

A photograph of a woman in a light purple suit and a man in a white thobe walking in a modern building. The woman is on the left, looking towards the camera. The man is on the right, looking towards the camera. In the background, there are other people in traditional Arab attire and a modern architectural structure with a grid pattern.

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**Special Edition - COP18**

# Energy Outlook – COP18

Climate Change: One Challenge, Many Solutions

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United Nations  
Climate Change Conference 2012  
COP18/CMP8 Doha, Qatar

DOHA 2012  
UN CLIMATE CHANGE CONFERENCE  
COP18|CMP8



“Security of everything...”

**THE WORD SECURITY** appears to have arrived with the 21st century as the foremost word in our collective vocabulary, and certainly the most dominant posture on the global stage for the last decade. In essence it came in the aftermath of the tragic events of 9/11 and then filtered down through to every activity of daily life, from putting your shoes through an X-ray machine in airports, to a fingerprint device on your desk for accessing your computer.

The next ten years will see security enter even deeper into the common vernacular for the survival of life – Food Security, Water Security and Energy Security. They are destined to be parked firmly as dinner party subjects for the chattering classes -- out goes debates on 2-bedroom apartment prices in Shanghai or Palm Island and in will come arable land in remote Kenya, water storage capacity in the UAE or drilling at the North Pole.

The challenge for mankind is to take the appropriate action early enough to avoid a 7-Billion person stampede as some nations have already commenced the race to secure the energy, food and water that all citizens need – but Sir Bob Geldof argues in this publication that a “mine, mine, mine” posture will inevitably lead to resource wars this century.

Lebanon’s former Prime Minister Fuad Siniora argues in his article following that these significant challenges underpin the fuse that triggered the explosive Arab Spring, and along with the U.A.E. Minister of Higher Education and Scientific Research, His Excellency Sheikh Nahayan Mabarak Al- Nahayan, they both advocate that a window of time still remains but leaders must take decisive and collaborative action now!

**Sean Evers**  
Managing Partner, Gulf Intelligence

# Climate Change Summit Needs Developed & Developing World to Compromise

**By His Excellency Abdullah bin Hamad Al-Attiyah,  
President of the Qatar Administrative Control and  
Transparency Authority, President of COP18/CMP8**



**AS THE INCOMING** president of COP18/CMP8, I urge you all, to maximize your efforts to accelerate the momentum of Climate Change negotiations toward COP18/CMP8 at the end of November, while taking advantage of what has been achieved in Durban last year and in Cancun a year before that.

The COP18/CMP8 sessions will mark the 18th Conference of the Parties to the UNFCCC and the 8th session of the Conference of the Parties serving as the meeting of the parties to the Kyoto Protocol. The sessions are expected to draw more than 17,000 people to Doha as representatives of 195 nations and more than 5,000 observer organizations participate in nearly three weeks of work and negotiations on climate change treaties and agreements.

Since the UNFCCC entered into force in 1995, the Conference of the Parties (COP) to the UNFCCC have been meeting annually

“We welcome the opportunity to demonstrate the hospitality and spirit of Qatar as we host these important discussions on climate change issues

to assess progress in dealing with climate change. The COP adopts decisions and resolutions, published in reports of the COP. Successive decisions taken by the COP make up a detailed set of rules for practical and effective implementation of the Convention.

We welcome the opportunity to demonstrate the hospitality and spirit of Qatar as we host these important discussions on climate change issues. As a nation committed to progress and innovation, we believe that great challenges require active and open participation by all parties.

Under the leadership of His Highness the Emir Sheikh Hamad bin Khalifah Al-Thani, the State of Qatar has a proud history of hosting credible negotiations on tough issues. However, any such discussions must take into account the interests of all groups and parties under an atmosphere of cooperation, inclusiveness and transparency.

As the President of COP18/CMP8 I urge participants to be open and frank in expressing their views in discussing issues of Climate Change. As we are all aware, Climate Change is one of the most urgent challenges to be addressed by the international community and that it is important to drive negotiations in a constructive and collaborative manner.

As always and after each COP, there are issues that remain unresolved and require further discussions and prioritization. I urge you all to prioritize the issues to improve the efficiency and effectiveness of this year's negotiations. The expected outcomes from COP18/CMP8 meetings will be built on your deliverance in the sessions to come, either in Bonn next May or the inter-session meetings that may take place.

To frame these elements in an agreement that is acceptable to all will depend on the cooperation between Developing and Developed countries, as well as the coordination between bilateral/regional cooperation and the United Nations framework. In my opinion, it is essential for the Climate Change negotiations to show the world our common commitment to address these pressing issues.

When Doha was chosen to host this year's UN Climate Summit, many commentators pointed out the irony that Qatar has one of the world's largest carbon footprints per capita, but this is a misleading statement – the calculation process says take whatever you produce and then divide it by the population – this is not fair.

China produces millions of tons of carbon emissions but because they have such a large population it seems like they are not significant polluters. The calculation is very confusing and perhaps in need reform.

We did one of the world's biggest carbon captures in one of our oil fields and earned a lot of carbon credits. Then other big countries wanted to buy our credits.

The truth is big countries don't want to decrease their carbon emissions. They buy your credit and use it as their own. Then they try to be all innocent and blame small countries like Singapore and Qatar because they don't want to blame each other -- we have clean air and a clean sky. That is a better reflection of reality.

It was concern for the environment that led to Qatar's spectacular development.

In the 1990s people around the world started to become more aware of pollution



and carbon emissions, and so began to put great pressure on their governments to change policies. Well if you want to reduce carbon emissions, moving from coal or oil fuelled electricity power stations to natural gas is one of the best solutions. The world turned to Qatar for the solution because we have the biggest single non-associated gas field on earth.

Now we are one of the biggest energy producers, we are one of the major producers in steel, aluminum and metals, and we are number 2 in the world as a producer of helium, and we are very proud to export to 85 countries worldwide.

The physical impact of Qatar's development has been a different challenge. We are a hydrocarbon country. We cannot deny it – when you produce energy you will produce CO 2. This is why, when I was Qatar's Minister of Energy we created a special environmental department and made

it mandatory in all our operations that the environment should be number one.

We have done a lot of studies on CO2 recovery - how to inject it into the old reserves and on recycling. Many of these studies remain at the experimental and planning stages. Likewise, the Qatar National Development Strategy 2011-16 has set the target of 38 percent of solid waste to be recycled, up from the current 8 percent.

There are some encouraging signs -- Qatar managed to reduce its carbon emissions by 14% from ending gas-flaring in 2010, considerably ahead of a global reduction target of 9%. The World Petroleum Congress, held in Doha in December, was carbon neutral for the first time in its history. But the proof of Qatar's good custodianship of the environment is even yet more obvious with all this production of oil, gas, aluminum -- in Qatar you can see the stars, you can smell the air. ■



*His Excellency  
Abdullah bin Hamad  
Al-Attiyah, President of  
the Qatar  
Administrative Control  
and Transparency  
Authority, President of  
COP18/CMP8*



THE GULF INTELLIGENCE

# FOOD SECURITY FORUM

The World Needs Luck,  
But Can't Wait Around for It

**By HE Sheikh Nahayan Mubarak Al Nahayan,  
UAE Minister of Higher Education and Scientific Research**

**LET ME BEGIN** by observing that the number of people reading the Gulf Intelligence Energy Outlook is infinitesimally small compared to the seven billion stakeholders who might have something to say about world population. In the five minutes it takes you to read this article, another 1,330 babies will be born, according to calculations by the Population Reference Bureau.

Our world and all of us in it need some good luck, but we cannot wait for it to come. The world continues to spin while we wait. Some people are still waiting for proof of global warming. While they waited, the earth changed. Bill McKibbin tells us in his book, *Earth: Making a Life on a Tough New Planet*: “The earth that we knew—the only earth that we ever knew—is gone.” Those are tough words about our planet, but plenty of evidence suggests their truth. Whatever the case, we must proceed with the world that we have and we must act quickly and decisively if we are to save that world for us and for our children.

