 3

EVENTS BY 20% RELATIVE TO 2015

## JETTY BOIL-OFF GAS (JBOG)

PROJECT RECOVERED 94% OF  
BOIL-OFF GAS

## 95% REMOVAL RATE

OF KEY HARMFUL PARAMETERS  
IN THE WASTEWATER DUE TO MEMBRANE  
BIOREACTOR INSTALLATION

## 93% DISPOSAL OF HAZARDOUS WASTE

ACCUMULATED  
ONSITE IN ACCORDANCE  
WITH LOCAL REGULATION

## SUCCESSFUL DISPOSAL

OF ALL ACCUMULATED ELECTRONIC  
WASTE (E-WASTE) THROUGH A SPECIALISED  
WASTE MANAGEMENT COMPANY

## 7% REDUCTION IN NITROGEN OXIDES

(NOX) EMISSIONS

## 19% REDUCTION OF VOLATILE

ORGANIC COMPOUNDS (VOC) EMISSIONS DUE  
TO SUCCESSFUL OPERATION OF THE LEAK  
DETECTION AND REPAIR (LDAR) SYSTEM

## RENEWED A GOLD LEVEL

ACCREDITATION OF IIP - 'INVESTORS  
IN PEOPLE'

## FEMALE SHARE

AMONG QATARGAS WORKFORCE  
INCREASED BY 12% RELATIVE TO 2015

## THE ATTRITION OF QATARI

EMPLOYEES DECREASED TO 6.75% IN 2016

## HAYYAKUM RECRUITMENT CAMPAIGN

TO ATTRACT QATARI TALENT

## 99.8% COMPLIANCE RATE

FROM THE PERFORMANCE APPRAISAL

## FIRST MULTIPOINT LNG DELIVERY

OPERATIONAL FLEXIBILITY AND  
SUPPLY CHAIN EFFICIENCY

## TWO MEMORANDA

OF UNDERSTANDING SIGNED TO FURTHER  
DEVELOP LNG AS A MARINE FUEL

## LAFFAN REFINERY 2

BEGINS OPERATIONS





**SWORD OF HONOUR AND  
GLOBE OF HONOUR AWARDS**

**QATARGAS RECOGNISED AT  
'WORLD BLOOD DONOR DAY' CELEBRATION**

**QATAR CIVIL DEFENSE RECOGNISES  
QATARGAS FOR FIRE PREVENTION EFFORTS**

**TWO GOAL ZERO AWARDS IN RECOGNITION OF ACHIEVING 10 AND 20 MILLION  
MAN-HOURS WITHOUT SERIOUS LEAKS OR INCIDENTS**

**GCC ENVIRONMENT  
AWARD 2015**



## MESSAGE FROM THE CEO

We are pleased to present the Sustainability Report 2016. This annual report, now in its seventh iteration, highlights our continued commitment to increasing the transparency of Qatargas' operations. Providing an honest account of our operational activities along with an assessment of associated impact on various stakeholders is crucial to our organisation's core value of integrity.

Our hard work in 2016 has successfully contributed to sustaining Qatargas' position as the World's Premier LNG Company providing reliable, clean energy. The Sustainability Report 2016 highlights the actions and investments Qatargas has made in the area of sustainable growth and development. To ensure we retain our place as the global leader in the LNG field, the Company has identified five key interconnected areas to focus our efforts and resources on. Leading the entire LNG industry in these five areas - referred to as the "five pillars" within Qatargas - forms the basis of our sustainability strategy.

With the recent global economic climate leading to a sharp decline in oil prices, Qatargas was able to maintain operational resilience through its long-term investments in sustainable business and industrial practices. We have not only withstood the worst of the economic downturn, but have maintained the stability and reliability of our operations. Moreover, Qatargas has decided to continue pursuing a proactive approach to invest in new technologies, partnerships, innovative projects, assets, and our people. This will positively impact our sustainable performance in the future.

In 2016, we invested a substantial amount of resources towards developing the M-type Electronically Controlled - Gas Injection pilot project. The technologically sophisticated project, jointly undertaken with our shipping partner, successfully demonstrated that traditional carriers can be converted to run purely on LNG. Qatargas signed two Memoranda of Understanding this year with leading global shipping and energy companies to help develop

LNG as a marine fuel. Using LNG as a marine fuel reduces greenhouse gas emissions, and is an environmentally friendly alternative to burning heavier fuel oils in the shipping industry. A shift towards LNG by the shipping industry can help mitigate human impact on global climate change while simultaneously assisting Qatargas' stable economic growth resulting from the rising demand for LNG as a marine fuel.

Qatargas had a great year in terms of maintaining high levels of operational safety and employee wellbeing, helping us retain our existing talent and attracting high calibre professionals. This year, we managed to achieve an industry first - a multiport LNG delivery, driving customer satisfaction to new heights. Finally, we celebrated the beginning of operations at Laffan Refinery 2, our newest asset. With the refinery now operational, Qatargas is strategically positioned for successful growth with robust infrastructure.

Although the Company faced challenging global economic conditions in 2016, Qatargas managed to achieve many set targets aligned with its 2020 Vision and Direction Statement. Most notably, the Company exceeded the targeted reduction per unit cost of production.

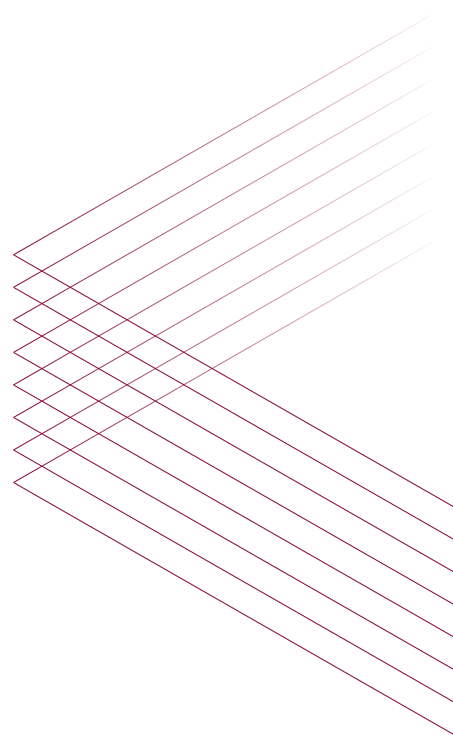
There is no doubt that we have come far as an organisation over the past 33 years. Maintaining our premier status in the LNG industry is achievable through ingenuity, hard work, and a commitment to quality throughout our ranks. Let us not look to rest on our laurels. Instead, let us promise to constantly evolve, innovate, and stay competitive in the years to come. Together, we can realise the full potential of Qatargas as the World's Premier LNG Company.

**Khalid Bin Khalifa Al-Thani**  
CEO, Qatargas





# **QATARGAS**





## **Qatargas Direction Statement, Mission and Values**

Having achieved premier status in 2015, Qatargas remains committed to maintaining this status, as reflected in the Direction Statement establishing the core strategy beyond 2015:

**WE ARE COMMITTED TO BEING  
THE WORLD'S PREMIER LNG COMPANY  
PROVIDING RELIABLE, CLEAN ENERGY.**

The Direction Statement establishes main goals for the Company. It defines five pillars that inform priorities, enabling Qatargas to set and maintain the highest standards in the industry.

Qatargas believes setting these priorities will ensure we attain the ultimate goal of achieving sustainable operations. For example, a high calibre workforce will always be attracted to a company that provides safe working conditions and a healthy working environment. The same workforce, in turn, will ensure that Qatargas operates in an efficient and reliable way. The stability of operation and supply of high quality products to the market will keep customer satisfaction high, which in turn will help drive demand for Qatargas' products.

These pillars are supported by Qatargas' Corporate Values that reflect the issues of importance for the Company's internal and external stakeholders. The Company's Corporate Values ensure that the organisation achieves its Mission of managing and operating all its resources safely, efficiently, and reliably. This Mission will in turn enable Qatargas to sustain its premier status, as articulated in the 2020 Vision.

### **Pillars**

#### **We lead the industry in:**

- Safety, Health and Environmental Performance
- A High Calibre Workforce
- Efficient and Reliable Operations
- Customer Satisfaction
- Financial Performance



## Values

**We value and respect all our stakeholders. We demonstrate this through:**

- **Incident & Injury Free:** Mutual and genuine care for our people and facilities;
- **Being Environmentally Conscious:** Being compliant and aware of our impact;
- **Integrity:** Conducting our business with transparency and in an ethical manner;
- **People Development:** Developing our people and fostering a culture of learning, innovation, diversity, and excellence;
- **Teamwork:** Empowering each other, communicating openly, encouraging initiative, and acknowledging accomplishments.

## Mission

**To manage and operate all of our resources safely, efficiently and reliably, we will:**

- Strengthen our Incident & Injury Free (IIF) culture;
- Attract and retain customers through our reputation as a safe, flexible, mature, and reliable supplier;
- Be the employer of choice for a high performing national and international workforce;
- Sustain reliability - ensuring asset integrity and plant availability through proactive and effective operations;
- Prioritise and flawlessly deliver projects, and effectively integrate them into existing operations;
- Be socially responsible - actively contributing to social, community, and local business partnerships;
- Maximise the value of our people and the efficiency of our facilities and systems.

**Through this we will proudly fuel the fulfillment of the Qatar National Vision 2030**

## 2020 Vision

**Our road map to sustaining our Premiership status. We will strive to:**

- Sustain an IIF workplace, eliminate hydrocarbon releases, and minimise our environmental footprint;
- Retain and develop our expertise through a high calibre, motivated workforce;
- Focus on our core LNG business and successfully operate our gas-derived product facilities;
- Lead the industry in pioneering new LNG applications, establishing new markets, and strategic industry partnerships;
- Maximise value through operational efficiency, synergies, and resource management;
- Be the most reliable and flexible supplier, building the strongest relationships with all our customers;
- Strengthen corporate resilience through effective business processes.



Pillar of the Vision	KPI	2016 Actuals	2020 Target
Safety, Health, Environmental Performance	Lost Time Incidents (LTI) <sup>1</sup>	0	0
	Tier 1 Process Safety Events <sup>2</sup>	1	0
	Flaring (% of sweet gas)	0.43	0.30
High Calibre Workforce	Compliance to the Technical Competence Framework (%)	98.8	100
	Qatarization	21.9	50 <sup>3</sup>
Efficient and Reliable Operations	LNG Reliability (%)	96.7	98.4
	LNG Availability (%) <sup>4</sup>	94.7	95.7
	LNG Utilisation (%)	89.7	88.0
	LNG Unit Cost (USD/tonne of saleable product)	10.8	12.0
Customer Satisfaction	Late Deliveries (#)	0	0
	Off-Spec Deliveries (#)	0	0
	Enter New Niche LNG Segments <sup>5</sup> (million tonnes)	0.18	0.50
Financial Performance	Optimisation Netback Uplift (%)	430	100
	Sales Volume (million tonnes)	58.9	61.6

Qatargas adheres to international standards of quality in its different processes and operations. Following established best practices in this sector has helped the company gain several benefits, in addition to reduced environmental impact. Optimised management and risk assessment processes has yielded in significant cost savings and more efficient and effective production. By ensuring our products and services meet internationally recognised quality standards, we have enhanced customer satisfaction and opened up new markets.

**Qatargas has received, or has been re-accredited for the following:**

- ISO 9001 Quality Management
- ISO 14001 Environmental Management
- OHSAS 18001 Occupational Health and Safety Management
- ISO 28000 accreditation for a Security Management System

<sup>1</sup> LTI accounts for number of incidents that constrain a person's capacity of coming to work the following day.

<sup>2</sup> Tier 1 Process Safety Events are unplanned or uncontrolled major releases of any material from a process.

<sup>3</sup> 50 percent Qatarization target is to be achieved by 2030

<sup>4</sup> Normalised for planned shutdowns

<sup>5</sup> Niche LNG Segments are defined as cargos of LNG that are supplied to customers in smaller volumes, used in accordance with the customer needs as marine fuel, truck fuel, or other.





## SUSTAINABILITY AT QATARGAS



Sustainability is the bedrock of our business decisions. As stewards of the operational assets, we have a fiduciary duty to ensure that we generate enduring long-term value by creating shared prosperity for all our stakeholders and partners while retaining our continuous focus on safety and risk management. Qatargas owns prepared risk management strategies which enable us to manage potential threats to the sustainability of our operations. These consider the impact of environmental, societal, and economic developments that can affect our operations. This integrated approach enables us to be prepared to overcome challenges and seize opportunities by successfully monitoring potential threats.

## Materiality

Having reached premier status in the LNG industry, Qatargas now strives to sustain its performance. In accordance with the newly adopted Direction Statement, supported by Qatargas Values, Mission, and 2020 Vision, the Company revised material topics that have defined the content of previous sustainability reports.

The Company has identified seven material topics across business, industry, and society that are of importance to Qatargas, local and international regulators, and industry observers. Additionally, Qatargas has considered other topics of major importance to its stakeholders for inclusion, especially those which would impact stakeholder decisions and attitudes in relation to the activities undertaken by the Company.

**Seven material topics are defined below in the order of importance assigned to each topic in a given year to align Qatargas' activities with its Direction Statement, and to address stakeholder needs. Other topics, however, are also presented in this sustainability report in order to ensure continuity in reporting and to reflect the topics that are important within the context of Qatar's Energy and Industry Sector Sustainability (QEISS) initiative.**

Material topic	Why the topic is material	Where the impacts related to material topics occur	The involvement of Qatargas with the impact (if the impact occurs outside Qatargas)	Any specific limitation in reporting on the topic	References in the report
<b>Energy Efficiency, Flaring, and GHG Emissions</b>	Being conscious of how the LNG industry operates, Qatargas has defined and implemented an ambitious plan to minimise impact of its operations on the environment.  Efficiency in the use of energy will have a positive impact on the level of GHG emissions and the cost of production, both of which are important for Qatargas and its wider stakeholders.	Within Qatargas, on the regional and global levels.	Qatargas' efforts in reducing flaring (such as implementation of the Flare Management System, JBOG project implementation, among others), and GHG reduction (through flaring reduction, GHG Management Strategy, promotion of LNG as a cleaner marine fuel, among others) are directed at mitigating this impact on a regional and global level.	No	-
<b>Qatarization</b>	One of the pillars of Qatar National Vision (QNV) 2030 is Human Development. It envisions the establishment of human capital that is able to develop Qatar's economy in a sustainable manner. Qatar National Development Strategy 2011-2016, and the energy and industrial sector in	Within Qatargas and in Qatar.	Qatargas has programmes dedicated to the recruitment of Qatari graduates and professionals; programmes of professional development for Qatari employees and trainees within the company, and also scholarship programmes.	No	-

Material topic	Why the topic is material	Where the impacts related to material topics occur	The involvement of Qatargas with the impact (if the impact occurs outside Qatargas)	Any specific limitation in reporting on the topic	References in the report
	particular, foresee the need to increase the targeted share of qualified Qatari nationals in the workforce. Qatargas, as one of the largest contributors to the national economy, plays an important role in the development of Qatari talent.				
<b>Efficient and reliable operations</b>	Efficient and reliable operations ensure safe production with minimum interruptions, providing a continuous revenue stream and satisfying customer needs. Resource management is at the heart of Qatargas' operational philosophy.	Within Qatargas.	NA	No	-
<b>Customer Satisfaction</b>	Qatargas managed to attain the status of the world's largest LNG supplier by providing reliable and timely supplies of LNG and associated products that correspond to the quality requirements of our customers. It is important for the stable development of our business that we continue to satisfy our customers and adopt innovative approaches in staying ahead of our competition.	Within Qatargas and on a global level in relation to our customers.	In addition to providing the highest quality of products in accordance with international standards, Qatargas is actively developing innovative ways of delivering its products to customers, such as its multiport delivery system.	No	-
<b>Financial Performance</b>	As one of the largest contributors to Qatar's economy, Qatargas' financial returns provide a significant contribution to the nation's development.	Within Qatargas and on the national level.	With low oil prices (that also impact gas prices), Qatargas - as The World's Premier LNG Company - sustains its financial performance by efficiently managing its assets and natural gas resources of Qatar.	No	-

[GRI 102-47]

[GRI 102-49]

[GRI 103-1: Economic Performance]

[GRI 103-1: Customer Health and Safety]

[GRI 103-1: Asset Integrity and Process Safety]

Material topic	Why the topic is material	Where the impacts related to material topics occur	The involvement of Qatargas with the impact (if the impact occurs outside Qatargas)	Any specific limitation in reporting on the topic	References in the report
<b>Local supply chain development</b>	Procurement from local suppliers contributes to the development of Qatar's economy by stimulating activity across the nation. This helps provide necessary services and materials necessary for Qatargas operations.	Within Qatargas and on the national level.	Qatargas gives preference to local suppliers. This is based on the condition that they provide their services on-par with international service providers when it comes to quality and price (which is often the case, due to minimised transportation costs)	No	-
<b>Contributing to Qatar National Vision (QNV) 2030</b>	QNV 2030 rests on four pillars of national development: human, social, economic, and environmental. Qatar's economy largely depends on the production of hydrocarbon resources (particularly of natural gas) that were generously bestowed on the country by the grace of God. Qatargas, as the world's largest LNG supplier, plays a fundamental role in the national economic development, and has considerable impact on the successful attainment of goals outlined under QNV 2030.	Within Qatargas, and on the national level.	Qatargas' operational strategy is in congruence with QNV 2030 pillars, where we establish objectives and targets that would bring maximum contribution from the Company's side to the attainment of QNV 2030 objectives.	No	-

This report provides detailed information on the management approach for our seven material topics. Appendix A provides explanation, or references, to the way material topics are managed, and evaluation of the management approach where applicable, as required by Disclosure 103 of the GRI Standards.

## Stakeholders

There are ten major stakeholder groups identified by Qatargas. The Company believes in remaining continuously engaged with its various stakeholder groups to maintain accountability, be mindful of their interests, and be a conscientious member of the community. By engaging with stakeholders, Qatargas ensures that it can safely manage its operations, provide a high quality of service, and be a major contributor to society. By including multiple stakeholder groups to inform decision making, Qatargas ensures its operations are sustainable.

The diagram below demonstrates groups of stakeholders that are significantly affected by Qatargas' activities, products, and services, and have significant reciprocal influence. Qatargas uses various stakeholder engagement channels to account for stakeholder interests, and to anticipate any concerns by providing adequate solutions.

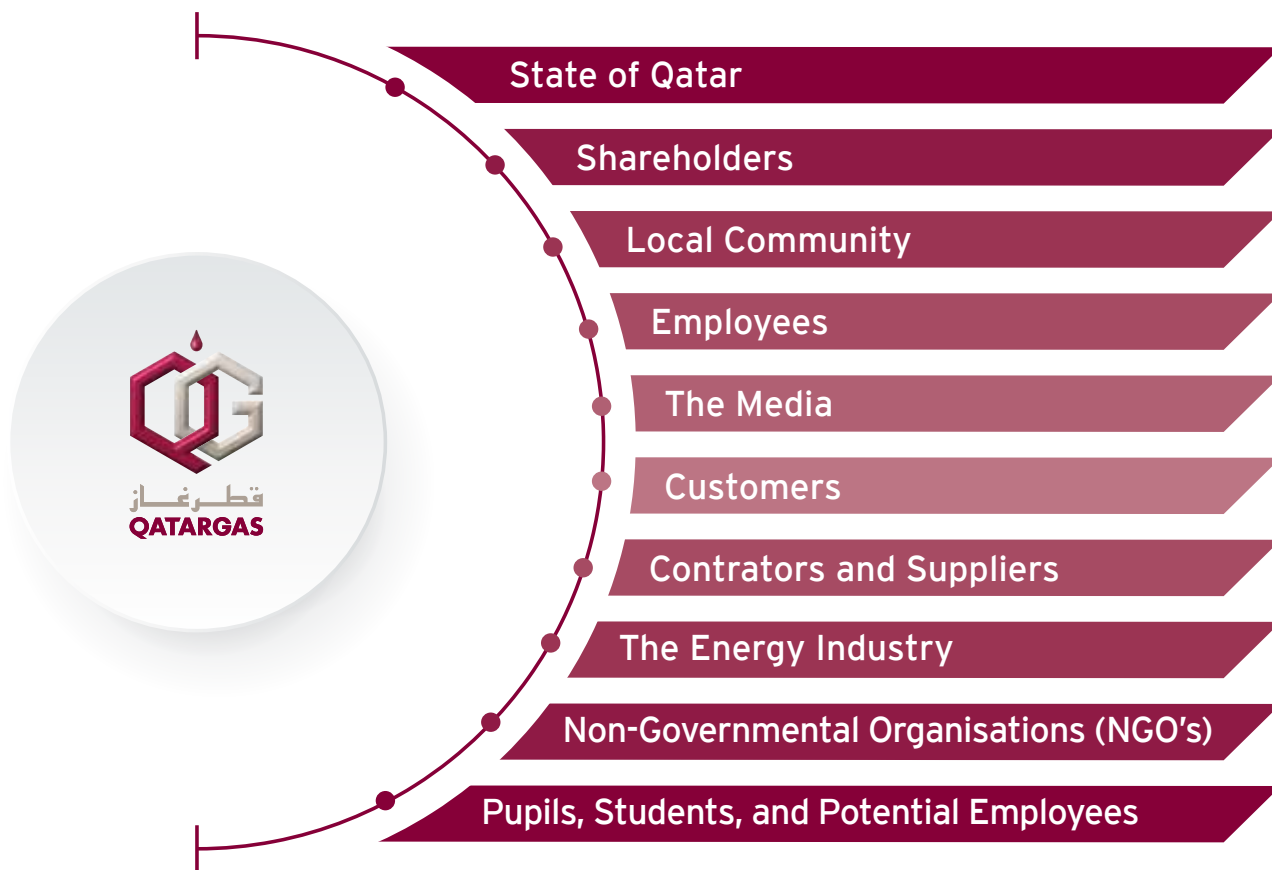
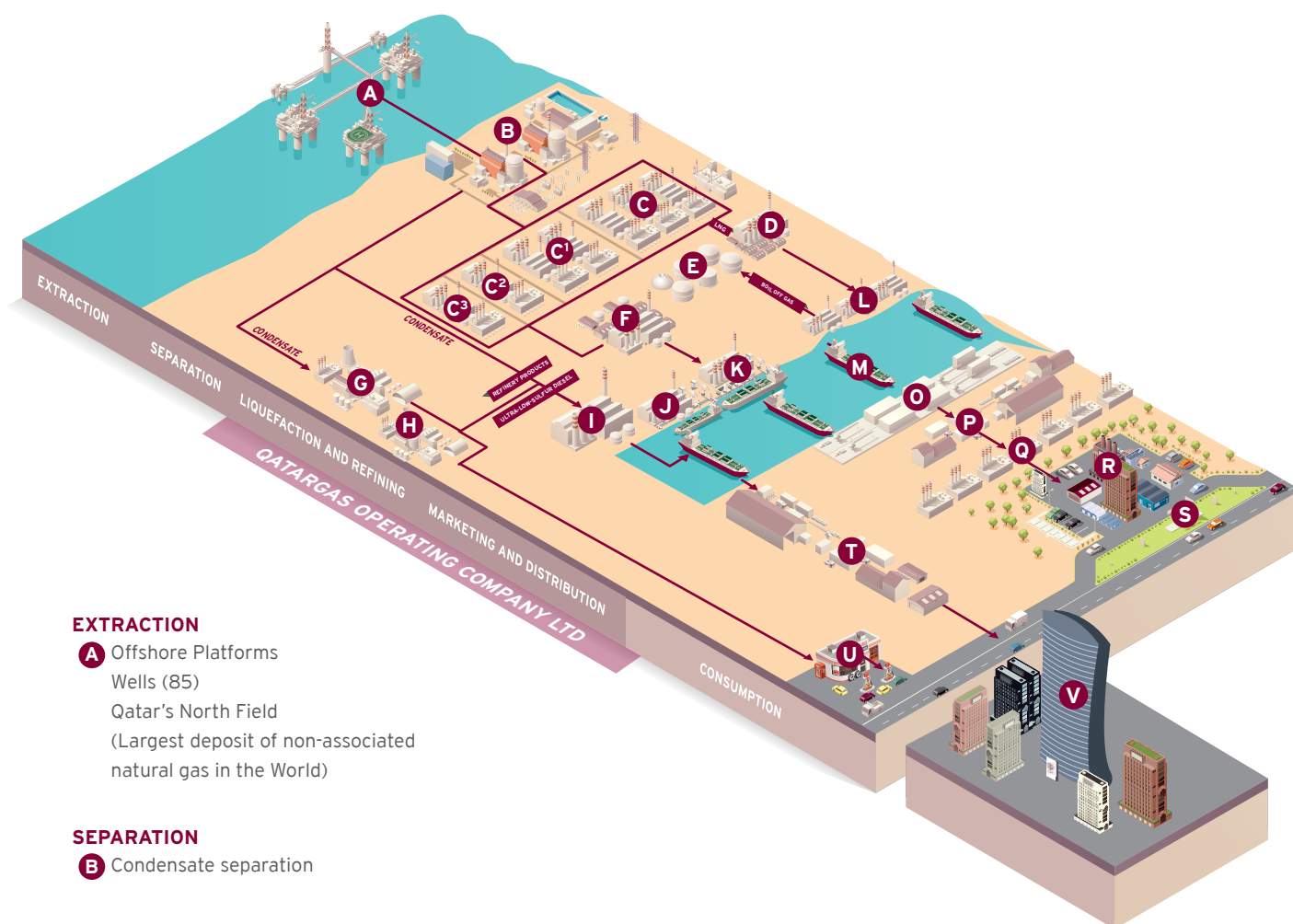


Figure 1. Qatargas stakeholders

Stakeholder Map in Appendix C provides further details on Qatargas' approach to engage different stakeholders.

