

Qatar Energy & Industry Sector

Sustainability Report 2011



Our Contribution to Qatar's Sustainable Development



About This Report

Welcome to the second Qatar Energy and Industry Sector Sustainability Report, developed by the Qatar Petroleum HSE Regulations and Enforcement Directorate (DG) responsible for the sector's Sustainable Development Industry Reporting (SDIR) Programme.

The report captures the sector's high level sustainability performance and describes activities and initiatives being implemented by individual companies. Most importantly, it presents the sector's progress towards achieving an accurate and consolidated measure of its economic, environmental and social impact.

The report has been developed in line with the GRI G3.1 sustainability reporting guidelines, GRI Oil and Gas Sector Supplement and the sector specific IPIECA voluntary reporting guidelines (as demonstrated in Appendix B). It has been reviewed by stakeholders including companies within the sector, external expert advisors, the DG and Qatar Petroleum (QP). Internal verification of the data presented in the report has been conducted by the individual companies involved in the programme. Verification processes will continue to be developed for future reporting years.

For further information about the SDIR programme and this report, please contact: Maheshkumar Patel, Team leader, SDIR Programme by phone: 40132599, email: patel@qp.com.qa

Front cover: New developments rise upward behind the Qatar Museum of Islamic Art, a reminder of Qatar's heritage as well as a guiding symbol of Qatar's investment in, and commitment to, culture, social development, and outreach to the world.

Qatar Energy and Industry Sector Sustainability Report 2011

Our Contribution to Qatar's Sustainable Development



His Highness
Sheikh Hamad Bin Khalifa Al Thani
Emir of the State of Qatar



His Highness
Sheikh Tamim Bin Hamad Bin Khalifa Al Thani
Heir Apparent of the State of Qatar

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Message from the Minister of Energy and Industry

It is my great pleasure to launch the second Qatar Energy and Industry Sector Sustainability Report in the year of COP 18 where Qatar has the distinguished honour of hosting negotiations under the United Nations Framework Convention on Climate Change. This report will showcase the sector's strong commitment to sustainable development, including many initiatives to reduce greenhouse gas emissions.



Qatar's Energy and Industry Sector in particular, is positioned as an energy leader that provides lower emission fuel to the global economy, while implementing economic diversification, Qatarization and environmental stewardship.

The Sustainable Development Industry Report (SDIR) Programme is a key mechanism for supporting the sector's implementation of sustainability and commitment to the State of Qatar. I am pleased with the significant improvement in the programme as the level of participation from the industry has increased substantially, from 17 companies in 2010, to 33 companies in 2011.

I am also delighted with the progress of this sector-wide report which showcases the sector's consolidated sustainability performance. In time, we will endeavour to promote high standards of

reporting across this diverse sector and support verification of performance data.

To encourage and recognize future report submissions, I am pleased to announce that we are launching the Sustainable Development Awards scheme for Excellence in Sustainability Reporting for Qatar's Energy and Industry Sector – 2011. This will recognize the most transparent and high quality reports submitted by companies that demonstrate a commitment to sustainability, performance and innovation.

To reaffirm my commitment and support to the SDIR Programme, I have decided the following:

- Make the scheme for the next reporting period mandatory for all the operators within the sector.
- All operators to comprehensively report their HSE and SD performance and evolve a 5-year strategy that incorporates continual improvement in this regard.
- The report shall be issued each year to the HSE Regulations and Enforcement Directorate who will have the responsibility to produce the Annual SD Report reviewing the overall sector performance and report its key findings to me.

The submission of reports from all companies operating within the sector will support both Qatar National Vision 2030 and the National Development Strategy 2011-2016.

I would also like to take the opportunity to present this report to the international audience of climate change delegates, highlighting our achievements, contribution and challenges towards tackling climate change.

I am delighted to recognize the collective effort of the companies who participated in the SDIR Programme this year and thank you for the commitment shown. I look forward to the coming annual cycle of further enhanced and comprehensive reporting.

H.E. Dr. Mohammed Bin Saleh Al-Sada
Minister of Energy and Industry
Chairman and Managing Director, Qatar Petroleum

Message from the HSE Regulations and Enforcement Directorate – DG

Welcome to the Qatar Energy and Industry Sector Sustainability Report 2011, the second such report to be produced by the sector capturing its collective response to the challenge of sustainable development.

As an annual output of the Sustainable Development Industry Reporting (SDIR) Programme, the report is an accumulation of 30 sustainability reports by the largest and most relevant companies within the sector, and includes data and input from 33 of the 36 companies invited to participate. This is nearly a doubling of reporting companies, up from 17 for the reporting year of 2010.



The SDIR programme continues to develop and we continue to advance the value of this sector-wide sustainability report. In addition to the major increase in reporting companies, notable improvements in this year's report include:

- Aggregation of performance data of reporting companies, sector and subsector analysis and, importantly, year-on-year performance comparisons wherever possible.
- Explicit alignment of sector level performance measures with the objectives and measures of the Qatar National Vision (QNV) 2030 and National Development Strategy (NDS) 2011-2016, thereby quantifiably capturing the contribution of the sector towards these national strategies.
- Being an effective tool for the Ministry and regulators to provide leadership, guidance and recommendations.

This year's report gives greatest emphasis to two high priority sustainability issues. First, safety, where the number of companies reporting on specific safety measures for both employees and contractors has improved significantly. Furthermore, the quality of the safety performance data is improving among many operators. Nonetheless, further effort and consistency is required both in terms of quality of data and coverage of contractor performance, and safety will continue to be a high priority focus area.

Second, the report focuses on the sector's climate change approach and performance. This is of particular timeliness as Qatar has the pleasure of hosting the

United Nations (UN) climate change conference (COP18/CMP8) in November 2012, coinciding with the launch of this report. As with safety, the quality of the data continues to improve, and even as the sector continues to expand its production rapidly, 2010 witnessed a growing number of companies reducing not only emissions per unit of production, but also their total emissions.

The report highlights a full range of other areas of improvement and opportunities for future enhancement. One such area of improvement relates to increased public reporting by individual companies in the sector, with reports utilizing international standards such as ISO, GRI, IPIECA and others to guide their reports. The number of publicly reporting companies in the sector looks set to double from four in reporting year 2010 to nine or more in reporting year 2011.

With the launch of the Sustainable Development Awards scheme for Excellence in Sustainability Reporting for Qatar's Energy and Industry Sector, we aim to continue driving improvements in the sector's reporting and performance on sustainability issues and adding value and contribution towards the Qatar National Vision 2030.

For the future we will continue to look for ways to raise the bar of the SDIR programme as a leading regional initiative that promotes increases in transparency, performance and improvement. As such for the 2012 reporting cycle, we aim to introduce a number of enhancements including:

- Development of an IT portal for online sharing of data and best practices.
- Creation of a sector-wide sustainable development policy and strategy.
- Production of additional guidance on the reporting priority areas for the 2012 reporting cycle (workforce health and well-being, and energy and water management).

I would like to take this opportunity to emphasize the commitment of the DG in facilitating this sector-wide initiative and to the production of the sector sustainability report on an annual basis.

Thank you to all of the companies who participated for their continuing commitment and involvement in the SDIR programme.

Saif S. Al-Naimi

Director
HSE Regulations & Enforcement Directorate (DG)

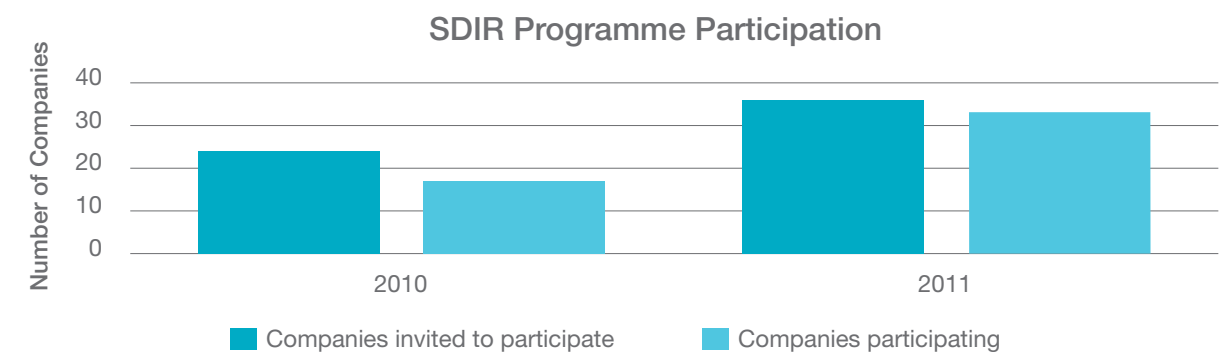
Executive Summary

In January 2010, under His Excellency the Minister of Energy and Industry's wise guidance, the Energy and Industry Sector of Qatar committed to annual sector-wide sustainability reporting as a way to develop a collective, coordinated and transparent approach to the challenges and opportunities posed by sustainable development.

The SDIR programme was originally launched as a voluntary initiative led by the Minister of Energy and Industry and has grown from 17 participants producing sustainability reports covering the reporting year 2010, to 30 in reporting year 2011. Now as a compulsory initiative under the guidance of the QP HSE DG, the programme has:

- Driven public reporting in Qatar by doubling the number of companies releasing GRI checked sustainability reports from four in reporting year 2010 to more than nine in reporting year 2011.
- Supported learning on sustainable development and management within the sector and among stakeholders.
- Provided a platform for sharing best practice among organisations across the sector.
- Helped to standardise the collection and consolidation of sector-wide data.
- Become an important tool for overseeing, monitoring and reviewing progress for effective decision making.

In 2011, thirty six companies, within eight subsectors, were invited to submit information for inclusion in the report. Thirty companies submitted a formal 2011 sustainability report to the DG, three submitted basic performance data, and three have not participated in the programme.



Purpose and Relevance of this Report

The purpose of this report is to present the progress being made in implementing the principles of sustainable development in the Qatar energy and industry sector through the SDIR programme.

The report provides information for use by the sector's stakeholders including government, the public, civil society, employees, shareholders, lenders, Qatar Petroleum and the operators themselves. As a source of timely and relevant data and information on the sector's sustainable development approach and practices, it will help inform and contribute to company, national, regional and international level decision and policy making.

This year's report has added relevance given the launch of Qatar's five-year National Development Strategy in 2011, which has enabled the sector to align its efforts to the national development approach and direction. A clear QNV, NDS and SDIR alignment map is included in the front of each chapter. The report has particular importance this year given Qatar's role as hosts of the 2012 UN Climate Change Conference (COP18/CMP8).

The Sector's Sustainability Performance

The SDIR programme framework encourages reporting on six priority areas and 31 performance indicators.

The Sustainable Development Industry Reporting (SDIR) Programme Framework

Climate Change	The Environment	Health and Safety	Workforce	Society	Economic Performance
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Below is a snapshot of the sector's 2011 performance across 11 selected SDIR programme indicators.

Focus area	Indicator	Number of companies reporting	As a % of invited companies	Total from reporting companies
Climate Change and Energy	Total GHG emissions (direct and indirect) (Tonnes CO ₂ e)	24	86%	85 million
	Total flaring (MMSCM)	16	76%	5,364
The Environment	Total water consumed (Million m ³)	21	62%	5,885
	Significant oil spills (> one barrel)	26	81%	10
Health and Safety	Employee fatalities	33	92%	1
	Contractor fatalities	32	89%	2
Workforce	Workforce size	30	83%	32,108
	Qatarization (%)	28	80%	24%
Social	Total social investment budget (USD)	17	47%	97 million
Economic Performance	Revenues (USD)	16	44%	90 billion
	Number of new jobs created	24	67%	301

The voluntary nature of the programme has generated innovation and enthusiasm in the approaches to reporting, it has also resulted in a range of challenges in terms of aggregating sector performance. Where possible, data has been consolidated to show sector-wide performance, subsector performance, average performance per company for the sector, and weighted averages. For each measure presented within the report, clarifications regarding the coverage and consistency of measurement techniques are provided. In future, as fuller reporting is conducted, these challenges related to data completeness and consistency will subside.

Future Direction

Several developments related to the SDIR programme are scheduled for implementation in 2013 including:

- Creation of a sector-wide sustainable development policy and strategy.
- Reporting becoming a mandatory requirement, as per the Ministry for Energy and Industry, for all participants invited to join the SDIR programme, as part of a five year strategy to ensure continual improvement.
- Development of an IT portal for online sharing of data and best practices.
- Updating the SDIR guidelines for reporting, as required.
- Further encouragement and support for companies to develop assurance relating to their reports and to make reports available to the public.
- Expansion of the SDIR awards from just awards for excellence in reporting, to awards recognising progressive sustainability performance.

Context of the SDIR Programme

“We encourage industry, interested governments as well as relevant stakeholders with the support of the UN system, as appropriate, to develop models for best practice and facilitate action for the integration of sustainability reporting”.

“Paragraph 47: The Future We Want: Outcome document adopted at Rio +20 - United Nations Conference on Sustainable Development”

International Context

Given the changes to our climate, rapid population growth and continuing economic challenges, it is widely accepted that the world needs to move towards a more sustainable way of living.

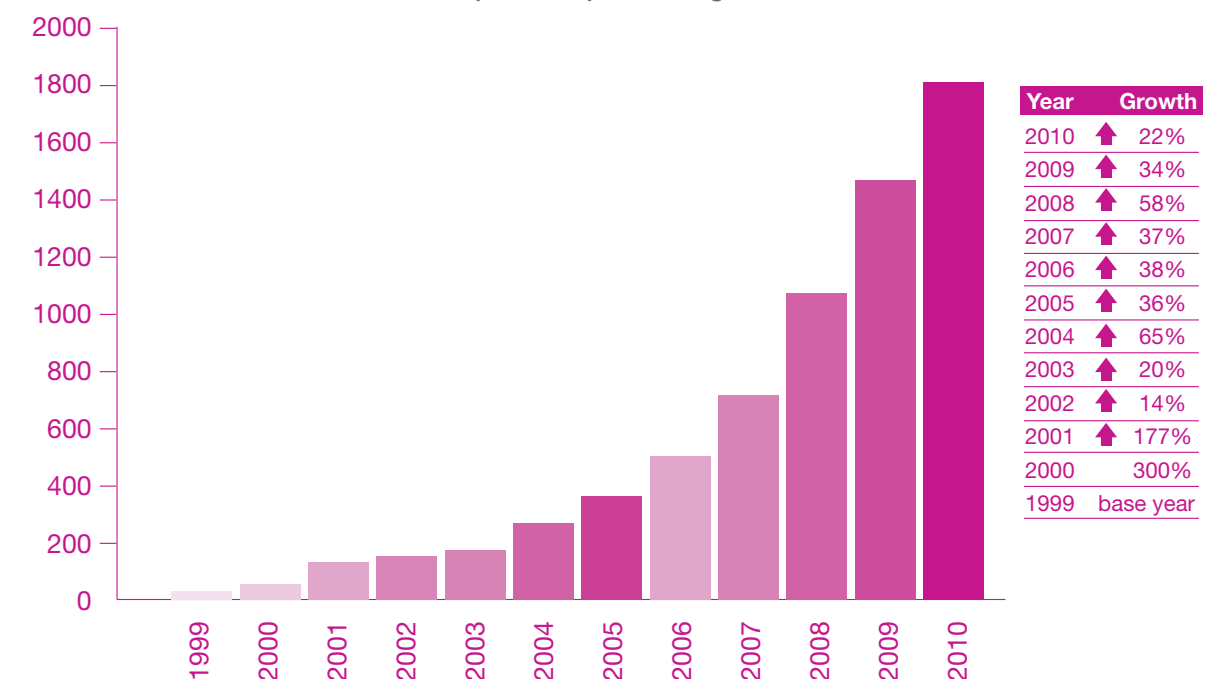
As a provider of natural gas and LNG to the world, Qatar has an important role to play in this, contributing the energy needed for development within a lower-carbon future. While the hydrocarbon industry has been the engine of economic growth in Qatar, there is clear recognition in Qatar, and internationally, of the need for substantive action on climate change and broader environmental stewardship. The COP18 conference in Doha in 2012 represents a further step in the international journey towards tackling climate change, seeking to reach a binding agreement on greenhouse gas emission reductions by all countries.

Transparency through reporting is increasingly being recognised as an important driver of improved sustainability performance in the public and private sectors. This trend has been recently reinforced by the “*The Future We Want: Outcome document adopted at Rio +20*” paragraph 47 which states:

We encourage industry, interested governments as well as relevant stakeholders with the support of the UN system, as appropriate, to develop models for best practice and facilitate action for the integration of sustainability reporting.

Internationally, corporate reporting has been increasing rapidly as demonstrated by the take up of international reporting guidelines such as the Global Reporting Initiative (GRI). According to the GRI, the number of sustainability reports issued using its framework has grown by 22% between 2009 and 2010.

Corporate reports using GRI




National Context

The Qatar National Vision launched in 2008 sets a long term direction for 2030. The vision foresees Qatar becoming a country capable of sustaining its own development and providing a high standard of living for its people for generations to come. Based on the principles of sustainable development, it sets out desired outcomes founded on four developmental pillars: Human, Social, Economic and Environmental.



Human Development

Development of all its people to enable them to sustain a prosperous society.




Social Development

Development of a just and caring society based on high moral standards, and capable of playing a significant role in the global partnership for development.



Economic Development

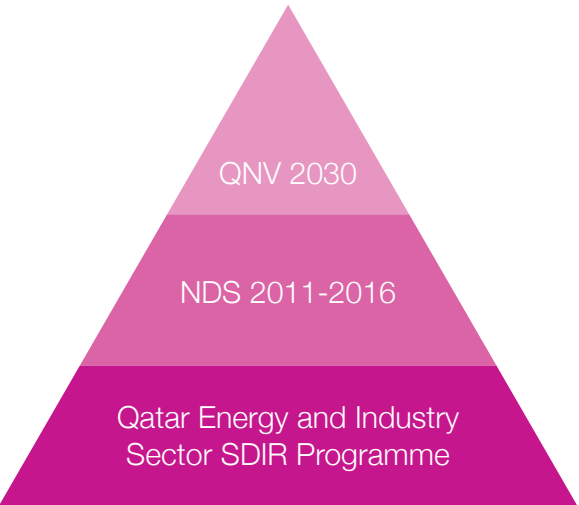
Development of a competitive and diversified economy capable of meeting the needs of, and securing a high standard of living for, all its people for the present and for the future.



Environmental Development

Management of the environment such that there is harmony between economic growth, social development and environmental protection.

The Qatar National Development Strategy (NDS), issued in 2011, provides clear actions and outcomes to be implemented between 2011 and 2016. It has been based on 14 sector strategies aligned clearly with the QNV four pillars, together with a fifth priority area for the development of modern public sector institutions.



It is the responsibility of each sector to implement programmes and practices that will contribute towards achieving these goals. Through the SDIR programme, the Energy and Industry Sector is building a framework that will show clear and measureable alignment and contribution to achieving the QNV and NDS goals. At the beginning of each chapter of this report, the SDIR alignment pyramid will show how the SDIR measures and performance align with the NDS and QNV. The outcomes and targets from the QNV and NDS included in the diagrams are not exhaustive and will be updated on an annual basis.

Other major developments directly related to transparency and reporting include the setting up of the Administrative Control and Transparency Authority to scrutinise the activities of government-linked agencies and spending of public finances, with a view to removing all barriers to Qatar being one of the world's top ten transparent countries.



Qatar's Energy and Industry Sector Context

The State of Qatar has a clear overarching industrial strategy that consists of achieving the following objectives:

- Use of natural and intermediate resources to the highest possible levels to maximize value addition.
- Diversifying income sources, especially industrial development as the second mainstream of the Qatar economy.
- Increasing the contribution of manufacturing industries to Gross National Product.
- Disseminating industrial awareness, to enable and expedite sustainable industrial development and self-reliance, assimilating scientific and technological advancements, and hence becoming more able and better adapted to export market requirements, on the way to developing a semi-industrialized society, which maintains local values and traditions.
- Contributing to global environmental protection pursuant to the 1997 Kyoto Protocol, and to international economic stability by securing a sizeable portion of long-term supplies of cleaner energy from liquefied natural gas.



The Ministry of Energy and Industry

Under the stewardship of His Excellency Dr. Mohammed Bin Saleh Al-Sada the Ministry of Energy and

Industry works to ensure optimum use of Qatar's natural resources by providing a positive climate for private national and foreign industrial investments. Ultimately the Ministry is working to secure the country's prosperity by establishing ultra-modern infrastructure capable of servicing and responding to the country's future needs, challenges and ambitions.



Qatar Petroleum

Qatar Petroleum (formerly known as Qatar General Petroleum Corporation) was founded in 1974. It is a nationally-owned

establishment responsible for all aspects of the oil and gas industry in the State of Qatar.

The principal activities of Qatar Petroleum and its subsidiaries and joint ventures include oil and gas exploration, drilling and production operations, the shipment, export and sale of crude oil, liquefied natural gas, natural gas liquids, gas-to-liquids, refined oil products, petroleum additives, petrochemicals, fertilizers, steel, chartering helicopters, insurance and other services. For further detailed information on QP's operations and investments, please see page 125.



The QP HSE Regulations and Enforcement Directorate (DG)

The QP HSE Regulations and Enforcement Directorate (DG) acts as the focal point for the energy and industry sector on all HSE and sustainability related matters. The Directorate is responsible for the following tasks as stated in Decision (5) of 2005 made by the Chairman of the Board of Directors of QP:

1. Assessing treaty provisions and providing guidance on the ratification and/or adoption by the state of Qatar.
2. Developing regulations, including administrative measures for implementation purposes.
3. Monitoring implementation for compliance purposes.
4. Developing and implementing enforcement measures to avoid penalties and/or sanctions on the State of Qatar, if applicable.
5. Safeguarding Qatar's social and economic development while eliminating or minimizing negative impact on the industry.
6. Promoting and monitoring sustainable and clean development.
7. Supporting awareness in the industry and among the public.
8. National capacity building, including training.

In support of many of these tasks, the DG has developed the SDIR programme on behalf of QP and the sector at large.

The Subsectors and Companies

The 2011 SDIR programme includes some of the largest and most influential companies in Qatar's Energy and Industry sector. The 36 companies invited to participate represent eight subsectors. For more information on each company, please see page 129.

Liquid Natural Gas/Natural Gas – the State of Qatar is the biggest LNG producer in the world with a production capacity of 77 million tonnes per annum (MTA).

Dolphin Energy | Qatargas | RasGas

Oil and Gas (E&P) – national and international exploration and production companies including Qatar Petroleum, the largest company in Qatar.

Gulf Drilling International (GDI) | Maersk Oil Qatar A/S (Maersk) | Occidental Petroleum of Qatar (OPQL) | Qatar Petroleum (QP) | Qatar Petroleum Development Co. Ltd (QPD) | TOTAL E&P Qatar (Total) | Wintershall Holding GmbH Qatar

Refining – covers conversion of natural gas into gas-to-liquids (GTL) products. Includes the recently commissioned world's largest GTL plant.

ORYX GTL Ltd | Qatar Shell Service Co. WLL.

Petrochemicals – includes the region's first petrochemicals company and the world's largest single-site producer of urea.

Qatar Chemicals Company Ltd (Q-Chem) | Qatar Fertilizer Company (QAFCO) | Qatar Fuel Additives Company Ltd (QAFAC) | Qatar Jet Fuel Company (QJet) | Qatar Lubricants Company Ltd (QALCO) | Qatar Petrochemical Company (QAPCO) | Qatar Vinyl Company Ltd (QVC) | Qatofin Company Limited (QATOFIN) | Ras Laffan Olefins Company (RLOC) | SEEF Limited

Power and Utilities – covers all of Qatar's electricity producers and water desalination plants.

Mesaieed Power Company Ltd (M Power) | Qatar Electricity and Water Company (QEWCo) | Qatar Power Company (Q-Power) | Rasgirtas Power Company (RGPC) | Ras Laffan Power Company (RLPC)

Mining, Minerals and Other – covers the production of steel, aluminium and cement.

Qatar Aluminium (QATALUM) | Qatar National Cement Company (QNCC) | Qatar Steel

Transport, Storage and Distribution – includes the largest LNG shipping company in the world.

Qatar Fuel Company (WOQOD) | Qatar Gas Transport Company Ltd (NAKILAT) | Qatar Shipping Company (Q-Ship)

Support Services – includes a range of international partners that provide support services to the sector as a whole.

ConocoPhillips Ltd | ExxonMobil Qatar | Saipem Qatar

The Sustainable Development Industry Reporting (SDIR) Programme Overview

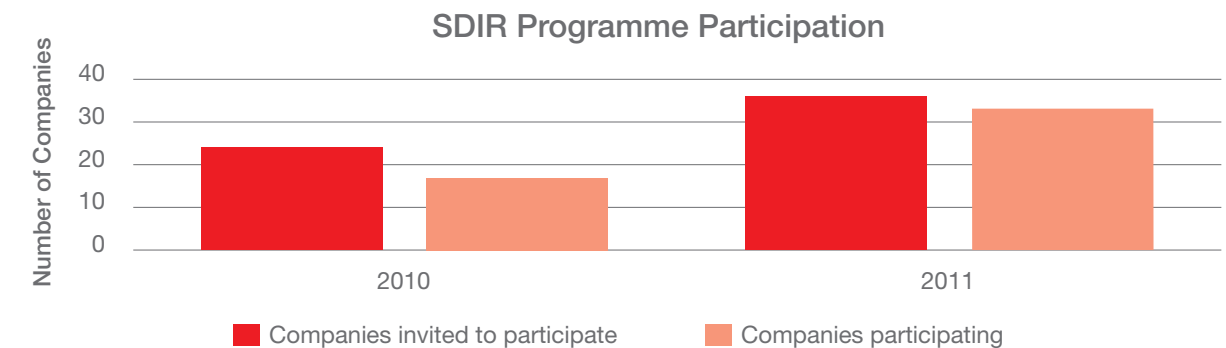
The SDIR programme was initiated by the DG in 2010 on behalf of Qatar's energy and industry sector to help develop an integrated and industry-wide approach to sustainable development, using the tool and discipline of sustainability reporting.

The goal of the SDIR programme is to:

- Track the economic, environmental and social performance and impact of the sector.
- Harmonize and strengthen health, safety and environment (HSE) and sustainability reporting across all companies.
- Be a mechanism for identifying industry sustainability challenges, engaging with stakeholders, and achieving performance gains through addressing these challenges.
- Build capacity and knowledge.
- Acknowledge leadership and best practice.

Participation in the Programme

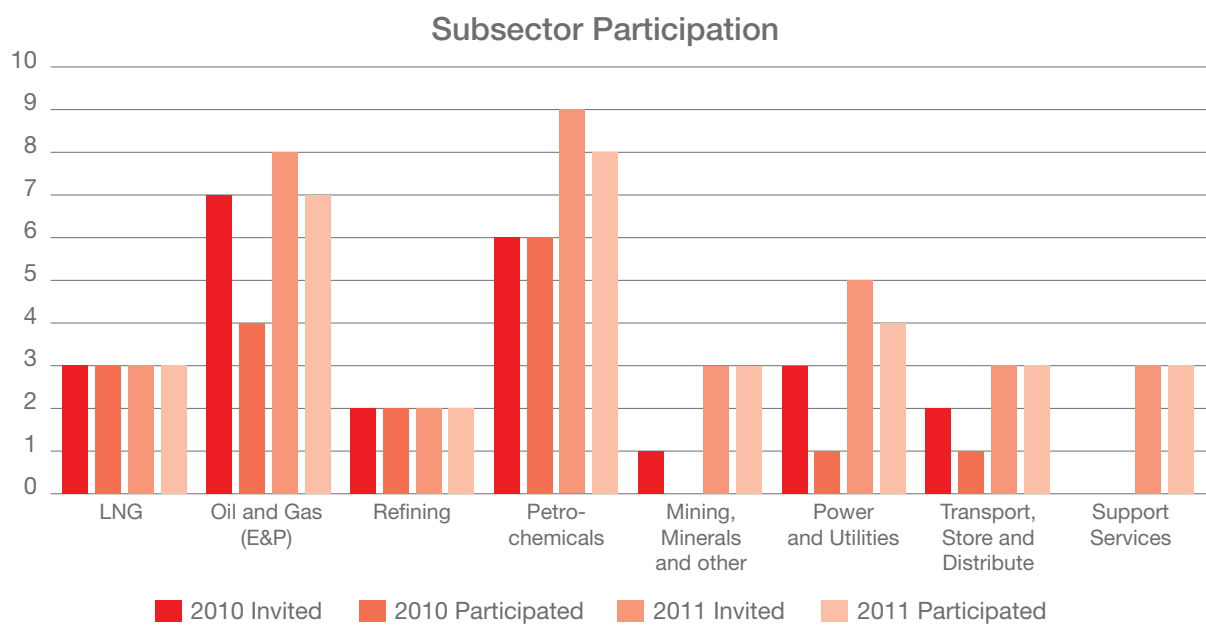
The number of companies from the sector invited to participate in the programme in 2011 and the number of companies preparing and submitting a sustainability report or specific sustainability data has increased significantly in 2011 to 92%.



SDIR Programme Participation

	2010	2011
Companies invited to participate	24	36
Companies submitting a sustainability report	17	30
Companies submitting sustainability data	0	3
% companies submitting either report or data	71%	92%

Subsector participation has also increased, with at least two companies reporting from each subsector in 2011.



The SDIR programme strives to deliver continuous improvement in reporting by all companies involved. To improve quality, emphasis is placed on the use of international guidelines, internal and external assurance of data, as well as the public disclosure of reports in an effort to encourage companies to hold themselves open to account to their stakeholders.



SDIR Programme Quality

	2010	2011
Companies invited to participate	24	36
Companies releasing public sustainability reports	4 (17%)	9 (25%)
Companies submitting a report to the DG	17	30
Reports submitted that have been released to the public	4 (24%)	9 (30%)
Reports submitted that have been GRI checked	3 (18%)	7 (23%)
Reports submitted that include an IPIECA index	4 (24%)	8 (27%)
Reports that have been third-party verified	1 (6%)	1 (4%)

The sustainability reports prepared by the companies in 2011 showed that more reports are being released to the public and more extensive use is being made of GRI and IPIECA reporting guidelines. Work on data quality and consistency will develop in future, driven in part by more comprehensive systems of internal control. The provision of external assurance to provide an independent statement relating to report content is at present practiced by just one company. Emphasis will be placed on increasing the adoption and sophistication of assurance approaches in the years ahead, in line with best international practice.

SDIR Programme Framework

The report has been prepared using the SDIR framework created in 2012 which is based on specific reporting guidance created by the DG, in addition to general international guidance on sustainability reporting and sector specific guidelines, including:

- The GRI (Global Reporting Initiative) G3.1 “Sustainability Reporting Guidelines and Oil and Gas Sector Supplement”.
 - The IPIECA (The global oil and gas industry association for environmental and social issues),
- API (American Petroleum Institute) and OGP (Association of Oil and Gas Producers) “Oil and Gas Industry Guidance on Voluntary Sustainability Reporting 2010”.
 - DG “Guidelines on Sustainability Reporting for Energy and Industry Sector 2010”.

The Sustainable Development Industry Reporting (SDIR) Programme Framework

Climate Change	The Environment	Health and Safety	Workforce	Society	Economic Performance
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For the 2011 reporting cycle, a specific focus was placed on the topics of climate change and safety. The DG developed two additional guidance documents to help improve reporting on those areas including:

- “Guidance Report on Climate Change Strategy and SDIR 2011 for the Energy and Industry Sector”.

- “Process Safety Indicators – Requirements for DG Annual Report”.

For the 2012 reporting cycle, provisional agreement has been reached between the DG and the sector to focus on the topics of (1) water workforce health and well-being, and (2) energy management and water management as relevant and pressing issues warranting more detailed discussion.

