QATAR’S COMMITMENT TO SUSTAINABLE DEVELOPMENT
MEETING THE CHALLENGES OF CLIMATE CHANGE

By the Qatar General Secretariat for Development Planning (GSDP)

With potentially catastrophic consequences for humankind, biodiversity and marine ecosystems, climate change has been identified as the most pressing global environmental challenge. Qatar is committed to eliminating inefficiencies that raise carbon dioxide emissions and to working with other countries and international organisations to address global climate challenges. Qatar, like its Gulf neighbours, is highly vulnerable to the adverse effects of climate change.

Qatar ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 18 April 1996 and the Kyoto protocol on 11 January 2005. Although Qatar is not obligated under the UNFCCC to set emission control targets, it is making voluntary efforts and setting ambitious targets to contain greenhouse gas emissions.

Qatar is hosting the eighteenth Conference of the Parties (COP 18) under the UNFCCC, to be held in Doha between 26 November to 7 December 2012. The Framework Convention provides that parties should protect the climate system for the benefit of present and future generations in accordance with their common but differentiated responsibilities. That Qatar is hosting COP 18 is a clear indication of the national commitment to sustainable development in general, and to a reduction in greenhouse gases in particular.

QATAR NATIONAL VISION 2030

At Rio+20, world leaders signed on to a document The Future We Want which in many ways reaffirmed at the global level what is foreseen in the Qatar National Vision 2030 (QNV), and what is now being implemented through the Qatar National Development Strategy 2011-2016 (NDS). QNV/NDS embed the principles of sustainable development, and the country’s people are at the centre of efforts to advance sustainable development.

QNV/NDS recognise that Qatar has been developing at an unprecedented speed. Exceptionally rapid economic growth, natural resource use, spatial development and exceptionally high population growth have resulted in environmental stresses.

Qatar’s NDS explicitly aligns the growth of national prosperity to the realities of environmental constraints. Interventions being initiated are starting to put the country on an environmentally sustainable development path. Many of them entail new patterns in consumption and production, the application of environmentally sound technology and the development of effective supporting modern institutions.

QATAR’S CLIMATE CHANGE VULNERABILITIES

If average temperatures rise and without an increase in rainfall there would be moisture losses from Qatar’s water-stressed land. Two broad effects would arise – further desertification and increased water needs. Since the country is dependent on desalination, which is energy intensive, energy consumption would rise and correspondingly

“...The State of Qatar seeks to preserve and protect its unique environment and nurture the abundance of nature granted by God. 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
Increased temperatures would also exacerbate air quality problems and adversely affect human health.

Qatar is one of three countries in the Arabian Gulf (along with Kuwait and Bahrain) with extreme vulnerability to rising sea levels and flooding.

Due to the shallow depths of Qatar’s marine waters, even small rises in temperature will have a profound influence. The Ministry of Environment’s marine sensitivity atlas classifies mangroves, coral reefs and seagrass beds as sensitive ecosystems which will be adversely impacted by climate change. Migratory patterns for some sea birds and other marine species could also change.

**PRIORITISING ADAPTATION AND MITIGATION MEASURES**

While investing in sources of future prosperity, the government is adopting and adapting the most effective policies and technologies for protecting environmental assets and reducing pollution. It recognises the imperative of cultivating a sense of environmental responsibility among the public in general and within industry in particular, while building a legal system, effective institutions and partnerships that support environmental protection.

Reducing GHG emissions while expanding energy supply is one of the greatest challenges facing national industries. The country has taken major steps to reduce CO\textsubscript{2} emissions—especially from gas flaring, which accounts for about 12% of total emissions.

---

**BOX 1. AL-SHAHEEN – QATAR’S FIRST SUCCESSFUL UNFCCC CLEAN DEVELOPMENT MECHANISM PROJECT**

In 2007 Qatar introduced its first UNFCCC Clean Development Mechanism (CDM), the Al-Shaheen Oil Field Gas Recovery and Utilization Project—a production oil and gas field off the north east coast of Qatar, the North Field. Al-Shaheen is the country’s largest offshore oil field and is the source of around one-third of Qatar’s daily oil production.

Qatar Petroleum (QP) and Maersk Oil have successfully reduced gas flaring from the Al-Shaheen field to an absolute minimum. There was a 90 per cent reduction in flaring between 2007 and 2011, and greenhouse gas emissions were reduced by more than half over the same period. Capturing previously flared gas and turning it into clean electricity led to these achievements. Al-Shaheen’s gas gathering system is recognised as the world’s largest CDM project, and QP will work with UNFCCC to validate the CDM application.

Facilities completed in 2012 at Al-Karkara, also in the North Field, are designed to achieve zero gas flaring by injecting excess sour gas back into the reservoir.

Source: Adapted from QP (2012).
Qatar’s leading energy companies are playing an active role in delivering a lower carbon future. For example, RasGas operates the region’s first acid injection (AGI) scheme that stores CO$_2$ and hydrogen sulphide (H$_2$S) from the gas production process, resulting in substantial reductions in CO$_2$ emissions.