# SUPPLY CHAIN



## EXTRACTION

- A** Offshore Platforms  
Wells (85)  
Qatar's North Field  
(Largest deposit of non-associated  
natural gas in the World)

## SEPARATION

- B** Condensate separation

## LIQUEFACTION AND REFINING

- C** Qatargas 1 (QG1) Train 1 - 3.3 MTPA Train 2 - 3.3 MTPA Train 3 - 3.3 MTPA
- C** Qatargas 2 (QG2) Train 4 - 7.8 MTPA Train 5 - 7.8 MTPA
- C** Qatargas 3 (QG3) Train 6 - 7.8 MTPA
- C** Qatargas 4 (QG4) Train 7 - 7.8 MTPA
- D** Common LNG Storage
- E** Jetty Boil-Off Gas (JBOG)
- F** Common Sulphur Facility
- G** Laffan Refinery 1
- H** Laffan Refinery 2
- I** Storage for condensate and other liquid products
- J** Liquid Products Berths
- K** Berths for Sulphur Loading

## MARKETING AND DISTRIBUTION

- L** Ras Laffan Terminal LNG Loading Berths
- M** Ships
- O** Receiving terminals

## CONSUMPTION

- P** Regasification
- Q** Power stations
- R** Homes, offices, and factories
- S** Lights, appliances, and cooking gas
- T** Distribution of by-products
- U** Local Markets ( Petrol/Gas Stations)
- V** Qatargas Doha Head Office

Figure 2. Supply Chain



## GOVERNANCE AND RISK MANAGEMENT

The role of corporate governance for Qatargas is to ensure long term viability and returns for shareholders, while preventing environmental and social risks related to company operations and maximising benefits for all stakeholders. Qatargas' governance management provides a holistic and long-term approach to company management. Corporate structure and ownership of the company, measures taken to maximise efficiency and minimise risks, and guiding principles for how the company functions are the core elements defining governance and risk management for Qatargas.

We want to continue to be a profitable company, doing business in an ethical way; caring for our people, their families, the environment, and the communities around us, and conducting our business in a responsible manner.

### Governance

Qatargas Operating Company Limited (OPCO) operates one unincorporated and six incorporated joint venture companies, which together constitute the Qatargas family.

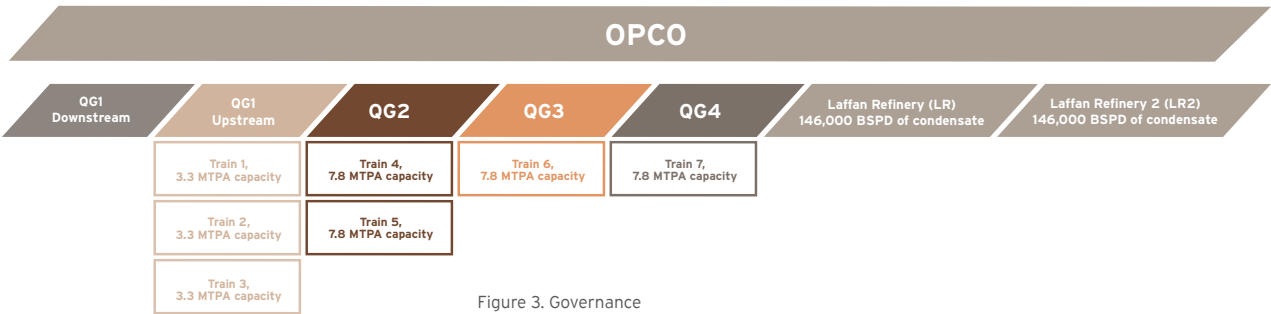
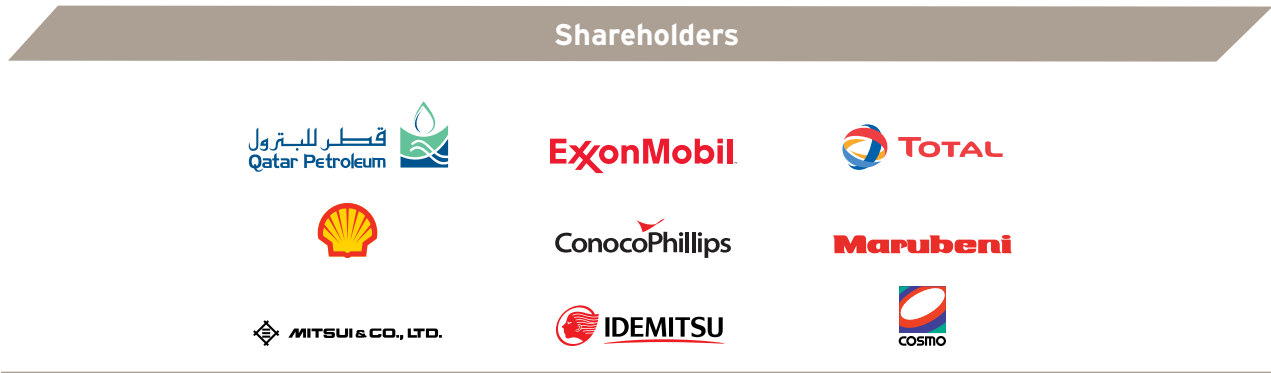


Figure 3. Governance

Each joint venture has a different ownership structure, with 70 percent of OPCO belonging to Qatar Petroleum, and 30 percent to the eight joint venture partners:



### Governance and Operating Structure

The OPCO Board of Directors has 11 members: three are representatives of Qatar Petroleum and eight are representatives of the other shareholders. 10 out of 11 Board members are non-executive and independent.

OPCO's Articles of Association and Joint Venture Agreement identify the roles and responsibilities of the members of the Board, and further delegate authority to the Chief Operating Officers of seven Groups within Qatargas and their relevant committees.

Sustainable company management is the responsibility of the Qatargas CEO. The diagram overleaf represents the structure of Qatargas governing bodies.

[GRI 102-1] [GRI 102-2] [GRI 102-5] [GRI 102-10]  
[GRI 102-18] [GRI 102-45]



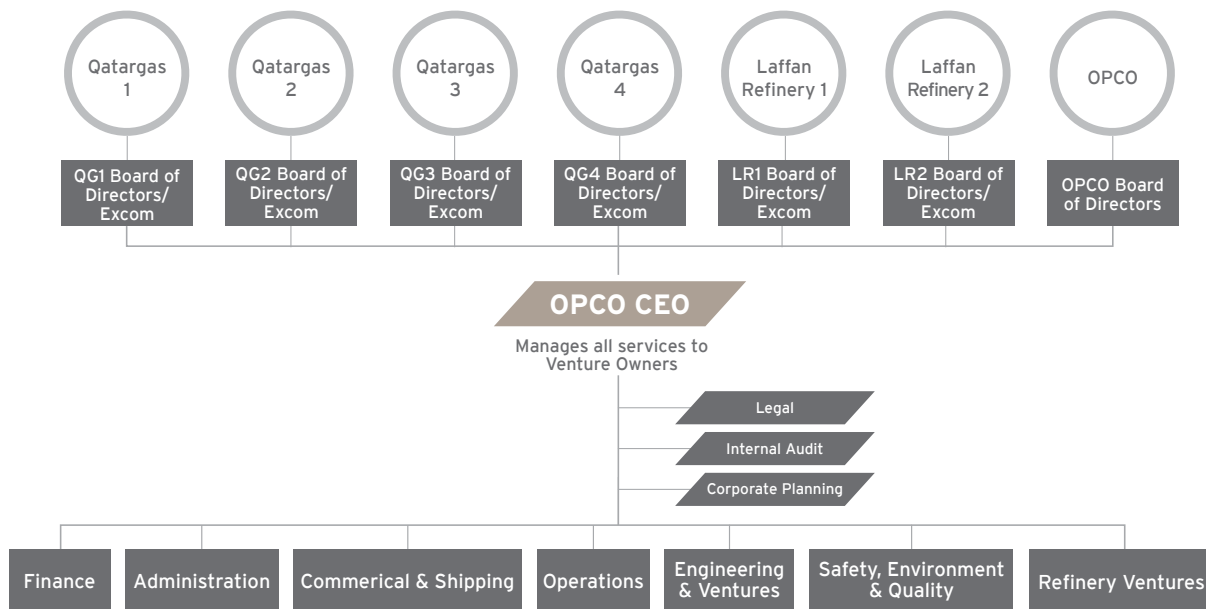


Figure 4. Governance and Operating Structure

### Internal Audit

Qatargas has multiple ventures with a wide range of activities managed by various departments, operating in accordance with the strategic direction provided by the Board of Directors. In order to assess the effectiveness in the performance of corporate activities and ventures, the Internal Audit Department collects and analyses information provided by cyclical internal audits of every company's department, at least once every four years. The results are communicated to the Board Audit Committee that, in turn, communicates them to the Board of Directors.

### QGMS (Qatargas Management System)

Qatargas has established an integrated approach to company management, where the Vision objectives, Mission and related Covenants are embedded in the operational objectives of each department through a corporate management tool, the Qatargas Management System (QGMS). QGMS aligns the implementation of corporate objectives and business plans across the organisation through initiatives including benchmarking, best practices, optimum utilisation of resources and knowledge, availability and use of policies and procedures, open communication and others.

By the end of 2016, all Qatargas business processes had been redesigned and documented in accordance with the QGMS. Integrated functioning of the System formalises and organises interactions between interrelated processes, where different parts of Qatargas complement each other in reaching common company objectives. A culture of cross-functional teamwork continues to grow across Qatargas as a result of this transformation of business processes.

At the same time, QGMS implementation involves revision of the administrative processes across departments, thus optimising efficiency of their operations and use of resources.

### Risk Management

Given that Qatargas is operating as a fully integrated LNG value chain, numerous external and internal risks could affect any segment of this chain and thus cause disruption to the stable functioning of the company's business, or could affect business as a whole. It is difficult for Qatargas to control all the risks. However, the company monitors them, acknowledges them, and is elaborating various reaction scenarios, might those risks materialise in a serious impediment to the company's operational abilities. Internal risks enter into a sphere of Qatargas' control, and thus undergo continuous evaluation regarding what preventive measures are required and what reactive actions will be necessary in the unlikely event of such risks occurring. In order to ensure stable functioning of the company's business in accordance with the expectations of all stakeholders, Qatargas dedicates particular attention to managing the risks related to its value chain.

### Enterprise Risk Management

The Enterprise Risk Management Programme focuses on timely, and effective risk prevention across Qatargas' value chain and establishes a framework for identifying, reporting and managing risks related to Qatargas' operations. For identified risks, mitigation plans are recommended at the ERM level. ERM team and Risk Management coordinators gather to discuss risks and ERM processes under the initiative of the so-called IRSHAD risk clinic.



Risk registers that manage corporate risks on strategic and operational levels are reviewed on quarterly basis to evaluate the risks and introduce corresponding measures in risk management. The migration of Excel-based risk registers to a centralised database solution was completed in 2016. This will provide a single point of reference for all risk descriptions, actions, and reports.

The 'Operational Risk Management' study is another Qatargas initiative to enhance its risk management profile. The study is focused on ensuring that opportunities for risk identification, management, and escalation take place in daily procedures as required for safe and efficient operations. Moreover, Qatargas participated in the Qatar chapter of the Institute of Risk Management, which is the leading professional body for risk management and practitioners.

### Business Continuity

Business continuity is vital for a company with tightly related elements of the integrated value chain. Business Continuity Management (BCM) focuses on preventing any disruption along Qatargas' value chain. BCM integrated across all departments continues to implement the agreed strategies for increased organisation resilience. In 2016 there was a comprehensive study conducted with various departments directed on ensuring the correct implementation of BCM strategies.

### Crisis Management

The company's approach to risk management focuses on the effectiveness of preventive measures to avoid any risk happening. However, Qatargas is also ready to manage any crisis that may arise due to unforeseen circumstances. The Emergency Management and Security Division is responsible for the prevention and mitigation of crises related to people, environment, assets and reputation, which is described in more detail in the section Emergency Response and Security.

### Ethical and Responsible Conduct

Principle of ethical conduct is reflected in the 'Integrity' Value of Qatargas: "Conducting our business with transparency and in an ethical manner". Qatargas expects its stakeholders to be guided by the principles of ethical and responsible behavior in the relationship with each other and regarding any issue related to the company's business. The company embeds these practices through the sets of rules, which are related to the appropriate conduct expected from everyone working for or with Qatargas. The rules are arranged in a number of codes adopted in accordance with international standards and professional practices. Qatargas has developed the following rules governing the conduct of all parties involved in Qatargas' business:

- Direction Statement
- Code of Business Ethics
- Internal Audit Charter
- Employee Relations Policy
- Social Investment Policy and Procedure
- Safety, Health, and Environment Committee Charter
- Enterprise Risk Management Process

### Code of Business Ethics Policy

The Code of Business Ethics Policy is a set of rules regulating responsible and fair culture in the company, free of corruption, fraud, and unethical behavior. The Ethics and Conflict of Interest Committee (ECIC) acts as a custodian of the Code, and governs everyone's adherence to its rules. ECIC is responsible for resolving any issues arising in relation to violation of the Code's rules, and makes sure that everyone in the company is informed about expectations concerning ethical conduct when working for or with Qatargas.

Every employee goes through an induction on the rules of the Code, and signs an annual certification statement confirming they have understood the company's expectations in relation to ethical behaviour. Conflict of interest is evaluated through an annual Conflict of Interest Declaration regarding each employee's position relative to any personal circumstances that may affect their objectivity when acting on behalf of the company. Operating to the highest standards of integrity, Qatargas has zero tolerance of any behaviour that contradicts its ethical principles. The Code of Business Ethics states "All Qatargas Employees are expected to act in a manner that will enhance the Company's reputation for honesty, integrity and reliability".

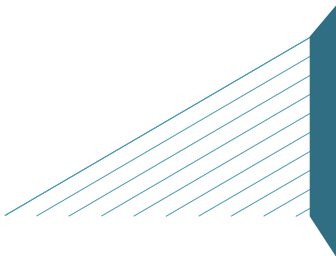
In order to safeguard the respect of its ethical values, the company has a whistle-blowing mechanism, accessible for everyone through the company's website. Anyone, including external stakeholders, can anonymously report concerns and information regarding actual or potential fraud, corruption, illegal activity, or unethical behaviour happening within the company.



## ECONOMY

In an encouraging departure from the prevailing trend of prior years, 2016 saw the price of oil rebound. Although prices remained low compared to the highs seen earlier in this decade, and to some investors, stakeholders, and governments, recovery was below expectations, the price continued on its upward trajectory supported by international agreements. Observers are expecting that the price of oil continues to sustain its upward momentum for the coming year.

Qatargas' 2016 performance has been outstanding on all fronts, starting with safety and ending with financial performance, even after being subjected to a challenging business environment towards the end of 2015.



In 2016, Qatargas introduced the Company's new Direction Statement, which clearly outlines ambitious targets set for every year until 2020.

On the production side of operations, all assets have delivered above budgeted targets - successfully offsetting the lower than planned prices and exceeding our financial objectives. Additional value has been captured from diversions to Europe, Asia, and the opening of new markets. Entering niche markets is a strategic objective for Qatargas, and performance in this area in 2016 has been better than expected. In early 2016, Qatargas signed a Memorandum of Understanding (MoU) with Maersk Group and Shell to continue further market penetration of LNG as a bunker fuel. Promoting alternative uses of LNG in the energy market continues to increase Qatargas' business resilience.

LNG is the cleanest of all hydrocarbon-based fuels, and the product is gaining more popularity with demand forecasts projected to remain strong for the coming years. The rising demand is underpinned by proven economic and environmental benefits to end-users. Opportunities to increase flexibility for the customer are pursued by Qatargas through multi-point delivery or ship-to-ship transfer offerings.

From a by-production perspective, Qatargas stands by its plans of increasing production capacity. Thus, it has successfully commissioned its second refinery Laffan Refinery 2.

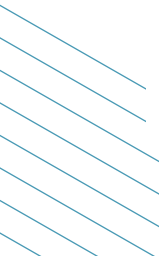
### Managing LNG Market Dynamics

It is anticipated that the LNG demand will grow nearly five percentage points every year, on average, to almost 500 million tonnes per annum (MTPA) by 2030. Projected population growth in developing economies, continuing high rates of urbanisation globally, and an increasingly environmentally conscientious public pushing for more regulations to adopt cleaner fuels in an effort to improve air quality have all been driving demand. Moreover, LNG for commercial land-based transport and marine bunkering is forecasted to grow exponentially if policy initiatives currently under consideration are enacted at a national, regional, or global level.

Challenges presented by the current economic climate have had an impact on Qatargas' budget. However, we retain our position as The World's Premier LNG Company, and continue to play a key role in maintaining sustainable performance and operations in-line with QNV 2030. Qatargas is achieving sustainable performance by properly managing assets, working synergistically with other market players, maximising resources, ensuring reliability, practicing effective financial management, delivering on environmental promises, and streamlining project delivery.

### Economic Performance

#### Production



LNG production has remained relatively unchanged, decreasing by only 0.55 percent. Stable production reflects Qatargas' reliability as a producer and position in the LNG market as a trusted supplier. We continue to prove our sterling reputation in the industry is well-earned and justified through our resilient operations during this economic period with lower than expected oil prices.

## LNG Production

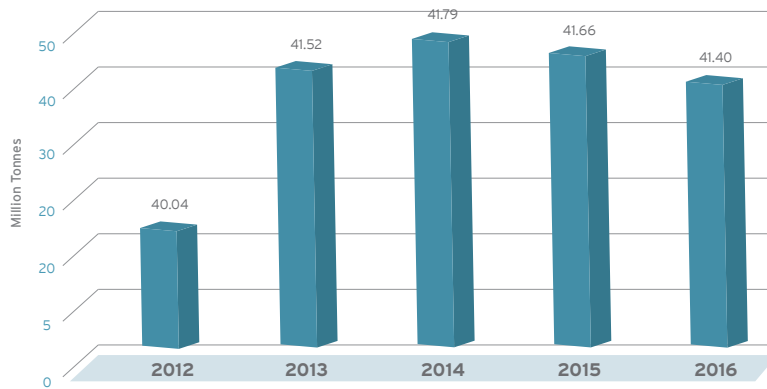


Figure 5. LNG Production

Overall sales volume of LNG has been slightly below the 2020 target set for this KPI. This is partly due to lower than planned level of production at the recently operational Laffan Refinery 2. In the future, however, Qatargas is expected to meet its targets.

## Sales and distribution



In the challenging circumstances of low oil prices, Qatargas captures the available opportunities through further diversification of its deliveries.

LNG is loaded onto carriers at the Ras Laffan Port. The 10,000<sup>th</sup> cargo was jointly loaded by Qatargas, Qatar Petroleum, and RasGas in 2016, marking another milestone in the utilisation of port facilities established in the mid '90s.

Qatargas has recently signed a four-year agreement with Kuwait Petroleum Corporation (KPC) to supply half a million tonnes of LNG per year to Kuwait over the next four years. This further enhances Qatar's reach in the Gulf Cooperation Council and the Middle Eastern LNG market.

Qatargas has extended its strong relationship with Petronas LNG UK Limited for another five years from the original expiration date of December 2018 to the end of 2023. The renewed deal will see the delivery of 1.1 million tonnes of LNG to the United Kingdom (UK) on a yearly basis. Signing a new flexible SPA with RWE Supply & Trading (RWE), a leading European electricity and gas company, Qatargas continues to expand its customer portfolio in the European market. The flexible SPA with RWE is in effect for the next seven-and-a-half years to provide 1.1 million tonnes of LNG per annum. Qatargas has also successfully signed a long-term SPA with Global Energy Infrastructure Limited (GEIL), based in Pakistan, to provide 1.3 million tonnes of LNG per year over the next 20 years. The first shipment is scheduled for 2018, and volume of deliveries can increase to 2.3 million under current terms of the agreement. Our SPA with GEIL strengthens Qatargas' growing relationship with the Pakistani energy sector as a leading supplier of LNG to the country. Finally, building on a relationship that began in 2011, Qatargas signed an SPA with Centrica to supply LNG until 2023. This deal ensures delivery of up to 2 million tonnes of LNG per year to strengthen UK's energy security for the near future.

These recent Sale and Purchase Agreements (SPAs) with four prestigious international LNG clients cements Qatargas' position as The World's Premier LNG Company.

The ability to diversify our customer base has been significantly enhanced by improvements in transportation and delivery mechanisms. Qatargas can now deliver LNG to multiple destinations during the same journey, once again setting the industry standard with its first multi-port delivery operation. Qatargas successfully executed a split-cargo delivery between the United Arab Emirates and India in March 2015. The initiative is part of Qatargas' continued efforts to promote increased efficiency and optimisation of business practices in a constantly evolving energy market.

Leveraging our substantial advantage in having the largest fleet of LNG tankers by size and capacity in the world on charter, Qatargas is able to achieve great flexibility in shipping. This places our company in an advantageous position of satisfying the needs of multiple customers at the same time.