“We must proceed with the world that we have and we must act quickly and decisively if we are to save that world for us and for our children

It is not entirely clear to me that the way to succeed is to stop having children. They are the future. To be sure, the world population has increased at an alarming rate over the past forty years, but Fred Pearce, for example, has presented a competent argument in *The Coming Population Crash and Our Planet’s Surprising Future*. He used demographic statistics that indicates that the world’s population will be declining by 2040. Whether or not he is correct, we have certainly seen dramatic reductions in birth rates in many countries. The United Nations Population Fund has been fully engaged in helping nations achieve sustainable birth rates. Some nations have even taken official actions in attempting to affect birth rates. In other nations, birth rates remain high. The matter of birth rates, like their companion rates for infant mortality and life expectancy, is unquestionably one of the key issues related to population growth, and the goal of this

publication is to highlight those key issues and to look at current solutions.

#### **ENERGY, FOOD AND WATER**

Those key issues inevitably include, for example, production, consumption, energy, food, water, pollution, deforestation, loss of biodiversity, urbanization, and disease. Identifying and taking wise and effective actions regarding those key issues we all see as absolutely daunting tasks, but we can usually take action without dealing with social mores, the rights of women, ethical conventions, religious beliefs, and national sovereignty regarding human reproduction. Indeed, the executive director of the United Nations Population Fund has said: “So instead of asking questions like, ‘Are we too many?’ we should be asking, ‘What can I do to make the world better?’ or ‘What can we do to transform our growing cities into forces for sustainability?’”

That approach naturally appeals to me because it is the one that The United Arab Emirates and Abu Dhabi are following. In its plans for the future, Abu Dhabi has seized its opportunities and become a truly global city. Not only a center for finance, business, education, technology, and culture, but also a nurturing source of innovation and creativity that promises to benefit the world. And, consistent with its historical record, Abu Dhabi is moving aggressively into a sustainable future.

Abu Dhabi and the United Arab Emirates are laying the foundation for a socially cohesive and economically sustainable community that preserves the country’s unique cultural heritage while gathering power from its connections with other countries and other cultures. Indeed, our President, His Highness Sheikh Khalifa bin Zayed Al-Nahayan, is leading the United Arab Emirates toward that better future with wisdom and vision. Both the Vice President, His Highness Sheikh Mohammed bin Rashid Al-Maktoum, and the Crown Prince of Abu Dhabi, His Highness Sheikh Mohammed bin Zayed al-Nahayan, share and support the President’s vision for a sustainable future.

Much of the world’s growth and development during the last century has come at the expense of care for our natural environment. If the human assault upon our environment continues unabated, future generations will live in a time when rising ocean levels submerge coastal regions, agricultural patterns shift, drought conditions



HE Sheikh Nahayan Mubarak al Nahayan, meeting Sir Bob Geldof

increase and major outbreaks of diseases infect new regions of the world. We need to provide increased awareness of the serious – perhaps devastating – impact upon the human race if our global society does not become more concerned about growth, environmental quality, and sustainability.

#### **EDUCATION AND LITERACY**

Current patterns of global population growth will also have an impact on world peace and prosperity. A 2009 report by UNESCO states that 776 million adults around the world – two thirds of them women – lack even the most basic literacy skills and that 75 million children currently are not in school. We are also continually barraged with reports about the fragile condition of health among so many of the world’s population. We need new ideas and policies, and the determination to help our global citizens achieve more productive and fulfilling lives.

Taking note of world population and sustainability, Thomas Friedman, the author and columnist for *The New York Times*, recently advanced this idea:

“There will be two billion more people here by 2050, and they will all want to live and drive just like us. And when they do, there is going to be one monster traffic jam and pollution cloud, unless we learn how to get more mobility, lighting, heating and cooling from less energy and with less waste — with so many more people. We can’t let

the climate wars continue to derail efforts to have an energy policy that puts in place rising efficiency standards, for buildings, windows, traffic, housing, packaging and appliances, that will drive innovation — which is our strength — in what has to be the next great global industry: energy and resource efficiency.”

We in the United Arab Emirates intend to demonstrate to the rest of the world a dynamic leadership and wise vision in energy and resource efficiency. Issues of population growth, global climate change, waste management, recycling, potable water, and renewable energy sources are increasingly important to sustaining the quality of our environment. We have sound policies in all these areas. Our colleges and universities offer educational and research programs on the environment and our country values innovation and the development and use of new technologies. We also have increased cooperation with other nations to ensure the sustainability of our development efforts.

We know how difficult and costly it is to shift into a new way of life that will preserve our environment, maintain our culture, and bring a better life to our population. But our new earth demands pragmatic innovation, and I hope that the issues raised in this edition of *Energy Outlook* will inspire some creative ideas that in the long run will benefit us seven billion interested parties. Thank you for thinking hard about our world. ■



HE Sheikh Nahayan Mubarak Al Nahayan, UAE Minister for Higher Education and Scientific Research & Chancellor of the Higher Colleges of Technology



Dignity, Freedom, Justice  
and the Arab Spring

By HE Fuad Siniora, Former Prime Minister of Lebanon

**MANY PEOPLE** don't necessarily see the connection between food security and the Arab Spring. But let us remember that this revolutionary movement was first sparked by the self-immolation of a vegetable cart vendor; and that the demonstrations that followed were also objecting to the fast increase in foodstuff prices in Tunisia and Algeria.

Of course that is not to say that the issue of food security or even economic deprivation was at the forefront of the movements. The Arab Spring was and remains first and foremost about dignity, freedom, and justice – values that were often breached or sidelined in our part of the world. But economic factors have always been at the source of feelings of marginalization that fueled the demonstrations.

I will outline a Three Track Plan for addressing these macro socioeconomic issues – including food security in a world of 7 billion people – by focusing on the following areas: regional integration, structural reform and social safety nets. But before I do that, let us briefly consider the scale of the challenge.

“The irony is that in the years before the Arab Spring, some headline economic indicators in the region were actually improving

The irony is that in the years before the Arab Spring, some headline economic indicators in the region were actually improving. But while growth, fiscal deficit and exchange rates were often OK, most socioeconomic indicators such as unemployment rate, poverty levels and food security kept deteriorating, particularly in Egypt, Jordan, Lebanon, Morocco, Syria and Tunisia. An IMF paper illustrates that more than half of the working-age youth population is unemployed. While another study shows that food security has deteriorated in most countries in the region as a result of the global commodity price crises in 2007/2008 and in 2010/2011.

Figures from the International Food Policy Research Institute reveal that the GCC States face a low risk of food insecurity. Libya and Tunisia exhibit moderate risk of food insecurity, whereas all other countries show serious, alarming or extremely alarming levels of food insecurity risks.

To me these results are deeply disconcerting at least for two reasons.

The first is that they reflect the fact that food security poses a clear and present impending danger in most countries undergoing a transition: Egypt, Yemen, and Syria as well as the countries where some political reforms are being undertaken like Jordan and Morocco.

The second reason is that the divergence on such matters, in a region that shares a common language, a common history, and a common cultural heritage, has dangerous implications not just for the specific concerned countries, but for the overall Arab world. Can we even imagine such wide divide existing between Western and Eastern Europe, or between the US and Central America?

And of course, let us not forget that the Arab Spring has in many ways exacerbated the food security concerns for a region that – at least partly due to its geography – remains a net importer of food. To give a specific example, the Arab countries are the largest net importer of cereals in the world, with a gap that totaled 58.2 Million Metric Tons in 2007. This high dependency on food imports creates the continuous need for foreign exchange for import-financing purposes – but the Arab Spring has led to sharp falls in tourism, Foreign Direct Investment (FDI) and remittances throughout most of the region, with the exception of the oil exporting countries.

This dependence on food imports is partly due to geographical issues such as water scarcity. But geography is not the only factor. The evidence shows that despite the fact that the share of the rural population exceeds 40% in the Arab world – and even exceeds 60% in countries such as Yemen or Sudan – relatively few of these people work in agriculture due to lack of opportunities and development in this sector. A recent study shows that the rural poor in the Arab world earn a large majority of their income from nonagricultural activities. They work instead in low-value added services or in the informal economy. Take Egypt for example: the poorest 20% of rural households earn only 18% of their income from agriculture, whereas the richest 20% of rural households earn 36% of their income from agriculture.

All of this brings me to my Plan with Three Tracks for the Arab World: integration, structural reform and safety nets. This Plan addresses the issue of food security not in isolation, but as part of a multi-dimensional approach to the broader socioeconomic challenges facing the region.