Shipping is a critical link in the liquefied natural gas (LNG) value chain that extends from Qatar’s North Field to markets throughout the world. In 2008, research undertaken by Qatar Petroleum in partnership with Exxon Mobil Corporation resulted in an industry breakthrough in LNG carrier design and size, enabling transport technology that can carry 80 per cent more liquefied natural gas than current carriers, thereby substantially reducing energy used per delivered unit.

Qatar will continue to exploit its rich hydrocarbon endowment and further develop its energy-intensive petrochemical and metallurgy sectors, consolidating its position as a major force in world energy markets. At the same time, however, the country will look for opportunities to diversify its productive base into new areas that add to resilience and provide sustainable avenues of wealth creation.

**TOWARDS ZERO EMISSIONS FROM GAS FLARING**

Qatar is developing a national policy to manage greenhouse gas emissions and the broader challenges of climate change. The National Flaring and Venting Reduction Project has introduced formal reporting and voluntary reduction targets for industries and standards for new facilities to minimize flaring.

While Qatar’s CO$_2$ emissions rose over the decade 2000 to 2010, the rate of increase slowed markedly between 2007 and 2010. Almost two-thirds of CO$_2$ emissions stem from the hydrocarbon industry. The slower increase in CO$_2$ emissions stems from marked reductions in gas flaring and venting. Qatar’s flaring volume declined by half between 2008 and 2010, meeting the NDS target set for 2016, as the impact of new technologies to reduce emissions started to take effect (Figure 1).

![Figure 1. Gas flaring halved between 2008 and 2010](source: NOAA (2011) and BP (2012))

**BOX 2. QATAR CHAMPIONING A GLOBAL DRY LAND ALLIANCE: PARTNERING FOR FOOD SECURITY**

National food security is of increasing concern in dry land countries that are characterised by tremendous pressures on their natural resources, such as water, soil and biodiversity.

Qatar’s National Food Security Programme (NFSP) has launched a Global Dry Land Alliance (GDLA). The GDLA comprises some 15 selected dry land countries willing and able to contribute to an agreed agenda. Qatar is supporting the start-up cost of a temporary secretariat based in Doha. The GDLA will work closely with international and multilateral organisations as well as private sector networks.

The GDLA is envisioned to be a collaborative undertaking to combat common threats, create new solutions to common food security challenges, and provide mutual assistance in times of extraordinary need. It will provide two types of support services: preventive initiatives to help avoid food security crises, and response initiatives to alleviate the consequences of such crises.

*Source: Adapted from GDLA (2012).*
FRONTIER TECHNOLOGY RESEARCH

Qatar, in multiple partnerships, is at the forefront of developing environmentally sound, cleaner and energy-efficient technology at Qatar Science and Technology Park (Figure 2). Innovative research is under way on new carbon capture and sequestration technology from the oil and gas industries, including at the Imperial College London’s Centre for Carbon Capture and Storage, in partnership with the Qatar Science and Technology Park.

LOOKING FORWARD

Qatar’s long-term development outcomes articulated in the QNV emphasise the need to strike a careful balance between the interests of the current generation and the interests of future generations. The country’s substantial economic gains provide a solid foundation for this, and through the NDS, returns from the current use of non-renewable resources will be further channelled into both physical and human capital formation.

Qatar is making a significant contribution to the global partnership for sustainable development through various forms of international co-operation. This spirit of partnership, and the national commitment to address climate change, provide the rationale for continuing to proactively engage with numerous regional and international agencies.

Given the wisdom and foresight of Qatar’s leaders and people, and the many initiatives already underway, there will be increasing harmony between economic growth, social development and environmental management.

“Qatar is committed to protecting and conserving its environment without harming its competitiveness. This path means that Qatar will invest more in frontier research and new technologies that promote sustainable development.”

— H E Dr Ibrahim Ibrahim, Executive Member of the Supreme Committee for Development Planning

Table 1. Qatar’s Science and Technology Park technological research through partnerships

<table>
<thead>
<tr>
<th>Research programme</th>
<th>Objective</th>
<th>Partners</th>
</tr>
</thead>
</table>
| Development and deployment of cost effective sustainable energy technologies (2012) | • Clean energy research and development  
• Advanced cooling technologies  
• Renewable power generation  
• Energy storage  
• Carbon capture and sequestration  
• Water treatment systems | Green Gulf, Chevron Energy Solutions and Water Sustainability Centre (Conoco Phillips and General Electric) |
| Transport solutions for integrated mobility and extreme climates (2010) | • Mobile energy units in light rail systems  
• Understanding impact of extreme environmental conditions on urban mobility | Siemens and Williams Technology Centre |
| Solar energy technology (2010) | • Solar carbon black reactor for solar thermal production of carbon black and hydrogen from methane with minimum CO$_2$ | Chevron and Green Gulf Inc |
| Solar technology (2010) | • Solar cracking reactor for solar thermal production of hydrogen from methane  
• Reduction of CO$_2$ emissions | Fraunhofer-Gesellschaft and TAMUQ |
| Research on LNG safety, sulphur and environmental management (2006) | • Carbon capture and sequestration  
• Reduction of CO$_2$ emissions | Qatar Petroleum, Qatar Shell Research Centre and Exxon Mobil |