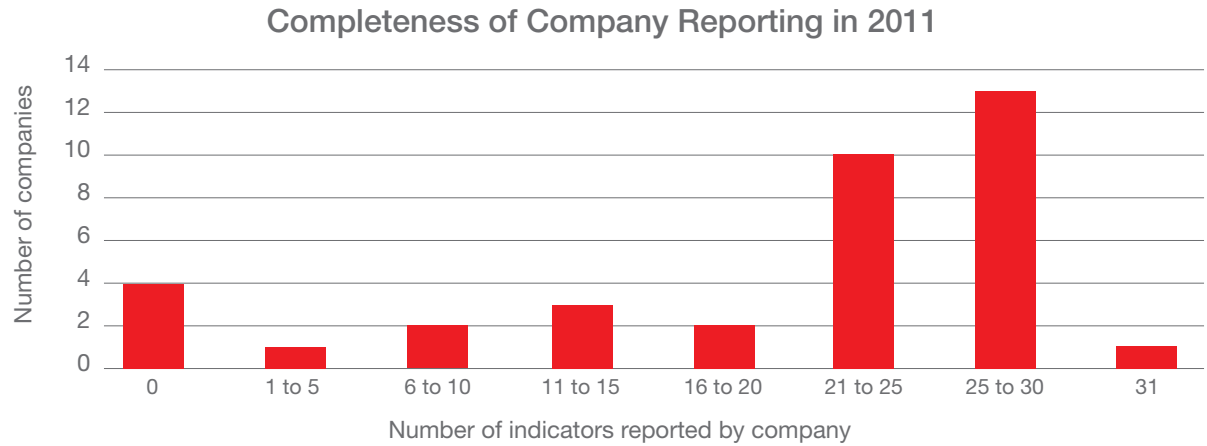


The SDIR programme indicators

To encourage consistency in performance reporting in 2012, and to allow for sector-wide data consolidation, 31 quantitative indicators were selected, based on the six major priority areas outlined in the SDIR framework. A list of these measures can be found in Appendix A.

In 2011, 24 companies reported on at least 21 of the SDIR indicators, representing 67% of the 36 invited companies. Given the emphasis on climate change and

safety, measures related to these themes showed the highest level of disclosure with more than 88% of companies reporting their emissions and 92% reporting on fatalities. Employee satisfaction was the lowest reported measure with only 22% of companies responding. Only one company responded to all 31 indicators.



The SDIR is in the second year of implementation and thus it has not been possible to achieve 100% disclosure on all 31 indicators by all 36 companies invited to participate. Due to the recent development of the 31 SDIR indicators, it has not been possible for all companies to develop or integrate the processes necessary for data collection within their existing systems. It is expected that reporting against this set of measures will improve in 2012.

The SDIR “Excellence in Sustainability Reporting Awards”

In accordance with a commitment made in the 2010 SDI report, the DG has launched a sustainable development appreciation and ranking scheme to reward companies that have demonstrate leadership, innovation and excellence in their sustainability reporting in 2011.

The award criteria will recognise companies that have demonstrated strong sustainability performance through their disclosures on the main

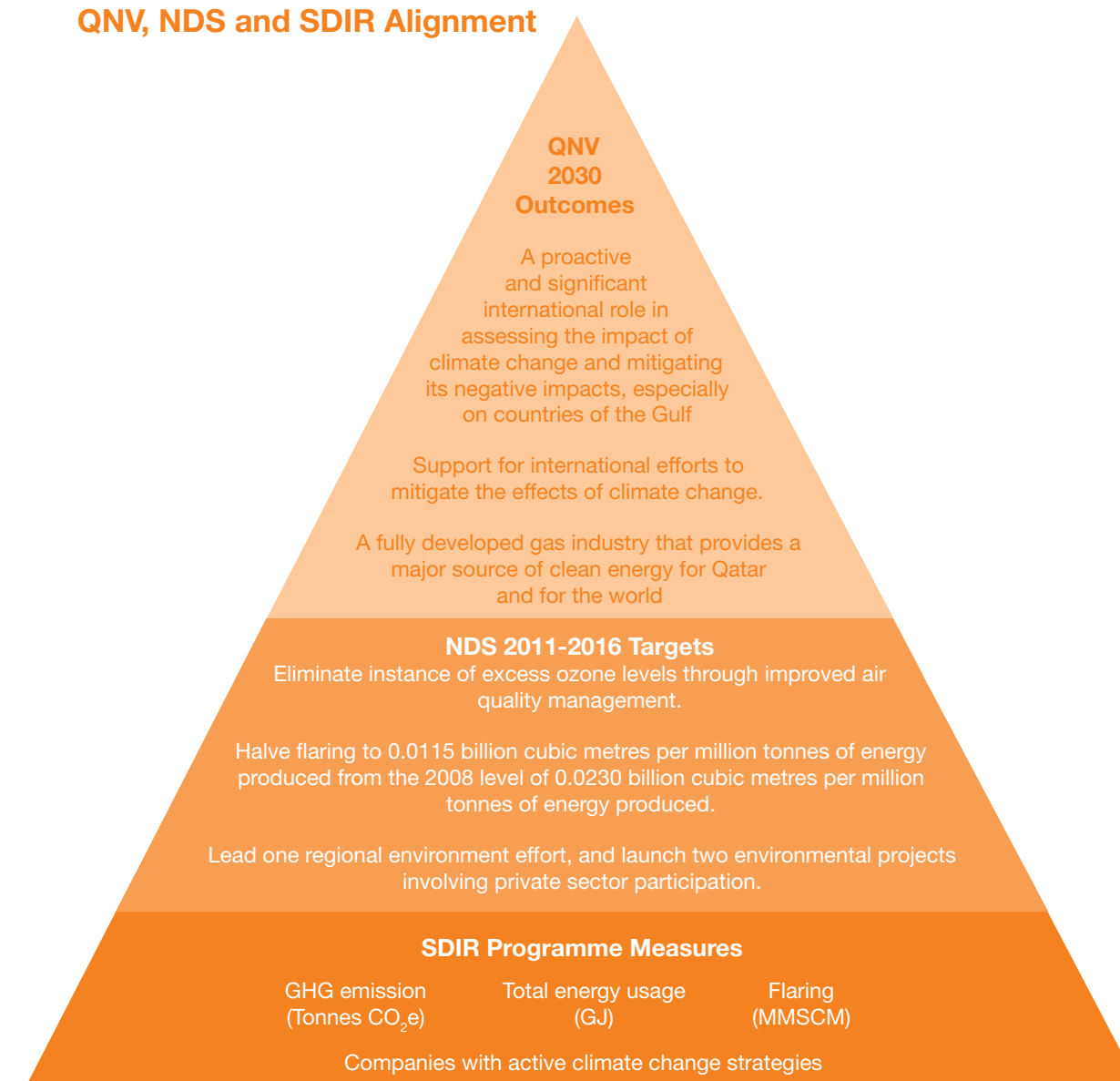
SDIR framework topics, and have articulated their performance in a clear and engaging manner. Awards will be presented in January 2013, and the results will be highlighted in the 2012 sector sustainability report. Detailed analysis and ranking of performance will be provided to each company to ensure the award scheme is both transparent and promotes improved performance.

Climate Change

International Context | National Context | A Sectoral Approach to Climate Change | Measurement and Reporting of GHG Emissions | Mitigation: Energy Efficiency | Mitigation: Flaring | Mitigation: CDM Projects and Carbon Capture and Storage | Mitigation: Alternative Energy | Climate Change Adaptation

Qatar is a major player in global energy markets; its energy sector has played a pivotal role in providing the reliable and affordable cleaner energy that the world needs, improving health, wealth and living standards for many around the world. Meeting the growing demand for energy, however, presents many complex challenges, including the global concern of climate change.

QNV, NDS and SDIR Alignment



International Context

Growing Energy Demand

Global demand for energy continues to rise. It has grown steadily for several decades and continues to increase as worldwide populations grow and economies expand. Authoritative forecasts, such as those produced by the International Energy Agency, suggest that fossil fuels will remain the dominant form of primary energy over the next two decades, with natural gas making an increasing contribution to world energy supplies.

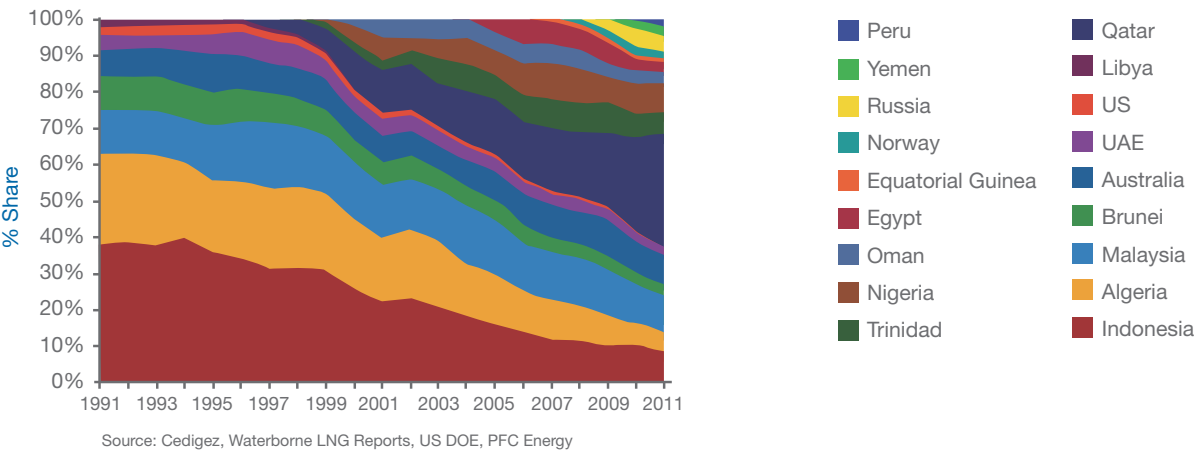


Qatar's Liquefied Natural Gas Industry

Qatar is a major player in global energy markets; its energy sector has played a pivotal role in providing the reliable and affordable clean energy that the world needs, improving health, wealth and living standards for many around the world. Following a successful

20-year programme of investment in the hydrocarbon sector overseen by QP, Qatar now produces and exports more liquefied natural gas (LNG) than any country in the world with production capacity reaching approximately 77 million tonnes in 2010.

Share of Global LNG Exports by Country, 1991-2011



The Challenge of Climate Change

Meeting the growing demand for energy, however, presents many complex challenges, including the global concern of climate change. According to the IPCC, over the next 50 years without action, atmospheric greenhouse gas (GHG) concentrations will be more than triple those of pre-industrial levels, creating climate change risks such as damage to natural ecosystems and more extreme weather events.

One way to address the challenge is to reduce the average carbon intensity of energy use by shifting from fuels rich in carbon, such as coal, to fuels lower in carbon, such as gas. LNG, when burned, releases 40% less carbon dioxide (CO₂) emissions than oil and 77% less than coal (US Energy Information Administration (EIA) – Natural Gas Issues and Trends). With these benefits, it can function as a lower carbon ‘bridge’ towards a future energy mix that also includes economical renewable alternatives.

The Path Ahead

The widely accepted forecasts of increased energy demand make it clear that governments, business and society at large will need significant commitment and investment over decades to reduce carbon emissions and ultimately stabilize GHG concentrations in the atmosphere.

Initiatives around the world, such as UN Framework Convention on Climate Change (UNFCCC), have sought to develop policy responses to tackle climate change with the scientific support from the outcome of studies conducted by the Intergovernmental Panel on Climate Change (IPCC). In addition to the Kyoto Protocol, which set binding targets and timetables for developed countries to restrict GHG emissions and introduced three market-based mechanisms (emissions trading, the clean development mechanism and joint implementation projects), other policies and measures have been developed to encourage action. These include measures at a national level, such as carbon taxes and a variety of voluntary incentives.

The year 2012 marks the end of the first commitment period of the Kyoto Protocol, requiring a new international framework to be negotiated and ratified by developed countries that can deliver the stringent emission reductions that the IPCC has indicated are needed. Moreover, at the United Nations Climate Change Conference in Durban in 2011, governments

decided to adopt a universal legal agreement on climate change involving both developed and developing countries, as soon as possible, and no later than 2015 which will take effect from 2020. In Doha in 2012, the 18th Conference of the Parties (COP) will continue to develop the new international framework required.



Qatar will provide “support for international efforts to mitigate the effects of climate change” and take “a proactive and significant regional role in assessing the impact of climate change and mitigating its negative impacts, especially on countries of the Gulf”.

Qatar National Vision 2030

National Context

Qatar’s rapid economic development has been accompanied by an increase in GHG emissions, in particular due to the dominance of the hydrocarbon sector, which has grown in response to international energy demand.

Economic growth is forecast to continue, with GHG emissions projected to increase for the foreseeable future, but at a progressively slower rate. Qatar’s future economic prosperity continues to rely heavily on hydrocarbons. It has an opportunity to help meet the world’s energy demands with lower emission fuels, as well as a long-term national challenge arising from the global transition away from fossil fuels.

As recognised in the National Development Strategy 2011–2016 (NDS), climate change creates significant environmental and social risks for Qatar. Although there are few published climate change risk assessments for the country, one study considers Qatar to be one of three countries in the Arabian Gulf with ‘extreme vulnerability’ to sea-level rise and high susceptibility to inland flooding, with significant impacts on the population. Biodiversity would be adversely affected, and increased air pollution in urban areas could result in adverse effects on human health.

National Response

Qatar ratified the UNFCCC in 1996 and the Kyoto Protocol in 2005. Although not obliged to set emission reduction targets (as a non-Annex 1 UNFCCC party), Qatar is voluntarily adopting initiatives and plans in order to limit the growth of its national GHG emissions.

Qatar’s National Climate Change Committee (NCCC) was established in 2007. The committee provides leadership, guidance and recommendations and continually reviews progress of implementation of climate change commitments required by the UNFCCC and the Kyoto Protocol. In 2011, Qatar submitted its initial national communication to the UNFCCC, which included a national GHG inventory with baseline figures set for 2007, adaptation and mitigation opportunities, and an initial National Action Framework. The total national GHG emissions for 2007 amounted to approximately 62.4 million tonnes of CO₂ equivalent (CO₂e).

As set out in the national communication and other documents pertaining to GHG reduction initiatives, Qatar’s approach to tackling climate change involves:

- Strategic global positioning as a major provider of a fuel that will help the world transition to a lower carbon future.
- Measurement, establishing baselines, capacity building and awareness raising.
- Mitigation.
- Adaptation.

Climate Change and the SDIR

In recognition of the strategic importance of climate change, particularly for the energy and industry sector, the SDIR programme included climate change as one of two high-priority reporting areas for 2011. Owing to its importance, the DG provided additional reporting guidance in this area for all reporters.

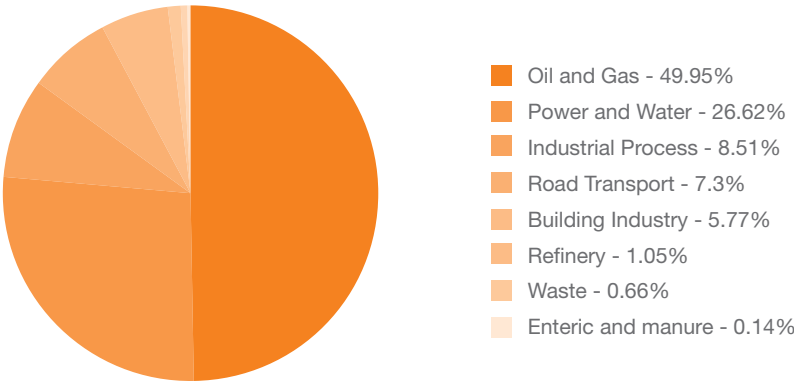
Sectoral Initiatives to Climate Change

Companies within the energy and industry sector in Qatar recognise that addressing climate change is important not only for the nation but also for the wider international community. The energy and industry sector accounted for approximately 86% of the 2007 total national inventory baseline of GHG emissions (approximately 53.7 million tonnes of CO₂e). The percentage contribution from the sector to total GHG emissions is expected to be similar, if not slightly higher, in 2011.

The sector recognises its responsibility to reduce GHG emissions by optimising energy production and use, particularly in the oil and gas subsector, which contributes the largest proportion of total emissions, as shown below. The power and water subsector

faces the challenge of improving the efficiency of electricity generation and water desalination, as well as encouraging consumers, residential, industrial and otherwise, to use electricity as efficiently as possible.

Qatar National GHG Emissions in 2007 (CO₂e)



Climate Change Strategies

In line with the 2011 national communication to the UNFCCC, a sector-wide climate change strategy and policy is being developed by the DG together with the sector. The sector strategy is in the final stages of consultation. Key elements include:

- Standardising the measurement and reporting of GHG emissions
- Climate change mitigation
 - Flaring reduction
 - Energy efficiency
 - Carbon capture, storage, recovery and reuse
 - Alternative energy
- Climate change adaptation

In addition to creating a sector-wide strategy, the DG has requested that all companies in the sector develop and implement individual climate change strategies. Of the invited companies, ten submitted an explicit climate change strategy.

ConocoPhillips’s action plan on climate change, for example, focuses on integrating climate change management into strategy, planning and operations, reducing GHG emissions, pursuing new business opportunities, making best use of technology

innovation and carbon trading, and pursuing practical, sustainable solutions and public policy. Maersk Oil Qatar’s environmental strategy is based upon eco-efficiency—doing more with less and using resources more efficiently. The RasGas GHG strategy and policy provide a framework for future action on accounting and reporting, mitigation, transparency and advocacy.

While some company climate change strategies are still in the early stages of implementation, others are beginning to yield results. The DG will continue to support and encourage all companies within the sector to develop specific strategies in response to the challenge of climate change. The sector-wide strategy will continue to develop, using company-level and national targets as a basis for future commitments.

Programmes and Initiatives

Many companies have embarked on initiatives to measure and minimise their GHG emissions, improve energy efficiency, and support new technologies and approaches for minimising emissions. These activities are described throughout this section and in more detail in the publicly available sustainability reports of companies.

Measurement and Reporting of GHG Emissions

For long-established international companies, GHG measurement and reporting is routine and draws on best practice guidance such as the WRI/WBSCD GHG protocol. Many recently established and medium sized companies in Qatar are now also calculating emissions using standardised approaches to measurement and data verification. Systematic and consistent measurements allow companies to develop action plans based on reliable and comparable data. QP has launched GHG accounting programmes to ensure consistency in measurement, reporting and verification.

The QP GHG Accounting and Reporting Programme

The QP GHG Accounting and Reporting Programme, which has been piloted by major QP joint venture and subsidiary companies, is helping to standardise emission measurement and reporting. The programme, which was initiated in 2006, uses EU standards and IPCC guidelines for GHG emissions reporting and requires data to be verified by a qualified third-party.

The initiative has enabled many companies in the energy sector to establish GHG calculation methodologies based on European standards and IPCC guidelines, and is enabling consistent implementation of GHG reporting according to international protocols. Ten companies in Ras Laffan have verified their GHG emissions through a third-party for the past two years.

The World Bank’s Global Gas Flaring Reduction initiative with QP (described further, below) has also helped to create awareness and standardise the way in which flaring is measured and reported.

In 2011, the QP Corporate Environment & Sustainable Development Department embarked on an initiative to compile a Greenhouse Gas (GHG) emissions inventory, with a target completion date of 2013. The initiative covers all QP wholly owned and operated business units. The objectives of the initiative are to:

- Develop an annual emission inventory.
- Assess GHG emission reduction opportunities.
- Provide reliable emission data for climate change policy.

A number of activities have already been completed (including workshops and tutorials, and the development of GHG Monitoring and Reporting Guidelines) while some are continuing (such as monitoring and reporting plans). The QP Guideline for Monitoring & Reporting of Greenhouse Gas & Air Quality Criteria Pollutant Emissions (GMRE) was developed and endorsed in February 2011. All tutorials on the guideline to operational area teams were completed as planned.

Sector GHG Emissions

As part of the SDIR programme, companies were requested to report their direct and indirect GHG emissions in tonnes of CO₂e. Twenty-eight companies reported GHG emissions in the 2011 reporting cycle, with twenty of these able to provide comparable data for 2010 and 2011. Seven operators reported reduced emissions between 2010 and 2011, and 14 operators reported higher emissions. Overall, 88% of companies* invited to report in 2011 provided data on their GHG emissions. This growth in reporting is encouraging, and QP anticipates further progress in 2012.

Companies are at different stages of maturity in achieving GHG reductions. Seven of the 28 companies showed reductions in GHG emissions between 2010 and 2011 and between 2009 and 2010. Of these, four companies reported two years of reductions between 2009 and 2011.

As GHG reporting is new to many companies operating in Qatar, uncertainty surrounds the accuracy and completeness of the current consolidated data. Some emission calculations have been independently attested, while others have not. Nevertheless, the information provided represents a valuable step on the journey to more complete disclosure.

The tables below set out information on reported GHG emissions (direct and indirect combined) by subsector and in total. Direct GHG emissions are

emissions from sources that are owned or controlled by the reporting entity, while indirect GHG emissions are emissions that are a consequence of the activities of the reporting entity, but occur at sources owned or controlled by another entity.

Increases in GHG emissions across the subsectors can be linked to the expansion and diversification of the sector as outlined in the Economic chapter of this report. In 2011, Qatargas became the biggest producer of LNG/NG in the world, a new power and desalination plant was inaugurated, and Qatar also became home to the largest single-site ammonia and urea plant and the largest gas to liquids (GTL) plant in the world. Mining, minerals and other was the only subsector to record a decrease in GHG emissions for the two companies reporting emissions data for both 2010 and 2011.

Direct and Indirect GHG Emissions by Subsector (Tonnes CO₂e)

Subsector	Reporting Companies		Total Direct and Indirect Emissions			% Change for Comparable Companies
	2010	2011	2010	2011	2011 (Comparable Companies)	
LNG/NG	3	3	37,924,423	46,119,753	46,119,753	21.6%
Mining, minerals and others	2	3	8,672,575	13,282,100	8,654,425	(0.2%)
Power and utilities	4	4	7,982,532	10,313,241	10,313,241	29.2%
Petrochemicals	6	7	7,173,041	7,776,039	7,570,039	5.5%
Oil and gas (E&P)	4	6	2,712,903	7,726,925	2,776,691	2.4%
Refining	1	2	1,807,178	6,755,790	2,277,487	26.0%
Transport, storage and distribution	0	2	–	3,236,390	–	–
Support services	1	1	38,281	45,271	45,271	18.3%



GHG Reporting

	2009	2010	2011
Companies reporting GHG emissions	12	21	28
As a % of companies invited to report in 2011*	38%	66%	88%
Companies reporting higher GHG emissions		5	14
Companies reporting reduced GHG emissions		7	7

*32 out of 36 companies were invited to report on this indicator



Increases across a number of subsectors are expected to continue as Qatar continues to invest in diversification of the sector, and as companies increase production as a result of international and national demand. However, the focus will continue to remain on continually improving efficiency and decreasing GHG intensity per unit of production.

Combined direct and indirect emissions for the sector are presented in the table below. These figures do not include the power and utilities subsector, given the potential for double-counting its emissions with those of other subsectors.

Total Sector GHG Emissions Excluding Power and Utilities Subsector (Tonnes CO₂e)

	2010	2011
Companies reporting	17	24
Total sector GHG emissions (tonnes CO ₂ e)	58,328,401	84,942,268
Total sector GHG emissions for 17 comparable companies	58,328,401	67,443,666
% change in comparable companies		13.8%

As expected, the total sector-wide emissions (excluding the power and utilities subsector) from the 24 companies reporting in 2011 represents a significant increase from the 2007 baseline. The 58% increase can be attributed to a number of large-scale milestones in expansion and diversification, including the creation of two large-scale industrial companies and the completion of two new power plants.

MITIGATION: Energy Efficiency

As set out in Qatar’s national communication to the UNFCCC, the National Action Framework to build capacity and raise awareness of issues relating to climate change will incorporate measures relating to energy efficiency in order to enhance industrial profitability, reduce environmental impact and increase competitiveness.

Widespread Opportunities

Opportunities for greater energy efficiency exist across many of the subsectors and in Qatari society at large, including:

- Reducing the energy required to produce oil and gas.
- Reducing the energy required to produce a single unit of industrial output, such as steel, aluminium, or chemicals.
- Increasing the efficiency of energy generation and distribution.
- Supporting the adoption of energy saving technologies.

- Reducing office-based or auxiliary energy consumption, by implementing a green building code, and increasing the practice of regular energy auditing and management.
- Raising public awareness, through collaboration with power and utility companies for example, to ensure that individuals make prudent decisions about energy use in their daily lives.

The NDS has set a target of improving energy generation and efficiency in terms of power production, adoption of energy-saving technology and promotion of green building practices.

“Even though Qatar’s abundant gas supplies are expected to last well into the future, improved efficiency would yield both environmental and economic gains. Savings would have the added benefit of providing a buffer for the supply of gas, which is ample in the long run but constrained over shorter periods of time. By burning less natural gas, Qatar would support the national goal of lowering carbon dioxide emissions, reducing the country’s contribution to global climate change” (NDS).

Energy Efficiency Initiatives within the Sector

In energy-intensive sectors, like steel, aluminium production and chemicals, companies must use energy efficiently to be competitive. Qatar Steel uses oxygen technology in its electric arc furnaces to speed up melting, helping to reduce electricity consumption

and enhance productivity by reducing tap-to-tap time. Qatalum uses advanced cell technology (HAL275) developed by its international partner, Hydro, to increase efficiency and reduce environmental impact during the reduction or smelting stage.

Q-Chem reported a 19% reduction in its electricity consumption per tonne of chemicals produced between 2006 and 2009.

Energy efficiency programmes have also been undertaken in other process industries, including oil and gas:

- Oxy Qatar’s strategies for maximising the productive use of natural gas in its operations include significant capital investment in energy-efficient turbines, engines and compression that allow the use of natural gas to expand production and reduce GHG emissions.
- Maersk Oil’s field development in Al-Shaheen incorporates the use of dry nitrogen oxide burners that are highly efficient and produce low emissions. Atmospheric emissions from its operations have been reduced further by the installation of waste heat recovery units on gas compression modules at four offshore platforms.
- Nakilat, which has the largest LNG shipping fleet in the world, along with its partners, has been studying the potential for its fleet to switch from running on heavy fuel oil to LNG or fuel oil, which would result in more efficiency and lower emissions.

Recent power plant developments within the power and utilities subsector, as well as other electricity-intensive subsectors, are built using the best available technology to achieve the highest degree of energy efficiency. Companies using combined cycle technology - which generates electricity by feeding natural gas into a gas turbine, and then using the heat generated by this process with heat recovery steam generators to create steam that powers a steam turbine to produce additional electricity - include

M Power, Qatalum, QAPCO, Ras Girtas Power Company and Ras Laffan Power Company. Use of combined cycle technology increases plant efficiency and make more effective use of Qatar’s natural gas.

Several of the larger operating companies have taken initiatives to improve energy efficiency in non-process areas, such as office design. RasGas has recently had its new headquarters certified at LEED (Leadership in Energy and Environmental Design) Gold level, the first commercial interiors project in Qatar to achieve such a standard. This is a direct result of energy-saving features being embedded into the design of the building, including automated control systems to ensure that the heating, ventilation, air conditioning and lighting systems operate at optimum efficiency. In other areas, Qatar Shell supports the use of more energy-efficient products, including advanced fuels and lubricants.

Energy Use Reporting

Reporting on energy use is in its infancy in Qatar, but increasing. Over three quarters of companies submitting reports in 2011 included information on direct and indirect energy consumption, together with examples and best practices in energy efficiency. Of the 25 companies reporting in 2011, 19 of them also provided comparable data for 2010. Six companies reported reduced energy use in 2011 compared to 2010, while 13 reported increased energy use. To improve the aggregation and analysis in future, the SDIR is providing further guidance to the sector on reporting energy consumption. The DG is also encouraging all companies to conduct energy auditing in 2013 and implement energy optimization measures.

Energy Use Reporting

	2009	2010	2011
Companies reporting energy use	11	19	25
As a % of companies invited to report in 2011*	34%	59%	78%
Companies reporting higher energy use		9	13
Companies reporting reduced energy use		2	6

*32 out of 36 companies were invited to report on this indicator



Consistent with the data for GHG emissions, direct and indirect energy consumption increased across all subsectors from 2010 to 2011 with a particular focus on the LNG/NG and power and utilities subsectors.

It is expected that energy consumption will continue to increase at a reduced rate into the near future. However, companies will continue to focus on increasing output for every GJ used.

Direct and Indirect Energy Consumption by Subsector (GJ)

Subsector	Reporting Companies		Total Direct and Indirect Energy Consumption			% Change for Comparable Companies
	2010	2011	2010	2011	2011 (Comparable Companies)	
LNG/NG	3	3	425,362,497	551,852,550	551,852,550	30%
Refining	1	2	276,661,908	343,578,449	298,339,137	8%
Petrochemicals	7	7	139,712,212	145,354,510	145,354,510	4%
Power and utilities	2	4	57,242,784	121,907,945	71,198,780	24%
Oil and gas (E&P)	3	5	26,638,213	103,250,036	29,563,552	11%
Minerals, mining and others	2	3	34,531,842	102,672,646	36,540,469	6%
Support services	1	1	526,017	1,816,458	1,816,458	245%
Transport, storage and distribution	0	0	–	–	–	–

Wider Energy Efficiency Awareness

The sector is taking an active role in raising awareness of the need for energy efficiency within its own operations and in society at large. For example, Saipem, an engineering, construction and drilling company, conducted an environmental awareness campaign in 2011 to promote environmentally responsible behaviour among its personnel, focusing

on energy saving, waste segregation, and water saving and reuse. Another initiative, Shell’s eco-marathon, challenges students to design, build and test energy-efficient vehicles in a hands-on project that encourages them to think about fuel efficiency and climate change.

MITIGATION: Flaring

Gas flaring is a necessary component of maintaining safe oil and gas operations. Flaring is used under routine conditions to safely combust waste gas or to manage unexpected events in the interests of safety. The release of non-waste gas eases the strain on equipment and protects it from damage from overpressure, especially when shutting down or restarting production.

A High-Priority Challenge

Qatar's initial climate change communication to the UNFCCC shows flaring to be the third-largest source of domestic GHG emissions, behind the production of oil and gas, and power generation and water production. The national communication estimated that flaring accounted for 13% of national energy use and approximately 26% of total energy consumed by oil and gas operations in 2007. Given these high proportions of non-productive combustion, flare minimisation is a high-priority challenge for many companies, and has warranted significant investment to reduce it.