## INTEGRATION

The first track is to design and implement a common Arab economic integration agenda that starts with the launching of cross border megaprojects in the key sectors of transport, power, energy and water. These projects should be financially viable and be attentive to the issue of cost-recovery so that institutional investors could actively participate. They should bring the Arab world closer and reduce the cost of production and distribution through efficiency gains. Shouldn't the cost of importing agricultural products from Sudan be lower than from Europe or South America? It can be, but only if we build routes and highways connecting agricultural areas of Sudan to Sudanese ports.

These megaprojects should be accompanied by tax breaks and other fiscal incentives, and by a more conducive business environment to encourage the private sector. This would create synergies, which would trickle down and help generate the jobs that are needed by our economies, and ultimately help lift people out of poverty.

Power generation illustrates the lack of integration today. The Arab World is home to more than 60 percent of the world's proven oil reserves and more than 40 percent of proven world reserves of gas. And yet we have a significant shortage of oil and gas pipelines, and not nearly enough cross-border electricity grids. As a consequence, large swathes of the population face a chronic shortage of energy, despite living in a region with abundant energy reserves.

## STRUCTURAL REFORM

Before closer integration becomes a reality, a second track needs to be pursued in parallel by the governments of the countries that are undertaking a transition, and those who want to take part in the promises of tomorrow. It consists of pushing ahead with reforms at the institutional, legal, regulatory and judicial levels, while creating a robust investment climate and properly addressing governance issues.

In short, progress on the infrastructure front should be complemented by progress on the supra-structure front, something that Arab countries have always been weak at. These structural reforms will contribute to stronger investments in labor-intensive sectors such as manufacturing, and with time will lead to stronger investments in higher value-added services. These sectors will generate large scale employment, absorb



the educated youth into the economy and lift people out of poverty – hence fostering food security.

## SAFETY NET

The third track is to rethink and implement a new approach to social safety nets. These must ease the transition process and protect the most vulnerable at these difficult times in our society. Today, much government spending in the Arab World is not effectively pro-poor. Research has consistently shown that the widespread and expensive system of food and fuel subsidies is inefficient. Take the example of two Arab spring countries: in Egypt and Syria, food and fuel subsidies (accounting for about 20% of public spending) are more than two-fold higher than spending on social protection programs and health combined.

We must learn from the experience of other countries, such as Brazil, on the optimal design of social safety nets. Brazil's Bolsa-Familia system makes welfare payments conditional on parents sending their children to school and getting them vaccinated. This has not just protected the poor from adverse economic conditions, but actually lifted masses out of poverty and contributed directly to higher growth and increased investment, by boosting the spending power of the emerging middle class. The World Bank has praised the system, saying it contributed to a 28 percent reduction in poverty in Brazil. ■



HE Fuad Siniora,  
Former Prime Minister  
of Lebanon

# Gas to Liquids Era Just Dawning as Natural Gas Rich World Seeks Lower CO2 Footprint

**Anton Punt, Head of Process Engineering at ORYX GTL**

**THE UNLIMITED** potential of converting natural gas to liquids sits well in a country that has unrivalled vision for the potential of harvesting the world's third largest natural gas reserves. To dream the biggest dream is a national pastime in Qatar, with the additional caveat that this country has a knack of making dreams come true.

Prepare for the unexpected to be realized is a defining attribute of Qatar and one which the country's GTL industry has taken to heart – ORYX GTL produces enough clean, life giving, irrigation water – 200 cubic meters per hour – to irrigate a 27-hole golf course. In a desert country such as Qatar, this is a valuable byproduct that currently irrigates all the landscaping needs in Ras Laffan Industrial City.

Before the second smallest Arab country dreamt about hosting The World Cup, it declared its ambition to be the largest producer of gas-to-liquids and spent the last decade achieving that goal. Qatar is now well placed to transform this successful posture into a dominant player that can shape the future GTL industry as it spreads across the world.

GTL, still in its infancy from a historical perspective, is a technology that is geared to unlock the world's vast natural gas resources for conversion into ultra-low emission diesel and other environmentally benign energy products.

For Qatar, shepherd of the world's largest independent non-associated gas field, it is a technology that complements its existing natural gas investments and supports Qatar's 2030 vision of adding value and diversifying its economy, all at a time when the world is struggling to add more crude oil production capacity.

The 1 billion Qatari-South African joint venture is the foundation of Qatar's desire to be pre-eminent in the establishment of a global GTL industry and is important for Qatar in terms of monetizing its gas reserves whilst diversifying its product range. His Excellency Abdullah Bin Hamad Al-Attiyah, Deputy

Premier and Chairman of the Administrative Control and Transparency Authority, said at the commissioning of the ORYX GTL plant in 2006.

A joint venture between Qatar Petroleum and Sasol Ltd. of South Africa, it was the start of a series of planned gas to liquid production facilities in the Emirate that has seen more than 120 cargoes depart Ras Laffan for world markets since its inauguration. It was the world's first commercial scale gas to liquids plant, producing GTL Diesel, Naphtha and LPG, and stands ready to break more records in support of Qatar's long-term vision.

The unique crucial value proposition is that GTL does not require the construction of a new delivery infrastructure like other new green compatible energy sources – it converts natural gas into liquid fuels that can go into existing fuel distribution infrastructure, use existing transport ships to bring it to the diesel terminals and sold through existing retail outlets and ultimately utilized by the same diesel engines, which today amounts to 55 percent of Europe's light-passenger car fleet.

Qatar's foresight to bet on GTL is prescient as the world goes deep in search of a lower carbon footprint – from "well to wheel" studies have shown that total greenhouse gas emissions are comparable or sometimes lower than traditional refining processes. This is due to superior emission qualities or efficiency gains related to GTL products. This fact is relatively unknown due to a limited GTL presence in areas where the public would notice, such as public transport.

The biggest greenhouse gas emitters, China, the US and India, will be legally bound for the first time to cut their emissions in a new international climate change treaty to be signed by 2015 and to come into force by 2020. The "Big Three" polluters finally agreed on Dec. 11 to a legal regime of emissions cutting at the close of the UN Climate Conference in Durban, South Africa.



Learnings from ORYX GTL have shown that future GTL projects, already planned, will be of higher capacities for similar major equipment size. This together with key technology breakthroughs, such as reforming and catalysis, recently achieved will make future projects significantly more efficient and economical.

The demand for gas to liquids transportation fuels could soar sooner rather than later if Christophe de Margerie, the chief executive of Total, the fourth largest oil company, predictions come to fruition. He told the 20th World Petroleum Congress that the world may not be facing peak oil supply but it may be facing peak oil production. The French oil giant is forecasting that crude oil production will plateau at 95 million barrels per day around 2020, up from about 89 million bpd today.

According to Total's "95 theory", falling output from old wells and scarce new ones mean we will not be able exceed this "plateau" of production regardless of effort as we are already having to find 4 million bpd just to compensate for depleted wells – very sobering if we consider that conventional economic predictions expect us to need 130 million bpd by 2020.

The future is bright for gas to liquids.

**MORE ON ORYX GTL:** A joint venture between Qatar Petroleum (51%) and Sasol of South Africa (49%). It is the first of a series of planned GTL production facilities that will deliver on the declared ambition of the State of Qatar to become the GTL capital of the world. The conversion of natural gas into liquid fuels is an attractive option to commercialize the world's third-largest gas reserves. ORYX GTL is an integrated energy company globalizing premium, environmentally friendly GTL products. The joint-venture company actively pursues stakeholder satisfaction and creates a culture of operational excellence and continuous improvement in a zero harm manner.

**MORE ON QATAR:** The Emirate is the world's largest producer of LNG, or gas cooled to a liquid for transportation by ship. By the end of this year, it is scheduled to complete the final two or 14 planned LNG units, raising annual production capacity to 77 million tons. The country built its LNG plants in partnership with international energy companies including Exxon Mobil Corp., Royal Dutch Shell Plc, Total SA and ConocoPhillips. Shell's Pearl GTL gas-to-liquids plant is due to be operating fully by next year.

# Oil Should Move Up Value Chain to High Margin Applications in Low Emissions World

By **Christiana Figueres, Executive Secretary of the United Nations Framework Convention on Climate Change**



**THERE IS LITTLE** doubt that oil together with the other fossil fuels and deforestation has been a major contributor to the climate crisis we collectively face. That said, there is utterly no doubt that the global society we have today has been built on the back of oil.

