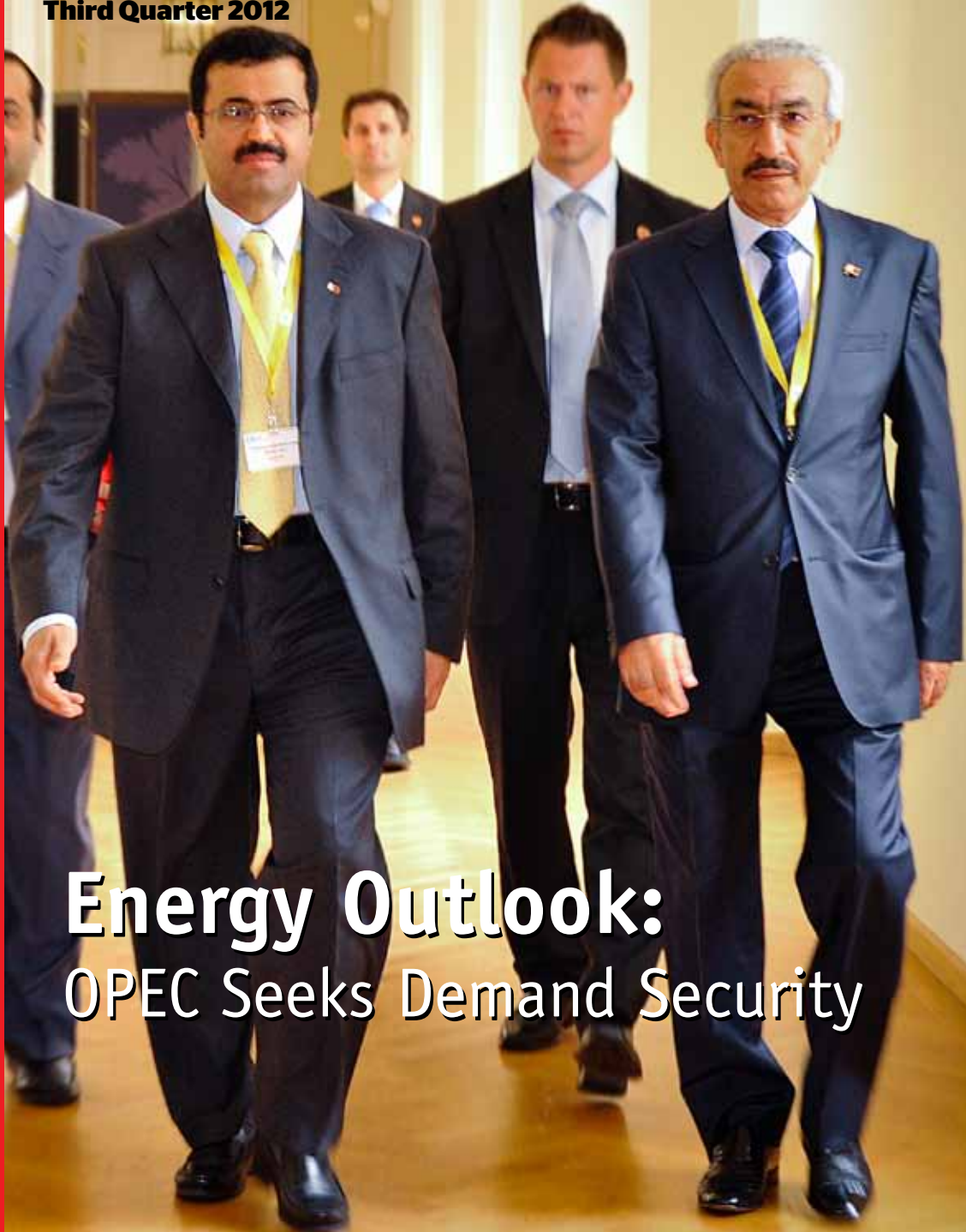


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Third Quarter 2012



Energy Outlook: OPEC Seeks Demand Security



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Demand Erosion vs Security of Supply..

OPECS12 member oil exporting countries earned about \$1 trillion dollars in 2011. They are set to earn more in 2012 even though their biggest customers, the U.S. and China, are continuing to experience an uncertain economic outlook.