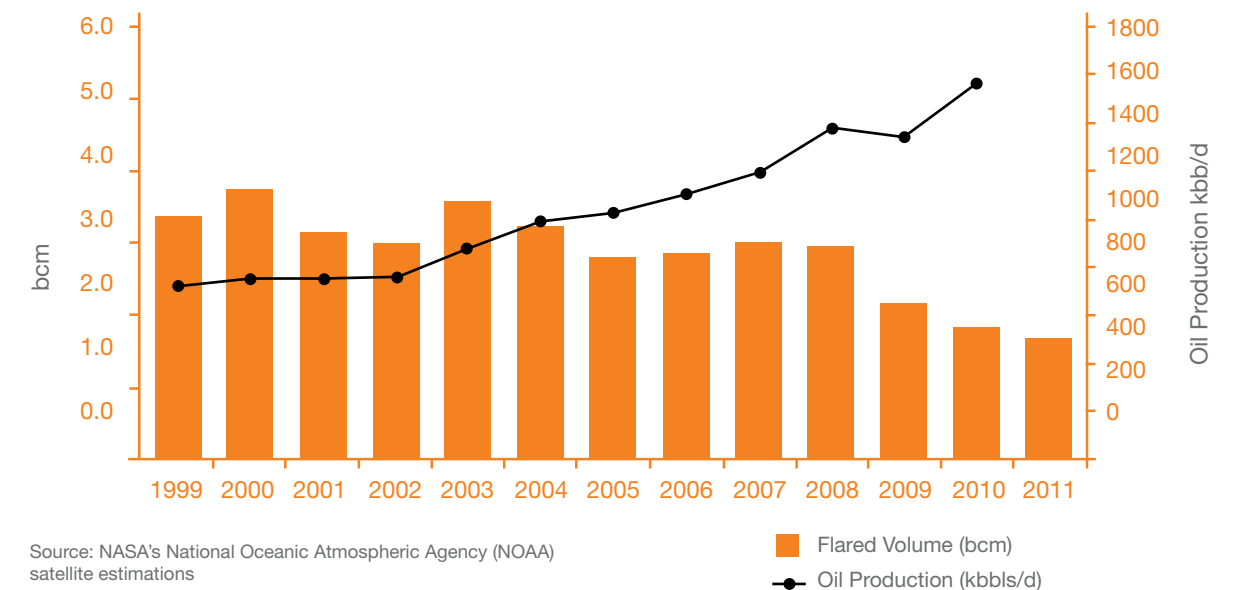
Flaring is also a focus area within the NDS, which includes the target of halving flaring to 0.0115 billion cubic metres per million tonnes of energy (LNG) produced from the 2008 level of 0.0230.

Participation in the Global Gas Flaring Reduction Initiative

To ensure a collective response from the sector, in January 2009, His Excellency, the then Deputy Prime Minister H.E. Abdullah bin Hamad Al-Attiyah, on behalf of QP and the sector, signed a three-year partnership agreement with the World Bank's Global Gas Flaring Reduction (GGFR) initiative. Qatar was the first Gulf country to do so.

The partnership, which currently supports upstream companies in developing and implementing flare reduction plans, helped reduce participants' gas flaring in 2011 by 19.4% from 2009 levels according to NASA National Oceanic Atmospheric Agency (NOAA), despite increases in production.

Qatar flared volumes and oil production



This reduction was achieved through:

- Technical working groups being formed in all industrialised zones.
- Measurement, monitoring and reporting of flaring.
- The designing of a flare monitoring tool with a five-year forecast.
- Technical support for flare reduction projects.
- Awareness and training via workshops.
- Development of a draft gas flares reporting regulation, which is currently under review.

The partnership with the World Bank GGFR initiative beyond 2012 is under development so that operators can continue to implement programmes for standardised measurement and pursue reductions in gas flaring in line with international best practice.

Reporting on Flaring

Flaring is a relevant practice for 21 of the 36 companies participating in the SDIR programme. Sixteen of the 21 companies reported information on their flaring emissions and management approach. Three of the companies that provided comparable data reported a reduction in their flaring and eight companies reported increases in flaring between 2010 and 2011.

	2009	2010	2011
Companies reporting flaring	9	12	16
As a % of companies invited to report in 2011*	43%	57%	76%
Companies reporting an increase in flaring		3	9
Companies reporting a decrease in flaring		5	3
Companies reporting no change in flaring		1	0

*21 out of 36 companies were invited to report on this indicator

Data on flaring for the sector and subsectors is shown in tables below, measured in million metric standard cubic metres (MMSCM). For companies that provided comparable data for 2010 and 2011, the LNG/NG subsector recorded a 6% decrease in

flaring from 1,936 MMSCM to 1,821. Both the oil and gas (E&P) and petrochemicals subsectors recorded increases which amounted to 163 MMSCM.

Flaring by Subsector (MMSCM)

Subsector	Reporting Companies		Total Flaring			% Change for Comparable Companies
	2010	2011	2010	2011	2011 (Comparable Companies)	
LNG/NG	3	3	1,936	1,821	1,821	(6%)
Refining	0	2	0	2,102	–	–
Petrochemicals	4	5	42	90	54	29%
Oil and gas (E&P)	5	6	917	1,315	1,068	16%

Total reported flaring for the sector has increased by 85% from 2010- 2011 as a result of an increased number of reporting companies from 12 to 16, and

the expansion of the sector as stated previously. The 12 companies with comparable flaring data for 2010 and 2011 recorded a 2% increase in flaring.

Sector-Wide Flaring (MMSCM)

	2010	2011
Total sector flaring	2,895	5,364
Total sector flaring for 12 comparable companies	2,895	2,943
% change for 12 comparable companies		2%



Flare Reduction Strategies and Programmes

Flare reduction strategies are an integral part of the approach to environmental management for a number of companies in Qatar. Dolphin Energy reported consistent reductions in flaring, including a 44% reduction from 2009 to 2010 and a 24% reduction from 2010 to 2011, resulting from its flaring reduction strategy. The strategy included an initiative to monitor and maintain pressure relief valves to minimise gas going to flare.

Qatargas’s flare management strategy and programme achieved a 24% reduction in flaring between 2010 and 2011 despite LNG production increasing by 65% in the same period, resulting in a 54% reduction in flared gas per unit of production.

Oxy Qatar’s CO₂ emissions (the predominant component of its GHG emissions) have reduced significantly since 2005, as a result of changing from gas flaring to gas injection, with 2011 emissions roughly half those of 2006. Despite increased production, its emissions of CO₂ per barrel of production have also declined significantly since 2005.

Qatar Petroleum Development established a zero gas flaring operation in 2007. By injecting associated gas back into the formation using high-pressure

compressors, QPD has dramatically improved its ratio of flared gas to production.

These initiatives are designed to continue to deliver flaring reductions into the future. A number of other companies are also setting long-term plans. ORYX GTL is building on its existing efforts by developing a three-part flare minimisation plan that sets out specific projects through to the end of 2017. RasGas has also developed a 2012-2016 Flare Reduction Plan following the successful implementation of its previous 5-year Flare Minimization Plan that achieved a 65% reduction in flaring.

In addition to initiatives that form part of routine operational management, the industry is undertaking a number of major projects that seek to reduce flaring. The QP, with operating partner Maersk, Al-Shaheen oil field Clean Development Mechanism (CDM) project (see later in this section) has achieved significant emission reductions. Meanwhile, the jetty boil-off gas recovery project, involving Qatargas, RasGas and ConocoPhillips, is expected to reduce jetty flaring by approximately 90% when operational in 2014 by recovering gas for reuse in process facilities that would otherwise have been flared during tanker loading. The project is expected to recover the equivalent of some 0.6 million tonnes per year of LNG, roughly enough to power more than 40,000 homes for one year.

MITIGATION: CDM Projects, Carbon Capture and Storage

Under the **Clean Development Mechanism**, emission-reduction projects in developing countries can earn certified emission reduction credits. These saleable credits can be used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol.

Clean Development Mechanism (CDM) Projects

Qatar registered its first CDM project in 2007, the first in the Gulf region and the largest registered oil and gas sector CDM project globally. The Al-Shaheen Oil Field Gas Recovery and Utilization Project has achieved a 90% reduction in flaring since 2007. The three main components of the project—recovery of associated gas for capture and initial treatment, transmission of associated gas by pipeline and use of associated gas at gas processing plants—will continue to reduce flaring emissions. QP in cooperation with the project operators Maersk Oil Qatar, are undertaking initiatives to share lessons learned from this project with others in the sector.

Changes in CDM criteria in 2011, including the inclusion of carbon capture and storage (CCS), created renewed interest in the potential for the sector to register projects in the future under the auspices of the UNFCCC to create saleable emissions reduction credits.

To support action in this area, the DG has formulated a CDM procedure to facilitate CDM projects in the energy and industry sector. The DG will continue to engage stakeholders by creating awareness programmes on CDM developments and will act as a regulator at the various stages until certified emission reductions are issued.

One example of a potential CDM project is QAFAC's carbon dioxide recovery (CDR) programme. This is a first of its kind in Qatar and for a methanol plant globally, and involves the construction of a CDR plant that recovers CO₂ from the company's methanol plant for reuse in methanol production. Not only does this fulfil its need for CO₂ within the production process, it helps reduce emissions. Another example of a potential CDM project is the Ras Laffan Power Company medium-pressure steam condensate recovery plant. The CDM prior consideration forms for both these projects have been submitted to UNFCCC, and the projects are at various stages of project documentation.



Carbon Capture and Storage Initiatives

The International Energy Agency estimates that CCS could reduce global CO₂ emissions by 19% by 2050, as long as it moves rapidly from the demonstration phase to widespread use. CCS and the recovery and reuse of what were previously considered waste gases are gaining momentum within the sector. These by-products can be used to enhance hydrocarbon extraction or as an input into chemical production, both of which can lead to cost savings, increased productivity and lower emissions.

A number of initiatives are under way in Qatar to capture and store carbon and other gaseous emissions. QP, for example, is currently studying reservoir suitability for a pilot enhanced oil recovery project. Since 2005, RasGas has operated an acid

gas reinjection programme that stores CO₂ and hydrogen sulphide and re-injects approximately one million tonnes of CO₂ per year into a saline aquifer formation.

While these projects are active, the need for further research into aspects of CCS remains. Shell, QP, the Qatar Science & Technology Park and Imperial College London are collaborating in a \$70-million 10-year investment to provide the foundation for new CO₂ storage technologies that can be applied in Qatar, elsewhere in the Middle East and beyond. It represents one of the world's largest and most ambitious collaborations between industry and academia to develop technology and know-how in support of large-scale CCS deployment.

MITIGATION: Alternative Energy

Despite Qatar's reliance on fossil fuels, there is growing recognition of its need to develop an alternative energy strategy. The NDS calls for the creation of a renewable energy committee at the Ministry of Energy and Industry. Furthermore, the Doha Carbon and Energy Forum, held in 2010 under the patronage of the then Deputy Prime Minister and Minister for Energy and Industry, provided recommendations for the future.

Recommendations from the Doha Carbon and Energy Forum included:

- Developing an overarching vision for renewable energy in Qatar.
- Hosting focused symposia on solar and bio-energy to provide specific guidance for researchers and policy makers.
- Developing a research plan to address region-specific issues for solar and bio-energy.

For the sector and country as a whole, the use of alternative energy presents an opportunity to ensure Qatar's gas is being put to best use as national electricity consumption is satisfied by harnessing

Qatar's abundant solar energy resources. It also represents an investment opportunity for the sector and country to diversify and be competitive in a growth market as demand for alternative energy increases.

At present, the DG has a draft procedure under review titled "Procedure for Implementing Renewable Energy Projects – Non Grid Applications". To date, the sector has created awareness by supporting and coordinating workshops and conferences, as well as developing regulatory guidelines for renewable energy projects as recommended in the Doha Carbon and Energy Forum.

Alternative Energy Projects and Commitments

A number of companies have begun pilot alternative energy projects or made significant commitments that could help catalyse greater use of alternative energy.

A memorandum of understanding was signed between Qatar Electricity & Water Company (QEWCo) and The Qatar Solar Technologies (QSTec) to explore the possibilities of developing power generation using solar energy in the country.

As a wider application combining industrial outputs such as CO₂ and grey wastewater with salt water and solar energy, the goal of the QAFCo Sahara Forest Project is to develop an integrated, large-scale system for reforestation. It aims to create green jobs through profitable production of food, fresh water, biofuels and electricity. The project will use deserts, salt water and CO₂ to produce food, water and energy, integrating concentrated solar power to produce heat and power. Concentrated solar power is one of the fastest-growing technologies for harvesting solar energy in the world.

Climate Change Adaptation

Qatar and the energy and industry sector face a range of economic, social and environmental vulnerabilities as a direct and indirect consequence of climate change. In the short term, extreme heat is a potential direct concern for Qatar as well as the sector. It not only affects the amount of energy used within the country, but can have negative effects on work efficiency and productivity, resulting in stoppages or technical faults.

Looking Ahead

Notable progress has been made by the sector following the adoption of a range of programmes and initiatives that are contributing to Qatar's ambition of limiting growth in GHG emissions. To recap as we move forwards the sector commits to:

- Enhance its GHG accounting and reporting programme, rolling it out to all companies within the sector.
- Encourage further mitigation actions such as GGFR programme, Al-Shaheen associated gas recovery CDM project, Jetty Boil off gas project, QAFAC's carbon dioxide recovery (CDR) programme, CCS R&D projects and the QAFCo Sahara Forest Project, to name a few.

- Finalise the development of a sector-wide climate change strategy and policy in collaboration with all companies.
- Ensure that all companies in the sector move to develop and implement their own individual climate change strategy. To date ten companies have submitted a specific climate change strategy to the DG.
- Embark on additional initiatives to improve energy efficiency, and support new technologies and approaches that will help minimizing emissions.

The SDIR programme and sector sustainability report shall continue to report back to all stakeholders the performance and contribution being made by the sector in tackling the issue of climate change.

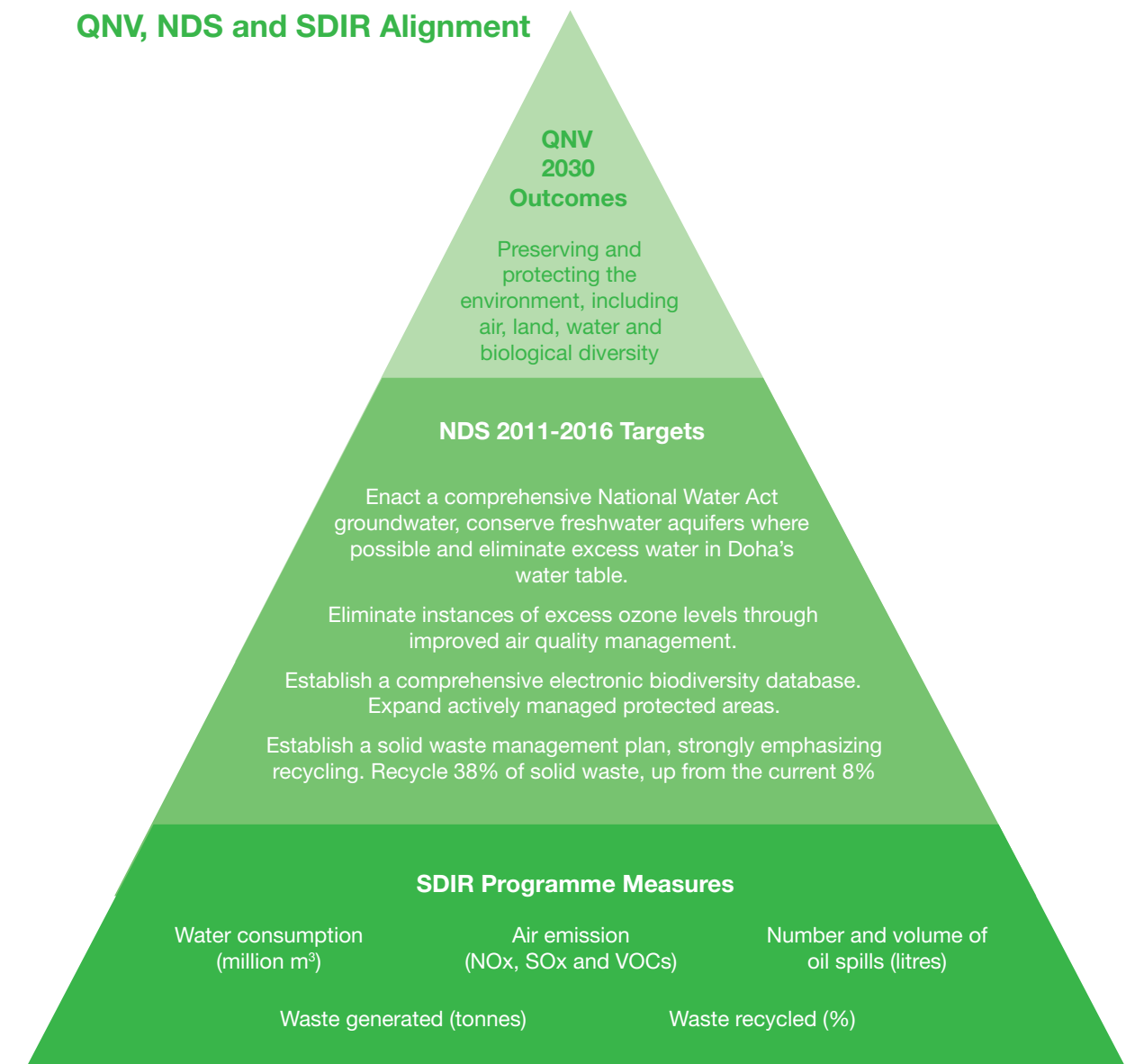
The Environment

Water | Spills | Waste Management | Air Emissions | Biodiversity

“The State of Qatar seeks to preserve and protect its unique environment and nurture the abundance of nature...”.
“Accordingly, development will be carried out with responsibility and respect, balancing the needs of economic growth and social development with the conditions for environmental protection.”

Qatar National Vision 2030

QNV, NDS and SDIR Alignment



The Environment

The Qatar peninsula is home to a diverse array of land and sea habitats supporting approximately 1,900 documented species. Like all countries, Qatar faces its own set of environmental challenges.

As described within the Qatar National Development Strategy 2011–2016, these include:

- Limited fresh water resources, with one of the lowest rainfalls in the world and increasing demand on fresh water with high network losses.
- Chronic dust that is now mixing with local and regional air pollutants from an increasingly diversified industrial sector.
- Increasing amounts of waste and limited landfill space and infrastructure for waste management.
- An increasing number of species classed as threatened with extinction.
- A need for more protected natural habitat.

Qatar has committed to preserving and protecting the environment through its National Vision 2030 and the Qatar National Development Strategy, which seeks to balance social and economic development needs with environmental protection. These efforts are being led by the Ministry of Environment, which reviews priority areas and amends laws and regulations annually.

To meet the requirements of the National Development Strategy 2011–2016, an Environmental Sector Strategy has been prepared outlining the strategic direction and key initiatives that the environmental sector will take under the leadership of MoE. For the 11 environmental projects outlined

in the NDS 2011 – 2016, the strategy identifies clear outcomes and related targets to be achieved by 2016 to ensure safe water, cleaner air, reduced waste, biodiversity conservation, greener urban spaces, increased environmental awareness and improved governance.

The Sector's Environmental Challenge

The energy and industry sector is using innovation and technological advancement to improve environmental and economic performance.

All companies within the sector require a Consent To Operate (CTO) from the Ministry of Environment, which is updated and approved annually to account for changes in environmental standards and requirements. The CTO represents a fundamental part of the laws and regulations that have been put in place to govern the sector's operations.

The DG plays an active role in ensuring all companies are compliant and following best practice in environmental performance. It conducts company visits and assessments to advise on potential areas of risk or opportunity. It also acts as a hub for sector-wide awareness of and collaborative efforts on environmental action.



Water

The availability, use, treatment and disposal of water is an increasingly important environmental and social issue for many companies and countries worldwide. Qatar has among the lowest per capita available renewable water resources in the world. The country's growing economy and population make water scarcity an issue of increasing importance. According to the Water Stress Index 2011, Qatar is the second-most 'water-stressed' country in the world.

Addressing the diverse challenges associated with water, including reducing network losses and investing in new technologies, has become a vital part of securing Qatar's future economic and social development. To help manage the challenge, a National Water Act is to be established no later than 2016. The act will put in place a structured and consolidated approach to water management in a bid to stem rising salinity, rising water tables, higher water temperatures, increasing consumption, growing rates of water leakage and reduced availability of fresh water resources.

The energy and industry sector has a significant role to play when it comes to water generation, consumption, treatment and disposal within Qatar. At present, the country is highly dependent on

desalination to meet the high levels of demand, in the face of network losses and the limited water resources naturally available. As a result, half of the water used in the country comes from desalination, an energy-intensive process managed by the power and utilities subsector. Additional data on this subject will be reported on within the 2012 sustainability report.

Beyond water generation and desalination, the sector is a major consumer of fresh, desalinated and sea water, which is often required within oil and gas and petrochemicals operations. As a result, treatment, recycling and disposal are also important challenges.

Water Consumption

Total water consumption for the sector was 5,885 million m³ in 2011, based on the 21 companies who reported their water consumption. Of the 15 companies that provided comparable data for 2010, nine showed increased water consumption, four reduced consumption and two remain unchanged. In total, these 15 companies reported a 20% increase in water consumption between 2010 and 2011.

Ninety seven percent of water consumption can be attributed to the LNG/NG and power and utilities subsectors. Both use large amounts of sea water

for non-contact cooling, which accounts for more than 90% of their water use. Since this water is not contaminated it can be discharged safely back into

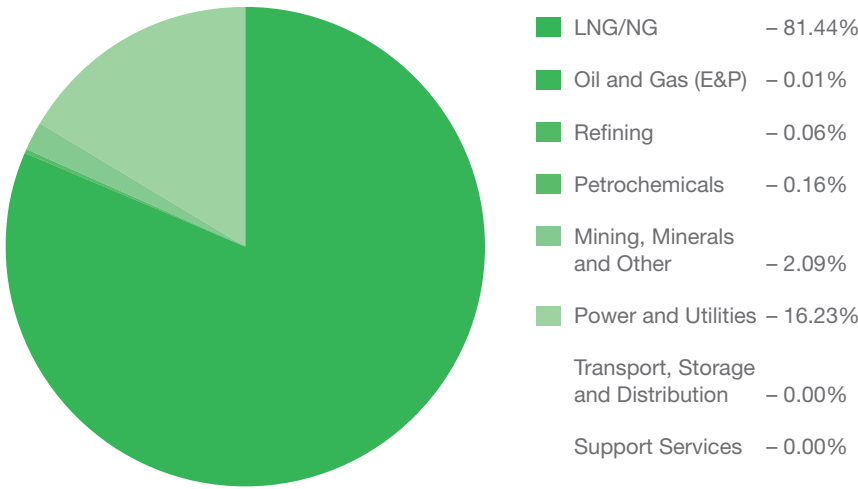
the sea. Future sustainability reports will provide a more detailed breakdown of water use by type.

Water Consumption

	2010	2011
Number of companies reporting	15	21
As a % of companies invited to report in 2011*	44%	62%
Companies reporting increased water consumption		9
Companies reporting decreased water consumption		4
Companies reporting no change in water consumption		2
Total water consumption (million m ³)	4,303	5,885
Water consumption for 15 comparable companies	4,303	5,184
% change in water consumption for 15 comparable companies		20%

*34 out of 36 companies were invited to report on this indicator

Water Consumption by Subsector – 2011



Four companies achieved a total reduction of 13.84 million m³ in water consumption in 2011. RLPC led this effort through the implementation of a CDM project to reduce CO₂ emissions by 7,851 tonnes per year, through the recovery of medium-pressure steam condensate from the desalination units’ vacuum condensers and recovery of blow down water from its cooling water system. By re-using the condensate, the plant is saving energy by not producing distillate make up water for the cooling tower. In addition to recovering steam condensate, the plant will filter and

reuse another approximately 16 m³ /hour of water, which is currently discharged into the sea.

The data reported for the sector is not yet complete, with two-thirds of invited companies providing water consumption data. With reporting in its early stages, there are challenges relating to the consistency of measurement and data reliability. In future reports, data quality should improve. A breakdown of water consumption by source will also help to distinguish between withdrawal from fresh water resources and seawater.

Water Recycling and Discharge

Water recycling is becoming a priority, with companies investing in wastewater treatment plants and using treated wastewater for irrigation as well as in their core operations. This practice not only has benefits on land, but also reduces the amount of wastewater discharged to sea, reducing potential impacts on marine biodiversity.

For example, QAFAC is no longer discharging treated process and sanitary wastewater to sea during normal operations. Instead they are using treated water to maintain a greenbelt within their facilities. Qatargas has introduced a membrane bioreactor to treat discharged wastewater to enable it to be used for irrigation. Dolphin Energy has an on-site wastewater treatment plant that reduces discharges by using recycled water in operations. Furthermore domestic sanitary effluents, rain water and washing water are collected, treated and mixed with the steam boilers blow-down purge water, to be used as water for irrigation.

Companies recognise the need to return seawater to the sea at temperatures and salinity levels that do not harm marine life. Conditions of discharge are regulated by the Ministry of Environment, and seawater used for cooling is tested to ensure it does not breach levels agreed within companies’ CTOs. The discharge of treated process or domestic wastewater to the sea has been prohibited, requiring companies to develop and implement plans to achieve zero discharge to the sea.

QP has implemented several water management programmes at its facilities to eliminate soil and ground water contamination. Wells have been installed on Halul Island and at the Duhkan and Mesaieed Industrial Areas to monitor and assess the

ground water quality. If contaminated ground water is detected, it can be treated to remove contaminants and clean water can be returned to the environment.

To date, not all companies have reported on the amount of water they have recycled or wastewater they have discharged. This topic, as well as the net discharge of pollutants to the sea (hydrocarbons, chemical oxygen demand, nitrogen) are areas of reporting that can be developed as the SDIR programme matures.

Research

Some companies in the sector are investing in research to enhance performance in relation to water management. For example, ConocoPhillips’ Global Water Sustainability Center in the Qatar Science and Technology Park is focused on innovative solutions to treat by-product water from the oil and gas industry as well as desalination, recycling, awareness and conservation.

Future Direction

In alignment with the goals of the National Development Strategy 2011–2016, a National Water Act is currently in preparation, which is aimed at organizing, developing and rationalizing the use of water resources, protecting them from depletion and pollution, and raising the efficiency of water services and uses. The DG is leading a consultation process to provide timely feedback about lessons learned, initiatives and challenges faced by the sector.

DG is also working with QP MIC Industrial City and MIC companies to design and install a comprehensive seawater quality monitoring network to evaluate the effectiveness of treatment options and assess the cumulative effect on the receiving body of water.



Spills

Oil spills are a significant environmental risk for the oil, petrochemical and shipping industries.

In recent years, a number of high-profile international incidents have heightened awareness of the impact of spills, in particular from offshore operations. These incidents have had major economic impact and caused significant environmental damage and harm to communities.

The energy and industry sector therefore places a high priority on preventing losses of containment during the extraction, production, refining and distribution of hydrocarbons and hydrocarbon-based products. With the majority of Qatar’s oil and gas production activity taking place offshore, attention is focused on preventing spills in order to protect marine life.

Sector Performance

In 2011, 26 companies reported on the number of significant oil spills, defined as a loss of hydrocarbons of more than one barrel (equivalent to 159 litres of oil) that reach the environment. The total number of significant spills reported was ten, 38% fewer than in 2010. Despite an increase in the number of companies reporting the indicator, from 15 in 2009 to 26 in 2011, the number of spills has dropped year-on-year, an encouraging trend that the sector is striving to build upon.

The ten spills reported in 2011 originated from three companies, meaning that 23 companies experienced no significant oil spills in 2011. Seventy percent of the total number of spills originated from the oil and gas (E&P) subsector, with the remainder from refining and petrochemicals activities. While reporting is not yet sufficiently mature to analyse trends, it is notable that just three companies had spills in 2011.

Significant Oil Spills



A ‘significant’ oil spill is defined as one equal to or greater than one barrel (159 litres)

Number of Significant Spills (>One Barrel)

	2009	2010	2011
Number of companies reporting	15	21	26
As a % of companies invited to report in 2011*	47%	66%	81%
Total number of significant spills	24	16	10
Number of companies reporting a spill	4	4	3
Number of companies reporting zero spills	11	17	23
Total volume of significant spills (litres)	26,884	5,838	12,550

*32 out of 36 companies were invited to report on this indicator



The volume of hydrocarbons spilled in 2011 was 12,550 litres. The majority of this resulted from one of the three companies that had spills in 2011. There are still gaps in the reporting of the number and volume of spills, an area that could be addressed more fully in future reports.

All companies in the sector for whom loss of containment is a risk are committed to reducing the number of significant spills to zero. As a precautionary measure, they also invest in spill response planning and capability development. QP have a dedicated Oil Spill and Emergency Response Department that provides timely and effective response to any oil spill incident in the State of Qatar minimizing its impact on the environment and on public health. A detailed national oil spill contingency plan has been developed for each oil and gas facility in Qatar. The contingency plan prepares facilities for actual oil spill emergencies by outlining training requirements and pre-emptive and containment measures. The department also provides oil spill response services to joint venture companies through oil spill response.

Maersk Oil, as a member of the Regional Clean Sea Organization, is committed to the ‘Clean Gulf’ concept. During 2011, Maersk Oil Qatar employees were trained on oil spill response in accordance with International Maritime Organisation standards. Maersk Oil Qatar also conducted an external oil spill radar preparedness audit, and based on this audit put in place a Current Buster boom and four fixed dispersant systems.

In 2011, Oxy Qatar experienced no significant spills of oil or condensate to the Arabian Gulf. Oxy Qatar’s risk-based asset integrity programme prioritizes facilities, pipelines and gathering lines for evaluation, inspection and maintenance and focuses investments to prevent pipeline corrosion, enhance secondary containment, train operators on release prevention and response, and audit and inspect operations. Oxy Qatar continues to devote significant capital and operating expenditures to spill prevention, detection and control efforts. This includes reinforced operator authority to shut down facilities, pipelines and wells safely when a potential incident is detected-without the need to first contact a supervisor.

Waste Management

Around the world, rising economic prosperity, population growth, urbanization and industrialization are all contributing to increasing levels of solid and hazardous waste. The OECD estimates that every 1% increase in national income creates a 0.69% increase in municipal solid waste.

As Qatar continues to experience rapid growth in GDP and population, waste management poses a significant challenge and opportunity. It is estimated that Qatar creates more than 7,000 tonnes of solid waste every day, with commercial and industrial activities accounting for 70% of waste generated.

At present, most of Qatar’s waste is sent to one major landfill site. Approximately 8% of waste is recycled. The country has committed to developing a comprehensive waste management strategy to contain levels of domestic and industrial waste and increase rates of recycling, with the goal of reaching a national recycling rate of 38% by 2016.

As for many other sectors and for society at large, waste presents a challenge for the energy and industry sector, particularly as the sector continues to expand and diversify. Minimizing waste to increase process efficiency is an important goal for many companies. Given the nature of the sector’s operations and the materials it handles on a regular basis, the treatment and disposal of hazardous waste represents another aspect of the challenge. Disposal of hazardous waste is currently handled by third parties approved by the Ministry of Environment. The relative immaturity of waste management facilities in the region means that a number of companies are taking steps to ensure that third-party waste handlers adhere to international best practice.

In recent years, reuse and recycling have become more prevalent across the sector. As waste management infrastructures develop, including markets for recycled materials, economically beneficial opportunities for recycling are beginning to emerge.

Waste Generation

As reported by 24 companies, the sector produced a total of approximately 376,978 tonnes of waste in 2011, including both hazardous and non-hazardous waste. Total waste increased by 25% between 2010 and 2011 but this increase reflects the inclusion of five additional companies reporting their waste in 2011.

Eighteen of the 24 companies reported waste generation data for both 2010 and 2011, eight of which experienced an increase in waste generation and 10 of which recorded a decrease. For the 18 companies that reported comparable data, total waste decreased from 287,576 tonnes to 249,546 tonnes, a reduction of 13%.