Besides establishing new markets and strategic industry partnerships, Qatargas leads the industry in pioneering new LNG applications, in line with its 2020 Vision. Qatargas has reached several milestones in the exploration of LNG as a bunker fuel through establishing MOUs. We signed a joint MOU with Maersk Group and Shell, before signing a second joint MOU with the United Arab Shipping Company (UASC) and Shell. Lastly,

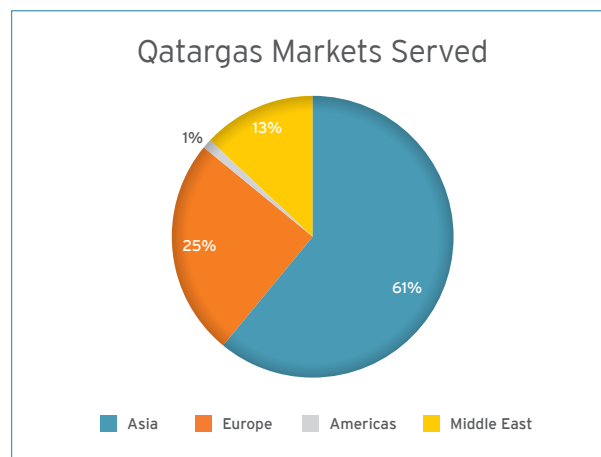


Figure 6. Qatargas Markets Served

Qatargas also signed a special Letter of Intent with the Maersk Group to develop new technology that enhances the efficiency of LNG-based propellers in marine vessels. The main advantages of using LNG as a bunker fuel are primarily environmental and financial to those adopting the technology, while it also leads to increasing demand for LNG and can support a stable higher price for suppliers.

## Efficiency and Reliability of Operations

Qatargas' mission highlights the importance of sustaining reliability, meaning ensuring asset integrity and plant availability through proactive and effective operations. Qatargas Vision for 2020 establishes targets for reliability and availability, and related KPIs are tracked on an annual basis. In 2016, the Company was slightly below targets on reliability and availability due to unexpected process interruptions. However, we have exceeded our target value in LNG utilisation. Overall LNG production cost, per unit, was lower than the set target, which shows Qatargas was successful in continuing to utilise production assets and resources efficiently.

## Customer Satisfaction

Customer satisfaction in product delivery reached 93 percent, according to the latest customer survey. It is noteworthy that there were no instances of late or recorded inconsistencies with deliveries in 2016. Customer satisfaction is of paramount importance for Qatargas, especially considering LNG supply is forecasted to grow in the coming years. With increased competition from other LNG producers an inevitability, as prices recover from their current lull and new production centers come online in other parts of the world, Qatargas ensures clients get timely and accurate delivery according to the terms of their agreement so we can successfully build and extend our relationship with them well into the future.

Contribution to National Economic Development

Qatargas actively contributes to national economic development by supporting the growth of local businesses. The Company provides opportunities to local suppliers by adopting an open tendering strategy for its contracts and procurement needs as a primary strategy, in order to maximise local content. All open tenders are advertised in the local print media, offering local companies an opportunity to participate in the tender process.

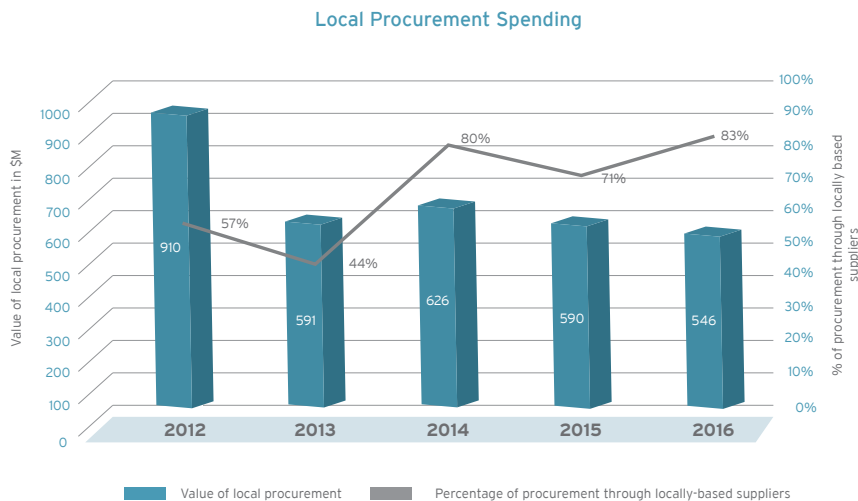


Figure 7. Local Procurement Spending

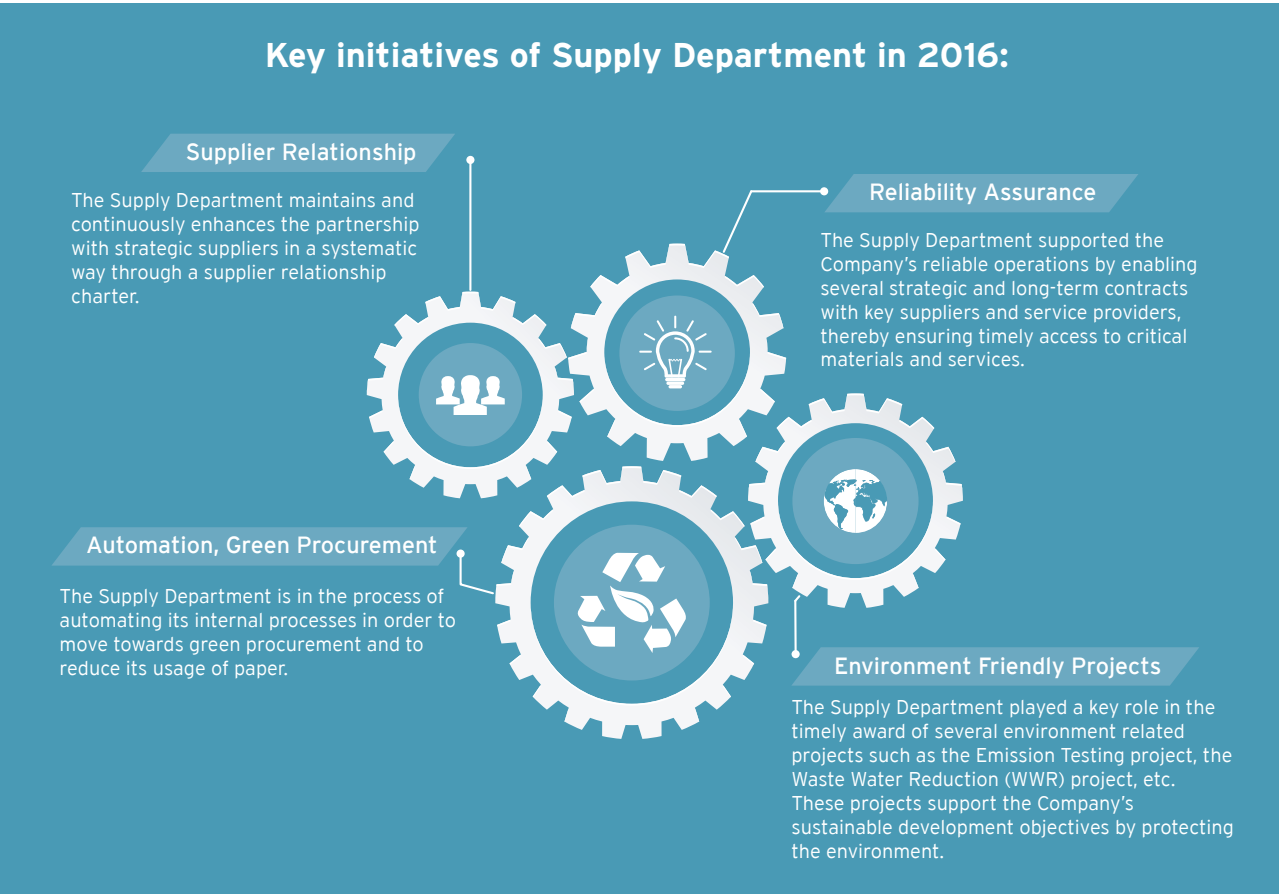


Figure 8. Key initiative of Supply Department in 2016







## HEALTH AND SAFETY



Building on its success in 2015, Qatargas maintained its momentum through 2016 and, once again, delivered record personnel safety performance. 2016 was the safest year on record in terms of both personnel and process safety.

## Health and Safety Performance

### Occupational Safety

Since 2012, Qatargas has shown consistent year-on-year reduction in injuries. Our successful deployment of focused initiatives such as Routine Task Safety, Right Tool for the Job, Line of Fire, and Heat Stress Management enabled us to reduce the Total Recordable Injury Frequency (TRIF) by 14 percent to 0.56, demonstrating best on-record performance. Operations recordable injury performance showed a 33 percent improvement in 2016 compared to 2015. For 138 consecutive days there were no recordable injuries across all assets of Qatargas. Additionally, there were zero instances of lost-time injuries in 2016 with over 30 million man hours logged across Qatargas for employees and contractors.

Occupational Safety	2012	2013	2014	2015	2016
<b>Work hours</b>					
Employees	5,887,472	12,215,468	12,241,736	12,242,570	11,777,905
Contractors	30,270,196	29,247,718	25,431,259	26,302,397	18,747,628
Total (employees and contractors)	36,157,668	41,463,186	37,672,995	38,544,967	30,525,533
<b>Fatalities</b>					
Employees and contractors	7	0	0	0	0
<b>Number of lost-time injuries (LTI)</b>					
Employees	1	1	0	3	0
Contractors	2	1	2	1	0
Total (employees and contractors)	3	2	2	4	0
<b>Lost time injury frequency<sup>1</sup> (LTIF)</b>					
Employees	0.17	0.08	0	0.25	0
Contractors	0.07	0.03	0.08	0.04	0
Total (employees and contractors)	0.08	0.05	0.05	0.1	0
<b>Number of recordable injuries</b>					
Employees	5	9	3	6	1
Contractors	45	30	28	19	16
Total (employees and contractors)	50	39	31	25	17
<b>Total recordable injury frequency<sup>2</sup> (TRIF)</b>					
Employees	0.68	0.74	0.25	0.5	0.08 <sup>3</sup>
Contractors	0.13	1	1.1	0.72	0.85 <sup>4</sup>
Total (employees and contractors)	1.38	0.94	0.82	0.65	0.56 <sup>5</sup>
<b>Injuries<sup>6</sup></b>					
Total (employees and contractors)	197	137	100	70	64

In recognition of achieving the two milestones of 10 and 20 million man-hours without serious leaks or incidents, Qatargas was awarded two Shell 'Goal Zero' Awards. The award aims to promote and build a strong safety culture in the industry by commending superior safety performance.

<sup>1</sup>LTIF is based on the number of lost time injuries per 1,000,000 man hours.

<sup>2</sup>TRIF is based on the number of recordable injuries per 1,000,000 man hours.

<sup>3</sup>One recordable injury with 11,777,905 man hours

<sup>4</sup>16 recordable injuries with 18,747,628 man hours

<sup>5</sup>17 injuries with 30.5 million man hours

<sup>6</sup>Injuries include recordable injuries and first-aid cases.

“We in Qatargas believe that safety is not a mere collection of policies and procedures. Safety is a core value that shapes our behaviors and actions, not only at work but, in everything we do each and every day. In Qatargas no job is well done unless it is done safely.”

Randy Lee Stadler, Qatargas Chief Safety, Environment and Quality Officer.

Qatargas executed two planned shutdowns in 2016, both monumental and complex undertakings that were achieved within budget and ahead of schedule. The planned shutdowns ensured that the assets, after maintenance, can continue to operate at their full operational capacity, working safely, efficiently, and reliably. Over 4,000 workers were involved onsite for each shutdown, with a total of more than 2.1 million man hours. Through teamwork and commitment, the projects were completed with zero leaks or rework, proof of Qatargas' commitment to safety.



Figure 9. Qatargas Safety Performance during Shutdowns

In addition to reducing the number of injuries, the severity of injuries was also reduced. The majority of Qatargas' recordable injuries were categorised as low potential severity incidents. Eighty-eight percent of all recordable injuries had maximum potential severity less than LTI.

Line of Fire Injuries were reduced after campaigns, on how to prevent these injuries, were conducted in cooperation with ConocoPhillips and Shell.

In May 2016, Qatargas introduced an electronic incident reporting system (IRS), replacing the paper-based incident reporting process. IRS is a new SAP-based solution to report incidents and manage investigations to aid in stewarding corrective actions.

## Safety programmes and campaigns

### The Role of the Management

Incident and Injury Free (IIF) is a programme designed to reinforce the safety culture among all personnel. It was introduced in 2002, based on the principle that all incidents are preventable if everyone completes each task safely. The programme engages everyone by incorporating safety measures specifically tailored for each of three targeted groups: department heads and managers, supervisors, and workers.

Leadership has an important role in IIF. Leaders participate directly in coaching sessions, IIF discussions, and workshops focused on ensuring safe and secure operations.

Another channel of direct management engagement is the QG SHE (Safety, Health, and Environment) Committee chaired by the CEO. This committee discusses the monthly SHE highlights, major incidents, and lessons learned, and conducts monthly site visits. Similarly, at the Asset level, the Asset SHE Committee led by asset managers and includes representatives from all functions operating in the asset. Asset SHE Committee conducts monthly site visits and coaching around asset sites to recognise opportunities for further health and safety improvements. The Committee also organises forums in which operators and maintenance personnel meet to discuss areas of mutual safety concern and share experiences.

### Compliance with Life Saving Rules

Qatargas' Life Saving Rules (LSR) were formally launched in February 2013. These 10 concise and consistent rules help provide clear safety guidelines to our workforce. LSR are a clear and simple "do's and don'ts" covering activities of highest potential risk. Experience has shown that failure to comply with LSR is a significant factor in serious incidents and fatalities within the oil and gas industry.

Our 10 LSRs apply across Qatargas. Compliance is mandatory for everyone while on Qatargas business and while using Qatargas vehicles or on Qatargas sites. In 2016, we rolled out a new E-Learning training to refresh knowledge of the LSR. The training is mandatory for all new joiners, including long-term contractors, with a validity period of three years. Additionally, all current employees and contractors completed the LSR online refresher training in 2016.

During the last three years, we have investigated every violation using our Fair Play Policy. In 2016 there was a 45 percent decrease in violations of LSRs compared to 2015 (19 compared to 35 events). Due to increased awareness, there was a significant reduction in cell phone use, non-compliance of seatbelt use, and Permit-to-Work (PTW) violations. Ninety-three disciplinary actions were taken in relation to LSR violations, out of which eight resulted in terminations.

## Training

In 2016, Qatargas revamped the safety training packages provided to its employees and contractors, additionally Qatargas launched “My SEQ Training” dashboard on the Qatargas centralised Learning Solution Portal (LSO), employees can now monitor their safety related training records and complete many online safety-training packages.

The benefits of transferring the SEQ Mandatory Training Records to (LSO) are many. Employees are easily updated on mandatory training they are required to complete, while supervisors are given a high-level overview of their team's progress in doing so. Detailed metrics of training completion by department are available to managers and SEQ course administrators. The change provides a wealth of information that will be leveraged in the future to make training easier to monitor and more effective.

## Routine Tasks Safety Campaign

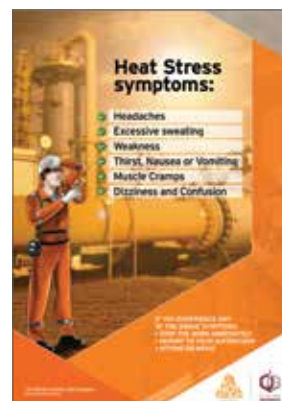
Over the last three years, 112 people in Qatargas were injured while performing routine tasks. Injuries stemming from routine task performance account for half of injuries in the same period. The best way to protect oneself from injury during routine tasks (such as walking, using ladders and stairs, etc.) is to develop safe habits. In 2016, Qatargas launched the Routine Tasks Campaign to increase employees' alertness to such activities and to promote safe working habits. The campaign was shared on a wide scale with Qatargas stakeholders.

## Right Tool for the Job Campaign

Qatargas introduced the 'Right Tool for the Job' Campaign in the second quarter of 2016. The campaign provided information about tool-related incidents that happened in Qatargas, in order to understand what went wrong and the lessons learned from each. Management participated by arranging a tool hunt for removing all defective and poorly maintained tools from the work sites. The campaign also introduced rules for safe tools handling.

## Involvement of contractors in safety programmes

It is very important to engage contractors in the safety programmes of Qatargas in order to ensure an overall high level of safety, especially given that 94 percent of recordable injuries in 2016 were contractor incidents. Qatargas dedicates particular attention to the preparedness of contractors to be capable of completing work safely. To this end, contractors undergo onboarding sessions in which they are introduced to the fundamental safety programmes of Qatargas. Specialised training on heat stress and acclimatisation is provided to contractors as well. They also participate in IIF, and completed the online LSR refresher training in 2016.



Occupational Health	2012	2013	2014	2015	2016
Heat stress events (employees)	0	1	0	1	0
Heat stress events (contractors)	0	5	2	1	2
Heat stress events (employees and contractors)	0	6	2	2	2
Occupational illnesses (other than heat stress) (employees and contractors)	0	0	0	0	1

## Heat Stress Management

The management of heat stress incidents is of primary concern to Qatargas. Over the last three years, Qatargas has maintained a strong performance record with regard to both heat stress incidents and occupational illnesses across all its assets. Only one case of occupational illness was recorded in 2016 - a skin rash after a concrete casting job.

As Qatargas operations are located in the zone of high heat stress working conditions for a considerable part of the year, it is important to ensure proper preparation of the workforce to manage their work during such periods without endangering their health. Qatargas Heat Stress Management Procedure (HSMP) establishes the rules for how to work in heat conditions and how to react to heat related incidents. The HSMP is based on the Heat Stress Guidelines by Industrial Cities Directorate, Supreme Council of Health, OSHA and IPIECA recommendations.

Qatargas uses the following approach in establishing its HSMP among the workforce:

- Ensure all employees and contractors are trained and retrained (annually) in heat stress management.
- Supervisors are trained and retrained in "Train the Trainer" heat stress management, together with first aid training. Supervisors, in turn, train contractors.
- Reinforce employees to maintain ownership toward zero heat related incidents at workplaces in the Operations Communication Forum.
- Use lessons learned from heat related incidents to further enhance heat stress management strategies.

## Occupational Health Examination

Qatargas has conducted the following evaluation of health risks associated with different types of work conducted by Qatargas' workforce, and its contractors, and adopted the corresponding initiatives and measures to mitigate such risks:

- Ergonomic work station: Qatargas developed a comprehensive ergonomic checklist and conducted an ergonomic self-assessment survey among employees. An industrial hygienist evaluates necessary measures that need to be undertaken in order to improve the posture of employees, which has a bearing on overall health.
- Fatigue assessment and healthy heart campaign initiatives were presented to workers with the potential for risk in those areas.
- Conducted Naturally Occurring Radioactive Material (NORM) survey at slug catchers prior to cleaning activities.
- Volatile Organic Compound (VOC) and benzene monitoring at sludge treatment plant.
- Conducted respirator face fit test for safety technician and contractors involved in tank cleaning and operating sludge treatment plant.
- Conduct periodic noise monitoring at every unit to ensure employees and contractors are notified if the noise level is elevated.
- Conducted sulfur exposure awareness training to contractors involved in granulator cleaning at Common Sulfur Plant (CSP).
- Increase awareness on Legionella bacteria to LR and QG2 maintenance department.
- Implementation of chemical register for LR and QG2.

## Inspection of contractors' living conditions

Qatargas ensures its contractors are treated in line with the highest standards pertaining to labor and human rights.

To this end, Qatargas carefully monitors food and hygienic safety with routine inspections in contractor camps, led by the medical team. The full suite of inspections cover areas including, but not limited to, kitchen, accommodation, medical services clinic, recreation facilities, bathrooms, and laundry areas. Detailed reports are prepared and delivered to the Qatargas contract host. In 2016, 76 inspections were conducted in contractor camps.

Non-conformance with regards to the related policy is stated in the reports with corresponding recommendations to address the issue. Whenever non-conformance arises, the Qatargas contract host immediately directs the related contractor to address the issue, with corrective action if necessary. Follow up inspections are conducted to check the status of the findings.

## Medical Examination

Qatargas conducts periodic medical examinations (PME) of its employees. It also conducts mass medical screening of its contractor workforce, which includes fitness-to-work examinations. This is over and above fitness-to-work medical examinations performed by the contractor. In 2016, 7,818 medical screenings were conducted, which is 30 percent less than in 2015 due to the completion of expansion projects and fewer required contract workers.

Qatargas follows OSHA and IPIECA guidelines and recommendations in conducting health survey measures. Ras Laffan Industrial City (RLIC) also has regulations for the well-being of employees that work in RLIC. Health screening of employees is performed at the Company's own clinic in RLIC, in order to ensure high levels of quality. Medical screening includes an annual fitness medical examination, fatigue assessments, and heart health assessments through the Healthy Heart campaign. The 'fitness to work' examination procedure has been revised and updated in alignment with the occupational health business process, which establishes the premier way in ensuring occupational health through the application of Qatargas Management System across the Company.

In addition, the Medical Centre provides 24x7 health check pit-stops for employees and contractors, ensuring that all who need medical care are able to receive it immediately.

## Engagement of employees' families

Qatargas also conducted health campaigns that engage families of employees, such as:



## Asset Integrity and Process Safety

In 2016, we reduced our total Loss of Primary Containment (LOPC) Process Safety Events (PSE), by more than 20 percent relative to 2015. The PSE reduction is a result of a continuous focus on integrity programmes (such inspection of equipment and piping, corrosion, dead-leg, and vibration surveys), flange, gasket, and joint management, and timely intervention from effective operator rounds.

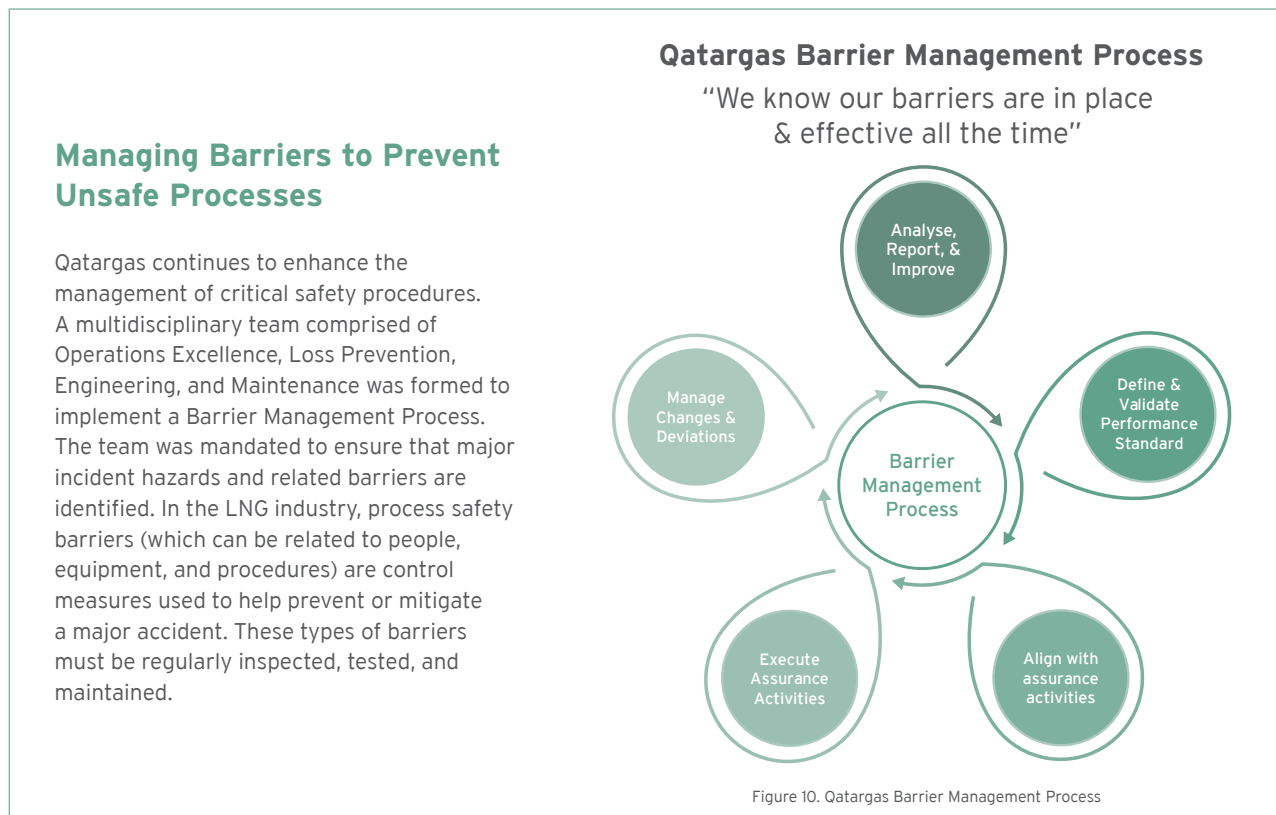
Tier 1 and Tier 2 PSE reduced by 80 percent relatively in comparison to 2015. Unfortunately, we had one Tier 1 PSE due to a leaking tube inside a Regen Furnace in QG2 that led to a fire. Managing risks of operational abnormal conditions continues to be key to improving process safety.