The world returns to work after the summer lull, that wasn't such a walk in the park for the markets, with the tug-of-war between uncertain energy demand and security-of-supply still battling it out for the Alpha male spot. We packed our swim suits and sun screen in June with energy demand weakness flexing its muscles as security-of-supply ran for the beaches and oil prices appeared to be in free-fall, losing almost a third of their value in a matter of weeks as inventories bulged and geo-political risks were washing away with the tides.

While the special women in our lives devoured "50 Shades of Grey" on lazy summer afternoons all over the world, the markets went on a rampage beating up Bears on all sides. Equities and commodities left the second quarter collapse in their wake and quietly surfed through different record levels as the drum beats of war rhetoric were once again floating across the Middle East, catapulting crude way back up past \$100 with few paying attention as the bulls went a knocking once again on the door of \$120.

This tug-of-war has OPEC concerned, and it should. For the speed at which oil prices can drop like a rock when geo-politics fade to the sidelines would signal that a China growing at 7% demands fewer tankers to call at its ports than one leaping forward at 10%.

Assurances anybody. . .?

Sean Evers
Managing Partner, Gulf Intelligence



Global Energy Flows to be Reconfigured by Growth of Non-OECD States

**By HE Dr. Mohammed Bin Saleh Al-Sada,
Minister of Energy & Industry, Qatar**

THE WORLD IS still recovering from the largest economic crisis. Difficult economic and bail-out decisions have been taken very recently by governments and regional economic consortiums in Europe, the US and also in China. There could be many more in the offing.

Under such circumstances, it is a daunting task to contemplate a steady stream of investments in oil capacity expansion.

The paradox is that the world energy needs are growing and meeting these needs is a prerequisite to coming out of this economic crisis. We, therefore, have to look at the bigger picture and see how we can meet this challenge. Crisis in any form is not absolute. It brings along with it many opportunities. So in a crisis, be aware of the danger, but also recognize the opportunity.

The recent global economic crisis has opened up windows of opportunity for the emerging countries to develop their resources and make significant economic contributions to the world economy. A redesign of the world economy is at work and this includes the oil and energy sector where non-OECD countries will play a key role in the redesigning of the energy flows in the world.

It is, therefore, pertinent that energy stakeholders, particularly the oil and gas producers and companies, carefully comprehend the emerging dynamics of the industry and align their investments to adapt to this new reality. It is becoming increasingly evident that the non-OECD countries are expected to enjoy a previously unknown prosperity over the next 25 years.

The revenue per capita should more than double in this period. Increasing disposable income in these countries will lead, among other things, to demand for greater mobility and passenger transportation. According to OPEC's World Oil Outlook (WOO), there were only 28 cars per 1,000 persons in China in 2008. The number is forecast to increase to 194 per 1,000 by 2030.

Altogether over this period, emerging economies will add worldwide over 600 million new cars. Between 2008 and 2035, 92 per cent of oil demand growth will come from the emerging countries. This means that oil demand from these countries will be far more resilient and strong over the next decades than what has been witnessed up until now. To meet this growing demand, the energy industry needs to invest in new capacity and field developments, while keeping in mind the cost of production.

Tomorrow's production level will, therefore, be determined by the investment decisions we make today.

While considering investment in energy capacities, it has to be borne in mind that besides oil the development of natural gas and LNG capacities will become necessary to balance the world's energy equation. As per most recent projections, demand for natural gas will rise by more than 60 per cent from 2010 through 2040. At this rate, it will grow fast enough to overtake coal for the number 2 position behind oil.

According to the IEA, the cumulative investment needed in the oil and gas supply infrastructure is estimated at \$19 trillion over the next 25 years. Of this total investment, more than 60 per cent is expected to take place in the non-OECD world.

Natural gas is expected to receive a share of investment equal to that of the oil industry, demonstrating its increasing role in the energy equation. As the largest holder of oil reserves in the world, OPEC has the responsibility to maintain and reinforce its pivotal role to stabilize the physical oil market between the boom and bust cycles in the oil industry.

The challenge is not only the size of investment, but also whether these projects support sustainability. After the COP17 meeting in Durban, it has become evident that a lot of work remains to be performed before any collective international response to climate change is agreed. This includes the development of technologies that will allow us to mitigate greenhouse gas emissions and adapt to the impact of climate change for supporting sustainable development.