Oil is almost a miraculous product: energy dense, stable, transportable and flexible across enormous numbers of applications. Without oil, the incredible trajectories of personal mobility, global commerce, cultural exchange, and scientific advance that have characterized our species over the past 150 years would not have occurred. Simply put, oil deserves recognition for its role in bringing humanity from the past age to the one in which we live now.

But the question we all confront today is how do we go from where we are to the next stage of our development. I believe that it is inevitable that we move toward a low emission society, and I further believe that movement has already started, in large part due to the progress of international climate change policy.

“Our aim should be an economic system that strategically directs oil toward the highest margin specialty markets, generating the most amount of economic benefit for each barrel of oil’s emissions.”

However, it has become increasingly clear to me that the advance of the international climate change negotiations is not, as some would have it, a threat to the economic future of OPEC, but rather an opportunity for OPEC member states for three main reasons:

Firstly, as greenhouse gas emissions continue to rise, vulnerabilities and climate change impacts are increasing - not only in frequency, but also in severity. Impacts will spare no country and no economic sector.

Clearly climate change impacts differ among the diverse OPEC member states. Those with an active agricultural sector are vulnerable to changing precipitation patterns and exacerbated risks of infectious diseases. Those with low lying coastal areas will be affected by sea level rise. Some are already suffering from increasingly severe heat waves, and saltwater intrusion into fresh aquifers,

forcing mega investments into cutting edge desalination technologies which themselves are energy intensive.

Hence, I would argue that it is in the long term self-interest of all oil and gas producing nations to contribute to solving climate challenge in order to avert the worst impacts of climate change on their own economies and societies.

Secondly, even with successful climate change mitigation policies in place, oil will undoubtedly remain a predominant fuel in the world’s primary energy mix.

According to the International Energy Agency, the full implementation of all existing emission reduction pledges and climate change policies would not lead to a decline in OPEC’s market share, production or revenues – quite the contrary.

Under a scenario of full implementation of current climate protecting policies around the world, oil demand would reach 99 million barrels per day by 2035, a 15% increase over year 2010 levels and a quadrupling of revenue compared to the period 1984-2009.

I conclude from this that the advance of the Climate Change Convention will coexist with increased demand for oil from OPEC nations.

Thirdly, the costs of oil extraction and production are rising. Oil is ultimately a finite resource with declining production at many fields and the easy cheap oil is becoming a thing of the past, even in many OPEC countries. While I cannot speak with any authority about the Peak Oil Hypothesis, it does seem fairly apparent that we are pushing boundaries in geography, geology, engineering and even human capability to access the finds needed to replace depleted fields.

Leaving aside the potential environmental consequences of Deepwater Horizon type accidents, drilling the deep offshore formations of Brazil or icebound equivalents in the Arctic undoubtedly involves costs – and risks – that are difficult to justify.

Taken together, it seems apparent that oil’s price and demand should remain strong. It is up to all of us to try to make sure that oil’s unique characteristics flow to the highest value applications possible.

How countries capture their portions of that value is, of course, a matter of national circumstance, but it does seem to be beneficial for oil exporters to reinvest their positive cash flows into the lower emission energy sources where demand will grow in the near future.

In that light, I am profoundly encouraged



by recent efforts of OPEC members to take leadership in these regards.

The first most evident step is to invest in energy efficiency. This makes compelling sense, as it allows a country to continue its economic growth by optimizing oil and gas production for export, away from inefficient internal consumption.

For example, in the United Arab Emirates, the Middle East’s biggest energy consumer, energy efficiency is set to become a new focus for the oil and gas industry. Introducing and implementing energy efficiency technologies will potentially save up to \$3 billion in energy costs.

A second impressive step that I observe is the recent aggressive investment in solar energy from some OPEC nations. Saudi Arabia this year announced that it will invest more than \$100 billion to develop 41,000 MW of solar over the next 20 years. The government aims to create up to 15,000 jobs in the next decade by nurturing a solar industry, from solar farms to assembly plants, to factories that make raw materials.

Nearby, Qatar Solar Technologies recently invested more than a billion dollars in a world class polysilicon facility, and aims produce 1,800 MW of solar power by 2024. Most if not all of this energy will be used for energy-intensive desalination, putting vital access to water on a more sustainable path.

The Gulf OPEC nations have one of the highest solar potentials in the world. If this potential is harvested, it is no exaggeration to say that some OPEC countries, in addition to being prominent oil and gas exporters, have the opportunity to become dominant exporters of future cutting edge energy forms as well.

A third measure which is beginning to take

hold is the expanded use of sequestration technologies, including enhanced oil recovery and carbon capture and storage. In this context, I am pleased to confirm that CCS has been recognized as eligible for funding under the international market-based instrument of the Climate Change Convention.

Abu Dhabi National Oil Co. may start injecting carbon dioxide instead of natural gas into its offshore fields to enhance oil recovery and is currently working to capture carbon, including from the steel industry. These pioneering investments are encouraging, and could be followed by other major investments into CCS to make the technology more marketable.

Market forces will continue to uncover energy alternatives that are less emission intensive. But that does not mean that the value of oil will necessarily diminish, nor will producers’ income from its export. Alternative energy sources can and will displace oil in lower value applications. This is not a new phenomenon: the percentage of electricity generated from oil has declined consistently since the 1970s. And yet, demand for oil runs today higher than ever, mostly due to the increasing demands of developing nations that are poised for exponential growth.

Over time, oil’s migration to the higher ends of the energy and petrochemical markets – where its unique properties cannot be matched economically- will not only continue, it will increase, because those segments will grow exponentially.

I therefore suggest to you that there are many win-win solutions for both climate change and for OPEC that put OPEC nations at the cutting edge of the energy future.

This is critically important because the transition to a low-emission economy has begun. Many of these issues will be taken forward at the 2012 UN Climate Change Conference to be held for the first time ever in the Gulf region, in Doha, Qatar at the end of this year.

In the long run, climate change impacts are a massive threat to human and economic development in every region. And it goes without saying that a political and technological solution to climate change cannot threaten the economic development of any region or of any developing country – fighting climate change does not mean fighting oil and gas. Fighting climate change means fighting unnecessary greenhouse gas emissions. ■



Speech by Christiana Figueres, Executive Secretary of the United Nations Framework Convention on Climate Change, at the 5th OPEC International Seminar in Vienna, 14 June 2012

# Climate Talks Need to Balance Environmental Protection & Economic Development

By OPEC Secretary General HE Abdalla Salem El-Badri



**THE FUTURE** should ensure the balanced integration of economic development, social development, and environmental protection, as these are the interdependent and mutually reinforcing pillars of sustainable development.

The principles and provisions contained in the 1992 Rio Declaration should remain the cornerstone of sustainable development. In particular, the principles of common but differentiated responsibilities, equity, the right to development, the sovereign right of States to exploit their natural resources, as well as the UN principle of permanent sovereignty of States over their natural resources.

The process to define sustainable development goals should also assess implementation gaps in previously agreed goals and commitments, particularly the Millennium Development Goals, and should aim to address these gaps. It is important that previous commitments made, are adhered to.

It is also essential to remember that sustainable development is country-led and country-driven.

No one-size-fits-all model exists.

For many developing countries, the primary focus is on alleviating poverty. And in this regard, a catalyst in helping alleviate poverty is access to affordable modern energy services. These have positively impacted the lives of billions in terms of providing light, power and mobility; we now need to make sure they positively impact the lives of billions of others, especially the 1.4 billion people that

lack access to electricity and the 2.7 billion that rely on traditional biomass for cooking and heating.

Energy poverty needs the urgent and critical attention of world leaders, so as to alleviate this blight on humankind in the years and decades ahead.

What this underlines is the importance of all types of energy for economic and social development. While some are new and emerging from a low base, other types of energy have contributed for centuries to satisfy human energy needs and are projected to continue to play an important role in the foreseeable future. It is thus essential to promote all cleaner energy technologies, including carbon capture and storage.

OPEC Member States are already making significant efforts in deploying these technologies, as well as to diversify their portfolio of energies, in areas such as hydro, solar and wind. We recognize that renewable energy has a part to play in our future. And, of course, it is also crucial we continue to strive to use energy ever-more efficiently. In this regard, technology transfer to developing countries and capacity building must constitute essential means of implementation.