Process safety	2012	2013	2014	2015	2016
Tier 1 <sup>7</sup> process safety events	1	0	0	1	1
Tier 2 process safety events	5	1	6	4	0
Tier 3 process safety events	165	176	163	149	121

Qatargas frequently revalidates safety studies to ensure effective controls are in place to help mitigate operational risk. We updated our Offshore Quantitative Risk Assessment (QRA) and completed Hazard and Operability (HAZOP) revalidation for Laffan Refinery and QG1 Onshore facilities. We also commenced Safety Integrity Level (SIL) Studies for QG1 and Ras Laffan Terminal Operations (RLTO) Common Liquefied Petroleum Gas (CLPG). These SIL studies will continue in 2017.

The work in the barrier management process and technical authority framework are progressing well and will be rolled out to all Qatargas assets in 2017.

We also introduced Demand on Safety System (DOSS) reporting, as part of Tier 3 process safety KPIs, for Laffan Refinery and QG1. DOSS reporting will be expanded to the rest of the company assets.



<sup>7</sup> Process Safety Events are unplanned or uncontrolled releases of any material from a process.



## Hazardous Materials Management

Qatargas uses Material Safety Data Sheets (MSDS) to screen the chemical composition of materials used that contain potentially hazardous chemicals. Any unit using hazardous materials must seek prior approval from the HAZMAT Committee. Qatargas' Industrial Hygienist takes the request forward through the review process, thoroughly checking for safety hazards inherent in the material, such as asbestos, carcinogens, mutagenic, or other components that can precipitate adverse health effects upon exposure. Hazardous materials that are found are promptly replaced when possible, or when control measures are established to protect workers and the environment. The Industrial Hygienist also monitors the safe disposal of hazardous material following its use. The MSDS database is accessible to all employees and contractors.

Safety of materials	2012	2013	2014	2015	2016
Material safety data sheets (MSDS)	215	125	127	190	253
New or updated MSDSs	5	85	3	60 additional approved MSDS	63 New

The following product handling procedures have been updated to further enhance safety:

- Transport Information for Sulfur was updated in accordance to IMDG Code for Dangerous Goods Regulation as well as the Document Control.
- Transport Information for Sodium Sulfide Solution IBC Code was updated in accordance to Shipment under MARPOL 73/78 as well as the Document Control.
- Collective agreement with RasGas on MSDS of their product due to common loading with Qatargas.

## Emergency Response and Security

Emergency response and security is at the fore of Qatargas' health and safety agenda. In 2016, exercises and training at all levels were conducted, focusing on mitigating the impact of worst case scenarios on people, environment, assets, and reputation. This year, Qatargas further enhanced the procedural framework for managing incidents, hosting formal training for all Incident Management Teams.

Qatargas conducted a major emergency response exercise in collaboration with the Ministry of Interior, Qatar Petroleum, and various shareholders. The exercise involved a simulated fire and a coordinated response from professional teams at a hydrocarbon storage tank in Ras Laffan Industrial City.

The exercise included the successful deployment of response equipment, tested logistics, and validated command and control capability including the integration of all response organisations, thereby providing a unique training opportunity to all exercise participants.

### Certifications

Qatargas efforts to maintain accreditation by the Center for Public Safety Excellence (CPSE) were rewarded, with the EMS Annual Compliance Report for 2016 accepted verifying the continued compliance with core competencies. Accreditation by CPSE, the only accreditation programme for fire service organisations around the world, serves as a mechanism for measuring organisational effectiveness. The commission determined that Qatargas' EMS met its high standards and qualifications. Qatargas EMS remains the only accredited fire department in the Middle East, and the only accredited fire department in the oil industry worldwide. This is a tremendous accomplishment for the organisation and the State of Qatar.



In June 2016, Qatargas Security Section received the ISO 28000 accreditation for security operations in RLIC and its Doha Head Office. ISO 28000 is a global security standard for a supply chain security management system. Security management is one of the main pillars required to effectively safeguard operations. The Qatargas system complements its already established safety, environmental, and quality management systems. It reinforces Qatargas' commitment to being the World's Premier LNG Company, as it is the first LNG company in the region to achieve the prestigious certification.

Qatargas also maintained the accreditation of quality, environment, and health and safety management systems in compliance with ISO 9001, ISO 14001, and OHSAS 18001 standards, passing the annual surveillance assessment with no non-conformities.

### Looking for and Sharing Best Practices

Stakeholders share their best practices through various forums, such as the Shareholders SHE Network, RLIC HSE Committee, Laffan Environmental Society, and Qatargas/RasGas Synergy Committee, at which most relevant SHE topics are discussed. Qatargas shares its successes in SHE practices through other channels, such as e-learning and routine activity campaigns.

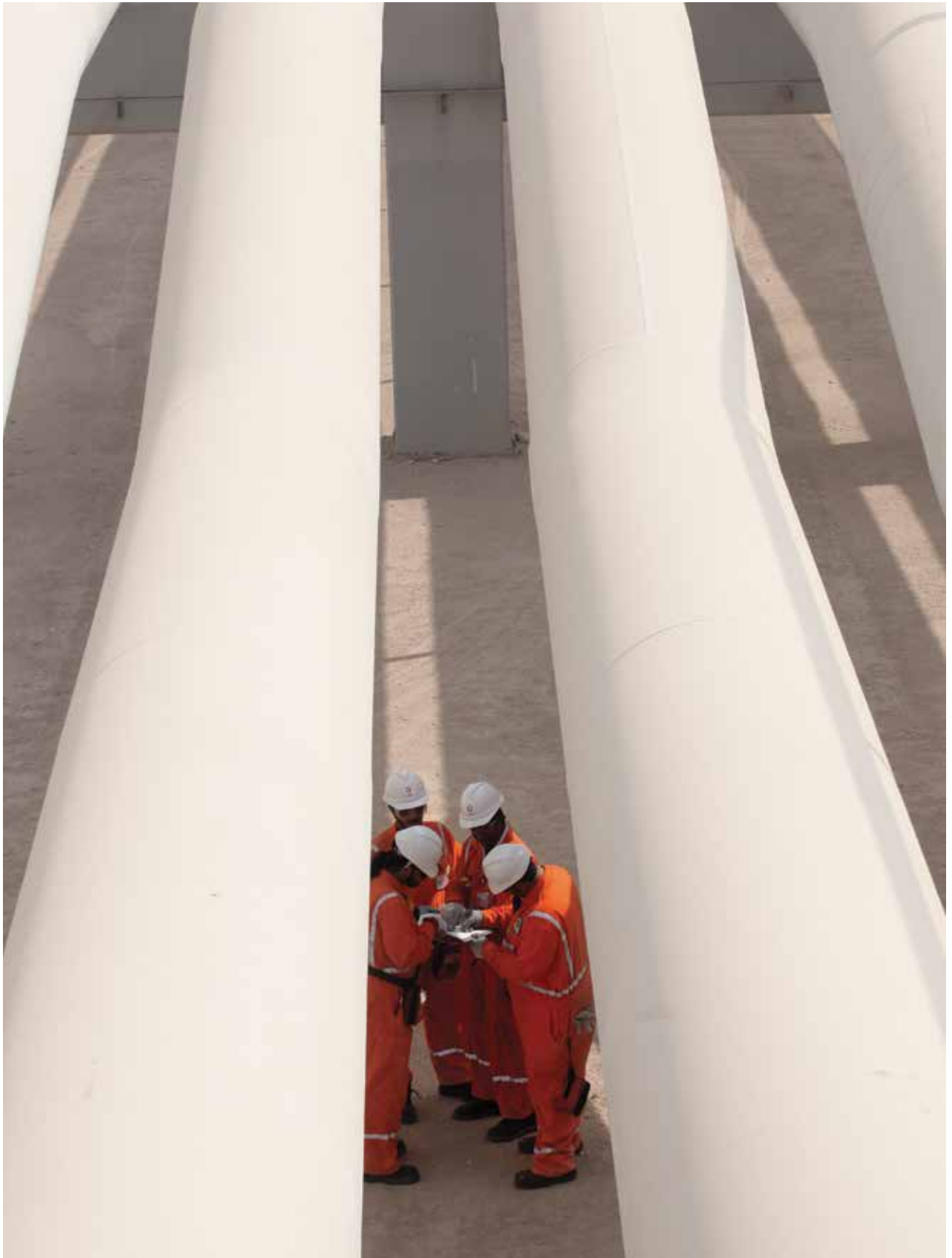
In April 2016, Qatargas participated in the Annual Qatar Process Safety Symposium under the theme "Building Competency in Process Safety." The event was co-hosted by ConocoPhillips Qatar and Texas A&M University at Qatar. The Qatar Process Safety Symposium is an annual platform that brings together industry, academia, and institutions to share knowledge on success stories, management methodologies, incident case studies, best practices, new legislative regimes, and recent advances in research on process safety. During the event, Qatargas representatives emphasised the Company's remarkable safety record, highlighting key milestones in ensuring safe production processes at Qatargas.

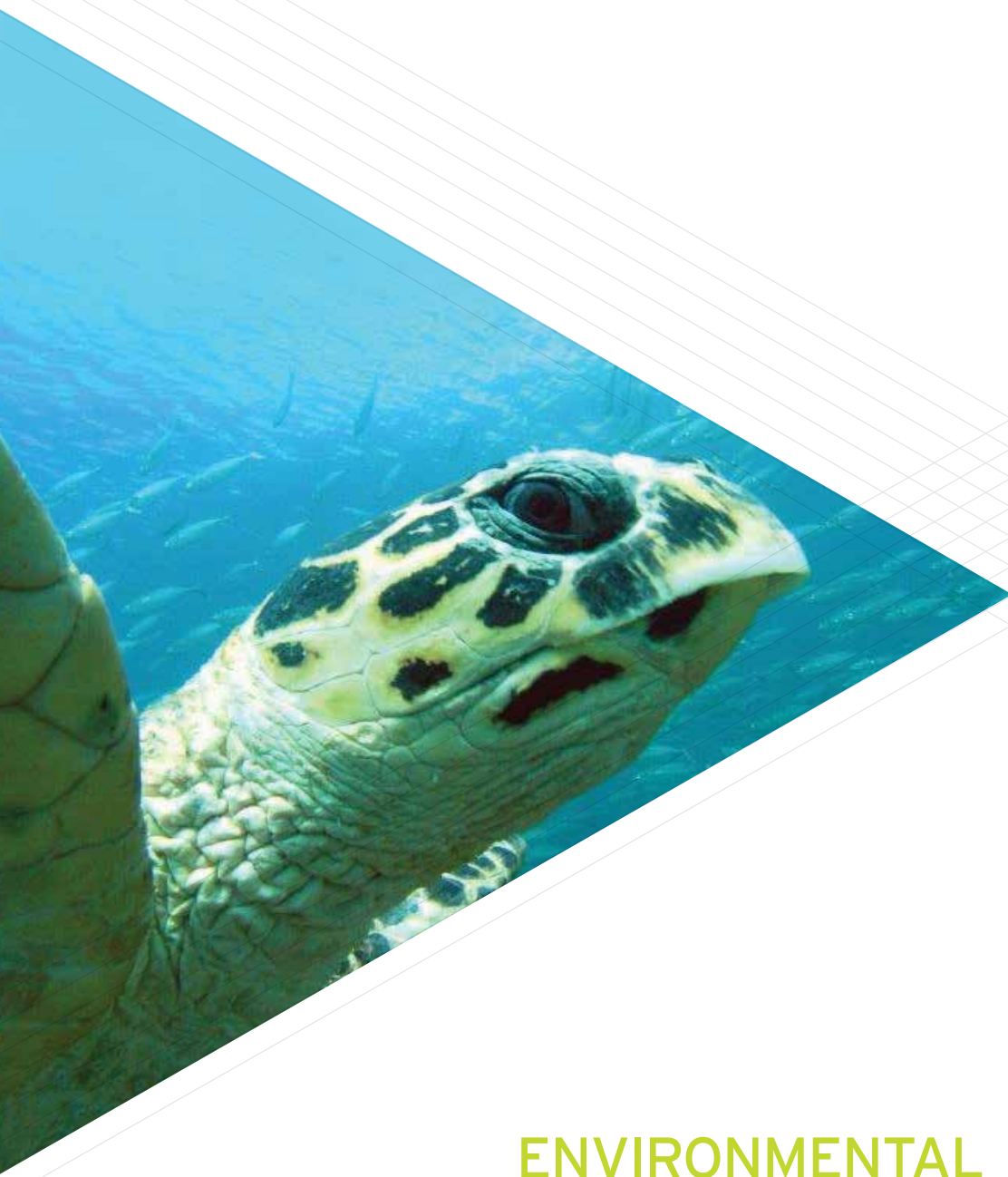


Qatargas regularly participates in national, regional, and international events dedicated to health and welfare of the workforce, where the Company can share its experience and learn best practices from other companies. Thus, in 2016 Qatargas was present at:

- The International Conference on Emergency Medicine and Public Health (ICEP 2016)
- The Primary Care Research Conference hosted by the Primary Health Care Corporation (PHCC) under the Qatar's Ministry of Public Health
- 5<sup>th</sup> QP Workers' Welfare & Occupational Health Forum
- Workers' Welfare and Healthy Life Style Forum hosted by QP Industrial Cities Directorate's HSSE Department.







## ENVIRONMENTAL PERFORMANCE

## Energy use and climate change



Preserving the environment for future generations.



Flare  
Reduction



Greenhouse  
Gas (GHG) Emissions



Air  
Quality



Waste Water  
Recycling



Communities  
Environmental  
Awareness

Qatargas' approach to environmental management is closely aligned with the goals of QNV 2030, which envisions preserving the environment for future generations. The Company strongly believes in adopting state-of-the-art solutions to reduce environmental impact across the LNG value chain while maintaining robust performance. Along with meeting regulatory requirements, Qatargas is actively focusing on exceeding compliance requirements around flare reduction, greenhouse gas (GHG) emissions, air quality, and wastewater recycling. Besides managing its own performance, Qatargas has also taken steps to help raise environmental awareness in the community.

Qatargas received the prestigious Gulf Cooperation Council (GCC) Environmental and Wildlife Award in 2015 - which was officially conferred in January 2016 at a ceremony in Doha. Qatargas earned this accolade jointly with Bahrain's Gulf Petrochemicals Company in the category of the 'Best Industrial Establishment that Complies with Environmental Regulations and Standards.' The GCC Secretariat-General introduced the Environmental Award in 1996 to encourage innovative and sustainable nature preservation across the region.

“ We are delighted to win this prestigious award, which is a testament to Qatargas' robust environmental performance and its total compliance with the international and local environmental standards and regulations. This recognition underscores once again the effectiveness of the sustainability strategy we follow in all our actions while helping to meet the global demand for reliable and cleaner sources of energy. ”

Khalid Bin Khalifa Al Thani, Qatargas CEO.

Highlights of Qatargas' environment related activities at its process facilities in 2016 included recovery of 94 percent of its jetty boil-off gas (JBOG). This led to 580,033 gigajoules (GJ) of energy savings, a 78 percent emissions reduction in GHGs during the LNG loading process, and reduced emissions of Volatile Organic Compounds (VOC) by 19 percent as a result of a continual Leak Detection and Repair (LDAR) program. There was also a 7 percent reduction in generated emissions of nitrogen oxides. Qatargas was also conferred the Globe of Honour and Sword of Honour awards by the British Safety Council for maintaining excellence in health, safety, and environmental standards in shipping. The Company also signed two Memoranda of Understanding to develop LNG as a more environmentally friendly alternative to heavier residual oil, traditionally used as a fuel by the shipping industry.

Qatargas' successfully completed the integration of its Environmental Management System (EMS) into the Qatargas Management System (QGMS), ensuring full alignment of environmental management with the corporate management system.

Driven by our sludge, slurry, and e-waste management projects in 2016, Qatargas successfully disposed over 93 percent of hazardous waste that was generated and stored previously onsite due to the lack of a feasible in-country disposal option. The Qatargas initiative to upgrade its existing waste management facilities also progressed to construction with the project targeted for completion in 2018. The first full year of operation of the Membrane Bioreactor (MBR) at Qatargas 1 facility ensured that process wastewater was treated to very high standards for potential reuse.

## Environmental Management

The integration of EMS processes and procedures into QGMS was completed in 2016. The process of 'Managing Environmental Impact,' which facilitates assessment of determining environmental impacts, their mitigation, monitoring, and reporting, as per regulatory requirements, is running fully in alignment with the QGMS system.

Qatargas' EMS is ISO 14001-certified, which continues to demonstrate the Company's commitment to managing immediate and long-term environmental impacts of our products, services, and processes. Embedding environmental objectives of Qatargas into QGMS provides an integrated approach to helping implement solutions, and comply with local and international regulations.

Qatargas is a member of the Laffan Environment Society (LES), which has been established jointly by Ras Laffan Industrial City and other industries based within the city. The objectives of LES are to promote open communication and exchange ideas amongst members, and to conduct community outreach on environmental issues and social development. Its primary services include operation and maintenance of ambient air quality monitoring stations and conducting marine ecological surveys.

### Qatargas Environmental Data Management System (EDMS)

The Qatargas EDMS replaces our manual data collection and reporting process. This system is also designed to combine plant-level data collection, calculation, and analysis activities into a single centralised platform that can be accessed across operations.

After extensive testing to ensure data completeness, accuracy, and validation, the EDMS is currently being used to generate our quarterly environmental reports submitted to the Ministry of Municipality and Environment.

### Compliance with Environmental Permitting

Projects that could have potential environmental impact need to undergo an environmental permitting process. This requires clearance from the Ministry of Municipality and Environment (MME) to proceed with the project, and is done before a Consent-to-Operate (CTO) permit is obtained. Timeframe from preparation to obtaining a permit can take a considerable amount of time. Therefore, it is critical for Qatargas to get involved in the process early.

EAD's engagement includes establishing environmental scope of work, conducting the environmental impact assessment, monitoring and managing environmental impacts, and obtaining a CTO. CTOs are renewed on an annual basis, subject to the condition that facilities maintain compliance with environmental laws & standards. Qatargas currently holds a total of 13 valid CTOs, including the new Laffan Refinery 2 facility commissioned in 2016. The Company also holds three Consent-to-Construct permits across engineering and construction projects.

## Energy Use

Energy Use (in GJ)	2012	2013	2014	2015	2016
Direct Energy Consumption	266,778,927	277,783,752	271,957,671	280,727,296	276,983,082
Indirect Energy Consumption	644,422	2,246,746	2,202,376	2,081,599	1,822,525 (10% drop)
Energy Consumption outside the organisation <sup>1</sup>	NA	NA	44,382	44,382	45,000
Total energy use	267,423,349	280,030,498	274,204,429	282,853,277	278,850,607
Energy Intensity (GJ/tonne of LNG)	NA	NA	6.36	6.56	6.52

<sup>1</sup> Based on a constant, assumed, numbers related to the use of transportation.

Monitoring energy use is important to understand our environmental impact. In 2016, there was a slight decrease in the total use of energy. However, indirect energy consumption showed a relatively significant decrease of 12 percent when compared with 2015 figures. This was mainly due to reductions in energy use at Ras Laffan Terminal Operations (RLTO), as further explained in the section 'GHG Emissions.' The JBOG operation is responsible for 580,033 GJ of direct energy savings, which corresponds to 25 percent energy savings in comparison to 2015 due to a subsequent 25 percent reduction in flaring at the jetties. Qatargas is also exploring further possibilities to reduce direct and indirect energy consumption practices. There is an ongoing energy efficiency study being conducted by Qatargas and Qatar Petroleum. The study is looking at overall potential energy savings across Qatargas' LNG assets.

## Flaring

The JBOG Recovery and Purge Gas Reduction projects, along with other operational initiatives, have progressively reduced overall flaring by approximately 70 percent between 2012 and 2016. Qatargas highlighted success of its flare reduction program in April 2016 at the 18<sup>th</sup> International Conference and Exhibition on Liquefied Natural Gas in Perth, Australia.

The higher recovery of JBOG (94 percent in 2016, compared to 90 percent in 2015) has reduced overall Qatargas flaring in 2016. The JBOG Recovery facility, which commenced operations in the fourth quarter of 2014, is the largest environmental project of its kind in Qatar with an investment of over a billion US dollars. This facility collects boil-off gas from LNG ships and compresses it at a central facility. The compressed gas is then sent to LNG producers to be consumed as fuel, or converted into LNG. Flaring due to JBOG operations has been reduced by more than 90 percent, relative to the flaring baseline of 2012.<sup>2</sup> In terms of reducing emissions of GHGs, the JBOG facility offsets approximately 1.6 million tonnes of carbon dioxide (CO<sub>2</sub>) per annum.



Figure 11. Qatargas JBOG Flaring 2012 - 2016

**JBOG** Offsets 1.6 Million Tonnes of CO<sub>2</sub> per annum

The Qatargas Flare Management System includes operational flare reduction initiatives and implementation of engineering solutions to reduce flaring. As a direct result, LNG flaring as a portion of sweet gas production was reduced by 87 percent in relation to the JBOG flaring, and by 59 percent in relation to the LNG process flaring (refer to the chart 'LNG Flaring as percentage of Sweet Gas Production, Figure 12). Qatargas has set targets to reduce the overall LNG process flaring to 0.30 percent of sweet gas production by 2020. The Flare Management System is planned for roll out to Laffan Refinery and RLTO assets in 2017 - 2018.

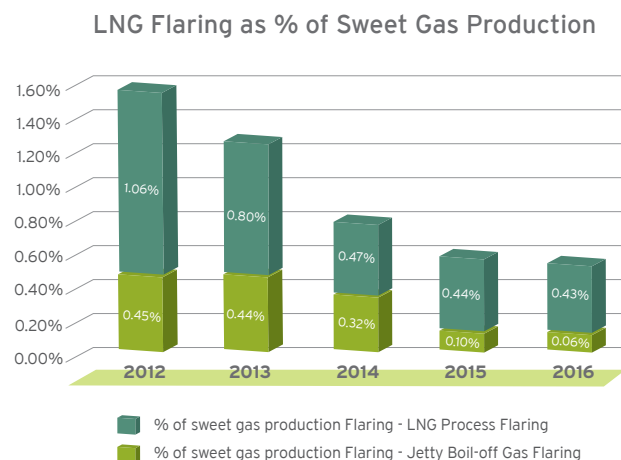


Figure 12. LNG Flaring as % Sweet Gas Production

Qatargas turnaround flaring has been reduced significantly after successfully implementing operational enhancements at the LNG facilities. Train 6 achieved the best turnaround flaring performance in 2016 with 131 MMSCF flared. Total 2016 turnaround flaring was higher than 2015 due to QG1 total turnaround, which included shutdown of three trains and associated Utilities. Turnaround flaring in 2016 is nearly 70 percent lower than the level in 2012.

Qatargas LNG process flaring in 2016 was the lowest at 0.43 percent of sweet gas production which is 59 percent lower than 2012 flaring.