A good example of a reduction in waste generation was achieved by Saipem Qatar, which reduced their waste by 44,516 tonnes between 2010 and 2011, or 48%. Saipem’s strategy on waste management is based on principles of waste limitation and segregation, in a controlled manner, with as much as possible being handled close to its source of

Waste Generation

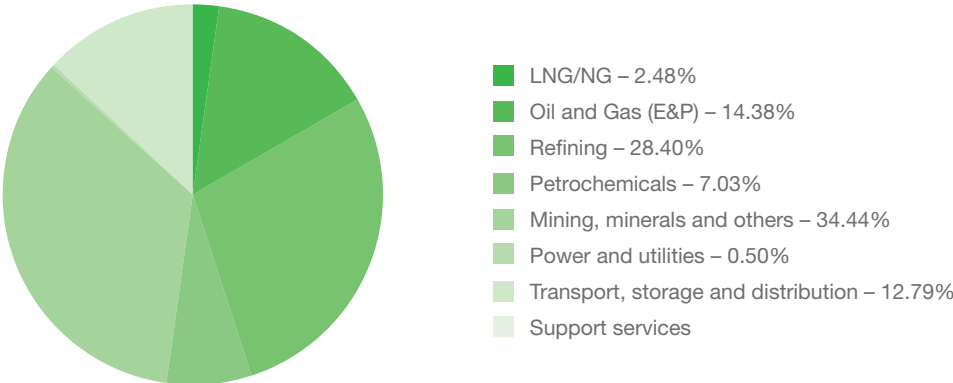
	2010	2011
Number of companies reporting	18	24
As a % of companies invited to report in 2011*	53%	71%
Total waste generated (tonnes)	287,576	376,978
Companies with increased waste generation		8
Companies with decreased waste generation		10
Waste generated by 18 comparable companies	287,576	249,546
% change for 18 comparable companies		-13%

*34 out of 36 companies were invited to report on this indicator

generation for further reuse, recycling, and safe disposal. Most of the waste resulting from site activities is reused within the project or separately collected for recycling. This includes ferrous and non-ferrous metals, copper and aluminium scraps, used vehicle batteries and electronic waste. In addition, Saipem have signed an agreement with a local paper recycler to recycle waste paper, cardboard, office paper and packages generated on site.



Waste Generation by Subsector 2011



Other examples of waste reduction initiatives include QChem, which has reported a 95% reduction in the production of chrome waste since 2005, to a best-in-class measure of 1.45 kg/KT HDPE in 2011. It also achieved a 31% reduction in its total waste from 2010 to 2011. This reduction can be credited to its waste minimization programme and process optimization initiatives that helped reduce catalyst waste. Initiatives included training and efforts to reduce the volume of hazardous waste, such as oily rags and other soiled equipment, emerging from routine operations.

ORYX GTL provides another example of waste reduction through the implementation of a waste management programme, which has resulted in a decline of 12% in their total waste between 2010 and 2011. ORYX GTL identified various sources of waste streams and implemented a '4Rs' (reduce, reuse, recycle, and recover) concept, setting ambitious metal recovery targets and defining various source streams and revising its waste management work flow processes. The programme has enabled:

- Reduction of wastes by proper segregation at source.
- Recovery of metals from spent catalysts.
- Energy recovery from wax and hydrocarbon wastes.
- Recycling of plastics, paper, metal, and used oils.
- Recovery of hydrocarbon from waste oil and sludge.

QP-Ras Laffan industrial city operates and maintains the following sophisticated common waste management facilities:

- **Waste Water Treatment** – the plant is used to treat sewage generated in the city, and through a strategy of sustainable environmental management, the treated water is re-used for irrigating landscaping within the city's green spaces.
- **Non-Hazardous Waste Management** – RLC operates a non-hazardous Waste Management Facility (WMF) that consists of three units that handle various types of acceptable waste.
- **Marine Waste Facility** – a marine waste reception facility to receive oily waste from ships will be completed by 2014. This facility will meet international marine pollution (MARPOL) standards and will enable ships to dispose of their oily waste safely.

The information in this report is a first step towards presenting aggregated waste data for the sector. Efforts will continue to improve the gathering and presentation of waste data, showing hazardous and non-hazardous categories. Standardisation of methods, definitions and presentation of waste generation intensity (using each subsector's unit of production) will also increase as the SDIR programme develops.



Recycling

Recycling practices in the energy and industry sector are still in the early stages of development. Nevertheless, recycling initiatives are beginning to bear fruit.

In 2011, 15 companies reported on the percentage of waste recycled, representing 42% of the companies involved in the reporting programme. An accurate sector-wide average and total are not viable at this level of reporting, but six of the 12 companies have recycling rates of more than 40%, with four showing improvement in the percentage recycled from 2010 to 2011.

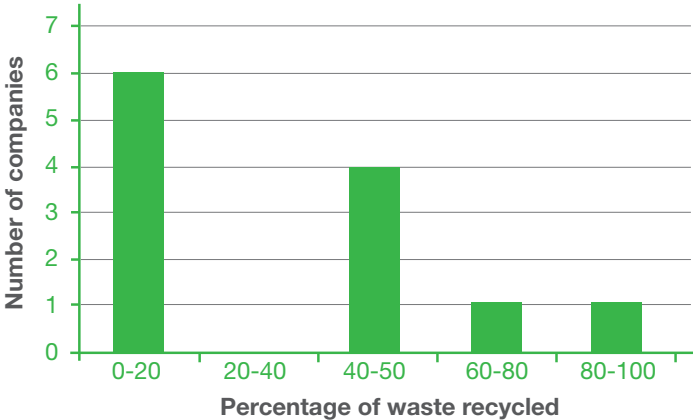
Examples of companies implementing recycling programmes include:

- QAFCO, which recycled 62% of its waste in 2011 through implementation of a '3Rs' programme that promoted reducing, reusing and recycling waste.
- RasGas, which implemented a company-wide waste management programme, originally launched in 2009. This has provided a cradle-to-grave framework for waste management, including recycling. According to benchmarking data provided by the company, RasGas reports best-in-benchmark performance within the LNG subsector, with 43% of its waste recycled in 2011. This includes domestic and office waste, industrial waste and e-waste.

Although not currently measured within the sector, there is a growing opportunity to source recycled material as input. For example, Qatar Steel sources scrap steel as an input material. In 2011, 17% of Qatar Steel's raw materials came from scrap steel, and to the best of its knowledge it recycles close to 100% of the scrap steel generated in Qatar. The benefits include reducing the amount of imported raw material, saving time, money and emissions; creating a new micro industry of scrap steel recycling, which generates wealth and employment; and ensuring that scrap is not sent to landfill.

QAFCO has initiated a Waste Exchange Donation System (WEDS), a free and confidential non-hazardous waste materials exchange system based on the idea that one business's waste could be raw material for another business. WEDS provides a medium for sharing information on waste that needs to be donated or exchanged, functioning as a mediator for connecting waste owners with requestors. The system helps to prevent the accumulation or disposal of non-hazardous waste and obsolete materials or chemicals and supports their beneficial use by others.

Waste Recycling Performance in 2011



Air Emissions

Air emissions arising from the energy and industry sector can be classified into two groups: greenhouse gas emissions, which have been covered within the climate change section, and non-greenhouse gas emissions, which include:

- Nitrogen oxides (NOx).
- Sulphur oxides (SOx).
- Volatile organic compounds (VOCs).

Emission of these gases, which occurs in many industrial activities, can have negative impact on the environment and human health, especially when combined with the high level of dust experienced within Qatar.

Qatar's National Development Strategy 2011–2016 includes measures to tackle air pollution. These include the development of a national strategy, an early warning tool to determine the source of ozone pollution, and new air quality controls to initiate upgrades of supporting infrastructures and institutions. The strategy makes clear that all sectors—especially the private sector—have a role to play.

The Ministry of Environment regulates levels of criteria pollutants within Qatar. Acceptable emission levels are set within all companies' CTOs. The DG continues to provide specific guidance to the sector in line with the National Development Strategy 2011–2016. and The Ministry of Environment acts through the HSE

Legal Framework and other associated guidance, which cover all aspects of environmental regulation and best practice, including air emissions.

NOx Emissions

Nitrogen oxides are primarily released during combustion, especially at high temperatures. In 2011, 26 companies reported a total of 59,762 tonnes of NOx emissions, a 28% increase from 2010, partially as a result of in an increased number of reporting companies.

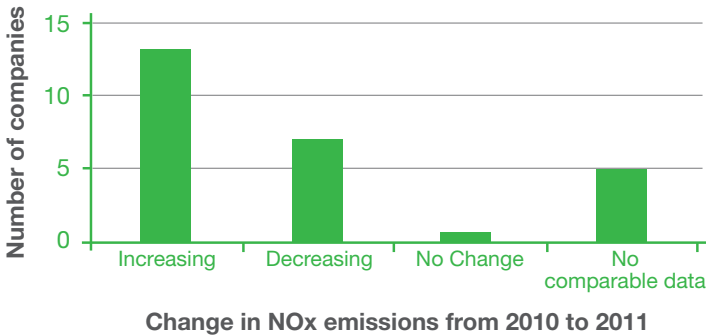
Thirteen of the 22 companies reporting comparable data for 2010 and 2011 showed higher NOx emissions in 2011, generally as a result of increased production or expansion of plant facilities. Eight companies reported a decrease in NOx emissions or no change. The 22 companies that provided comparable NOx data from 2010 to 2011 recorded a 10% increase in emissions from 46,588 to 51,049 tonnes.

	2010	2011
Number of companies reporting	22	26
As a % of companies invited to report in 2011*	65%	76%
Total NOx emissions (tonnes)	46,588	59,762
NOx emissions for 22 comparable companies	46,588	51,049
% change for 22 comparable companies		10%

*34 out of 36 companies were invited to report on this indicator



NOx Emission Trend



The Ministry of Environment has placed a stringent limit of nine parts per million (ppm) NOx emissions for gas turbines in power generation units while operating in combined cycle. Mesaieed Power Company, Ras Girtas Power Company and Qatalum have achieved single-digit NOx parts per million concentrations through Selective Catalyst Reduction technology, using ammonia solution provided by QAFCO. In 2011, RasGas spent \$46.88 million on

air emissions environmental projects, the majority of which related to major capital expenditure on NOx retrofit projects on gas turbines and utility boilers. Future reporting will enable more sophisticated comparison and analysis of performance by the sector, including emission intensity in terms of emissions per unit of production.

SOx Emissions

Sulphur oxides are formed when fuel containing sulphur, such as coal or hydrocarbon (gas, gasoline and diesel) is burned, and when gasoline is extracted from oil or metals extracted from ore.

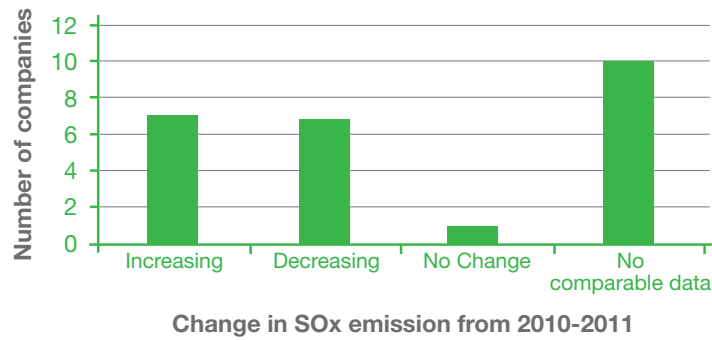
In 2011, 25 companies reported a total of 55,719 tonnes of SOx emissions in comparison to 81,806 in 2010. This represents a 32% decrease in SOx emissions despite a 25% increase in the number of companies reporting.

For the 20 companies who have reported comparable data between 2010 and 2011, SOx emissions decreased by 41%. A large proportion of the decrease can be attributed to one company stabilizing its operations after starting-up a large project to increase production capacity in 2010. Reductions of this scale are therefore not expected to continue as production increases in the future.

	2010	2011
Number of companies reporting	20	25
As a % of companies invited to report in 2011*	59%	74%
Total SOx emissions (tonnes)	81,806	55,719
SOx emissions for 22 comparable companies	81,806	48,003
% change for 22 comparable companies		-41%

*34 out of 36 companies were invited to report on this indicator

SOx Emission Trend



Of the 25 companies reporting their SOx emissions, seven companies reported an increase in emissions, with seven companies reporting a decrease in emissions. The total reduction in SOx for these companies was 38,193 tonnes.

An example of a reduction in SOx emissions is RasGas with emissions that were 26,390 tonnes lower in 2011 than 2010. The reduction was primarily due to higher reliability in Trains 6 and 7 and AKG-2, resulting in fewer unplanned acid gas releases through flaring. Efforts to improve the performance of recently installed sulphur recovery units (SRU)

resulted in a decrease in emissions due to better performance.

As with NOx emission data, future reporting will allow more detailed comparison and analysis, including emission intensity in terms of emissions per unit of production.

VOC Emissions

Volatile organic compounds (VOCs) are organic compounds that vaporise in the atmosphere and may contribute to the formation of ground-level ozone.

At present, the extent of VOC emission reporting does not enable consolidated sector-wide analysis. However, notable initiatives to reduce VOC emissions include:

- ORYX GTL’s “Smart LDAR” programme - which the company sees as a milestone achievement in their quest to improve environmental performance in a cost effective way. The objective of the programme is to cost effectively detect and repair major leaks sooner than conventional monitoring methods allow. During the 2011 programme, 130 leaks were identified in the facility which emitted approximately 233 tonnes of VOC. After implementing the repair programme, emissions were reduced to 105 tonnes (a reduction of more than 55%). In addition, ORYX GTL is supporting and participating in tanker vapour collection and incineration in conjunction with other port users to achieve 95% control of VOC emissions, generated during naphtha loading.
- At Qatargas, in line with best industry and regulatory practices, around 55,000 equipment and components are subjected to leak detection and repair (LDAR) including process and piping equipment associated with fugitive VOC emissions

in the LNG trains, the Laffan Refinery and offsite Ras Laffan Terminal Operations product storage tank farms. VOC leaks monitored and identified are populated on a software interface that allows fast and efficient uploading of data into an LDAR database. Each item of equipment found to be leaking in excess of the leak threshold is repaired and re-monitored for effectiveness. Qatargas’ LDAR programmes have successfully ensured low VOC leak rates of 0.2% and below, which are among the lowest in the industry. LDAR audits and LDAR re-monitoring programmes at Qatargas facilities ensure the fugitive VOC reduction achieved is sustained.

Future Direction

The DG is currently working with the Ministry of Environment and QP-RLC Directorate and the Laffan Environmental Association (which groups RLIC operators) in a project to evaluate the environmental air carrying capacity at Ras Laffan Industrial City. This effort includes a focus on air emissions (including NOx, SOx particulate matter and ozone). The DG envisions that a similar study will be conducted for MIC in the near future.



Biodiversity

Biodiversity, the variability among living organisms within a given ecosystem, includes living organisms and their complex interactions, as well as interactions with the non-living aspects of their environment. The level of biodiversity is an important indicator of the health of natural ecosystems and the services those ecosystems provide.

Qatar's biodiversity is a valuable part of its culture, so much so that conserving it is understood as a moral duty. However, as in many countries of the world, biodiversity in the country is facing threats from human activities caused by construction, industrialization, and international trade that have introduced invasive species to the Qatari ecosystem. As a result of all these trends, some 31 species, ranging from the Arabian Oryx to the green turtle and the brown shark, are categorized as threatened with extinction.

Recognizing the importance of biodiversity to Qatar, the National Development Strategy 2011–2016 includes the goal of creating a national biodiversity database by 2016 to inform decision making. This practical step supports regional activities that protect biodiversity.

The Sector and Biodiversity

The energy and industry sector recognizes that its continuing business success, including gaining access to new resources, depends upon its ability to explore for and develop reserves without adversely affecting the natural environment. Companies within the sector are therefore seeking to integrate biodiversity considerations into their everyday business practices and operations. Doing so helps minimize risks and enables companies to make a positive contribution to conservation, on and offshore. For example, the effective management of controlled discharges to sea, in which temperature and salinity

can have a significant effect on fragile marine ecosystems, is an important aspect of offshore oil and gas operations.

The effects of ballast water from an increasing number of ships transporting LNG and other goods to and from Qatar can also have a major impact on marine ecosystems. This is of particular importance with the number of ships visiting Qatar expected to double in the coming three to five years, according to DG estimates. To safeguard the marine ecosystem, Qatar is signatory to a number of conventions and treaties (IMO, ROPME, UNCLOS and MARPOL) with Article 51 of the Decree Law No 30 (2002) for Environmental Protection stating that "Ships and carriers... are forbidden to throw or to drain damaging or polluting substances, wastes, residues causing damage to the environment, to public health or legitimate usage of the sea". Other bylaws ensure equipment is present at ports to dispose of dirty ballast water. The DG continues to recommend additional practical steps to safeguard against the potential for a major incident. Shipping companies within the sector have created and implemented ballast water management plans that minimise use of ballast water and ensure mid-ocean ballast exchange whenever possible.

Ten of the reporting companies included discussion of biodiversity in their reports in 2011. Increased disclosure in future will help more companies in the sector measure and manage the impact of their operations on biodiversity.



Biodiversity Research and Protection

Many companies have initiated research studies to develop better understanding of ecosystems, and obtain deeper knowledge of the relationship between their operations and the local environment.

Qatargas, for example, is continuing its coral monitoring programme, which was initiated in 2006 in partnership with the Ministry of Environment. This programme has sought to save more than 4,500 coral colonies in Qatar's waters close to the underwater pipeline-laying activities related to the company's expansion projects, Qatargas 2, Qatargas 3 and Qatargas4.

Meanwhile, RasGas conducts annual turtle monitoring surveys and studies on marine water quality in the Ras Laffan area.

Another example is Maersk Oil Qatar, who are engaged in scientific research projects to explore the diversity of marine species in Qatari waters in collaboration with the Ministry of Environment through Maersk Oil Research and Technology Centre.

As part of the new Barzan Gas project initiated in 2011, RasGas is conducting a turtle nesting and hatchling survey, a near-shore coral and seagrass baseline study, and an archaeological survey

undertaken as part of the project's environmental, socio-economic and health impact assessment (ESHIA). The ESHIA also includes a turtle and coral management plan.

In 2011, RasGas completed the seabed survey of the Barzan pipeline corridor and potential relocation sites. This involved documenting any significant ecological changes in the pipeline corridor since the original ESHIA baseline survey in 2008 and confirming coral density estimates and the number of hard corals for potential relocation. Coral habitats were delineated and characterised, and data on oceanographic conditions (such as temperature, salinity, turbidity) was gathered. Locations were assessed for coral relocation, a transplant plan and coral management plan was developed, and recommendations made. Coral relocation was completed in February 2012 and included the creation of man-made reef development to create suitable sites.

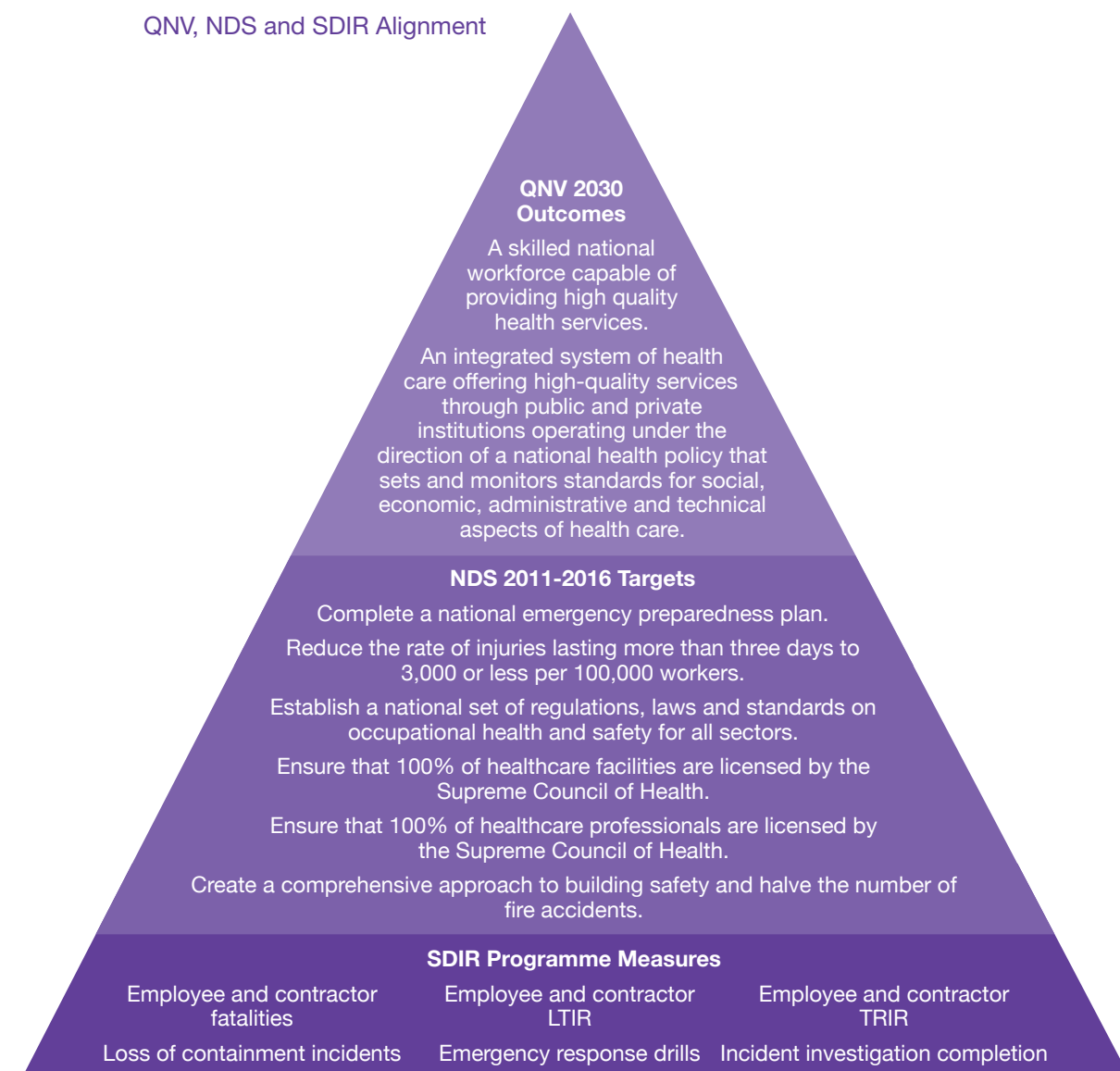
QAFCO has continued to protect biodiversity through its Sahara Forest project, a large reforestation activity, and the ecological conservation of Al-Beshheriya Island.

Health and Safety

Personal Safety | Process Safety | Health | Workforce Engagement on Health and Safety

Given the size and industrial nature of the energy and industry sector and the hazardous materials it routinely handles, the risk of accidents is inherent. Every company seeks to ensure that each employee and contractor returns home safely at the end of every working day.

QNV, NDS and SDIR Alignment



Health and Safety

Ensuring the safety and health of the workforce, including employees and contractors, is an important priority for the energy and industry sector.

It is achieved through:

- Taking measures that promote people and process safety.
- Having access to high-quality on-site healthcare facilities and professionals who care for the well-being of employees and contractors.
- Securing the active involvement of all employees and contractors in promoting health and safety.

The sector’s response to this topic is guided by the laws and regulations of Qatar that cover a range of topics from protection from infectious disease and radiation, to human food control. The sector also takes account of international standards and best practices. The DG provides guidance, support and direction to the sector through engagement, and monitoring compliance with relevant laws and regulations.

Health and Safety Management Systems

Companies have made significant progress in developing integrated health and safety or HSE management systems that comply with QP standards and align with internationally recognised standards and practices. By 2011, 19 companies (53%) from the sector had developed their own health and safety management system, and nine of those had their health and safety management system certified to the international standard OHSAS 18001. Management systems of this type help companies measure, monitor and manage their health and safety performance while ensuring compliance with international best practice and principles of continuous improvement.

To advance and regulate the sector further, the DG is developing a Technical HSE Framework for Energy and Industry Sector. It will provide a framework for implementing health, safety and environment regulations, and will include international standards, such as:

- BS 8800:2004, Occupational health and safety management systems – Guide.
- BS OHSAS 18001:2007, Occupational health and safety management systems – Requirements.
- ILO-OSH 2001, Guidelines on Occupational Safety and Health Management Systems.
- API Publication 9100A, Model Environment, Health and Safety Management System.
- Other safety, environment, quality and oil-and-gas-specific standards.

This framework is expected to be approved by mid-2013.

To encourage continuous improvement in safety performance and to recognise outstanding performance, QP initiated the Safety Excellence Awards in 2010 under the guidance of His Excellency Dr. Al-Sada. Awards were presented in 2011 under the QP Joint Ventures Category to Qatar Shell GTL Limited (Gold Award) for its Pearl GTL Project, Q-Chem (Silver Award) for its QSAFE Process Revamp, and RasGas (Bronze Award) for its Interactive Safety Training Programme.

Health and Safety and the SDIR

Safety was one of two priority focus areas within this year’s SDIR programme. In support, the DG provided specific safety indicators (see table) for preparing each company’s performance report. As a result, these measures were among the most widely reported by companies participating in the SDIR programme.

Priority Safety Indicators

Lagging indicators	Lost-time injury rate
	Total reportable rate
	Loss of containment (LOC) incidents
	Incident investigation completion
Leading indicators	Process hazard assessments (PHA)
	Process safety action item closure
	Training completed on schedule
	Procedures review and updating
	Work permit compliance
	Safety critical equipment inspection
	Management of change (MOC) and pre start-up safety review (PSSR)
	Emergency response drills

Employee Fatalities

	2009	2010	2011
Number of companies reporting on employee fatalities	22	24	33
As a % of companies invited to report in 2011*	61%	67%	92%
Companies reporting zero employee fatalities	22	22	32
Total employee fatalities among reporting companies	0	2	1

*All 36 companies were invited to report on this indicator

Contractor Fatalities

	2009	2010	2011
Number of companies reporting on contractor fatalities	20	23	32
As a % of companies invited to report in 2011*	56%	64%	89%
Companies reporting zero contractor fatalities	18	23	31
Total contractor fatalities among reporting companies	3	0	2

*All 36 companies were invited to report on this indicator

Employee and Contractor Injuries – Lost-Time Injury Rate (LTIR)

Lost-time injury rate (LTIR) measures the number of lost-time injuries (LTI) recorded for a group of workers per million hours worked by that group. In 2011, 31 companies reported their employee LTIR (25 included comparable data for 2010), and 28 reported their contractor LTIR (23 included comparable data for 2010).

The average 2011 employee LTIR, by company, was 0.48, compared to 0.26 in 2010. This increase is primarily due to a small number of companies from

Personal Safety

Given the size and nature of the energy and industry sector and the hazardous materials it routinely handles, the risk of accidents is inherent. Every company seeks to ensure that each employee and contractor returns home safely at the end of every working day.

Employee and Contractor Fatalities

Regrettably, one employee fatality occurred in 2011 among 33 reporting companies, and two contractor fatalities occurred among 32 reporting companies. In 2010, two employee fatalities occurred among 24 reporting companies, with zero contractor fatalities among 23 reporting companies. The goal was zero fatalities for both employees and contractors. To help achieve this goal, engaging with employees and contractors on safety was emphasised.

high-risk subsectors reporting increases in their LTIR in 2011. The increase also reflects better and more rigorous reporting. Overall, of the 25 companies with comparable year-on-year data, four reduced their employee LTIR, 16 remained at the same level, and five experienced an increase.

Future reporting will focus on the number of lost time events occurring and man hours worked in order to present a weighted average based on the number of man hours worked.

Employee Lost-Time Injury Rate (LTIR)

	2009	2010	2011
Number of companies reporting on employee LTIR	22	25	31
As a % of companies invited to report in 2011*	61%	69%	86%
Companies reporting zero employee LTIR	15	18	21
Average employee LTIR for total reporting companies (by company)	0.60	0.26	0.48
Average employee LTIR for 25 comparable companies (by company)	–	0.26	0.51

*All 36 companies were invited to report on this indicator

The 2011 ‘by company’ average contractor LTIR was 0.18 for the 28 reporting companies, compared to 0.23 in 2010 among 23 reporting companies, a reduction of 18%. For the 23 companies with comparable year-on-year data, four reduced their contractor LTIR, 15 remained at the same level, and four increased their contractor LTIR between 2010 and 2011.

Contractor Lost-Time Injury Rate (LTIR)

	2009	2010	2011
Number of companies reporting on contractor LTIR	20	23	28
As a % of companies invited to report in 2011*	56%	64%	78%
Companies reporting zero contractor LTIR	12	15	16
Average contractor LTIR for total reporting companies (by company)	0.44	0.23	0.18
Average contractor LTIR for 23 comparable companies (by company)	–	0.23	0.18

*All 36 companies were invited to report on this indicator

There have been many areas of excellent personal safety performance. These include Ras Laffan Power Company achieving five years without a lost time accident which helped them win the Royal Society for the Prevention of Accidents (RoSPA) Gold award at the RoSPA Occupational Health and Safety Awards 2011.

Qatargas achieved a major safety milestone of zero LTI for all employees and contractors on its Plateau Maintenance Project (PMP) covering three million man-hours. The project’s behavioural-based safety observation programme generated more than 40,000 STOP cards, used to promote better safety behaviour through observation and intervention. In the words of the Qatargas’s PMP project manager: “To mitigate risks, the team uses ‘STOP observation cards’ to document safe and unsafe behaviours

and conditions. The data is studied thoroughly each week, and mitigating measures are continuously applied based on this analysis and trends.” Since signing the project’s engineering, procurement and construction contract, the team has focused on applying Qatargas’s Incident and Injury Free (IIF) initiative. STOP cards have been valuable as a “proactive activity, providing a leading indicator for a safe workplace.”

In 2011, Qatar Vinyl Company (QVC) achieved five million LTI-free employee man-hours since starting operations, and 2.88 million LTI-free contractor man-hours. This can be attributed to ongoing safety inspections, training, reporting and also ensuring that all fixed schedule meetings have safety as the first point on the agenda.

Employees and Contractors Injuries – Total Reportable Injury Rate (TRIR)

Total reportable injury rate (TRIR) measures the overall frequency of injuries per number of hours worked. In 2011, 30 companies reported employee TRIR (23 provided comparable data for 2010). Twenty-eight also reported contractor TRIR in 2011 (21 providing comparable data for 2010). The 2011 ‘by company’ average employee TRIR was 1.75, down from 2.08 in 2010 for 23 companies,

a reduction of 16%. Of the 23 companies with comparable year-on-year data, 12 reported reduced employee TRIR, eight remained the same, and three reported increased employee TRIR. This group of companies, however, recorded a slight increase in ‘by company’ average employee TRIR of 1% from 2.08 to 2.10.

Employee Total Reportable Injury Rate (TRIR)

	2009	2010	2011
Number of companies reporting on employee TRIR	20	23	30
As a % of companies invited to report in 2011*	56%	64%	83%
Companies reporting zero employee TRIR	6	10	13
Average employee TRIR for the reporting companies, by company	3.06	2.08	1.75
Employee TRIR for 23 comparable companies	–	2.08	2.10

*All 36 companies were invited to report on this indicator

The 2011 ‘by company’ average contractor TRIR was 1.00 for the 28 reporting companies, compared to 2.41 in 2010 among 21 reporting companies. Of the 21 companies that provided comparable data for 2010 and 2011, ten reported decreased contractor TRIR, five no change and six increased contractor TRIR.

Contractor Total Reportable Injury Rate (TRIR)

	2009	2010	2011
Number of companies reporting on contractor TRIR	18	21	28
As a % of companies invited to report in 2011*	50%	58%	78%
Companies reporting zero contractor TRIR	7	6	9
Average sector contractor TRIR for the reporting companies	1.17	2.41	1.00
Contractor TRIR for 21 comparable companies	–	2.41	1.21

*All 36 companies were invited to report on this indicator

In 2011, Maersk Oil Qatar introduced incident-free leadership teams (IFLTs), aimed at increasing workforce engagement and enhancing Maersk’s capability of identifying, communicating and resolving safety issues across the company. The programme created dedicated company-wide IFLT forums, which supported and enabled comprehensive analysis and feedback focused on safety. The IFLT’s focused on key areas such as incident-free priorities, personal and process safety opportunities and challenges,

adaptive challenges and contractor management. They enabled efficient and effective identification and resolution of safety issues, which improved the company’s safety performance.