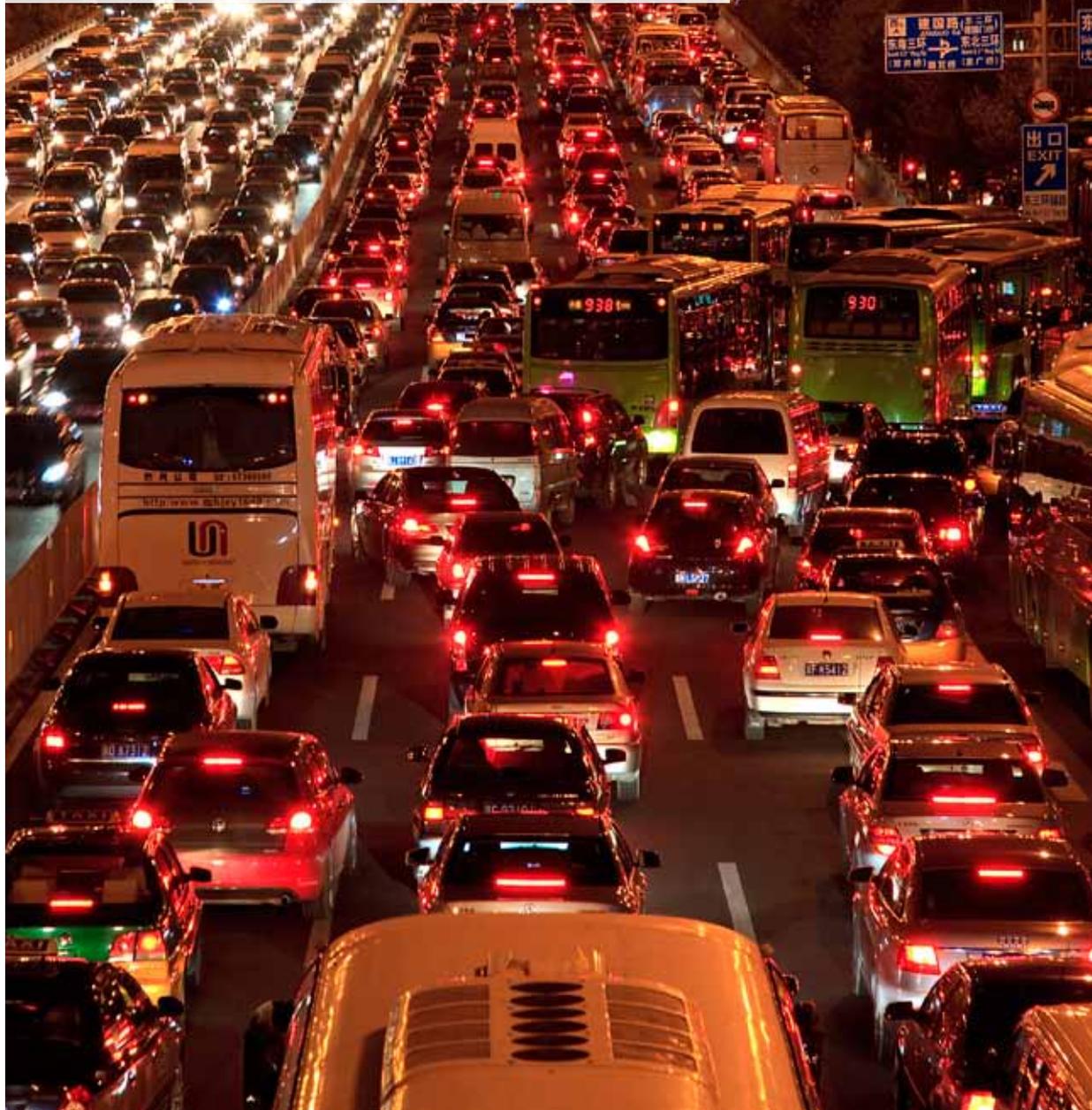
Looking ahead, we need to work together. We must continue the process of inclusivity, achieving outcomes by consensus, with transparent country-led negotiation, building upon the principles, provisions and commitments already made. ■



*Speech by OPEC Secretary General to the High-level roundtable at the Rio+20, the United Nations Conference on Sustainable Development, Theme: "Looking at the way forward in implementing the expected outcomes of the Conference", Rio de Janeiro, Brazil, 22 June 2012*

# Energy Security a Top Priority for East and West

By Andrew Sutherland, Vice President,  
Global Business & Marketing, Senergy



## Oil Set to Play Key Value Role in Lower Emissions Climate

**THE WORLD'S** oil companies are committed to Abu Dhabi. The emirate is preparing to review agreements that have stood for decades, so it's no surprise that supermajors, small independents and state energy firms are forming an orderly queue; securing access to long-term energy supplies is critical, economically and politically.

In many ways, the world has changed dramatically since Abu Dhabi awarded those early concessions. At the time of the first commercial discovery in the emirate – an offshore strike in 1958 – the global population stood at less than 3 billion. Today it is 7 billion.

Demand for oil has also changed dramatically. Passenger jet travel was born in 1958 when Boeing unveiled the 707, while the era of mass automobile ownership was only just beginning: Toyota sold its first car in the United States 1957, while in Britain the first Mini rolled off the production line in 1959.

An extra 4 billion people – a growing number of whom drive cars and fly in aeroplanes, especially from the emerging economies of India and China – means more demand for oil, still the dominant fuel for transportation.

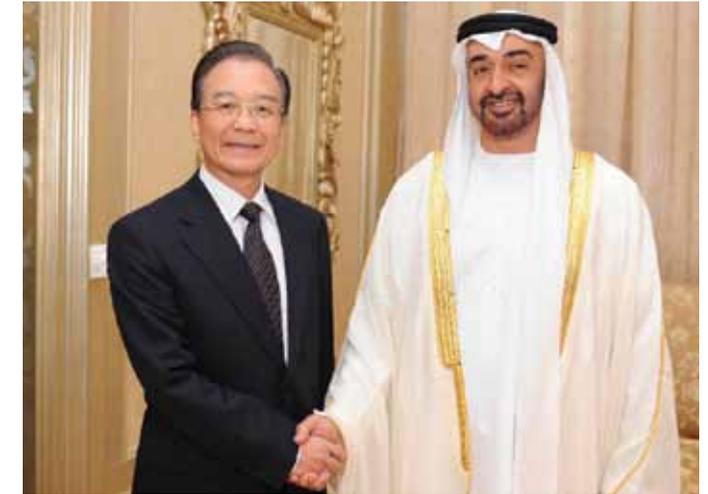
While the West was dominant politically and economically in the 1950s, Asia in particular is increasingly influential today. All of these factors are reflected in the roll call of players bidding for new concessions in Abu Dhabi. In simple terms, the main onshore concessions expire in 2014, with offshore concessions following in 2018. Already this year we've seen the growing influence of Asia in the process.

Under the headline "South Korea Oil Deal Makes Abu Dhabi History," The National newspaper on March 5th carried a photograph of Young-Won Kang, CEO of Korea National Oil Company (KNOC). He'd just signed a deal with Abu Dhabi giving KNOC exploration rights to some 10 percent of Abu Dhabi's landmass, albeit in speculative areas outside the four giant, established onshore fields.

Just a few weeks earlier, Gulf News carried pictures of Chinese premier Wen Jiabao on a state visit to the UAE. Abu Dhabi has agreed to supply 200,000 barrels of oil per day to China from 2014.

These Korean and Chinese deals are likely to mark the beginning, not the end, of new energy agreements between Gulf oil producers and the rising powers of the East.

Still, if we read our history books a little more



closely, it's clear that while much has changed, much stays the same. Then, as now, energy security was crucially both economically and politically. The Second World War was still fresh in the memory of politicians and business leaders, and access to energy had played a pivotal role in the outcome.

The current Abu Dhabi onshore concession, which expires in just a couple of years, leaves us in little doubt about the winners of that conflict, even after half a century of mergers and takeovers. ExxonMobil (US) BP (UK) Shell (UK) Total (France) and Partex (Portugal) reflect the victorious powers in the 1939-1945 war (the Portuguese involvement actually tells us more about the power of personality that politics, but we'll save that story for another day).

The point is this. Some observers see the current scramble for concessions in Abu Dhabi in two distinct camps. Asian state oil companies driven by continuity of supply considerations, and private oil companies (mostly Western, including the supermajors) who wish to retain a strategic relationship in the region.