<sup>2</sup> The baseline of 2012 is taken into consideration in order to align it with the overall baseline of Qatargas flaring.

## GHG Emissions

GHG Emissions <sup>3</sup> (Tonnes CO <sub>2</sub> equivalent)	2012	2013	2014	2015	2016
Direct (Scope 1) GHG Emissions (All Qatargas facilities):	19,021,540	19,786,093	18,431,841	18,532,523	18,318,845
Of which GHG Emissions attributed to flaring (including LNG loading)	2,103,279	2,111,085	1,075,111	720,905	693,550
Of which GHG emissions attributed to LNG loading <sup>4</sup>	875,770	641,767	512,315	148,816	111,870
Indirect (Scope 2) GHG Emissions	274,982	567,618	561,197	572,739	513,547
Other Indirect (Scope 3) GHG Emissions	6,309,367	6,134,312	6,044,334	5,737,364	5,277,733
Total GHG emissions	25,605,889	26,488,023	25,037,372	24,842,627	24,110,125

Total emissions of GHGs were reduced by three percentage points to 2015. GHG emissions attributed to flaring were reduced by 27,355 tonnes of equivalent CO<sub>2</sub> as compared to 2015. Reduction can be attributed to the successful continuation of the Flare Management System and higher recovery of boil-off gas in 2016, relative to 2015. GHG emissions attributed to LNG loading were reduced by 78 percent, relative to 2014, when JBOG became operational.

Scope 2 emissions, attributed to electricity consumption, were reduced due to lower power consumption in RLTO. Lower power consumption at RLTO is attributed to its operations and includes the nature and volume of products loaded, and operational measures undertaken. Scope 3 emissions that are attributed to the GHG emissions from the use of transportation by employees were reduced by eight percent, relative to 2015.

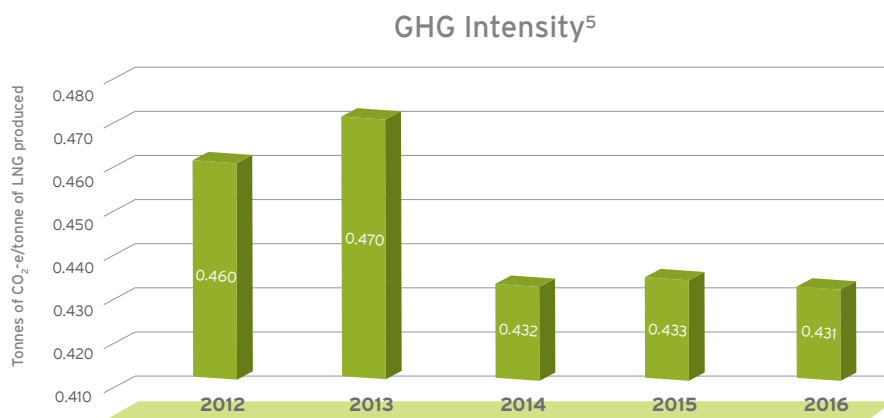


Figure 13. GHG Intensity

<sup>3</sup> Qatargas GHG emission inventory, accounting, and reporting are audited and certified by Qatar Petroleum and its external auditors.

<sup>4</sup> Incorporates JBOG facility operations from October 2014.

<sup>5</sup> GHG intensity is related to LNG production only.



## Water and Wastewater management

Water and wastewater management	Unit	2012	2013	2014	2015	2016
Water consumption	m <sup>3</sup>	4,416,617	4,329,053	4,505,991	4,504,140	4,585,426
Water consumption intensity	m <sup>3</sup> /tonne of LNG produced	0.11	0.10	0.11	0.11	0.11
Desalinated water consumed:	m <sup>3</sup>	4,416,617	4,329,053	4,505,991	4,504,140	4,445,936
From Kahramaa	m <sup>3</sup>	2,643,072	2,440,410	2,407,935	2,587,842	2,394,068
Generated on site from seawater	m <sup>3</sup>	1,773,545	1,888,643	2,098,056	1,916,298	2,059,678
Process wastewater injected into subsurface Formations	m <sup>3</sup>	1,291,751	1,254,375	1,237,128	1,287,093	1,235,735
Seawater used for non-contact, once-through cooling (onshore)	m <sup>3</sup>	3,761,597,718	3,733,898,900	3,762,481,215	3,788,123,436	3,799,552,920
Process and sanitary wastewater discharged to sea (excluding non-contact seawater for once-through cooling)	m <sup>3</sup>	950,529	961,556	958,996	965,123	980,366
Wastewater discharged to sea	m <sup>3</sup>	950,529	961,556	958,996	965,123	980,366
Process and sanitary wastewater used for Irrigation	m <sup>3</sup>	74,062	60,181	104,868	93,609	106,529 <sup>6</sup>
Wastewater recycled	m <sup>3</sup>	74,062	60,181	104,868	93,609	106,529

Qatargas' goals are aligned with those of the Ministry of Municipality and Environment (MME) in minimising wastewater discharge and maximising the efficient use of water. The Company's onshore production and processing facilities generate approximately 450 cubic meters per hour of wastewater. The Company has invested in a comprehensive Wastewater Reduction and Reuse (WRR) programme to achieve three key objectives in accordance MME's goals. WRR's first objective is to reduce wastewater injection into deep well formations. Its second objective is to reuse suitable streams of treated water for irrigation. The third objective is to recycle water using advanced technologies - effectively treating wastewater for further use, thereby reducing intake of desalinated water for industrial operations. Under this wastewater treatment model, brine from facilities is discharged to deep well injections, sent to the Ras Laffan Industrial City (RLIC) common cooling water channel, or used to meet irrigation needs. By upgrading our wastewater systems to tertiary Reverse Osmosis systems across our plant operations, Qatargas will be able to reuse 65-70 percent of its wastewater discharge as polished water for utilities reuse. Wastewater treatment projects are in progress and expected to be completed between 2017 and 2021 in a phased manner.

As a first step toward accomplishing WRR objectives, QG1 MBR was commissioned in the fourth quarter of 2015 after successful tests in a pilot programme during 2008. Its construction was initiated in 2011. MBR is responsible for removal rates of more than 95 percent across key parameters like Chemical Oxygen Demand and Nitrogen compounds. This means that treated wastewater using MBR is significantly better than wastewater processed via other conventional treating methods, an indication of the project's success. The Company's WRR programme ensures wastewater quality meets MME and RLIC requirements.

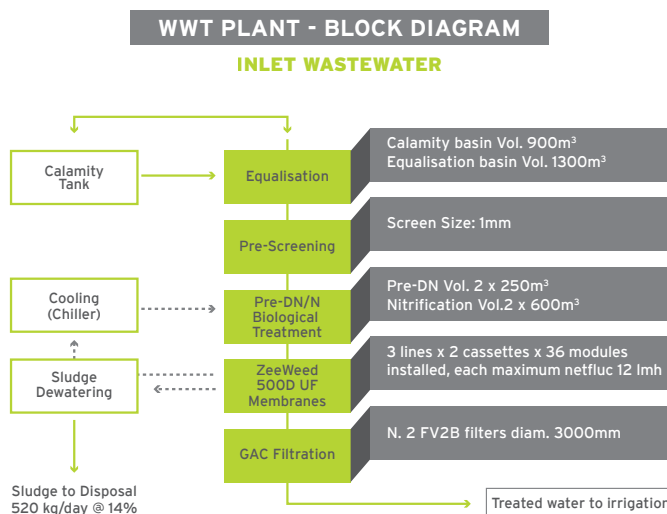


Figure 14. WWT Plant - Block Diagram

<sup>6</sup> 14 percent increase in the water used for irrigation is based on the actual water demand for landscaping.

Operating its first MBR was a unique learning experience for Qatargas. The Company assigned a dedicated team for the operation, which successfully overcame challenges such as water quality management, microbial biology, and optimum feed of wastewater for the MBR to operate.

“ This project is a clear manifestation of our commitment to environmental conservation and is part of the huge investments we have made in the recent past to minimise our environmental footprint in line with the values spelled out in the Qatargas Direction Statement. ”

Sheikh Khalid Bin Abdullah Al-Thani,  
Qatargas Chief Operating Officer - Engineering and Ventures.

In 2016, steady progress was achieved in the construction of near-Zero Liquid Discharge (nZLD) wastewater reuse and recycling projects at QG2, QG3, and QG4, in addition to Laffan Refinery. Also in progress for completion by the first quarter of 2017 is the Front End Engineering Design (FEED) for QG1 wastewater nZLD project. Wastewater treatment plants for the LNG facilities are being built within the existing structure, leading to some challenges of a brownfield site such as working in close proximity to an operating plant, construction space constraints, subsurface utilities infrastructure, and others. Although there are several complexities in implementing advanced wastewater management systems, Qatargas expects to implement WRR projects on schedule.

## Waste Management

Waste Management	Unit	2012	2013	2014	2015	2016
Total waste generated	tonnes	9,599	5,872	7,065	6,805	11,656
Hazardous waste generated	tonnes	4,099	2,769	3,217	3,591	7,692
Non-hazardous waste generated	tonnes	5,500	3,103	3,849	3,213	3,964
Percentage of recycled waste relative to total waste generated	%	48	30	29	23	17
Waste recycled	tonnes	4,569	1,775	2,038	1,534	1,967

Qatargas has established sustainable waste management and waste reduction as key corporate objectives in line with QNV 2030. The rapid expansion of Qatargas' operating facilities has resulted in an increase in overall waste generation rates, including hazardous waste streams. The higher waste generation in 2016, when compared to previous years, was primarily due to an increase in generation of scrap steel, general office waste, disposal of accumulated waste from completion of the Plateau Maintenance Project (PMP) as well as planned LNG train maintenance turnarounds, and sludge from tank cleaning activities. The Company also commenced a battery replacement program, which resulted in a substantial increase in the quantity and tonnage of batteries received for disposal as reflected in the higher hazardous waste generation reported for 2016.

In terms of tonnage, the amount of waste recycled was higher in 2016. However, the ratio of recycled waste relative to total waste generated decreased due to a greater volume of non-recyclable waste streams generated such as construction debris, sludge, molecular sieves from maintenance turnarounds, and spent batteries.

Qatargas' journey toward sustainable waste management underwent significant changes, commencing with the formation of an effective inter-disciplinary Waste Management Team (WMT) in 2014, improvement of onsite waste management practices and procedures, and the establishment of sustainable recycling and disposal pathways for our key waste streams.

## Performance

In addition to sludge disposal via the onsite centrifuge system, over 150 tonnes of electronic waste (e-waste) backlog stored onsite were successfully transferred for recycling and disposal. This was achieved through a long-term contract awarded to an authorised contractor to collect and transport the e-waste to recycling and disposal facilities in compliance with United Nations Basel Convention requirements. We also strengthened our recycling partnership with Qatar Steel, and continue to explore options for recycling non-ferrous streams such as activated carbon and molecular sieves.

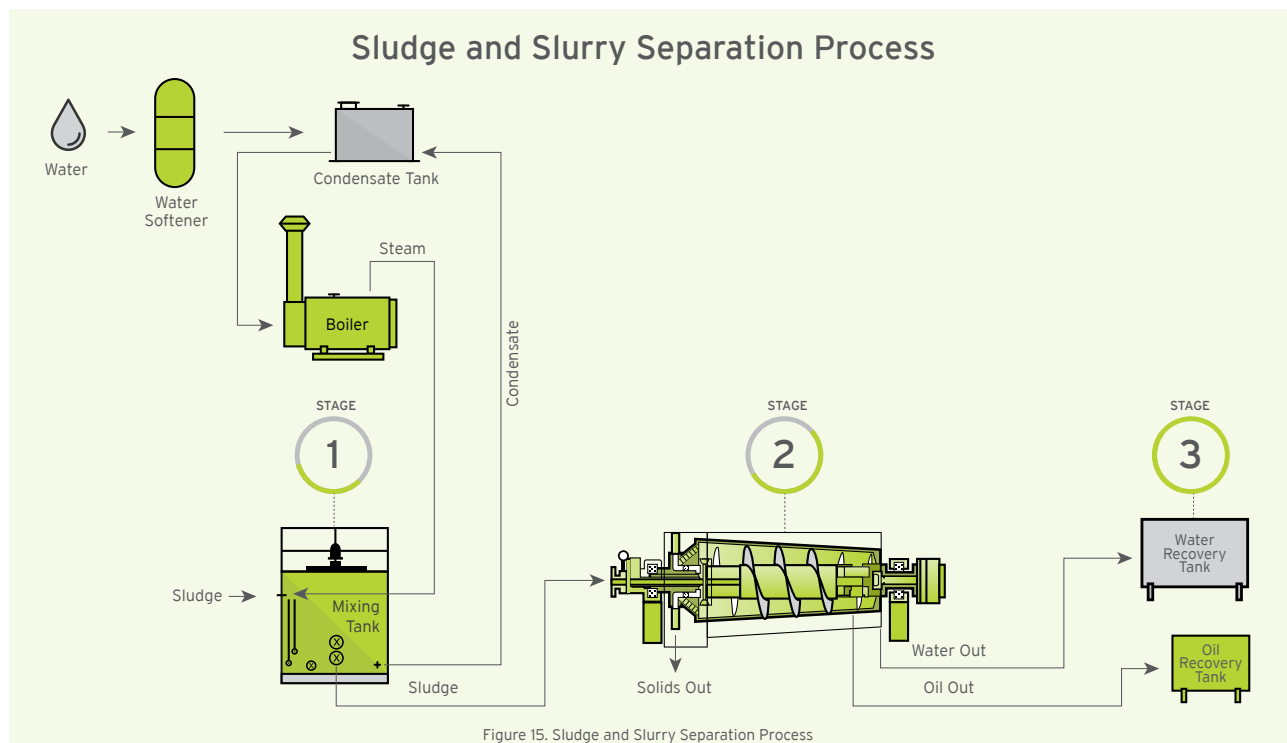
Continuous improvement of existing onsite waste management practices is equally important when it comes to maintaining waste performance. Throughout 2016, Qatargas worked with our various partners and contractors to optimise waste storage and handling practices to ensure the safe disposal of waste in a timely manner. For example, Qatargas partnered with onsite contractors to reuse waste paint and grease stored at our facilities, resulting in a 90 percent reduction in the storage of these materials. A tender was also opened for handling the safe disposal of rubber, paints, grease, and batteries, which is expected to be implemented in early 2017.

## Sludge and Slurry Treatment System

All Qatargas sludge and slurry inventory (approximately 4,200 m<sup>3</sup>) accumulated on site since 2012 was successfully disposed of in 2016 through the sludge and slurry centrifuge system. This sludge was generated from facility shutdowns and tank cleaning activities, and had accumulated onsite due to the lack of available in-country disposal infrastructure.

The Qatargas centrifuge system installed onsite in late 2015 separates sludge and slurry waste into three residual streams: waste oil, water, and residual hydrocarbons. The sludge separation process comprises of the following key steps:

1. Stage 1: Sludge is mixed and pre-heated.
2. Stage 2: Sludge is separated by a centrifuge, which breaks it down into three main components: waste oil, water, and solid sand.
3. Stage 3: Separated waste streams are managed and disposed of via the established in-country disposal pathways in-line with Qatargas' waste management procedures.



The project continues in 2017 with the objective of separating sludge and slurry waste streams generated and stored onsite in 2016, along with the planned generation for 2017. To date, only three percent of residual waste generated from the main sludge waste stream separation process is solid residue that requires final disposal at the Mesaia Industrial City (MIC) Hazardous Waste Treatment Center (HWTC).

Driven primarily by our sludge and e-waste management projects in 2016, Qatargas successfully disposed over 93 percent of the hazardous waste accumulated onsite in previous years due to the lack of a feasible in-country disposal option

**Disposed over 93 percent of hazardous waste.**

## Systems

The Qatargas Waste Management Procedure (WMP) underwent a significant update in 2016 with the addition of new requirements for electronic and pyrophoric waste handling and disposal. Our electronic Internal Waste Transfer System (e-IWTF) was successfully utilised by all Qatargas onshore assets throughout 2016. This helped to manage and successfully record more than 1,500 waste transfer requests from waste generating operations, which equates to approximately 98 percent of all waste transfer requests in 2016. With e-IWTF, Qatargas significantly improved coordination and efficiency between relevant parties (waste generators, waste management programme custodians, and waste operations). The e-IWTF was upgraded further in 2016, in partnership with the Information Technology Department, which included updates to waste data report generation, printing provisions, additional assets, and waste information required to facilitate waste management approvals.

## Infrastructure

Qatargas is investing in upgrading its existing waste management facilities to expand our capacity for safe and sound handling, segregation, and storage of various types of waste generated by the Company. Tendering and technical evaluation for this project was completed in 2016. The project is expected to move into the construction phase in 2017, with an expected completion in late 2018 – early 2019.

## Air emissions

Air emissions (tonnes)	2012	2013	2014	2015	2016
Nitrogen Oxides (NO <sub>x</sub> ) emissions	11,916	11,749	11,157	10,454	9,655
Sulphur Dioxide (SO <sub>x</sub> ) emissions	18,090	17,400	16,387	12,583	21,858
Volatile Organic Compounds (VOCs)	1,157	1,658	800	761	619

An increase in sulphur dioxide (SO<sub>2</sub>) emissions was observed in 2016. This is 73 percent higher than SO<sub>2</sub> emissions in 2015 due to the maintenance related shutdown and repair of QG1's Sulphur Recovery Unit (SRU4) Tail Gas Treatment (TGT), which increased the SO<sub>2</sub> emissions.

NO<sub>x</sub> emissions have been reduced by over seven percent since 2015. This was primarily due to the optimisation in fuel gas consumption of QG1's Process Gas Turbines (PGT). Since the establishment of a NO<sub>x</sub> Emission Reduction Compliance Action Plan, developed by Qatargas in 2008 to meet the MME's NO<sub>x</sub> emissions reduction requirements, the Company adopted multiple technologies for NO<sub>x</sub> reduction. The Lean Head End Liner technology (LHEL), which involved modifications to the PGT combustion chambers, resulted in 20 to 30 percent reduction in NO<sub>x</sub> emissions across PGTs. Meanwhile, installation of the Dry Low NO<sub>x</sub> (DLN) Burners resulted in nearly an 85 percent reduction in emissions from the QG1 Gas Turbine Generators. Low NO<sub>x</sub> Burner modifications installed at Utility Boilers and in the Upstream Heaters helped to reduce NO<sub>x</sub> emissions by 50 and 75 percent, respectively.

Qatargas recognises the importance of reducing Volatile Organic Carbons (VOCs) in the atmosphere, and has established a robust Leak Detection and Repair (LDAR) programme at the LNG trains, Laffan Refinery, and tank farm facilities since 2011. VOCs contribute to atmospheric photochemical reactions leading to the formation of ground-level ozone. The LDAR programme provides surveillance for approximately 76,000 VOC components, leading to necessary repairs in identified VOC leakage sources. Improved LDAR monitoring and repair operations led to the reduction in VOC emissions by 19 percent relative to 2015, and by 46 percent relative to 2012.

## LDAR Monitoring

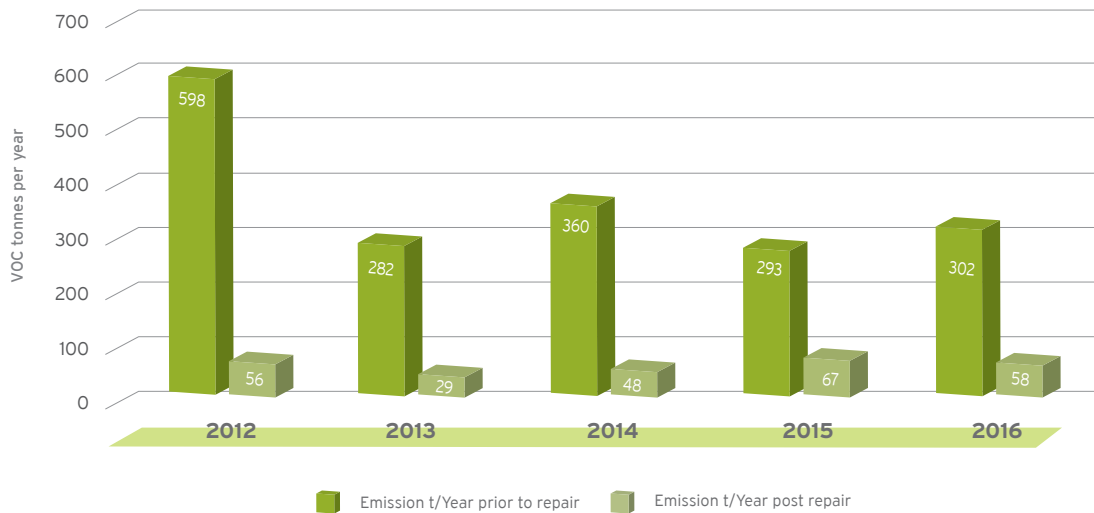


Figure 16. LDAR Monitoring

## Environmental impact from transportation

As the largest user of LNG transportation vessels in the world, Qatargas is placing innovative and progressive solutions at the forefront to continuously improve the efficiency of transportation to limit environmental impact.

Qatargas strives to be one step ahead of upcoming trends and regulations in the maritime sector. The Company joined the Society of International Gas Tanker and Terminal Operators, an international organisation through which all industry participants share experiences, address common challenges, and establish criteria for best practices and standards.

As in the previous two years, Qatargas was once again recognised by the British Safety Council with the Globe of Honour international award, given for excellence in environmental management of its transportation related activities. It was also awarded the Sword of Honour by the Council for demonstrating superior safety management. This makes Qatargas the sole Qatari company to receive both awards, and one of only 15 companies worldwide to receive both awards in 2016.

### Developing LNG as a marine fuel

Qatargas Shipping has been working on an innovative project that aims to develop LNG as a bunker fuel. This has vast potential to diminish the environmental impact of shipping, as vessels typically burn fuel oil which is less friendly to the environment. The Company has established multiple partnerships to explore the utilisation of LNG as a commercially viable bunker fuel that is a suitable alternative to heavier fuels oil. Partnerships with shareholders, Qatar Petroleum and Shell, have made Qatargas an industry leader in this effort. Qatargas has also signed two Memoranda of Understanding, one with the Maersk Group and Shell and the other with United Arab Shipping Company and Shell, to explore the development of LNG as a bunker fuel.

The bunker fuel development initiative will aid Qatargas' preparations for stricter global sulphur cap requirements being drafted by the International Maritime Organisation (IMO), which is slated for ratification in 2020. A project on the use of M-type Electronically Controlled - Gas Injection (ME-GI) is being undertaken to convert chartered long-term LNG carriers to use LNG as a propellant. The implementation of this environmentally friendlier alternative reduces emissions of GHGs and other pollutants. The pilot project and the subsequent evaluation of this technology and its economic benefits are ongoing.

Qatargas' Shipping Department became a member of SEA/LNG. SEA/LNG is a multi-sector industry coalition whose aim is to demonstrate, deliver, and amplify commercial opportunities for the accelerated development of LNG as a bunker fuel. This helps to promote the use of cleaner and more environmentally friendly fuels throughout the global shipping industry. SEA/LNG brings together key players in the LNG shipping value chain, including shipping companies, classification societies, ports, major LNG suppliers, LNG bunkering companies, infrastructure providers, and original equipment manufacturers (OEM). This helps to break down the commercial obstacles in transforming the localised use of LNG as a bunker fuel into a global reality.



### Optimising LNG transportation efficiency

In 2016 Qatargas Shipping conducted a pilot project to evaluate the use of various Vessel Performance Monitoring Systems (VPMS) onboard its long-term chartered fleet. A VPMS system is an onboard monitoring and evaluation system that provides real time feedback to the vessel crew according to set criteria, such as trim and speed. The system serves as a tool to enable fuel savings, and reduction of Qatargas' overall environmental footprint.