Qatar has actively participated in many initiatives for sustainable development. We have also hosted the 13th UNCTAD Conference in April this year on sustainable economic development and we are scheduled to host the next UN Climate Change Conference (COP18) in Doha this November. We have embarked on the practical implementation of sustainable development initiatives, such as flare gas recovery in our Al-Shahin oil field. This project represents a tangible reduction of gas flaring by processing it and also reinjection into the field.

It is quite evident that fossil fuels will continue to be the centerpiece of the energy equation for several decades to come. They are expected to continue to meet about 80 per cent of the world's energy needs in 2040. Within fossil fuels, natural gas, owing to its cleanliness and flexibility, will play a practical

important role in meeting both its energy and environmental objectives. For this reason, I believe the policymakers will be required to give even more emphasis on sustainable development of fossil fuels.

Besides its individual commitment and efforts, Qatar is associated with other OPEC Countries to advocate responsible stewardship of the environment and to support comprehensive, fair and realistic efforts to reduce the environmental impact of global energy use. Investments in sustainable oil and gas projects take me to another key challenge and that is the development and application of modern technologies and innovations in the oil and gas industry.

Qatar has achieved an incredible expansion of its LNG industry. These advances encompass our embracing important innovations and modern technology all along our development over the last decades across the entire value chain of natural gas. We have used innovative technology to scale up the LNG trains and to design the world's largest LNG carriers. We have also built a completely new LNG business model, which has made Qatari LNG a truly global business.

Today, Qatar can sell LNG in every region of the world and can adjust its sales mix to match market requirements. Technology and business innovation have also allowed us to build a unique gas-to-liquids industry with mega GTL projects.

When it comes to the application of modern technology, particularly by OPEC Countries, I would like to highlight the importance of collaboration between international oil companies (IOCs) and the national oil companies (NOCs).

The IOCs have developed the new technology and know-how for the sustainable development of energy. Their focus has shifted from being producers to productivity improvers. This is reflected in the tone of the current arrangements between the IOCs and the NOCs. They are now partners in their pursuit of the development of efficient and sustainable energy sources. Such technology alliances would help the oil and gas industry to speed up research, prototyping and piloting new technologies, while achieving the common goals of economic and social development.

I welcome the opportunity to create a dynamic network of research centres to take advantage of the human ingenuity in the field of energy and the environment. When we are considering challenges, with regard to investment and capacity expansion, we also



have to look at certain other factors, erstwhile considered distant uncertainties.

Today, they are at the threshold of becoming a reality. I am referring to the shale gas revolution. That is introducing the US to a new era of energy abundance. The national expansion of the US shale gas revolution is set to transform the global natural gas industry. A related question is -- could such a game changer even happen in the oil industry too? The answer is yes, it could.

If we look at the growing technological advances in producing tight oil from low permeability reservoirs, the oil production from the Bakken play, is expected to jump from currently 500,000 b/d to over 3 million b/d by 2020. Such results could be reproduced in many mature basins worldwide. To what extent, what cost and what pace tight oil will be developed, is yet to be seen. But it suggests that advances in technology have and will continue to transform the outlook for the oil industry.

During this time, in the economic crisis, OPEC Members and the IOCs have the responsibility to lead the oil industry together. A global energy redesign is at work where emerging countries will become the major oil consumers and the balance of energy flows will be eastwards.

Oil-producing countries will have to adjust and adapt to such change and accordingly invest to capture such a market opportunity in an environmentally sustainable way. Let me remind you that there are downstream challenges. The diversification of feed-stocks from heavy oil to light condensates associated with an increasing share of the transportation fuels as the final destination of crude oil lead me to believe that the next wave of innovative investment could take place in the downstream industry. ■



HE Mohammed Bin Saleh Al-Sada, Minister of Energy & Industry, Qatar made the comments in a speech at OPEC's 5th International Seminar in Vienna on June 14.

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



Global Energy Planning Needs
Stability, Stability, Stability!

By HE Abdalla Salem El-Badri, OPEC Secretary General

WHEN LOOKING at the global energy scene it is important to consider where we are today, where we might be going, and how we might get there.

In the most recent edition of OPEC's World Oil Outlook, energy demand is forecast to increase by more than 50% between 2010 and 2035. And over the same timeframe, world population is expected to expand from 6.9 billion to almost 8.6 billion.

All energies witness growth, although overall shares shift over time.

Fossil fuels - which currently account for 87% of the world's energy supply - will still contribute 82% by 2035. Oil will retain the largest share for most of the period to 2035, although its overall share falls from 34% to 28%. It will remain central to growth in many areas of the global economy, especially the transportation sector. Coal's share remains similar to today, at around 29%, whereas gas increases from 23% to 25%.