This distinction is too simplistic. Energy security has always been as much about politics as economics; this is as true today as it was back in the 1950s. What has changed is that Abu Dhabi has a far stronger hand in the negotiations. Back then it was home to a few speculative wells. Today it holds 7 percent of the world's proven oil reserves. Whatever the ambitions of international suitors, Abu Dhabi is sure to strike deals that place its own political and economic interests very much to the fore. ■



Andrew Sutherland,  
Vice President, Global  
Business & Marketing,  
Senergy



Making the Cut:  
Qatar Petroleum and Maersk Oil  
Turn-Off Gas Flaring at Al Shaheen and  
Turn-On Cleaner Electricity in Doha

**DESPITE RECENT** successes in reducing global gas flaring, the world still burns too much of the resource, putting pressure on the environment and natural resources. In Qatar, the unrelenting commitment by Qatar Petroleum (QP) and Maersk Oil to cut the flaring of gas to a minimum at the offshore Al Shaheen field have made it a global showcase for sustainable and environmentally responsible thinking – and the world’s largest clean development mechanism project in the oil and gas industry.

Over the past six years, the flaring of associated gas dropped almost 20% globally, cutting CO2 emissions by 85 million tons – equivalent to taking as many as 16 million cars off the world’s roads. The figures, provided by the Global Gas Flaring Reduction (GGFR) public-private partnership, are encouraging. Yet, with 140 billion cubic meters of natural gas, or about 20% of total U.S. gas consumption still being burned globally every year, there is tremendous potential for further cuts.

Recent successes of projects aimed at cutting the burning of associated gas have shown that the Middle East can play a leading role. Maersk Oil and QP’s significant achievements towards reducing flaring to a minimum at Qatar’s Al Shaheen offshore oil field, the source of around one third of the country’s daily oil production, are a case in point.

“Our gas gathering and flare reduction project, one of the largest in the oil and gas sector, was achieved through Qatar Petroleum’s partnership with Maersk Oil,” said His Excellency Dr. Mohammed Bin Saleh Al Sada, Qatar’s Minister of Energy & Industry. “Al Shaheen’s gas gathering system has cut the flaring to a minimum level, which is a rare accomplishment. It is considered as the largest CDM project in the oil and gas sector... and set a pioneering path to encourage more such projects from the region.”

The benefits of minimizing gas flaring go beyond reducing CO2 emissions. In the Middle East, for example, capturing instead of flaring the resource could go a long way to help some countries overcome gas shortages and rid themselves of their dependence on heavy crude to fire their power plants. Gas is also a preferred feedstock for industries such as petrochemicals, which have seen tremendous growth over the past decade and have played a key role in regional economic diversification. Freeing up more of the resource could provide another boost for this and other industries.

When Maersk Oil Qatar (MOQ) and QP entered into an exploration and production

sharing agreement (EPSA) to develop the Al Shaheen field in the early 1990s, the remit was clear: get the field to produce crude oil on a commercial scale – despite its complex geology. Until 1992 when MOQ and QP signed the Al Shaheen deal, the field was shunned by industry players as it was widely considered uneconomic to develop. Its complex reservoir geology, which contained thin and mainly tight carbonate formations, meant the cost for developing the field was considered prohibitive.

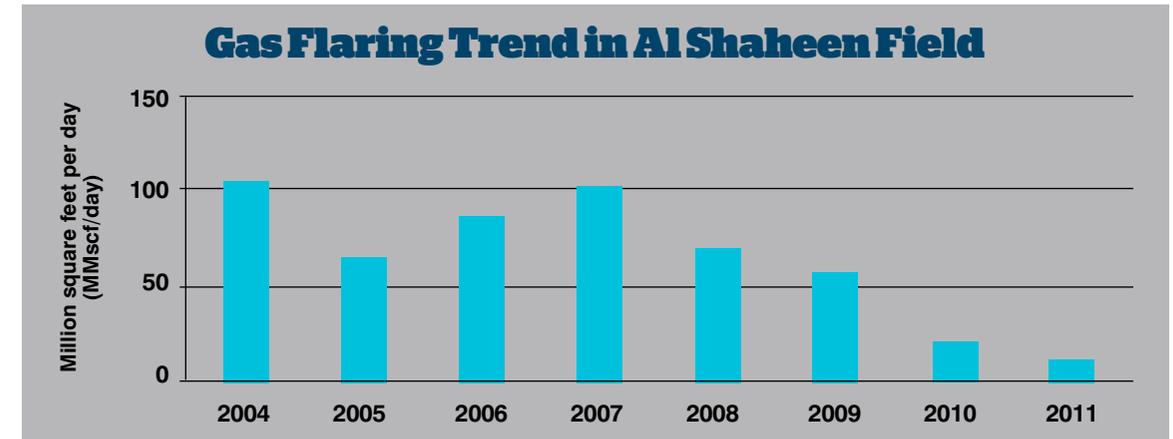
But these concerns didn’t prevent MOQ and QP from taking on the challenge. After all, MOQ’s parent, Maersk Oil, had shown in the North Sea that technologies such as horizontal drilling could produce commercially viable results even in marginal oil fields.

Armed with these technologies – and the valuable expertise gained during years of application – the companies’ geoscientists and engineers set out on their mission in Qatar.

Nearly two years later, in 1994, MOQ and QP had achieved their target. Al Shaheen was producing crude in commercial quantities and output continued to increase. Upon completion of its 2001 field development plan, the field pumped in excess of 200,000 barrels a day (b/d) of crude. With the ramp up in production, however, a new challenge had emerged: how to handle the equally rising associated gas volumes? Nearly all the associated gas produced at Al Shaheen was being flared and only three percent utilized for on-site consumption.

**AGAINST THIS** backdrop, MOQ and QP moved ahead with the installation of gas gathering facilities at Al Shaheen as part of their Field Development Plan 2001, explains Saad Al-Kaabi, Director of Oil and Gas Ventures at QP, and an important advocator of the Al Shaheen gas gathering and flare reduction programme. “By 2004, the companies delivered the captured gas to QP’s North Field Alpha platform from where it was then transferred to an onshore processing plant at Mesaieed” said Mr Al Kaabi.

Still, gas flaring at Al Shaheen remained high at more than 100 million standard cubic feet a day (scf/d), prompting MOQ and QP to draw up a new set of ambitious goals aimed at further cutting flaring at the field. As part of their Field Development Plan 2005, and in line with targets set in the Environmental Impact Assessment approved by Qatar’s Ministry of Environment, the companies committed to reducing flaring to just 28 million scf/d. They hit the target in 2010, with an annual average of less than 22 million scf/d.



But the companies’ ambitions didn’t stop there. By 2011, flaring at Al Shaheen was down 90% versus 2004 levels to 11 million scf/d, while total crude oil and condensate production was up significantly during the same period. This year, MOQ and QP will reduce flaring at the field to below 10 million scf/d and they remain focused on reducing it even further in the years ahead. Moreover, any gas burning that does take place at the field is due to safety reasons or planned and unplanned shutdowns.

“The gas that’s captured and transported onshore is being used to produce electricity in clean-burning gas-fired power plants, thereby increasing the national electricity supply, providing employment and transferring technical knowledge to local industry,” said Sheikh Faisal bin Fahad Al-Thani, Deputy Managing Director of Maersk Oil Qatar.

As part of the companies’ field strategy, other measures aimed at minimizing the environmental impact were implemented too. Under their 2005 Field Development Plan, MOQ and QP launched a Waste Heat Recovery Project that introduced an improved process to enhance the separation of oil and water from the field’s wells. The project cut CO2 reduction by a remarkable 250,000 tons annually.

The companies’ drive towards a more sustainable field development strategy was complemented in 2010 with another initiative aimed at recovering volatile organic compounds (VOCs), which are emitted as gases from certain solids or liquids and contain different chemicals that may have adverse health effects. The recovery system, installed at two floating storage and offloading (FSO) units at Al Shaheen, means more than 100 tons of VOCs are expected to be recovered on the vessels every year.

The tremendous achievements at Al Shaheen have been as much the result of goals set out by Qatar’s Ministry of Environment as Maersk Oil’s own environmental strategy. Termed ‘Eco-Efficiency’, the strategy is essentially a mix of innovative and sustainable solutions that lead to resource efficiency, emission reductions and cost optimizations. The Environmental Management System that’s employed by the company to achieve these goals is ISO 14001:2004 certified and as such provides assurance to Maersk Oil’s management and employees, as well as external stakeholders, that environmental impact is being measured and improved.