Future reporting will focus on the number of man hours worked by employees and contractors and the type of recordable accidents and lost time events occurring. This will allow more precise presentation of the sector’s personal safety performance.

Process Safety

Through good engineering, operation and maintenance practices, process safety aims to protect employees, contractors and communities by preventing hazards such as fires, explosions and toxic gas clouds.

It is essential in ensuring business continuity and protecting corporate assets. Process safety includes loss of containment policies or procedures, hazard evaluation, training, procedures review, work permits, safety inspection and emergency response.

Process Safety in Action

Most of the sector's companies systematically integrated process safety into their safety management systems. Maersk Oil Qatar initiated a process safety review in 2011 to evaluate the management of safety systems; the design and engineering of facilities; hazard identification and assessment; inspection, testing and maintenance of equipment; and effective alarm, shutdown, and emergency response procedures. Maersk assessed all offshore locations and identified areas for improvement, which are now being implemented. They also conducted a standard review of operational safety procedures, production guidelines and procedures.

Dolphin Energy has developed a process safety management framework for managing the integrity of safety-critical operating systems and processes by applying good design principles in engineering, operating and maintenance. The initiative shifted focus from occupational or personal safety to process safety, to complement the occupational safety and environmental protection already implemented. They established a work group and set process safety metrics as the first priority.

As part of its efforts to enhance process safety, ExxonMobil Qatar has developed its ExxonMobil

Current regulations, emerging industry standards, and the DG Technical HSE framework under development, provide thorough guidance on process safety, including proposed lagging and leading indicators.

Research Qatar programme to conduct research on an advanced, immersive, 3D training tool at their facility at the Qatar Science and Technology Park. ExxonMobil Research Qatar has also researched a remote gas-detection system that pairs infrared camera technology with a sophisticated computer algorithm that autonomously identifies hydrocarbon emissions. Remote gas-detection can reduce hydrocarbon emissions by continuously scanning for leaks and automatically notifying companies of potential problems, which helps to avert potential safety hazards and to reduce emissions to the environment.

RasGas, with seven LNG trains, two Al Khaleej Gas (AKG) domestic gas plants and a helium plant, conducted four planned shutdowns at the Ras Laffan site in 2011. The shutdown management system – a clearly defined and staged process – ensures the smooth, timely shutdown and start-up of process equipment. This involved a hazards-based criticality assessment to ensure the right levels of controls, resources and supervision were in place. RasGas consider a wide range of factors when managing a shutdown, including access control, traffic, waste management, job safety, heat stress, exposure to hazard such as chemical substances or noise, emergency response and rescue plans, and communication.

Loss of Containment (LOC)

A loss of containment (LOC) is an unplanned or uncontrolled release of any material from primary containment (such as a tank, vessel, pipe, truck, rail car or equipment intended to serve as the primary container), including non-toxic and non-flammable materials (such as steam, hot condensate, nitrogen, compressed CO₂ or compressed air). An LOC incident refers to an incident where hazardous substances are released which have the potential to cause harm to people or damage to assets or the environment. 'LOC incidents' is a core safety indicator for the sector, given that companies routinely deal with many hazardous substances like chemicals, lubricants, and oil. The DG identified this as a key indicator to be measured and reported by companies in the energy and industry sector, since it

reflects the efforts made by companies to preserve the integrity of the operating facilities while reducing potential hazardous events.

Twenty-six companies reported their LOC performance for 2011, with comparable data from 19 organisations who reported their 2010 performance. The total number of LOC incidents rose from 42 to 287 from 2010-2011, due primarily to a combination of the higher number of reporting companies and more complete reporting. When comparing the LOC incidents of those companies providing comparable data for 2010 and 2011, the number of LOC incidents decreased by 33%, from 42 to 28. Of those same companies with comparable data, two reduced their LOCs, 12 maintained the same number, and five reported an increase in LOCs.



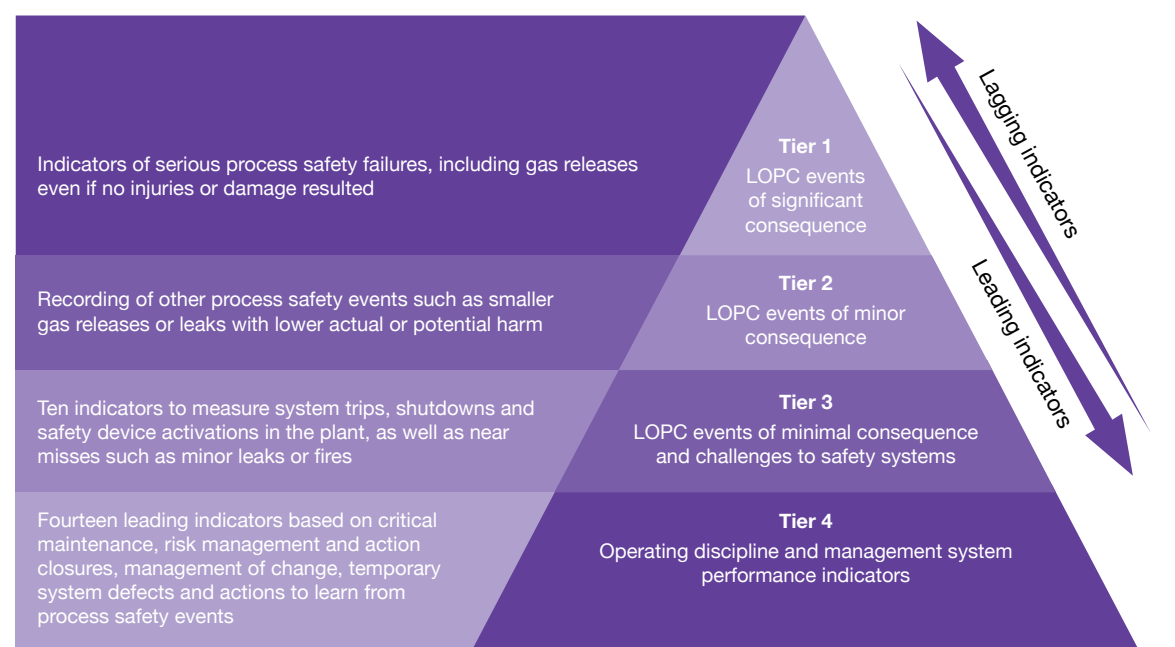
Loss of Containment (LOC) Incidents

	2009	2010	2011
Number of companies reporting on LOC incidents	14	19	26
As a % of companies invited to report in 2011*	40%	56%	76%
Total LOC incidents for the reporting companies	12	42	287
Companies reporting zero LOC incidents	10	13	17
Total LOC incidents for 19 comparable companies	–	42	28

*34 out of the 36 companies were invited to report on this indicator

In 2010, RasGas introduced a four-tier hierarchy of process-safety indicators to track and prevent hydrocarbon releases, referred to as loss of primary containment (LOPC). RasGas had already identified improvements by applying an industry-wide reporting and measurement framework, which they helped to establish. With this in place, RasGas has worked to ensure the most serious categories of process safety events are reported and investigated formally

by the respective functions, with root cause findings shared among line management and incorporated in work processes. This included a major effort in 2011 to check small-bore pipe work connections across all LNG trains, which were the source of two Tier 1 incidents in 2010. This focus on learning from process safety events contributed to better performance for RasGas in 2011, with no Tier 1 process safety events and two Tier 2 incidents in 2010.



Four-tier indicator framework used by RasGas, based on American Petroleum Institute Recommended Practice 754-2010

Emergency Preparedness

Emergency preparedness requires company-level readiness as well as preparation and collaboration with all relevant stakeholders to plan for the protection of health and safety of employees, communities, and industrial assets in the event of an incident. Emergency preparedness is essential for the sector, and required by law given the potential scale of impact of a serious incident. Most companies’ operations in Qatar are located in industrial areas, and in some cases are close to small neighbouring communities and to sensitive ecological habitats.

In 2011, 25 companies reported on the number of emergency response drills, with 16 providing

comparable data for 2010. In total, the 25 companies conducted 3,143 emergency drills in 2011, and 749 in 2010. For the 16 companies that provided comparable data, five increased the number of drills conducted, eight maintained the same number, and three carried out fewer drills than in the previous year. In total, the number of emergency drills conducted by these companies increased by 4% from 2010 to 2011. The bulk of the increase came from increased drills conducted for new sites and facilities. Currently, ISO 14001 and OHSAS 18001 require emergency drills, but no number is prescribed.

Emergency Response Drills

	2009	2010	2011
Number of companies reporting on number emergency response drills	13	16	25
As a % of companies invited to report in 2011*	36%	44%	69%
Total emergency response drills for the reporting companies	868	749	3,143
Total emergency response drills for 16 comparable companies	–	749	782

*All 36 companies were invited to report on this indicator

Both QP Ras Laffan Industrial City (RLIC) and QP Mesaieed Industrial City (MIC) undertook emergency preparedness planning and drills involving the companies operating within their boundaries and in collaboration with community representatives. Mutual aid agreements are in place at both industrial cities in which companies have agreed to lend manpower, equipment and materials to other companies in the event of an emergency.

Mesaieed Power Company Ltd. (M Power) has developed of emergency response work instructions to ensure of preparedness for unexpected emergencies or disturbances. The main objective is to minimise damage to personnel, environment and equipment. M Power’s emergency response and preparedness procedures are based on having clear lines of communication and coordination between M Power’s management, its workforce, and other parties, such as MIC and its crisis management team, the local municipality and community population, neighbouring industries, civil defence, Qatar emergency departments (fire and police), and relevant ministries. M Power’s procedures also align with other regional and national emergency response plans. Following MIC emergency response procedure, M Power participated in all MIC emergency procedures, drills and unannounced evacuations in 2011.

Qatar Fuel Additives Company (QAFAC) developed 23 pre-planned scenarios of emergency cases in 2011 that cover fire, rescue or hazardous spill incidents. These scenarios cover all processes and issues related to such emergencies, including how to perform specific rescue or first-aid operations, how to contain an emergency, and how to coordinate with outside agencies. The QAFAC Emergency Response Team (ERT) is routinely trained on these scenarios.

Qatargas’s dedicated emergency management services (EMS) division is responsible for developing and ensuring crisis and emergency response management. Qatargas carried out significant work in 2011 to ensure that EMS can continue to protect its assets and interests if a major incident affected plant reliability. Assessment is undertaken on every part of Qatargas emergency response and associated activities in pursuit of excellence in emergency response management.

In 2011, EMS hosted a seminar on Emergency Response and Evacuation Challenges in High-Rise Buildings at the new Qatargas Tower in Doha. The objective was to enhance the knowledge of the Qatargas floor wardens and the Qatargas Initial Response Team in emergency response. Its aim was to enable them to implement a safe and effective emergency response in case of an incident at the Qatargas Tower, which is occupied by more than 1,000 people.

EMS also delivered fire safety education sessions at schools in Al-Khor community and across Qatar to enhance fire safety, as part of QP Ras Laffan Industrial City’s Community Outreach Programme (RLIC COP) and in line with Qatargas’s wider Corporate Social Responsibility (CSR) initiatives.

At a national level, the Qatar National Development Strategy 2011–2016 describes the Government of Qatar’s aim of completing a national emergency preparedness plan to ensure a coordinated national response to major emergencies. This could include a response to an emergency within the sector or plans to protect the sector in the event of another form of national emergency.

Incident Investigation

Incidents occur even when all known preventive measures have been considered and employed. Sector companies are expected to investigate and eliminate the root cause of incidents that do occur, with a view to avoiding similar incidents in future.

Companies in the sector report on the percentage of incident investigations completed. In 2011, 25 companies reported their 2011 incident investigation

completion percentage with 18 companies providing comparable data for 2010 also. The average incident investigation completion for those 18 companies was 82% in 2011, compared to 86% a decrease of 4%. Of the 18 companies reporting comparable year-on-year data, one company increased their incident investigation completion rate, while 13 maintained their rate, and four reported a lower rate of completion.

Incident Investigation Completion (%)

	2009	2010	2011
Number of companies reporting	13	18	25
As a % of companies invited to report in 2011*	36%	50%	69%
Number of companies reported 100% incident investigation	8	12	16
Average ‘by company’ incident investigation completion (%)	86%	86%	84%
Average incident investigation for 18 comparable companies	–	86%	82%

*All 36 companies were invited to report on this indicator



Health

Qatar has made the health of its population a central component of its development.

This is reflected in the QNV 2030 ambition of building “A healthy population: mentally and physically”, and the Qatar NDS 2011–2016 ambition of “Nurturing a healthy population” and “improving occupational health”, through:

- Developing national occupational health standards and regulations and enforcing compliance.
- Increasing the number of general practice physicians.
- Implementing the approved model of care by 2016.
- Preparing a national clinical services framework.
- Achieving an 80% data-compliance rate for healthcare providers, and other targets.

To further demonstrate Qatar’s commitment to health, Qatar ratified the international health regulations (IHR) (2005) from the World Health Organization.

For the energy and industry sector, having healthy employees and contractors is a core part of having a workforce that is productive, innovative, motivated and safe. Ensuring a healthy work environment is constant challenge in high-risk sectors such as energy and industry, which involves working with chemicals, lubricants, heat, noise and other potential health hazards on a routine basis.

The DG Health Role

The energy and industry sector is guided and regulated from a the health perspective by the DG to address the following:

- Health-risk and health-impact assessments.
- Occupational health, public health, environmental health and industrial hygiene, food sanitation and hygiene, IHR including pandemic planning, communicable diseases, food safety, chemical disasters, and others.
- Travel health.
- Medical emergency response planning.
- Healthcare providers and healthcare facility assurance framework (healthcare licensing assurance).
- Medical evacuation and continued medical care.
- Health performance measures.

- Incident investigation and monitoring.
- Health audits and health inspections.
- Health performance review, sector key performance indicators (KPIs), and trends analysis.

The DG’s dedicated resources work closely with the energy and industry sector and the Supreme Council of Health (SCH) to ensure the sector is meeting and in some cases exceeding national regulations and goals concerning health. These goals include the Qatar National Development Strategy 2011–2016’s goals for a healthy population, including:

- Implementing an early warning surveillance and tracking system.
- SCH licensing of 100% of healthcare professionals and 100% of healthcare facilities.

The Sector's Approach to Health

In 2011, the sector received 46 health alerts from the SCH, all of which were communicated to the companies across the sector for their education, use and further distribution. The sector conducted several health campaigns in 2011, including:

- The 14th Industry Health Advisors Forum (IHAF), opened by Mr. Saif Al Naimi, Director of the DG, at Renaissance Hotel City Centre in December 2011.
- The MMR (Measles, Mumps and Rubella) vaccine campaign for industrial concessions areas in September 2011 held by the DG, in collaboration with SCH.
- A World Health Day Symposium in April 2011, with 15 representatives from the energy and industry sector in attendance.
- Tuberculosis awareness campaigns for healthcare workers in Ras Laffan, Mesaieed, and Dukhan in March 2011. These were conducted by the DG, in collaboration with SCH.
- Celebrating 'World No Tobacco Day' in May 2011, coordinated by the DG and SCH.

- Organizing the seasonal influenza awareness and vaccination campaign in 2011, supported by SCH and Centre for Health and Wellness.
- The sector as a whole is aiming to strengthen its 2012 health efforts through initiatives, such as:
- Releasing "Guidelines for Pandemic Planning at Oil and Gas Sector," to assess stakeholder preparedness, to provide stakeholders with the minimum requirements for pandemic planning, and to provide guidance to stakeholders to elevate and/or establish their pandemic preparedness.
 - Establishing an IHR task team to initiate and develop the IHR 2005 implementation plan at the energy and industry sector level.
 - Supporting the Qatar National Development Strategy 2011-2016 goal of implementing an environmental impact health assessment process for all projects affecting public health.



The Sector's Response to National Health Priorities

The sector's companies understand the importance and challenges in national health priorities, and have made significant efforts to address illness prevention and to ensure employee well-being.

These efforts have included treating illnesses and injuries, seeking to avoiding communicable disease, and providing good housing conditions and food standards for workers.

RasGas conducts annual health risk assessments in accordance with its internal management system procedures. These are carried out in line with OGP industry guidance and recognised professional practice. The assessments aim to identify and evaluate health hazards in the workplace. They consider existing or proposed control measures and, where appropriate, recommend additional measures to control exposure to health risks. Since 2010, RasGas has monitored total recordable occupational illness rate.

RasGas has also established a procedure for governing food and water safety. Audits in 2011 ensured the integrity of the food chain, and RasGas catering contractors incorporated hazard analysis critical control point concepts, which are commonly used in the food industry.

Dolphin Energy has undertaken several annual health campaigns, in which they have discussed topics such as hypertension, diabetes, breast cancer and weight management. Dolphin Energy held its annual heat-stress programme to address risks associated with working days throughout the summer. All employees must undergo an extensive health check every three years. Prospective employees have fit-to-work check-ups administered by a medical professional and reviewed by Dolphin Energy's Occupational Health Team to determine whether they are fit enough to participate in the company's work environment.

QP has major heath care facilities across all operational areas and industrial cities for employees, contractors and workers.

Health & Wellness Programs

Building on the efforts of Qatar's leaders to promote healthy and active lifestyles among its people.

ExxonMobil Qatar held its annual health fair for employees and their families in Qatar in 2011. Through a partnership with Hamad Medical Corporation and the Traffic Department, attendees received free health checks and attended workshops on topics such as first aid, cardio-pulmonary resuscitation, healthy lifestyle habits, nutrition, diabetes, and early cancer screening. ExxonMobil further promoted healthy lifestyles in Qatar through

its support of "Your Health First". This nationwide initiative promoted by the SCH in Qatar and Weill Cornell Medical College in Qatar aims to increase public awareness of critical health issues and educate the local community about preventative measures, including lifestyle changes. Recognizing the critical nature of actions such as this, ExxonMobil and Qatar Petroleum, among others, joined the initiative as strategic partners.



In 2011, Qatargas conducted 7,458 mass medical screenings for project contractors. Their other health efforts and assessments included:

- Respiratory protection – indoor air quality, exposure to VOC and sulphur dust, use of breathing apparatus sets.
- Camps, food safety and hygiene – monitoring food handlers, camp kitchen inspections (50 plant, offshore and Al Khor inspections in 2011), potable water-quality checks, provision of medical and recreation facilities for the workforce.
- Ergonomics – office/workstation assessments, stress/fatigue assessments.
- Hearing conservation – personal monitoring on noise exposure, hearing protection equipment evaluation, boundary noise survey and mapping.
- Heat stress – daily alerts, temperature monitoring, training, monitoring of fitness to work in a hot environment.

- Chemicals management – periodic laboratory and warehouse inspections, update of material safety data sheets database, training in handling of hazardous materials.
- Occupational health screening – annual or bi-annual periodic medical examinations (1,800 examinations conducted in 2011), counselling obese or diabetic employees, pre-placement or return to work from medical conditions.

Reporting Health Performance in the Sector

Despite the actions implemented by companies within the sector, systematic reporting of health-related data is not widespread. To address this, companies will be encouraged to include further health measures in their reports.

Workforce Engagement on Health and Safety

Health and safety in the sector is not the responsibility of one person, one entity or one team; it is the responsibility of every individual involved.

Embedding the appropriate safety culture requires advanced health and safety management systems and practices that ensure continuous and active stakeholder engagement. This in turn requires action to enhance awareness and educate personnel on how to run operations safely, as well as how to stay active, fit and healthy.

An effective safety culture is established when safety is valued as highly as productivity. This requires high-level (managerial and supervisory) involvement in and emphasis on the importance of safety. Nineteen companies reported well-established health and safety management systems. The systems prioritised responsible health and safety while ensuring collaborative company-wide efforts in pursuit of health and safety goals. Nine companies obtained OHSAS 18001 certification for their management systems.

The sector has a diverse workforce. Several companies had more than 30 nationalities represented and more than 10 languages spoken in their workplace. These different backgrounds and cultures present challenges for engaging the workforce on health and safety. To manage the challenges, companies introduced initiatives within their health and safety management systems, including:

- Structured employee health and safety committees.
- High-profile awareness campaigns (many coordinated across the sector and with international awareness days).
- Company-level award programmes for encouraging good healthy and safe behaviour.

- Training materials provided in multiple languages.
- Using multimedia as well as clear imagery to educate the workforce about health and safety risks.

In 2011, Maersk Oil Qatar A/S held more than 70 'incident-free' workshops involving approximately 1,700 on- and off-shore employees and contractors. The workshops addressed a wide range of areas—from encouraging individual responsibility and transforming mindsets, to driving leadership by developing and improving key skills—all aimed at eliminating occupational and process-related incidents.

No cases of lost-time occupational illnesses were recorded for Qatargas employees or contractors in 2011. Two recordable occupational illness cases were recorded in 2011, primarily related to heat stress. Contractors working for Qatargas adhered to the high standard of medical, food and camp services for contractors, including conducting mass medical screenings for the company's contractor workforce.

Saipem Qatar use a training passport, which is a personal register provided to every worker, supplier and subcontractor during their first training on site. For each item of completed HSE training, the worker receives a passport stamp. Workers must carry their passport at all times which can be verified through spot checks and relevant training. All training sessions are recorded, to keep information up to date and to schedule refresher courses. Personnel in charge of training check the training matrix monthly to verify who needs to attend a course or refresher.

At Qatar Steel, the HSE function has promoted safety awareness to all employees and encouraged them to participate in a range of safety activities and competitions, including:

- Safety slogans – employees created their own 'Safety Matters' slogans.
- Poster-making – employees drew pictures of safety and/or environmental issues. The drawings explained how the issues affected people, property and the environment, and suggested prevention measures.
- Housekeeping – departments kept their work-areas clean to prevent accidents, both minor and major.
- Near-miss incident reporting – employees reported 'near misses' that they observed.

Winners received cash awards and their names were posted monthly in all facilities.

In 2012, the DG will consider including workforce participation indicators within the SDIR programme. Indicators could include:

- Number of hours of training on health and safety.
- Measurement of the extent to which contractors and employees receive certain basic health and training.
- Number of companies with a health and safety committee in place.

In 2012, the DG is developing, in cooperation with designated operators, a new Technical HSE Framework for the energy and industry sector. The framework focuses on the significant health, safety and environmental risks that could have an impact at state level; addressing major hazard management.

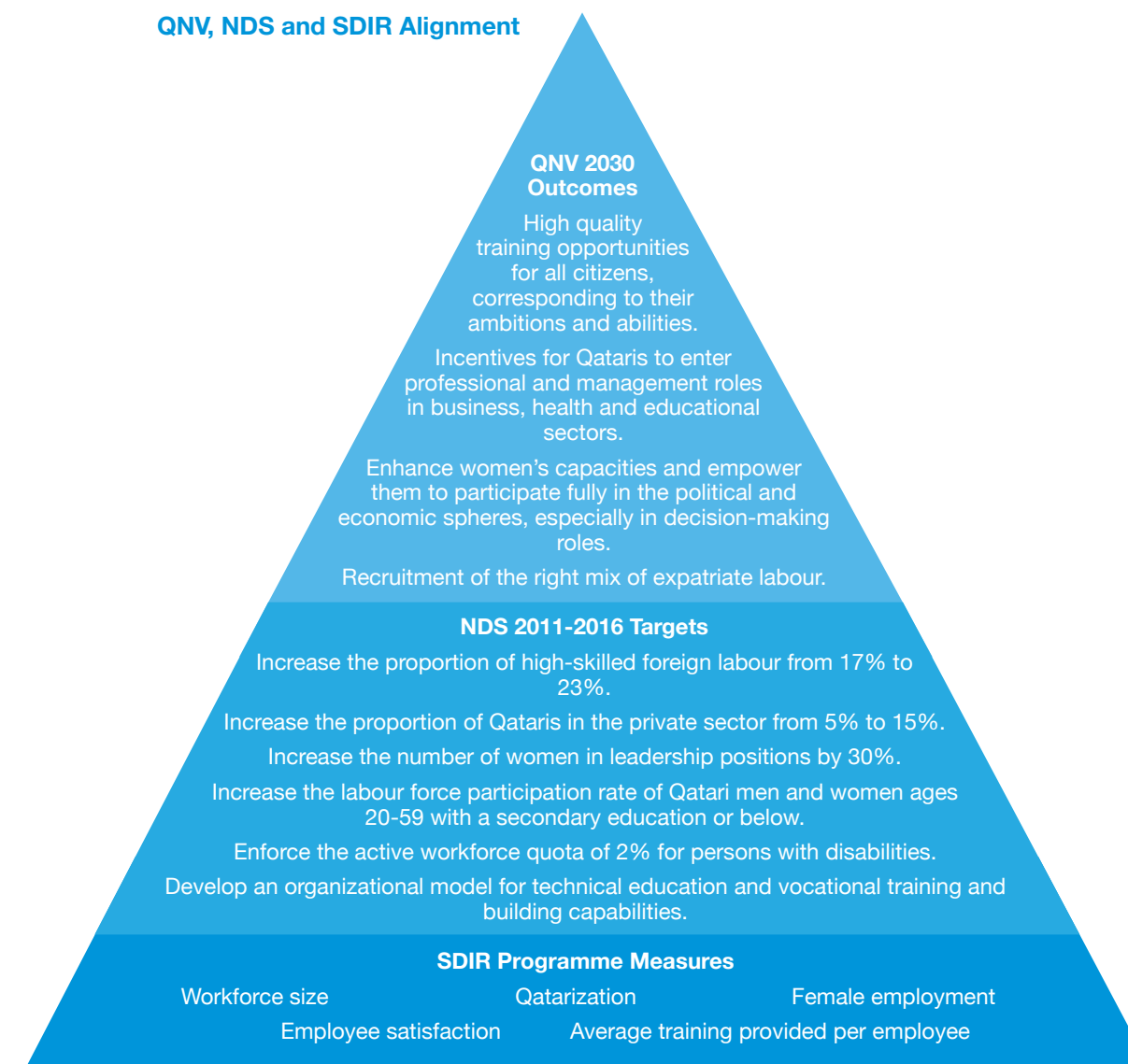


Workforce

Workforce Overview | Qatarization | Diversity and Inclusion | Training and Development | Welfare and Engagement

In light of the challenges outlined in the QNV and NDS, companies in the energy and industry sector are concentrating their efforts on Qatarization, diversity, training and workforce welfare.

QNV, NDS and SDIR Alignment



Workforce

National Context

Workforce development within Qatar’s energy and industry sector has been characterized by demand for skilled and experienced workers to enable its rapid growth.

At present, meeting this demand entails the employment of a large number of expatriate workers, coupled with the long-term need to develop the skills and experience of the local population. ‘Qatarization’, the development of Qatar’s own human resources, is one of the key challenges facing the sector and society at large.

The challenges and opportunities of workforce and human capital development in Qatar are highlighted in the Qatar National Vision (QNV) 2030 and the National Development Strategy (NDS) 2011–2016. These include building local capacity, increasing female participation in the workforce, capitalising on the knowledge and experience of expatriates, and creating a society that maintains local cultural heritage while having an inclusive attitude towards its international workforce.

Sector Context

In light of the challenges outlined in the QNV and NDS, companies in the energy and industry sector are concentrating their efforts on Qatarization, diversity, training and workforce welfare.

Qatarization within industry is an important priority for the Government of Qatar. Its Strategic Qatarization Plan launched in 2000 aims to reach a nationalization rate of 50%. The goal is to build a Qatari workforce

equipped with the skills necessary to drive the sector’s continued growth.

While the QNV 2030 calls for high-quality training opportunities for Qataris, successful partnership with a qualified international expatriate workforce remains critical to the continuing success of the sector.

In recognition of the diverse goals in the human development pillar of the national strategy, the sector’s efforts not only focus on workplace issues such as capacity development, training and welfare, but extend to support for social and educational capacity development. Over and above basic remuneration, the employment packages of many companies in the sector include health benefits, housing allowance, and educational support for employees and their families. The sector also takes action to improve the welfare and working conditions of third-party contractors. Business ethics topics, including the human rights of migrant contractor labour, are covered in detail within the Society section of this report.

Workforce and the SDIR

As part of the SDIR programme, companies were requested to submit data on the size and composition of their full-time workforce. In future years, the programme will expand to include a full workforce profile, including part-time employees and contractors.

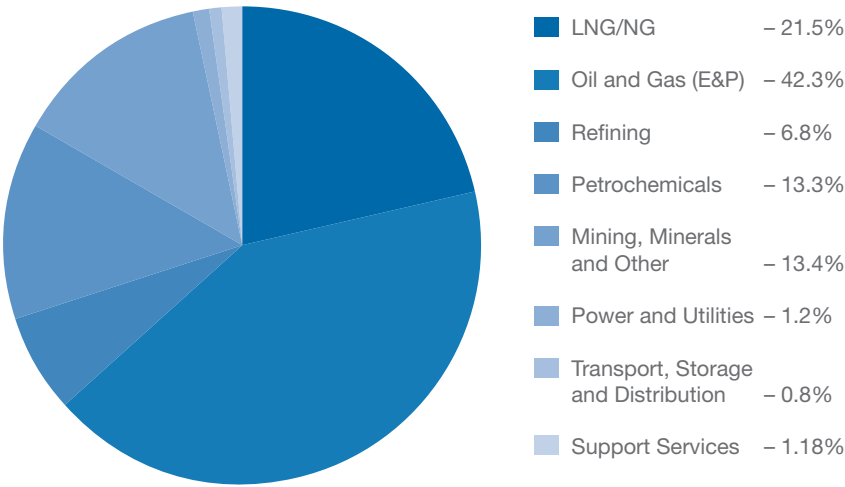


Workforce Overview

The 30 companies that reported their workforce size in 2011 have a combined total of 32,108 full-time employees. These companies range in size from just 20 full-time employees to 11,301 full-time employees, but they form two clusters—15 of the companies have fewer than 600 hundred employees, while 15 have more than 600 employees.

Among the reporting companies, the oil and gas subsector makes up the largest segment of the sector’s workforce, representing approximately 42% of full-time employment (see graph below). In combination with the LNG and refining subsectors, they account for more than two-thirds of total employment in the sector.

Workforce by Subsector – 2011



As part of this year’s SDIR programme, 23 companies provided comparable data on their workforce size between 2010 and 2011, representing 64% of the companies invited to participate. Most of the companies in the LNG/NG; mining, minerals and other; and support services reported comparable data. Of the 23 companies, 13 reported an increase in the size of their workforce, seven reported a decreasing workforce and two remained unchanged.

Workforce Profile

	2010	2011
Number of companies reporting workforce data	23	30
As a % of companies invited to report in 2011*	64%	83%
Companies with increasing workforce		14
Companies with decreasing workforce		7
Companies with unchanged workforce size		2

*All 36 companies were invited to report on this indicator

Among these 23 companies, the full-time workforce increased by 2%, with significant increases coming from the oil and gas and refining sectors, which each added more than 100 full-time employees. Power and utilities and petrochemicals also notably increased workforce size on a percentage basis, while support services experienced a significant percentage reduction due to the completion of multiple expansion projects in 2011. The six non-reporting companies are mainly in the petrochemicals; power and utilities; and transport, storage and distribution subsectors.

Workforce Profile

	Reporting Companies		Total Workforce Size			% Change for Comparable Companies
	2010	2011	2010	2011	2011 for Comparable Companies	
LNG/NG	3	3	6,917	6,886	6,886	-0.4%
Oil and gas (E&P)	5	7	2,008	13,596*	2125	+5.8%
Refining	2	2	1,927	2,048	2,048	+6.3%
Petrochemicals	6	7	3,039	4,272	3133	+3.1%
Mining, minerals and others	3	3	4,246	4,299	4,299	+1.2%
Power and utilities	2	4	158	389	167	+5.7%
Transport, storage and distribution	0	1	–	240	–	–
Support services	2	3	325	378	263	-19.1%
TOTAL	23	30	18,620	32,108	18,921	+2%

* Significant increase as a result of a notable company reporting in 2011 but not in 2010.