In terms of non-fossil fuels, renewable energy grows fast. But as it starts from a low base, its share will still be only 3% by 2035.

“It is clear that future oil demand can be met. However, the future is rarely what we think it is today. There are a variety of uncertainties that may adversely impact demand.”

Hydropower will increase only a little - to 3% by 2035. Nuclear power will also witness some expansion, although prospects have been affected by events in Fukushima. It is seen as having only a 6% share in 2035.

To meet this growth, there are plenty of available resources.

For oil, conventional, as well as non-conventional resources are sufficient for the foreseeable future. We expect to see significant increases in conventional oil supply from Brazil, the Caspian region, and of course OPEC, as well as steady increases in non-conventional oil and natural gas liquids.

Nevertheless, some continue to question whether this projected oil demand increase can be met. Let me firmly state: Yes it Can!

It is true the world will need significant additional production capacity to 2035, including compensating for the natural decline in oil fields. But this is nothing new

for the industry. This has always been the case. Today's challenges are no different from those faced in the past. Our industry has always been able to deliver.

And let me stress, significant investments are being made today. For the five-year period 2012-2016, OPEC's Member Countries currently have 116 upstream projects in their portfolio. Should all projects be realized, this could translate into an investment figure of close to \$280 billion.

Taking into account all OPEC liquids, the net increase is estimated to be close to 7 million barrels per day above 2012 levels, although investment decisions and plans will obviously be influenced by various factors, such as the global economic situation, policies and the price of oil.

Moreover, technological advances will continue to extend the reach of the industry - helping to reduce costs, unlock additional resources and increase supplies.

It is clear that future oil demand can be met.

However, the future is rarely what we think it is today. There are a variety of uncertainties that may adversely impact demand. In the medium-term, the main one is the global economy. There are many questions, but at present, few answers.

In Europe, what will be the outcome of the sovereign debt crisis, and the austerity versus growth debate? Across the Atlantic, the US economy seems to be relatively resilient, but challenges remain. Japan is expected to continue its recent recovery, but expansion remains fragile. Is the recent slowing down of China and India's economic growth a long-term trend, or just a short-term issue?

And in developing countries, will problems in the OECD region spill over into their economies, particularly in terms of reduced demand for their exports, as well as less investment capital?

From the demand-side, there are also the environmental and energy policies of a number of consuming countries. Obviously, every country has the sovereign right to set its own policies. But it is essential that they provide a clear idea as to the potential impact of policies on future oil consumption levels, as well as overall energy supply and demand patterns.

There is the Accelerated Transportation Technology and Policy scenario, which underscores how technologies and policies could advance and quicken developments in the transportation sector. And there are



scenarios that examine the possibilities for higher and lower economic growth.

What these scenarios underscore are genuine concerns over security of demand. There are major demand uncertainties.

I am sure we can also appreciate that this leads to investment uncertainty. And if investments are not made in a timely and adequate manner, then future consumer needs might not be met.

Before concluding, I would like to touch on one other theme: 'potential game-changers'.

The first is shale oil and shale gas. It is clear they are already changing the energy landscape in the US, and there are evidently possibilities elsewhere. However, challenges associated with the environmental impact of hydraulic fracturing remain, especially on groundwater supplies. And while technology and scientific innovation will help eventually solve these problems, it will take time.

And there is also much talk about alternative transportation technologies. At OPEC, we recognize that there will be

developments and advancements in areas such as electric and hybrid vehicles. They will see market growth, albeit from a low base. However, we believe that oil and increasingly efficient conventional power train technologies will remain central to the transportation sector in the foreseeable future.

Fossil fuels will continue to supply over 80% of our energy needs by 2035, with oil the energy type with the largest share for most of this period.

Finally, given the long-term nature of our industry and the need for clarity and predictability - not only for oil, but energy in general - I would like to leave you with three appropriate words: 'stability, stability, stability'.

Stability for investments and expansion to flourish!

Stability for economies around the world to grow!

And stability for producers that allows them a fair return from the exploitation of their exhaustible natural resources! ■



The OPEC Secretary General, HE Abdalla Salem El-Badri, made these comments in a speech to the 5th OPEC International Seminar, Vienna, Austria, 13 June 2012.