The efforts by MOQ and QP haven’t gone unnoticed elsewhere. With flaring cuts of 90% between 2007 and 2011, and more than a 50% reduction in greenhouse gases during the period, the Al Shaheen development has been acknowledged as the world’s largest Clean Development Mechanism (CDM) project in the oil and gas sector. And in October 2012, the project received a Global Gas Flaring Reduction (GGFR) recognition award.

Despite this acknowledgment, the Al Shaheen gas flaring reduction project is far from over. To ensure its ongoing success, MOQ will continue to spend significant resources on maintaining the existing low flaring levels. The company’s commitment to being a transparent and responsible corporate partner in the project means it monitors and provides regular reports to its Qatari partners and corporate offices on any flaring that is taking place as well as associated greenhouse gas emissions.

Maersk Oil Qatar and Qatar Petroleum have led the way on bringing down gas flaring levels to a minimum – a benchmark for the region to aspire to.

# Overpopulation Will Lead to Resource Wars

By Sir Bob Geldof



**IT IS AN** obvious and brutal fact that on this finite planet, human population will definitely stop at some point. There simply cannot be more people on earth than we can feed. And we are getting very close.

I think it is pretty much game up!

I've been doing this for three decades and I'm not sure I understand how we go beyond 10 billion people. The global population multiplied five times from the 1700s to 1960, but there was also an increase in arable crop land of five times during that period. From 1960, for the next three decades, the global population increased by 80% - but crop land only increased by 8%. And so in order to begin feeding this increasing population we began cutting down the rainforest and degrading the environment.

This perfect storm of population increase, climate change and sustainability comes to a head today! Not tomorrow, not yesterday, but no - today! This week there will be one and a half million new humans. By tomorrow there will be 250,000 thousand new people.



“Being brutal about this fact, we are undergoing a mass anthropogenic extinction event at the moment”

There are people all over the world working hard trying to feed these people. They are always on a knife edge. I do know about technological advances and I do know about better farming methodologies. I don't believe it. I do know about Genetically Modified food and I support much of it, but I don't believe it.

I believe that the 'tipping point' could quite conceivably have already passed at this point. By 2050 there will be 10 billion people. That is less than 40 years away. This will require a 70 percent rise in agricultural production. I don't believe it. Seventy percent beyond the struggle today - I don't believe it. By 2100, global consumption will have increased by 1600%. How? We don't have enough now. Can we deliver 1600% over the next 90 years? I don't believe it.

So being brutal about this fact, we are undergoing a mass anthropogenic extinction event at the moment. Vast numbers of species

are being wiped off the face of the planet now. The logical conclusion to this is us. Why won't it happen? Why wouldn't it happen? I think it might.

Population increase in the Arab world is greater on average than in the rest of the world. Population increase in this region is 1.7%, while the global average is 1.2%. Since 1950 water availability to the people in this region has dropped 75%. By 2050 that will be halved again, yet the population increases. Most of this water is trans-border. What do you think is going to happen with that?

There has been a hidden crisis occurring throughout the last five years where the underwater base levels have been sucked out of the earth at unprecedented production levels. Why? For us!

There are probably too many of us.

And it is the great unspoken argument for obvious reasons: we are born to reproduce. That terrible genetic pull, that glorious genetic drive to have children is critical to us, as it is to every single living thing. To deprive a man and a woman of their children and family is inconceivable to us. It wouldn't work as policy.

So how do we talk about population control and, crucially, deal with it? And deal with it

we had better do now!

There are two ways of dealing with this. There is the humane way and there's the brutal way. And policymakers don't wish to talk about this because of powerful religious lobbies, powerful political and cultural concerns, and because of the failure in the past of over-enthusiastic population control remedies, as per in India in the 1960s. Certainly in China it has worked to an extent. But without an authoritarian state this will not apply to us. And any government that tried to impose it quite rightly we would get rid of.

So what do we do? Well, we know for a fact that when women are educated the population levels drop considerably. If we take India again, the average birth rate is 2.8 children. But in Kerala province, the most literate, it drops to 1.7. In Thailand it is 1.7. But in the Philippines, because of constraints from the Catholic Church, it is 3.3 children per woman.

So for an absolute fact - an absolute fact - when women are educated the population numbers drop.

When women have the vote, they drop further. And there are 200 million women in the world now who want - but have no access - to birth control contraception. If they

had contraception it would mean 80 million fewer births. That would stabilize population growth right now.

If we can get free contraception to these 200 million women, and culturally they are able to use them, it would stabilize because there would be 80 million less unwanted pregnancies. And I think we have to do that. And if those contraceptions are condoms, we also get rid largely of the AIDS problem.

Forget multilateralism - each country must have a highly developed population policy based on the ability of that country to live, to exist, because if they do not have it they will have too many people, not enough food, and they will die.

So what this thing is about is the very survival, not just of the region, but of the world. We cannot continue on a tiny little ball of possibility - this earth - with so many of us. That is not possible and it is no longer viable. The only possible way is to be serious, to plan, and to pray to God that we see sense, we rise above our emotional instincts, and we do give the possibility of life, not just to individual children hoping to mature into responsible adults, but we give the possibility of life to the human species. I'm not that optimistic. ■



**Sir Bob Geldof,**  
Humanitarian, pop star,  
broadcaster and  
businessman



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**Avoid Resource Wars: Food, Energy, Water**



Middle East Gas Producers Should Look to Underground Gas Storage to Bolster Security of Supply and Optimize Gas Supplies

**By Dr Axel M. Wietfeld, CEO and Chairman of the board of E.ON Földgáz Storage, a unit of E.ON AG**



**EUROPE HAS A** shortage of natural gas and yet it has significant appetite for natural gas underground storage facilities. The Middle East has significant gas reserves but little apparent hunger for storage capacity. Demand growth in the former is waning and soaring in the latter – this discrepancy presents unique investment opportunities for those who seek to balance these inconsistencies in Europe and in the Middle East.

By all forecasts, global gas demand will grow nearly twice as fast as total energy demand over the next two decades, and this escalation is even more pronounced in the Middle East where natural gas demand will nearly double between 2010 and 2030 from 315 billion cubic meters to some 550 billion cubic meters.

Storage is the key to balancing this continuous uncertainty with import-export and seasonal fluctuations to demand. Consequently, investment in new build natural gas storage facilities and capacity extensions are the basis for sustainable, secure and competitive gas supplies.

Companies and countries can make use of storage facilities basically for three reasons - seasonal balancing, optimization, and security of supply.

Seasonal balancing is the obvious rationale

for storing gas. Imports via pipeline or LNG are in general characterized by the same volume being delivered every month throughout the year, to minimize production and transportation costs. Therefore, additional storage capacities are required to provide seasonal balancing, i.e. to balance the difference between summer and winter consumption. Consequently, gas is withdrawn from storage in high-consumption periods and injected into storage during periods of low demand.

Producers and marketers also use gas storage as a speculative tool for optimization, i.e. storing gas when they believe that prices will increase in the future and then selling it when it does reach those levels.

Overall, gas storage significantly contributes to security of supply. The indigenous gas production of the European Union is expected to fall further, resulting into a situation by 2020 in which more than 70 % of the gas demand will have to be imported from countries outside of the EU. Consequently, supply security has to be actively managed. In January 2009 Europe faced the biggest ever gas emergency when all Russian supplies via Ukraine were disrupted. The crisis completely changed the attitude of policy makers, customers and suppliers.



Since the Middle East is blessed with 40% of the world's proven natural gas reserves, excellent untapped investment opportunities exist for companies in the region from trading to gas storage activities.

Middle East gas exporters can also look to build storage capacity in far-away customer markets in the same way that oil exporters have achieved such as Kuwait tank farms in Korea. Saudi Arabia and China agreed as far back as 2006 to build a huge crude oil storage facility on southern China's Hainan Island.

It is not a coincidence that in Europe, which is short of natural gas reserves, plenty of storage facilities have been developed to adapt the physical gas flows to the fluctuating and growing customer demand. This opens up opportunities for exporters and importers to cooperate on gas storage investment.

Depleted gas fields – in the Middle East as well as in Europe – would be excellent storage facilities for this kind of process. After having assessed the technical feasibility, investors have to evaluate economically whether it is favorable to develop storage facilities close to the gas production facilities or close to the consumption centers in the downstream markets.