Qatarization

Qatar recognizes the value and importance of the Qatarization within the sector. Although there are constraints, the 50% target within the Strategic Qatarization Plan represents a challenge to aim for, for the sector as whole. The sector’s strategic goals include a focus on “quality Qatarization”, ensuring Qataris achieve professional standards comparable to their counterparts around the world, with a focus on increasing the percentage of female Qataris in the workforce. Training and succession planning are already helping to build a pipeline of Qatari expertise and leadership for the sector.

Twenty-eight companies, or 80% of those requested to report, provided information on their Qatarization rates in 2011. Of those 28 companies, 21 also provided comparable data for 2010. For the 21 companies reporting comparable data, 11 increased the percentage of Qataris employed, six decreased and four experienced no change.

Sector Performance

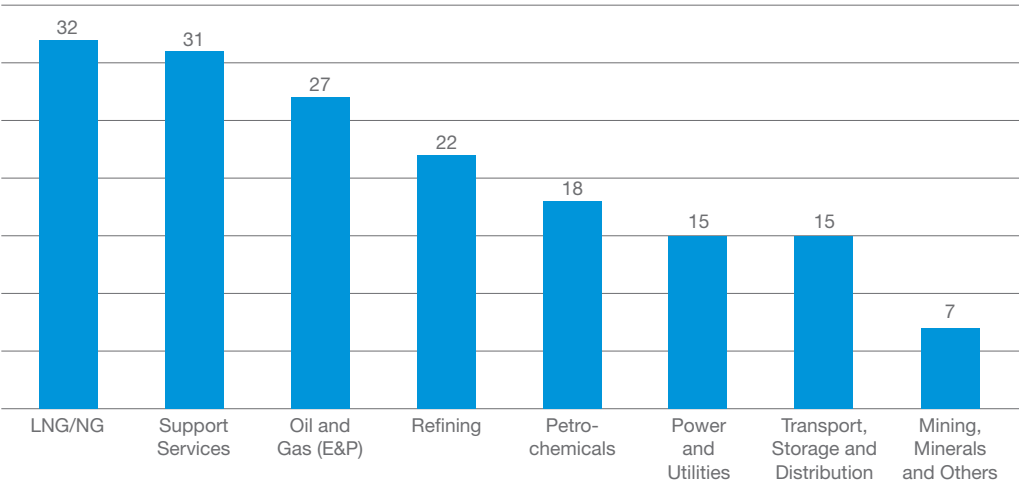
Qatarization

	2010	2011
Number of companies reporting	21	28
As a % of companies invited to report in 2011*	58%	80%
Companies with an increased % of Qataris		11
Companies with a decreased % of Qataris		6
Companies with an unchanged % of Qataris		4

*All 36 companies were invited to report on this indicator

The 28 reporting companies employed a total of 7,537 Qataris, constituting 24% of the total full-time workforce of those companies. LNG/NG, support services, and oil and gas subsectors showed the highest levels, with Qatarization rates in 2011 of 32%, 31% and 27%, respectively. Less mature subsectors, such as mining and minerals, recorded a lower Qatarization rate of 7%. The Qatarization rates of individual companies ranged from 2.7 to 39%, with eight companies reporting Qatarization above 25%, halfway towards the sector’s goal of 50%.

Qatarization by Subsector in 2011



In 2010, Qataris formed 17% of the sector, based on information from 21 reporting companies as shown in the table below. The increase to 24% in 2011 can be attributed to the inclusion of data from some notably large companies in 2011 that did not provide information for 2010. As a more accurate gauge of progress, the 21 companies that provided data for two years recorded a slight increase in Qatarization from 17% in 2010 to 18% in 2011.

Qatarization

	Reporting Companies		Sector Qatarization			Increase in Qataris at Comparable Companies
	2010	2011	2010	2011	2011 for Comparable Companies	
LNG/NG	2	3	29%	32%	32%	112 (9%)
Oil and gas (E&P)	5	7	17%	27%*	17%	26 (8%)
Refining	2	2	17%	22%	22%	109 (33%)
Petrochemicals	6	7	14%	18%	14%	37 (9%)
Mining, minerals and others	3	3	8%	7%	7%	-24 (-7%)
Power and utilities	2	3	12%	15%	11%	0 (0%)
Transport, storage and distribution	0	1	–	15%	–	–
Support services	1	2	11%	31%	16%	1 (35%)
TOTAL	21	28	17%	24%	18%	262 (10%)

* Significant increase as a result of a notable company reporting in 2011 but not in 2010.

Several companies take a long-term approach to supporting training and educational development among the local labour force. Dolphin Energy’s Qatarization efforts, for example, have demonstrated year-on-year growth for four years, along with a growing pipeline of programmes to build on this performance. Efforts included offering 26 internships, six scholarships and 44 associate positions to Qatari youth in 2011. Dolphin Energy reported a 31% Qatarization rate in 2011.

The RasGas Qatarization programme is extensive and includes educational partnerships, job opportunities for nationals, a national development framework for Qatari staff, mentoring and coaching initiatives, and an integrated people

Among the gainers, the refining subsector employed an additional 109 Qataris, representing a 33% increase for the subsector. LNG, oil and gas, and petrochemicals also made significant contributions, increasing the number of Qataris they employ by 9%, 8% and 9%, respectively. Support services also saw a significant increase, of 35%. Mining, minerals and others was the only subsector to show a decrease in its Qatarization rates.

planning process. RasGas achieved a milestone in Qatarization in January 2011, when the company reached more than 50% Qatari operators at its Train 1 and 2 LNG production facilities.

Qatargas conducts an annual CEO forum to help engage nationals. In 2011, the Qatargas chief executive provided information to the Qatari audience about the opportunities available to them within Qatargas and the role local youth can play in achieving the goals of the QNV. For the second consecutive year, Qatargas won the Qatarization Award, given during the Energy and Industry Sector’s 11th Annual Award Ceremony. It was received as a result of the company’s contribution towards the category of “Support for Training and Development” as a part of the QNV 2030.



Qatar Petroleum has implemented a range of initiatives to build a large pool of high-quality Qatari talent from high school through to senior management. These initiatives include:

- **Academic Bridge Programme (ABP)** – This pre-university training opportunity is offered to Qatari secondary school graduates who have not met the entry requirements for a Direct Scholarship but who Qatar Petroleum feels have the potential to succeed at university with some preparation.
- **Direct Scholarship** – Qatar Petroleum offers scholarships for sector-relevant disciplines to recently graduated secondary school students who have the required English level (TOEFL 550 or equivalent), 80% or higher overall secondary GPA and the required scores in the Qatar Petroleum scholarship tests.
- **University Scholarships** – Qatari university students who have completed their first academic year and are studying at an approved university can apply for a scholarship to complete their studies.
- **Internships** – Internships, work terms and workplace learning are required for all university students sponsored by Qatar Petroleum, whether studying locally or internationally.

Other companies, such as Qatalum, work in close collaboration with local universities. Qatalum sponsors a professorial chair at Qatar University

to teach topics related to aluminium smelting. ExxonMobil has created an internal task force called the University Liaison Committee to achieve more effective student outreach and increase Qatarization within the company. Members of the University Liaison Committee build relationships with students and career counselling divisions of the various universities in Qatar, particularly Qatar University and Hamad bin Khalifa University, and aim to attract qualified candidates to ExxonMobil through scholarships and internships. Members also participate in career fairs and initiate and sponsor academic competitions and professional networking activities.

Many companies have taken other steps to systematically embed the goals of Qatarization within their recruitment and talent management processes. QAPCO, for example, has revamped its hiring procedures to focus more strongly on local talent. Shell has operated attraction and recruitment campaigns in Qatar since 2007, resulting in steady growth in its national staff. Shell’s recruitment and selection system emphasizes talent identification and assessment of long-term capacity for success. Students who qualify are offered internships and sponsorships connecting them to Qatar Shell long before they graduate and a programme of continuous development after joining the company.

Diversity and Inclusion

A 2010 survey by the Qatar Statistics Authority estimated that the ratio of males to females within the national workforce was approximately three to one. Moreover, the need for a skilled and experienced technical workforce, combined with industry growth, has resulted in increasing numbers of expatriate workers. As a consequence, many companies have highly diverse workforces, drawing on workers from around the world. Eni Saipem, for example, reported that its workforce includes over 77 nationalities, and it is common for more than 30 nationalities to be represented in most companies within the sector.

Increasing the rate of female participation in the workforce is a challenge for many companies in the energy and industry sector worldwide, and particularly in Qatar. As a result of the region’s cultural context, women have not traditionally worked in the sector. This challenge has been identified by the QNV 2030, and thus it is a focus for all companies in the sector.

The energy and industry sector is also increasing youth participation, developing skills and technical

capability as early as high school, through university and into the workforce. An important element of the sector’s long-term success is knowledge transfer and succession planning, which allow experienced expatriate and Qatari workers to pass on their expertise to younger Qatari colleagues.

Sector Performance

In 2011, the female participation rate across the sector, based on 27 reporting companies, was 11.27%, representing 3,432 women. Statistically, this is a significant increase in comparison to 2010 figures from reporting companies (7.51%); however, the increase is principally due to the inclusion of one significant new reporter in 2011.

As a more accurate gauge of progress, of the 19 reporting companies with comparable data between 2011 and 2010, 13 showed an increased in their female employment percentage, six showed no change, and two reported a decrease. The net change on a weighted average basis for the 21 companies with comparable data was a shift from 7.51% to 7.97% female participation.

Female Participation

	2010	2011
Number of companies reporting	21	27
As a % of companies invited to report in 2011**	53%	69%
Companies with increased female participation rate		13
Companies with decreased female participation rate		2
Companies with unchanged female participation rate		6
Reported number of females employed	1,235	3,432*
Female participation rate	7.51%	11.27%*
Reported number of females employed by 21 comparable companies	1,235	1,295
Female participation rate for 21 comparable companies	7.51%	7.97%

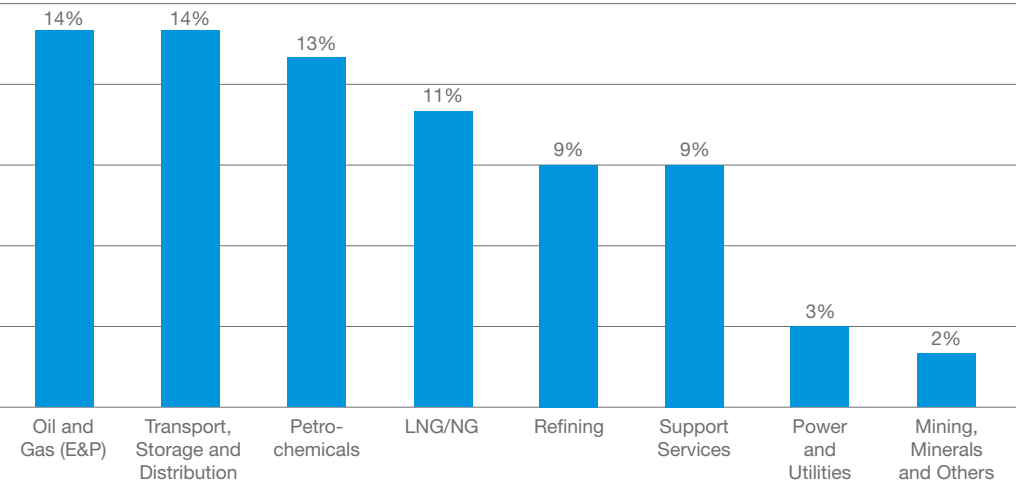
*Significant increase as a result of a notable company reporting in 2011 but not in 2010.

**All 36 companies were invited to report on this indicator

The oil and gas subsector and transport, storage and distribution subsector show the highest female employment rates, at 14%. The mining subsector and power and utilities subsector show the lowest rates of female employment. These latter subsectors have the vast majority of their staff based on-site

within industrial cities and remote areas, often posing a challenge to recruitment and retention. They also often have lower-than-average Qatarization rates. Overall, the female participation performance across all subsectors leaves significant opportunity for improvement.

Female Participation by Subsector in 2011



Several companies have adopted collaborative initiatives to increase opportunities for females in the workforce. Maersk, for example, targets female participation through the Qatari Unique Development Rotational Assignment graduate scheme for Qatari female engineers, as well as offering females the opportunity to move into positions that provide balance between personal and professional lives. In an internal 2011 survey, 82% of Maersk employees affirmed that the company treats people equally and with respect.

Also in 2011, Qatargas and RasGas launched the Women in the Workplace and Tamkeen Al Ma’rat initiatives to increase levels of female employment in their workplace. The Qatargas initiative included hosting three workshops delivered by women for women with participating female nationals from across the sector, including Qatar Petroleum, RasGas, Maersk, Qatalum, Qatar Electricity, ConocoPhillips, Dolphin and Q-Chem. Participants engaged on topics including how to tackle the “glass ceiling effect”, work-life balance and professional career planning.

Qatargas’s employees, both male and female, are entitled to parental leave upon the birth of a child. In 2011, all female employees entitled to parental leave took it, with 90% returning to work afterwards. The one-year return-to-work rate after parental leave (i.e., the ratio of the number of female employees who were still employed 12 months after their return to work divided by the number of female employees that returned to work after maternity leave) was 83%

in 2011. Similar statistics are not formally recorded yet for male employees.

ExxonMobil also promotes female participation in the workforce through its support of the Global Women in Management Initiative, which offers month-long training programmes to female leaders. In Qatar, it also supports the Qatar Business Women Forum, which seeks to enhance the participation of Qatari women.

Training and Development

The Qatar energy and industry sector cultivates the technical knowledge and capability of its entire workforce, with a particular focus on Qatari staff, through investment in training and development.

Sector Performance

In 2011, 23 companies reported total employee training of 1,091,107 hours, an average of 38 hours of training per full-time employee. Of the 23 companies, 17 also provided data for their 2010 employee training, reporting a total of 568,961 hours of training or 37.62 hours per employee. The sector therefore saw a 1% increase in the average hours of training provide per employee in 2011. The significant increase in the total training hours is due to a number of notable companies providing only 2011 data.

Of the 17 companies that provided comparable data in training per employee between 2010 and 2011, 10 reported an increase, six reported a decline and one reported no change, thus demonstrating an overall trend of increased training across the majority of companies.

However, the net change on a weighted average basis for the 17 companies with comparable data was a decrease of 1% in total training hours, and a shift from 37.62 hours per employee in 2010 to 36.95 hours per employee in 2011, representing a decrease of 2%. This decrease was due to slight variations in the amount of training offered by a handful of individual companies as well as an increase in the sector’s workforce size.

Employee Training

	2010	2011
Number of companies reporting	17	23
As a % of companies invited to report in 2011*	47%	64%
Companies with more hours of training per employee		10
Companies with fewer hours of training per employee		6
Companies with no change		1
Total number of training hours provided	568,961	1,091,107**
Hours of training per employee	37.62	38.00
Hours of training for 17 comparable companies	568,961	560,963
Hours of training per employee for 17 comparable companies	37.62	36.95

*All 36 companies were invited to report on this indicator

**Significant increase as a result of a notable company reporting in 2011 but not in 2010.



In a rapidly growing industry, in which competition for talent is fierce, companies need to be not only adept in recruiting and retaining the right people, but also skilled in training and developing their workforce.

Many companies have well-established systems to manage their training and development processes. Qatalum, for example, has two major training systems that apply to all of its employees: a functional and competency training system and a performance training system. The first develops a training programme based on the skills and function required by specific jobs and roles. The second assesses an employee’s skills and competencies and develops a training programme for individual employees based on their skill set and career development plan.

Appraisal processes that systematically assess employee performance and provide a platform for identifying specific training requirements on a yearly basis are now common in the industry. For instance, QAFCO has created an employee appraisal system as part of its personnel procedures guide. It is applicable to all employees, including secondees and trainees.

Dolphin Energy also uses an eAppraisal system to facilitate its performance management cycle.

In 2011, in response to employee feedback, the system evolved to include a section on Dolphin’s well-defined core competencies framework, allowing individual managers to indicate two core competencies that they deemed to be areas of development for each employee. Similarly, Oxy launched an online talent management system in 2011 to consistently compile and align skills, competencies, goals and career aspirations. In 2011, Oxy also enhanced the on-boarding and mentoring process for new employees to provide them with an early start on their career development.

Gulf Drilling International’s training matrix covers required internal and external safety and environment training requirements for all rig crew, managed by the QHSE Department. Crew are required to stay up to date with all courses, and each course has an expiry date. The system reminds crew members 90 days before the course expiry date, requesting them to take the required refresher course.

A number of companies combine on-the-job training on core topics such as health and safety with broader skills development training in areas such as leadership development, presentation skills and negotiation.

Training at Q-Power, for example, focuses on leadership, management, performance management, team building and relevant technical courses. The Q-Power performance management system encourages line managers and all employees to align the objectives of the company with those of individual employees and to help in the process of succession planning.

Oxy Qatar also uses a variety of training methods, including self-directed online courses, a worldwide lending library, team-building sessions, open-enrolment and targeted workshops, trade conference participation, professional certifications and memberships, specialized technical training for facility operators, tuition assistance, mentorships and leadership development programmes. In light of the growing importance of peer-to-peer training and learning opportunities, Oxy Qatar also encourages grassroots development of knowledge-sharing team websites and communities of interest and practice.

Qatar Petroleum has been using e-learning technology since 2004. Together with the Supreme Council of Information Communication Technology (ictQATAR), the company now gives its staff access to a comprehensive library of more than 3,000 online training courses. In 2011, more than 4,500 candidates took the Permit to Work session

electronically, while 2,589 courses were completed via the ictQATAR portal.

In addition to the emphasis on talent management and development in general, training with the specific objective of increasing career planning and development for Qataris is a high priority within the sector, with a number of companies tailoring specific courses for Qataris. SEEF provides a variety of training programmes for Qatari graduates, including personal career programmes, on-the-job training and a technical preparation programme. At QP, Qatari staff attended an average of more than four courses per year, as compared to one course on average for the workforce as a whole.

Qatar Shell has created a structured Qatari developpee programme to include regular competency assessments, job rotations and exposure to as many as three roles within a three to five-year period. It has also launched a local further education policy to support academic studies and professional membership and affiliations, and an accelerated development programme to take high-potential Qatari staff through an intensive action learning leadership development experience. Qatar Shell has increased its training budget for Qatari staff, with the aim of having them attend at least one learning programme abroad per year.



Welfare and Engagement

Companies in the energy and industry sector commonly offer their employees attractive salaries and benefits, in line with the QNV 2030 goal of raising the quality of living for all people in Qatar. While practices vary between companies, many offer salaries that are internationally competitive, and also offer basic and additional benefits such as medical insurance, accommodation allowances, pensions for locals, an end-of-service gratuity for expatriates, and school allowance support for the children of employees.

Companies throughout the sector also recognise the importance of effective employee engagement. While salaries and benefits are an important foundation of employee satisfaction, many companies work to create a positive working environment in which employees are constructively engaged in the business and its future. Employee satisfaction surveys, corporate 'town hall' meetings, team-building activities and cultural activities are common practice in the sector.



Sector Performance

Many companies promote employee welfare by providing high-quality accommodation and workplace facilities. Shell Qatar has sought to create a 'home away from home' for its workers in the Pearl Village community. The community has a mayor and dedicated staff to manage activities within the village, as well as high standards of accommodation, nutrition, hygiene, recreation, training and professional development. At the centre of the community is a training centre providing professional and technical development and training opportunities.

Qatar National Cement Company also provides a number of employee and contractor facilities, including a club for senior staff that includes entertainment facilities and a gym with swimming pool, a club for junior staff with entertainment and a sports hall, restaurant facilities that provide three meals a day, a kindergarten and a health centre.

In relation to employee engagement, award programmes and team-building activities are examples of strategies used by companies in the sector. ORYX GTL has introduced a non-monetary recognition award scheme, Takreem, to acknowledge

the efforts of individuals and teams to excel in meeting the company's objectives. According to ORYX, the Takreem Awards have proved to be 'an effective tool to motivate employees and promote active participation in all affairs and at all levels of our organization'.

Meanwhile, QP Dukhan Industrial City offers a fun, multi-company employee interaction initiative. In the annual Chairman's Cup, more than 20 companies participate in a cricket tournament. Its aim is to promote a healthy and entertaining recreational outlet for employees, with the additional benefit of enhancing workplace cohesion.

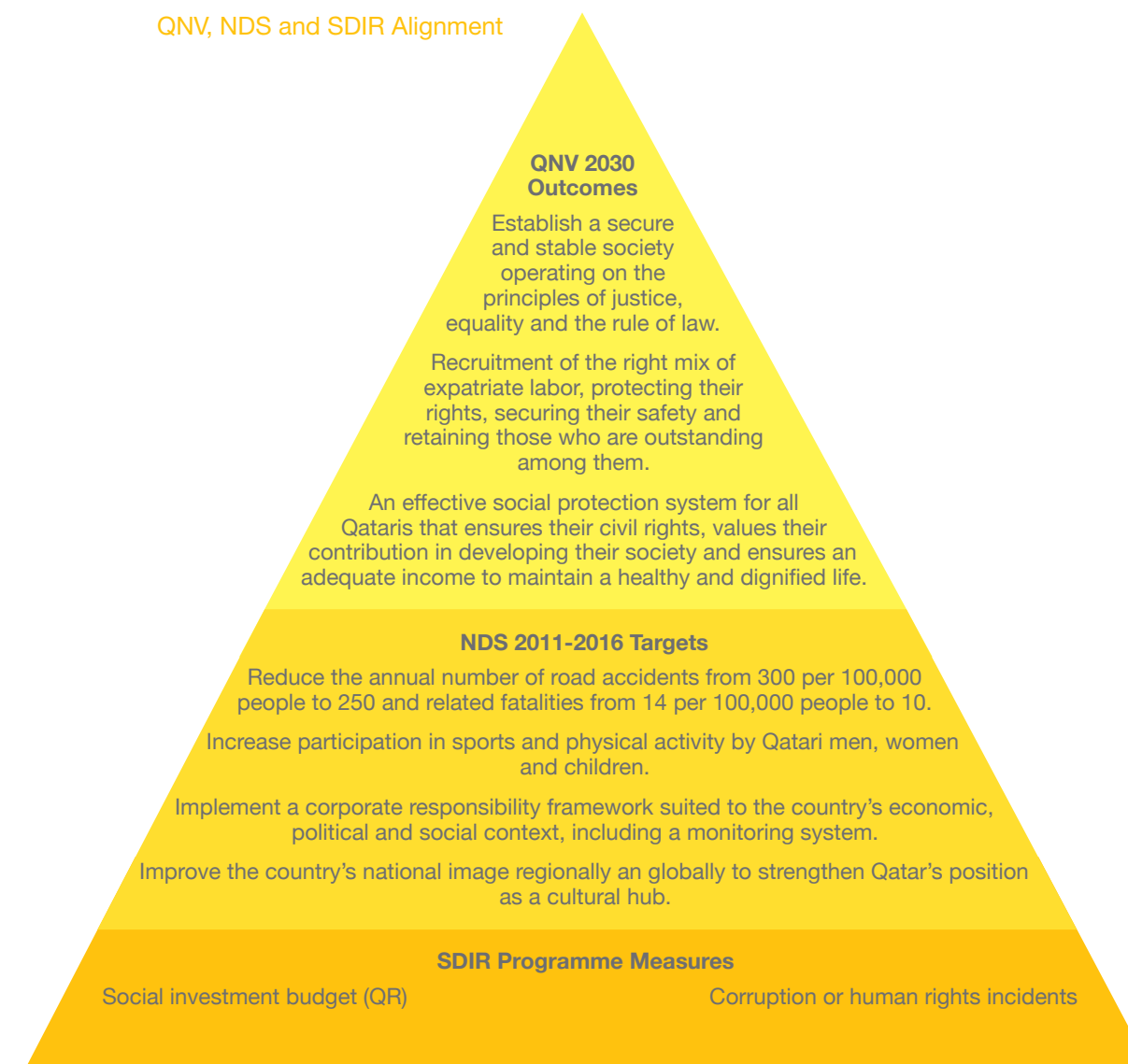
As can be found in the business ethics section within the Society chapter of this report, all companies are required to comply with the State of Qatar's laws and regulations related to working conditions, which apply to employees and contractors. DG and many companies in the sector are looking to improve the transparency of their compliance with these regulations and conditions in relation to labourers and contractors. Future reporting will feature increased transparency in these areas.

Society

Social Development | Business Ethics | Community Engagement and Investment

The QNV identifies the creation of a sound social structure and 'a caring society based on high moral standards capable of playing a significant role in global partnerships for development' as a priority. It outlines its goal of building a society that promotes justice, benevolence and equality, based on the principles of the Permanent Constitution.

QNV, NDS and SDIR Alignment



Social Development

National Context

The QNV embodies the principles of the Permanent Constitution which protects public and personal freedoms; promotes moral and religious values and traditions; and guarantees security, stability and equal opportunities.

Social development and the SDIR

The energy and industry sector contributes to many aspects of Qatar’s social development. Fundamentally, the sector aims to embody the values and principles laid out by the Permanent Constitution and the QNV 2030, applied in high standards of corporate practice and ethical conduct. In addition, the sector is directly engaged with the communities where it operates throughout the country. As such, it is committed to supporting local community development through active engagement and investments undertaken in collaboration with local communities.

Beyond its focus on business ethics and community involvement, the sector contributes in many other ways to Qatar’s social development. These contributions are captured in other chapters of this report, such as the sector’s contribution to Qatarisation and its investment in human resource development. Other aspects, such as the economic wealth generated by the sector, are broad in nature and beyond the scope of this report and are more fully captured in Qatar’s national measures.



Business Ethics

“Qatari society is based on the values of justice, benevolence, freedom, equality, and high morals.”

Permanent Constitution

Codes of Conduct

Operating in compliance with related legal requirements and in accordance with codes of ethics is a vital part of a company’s licence to operate and is fundamental to good business practice. This includes managing issues such as diversity, social equality, prevention of corruption and care of local and migrant workers.

DG is committed to ensuring all companies operating in the sector are following all national laws and regulations and conduct their business according to high standards of business ethics. QP has had its Code of Ethics and Conflict of Interest Regulations in place since 2002, and a letter was issued in 2005 inviting all contractors, consultants and suppliers to comply with QP’s ethical principles and standards.

As of 2011, nine companies reported that they had some form of specific code of ethics in place and five companies reported that they had a Code of Conduct.

A good example of code of ethics implementation is the Qatargas Ethics and Conflict of Interest Committee (ECIC) which is mandated to assess and investigate actual or potential incidents of bribery or corruption. The committee is comprised of seven members, all of whom are Qatargas employees. Its reporting process provides mechanisms for raising and following up violations. Violations of the Code of Business Ethics Policy or any other company policies can lead to criminal or civil proceedings and/or disciplinary action, including termination of employment. Company contractors and suppliers are expected to adhere to a code of conduct equivalent to Qatargas’ Ethics Policy.

Worker Rights

Together with climate change and health and safety, worker rights issues in Qatar are increasingly under discussion at national level, particularly given the significant reliance of the economy on migrant workers. In recent years, the sector has been focusing on safeguarding the rights of these workers, ensuring that all companies and contractors are abiding by national labour laws and regulations.

Law 14 of 2004 – governing labour in the private sector – is the reference point for companies within the sector for ensuring high standards of labour practice. The law sets out provisions relating to migrant labour that limit working hours, require paid annual leave, set requirements on health and safety, and require on-time payment of wages each month. Qatari law also requires that accommodation for migrant workers meets minimum standards of comfort. The government currently employs 150 inspectors to monitor compliance with the labour law across the country.

Human Rights

The commitment, approach and actions taken by companies on business ethics, codes of conduct and worker rights and the increasing degree of performance reporting demonstrate a continued, and growing emphasis, on recognition and respect for human rights and worker rights. As of 2011, 22 companies from the SDIR programme reported their performance on human right, with zero incidents of human rights abuses reported. The boundaries and sophistication of this reporting will continue to be emphasized and enhanced in 2013.

Human Rights Incidents

	2009	2010	2011
Number of reported incidents of human rights violations	0	0	0
Number of companies reporting on human rights incidents	14	19	22
As a % of companies invited to report in 2011*	38%	53%	61%

*All 36 companies were invited to report on this indicator

Among the companies with dedicated human rights policies in place, Occidental Petroleum of Qatar (OPQL) adopted a Human Rights Policy in 2004 and considers it a cornerstone of its Social Responsibility Programme. The company actively promotes respect for human rights among its employees, contractors and local communities through training and awareness sessions. As of December 2011, 100% of OPQL’s employees - including outsourced staff - had received training in human rights.

Some companies such as Maersk have conducted a human rights gap analysis. In 2011, Maerk’s review covered the entire Group – including Maersk Line and Maersk Oil – based on the UN Guiding Principles on Business and Human Rights. Maersk’s objective is to ‘have an integrated risk management system in

place to manage human rights risks across the Group and processes and systems in place to meet the expectations of the UN Guiding Principles.’

Non-discrimination and Equal Opportunities

Laws and regulations relating to non-discrimination and equal opportunities apply to all companies in the energy and industry sector. In this cycle of reporting for the SDIR programme, no specific indicators, beyond compliance, were requested from companies in relation to these topics. Many of the sector companies actively incorporate these issues into their Code of Ethics and human resources practices, with some companies such as Dolphin Energy and QAFCO having specifically launched internal anti-discrimination policies as good practice initiatives.

Community Engagement and Investment

Companies within the energy and industry sector have supported a significant number of initiatives and programmes in the communities where they operate. The sector invested approximately 97 million USD in community engagement in 2011, with 17 companies providing information on their social investment expenditure.

Companies channel their community investments through various mechanisms. Some have defined strategies for community support, focusing on particular themes, and taking direct account of local community wishes. Philanthropic donations, sponsorships and ad hoc practices are also common, according to the needs of the relevant community. Some companies have worked collaboratively

on initiatives such as the Ras Laffan Community Outreach Programme - whose founding members include Qatar Petroleum, Al Khaleej Gas, Dolphin Energy Limited, ORYX GTL, Qatargas, RasGas, and Qatar Shell. The initiative is described below. Others have partnered with institutions and other companies to support countrywide development programmes.

Community Investment Reporting

	2009	2010	2011
Total Community Investment (USD)	13,204,024	13,987,271	96,631,186
Number of companies reporting community investment	12	14	17
As a % of companies invited to report in 2011*	33%	39%	47%

*All 36 companies were invited to report on this indicator

Of the 14 companies providing comparable data for both 2010 and 2011 on community investment, nine have increased the amount spent on the community, three are unchanged and five have reported a lower amount of spending on community programmes in 2011.

Community Investment Trends

	2009 – 2010	2010 – 2011
Companies with increasing community investment	8	9
Companies with decreasing community investment	1	5
Companies with static community investment	3	3

QP implements a number of high-profile projects together with various government institutions, which implement capital projects that seek to develop infrastructure in the State of Qatar, such as the Qatar Foundation for Education, Science and Community Development, the Space City project, the Qatar Museums Authority, the Supreme Education Council, and others.

In 2011, companies in the sector have initiated, invested in, or sponsored social initiatives in the following areas:

- Health and Safety.
- Education.
- Sports.
- Science and technology.
- Arts and culture.

Community investment initiatives implemented by companies tend to focus on the topics of education, training and health and safety. Investments in these areas not only bring direct benefit to society and communities, but are directly aligned to the sector’s long-term success in hiring an educated workforce for the future.

The following tables set out a selection of the community initiatives undertaken by companies across the sector, in various thematic areas.