Qatargas Shipping has worked with its customers to achieve multi-port deliveries, a shift from the typical industry practice of discharging all cargo at one terminal. This is made possible by the size of the Company's LNG tankers, which are the largest in the world on charter. Multi-port delivery provides not only higher customer satisfaction due to increased flexibility (as mentioned earlier in the 'Sales and Distribution' section of the 'Economy' chapter), but also provides environmental benefits by reducing shipping traffic and multiple trips.

### Compliance with environmental regulations

Qatargas ensures that its chartered vessels adhere to the highest safety and environmental standards, and meet the global standard set by the Green Award Foundation. After a rigorous auditing process, the Company obtained the Green Award Certification for 39 long-term chartered vessels used in transporting LNG. Qatargas' commitment to the cause championed by the Green Award Foundation is demonstrated by its Shipping Manager serving as the Vice-Chairman on the Foundation's Board of Experts. Additionally, Qatargas has been working with UK's South Hook LNG Terminal, located in the port of Milford Haven, and with the port of Ras Laffan to participate under the Green Award Foundation's port incentive scheme to make operations environmentally friendly. Such ports provide various service incentives to Green Award Foundation certified ships, promoting enhanced safety and environmental performance across the industry. It also helps reduce the overall environmental footprint of industrial shipping.

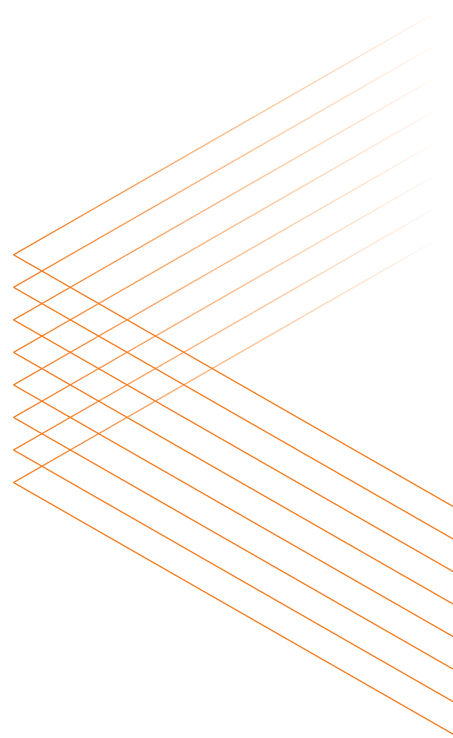








## OUR WORKFORCE



## Taking care of our workforce

### Introduction

Qatargas' strategy reflects the Company's value of "developing its people and fostering a culture of learning, innovation, diversity, and excellence." This strategy also supports Qatargas' 2020 Vision, which aims to "retain and develop our expertise through a high calibre, motivated workforce." With wellbeing of the workforce thoroughly grounded in our core values and future vision, Qatargas remains committed to continuously improving the services provided to our employees. The Company made positive strides towards supporting its workforce in 2016. Qatargas' renewal of a gold level accreditation of Investor in People (IiP), an international standard for people management, is indicative of this ongoing effort.

We addressed market challenges with innovative initiatives to retain, train, and develop the workforce. To attract and acquire competent talent in a competitive environment, Qatargas evaluated and restructured the external recruitment sourcing framework for expatriates, making it more efficient. The Company also launched an enhanced 'Interviewing the Qatargas Way' programme for interview panels and hiring managers. The programme includes new techniques designed to improve how candidates are selected for available positions at Qatargas.

By prioritising the ideals of learning, innovation, diversity, and excellence, Qatargas takes a holistic approach to the development of its workforce.

### Diversity, female representation and equal opportunities

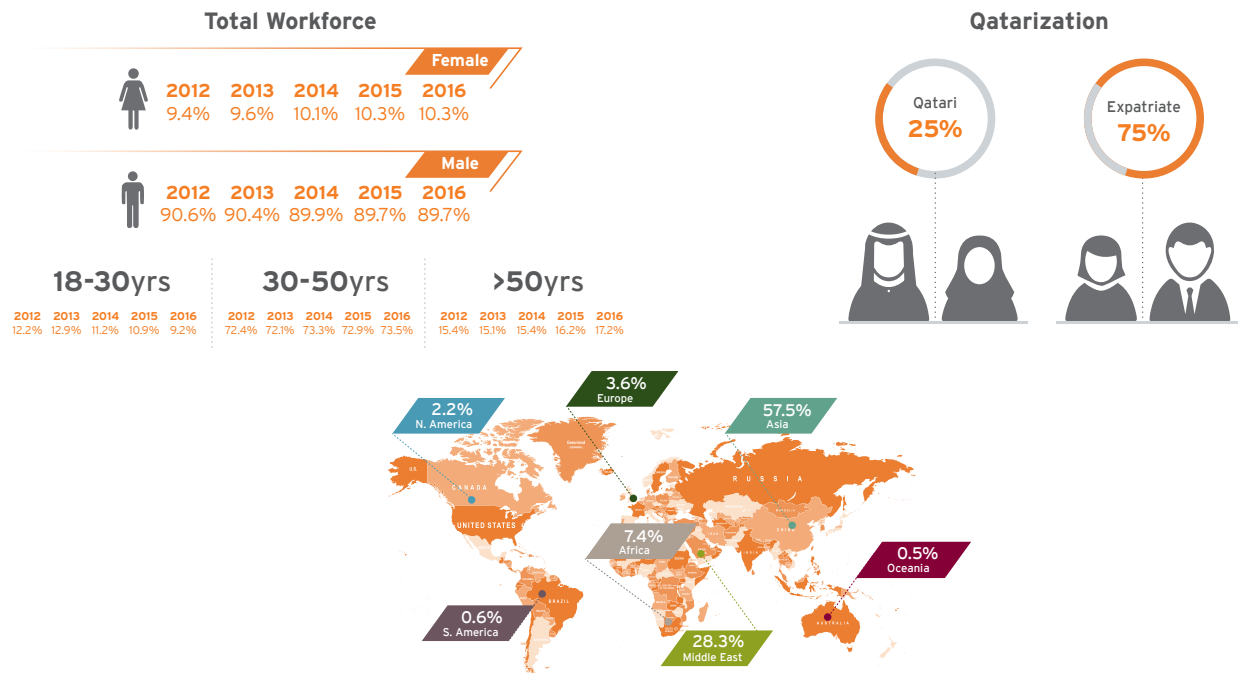


Figure 17. Diversity, female representation and equal opportunities

Constant assessment of overall workforce statistics, including diversity, is important to Qatargas. In 2016, there was no significant change in the total number of Qatargas employees overall. Despite lower oil prices affecting energy-based economies and other economies alike, Qatargas' attention to its workforce and business processes has helped the Company streamline operations and mitigate adverse effects presented by reduced employment levels.

In particular, Qatargas is proud of the continuous decrease in the rate of employee turnover in the past five years. Qatargas' employee relations policy protects employees from discrimination and mandates fair treatment, both critical elements in maintaining a diverse workforce. A single salary structure also ensures equal treatment. Qatargas' robust disciplinary grievance system protects employees and establishes procedural methods for investigations and disciplinary response for violations of the Employee Relations policy.

<sup>1</sup>Total workforce includes employees in non-permanent positions and temporary project positions.

## Qatarization

Qatarization remains a strategic focus for Qatargas, in-line with QNV 2030. The company is positioning itself to achieve 50 percent of its Qatari workforce in established positions by 2030. To achieve this target, Qatargas focuses on hiring, training, and retaining its Qatari employees with an aim to reduce reliance on its international workforce. Each year, the company sets a target for it to increase its percentage of approved permanent budget positions to be held by Qataris. Qatargas' target for 2016 was 23 percent of the total workforce, and the actual rate of Qatari employees has reached 21.9 percent. However, the Qatarization rate constitutes 25.3 percent if only permanent employees on Qatargas payroll are taken into account - excluding contractors and sub-contractors. In particular, the success of Qatarization can be observed on a management level, where the presence of Qataris has grown by 9.8 percent since 2013.

Indicator	Unit	2012	2013	2014	2015	2016
Qatarization rate	%	25.8	26.1	24.1	24.6	25.3 <sup>2</sup>
Qatari employees	#	572	613	602	622	611
Qatarization of Management	%	40.1	37.5	44.4	46.2	47.3

Retaining Qatari Nationals in key positions is also a strategic priority for Qatargas. The attrition rate of Qatari employees decreased from 7.31 percent in 2015 to 6.75 percent in 2016.

## Supporting National Graduates and Trainees

Qatargas is committed to developing high calibre National Graduates and trainees through continuously investing in development initiatives. Therefore, Qatargas delivers high-quality learning and training programmes to its National Graduates and trainees.

National Graduates are Qatari Nationals who have obtained a bachelor degree or a higher national diploma through Qatargas' scholarship scheme, or recruited directly in technical and non-technical streams. Upon joining Qatargas, National Graduates receive a tailored Individual Development Plan (IDP) as per their agreed establishment position targets. With guidance and support from assigned coaches, department managers, and the Qatarization team, each National Graduate endeavours to complete their IDP. Currently there are 114 Nationals working towards completing their IDPs.

Qatargas also supports the career development of trainees who have obtained a high school diploma or technical certificate. These individuals enter either a Non-Technical Trainee Programme (NTTP) or the Technician Programme

(TP). Both include two phases of in-depth training, which is administered both in-house and through Qatar Petroleum. About 124 National Trainees completed a variety of courses, for a total of 1,381 training days. Qatargas allows the National Trainees to attend courses based on his or her needs.

Qatargas graduates and trainees have many opportunities to communicate with the Company's Management Team. Among these is the annual CEO Forum for National Graduates and Trainees. The event, which has been an enduring feature of the Company's employee engagement for the past 15 years, is an integral part of Qatargas' Qatarization Strategy. Graduates and trainees are encouraged to voice feedback on their development programmes, which inform future improvement. This forges a strong relationship between the young professionals, their mentors, and the management. Further communication between graduates and trainees takes place during a Qatarization forum for National Graduates, as well as two Qatarization forums for trainees, each year. In these forums, attendees are given the opportunity to

speak to other Qatari National mentors about their experiences. The events serve to build understanding of career goals and objectives for the graduates and trainees. The forums also deepen the professional and personal ties between attendees and their designated coaches within the organisation.



<sup>2</sup> Qatarization rate is calculated based on the headcount of permanent employees in Qatargas OPCO.

## Supporting education and recruitment

Qatargas aims to “be the employer of choice for a high performing national and international workforce,” as defined in the Company’s Mission. The Company participates in a wide range of activities to continue this legacy, including the Hayyakum Campaign and career fairs. Qatargas collaborates with the Ministry of Administrative Development, Labor, and Social Affairs to conduct school outreach, which is a key part of Qatargas’ multi-pronged strategy to attract the best talent.

The highly-successful Hayyakum Campaign continued in 2016, attracting local talent into programmes that will benefit their professional development. By communicating directly with Nationals, Qatargas aims to reach future professionals who fit its values. Thirteen high schools in Doha and northern Qatar were engaged through Hayyakum. Further outreach events in four international schools were held to educate students about Qatargas scholarship opportunities.

The Hayyakum Campaign is Qatargas’ platform designed to reach out and attract young nationals interested in developing their careers within the LNG Industry, and encouraging them to consider Qatargas as their employer of choice. The campaign uses many platforms such as social media, career fairs, and school visits to reach out to nationals in sharing information about opportunities such as scholarships, internships, and job vacancies.

### The Hayyakum Campaign highlights the following 16 reasons to choose Qatargas:

1. Premier LNG Company
2. Largest LNG Trains in the World
3. Access to World-Class Shareholder Expertise
4. Project Exposure
5. Competitive Package
6. Qatargas Summer Internship
7. Qatargas Undergraduate Scholarship Programme
8. Safe Working Environment
9. Shareholder Attachments
10. Individual Training Plan for High School Graduates and Individual Development Plan for University Graduates
11. Strategic Qatarization Planning Committee
12. CEO Forums for National Trainees and Graduates
13. Learning and Development Focus Group
14. Rewards and Recognition
15. Continuing Professional Development
16. Succession Planning

In 2016, Qatargas continues interaction with students at Qatar University, Community College Qatar, College of the North Atlantic - Qatar, and Education City. Qatargas was able to reach a large pool of talented university students within Qatar to carry out recruitment for entry-level positions and programmes. The Company also delivered presentations at Qatar University’s College of Business and Economics and Carnegie Mellon University in Qatar. Additionally, Qatargas attended a networking event at Texas A&M University at Qatar.

"Change your future.  
Change the world"



Supporting and encouraging education is a core element of Qatargas’ corporate social responsibility initiatives. Qatargas believes that partnerships between universities and industry will help students to become qualified professionals and meet the future needs of the Company. Qatargas allocated 1.78 million QR for sponsoring 10 new scholarships at higher education institutions across the UK, USA, and Qatar. In 2016, nine bachelor degrees and seven higher national diploma scholarships were offered for engineering majors.



## Talent and performance management

Qatargas renewed its gold level accreditation of 'Investors in People,' which will remain valid until 2019. The accreditation is an achievement of world-class best practice in the field of employee development and a testament to Qatargas' continued prioritisation of talent management. Qatargas is the only organisation in Qatar to achieve and maintain a gold level accreditation.

May 2016 saw the rollout of an automated technical competence assessment (TCA), a dynamic talent management application that improved Qatargas' approach to managing competence assessment and competence development processes. The TCA will further ensure that competent staff is in place to perform tasks safely and effectively.

## Enhancing Workforce Performance

Qatargas' Individual Performance Management (IPM) system is essential to maintaining a high calibre workforce, in line with Qatargas' 2020 Vision. IPM provides employee and supervisor with a system to set objectives, to review progress, and to assess performance and behavior within an annual cycle. In 2016, compliance reached 99.8 percent, with 2,675 of 2,681 employees completing their performance appraisal. This helps evaluate general performance of departments, and offers an opportunity for performance improvement. Overall, the IPM system is instrumental to helping Qatargas maximise the value of its people.

## Develop Talent

Qatargas recognises that development of its human capital is critical to sustained success of the Company. Empowering employees through leadership training initiatives is a significant part of this effort, as is preparing Nationals and other employees to take on high-impact positions in the future.

## Succession planning

At Qatargas, talent is identified by performance and potential. Our IPM system supports the business in identifying individuals who meet the performance criteria. Leadership Development & Succession Planning then collaborate with each Group Chief Operating Officer to review and assess the potential of Talent Pool entrants to identify development opportunities and successors for key roles.

The Corporate Succession Plan identifies successors for key roles across all Qatargas operations to minimise risk and ensure business continuity. To ensure a robust talent pipeline, these individuals are categorised into three groups - 'ready now,' 'ready in 1-2 years,' and 'ready in 2+ years.' Those who will be ready for succession in 1-2 years are classified as talent priorities, and are provided with opportunities for training, coaching, and mentoring designed to support their personal and professional development.

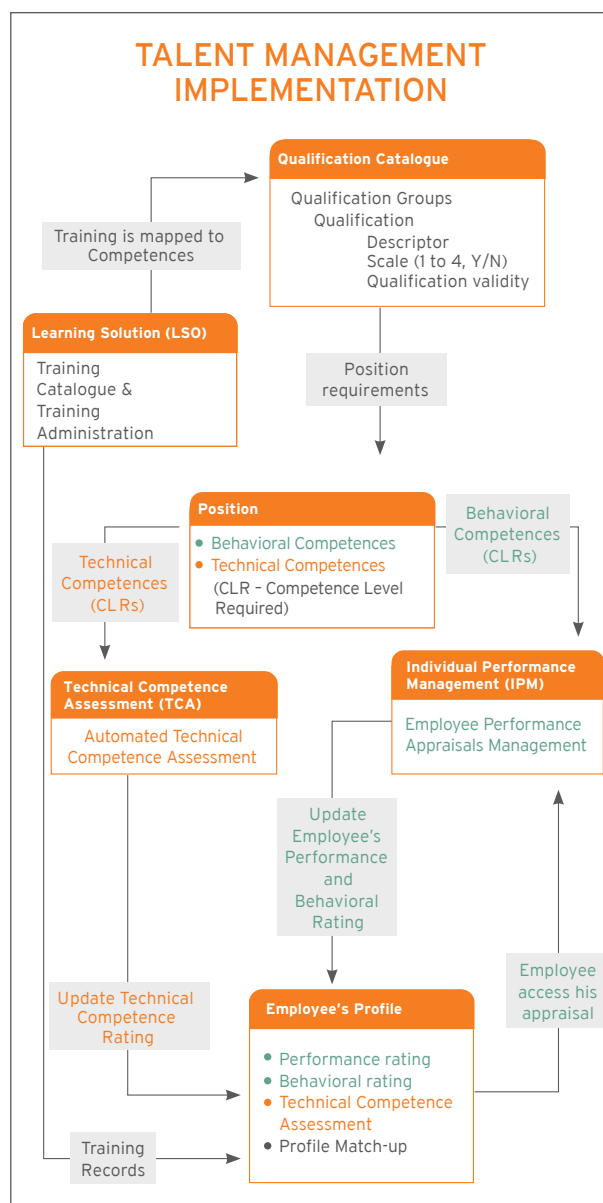


Figure 18. Talent Management Implementation



## Training and development

Training and development Indicators	Unit	2012	2013	2014	2015	2016
Average hours of training/employee <sup>3</sup>	#	24.5	28.7	53.8	40	38
Total hours of training	#	42,914	86,000	137,601	115,856	96,736
Total cost of training	QR	6,406,290	8,117,729	8,741,908	6,918,602	6,062,918

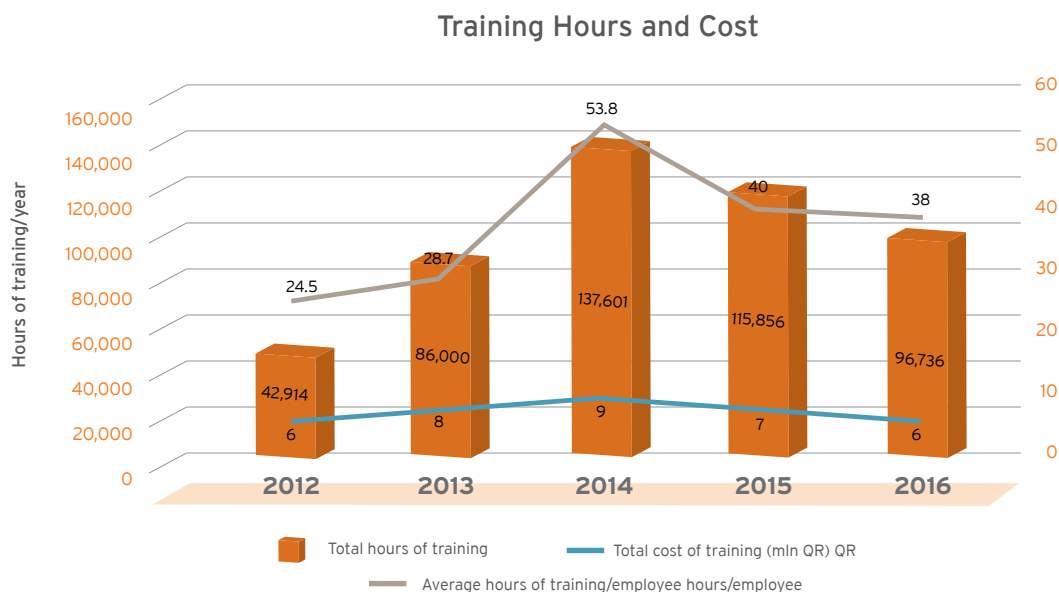


Figure 19. Training Hours and Cost

Although there has been a 16 percent decrease in the total training hours utilised by our employees in 2016, the total amount of hours has grown by 125 percent in the past five years. The average training hours per employee is 38 hours, compared to 28.7 hours per employee in 2013.

The Company uses advanced processes to assess and improve performance. In May, Qatargas' Technical Competence Assessment (TCA) was added to the set of talent management applications. The TCA uses employee self-assessments to conduct analysis of learning and development needs, and makes recommendations for training accordingly. It efficiently matches employees with the most beneficial training modules available to improve their skillset. There has been broad compliance, with 99.6 percent of Qatargas employees in established positions achieving their TCAs.

All employees identified with competence gaps have a Personal Improvement Plan in place. These plans are focused on improving technical skills of employees. A 70-20-10 approach is applied in these cases: 70 percent of development activities are linked to real-life and on-the-job tasks and assignments, 20 percent is linked to receiving feedback and learning from role models, and 10 percent is reserved for formal training.

Major progress was made during 2016 to improve implementation of training in the workplace. Notable to this effort was the integration of IPM - Qualification Catalogue and SAP Learning Solution.

Learning Solution (LSO) is a system employed by Qatargas which provides employees with a variety of training resources, including classroom lectures, e-learning, and virtual training. The system allows employees to tailor their training, and streamlines the process by which managers can supervise their teams' progress. To date, 22,578 training bookings have been made via the system, which offers over 2,700 courses.

<sup>3</sup> Based on the number of employees that have received actual training.

“The training helped me perform under challenging situations and in a very professional atmosphere. It set high standards of quality for my work and I am aiming to transfer the knowledge I gained to my role at Qatargas. I hope I will help improve the quality of productivity as well as realise specific goals.”

Fahad Mohammed Al-Hajri, Mechanical Engineer, Maintenance

In line with Qatargas' commitment to maintain strong relationships with customers and contractors, six Qatargas engineers completed a seven-week training course at Chiyoda Corporation in Japan. The engineering company, which specialises in oil refineries and LNG facilities, is located in Yokohama, Japan, just outside Tokyo. Chiyoda Corporation was a main contractor for Qatargas 1-4 LNG plants. Qatargas' engineers learned from the Company's experts in interactive sessions on process engineering, mechanical engineering, safety and environmental engineering, piping and material engineering, advanced engineering, and project execution.

### Employee satisfaction and retention

Qatargas' mission is to remain the employer of choice for everyone in the oil and gas industry. This can only be achieved with updated knowledge of our current employee satisfaction levels. The Company conducts annual surveys on employee satisfaction in relation to various departments. These surveys are vital to compile feedback and improve inter-department efficiency.

The turnover rate, a critical indicator of employee satisfaction, fell by 24 percent relative to the 2012 rate. Young people show higher increase in turnover if compared to other age categories, which is in line with industry trends. However, each case is examined so that turnover unrelated to market forces is minimised. We are proud to enrich our employees with experience and practical skills that are highly valued in the overall national workforce.

Turnover						
Indicator	Unit	2012	2013	2014	2015	2016
Turnover rate	%	7.5	7.0	6.5	5.5	5.7
Turnover rate by category						
Male	%	7.3	7.1	6.5	5.4	5.5
Female	%	8.8	5.9	6.9	6.7	7.5
18-30 years	%	6.3	4.7	6.7	8.9	10.5
30-50 years	%	6.6	6.3	4.8	3.9	4.0
>50 years	%	12.5	12.4	14.5	10.6	10.5

Qatargas has recognised 185 employees with 'Shukran,' an award to express its gratitude for their valuable contribution in making Qatargas the World's Premier LNG Company. Qatargas gave Long Service Awards to 362 employees.

Qatargas highly appreciates and respects those that are with the Company long-term. The Company understands that efficiency and productivity are a result of time and experience, in addition to appropriate training. We strive to retain those who have shown great commitment to their work, and who are delivering on the core values espoused by Qatargas over the years.