At present, there exists an underground storage capacity of some 85 billion cubic meters in Europe and in addition some 30 billion cubic meters in Ukraine, which would be sufficient to store the entire Qatari annual LNG production in a gaseous form.

The likes of Eni, E.ON and GdF Suez have subsidiaries who own the largest underground storage facilities among all European players. In contrast, there are only a few storage projects

in the Middle East e.g. the Margham Field in Dubai and the Jebel Ali Salt Dome in the UAE.

Some Middle East firms have identified the value proposition presented and have invested in European storage facilities – Abu Dhabi National Energy Company, known as TAQA, has acquired a stake in and is the operator of the Bergermeer storage project in The Netherlands – a facility with 4 billion cubic meters capacity.

Statoil ASA, Vattenfall Energy Trading Netherlands N.V. and a third European energy company have together secured more than 90% of the total 1 billion cubic meters of annual storage capacity made available as part of the 2011 Bergermeer Gas Storage Open Season.

**THESE INVESTMENTS** generate a stable return and offer Middle East exporters the opportunity to integrate further down the value chain and get closer to their European customers. This could add even more value for both parties involved because underground storage in the European markets also helps in managing temporary supply disruptions and LNG transit times.

Underground gas storage is a value creating investment. With underground capacities of 10 billion m<sup>3</sup>, a company can achieve sales revenues above \$1 billion.

Dr. Axel M. Wietfeld is CEO and Chairman of the board of E.ON Földgáz Storage, a unit of the E.ON AG, one of the world's largest investor-owned power and gas companies. At facilities across Europe, Russia, and North America, E.ON has more than 85,000 employees and generated almost EUR100 billion in sales in 2010.



**Dr Axel M Wietfeld,**  
CEO and Chairman of  
the board of E.ON  
Földgáz Storage, a  
unit of E.ON AG

# Ethical Investment: End the Land Grab!

**Jeffrey Culpepper, Chairman, Agrisecura**



## Avoid Resource Wars: Food, Energy, Water

**THE TRAINS** going to wreck! There are simply going to be too many mouths to feed.

Food is in places where the populations aren't. Think about it: there are only five food exporting countries in the world: the U.S., Canada, Argentina, Brazil, and Australia. If you have one year of drought or floods in Australia, that dramatically impacts China's access to food.

Last summer I was riding my motorbike across the midsection of the U.S. and Pennsylvania, as I do every summer. I stopped at a small diner and got talking to a bunch of Amish farmers. Usually at this time of year these guys are generally depressed because it is corn harvest time and the more they produce the further prices fall. But this year they seemed relatively happy. I said, "Well, what's different this year from years in the past?" They said, "Well, because China is buying every bushel of corn we can produce."

The key driver is the Chinese government policy to make China self-sufficient in pork by 2015, which is the largest source of protein in the world's most populous country. What they don't talk much about is that China must import food to feed the pigs. So, yes, you're gaining the political will of the Chinese people by declaring we are secure as we have more pork available, grown locally. But what they're not saying is that it makes you dependent on agricultural imports to feed the pigs.

China has prospered dramatically from industrialization over the last three decades, lifting some 400 million people out of poverty, but as a consequence it's gone from a position as recently as seven years ago when it was self-sufficient in food production to being dependent on other people to feed them.

There is a major shift underway in the world's population moving from rural areas to urban centers and the areas with capacity to produce food is all in the wrong places far from the large mega-cities.

What we're doing at Agrisecura is looking for opportunities to help address the imbalances this situation creates around the globe. As a matter of policy we do not invest in land acquisition as I am personally and philosophically against it. Arable Land should stay in the ownership of the people who are working it, and that's the farmers. We have seen abuses in the past, in places like Sudan, Ethiopia and Congo, where private individuals would buy up hundreds of thousands of hectares of land for the purpose of establishing them as their private estates. They may farm it, they may not.



And to this day, I can think of maybe half a dozen major land purchases in the last decade where not one of those parcels is being utilized for the production of food. They're just there as a land bank, a just-in-case safety net. To me that's morally reprehensible.

The status of farmers needs to change. Traditionally in developed economies we've guided our children to get an education, to be a lawyer, be a doctor, be a journalist or be an engineer, but whatever you do don't become a farmer or a tradesman. I grew up on a farm and I could not have run fast enough at age 18 to leave, because the last thing I ever wanted to do was farming.

Perhaps it's ironic that I'm now an investor in agriculture. But it's taken me about forty years working in banking to make that transition. Today we have to enlighten young people that they can prosper being a farmer. We have to send the message: 'you can build your family and you can educate your children!'

There is hope. I have seen it in parts of Africa with excellent companies like African Century or Tilda Rice. We're helping to provide the education and technology people need to be better farmers in such areas as water conservation, decreased chemical dependency and to help with better marketing.

The cell phone in the pocket of nearly every African is more powerful than just to talk to their girlfriend across the village – they are realizing it can be used to access tremendous amounts of data to decide on what to grow and where to sell it. ■



**Jeffrey Culpepper,**  
Chairman, Agrisecura

# Qatar National Vision 2030

**The National Vision aims at transforming Qatar into an advanced country by 2030, capable of sustaining its own development and providing for a high standard of living for all of its' people for generations to come.**

Qatar's National Vision Rests on Four Pillars:

1. **Human Development** – of all its people to enable them to sustain a prosperous society.
2. **Social 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.
3. **Economic 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.
4. **Environmental Development** – management of the environment such that there is harmony between economic growth, social development and environmental protection.

## The Fourth Pillar – Environmental Development

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.

The environmental pillar will be increasingly important as Qatar is forced to deal with local environmental issues, such as the impact of diminishing water and hydrocarbon resources, and the effects of pollution and environmental degradation, as well as international environmental issues such as the potential impact of global warming on water levels in Qatar and thereby on coastal urban development. Assessing the severity of risks and dealing with anticipated changes will require mobilizing capacities and coordinating efforts to tackle problems that arise.

The State shall preserve the environment and its natural balance in order to achieve comprehensive and sustainable development for all generations.



“A Balance Between Development, Needs and Protecting the Environment”

- An environmentally aware population that values the preservation of the natural heritage of Qatar and its neighboring states
- An agile and comprehensive legal system that protects all elements of the environment, responding quickly to challenges as they arise
- Effective and sophisticated environmental institutions that build and strengthen public awareness about environmental protection, and encourage the use of environmentally sound technologies. These institutions will also conduct awareness raising campaigns, employ environmental planning tools, and carry out environmental research.
- A comprehensive urban development plan for Qatar that adopts a sustainable policy with regard to urban expansion and population distribution. Encouragement of regional cooperation to put in place preventive measures to mitigate the negative environmental effects of pollution arising from development activities A proactive and significant international role in assessing the impact of climate change and mitigating its negative impacts, especially on countries of the Gulf. ■

# Navigating Complexity Unlocking Potential

The Al Shaheen field, Qatar lay dormant for decades, considered too difficult for commercial development. But where others saw problems, Maersk Oil recognised a great opportunity and within just two years the field was producing oil. Today it is Qatar's largest oil producer.



Maersk Oil has a proven track record of making the impossible possible in tight and difficult reservoirs. As a technically focused company we create cost-effective, efficient solutions which accelerate oil and gas recovery for the long term.

Our focus is on operating safely and responsibly, to ensure sustainable business growth in the countries in which we operate. By harnessing local talent and technology development, we continuously create value for our partners and host governments.

**Oil production:** Maersk Oil operates some 625,000 barrels of oil equivalent per day. **People:** Some 3,500 people – 1/3 offshore, 2/3 onshore.  
**Production countries:** Denmark, Qatar, UK, Algeria and Kazakhstan. **Exploration countries:** Angola, Brazil, Greenland and the US Gulf of Mexico





# Experts at the heart of global energy markets

A leader in the international wholesale energy markets, E.ON Energy Trading is backed by Europe's broadest and most diverse power and gas asset base, and by a talented team of energy experts.

Active on more than 20 exchanges and in over 40 countries worldwide, we trade power, carbon, oil, coal, freight, and natural gas, including LNG.

With 1000 skilled professionals from 45 countries, we have the deep market knowledge and multi-commodity expertise to manage risk and create value in today's dynamic and interconnected global energy markets.