Health and Safety

QP sponsors and promotes a number of activities and outreach programs to enhance HSE awareness and commitment among its employees and in local communities.

Maersk	“Action on Diabetes” programme
Ras Laffan	Road Safety Campaign
ORYX GTL	Donation to Qatar Society for Rehabilitation of Special Needs
Qatar Gas	Financial contribution to the ‘Audio Education Complex’
ConocoPhillips	Donation to Sympathetic Touches programme
Dolphin Energy	Qatar Foundation for Elderly People Care
Qatalum	Donation to Qatar Diabetes Association
Qatar Steel	Donation for Qatar Society for Rehabilitation of Special Needs
ORYX GTL	National campaign for Road Accident Prevention

Education and Training

Ras Laffan	“Fire Safety and Education”
ORYX GTL	Supporting Awsaj Academy
ExxonMobil	The Qatar University ExxonMobil Teachers Academy
RasGas	Donation of Braille devices to Gaza children
RasGas	Doha English Speaking School (DESS).
Dolphin Energy	Co-sponsor of Qatar Career Fair
Dolphin Energy	Gold sponsorship of the Young Future Energy Leaders Programme
Qatalum	Hosts iftar for Qatar Orphan Foundation (Dhreima)
ExxonMobil	Gold sponsor of third annual World Innovation Summit of Education
ExxonMobil	High School Summer Programme
ExxonMobil	Diamond Sponsor at 2011 Qatar Career Fair
ExxonMobil	Sponsored the College of Engineering initiative “Life is Engineering”
Qatar Petroleum	Summer Internship Programme

Sports

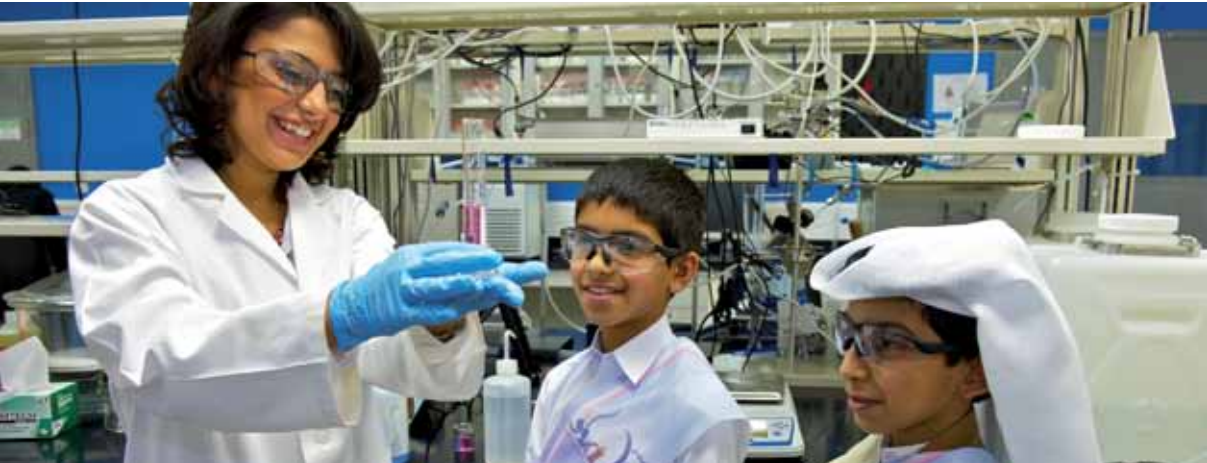
QP has developed multi-sport complexes across different industrial cities with the recent addition of the QP MIC Multi-Sport Complex at Mesaieed. QP actively backs numerous national sporting events and continues to sponsor and promote a number of regional and international level sporting events in football, volleyball, racing equestrian, to name a few.

RasGas	Donation to Al-Khor Centre for Community Development
ExxonMobil	Partnership with Qatar Tennis Federation (QTF)
ExxonMobil	Sponsor of ExxonMobil Qatar Nationals Youth Tournament
ExxonMobil	Sponsor of “Ladies Tour of Qatar” and “Tour of Qatar”
ExxonMobil	Support to the Qatar Paralympics Committee



Science and Technology

Project Management Centre of Excellence ‘TAFAWOQ’ of Qatar Petroleum and Qatar Shell



Arts and Culture

Ras Laffan ‘Sharing the spirit of Garangao’

*Initiative under the Ras Laffan Industrial City Community Outreach Programme (RLIC COP)

Ras Laffan Community Outreach Programme (RLIC COP)

QP Ras Laffan city and major industries have implemented a joint Community Outreach Programme (COP), and effort to coordinate and align the community engagements of RLIC and the RLIC COP member end-users with the Al-Khor, Al Thakira and other Northern Qatar communities. The COP aims to create a more respectful, trust-based partnership between companies based in Ras Laffan Industrial City and surrounding communities as well as providing a platform to develop sustainable projects in line with Qatar National Vision 2030. Founding members include Qatar Petroleum, Al Khaleej Gas, Dolphin Energy Limited, ORYX GTL, Qatargas, RasGas, and Qatar Shell.

Maersk “Action on diabetes” program

The State of Qatar has one of the highest rates of diabetes prevalence in the region, and Qatar authorities are committed to raise awareness of diabetes – its causes, symptoms and management - among the people living in the State of Qatar. A programme has been launched in November 2011 by Maersk Oil in partnership with the Supreme Council of Health, Hamad Medical Corporation, Qatar Diabetes Association, Novo Nordisk and Maersk Oil. It aims to reduce the incidence of diabetes in support of the Emir’s vision of a healthy and prosperous Qatar. In future, the Action on Diabetes partnership will implement a major programme to raise awareness of diabetes, helping those at risk avoid it, and helping people already living with diabetes to manage their health more effectively.

The Qatar University ExxonMobil Teachers Academy

More than 40 primary school teachers from Qatar’s independent school system participated in 2011 in the inaugural Qatar University ExxonMobil Teachers Academy, which is modelled after the successful Mickelson ExxonMobil Teachers Academy. Qatar University and ExxonMobil welcomed third, fourth and fifth grade teachers with a view to enhancing mathematics and science education by using hands-on experiments in matters such as buoyancy, displacement, and density.

RLIC COP launched its 2011 Road Safety Campaign to the Northern Schools

The RLIC COP “Safe schools” programme organizes annual road safety campaigns aiming at raising road safety awareness among children and to prepare them to be better future drivers. In its third edition in 2011, 23 schools from the North of Qatar participated in the event held at Al Kaban Youth Centre and the Al Khor Primary Independent Model School. Activities included understanding traffic signs, visibility in the dark and vehicle stopping distances. Safety experts focused on the importance of wearing a seatbelt and its value in case of an accident.



Qatar Petroleum Summer Internship Programme

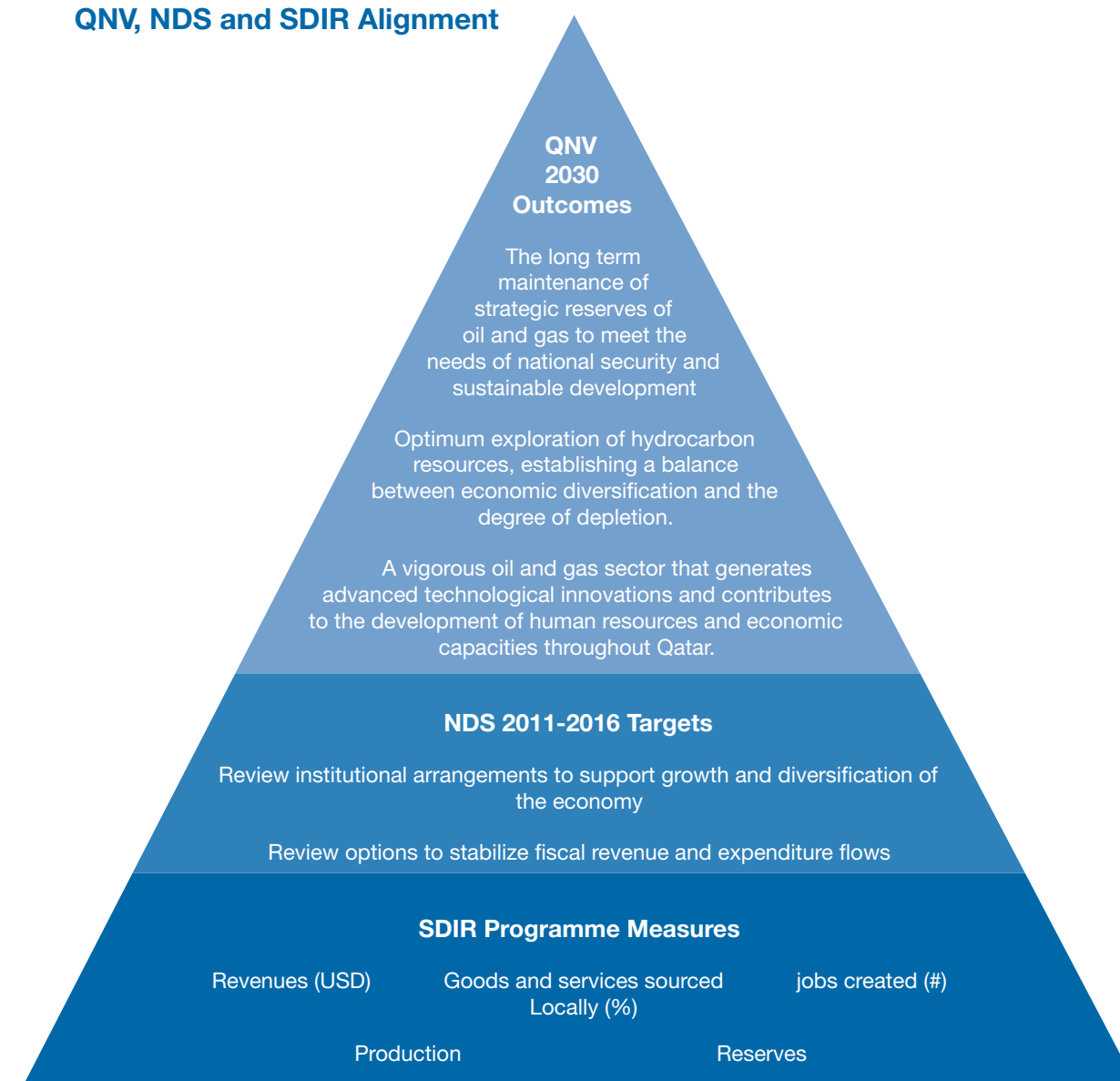
In July 2011, QP’s Central Training Department held a ceremony at Al-Ghazal Club, opening QP’s 2011 Summer Internship Programme for university students who received scholarships from QP to obtain degrees at foreign and local universities. The programme aims to allow students to gain knowledge of the working environment, and provide them with practical applications of some of the academic aspects studied at university.

Economic Performance

Contribution to National GDP | Sector Expansion | Economic Diversification

The State of Qatar has experienced rapid growth over the past four decades. This has been led by the energy and industry sector, enabling the government to raise living standards, develop world-class infrastructure, promote innovation via the establishment of R&D centres, and further improve the delivery of services in education, health and transport.

QNV, NDS and SDIR Alignment



Qatar requires a stable economic policy to guarantee a vibrant economy characterized by sustainable growth rates and high living standards today and in the future. Its energy resources need to be managed

wisely, ensuring the best use of its hydrocarbon reserves so that the revenue it creates today can support the country's ambition to develop a diversified knowledge-based economy tomorrow.

The Role of the Energy and Industry Sector in the Economy

The energy and industry sector’s expansion has been the main engine behind Qatar’s growing economy, evident in the high economic growth rates over the past 10 years. This expansion, along with the rise in product prices, has contributed significantly to increased export earnings, higher State revenues, and a high GDP growth rate. The standard of living for individuals has become amongst the highest in the world.

Oil and gas revenues have also contributed to the stimulation of internal investments, particularly those associated directly with the energy sector. The establishment of industrial zones (Ras Laffan Industrial City, Mesaieed Industrial City, Doha Industrial Estate, Dukhan Petroleum City) has served small and medium-sized industries while also providing them with all services and requirements such as access to water, electricity, and transport infrastructure.

Energy sector growth has also contributed indirectly to the development of other sectors of the economy, the creation of vital infrastructure, and the provision of major services projects covering all sectors, including education, health and transport. These achievements would not have been accomplished without the wise policy of His Highness the Emir Sheikh Hamad bin Khalifa Al-Thani and his sound guidance for the optimal exploitation and use of the country’s wealth and natural resources.

The energy sector is the single most important point of attraction for direct foreign investment in Qatar. The sector has benefited from legislation, regulations, laws and measures issued by the government to protect foreign capital and facilitate its transfer. In addition, the provision of incentives and concessions to investors and the creation of a sophisticated and flexible business environment have attracted global energy firms to engage in joint strategic projects with high investment returns.

Contribution to National GDP

Qatar has succeeded in rapidly establishing a robust energy industry base, becoming a world player in the production of LNG. According to Qatar’s Statistics Authority , the oil and gas sector represented 58% of Qatar’s GDP in 2011, roughly 85% of export earnings, and 70% of government revenues. The non-hydrocarbon sector represented 42% of GDP, a total of 266,424 million Qatari riyals, an increase of 135% since 2009.

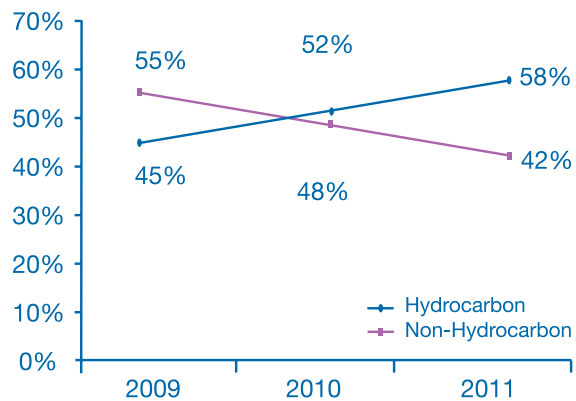


Sector Contribution to GDP

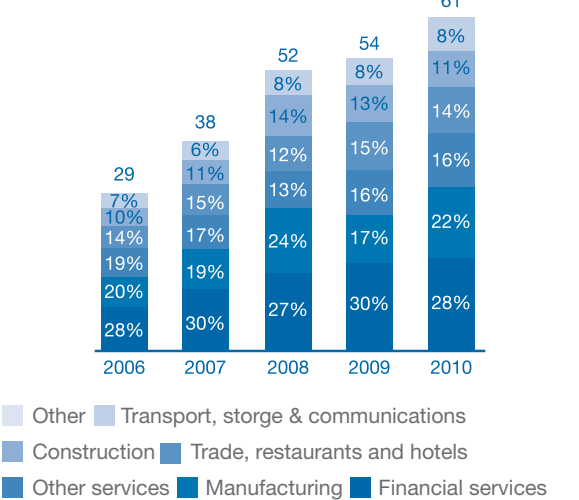
	2009	2010	2011
Contribution to GDP (9%) – hydrocarbon sector*	45%	52%	58%
Contribution to GDP (9%) – non-hydrocarbon sectors*	55%	48%	42%
Industrial production growth rate**	15%	27%	N/A

*Source: Qatar’s Statistics Authority
 **Source: <http://www.indexmundi.com>

Sectoral Contribution to GDP (%)



Breakdown of Non-hydrocarbon GDP by Sector (2006-10)
 (US\$bn, CAGR shown)



*Source: QSA and QNB Capital analysis

Sector Revenue Generation

Sector revenues have increased since 2009 alongside national GDP. In the data submitted by companies within this reporting initiative, 13 of 16

companies showed increased revenues from 2010 to 2011. This improvement is mirrored in the sector’s increasing productivity and investment in production expansion, aided in part by higher oil and gas prices.

Revenues – Sector Performance

	2009	2010	2011
Total revenues reported (USD)	4.3 billion	28.8 billion	90.0 billion
Number of companies reporting	9	15	16
As a % of companies invited to report in 2011*	25%	42%	44%

*All 36 companies invited to report this indicator

Revenues – Trends

	2009–2010	2010–2011
Companies reporting higher revenues	6	13
Companies reporting lower revenues	3	2

“Converting these natural assets into financial wealth provides a means to invest in world-class infrastructure; build efficient delivery mechanisms for public service; create a highly skilled and productive labour force; and support the development of entrepreneurship and innovation capabilities.”

The General Secretariat for Development Planning
in the state of Qatar (GSDP)

Job Creation

Companies within the energy and industry sector have continued to create new jobs as its scale and range of activities have expanded. In addition, the sector indirectly contributes to the creation of jobs in Qatar through the engagement of contractors, and the development of supporting businesses and

supply chains. Twenty-four companies in the sector reported data on total workforce in 2011, compared to 17 companies in 2010. Based on the workforce numbers reported, an additional 301 direct full-time jobs were added to the workforce in 2011.

Job Creation – Sector Performance

	2009	2010	2011
Number of jobs created	N/A	144	301
Number of companies reporting	9	17	24
As a % of companies invited to report in 2011*	25%	47%	67%

*All 36 companies invited to report this indicator



Job Creation – Trends

	2009 – 2010	2010 – 2011
Companies reporting increased job creation	4	9
Companies reporting workforce contraction	3	7
Companies reporting static workforce levels	2	1
Companies without comparable data	8	7

Supporting Local Enterprise

The sector also contributes directly to Qatar’s economic success by supporting locally-based suppliers. Procuring local goods and services benefits supply chains (upstream and downstream) and stimulates the creation of new businesses that provide the products and services required, creating new jobs and supporting local economic development.



A number of companies within the sector have developed policies that support increased local procurement. For instance, Q-Chem’s procurement strategy is focused on local suppliers and vendors for the operation and maintenance of its three facilities (Q-Chem, Q-Chem II and RLOC). In addition, Qatar Steel sources all of the scrap metal used in its production processes from within Qatar, an example both of local procurement and resource efficiency.

As of 2011, 23 companies within the sector reported increase in the percentage of their procurement from local suppliers, with an average of 51% per company in 2011.

However, some companies rely on raw materials unavailable in Qatar for their production processes. Those sourcing for specific heavy machinery and technologies depend heavily on imports, for example, although local suppliers for these products are beginning to develop.

Local Procurement – Sector Performance

	2009	2010	2011
Average spending on local suppliers per company (%)	49%	51%	51%
Number of companies reporting	10	17	23
As a % of companies invited to report in 2011*	28%	47%	64%

*All 36 companies invited to report this indicator

Local Procurement – Trends

	2009–2010	2010–2011
Companies reporting increased local procurement	1	10
Companies reporting lower levels of local procurement	4	5
Companies reporting static levels of local procurement	5	2
Companies without comparable data	7	6

Other Indirect Economic Impact

The benefits brought by QP to the Qatari economy have extended beyond the provision of hydrocarbon products and the wealth these generate. These wider benefits include the divestiture of non-core businesses to the private sector, the transfer of

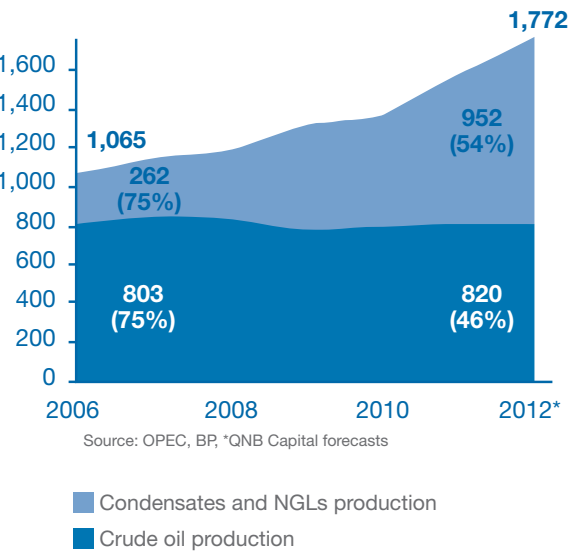
technical skills to other sectors, and securing access to the skills of QP’s international partners. Mechanisms to enable such transfers (such as training programmes) have been developed and continue to be used.

Sector Production and Expansion

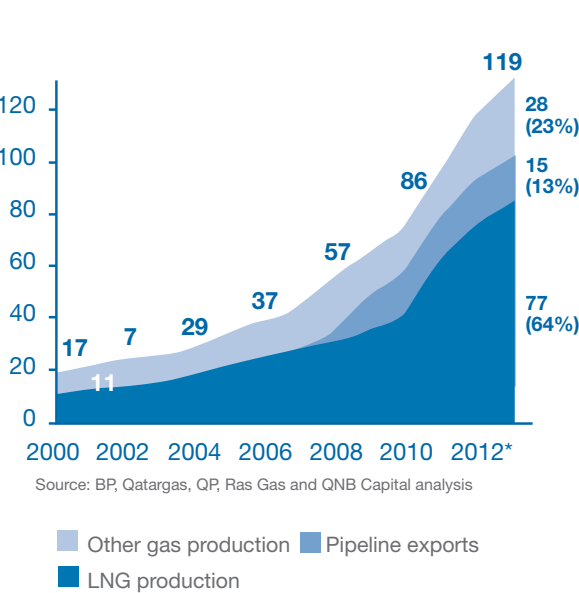
Energy and industry sector projects continue to flourish and support continued economic growth as international demand for cleaner energy continues to rise:

- Total gas production is forecast to increase by 18% per year in 2011-12.
- The expansion of LNG infrastructure has increased the scope for flexible sales contracts.
- LNG production capacity has more than doubled from 31m t/y in 2008 to 77m t/y in 2011.
- At current production rates, gas reserves will last for more than 200 years.
- At current production rates, oil reserves are expected to last for approximately 45 years.
- Oil production is expected to rise to meet domestic and international demand.

Crude Oil, Condensates and NGL Production (2006-12) (k b/d)



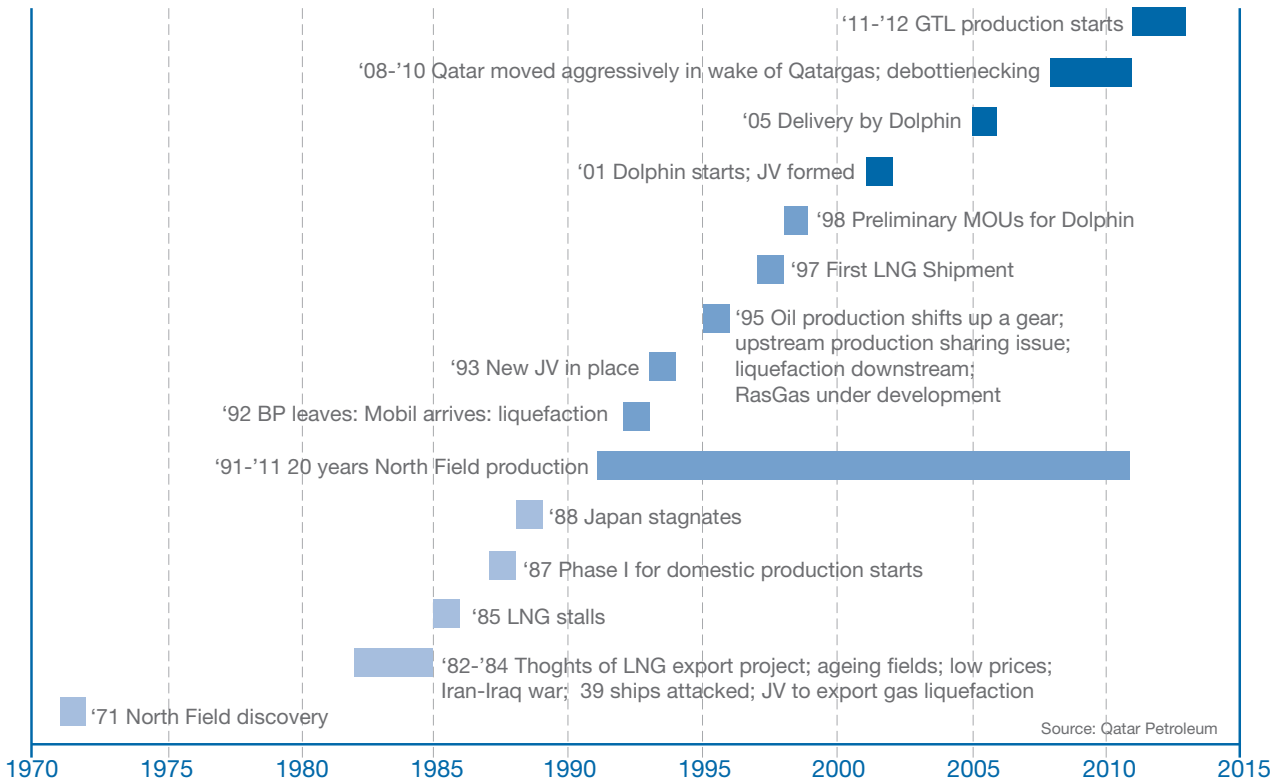
Production of Gas (2000-12) (m t/y)



Qatar's domestic demand for energy is also being addressed by the sector's development plans. Projects such as the new RasGirtas Power plant at Ras Laffan Industrial city and the multi-faceted Barzan gas project will help meet future needs for

energy and water. The graphic below provides a timeline of major developments in oil and gas, starting from the discovery of the North Field in 1971, until 2015 when Qatar's Barzan project is scheduled to be completed.

Major developments in oil and gas (LNG and GTL)



A full and detailed presentation of sector and subsector production is to be presented in the 2012 sector sustainability report. For this year examples of expansion have been presented to provide context to the figures and trends presented throughout this report.

Pearl GTL: Qatar’s Newest Multi-Billion-Dollar Gas-to-Liquids Plant

Qatar achieved a significant milestone in 2011 with the inauguration of the world’s largest gas-to-liquids (GTL) plant, Pearl GTL, at Ras Laffan Industrial City, situated 80 kilometres from Doha. The new plant is the result of a joint venture between Qatar Petroleum and Royal Dutch Shell and is expected to produce the equivalent of 2,600,000 barrels per day of clean liquid products and fuels comprising naphtha, GTL fuel, paraffin, kerosene and lubricant-based oils. The facility, construction of which started in February 2007, began operating in the first quarter of 2011 and is considered a key step towards promoting Qatar’s ambition of being the world’s gas-to-liquids capital.

Barzan Gas Project

The Barzan Gas project, a joint venture between Qatar Petroleum and ExxonMobil with RasGas as the project developer and operator, aims to produce and process approximately 1.9 billion cubic feet of gas per day from Qatar’s non-associated North Field. The project is scheduled to become operational in 2013 with the first train to start in 2014. Production will be fully used as an energy source in the domestic gas-related and petrochemicals industries.

Ras Laffan Port Expansion Project

The existing Ras Laffan Port has expanded to become the largest LNG harbour in the world. The expansion has enabled the port to handle 77 million tons per year of LNG and other liquid products. Expansion plans include the construction of breakwaters and causeways to accommodate projected traffic volumes up to the year 2024 associated with a substantial increase in LNG, liquid products and dry cargo exports. The size of the existing harbour will increase from 106km² to 246km² and ten loading facilities will be available upon completion of the project.

RasGirtas Integrated Water and Power Plant

The Middle East’s second largest integrated water and power plant (Ras Girtas) was inaugurated in 2011 and is expected to supply about 30% of the electricity and 20% of desalinated water consumed in Qatar. The plant was developed to meet Qatar’s growing demand for water and power, and is managed by RasGirtas Power Company (RGPC), which has as its stakeholders Qatar Electricity and Water Company (45%), Qatar Petroleum (15%), Chubu (5%), IPGDF Suez (20%), Mitsui (10%) and Yonden (5%).

Maersk Oil Research and Technology Centre

The Maersk Oil Research and Technology Centre (MO-RTC) represents a long-term investment in Qatar’s development in Enhanced Oil Recovery (EOR) and horizontal well technologies. The centre will focus on applied technology development into horizontal wells and carbonate EOR, which hold the key to unlocking the vast potential of challenging oil fields, including Qatar’s largest, the Al-Shaheen field. Studies are also planned into the effects of offshore operations on the environment, with a view to reducing environmental impact. The MO-RTC will offer training facilities for employees and local universities, helping to build cooperation with students by providing academic support and expertise. The new centre will invest up to US\$100 million in projects and studies over the next ten years.

World Petroleum Congress (WPC)

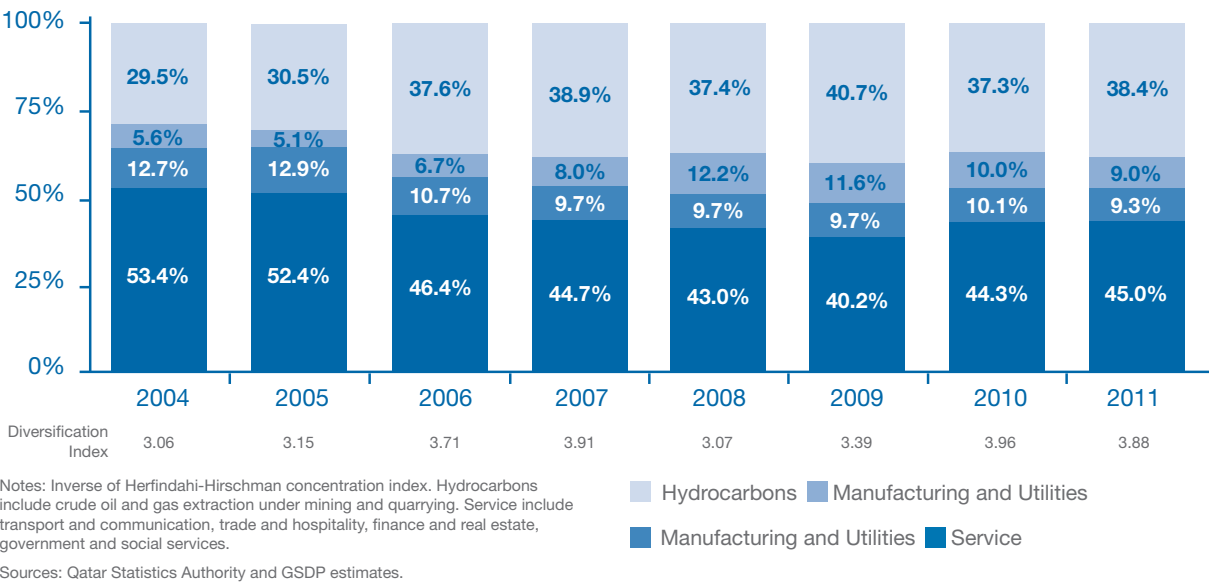
In December 2011, Qatar Petroleum hosted the 20th World Petroleum Congress with the theme ‘Energy Solutions for All – promoting cooperation, innovation and investment’. The five day event covered all aspects of the industry, from technological advances in upstream and downstream operations, to the role of natural gas, renewable and alternative energy, the management of the industry and its social, economic and environmental impact.

Economic Diversification

Historically, hydrocarbons have been the backbone of Qatar’s economic success. In future, the country’s economic policy will focus on diversification, gradually reducing dependence on natural resources, while increasing private and foreign investment in non-energy sectors. This policy aims to ensure that Qatar is capable of sustaining development by supporting innovation, entrepreneurship and education. The ultimate goal is to transform Qatar into a competitive knowledge-based economy over the medium to long term, and to expand the service sector, particularly finance and tourism.

According to Qatar Statistics Authority, Qatar’s non-oil and gas economy grew nearly 20% from 2004 to 2011. Much of this expansion was possible due to the revenues generated by hydrocarbons, which also supported development in sectors such

as construction, utilities and transport services. As of 2011, accepted measures of diversification suggested that Qatar was slightly more diversified if compared to 2004, as illustrated in the figure below.