## SOCIAL DEVELOPMENT



## Contributing to social development

Social responsibility is enshrined in the core mission of Qatargas, which states: “Be socially responsible – actively contributing to social, community and local business partnerships.” Activities and initiatives that fulfill this mission are carried out under our Social Investment (SI) Programme and the Community Outreach Programme (COP). The COP is split from SI, and was specifically established in 2010 to serve those communities situated in the northern part of Qatar. As the World’s Premier LNG Company, we understand that actively contributing to the community and developing partnerships with local businesses is essential to successfully engage and serve the needs of the people located near the Ras Laffan Industrial City and in the rest of Qatar.

### Investments in local communities

In 2016, Qatargas dedicated 11.7 million QR across all SI and COP related activities and initiatives. Investment in 2016 has seen a relative decline of 32 percent compared to the preceding year as Qatargas management focused on consolidating assets and streamlining processes. These efforts ensured financial optimisation was successfully completed to meet the demands of the current economic climate. However, the total amount invested in 2016 has remained over 50 percent higher than the level invested in 2012. A significant portion of the investment was allocated to COP activities that play a direct role in contributing towards QNV 2030’s human development goals.

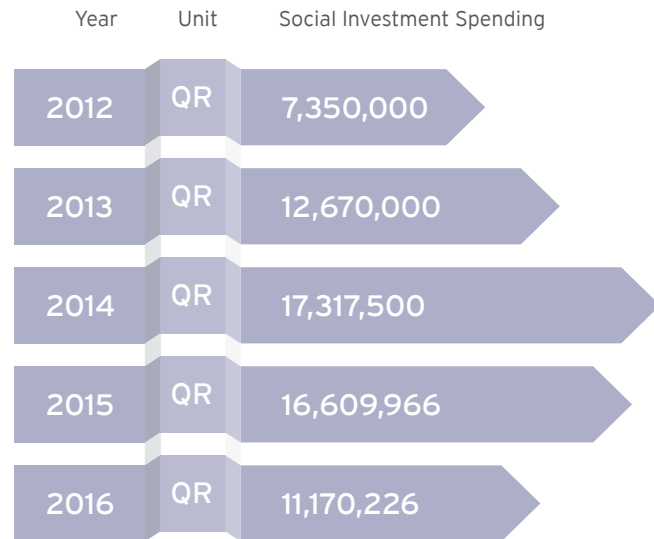


Figure 20. Investment in Local Communities

### Engagement of local communities

#### Community Outreach Programme (COP)

Established in 2010, the COP is an enterprising initiative that aims to serve communities situated in the northern part of Qatar which includes Al Khor, Al Thakira, Al-Daayen, Smaisma, Al-Kaaban, and Al-Shamal. To support a wide range of capital intensive community development projects, COP membership – which is voluntary – consists of seven companies operating in the Ras Laffan Industrial Area: Qatargas, Qatar Petroleum, RasGas, Oryx GTL, Pearl GTL, Al Khaleej Gas, and Dolphin Energy. Projects selected always adhere to the three guiding pillars of the programme – capacity building, health and safety, and education. Community leaders first bring their proposal to the local municipality which assesses feasibility and social benefit of the project. Once the municipality completes their assessment, findings are submitted to the COP. Projects are selected by the COP Working Group, which is the official administrative body responsible for shortlisting proposals. The COP Working Group assesses whether pressing community needs are addressed by the project and accounted for in the final proposal. Individual COP members then assume a project management role for a select number of community initiatives and coordinate project implementation and spending. Upon completion, projects are handed over to the relevant municipalities who are tasked with future maintenance and oversight. Currently, 12 projects administered by the COP are under various stages of planning and execution.

List of all participating companies:



Pearl GTL



We recognise that developing infrastructure is an important step towards the development of local communities to significantly improve the quality of life for their residents.

2016 saw the successful completion of the Al-Daayen Public Services Building Golf Cars and Shades project. It provides flexible light transportation services to support increased mobility for the elderly and those with special needs around the facility. Furthermore, it also assists visitors and employees to move around the facility faster.

One project in the exploratory research phase is Malaeb Ferjaan, an infrastructure project in collaboration with the Ministry of Culture and Youth. The project aims to promote a healthy lifestyle for the younger generation by providing them with recreational spaces outside their homes to socialise and play with friends in a safe environment.

The following three infrastructure projects have been approved by the COP and are under development.

Al Thakira Walkway is a beach refurbishment project under construction. Upon completion, it will provide the community with an upgraded space for exercise and recreation while also granting easy access to the coast. Having recently cleared the approval process, a refurbishment of the Sifa Touq area, located by the Al Sultan resort near Al Khor, is also being initiated. The goal with these two projects is to create an atmosphere that encourages members of the community to pursue a healthier outdoor lifestyle, with emphasis on fitness and spending time with family and friends.



The COP also contributes towards long-term sustainable community development using renewable sources of energy through its Solar Charging Stations and Lighting project. Three public areas in the Al-Shamal municipality, the Al-Ruwais Park and Beach, Abu Al-Tholof Park and Beach, and Ain Al-Sinan Park, will be outfitted with a combined total of 10 solar charging stations and 34 shaded areas with solar lights. Charging stations are built in the form of gazebos mounted with solar panels that provide a shaded seating area for visitors to rest and energise themselves and their electronic devices. Known as the 'Solar Multi-Function Charging Tree,' each 'tree' contains two light poles which can provide up-to eight hours of continuous lighting.

Qatargas is committed to raising environmental awareness in direct support of QNV 2030's environmental development pillar and in-line with the Paris Agreement, to which Qatar has been a signatory since December 2015.

In 2016 the COP completed its Tree Week Project in collaboration with the municipality of Al-Daayen. As part of the project, school students were involved in planting trees and were taught how to recycle tires into makeshift pots for plants. Each student was also put in charge of a potted plant for a week. The student with the healthiest plant by the end was given an award to celebrate their achievement.

Tawasol Hill is a nearly completed park project that is set near the entrance of Al Khor city. The park is designed to include various recreational facilities with numerous green spaces. It is populated with environmentally friendly non-invasive plant species that are endemic to the Middle East. This makes the park an ideal sanctuary for migrating flocks of birds and a reliable breeding ground for local fowl.



Qatargas understands the importance of supporting social welfare and education initiatives as it contributes to the wellbeing of communities. The COP has invested in five projects with the goal of building closer societal bonds to keep communities emotionally connected and engaged in an age where technology is increasingly eroding the sense of community.

A striking example is the Al-Ameera Training & Awareness program, organised by Qudorate Women's Center. The dedicated training facility, an ongoing project that receives funding from COP, is designed specifically for girls and their parents. At the facility, training is provided to help the next generation of women become motivated and productive members of society.

On the other end of the spectrum, COP funds the Maqad Al Duha Program which includes elderly and retired women. The program educates and raises awareness about the most relevant issues faced by this demographic, and how to overcome common challenges. It also provides opportunities to leverage their substantial life experience and skills to make a positive contribution and 'give back' to the community. Competitions and exhibitions are also organised for those involved in producing arts and crafts to keep them engaged, and inspire them to lead a balanced life.



Continuing Qatargas' focus on giving back to society, the COP is also funding Rowwad Al-Watan Program. This project focuses on experienced Qatari individuals sharing their knowledge with the younger generation to instill high ethical standards and reinforce positive social habits. Through workshops, events, and campaigns, this initiative partners with local schools to empower over 4,000 primary and secondary school students in the Al Khor, Al Thakira, Al Shamal, Kaabaan, Daayen, and Smaisma areas. The program is also open to a broader audience including parents, teachers, retirees, and families living in those regions.

Rowwad Al-Watan Program revolves around developing three core capabilities in program participants - self-leadership and planning, mental and physical health, and road safety awareness. Self-leadership and planning includes transferring skills and concepts necessary for setting personal goals and how to go about achieving them, in addition to setting a personal action plan. Mental and physical health awareness guides participants towards developing positive behavior and habits to overcome specific hurdles faced by students, such as stress, depression, anxiety, lethargy, and eating disorders. The road safety awareness establishes concepts of road safety etiquette and offers advice to help improve the quality of driving and reduce accidents in Qatar by highlighting responsibility and accountability while driving on the road.

Finally, the Safe Journey Campaign project was successfully completed in May 2016. The campaign focused on educating members of the northern communities in Qatar on key principles of road safety. All key principles aim to reduce fatalities by changing selective driving behavior. Project activities were delivered in collaboration with the Social Police and Traffic Department in Barzan.

## Qatargas CSR Programme

### Knowledge and Education related initiatives

We continue to support various research and education oriented initiatives as part of our investment in human development.

Qatargas is closely involved as a member of the Gas Processing Center (GPC). The GPC was launched in 2007 by the College of Engineering at Qatar University to become a leading center for research that helps solve critical technical challenges in the gas industry. Research topics are determined by industry and community needs upon consultation with major oil and gas companies operating locally and globally.

GPC's primary role is to conduct research that benefits key industry partners and the community. In close collaboration with our partners and investors, GPC holds a track record of successfully developing research solutions that lead to greater efficiency in production, distribution, and consumption of energy. Professional services offered by GPC have now expanded to include a diverse array of consultancy services on gas processing to its consortium of members. This is in addition to testing services, technical workshops, academic training and competitions, and the International Gas Processing Symposium held once every two years.

Collaboration between GPC and Qatargas has resulted in continued support for the long-running Annual Plant Design Competition at Qatar University's Chemical Engineering Department. Having first started in 2004 to provide students at the university an opportunity to work on a plant design project to develop Qatar's local human capacity, the competition is now in its 13th year. In 2016, a total of eight teams participated by submitting a wide variety of projects they had worked on for two semesters, vying to be the winning team of the Best Overall Prize.



Qatargas is also a member of the Abdullah Bin Hamad Al-Attiyah International Foundation for Energy and Sustainable development. Established in 2015, it is Qatar's first foundation to deal with energy and sustainable development issues with support from H.H. the Father Emir. The foundation delivers independent research and analysis that directly assists decision makers in the energy industry.

As part of its multifaceted efforts to ensure the operational safety of our employees, contractors, stakeholders, and members of the communities around our facilities, Qatargas has been an active member of the Mary Kay O'Connor Process Safety Center. The center is a prestigious internationally acclaimed institution, and the first of its kind in the Middle East, located at Texas A&M University at Qatar. The Center has signed a five-year Memorandum of Understanding with Qatargas to provide mutual support in the area of implementing industrial process safety to the highest international standards.

Although not directly related to the core business, Qatargas supports the operations of Teach for Qatar by providing the organisation access to meeting rooms on Saturdays. Teach for Qatar is a non-governmental organisation working to find solutions to challenges faced by students in the country. They work to create a high-value knowledge base for the future by recruiting top university graduates and professionals who wish to give back to the community via teaching through independent partnering schools.

## Environment related initiatives

As a conscientious corporate citizen, Qatargas organises several initiatives designed to raise awareness of environmental issues in the community, as well as encourage environmentally friendly behavior.

Qatargas regularly donates IT equipment, such as computers, projectors, and electronic peripherals which have completed their professional life-cycle at Qatargas. This serves the purpose of reducing electronic waste, and provides those who lack financial resources access to equipment they might otherwise not be able to procure.

2016 marked the third annual Qatargas beach clean-up event organised collaboratively with the Ministry of Municipality and Environment. Conducted at Al Ghariya beach, located around 100 kilometers north of Doha, the beach clean-up activity highlighted our commitment towards promoting environmental protection, raising awareness, and preserving Qatar's natural beauty.

Helping to protect Qatar's ecosystem, Qatargas sponsors the Go Green campaign. Desert environs are usually fragile ecosystems that host many distinct plant and animal species. Qatar's deserts are home to hundreds of such species, and the Al Reem Biosphere Reserve is one of 24 UNESCO recognised spots in the Middle East - home of the Arabian Oryx. The Go Green campaign raises awareness about human impact on these, and other, ecologically sensitive areas near Qatargas facilities. This includes nesting areas for endangered hawksbill and green turtles on Ras Laffan beaches, coral, sea-grass beds, and the coastal mangroves in the Al Thakira area.



## Health and Safety related initiatives

Qatargas was recognised for its ongoing support throughout the year by the Hamad Medical Corporation (HMC) at their annual felicitation ceremony during the World Blood Donor Day event in 2016.

This global day is endorsed by the World Health Organisation and celebrated on June 14 each year. At the event in Qatar, organised each year by HMC, Qatargas was recognised for its involvement in promoting voluntary blood donation activities during the year. Every year, Qatargas organises four blood donation drives across its facilities in Doha and Ras Laffan. The partnership with HMC on coordinating blood donation drives has been ongoing for 15 years, and is expected to continue into the future. This helps residents of Qatar develop a culture of voluntary blood donation for the wellbeing of the community.

Throughout 2016, Qatargas organised a series of events that raised awareness on the importance of leading a healthy and balanced lifestyle. To provide an example, the Healthy Diet event focused on providing over 150 employees and their families with a free medical assessment that included counseling sessions on healthy dietary choices.



World Blood Donation Day



Healthy Diet Campaign

“ Qatargas' support for various sporting activities is aligned with the objectives of the Human Development pillar of the Qatar National Vision 2030. ”

Azzam Abdul Aziz Al-Mannai, Public Relations Manager.

## Sports related initiatives

Committed to making a contribution towards the human development pillar of QNV 2030, Qatargas continues to organise sporting activities and games in 2016.

Qatargas is sponsoring the country's reserve and second division football league, in partnership with the Qatar Football Association, for the past three years and counting. Now known as the Qatargas League, a total of 18 clubs participated in the 2015-16 season. The league title was earned by Muaither Sports Club this season. The League, which continues to generate excitement in the resident community, helps contribute towards the local development of football, and sporting activity in general, prior to the FIFA 2022 Football World Cup to be held by Qatar.

In support of national initiatives to promote health and wellbeing at the community level, Qatargas organised a wide variety of activities for the Qatar National Sports Day in 2016. Over 4,000 employees and their families took part in activities ranging from football, sprinting, walking, cricket, volleyball, basketball, and many others. Those attending were able to conduct on-the-spot medical examinations, courtesy of the medical team, to determine their blood sugar levels, blood pressure, and body mass index to plan their fitness regimen for the day - and in the future.



We have also, over the years, been consistently investing in youth-level sports and non-electronic games to promote healthier alternatives for children to pursue in their spare time.

The third Qatargas Chess Championship, organised by the Qatar Chess Association and sponsored by Qatargas, saw 120 minors across the Middle East between the ages of six and 16 years take part in the intellectually stimulating competition over four days. Final top ten in the ranking table received prizes for their mastery of strategy and display of skill in this game.

Qatargas continued their sponsorship for the third year towards the Under-9 Ice Hockey Tournament organised by Qatar Minor Ice Hockey Association. The non-profit association is an amateur youth ice hockey league operated by volunteers since establishment in 2001. Teams taking part in the tournament, held at the Villagio Ice Rink, for the 2015-16 season had come from around the Middle East in addition to those based in Qatar.

Lastly, Qatargas also extended their support of the Junior Golf Programme in collaboration with the Qatar Golf Association. The programme has been supported by Qatargas for the past six years and offers golf training, course etiquette, and competitions to those enrolled. It also encourages talented young golfers to join the national team and represent Qatar.



Qatargas League



National Sports Day



Qatargas Chess Championship



Ice Hockey Tournament



Junior Golf Programme







## APPENDICES



## Appendix A- Report Scope and Boundaries

This report has been prepared in accordance with the GRI Standards: Core option. The GRI Standards is a globally recognised framework for reporting on an organisation's economic, social, and environmental performance. A GRI Index is included in Appendix B.

## How we Define Report Content

### Management approach for material topics

The following material issues were identified during the materiality processes conducted in 2016. Management approach for each material topic is presented in the table below, following the requirements of the GRI Standards.

Material topic	How Qatargas manages material topic (103-2-a)	The purpose of the management approach (103-2-b)	Existing policies, commitments, goals, targets, responsibilities, resources, grievance mechanisms, processes, programs, or initiatives related to material topic (103-2-c)	Evaluation of the management approach (mechanisms used for evaluation, evaluation results, any related adjustments to the management approach) (103-3)	Reason for omission in disclosing managing approach for material topic
<b>Energy Efficiency, Flaring and GHG Emissions</b>	Qatargas has defined and implemented an ambitious plan to minimise impact of its operations on the environment. At the forefront are measures undertaken to reduce flaring as one of measures leading to more efficient energy use, reducing flaring and GHG emissions.	Mitigating impact of flaring and other activities that lead to GHG emissions. Enhancing positive impact of energy efficiency measures on reducing GHG emissions.	Flare Management System	Flare Management System includes regular monitoring and reporting by Flare Management Teams in order to benchmark progress against flaring reduction targets set on an annual basis.	No
			JBOG project implementation	JBOG project operations are continuously monitored in terms of recovered boil-off gas and consequent reduction of GHG.	
			Promoting LNG as a cleaner marine fuel.	Evaluation of the management approach directed on promoting LNG as a cleaner marine fuel is undertaken via testing M-type Electronically Controlled - Gas Injection (ME-GI) technology in a pilot project and estimating its economic benefits.	
			Corporate target in reducing sweet gas flaring to 0.30% by 2020.	Qatargas monitors on a continuous basis the progress of the company in reaching its corporate target by 2020.	

Material topic	How Qatargas manages material topic (103-2-a)	The purpose of the management approach (103-2-b)	Existing policies, commitments, goals, targets, responsibilities, resources, grievance mechanisms, processes, programs, or initiatives related to material topic (103-2-c)	Evaluation of the management approach (mechanisms used for evaluation, evaluation results, any related adjustments to the management approach) (103-3)	Reason for omission in disclosing managing approach for material topic
<b>Qatarization</b>	In line with the national goal of developing highly qualified Qatari professionals, Qatargas has established targets on a corporate level corresponding to the Qatarization target suggested for Energy and Industry sector. Corporate human resources activities and programmes, as well as recruitment policies are aligned with the goal of reaching Qatarization targets.	Qatargas enhances the strategic direction set by the QNV 2030 and specified by Qatar NDS 2011 - 2016 to establish national human capital that is able to develop Qatar's economy in a sustainable manner and to increase the share of qualified Qatari nationals in the workforce.	Qatargas has programmes dedicated to the recruitment of Qatari graduates and professionals; programmes of professional development for Qatari employees and trainees within the company, and scholarship programmes.	Qatargas continuously monitors success of various programs and introduces adjustments and new programs in accordance with the latest international trends in the field of human resources development.	No
			Corporate target of Qatarization is 50% by 2030.	Qatargas monitors on a continuous basis the progress of the company in reaching its corporate target by 2030, and introduces corresponding adjustments in the Company's strategy directed on attracting and developing Qatari workforce talents.	
<b>Efficient and reliable operations</b>	Qatargas ensures safe production with minimum interruptions, providing a continuous revenue stream and satisfying customer needs. Resource management is at the heart of Qatargas' operational philosophy.	Qatargas sustains efficient use of resources and ensures reliable operations that lead to stable production at minimum possible cost.	Efficient and Reliable Operations is one of the of the corporate Vision pillars. Within this pillar, Qatargas establishes 2020 targets for: - Reliability: 98.4%; - Availability: 95.7% - Utilisation: 88.0% - Unit Cost: 12.0 USD/tonne of saleable product.	KPIs related to corporate targets of Reliability, Availability, Utilisation, and Unit Cost are tracked on an annual basis. Corresponding adjustments in the technical and operational management of the production processes are introduced in accordance with the progress made fulfilling 2020 Vision targets.	No
<b>Customer Satisfaction</b>	Qatargas adopts innovative approaches in delivering our products to customers in order to stay ahead of our competition.	Maintain the status as the world's largest LNG supplier by providing reliable and timely supplies of LNG and associated products that correspond to the quality requirements of our customers.	In addition to providing the highest quality of products in accordance with international standards, Qatargas is actively developing innovative ways of delivering its products to customers such as its multiport delivery system.	Qatargas tracks the level of customer satisfaction through customer survey.	No
			Customer Satisfaction is one of the corporate Vision pillars. Qatargas established the following targets for 2020 in relation to this pillar: - 0 late deliveries - 0 off-spec deliveries - 0.50 million tonnes of smaller volume cargos supplied as niche LNG segments.	Qatargas continuously monitors KPIs related to Customer Satisfaction pillar in order to make sure they are aligned with the Vision targets.	

Material topic	How Qatargas manages material topic (103-2-a)	The purpose of the management approach (103-2-b)	Existing policies, commitments, goals, targets, responsibilities, resources, grievance mechanisms, processes, programs, or initiatives related to material topic (103-2-c)	Evaluation of the management approach (mechanisms used for evaluation, evaluation results, any related adjustments to the management approach) (103-3)	Reason for omission in disclosing managing approach for material topic
<b>Financial Performance</b>	With low oil prices (that also impact gas prices), Qatargas - as The World's Premier LNG Company - sustains its financial performance by efficiently managing its assets and natural gas resources of Qatar.	As one of the largest contributors to Qatar's economy, Qatargas' financial returns provide a significant contribution to the nation's development. It is of material importance for Qatargas, as well as its stakeholders, to effectively ensure stable financial performance of the company.	Omitted (see last column)	Omitted (see last column)	1. Confidentiality constrains: Qatargas is a non-publicly listed company and is thereby not required to publicly disclose its financial performance. 2. Specific legal prohibitions: Given that the Government of Qatar owns most of the company, full approval from the government and all shareholders is required for public financial disclosure.
<b>Local supply chain development</b>	Qatargas gives preference to local suppliers provided they offer their services on-par with international service providers when it comes to quality and price.	Procurement from local suppliers contributes to the development of Qatar's economy by stimulating activity across the nation.	Qatargas adopts open tenders for its contracts and procurement needs in order to maximise opportunities for local participation.	Evaluation of supply and procurement practices is done in accordance with internal supply management policy, and taking into account internationally recognised best practices (such as those required for receiving certification from the Chartered Institute of Procurement and Supply (CIPSS)).	No
			On an occasional basis Qatargas organises large forums for local contractors where direct communication with local companies and financial institutions is facilitated.	As a result of feedback received during Contractors' Forums, Qatargas adopts numerous improvements in the supply management process.	
<b>Contributing to Qatar National Vision (QNV) 2030</b>	Qatargas' operational strategy is in congruence with QNV 2030 pillars, where we establish objectives and targets that would bring maximum contribution from the Company's side to the attainment of QNV 2030 objectives.	Being the world's largest LNG supplier, Qatargas sustains its role in the national economic development. The company has considerable impact on the successful attainment of goals outlined under four pillars of the QNV 2030: human, social, economic, and environmental.	Qatargas' operational strategy establishes targets to be reached by 2020 (and Qatarization target to be reached by 2030), whose fulfillment will contribute to the objectives established by QNV 2030.	Qatargas continuously monitors KPIs related to the targets of the corporate Vision 2020.	No

## Stakeholder Inclusiveness

As captured in Appendix C, we have identified and considered our key stakeholders, and we have outlined throughout the report how the company engages them, identifies their priorities, and responds to the issues raised by them.

## Sustainability Context

As much as possible, we have tried to set the report content within the sustainability context of Qatar and the region. The most significant element of this is the influence of the Qatar Energy and Industry Sector Sustainability (QEISS) Programme, the Qatar National Vision 2030, and National Development Strategy 2011-2016. Whenever possible, Qatargas performance has been placed in comparison to sector performance or national goals set out in these frameworks.

## 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 2; Ras Laffan Terminal Operations (RLTO - the storage and loading facilities located at Ras Laffan port), as well as transportation activities to and from Qatar by our LNG ships. Qatargas activities and facilities outside Qatar are excluded from the scope of this report. Contractors, suppliers and clients' data are not included in this report unless otherwise stated. Qatargas does not publish an annual financial report.

## How we Ensure Quality and Relevance

### Balance

The report aims to present a balanced and unbiased picture of Qatargas. Data presented shows both positive and negative performance, with an explanation of both.

### Comparability

Whenever possible we have presented four or more years of performance data in order to determine trends and trajectory on material issues.

### Accuracy and Reliability

The data and information presented in this report has gone through an interactive review process to catch any potential inaccuracies, with an external consultant conducting a limited logic and context based review. Internal auditing of systems and processes used to measure performance has been conducted.

In a limited number of cases we have had to restate data presented in our 2015 Sustainability Report. Reasons for any restatements are clearly noted in the relevant sections of the report.

Quantitative data disclosed in the report originates from various sources:

- Economic data is extracted from our finance IT system;
- Production data originates from our production database;
- Workforce data is 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. Our EDMS is also now providing an increasing amount of data and information.

## Timeliness

Due to progressive involvement of a larger circle of internal stakeholders in the preparation of the Report, an extended period of time was necessary to complete an extensive consultation and verification process due to the complexity of Qatargas as an organisation. Nevertheless, the publication time should give us the opportunity to engage external stakeholders with a document that is relevant and timely.

## Clarity

The report has been developed in a way that caters to the various users of the report. Clear signposting of content is provided throughout the report, and additional information is also marked for those requiring additional information. The report has also been translated into Arabic.

## Cautionary Statement

The report contains forward-looking statements. All statements, other than statements of historical fact, are or may be deemed to be forward-looking statements. Forward-looking statements involve known and unknown risks and uncertainties that could materially affect expected results of operations, cash flows, and business prospects, because they relate to events and depend on circumstances that will or may occur in the future. Although every effort has been made to ensure the accuracy of these statements, readers should not place undue reliance on forward-looking statements which speak only as of the date of this report.

## Appendix B- GRI Content Index

GRI Standard	Disclosure	Page number(s) and/or URL(s)	Omission
<b>GRI 101: Foundation 2016</b>			
<b>General Disclosures</b>			
<b>GRI 102: General Disclosures 2016</b>	<b>Organisational profile</b>		
	102-1 Name of the organisation	19	
	102-2 Activities, brands, products, and services	19, 23, 24	
	102-3 Location of headquarters	17	
	102-4 Location of operations	17	
	102-5 Ownership and legal form	19	
	102-6 Markets served	24, 25	
	102-7 Scale of the organisation	17, 24, 25, 51	
	102-8 Information on employees and other workers	51, 68. Information not-applicable on 102-8-d. The boundary of related material topic is beyond Qatargas.	
	102-9 Supply chain	17	
	102-10 Significant changes to the organisation and its supply chain	19, 23	
	102-11 Precautionary Principle or approach	6, 21, 30, 34	
	102-12 External initiatives	2, 10, 32, 33, 35, 36, 39, 40, 47, 48, 49, 52, 59-61, 62, 64, 65	
	102-13 Membership of associations	2, 40, 47, 48, 60, 62, 64, 65	
	<b>Strategy</b>		
	102-14 Statement from senior decision-maker	6	
	102-15 Key impacts, risks, and opportunities	6, 11, 20, 23-25, 32, 39, 40-42, 43, 47, 52, 59, 73, 74	
	<b>Ethics and integrity</b>		
	102-16 Values, principles, standards, and norms of behavior	21	
	<b>Governance</b>		
	102-18 Governance structure	19-20	
	<b>Stakeholder engagement</b>		
	102-40 List of stakeholder groups	16, 74, 75	
	102-41 Collective bargaining agreements	0% as collective bargaining is not recognised in the State of Qatar	
	102-42 Identifying and selecting stakeholders	16, 74	
	102-43 Approach to stakeholder engagement	74	
	102-44 Key topics and concerns raised	74-75	
	<b>Reporting practice</b>		
	102-45 Entities included in the consolidated financial statements	19, 20	
	102-46 Defining report content and topic Boundaries	13, 67-69	
	102-47 List of material topics	13, 14, 15, 67, 68	
	102-48 Restatements of information	68	
	102-49 Changes in reporting	14-15	
	102-50 Reporting period	2	



GRI Standard	Disclosure	Page number(s) and/or URL(s)	Omission
<b>GRI 101: Foundation 2016</b>			
<b>General Disclosures</b>			
<b>GRI 102: General Disclosures 2016</b>	102-51 Date of most recent report	2016 Sustainability Report	
	102-52 Reporting cycle	2	
	102-53 Contact point for questions regarding the report	2	
	102-54 Claims of reporting in accordance with the GRI Standards	2	
	102-55 GRI content index	71 - 73	
	102-56 External assurance	No external assurance was conducted	
<b>Material Topics</b>			
<b>GRI 200 Economic Standard Series</b>			
<b>Economic Performance</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	14, 23	
	103-2 The management approach and its components	103-2-a: 69 103-2-b: 69 103-2-c is omitted	Omitted for the following reasons:  1. Confidentiality constrains: Qatargas is a non-publicly listed company and is thereby not required to publicly disclose its financial performance.  2. Specific legal prohibitions: Given that the Government of Qatar owns most of the company, full approval from the government and all shareholders is required for public financial disclosure.
	103-3 Evaluation of the management approach	Omitted	
<b>GRI 201: Economic Performance 2016</b>	201-2 Financial implications and other risks and opportunities due to climate change	41 <sup>1</sup>	
	201-4 Financial assistance received from government	None received	
<b>Market Presence</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	13	
	103-2 The management approach and its components	68	
	103-3 Evaluation of the management approach	68	
<b>GRI 202: Market Presence 2016</b>	202-2 Proportion of senior management hired from the local community	52	
<b>Procurement Practices</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	15	
	103-2 The management approach and its components	69	
	103-3 Evaluation of the management approach	69	
<b>GRI 204: Procurement Practices 2016</b>	204-1 Proportion of spending on local suppliers	26	

<sup>1</sup> Disclosure 201-2 is reported in accordance with the GRI Oil and Gas Sector additions for correspondent Disclosure G4-EC2.

GRI Standard	Disclosure	Page number(s) and/or URL(s)	Omission
<b>GRI 300 Environmental Standard Series</b>			
<b>Energy</b>			
<b>GRI 103: Management Approach 2016</b>	103 -1 Explanation of the material topic and its Boundary	13	
	103 -2 The management approach and its components	67	
	103 -3 Evaluation of the management approach	67	
<b>GRI 302 -1</b>	Energy consumption within the organisation	40	
<b>GRI 302 -3</b>	Energy intensity	40	
<b>GRI 302 -4</b>	Reduction of energy consumption	40, 41	
<b>Emissions</b>			
<b>GRI 103: Management Approach 2016</b>	103 -1 Explanation of the material topic and its Boundary	13	
	103 -2 The management approach and its components	67	
	103 -3 Evaluation of the management approach	67	
<b>GRI 305 -1</b>	Direct (Scope 1) GHG emissions	42	
<b>GRI 305 -2</b>	Energy indirect (Scope 2) GHG emissions	42	
<b>GRI 305 -3</b>	Other indirect (Scope 3) GHG emissions	42	
<b>GRI 305 -4</b>	GHG emissions intensity	42	
<b>GRI 305 -5</b>	Reduction of GHG emissions	42 <sup>2</sup>	
<b>GRI 400 Social Standard Series</b>			
<b>Local Communities</b>			
<b>GRI 103: Management Approach 2016</b>	103 -1 Explanation of the material topic and its Boundary	13	
	103 -2 The management approach and its components	69	
	103 -3 Evaluation of the management approach	69	
<b>GRI 413 -1</b>	Operations with local community engagement, impact assessments, and development programs	53, 59	
<b>Customer Health and Safety</b>			
<b>GRI 103: Management Approach 2016</b>	103 -1 Explanation of the material topic and its Boundary	14	
	103 -2 The management approach and its components	68	
	103 -3 Evaluation of the management approach	68	
<b>GRI 416 -1</b>	Assessment of the health and safety impacts of product and service categories	25, 35	
<b>Oil and Gas Sector Disclosures</b>			
<b>Asset Integrity and Process Safety</b>			
<b>GRI 103: Management Approach 2016</b>	103 -1 Explanation of the material topic and its Boundary	14, 25	
	103 -2 The management approach and its components	68	
	103 -3 Evaluation of the management approach	68	
<b>OG13</b>	Number of process safety events, by business activity	33, 34	

<sup>2</sup> Disclosure 305 -5 is reported in accordance with the GRI Oil and Gas Sector additions for correspondent Disclosure G4-EN19.

## Appendix C- Stakeholder Map

The stakeholder groups identified below were selected to represent those entities, organisations, or peoples that are most affected by, or affect Qatargas most. The table below summarises the priorities of that stakeholder group, the methods used to engage stakeholders, and company's response to stakeholders' expectations.<sup>1</sup>

Stakeholders	Stakeholder Priorities	Engagement Method	Qatargas Response
<b>Shareholders</b>	<ul style="list-style-type: none"> <li>• Maintenance of safe and reliable operations</li> <li>• Process efficiency</li> <li>• Financial returns</li> <li>• Preserve Qatargas reputation as a reliable LNG supplier</li> <li>• Participation in local economic and social development</li> </ul>	<ul style="list-style-type: none"> <li>• Board and ExCom meetings</li> <li>• Annual shareholder market presentations</li> <li>• Shareholder meetings and discussions</li> <li>• Workshops to discuss opportunities for improvement</li> <li>• Shareholder relations</li> <li>• Official engagements - e.g. signings</li> <li>• Coordinated crisis communications</li> <li>• Liaison offices</li> <li>• Sponsorship collaborations</li> <li>• Qatargas contributions to QP Annual Report</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance with principles of transparency, ethical standards and good governance</li> <li>• Board meetings</li> <li>• Routine reports</li> <li>• Internal auditing</li> <li>• Strict SHE practices</li> <li>• Excellent standards of performance</li> <li>• Maximising Return on Investment</li> <li>• <b>Shareholders' audit</b></li> <li>• <b>Annual interview with shareholders in relation to strategy review</b></li> </ul>
<b>State of Qatar</b>	<ul style="list-style-type: none"> <li>• Management of natural resources</li> <li>• Contribution to quality of life</li> <li>• Environmental protection</li> <li>• Financial returns</li> <li>• Development of national talent</li> <li>• Compliance with regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Job creation</li> <li>• Participation in the Ministry of Energy's "Quality Qatarization Strategy"</li> <li>• Contribution through the activity of Qatar Petroleum</li> <li>• Coordinated <b>business continuity planning</b>, crisis planning and communications</li> </ul>	<ul style="list-style-type: none"> <li>• Alignment with State of Qatar 2030 Vision</li> <li>• <b>Participation in national recruitment campaigns (such as Hayakum)</b></li> <li>• Compliance with government regulations</li> <li>• Maximising profits</li> <li>• Commitment to Qatarization</li> <li>• Timely data reports for QP and government authorities</li> <li>• Routine SHE and sustainability reporting</li> <li>• Participation in national celebrations and functions</li> <li>• <b>Responsible use of resources</b></li> <li>• <b>Participation in annual Ministerial Technology/IT Disaster recovery exercises</b></li> </ul>
<b>Local Community</b>	<ul style="list-style-type: none"> <li>• Responsible business practices</li> <li>• Minimal environmental impacts</li> <li>• Employment opportunities</li> <li>• Safe operations</li> <li>• Development of national talent</li> <li>• Continuous engagement with local community</li> </ul>	<ul style="list-style-type: none"> <li>• Social investment programs</li> <li>• Membership of RLIC Community Outreach Program (COP)</li> <li>• Contribution to local community</li> <li>• Sponsorship of social events</li> <li>• Engagement with local authorities</li> <li>• Educational/employment opportunities</li> <li>• Business opportunities for local small businesses</li> <li>• Site visits</li> </ul>	<ul style="list-style-type: none"> <li>• Active social outreach and contributions</li> <li>• CSR compliance and initiatives</li> <li>• Participation in social events</li> <li>• Assistance to educational institutions</li> <li>• Environmental initiatives</li> <li>• Rewarding opportunities for local business partners</li> <li>• <b>Raising environmental and safety awareness among local communities</b></li> </ul>
<b>Employees</b>	<ul style="list-style-type: none"> <li>• Safe, secure and healthy working conditions</li> <li>• Competitive pay and benefits</li> <li>• Continuous career development</li> <li>• Open and transparent communications</li> <li>• No blame culture</li> <li>• Listening, supportive management</li> </ul>	<ul style="list-style-type: none"> <li>• Internal Communications Strategy (incl. Communication Values)</li> <li>• Interactive security announcements and safety exercises</li> <li>• <b>Incident &amp; Injury Free (IIF) Cards</b></li> <li>• <b>Periodic Medical Examination</b></li> <li>• <b>Food Safety Inspection at canteens</b></li> <li>• Regular departmental/team meetings</li> <li>• Qatargas_All Email</li> <li>• Website and portal</li> <li>• Objectives and Performance Appraisal System</li> <li>• Employee opinion surveys</li> <li>• Corporate newsletters - Pioneer</li> <li>• Town hall meetings</li> <li>• CEO Forums for Trainees and Graduates</li> <li>• Ask the CEO channel</li> <li>• CEO intranet address to new joiners</li> <li>• Employee/management self-service (Online)</li> <li>• HR Service Desk</li> <li>• Walk-in open clinics</li> <li>• Department away days</li> <li>• PR Spotlight</li> <li>• Monthly key messaging pack for managers</li> </ul>	<ul style="list-style-type: none"> <li>• Equal opportunities and fair treatment</li> <li>• Safe working conditions, promoting employee health and welfare</li> <li>• <b>Management support for safe working environment</b></li> <li>• Competitive salaries and rewards</li> <li>• Open and transparent communications</li> <li>• <b>Employee satisfaction survey</b></li> <li>• <b>Salary and benefits survey</b></li> <li>• HR policies promoting personal and professional development, engagement and empowerment</li> <li>• Training programs</li> <li>• Acceptable standards of accommodation</li> </ul>

<sup>1</sup> Information updates relatively to 2015 is highlighted in maroon.

Stakeholders	Stakeholder Priorities	Engagement Method	Qatargas Response
<b>Employees</b>		<ul style="list-style-type: none"> <li>• Quarterly key messaging pack for supervisors</li> <li>• Corporate welcome program</li> <li>• Lunch &amp; Learn sessions</li> <li>• Learning Community Day</li> <li>• Learning Souq</li> <li>• Premier Leadership Events (PLEs)</li> <li>• Long-Service Awards, Spot Awards, CEO Awards, Farewell Awards</li> <li>• Social platforms (National Sports Day, Social Clubs)</li> <li>• Updated Policies and Procedures</li> </ul>	
<b>Customers</b>	<ul style="list-style-type: none"> <li>• Reliable, timely supplies of LNG and associated products</li> <li>• Quality products</li> </ul>	<ul style="list-style-type: none"> <li>• Contracts and agreements</li> <li>• Country Liaison Offices</li> <li>• Regular meetings and site visits</li> <li>• Conference and exhibitions</li> <li>• Contractual arrangements</li> <li>• Signing ceremonies</li> <li>• General publications</li> <li>• Material Safety Data Sheets (MSDS)</li> </ul>	<ul style="list-style-type: none"> <li>• Global customer relations</li> <li>• Regular, responsive dialogue</li> <li>• Customer satisfaction surveys</li> <li>• Production of quality products</li> <li>• Reliable supplies</li> <li>• On-time products loading</li> <li>• Provision of excellent logistics and services</li> </ul>
<b>Contractors / Suppliers</b>	<ul style="list-style-type: none"> <li>• Fair contract bidding/awarding</li> <li>• On time payment</li> <li>• Good working conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Website</li> <li>• Contractual arrangements and bidding/ tendering process</li> <li>• Day to day liaison</li> <li>• Prequalification meetings</li> <li>• Third-party endorsement</li> <li>• Safety communications and related initiatives (e.g. Incident &amp; Injury Free (IIF), Safety Training Observation Program (STOP), Hydration...)</li> <li>• Medical inspections</li> </ul>	<ul style="list-style-type: none"> <li>• Ethical standards</li> <li>• Fair bidding and awarding process</li> <li>• Effective contractor management</li> <li>• Payment process improvement initiatives (Vendor Invoice Management, Contract Life Cycle Management)</li> <li>• Contractor monitoring to assure health and welfare compliance;</li> <li>• <b>Food Safety, Medical and Camp Inspection</b></li> <li>• <b>System directed on rewarding exemplary HSE practices among contractors</b></li> </ul>
<b>The Energy Industry</b>	<ul style="list-style-type: none"> <li>• Timely, responsible communication</li> <li>• Information/Data sharing</li> <li>• Synergies in cooperation</li> </ul>	<ul style="list-style-type: none"> <li>• Membership of official/global energy sector bodies</li> <li>• Conference and exhibitions</li> <li>• Energy-related publications</li> <li>• Delivery of technical papers</li> <li>• Sponsorship collaborations</li> <li>• Keynote speeches</li> <li>• Best practice sharing</li> <li>• Crisis management collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Data sharing and exchange</li> <li>• Ethical relationships</li> <li>• Synergy Charter with RasGas directed on common procurement</li> <li>• Agreement with Qatar Steel on ferrous and non-ferrous material recycling</li> </ul>
<b>The Media</b>	<ul style="list-style-type: none"> <li>• Strategic global media engagement</li> <li>• Timely access to accurate company information</li> <li>• Access to senior Company spokespersons</li> <li>• Speedy access to corporate locations/facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic global media engagement program</li> <li>• Communication plans</li> <li>• Press releases</li> <li>• Holding statements</li> <li>• Media tours</li> <li>• Press conferences and briefings</li> <li>• Fast fact sheets</li> <li>• Interviews</li> <li>• Round tables</li> <li>• Social media platforms</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledgeable company spokespersons</li> <li>• Accurate, regularly updated publicity</li> </ul>
<b>Non-Governmental Organisations (NGOs)</b>	<ul style="list-style-type: none"> <li>• Responsive communications</li> <li>• Contribution support to local NGOs</li> </ul>	<ul style="list-style-type: none"> <li>• Presentations/Briefings</li> <li>• Educational programs</li> <li>• NGO support strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Timely, accurate communications</li> <li>• Knowledgeable and responsive company spokespersons</li> </ul>
<b>Pupils / Students / Potential Employees</b>	<ul style="list-style-type: none"> <li>• Accurate accessible information about career opportunities</li> <li>• Compelling Employee Value Proposition (EVP)</li> <li>• Contribution to Educational Establishments</li> </ul>	<ul style="list-style-type: none"> <li>• Targeted recruitment campaigns</li> <li>• Donations to educational institutions</li> <li>• University endowments - Faculty Chairs</li> <li>• Scholarships</li> <li>• Internship opportunities</li> <li>• School outreach programs</li> <li>• Career fairs</li> <li>• Educational events</li> <li>• Participation in curriculum committees</li> <li>• Sponsored research activities</li> <li>• Guest lectures</li> <li>• Faculty visits/assignments</li> <li>• Student projects</li> </ul>	<ul style="list-style-type: none"> <li>• Dynamic, supportive relationships with educational/academic communities</li> <li>• Clearly differentiated and compelling EVP</li> <li>• Talent attraction and retention</li> <li>• Enhanced symbiosis between industry and academia</li> </ul>

## Appendix D- Glossary and Acronyms

BCM	Business Continuity Management
BSPD	Barrels Per Stream Day
CAP	Compliance Action Plan
CCL	Centre of Creative Leadership
CEMS	Continuous Emissions Monitoring Systems
CEO	Chief Executive Officer
CIPS	Chartered Institute of Procurement & Supply
CLPG	Common Liquefied Petroleum Gas
CNAQ	College of North Atlantic Qatar
COO	Chief Operating Officer
COP	Community Outreach Programme
CPI	Continuous Performance Improvement
CPSE	Centre for Public Safety Excellence
CSP	Common Sulphur Plant
CSR	Corporate Social Responsibility
CTO	Consent to Operate
CVOC	Common Volatile Organic Compound
DG	HSE Regulations and Enforcement Directorate
DHT	Diesel Hydrotreater
DHT	Diesel Hydro Treating
DOSS	Demand on Safety System
ECIC	Ethics and Conflict of Interest Committee
EDMS	Environmental Data Management System
EIA	Environmental Impact Assessment
e-IWTF	Electronic Internal Waste Transfer
EMS	Environmental Management System
EMS	Emergency Management Services
EPTW	Electronic Permit to Work
ERP	Emergency Response Plan
EU	European Union
EVP	Employee Value Proposition
FEED	Front End Engineering Design
FMT	Flare Management Teams
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GHG	Green House Gases
GJ	GigaJoules
GRI	Global Reporting Initiative
HACCP	Hazard Analysis Critical Control Point
HAZOP	Hazard Operational Analysis
HFO	Heavy Fuel Oil
HRSG	Heat Recovery Steam Generators
HVAC	Heating, Ventilation, and Air Conditioning
IDP	Individual Development Plan
IIF	Incident and Injury Free
IIFIA	Incident Injury Free In Action
IiP	Investors in People
IMT	Incident Management Team
IPIECA	International Petroleum Industry Environmental Conservation Association
ISO	International Organisation for Standardisation
ITP	Individual Training Plan
JBOG	Jetty Boil-off Gas Recovery Facility
JBOR	Jetty Boil-Off Gas Recovery
JVA	Joint Venture Agreement
KPI	Key Performance Indicator
LCA	Life Cycle Assessment

**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.

**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.

**LNG** - Natural Gas can be liquefied, e.g., at atmospheric pressure by cooling to about -160° C (-256° F). It consists of liquefied methane (C1) and ethane (C2) and sometimes includes propane (C3) and butane (C4).

**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.

**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.

**Recordable Injuries** is a sum of fatalities, lost-time injuries (LTIs), restricted work cases, and medical treatment injuries.

**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.



LDAR	Leak Detection and Repair
LMRA	Last Minute Risk Assessment
LNG	Liquefied Natural Gas
LOPC	Loss of Primary Containment
LP	Low Pressure
LPG	Liquefied Petroleum Gas
LR	Laffan Refinery
LSO	Learning Solution
LSR	Life Saving Rules
LTl	Lost Time Injury
LTIF	Lost-Time Injury Frequency
MBR	Membrane Bio-Reactor
ME-GI	M-Type Electronically Controlled - Gas Injection
METS 2015	Middle East Turbomachinery Symposium
MME	Ministry of Municipality and Environment
MMF	Multi-media Filtration
MRG	Monitoring and Reporting Guidelines
MSDS	Material Safety Data Sheets
MTA	million tonnes per annum
MW	Mega Watt
NGOs	Non-Governmental Organisation
NOx	Nitrogen Oxide
OHSAS	Certificate
OPCO	Qatargas Operating Company Limited
OPEC	Organisation of the Petroleum Exporting Countries
PM	Preventive Maintenance
PMP	Plateau Maintenance Project
PSE	Process Safety Event
QG	Qatar Gas
QGMS	Qatargas Management System
QNV 2030	Qatar National Vision
QP	Qatar Petroleum
RLIC	Ras Laffan Industrial City
RLTO	Ras Laffan Terminal Operations
RO	Reverse Osmosis
SEQ	Safety, Environment, Quality
SHE	Safety, Health, and Environment
SIL	Safety Integrity Level
SIPOC	Suppliers, Inputs, Process, Outputs, Customers process
SME	Small Medium Enterprise
SO2	Sulphur Dioxide
SPA	Sales and Purchase Agreement
SQW	Supervising the Qatargas Way'
SRU	Sulphur Recovery Unit
TDLC	Training and Development Liaison Committee
TPP	Technical Preparation Programme
TRI	Total Recordable Injury
TRIF	Total Recordable Injury Frequency
VIM	Vendor Invoice Management
VOC	Volatile Organic Compound
WBCSD	World Business Council for Sustainable Development
WMS	Waste Management System
WRI	World Resources Institute
WRR	Wastewater Reduction and Reuse

**Total Injuries** is a sum of total recordable injuries (TRIs) and first-aid cases.

**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.