Major Non-Oil and Gas Projects (2011)

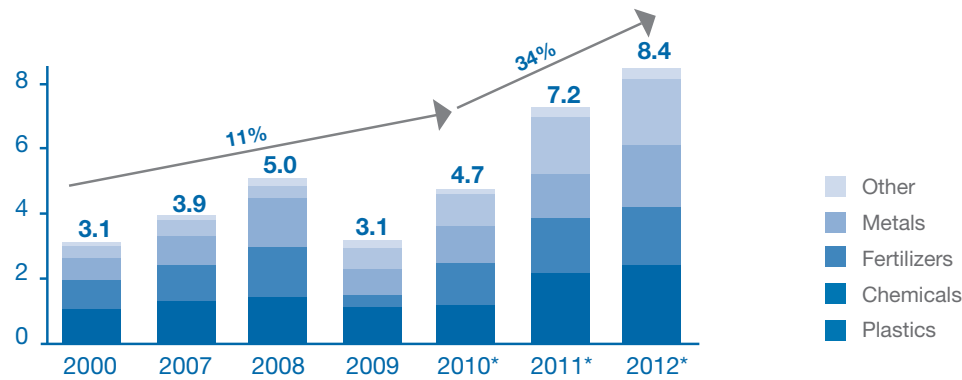
Project	Cost (US\$bn)	End-Date
Qatar National Railway System	29.0	2020
New Doha Port	7.0	2027
Lusail mixed-use development	6.3	2014
Kahrama Power Plant	5.0	2016
Musheireb (phase 2-4)	4.1	2017
Lusail Development: Al-Sidra Golf Residential Development	3.5	2013
Ras Laffan IWPP Expansion	3.0	2014
Doha International Airport	2.8	2012
Education City: Sidra Digital Medical Care & Research Centre	2.5	2012
Automated People Mover in West Bay	2.2	2020

Sector Non-Hydrocarbon Exports

In 2010, Qatar exported non-hydrocarbon products worth 26,946 million Qatari riyals, a 14% increase compared with 2009, while hydrocarbon exports increased 10% in the same period. Exports from non-hydrocarbon sectors have grown in absolute terms, but not as a percentage of GDP, principally

as a result of volatile oil and gas prices. Due to investments made throughout the years towards supporting economic diversification, Qatar has witnessed a substantial increase in the production of non-hydrocarbon products such as ammonia, urea, cement, steel bars and fertilizers.

Non-Oil and Gas Exports (2006-12) (US\$bn, CAGRs shown)



Source: QSA, *QNB Capital estimates and forecasts

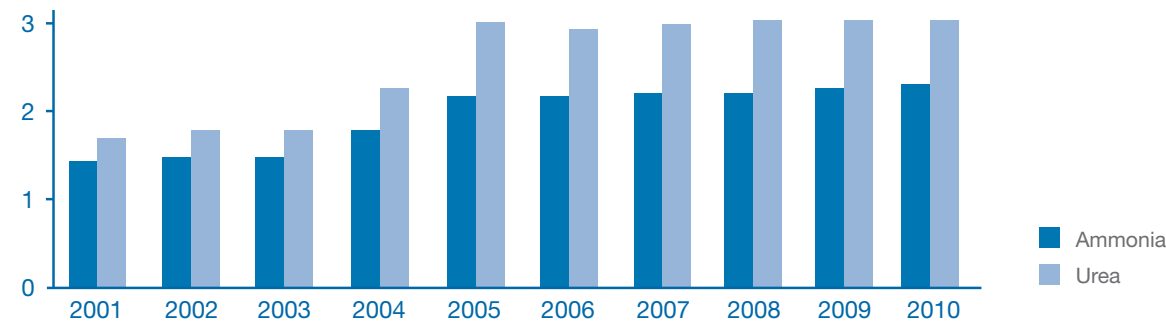


QAFCO becomes World’s Largest Ammonia and Urea Producer

Qatar’s efforts towards industrial diversification have been boosted by a \$3.2-billion project (‘QAFCO-5’) that has increased QAFCO’s urea production capacity by almost 40%. QAFCO (Qatar Fertiliser Company) is the world’s single largest producer of ammonia and urea and exports chemical fertilizers

to more than 35 countries worldwide, making it a key player in the international fertilizer market. The company is a pioneer in the industrial diversification efforts in Qatar, with a total production capacity of 2.2 million tons of ammonia and 3 million tons of urea annually.

Fertiliser Production (2001-10) (mt/y)



Source: QAFCO and QNB Capital Analysis

Qatar Energy and Industry Sector Companies

Since 1995, His Highness the Emir Sheikh Hamad Bin Khalifa Al-Thani has transformed the State of Qatar, leading political, media, economic, social and information development to establish the modern State of Qatar.

Qatar Petroleum

Qatar has witnessed major economic transformation in the past 17 years, especially in the oil, gas and petrochemicals industry. Investments worth billions of dollars by QP have helped to realise the National Vision for a proud and secure future. QP, as a National Oil Company, has fully supported government efforts. In all its projects and operational facilities, QP makes every effort to comply with all applicable HSE standards and legislation in both international and state-ratified conventions and protocols. QP is committed to protecting and conserving the natural environment, local communities, employees and the general public in all its operations.

Qatar's rapid economic growth during the past two decades has stimulated numerous large-scale infrastructure and expansion projects. Qatar has succeeded in leveraging its hydrocarbon resources to drive its development efforts. QP intends to achieve sustainability, efficiency and the optimum use of these resources in the medium and long term, in alignment with the QNV 2030.

QP has achieved a prominent position in the regional and international energy sector by implementing a number of major projects. Qatar has become the

world's largest LNG producer and a growing player in gas-to-liquids, establishing the country as the 'GTL capital of the world'. This has fulfilled a long-held ambition of the Emir and the current Chairman of the Emiri Diwan, Chairman of Qatar's Administrative Control and Transparency Authority (ACTA), and the former Minister of Energy and Industry H.E Abdullah bin Hamad Al Attiyah.

QP works in partnership with leading IOCs that offer operational excellence, in-depth knowledge of advanced technologies and production methods. They also bring proven HSE track records in the expertise and skills required for large-scale projects in exploration, extraction, and production. An important priority in achieving QP's strategic objectives is attracting qualified employees, developing their competency by instilling performance-driven cultures, retaining their service, and providing training and development in the latest technologies, best practices and business challenges. QP is spearheading the energy and industry sector's Strategic Qatarization Plan to maximize the preparation and employment of Qatari nationals.

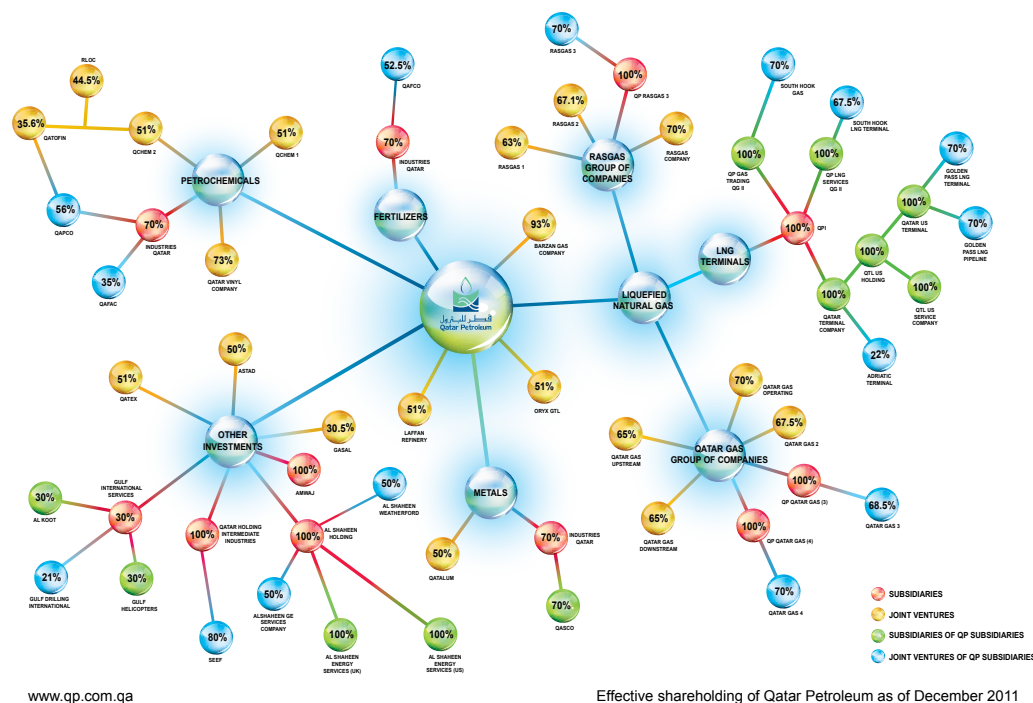


Overview of QP's Operations

Qatar Petroleum's strategy of conducting hydrocarbon exploration and new projects is conducted through Exploration and Production Sharing Agreements (EPSA) and Development and Production Sharing

Agreements (DPSA). These are concluded with major international oil and gas companies. The QP investment portfolio is illustrated below.

QATAR PETROLEUM INVESTMENT PORTFOLIO



Onshore Operations

Exploration commenced in Dukhan in 1935 and the first commercially feasible quantity of crude oil was discovered by drilling the first well during 1939-40. The Dukhan field extends over 65 kilometres in length

and five kilometres in width. It consists of three crude oil reservoirs and one reservoir of non-associated gas. Oil production from this field started in 1947 with the first shipment exported in December 1949.

Offshore Operations

Offshore operations consist of oilfields operated under production sharing agreements (Al Shaheen, Al-Rayyan, Al- Khaleej, Idd-El-Sharqi and Karkara oilfields) with a number of large international oil companies. In addition, the Maydan Mahzam and Bul Hanine oilfields are operated by QP.

Over the years, oil production levels have been increased from onshore and offshore fields. QP has managed the common areas to the highest standards and assures that production has adhered to environmental requirements. This has resulted in substantial revenues and valuable cash flow to the state.

Gas Operations

Qatar Petroleum is responsible for managing all phases of production operations for associated and non-associated gas, the removal of natural gas liquids, transportation, local distribution within the State of Qatar, and the export of natural gas liquids and condensates. QP's Natural Gas Liquids Plant facilities at Dukhan and Mesaieed process associated gas produced from Dukhan onshore field and two offshore oil fields, and from the North Gas Field. NGL plants produce propane, butane and NGL condensates.

Refinery

Qatar Petroleum Refinery seeks to meet all domestic demand for petroleum products (fuel gas, gasoline, diesel, jet fuel, naphtha, and others) and to export surpluses with the highest possible value. Started as a small topping plant in 1958, it has grown into a large-scale refinery. QP has been successful in making the State of Qatar self-sufficient and export-oriented in refined oil and petroleum products by providing added value to part of the country's natural wealth, improving refining economics and providing citizens with the necessary expertise in management, operations, engineering, maintenance and marketing. The principal finished products are LPG, gasoline, jet fuel, diesel and fuel oil.

Gas Pipeline

The Dolphin Gas Project, started in July 2007, is a unique strategic energy initiative involving natural gas production and processing from Qatar's offshore North Field, and transportation of the processed gas by subsea pipeline to the UAE and Oman. The project is one of the largest of its kind ever undertaken in the Middle East. It brings together three member states of the Gulf Cooperation Council, namely the State of Qatar, the UAE and the Sultanate of Oman.



Refining and Gas-to-Liquids companies

Ensuring the wise stewardship of Qatar’s North Field natural gas reserves and to support Qatar’s competitive position in world markets.

QP has established a number of plants for the conversion of natural gas into gas-to-liquids (GTL) products. These initiatives are being undertaken in cooperation with international partners and technology leaders, Shell and Sasol. The GTL plants supply a number of high-quality products for sale in world markets, such as clean-burning GTL kerosene, GTL gas oil and clean fuel for engines.

Gas and Liquefied Natural Gas

With the advent of North Field development projects, including LNG, gas-to-liquids projects, and the export of natural gas through pipelines, the industry has made a significant leap forward.

QP had initiated and developed two major LNG projects with foreign shareholders through Qatargas and RasGas which currently operate LNG facilities. The projects applied economies of scale in the gas industry as a basis for providing a competitive source of LNG to meet the needs of consumers, by establishing an integrated LNG industry, from production, to transportation, and finally to the receiving stations, which are considered the largest in the world. Several Heads of Agreement (HoA) have been signed, which should become confirmed Sales and Purchase Agreements (SPAs).

SPAs have been agreed with a number of countries. Qatar has been able to expand and diversify its export base to include major gas markets in the world, including Japan, China, India, the United States and Europe.

Petrochemicals Companies

QP has supported petrochemical development by carrying out large-scale projects in collaboration with international companies. It has used its oil and gas resources to diversify its income. Investment in petrochemical projects has resulted in the production of chemical fertilizers, ethylene, polyethylene and other products.

Industrial Cities

QP supervises industrial cities at different locations in Qatar. In addition to serving the oil and gas sectors, the cities are responsible for all municipality, health and environmental services in their area. They provide services and facilities for existing industries and support small and medium industrial units. The most important industrial cities are Ras Laffan Industrial City (RLIC) and Mesaieed Industrial City (MIC).

Support Services and Investment Companies

In addition to QP’s activities in oil and gas exploration and production and refining and gas projects, the corporation has established a number of specialized companies in fuel distribution, supply services, transportation, insurance and others. QP wholly owns some of these companies, while others are joint ventures with other companies or listed stock companies.

The SDIR Programme
Participating Companies

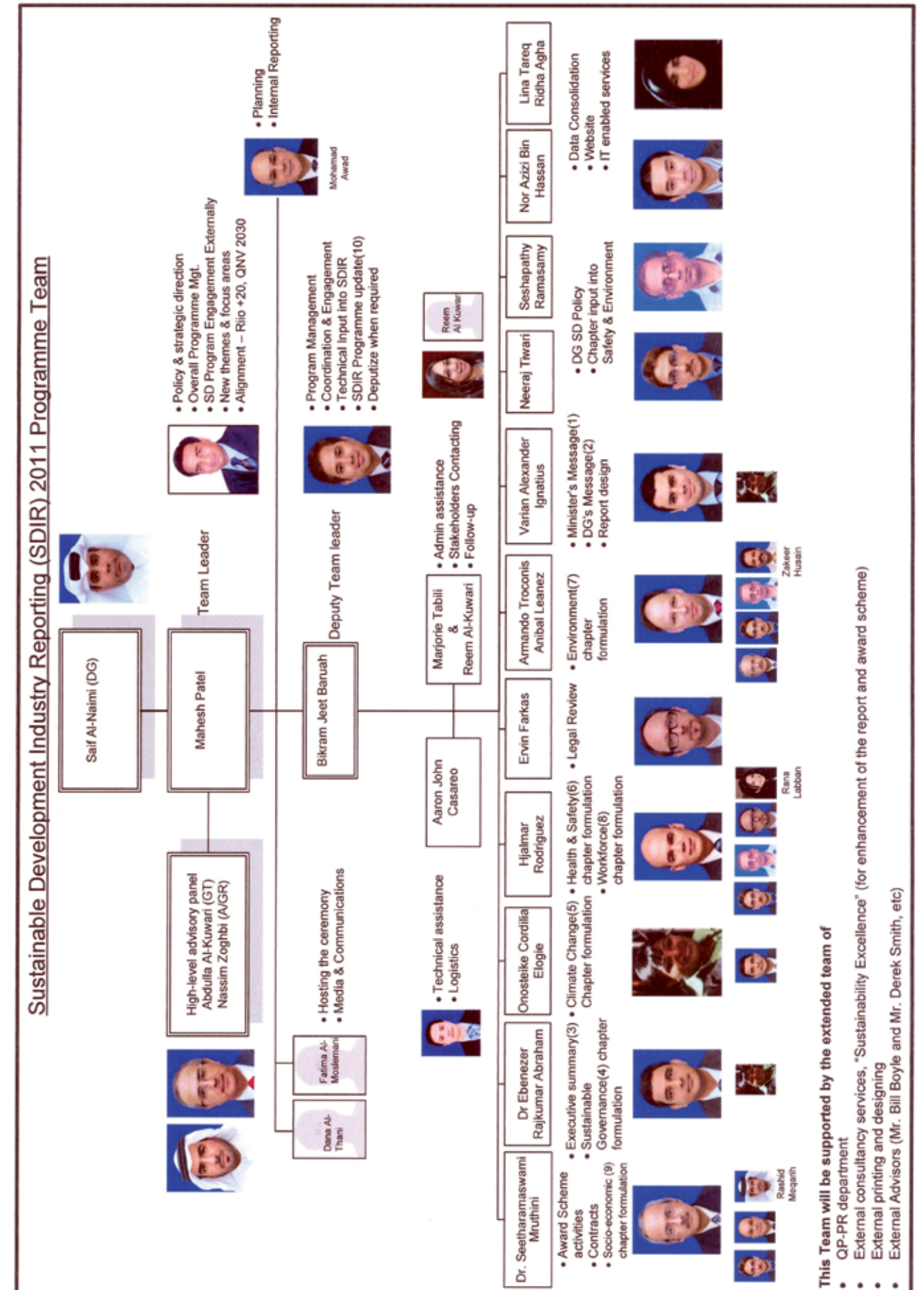
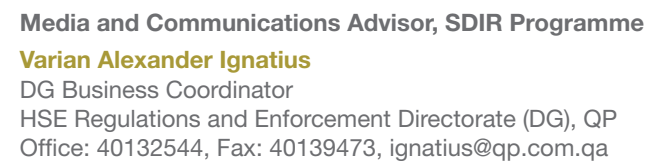
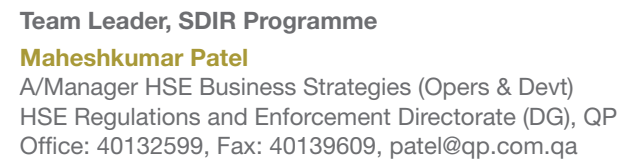
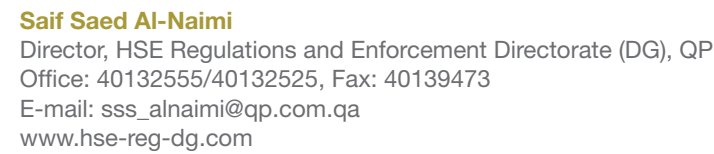
Subsector	Companies	Short Name	Start Date	SDIR Contact (CEO, MD, DG, others...)	Products	Website
Liquid Natural Gas/ Natural Gas	Dolphin Energy	Dolphin	1999	Mr. Adel Ahmad Al-Buainain General Manager	Natural gas	www.dolphinenergy.com
	Qatargas Operating Company Ltd	Qatargas	1984	Sh. Khalid Khalifa Al-Thani CEO	Liquefied natural gas, condensate and sulphur; helium and PG	www.qatargas.com
	RasGas Company Limited	RasGas	1993	Mr. Hamad Rashid Al-Mohannadi Managing Director	Liquefied natural gas, pipeline gas, condensate, sulphur, LPG and Helium	www.rasgas.com
Oil & Gas (Exploration and Production)	Gulf Drilling International	GDI	2004	Mr. Ibrahim Jassim Abdulrahman Al-Othman Fakhroo CEO	Oil and gas exploration and production	www.gdi.com.qa
	Maersk Oil Qatar A/S	Maersk Oil Qatar	1992	Mr. Lewis Affleck Managing Director	Oil and gas exploration and production	www.maersk.com
	Occidental Petroleum of Qatar	OPQL	1994	Mr. Stephen Kelly President and General Manager	Oil exploration and production	www.oxy.com
	Qatar Petroleum	QP	1974	Mohd. Saleh Abdulla Al-Sada Minister of Energy & Industry, Chairman & Managing Director, Qatar Petroleum	Oil and gas exploration and production	www.qp.com.qa
	Qatar Petroleum Development Co. Ltd (QPD)	QPD	1997	Mr. Satoru Nakanishi General Manager	Oil exploration and production	www.qpd-jp.com
	TOTAL E&P Qatar	TEPQ	1936	Mr. Stéphane Michel Managing Director Group Representative	Oil and gas exploration and production	www.total.com
	Wintershall Holding GmbH Qatar	Wintershall	1973	Juergen Rodefeld General Manager	Oil exploration	www.wintershall.com

Subsector	Companies	Short Name	Start Date	SDIR Contact (CEO, MD, DG, others...)	Products	Website
Refining	ORYX GTL Ltd.	ORYX GTL	2003	Mr. Abdul Rahman M. Al-Suwaidi CEO	Gas-to-liquids (GTL)	www.oryxgtl.com
	Qatar Shell Service Co. WLL.	Qatar Shell	2002	Mr. Wael Sawan Executive Vice President	Gas-to-liquids (GTL)	www.shell.com.qa
Petro-chemicals	Qatar Chemicals Company Ltc	Q-Chem	2003	Mr. Ahmed Ibrahim Al-Emadi General Manager	Polyethylene, normal alpha olefins and ethylene	www.q-chem.com.qa
	Ras Laffan Olefins Company	RLOC	2010	Mr. Ahmed Ibrahim Al-Emadi General Manager	Ethylene	www.rloc.com.qa
	Qatar Fertilizer Company	QAFCO	1969	Mr. Khalifa Abdulla Al-Sowaidi Vice Chairman and CEO	Ammonia and urea	www.qafco.com
	Qatar Fuel Additives Company Ltd. (QAFAC)	QAFAC	1991	Mr. Nasser Jeham Al-Kuwari General Manager	Fertilizers	www.qafac.com.qa
	Qatar Jet Fuel Company	QJet	1992	Ateeq Salem Al-Musallam Aviation Operations Manager	Jet fuel	www.qjetfuel.com
	Qatar Lubricants Company Ltd.	QALCO	1997	Sheikh Sultan Bin Jassim Mohamed Al-Thani Chairman and CEO	Lubricants	www.qalco.net
	Qatar Petrochemical Company	QAPCO	1974	Dr. Mohd. Yousef Al-Mulla Vice Chairman and CEO Board Member & General Manager	Low Density Polyethylene (LDPE)	www.qapco.com
	Qatar Vinyl Company Ltd.	QVC	1997	Mr. Hamad Rashed Al-Nuaimi CEO	Vinyl chloride monomer, ethylene dichloride and caustic soda	www.qatarvinyl.com
	Qatofin Company Limited	QATOFIN	2000	Dr. Mohd. Yousef Al-Mulla Vice Chairman and CEO	Polyethylene	www.qatofin.com.qa
	SEEF Limited	SEEF	2004	Mr. Ahmed Hitmi Al-Hitmi General Manager & Board Member	Paraffin, benzene and heavy alkylate benzene (HAB)	www.seef.com.qa

Subsector	Companies	Short Name	Start Date	SDIR Contact (CEO, MD, DG, others...)	Products	Website
Power and Utilities	Mesaieed Power Company Ltd	M Power	2007	Mr. Abdulmajeed Al-Reyahi CEO	Power generation	under construction
	Qatar Electricity and Water Company	QEWG	1990	Tariq Alansari Head of Quality & Environment	Power generation and water desalination	www.qewc.com
	Qatar Power Company	Q Power	2002	Mr. Jamal Al-Khalaf Executive Managing Director	Power generation	www.qatarpower.net
	Rasgirtas Power Company	RGPC	2009	Mr. Faisal Obaid Al-Siddiqi CEO	Power generation and water desalination	under construction
	Ras Laffan Power Company	RLPC	2003	Mubarak Al-Nasr Managing Director	Power generation and water desalination	under construction
Mining, Minerals and Other	Qatar Aluminium Limited	QATALUM	2007	Mr. Tom Petter Johansen CEO	Aluminium products	www.qatalum.com
	Qatar National Cement Company	QNCC	1965	Mr. Mohd. Ali Al-Sulaity General Manager	Cement	www.qatarcement.com
	Qatar Steel	Qatar Steel	1974	Mr. Ali Bin Hassan Al Muraikhi Director & General Manager	Steel	www.qasco.com
Transport, Storage and Distribution	Qatar Fuel Company	WOQOD	2002	Mr. Mohamed Khalifa Turki Al-Sobai Vice Chairman & Managing Director	Fuel distribution and services stations	www.woqod.com.qa
	Qatar Gas Transport Company Ltd	NAKILAT	2004	Mr. Muhammad Ghannam Managing Director	Transporting liquefied natural gas	www.nakilat.com.qa
	Qatar Shipping Company	Q-Ship	1992	Mr. K. K. Kothari CEO	Shipping company	www.qship.com
Support Services	ConocoPhillips Ltd.	ConocoPhillips Qatar	2003	Mr. Gary Sykes President	Supporting Qatargas3 (Train 6)	www.conocophillips.com
	ExxonMobil Qatar	ExxonMobil Qatar	1992	Mr. Barton Cahir President & General Manager	Supporting RasGas and Qatargas joint ventures	www.exxonmobil.com.qa
	Saipem S.p.A., Qatar	Saipem	1960	Mr. Fulvio Illuminati Saipem Qatar Branch Manager, Project Director Qafco 5 & 6	Oil and gas contractor	www.saipem.com

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SDIR Support Team: Sustainable Development Industry Reporting (SDIR) Programme



Appendix A

SDIR MEASURES

The table shows the 31 SDIR programme measures determined in August 2012. All companies participating in the SDIR programme will be asked to report on these measures as a minimum during the 2013 reporting cycle.

Focus Area	Indicator	Unit
Climate Change and Energy	Total GHG emissions (direct and indirect)	Tonnes CO ₂ e
	Total energy used (direct and indirect)	GJ
	Total flaring	MMSCM
	Total natural gas used	Million m ³
	Companies with active climate change strategies	Number
The Environment	Total water consumed	Million m ³
	SOx produced	Tonnes
	NOx produced	Tonnes
	Significant oil spills (> one barrel)	Number
	Volume of spills	Litres
	Total waste generated	Tonnes
	Waste recycled	%
Health and Safety	Employee fatalities	Number
	Contractor fatalities	Number
	Employee lost time injury rate	Per 1 Mn m-h
	Contractor lost time injury rate	Per 1 Mn m-h
	Employee total reportable injury rate	Per 1 Mn m-h
	Contractor total reportable injury rate	Per 1 Mn m-h
	Loss of containment (LOC) incidents	Number
	Emergency response drills	Number
	Incident investigation completion	%
Workforce	Workforce size	Number
	Qatarization	%
	Female employment	%
	Employee satisfaction	%
	Average training provided per employee	Hours
Social	Total social investment budget	USD
	Corruption or human rights incidents	Number
Economic Performance	Revenues	USD
	Goods and services sourced locally	%
	Number of jobs created	Number

Appendix B

GRI AND IPIECA ALIGNMENT

The table below shows the six main sections of the report, the topics covered and their alignment to the main performance disclosure indicators of the GRI G3.1 guidelines, and all of the IPIECA indicators.

Focus Area	Topics	Page Number	IPIECA Indicators	GRI Indicators
Climate Change and Energy	A sectoral approach to climate change	34-35		EC2
	Measurement and reporting of GHG emissions	36-38	E1	EN16, EN17
	Energy efficiency	39-41	E2	EN3, EN4, EN5, EN6, EN7
	Flaring	42-45	E4	EN18, OG6
	CDM projects and carbon capture and storage	46-47		EC2, EN18
	Alternative energy	48	E3	EC2, EN6, OG3
The Environment	Climate change adaptation	48		
	Water	53-55	E6, E9	EN8, EN9, EN10, EN21
	Spills	56-57	E8	EN23
	Waste management	58-61	E10	EN2, EN22
Health and Safety	Air emissions	62-65	E7	EN20
	Biodiversity	66-67	E5	EN12, EN13, EN14, OG4
	Personal safety	71-73	HS3	LA7
	Process safety	74-78	HS5	LA7
Workforce	Health	79-83	HS2	LA8
	Workforce engagement on health and safety	84-85	HS1	LA8
	Workforce overview	89-90		LA1,
	Qatarization	91-93	SE6	EC7
	Diversity and inclusion	94-96	SE15	LA13
Social	Training and development	96-98	SE17	LA10, LA11
	Welfare and engagement	99	SE16	EC3
	Social development	102	SE1	EC1, SO1
Economic Performance	Business ethics	103-104	SE8, SE9, SE11	HR11
	Community engagement and investment	104-109	SE1, SE2	EC8
	Contribution to national GDP	112-117	SE5, SE7	EC1, EC6
	Sector expansion	118-120		EC9
	Economic diversification	121-123		EC9

Appendix C

ACRONYMS, GLOSSARY AND REFERENCES

ACRONYMS

API	American Petroleum Institute	kWh	Kilowatt hour
CCS	Carbon Capture and Storage	KPI	Key Performance Indicator
CDM	Clean Development Mechanism	LNG	Liquefied Natural Gas
CDR	Carbon Dioxide Recovery	LOC	Loss of Containment
COP	Conference of Parties	LTIF	Lost Time Injury Frequency
CO ₂ e	Carbon Dioxide Equivalent	MAP	Mutual Aid Plan
CMP	Parties to the Kyoto Protocol	MIC	Mesaieed Industrial City
CTO	Consent To Operate	MMSCM	Million Metric Standard Cubic Meters
DG	HSE Regulations and Enforcement Directorate	m ³	Cubic meter
DPSA	Development and Production Sharing Agreements	NCCC	National Climate Change Committee
EIA	Environmental Impact Assessment	NDS	National Development Strategy
EMS	Environmental Management System	NG	Natural Gas
EPSA	Exploration and Production Sharing Agreements	NOx	Nitrogen Oxides
E&P	Exploration and Production	QP	Qatar Petroleum
GCC	Gulf Cooperation Council	QR	Qatari Riyal
GJ	Gigajoule	QMS	Quality Management System
GDP	Gross Domestic Product	QNV	Qatar National Vision
GGFR	Global Gas Flaring Partnership	RLIC	Ras Laffan Industrial City
GHG	Greenhouse Gas	SCH	Supreme Council of Health
GRI	Global Reporting Initiative	SDIR	Sustainable Development Industry Reporting Programme
GSDP	General Secretariat for Development and Planning	SMS	Sustainability Management Systems
GTL	Gas-to-Liquids	SOx	Sulphur Oxides
HSE	Health, Safety, and Environment	TRIF	Total Reportable Injury Frequency
IOC	International Oil Company	UAE	United Arab Emirates
IPCC	Intergovernmental Panel on Climate Change	UN	United Nations
IQ	Industries Qatar	UNFCCC	United Nations Framework Convention on Climate Change
		VOC	Volatile Organic Compound

GLOSSARY

Qatar National Vision 2030

A long term national vision built on the guiding principles of Qatar’s Permanent Constitution. It reflects the aspirations of the Qatari people and the resolve of their political leadership. It envisages a vibrant and prosperous country in which there is economic and social justice for all, and in which nature and man are in harmony.

Climate Change

A significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years.

Qatarization

An initiative by the government of the Qatar to increase the number of Qatari nationals in all joint venture industries and government departments.

Corporate Governance

The system by which companies are directed and controlled. It involves regulatory and market mechanisms, and the roles and relationships between a company’s management, its board, its shareholders and other stakeholders, and the goals for which the corporation is governed.

Sustainability

A state in which the current generation can meet their needs without comprising the ability of future generations to meet their own.

Sustainability Management

The integrated management of economic, social and environmental issues in a manner that maximizes value for all stakeholders.

Sustainability Report

An organisational report that gives information about economic, environmental, social and governance performance.

Global Reporting Initiative (GRI)

A network-based organisation that produces a comprehensive sustainability reporting framework widely used around the world with the aim of the mainstreaming of disclosure on environmental, social and governance performance.

Gulf Cooperation Council (GCC)

A political and economic union of the Arab states bordering the Arabian Gulf and located on or near the Arabian Peninsula, namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

Greenhouse Gas Emissions

Gas emissions, which contribute to the trapping of heat inside the atmosphere (resulting in the Global Warming phenomenon).

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