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OPEC's 21st Century Dilemma: Demand Security

European Union Seeks Global Cooperation to Combat Future Energy Shortages

**By Günther Oettinger,
European Union Energy Commissioner**



ALL EU ENERGY forecast scenarios, including the most ambitious ones, indicate that by 2030 oil will still represent approximately a third of our energy needs. Currently, more than a third of our energy portfolio and almost all the energy use in the transport sector rely on oil.

The European Union is currently importing more than 80% of its oil needs. Even with our energy efficiency and broader energy base strategy, this figure may increase up to 90% or more within ten years. Our challenge therefore is to keep a secure and affordable oil supply against a background of rising demand from other parts of the world while maintaining the highest environmental standards.

This being said, over the past years, the global energy scene has witnessed significant new developments, in terms of resources, technology development and demand, which have redefined the global energy market – Liquefied Natural Gas; shale gas/ shale oil revolution in the USA could lead the country to becoming a net gas exporter; the advent of Gas-to-Liquids technology at commercial scale and at the same time there have been huge leaps in the improvement of car engines' fuel efficiency.

Renewables' technologies are becoming more mature and in 2010, for the first time ever, private companies in developing countries invested more in renewable energy than their competitors in developed nations. In the past year and a half, the China Development Bank has offered more than \$34 billion in credit lines to China's solar companies.

Indeed, we still face a number of challenges:

The world population is still growing significantly and is set to reach 9 billion people around 2050. This means a significantly growing global middle class with aspirations for further growth and increased demand for energy. Non-OECD countries are expected to account for over 90% of the global energy demand increase in coming decades. This could have a dramatic effect on prices.

Energy needs have become closely linked with food production and climate change, so we need to actively look at broadening our energy base, in order to provide access to energy for all and prevent energy poverty while not affecting food production or negatively affecting the climate.

So whilst we have seen impressive

developments in the field of energy, we cannot relax in our efforts, as our customer base for energy increases and so do their energy needs.

The energy challenge of increasingly greater demand for increasingly scarce resources requires a global solution – not as a best-case scenario, but as a matter of necessity. No matter what we do, the costs of the energy system will go up due to increasing global demand - and global prices are likely to continue to be volatile. It is therefore essential to strengthen the resilience of our energy system.

Some options work well in all scenarios, namely energy efficiency and renewable energy investments. We are still wasting too much of the energy that we are producing with great effort. Only if we increase our energy efficiency and reduce energy consumption can we cope with the challenge of investment costs. We also see that the share of renewables is growing significantly.

We also expect gas to remain a key element of the EU energy mix due to its advantages in terms of sustainability and flexibility, availability and security of supply and competitiveness vis-à-vis other fuels. Natural gas is the fossil fuel with the lowest CO2 emissions and can therefore contribute to a considerable reduction of our greenhouse gas emissions.

In order for gas to fulfil its potential and deliver the above mentioned advantages, we need to make the gas market much more flexible. Rigid pricing structures that couple



the gas price to oil, and rigid transport contracts that prevent gas from being easily transported where it's most needed, don't help.

Public policy must focus not only on competitive energy pricing. It must ensure that energy saving and technology investment opportunities are available across the whole economy, including for energy intensive companies. That is what European energy policies are doing – giving energy consumers a stronger hand to negotiate supply deals; involving businesses better in technology development and promoting energy efficiency awareness.

Private investors and governments will only "invest" in energy if there is a more stable framework that guarantees more predictability. This is why we developed the Energy Roadmap 2050. It is a basis for discussion and is intended to facilitate decision making on energy policy post-2020.

We must also improve research & development which will bring more cost-efficient solutions in the future. This includes progress with CCS, in particular for fossil fuel power plants. Without CCS, coal and also gas fired power plants will not be compatible in the long run with our climate objectives, yet these energy sources are of crucial importance for many countries. CCS

is therefore a much needed option not only for power generation, but also for heavy industries.

Nuclear energy will also play an important role in those countries where this is accepted – it remains a central source of low-carbon energy. The role of the EU is primarily to ensure a level playing field and the highest safety and security standards for nuclear energy.

It is increasingly impossible to view specific energy sources individually and in an isolated form. The energy scene is moving fast, and the only way to keep up with the pace is for all energy actors to cooperate.

Such a comprehensive cooperation should be mutually beneficial and should address a wide range of topics such as regulatory issues, the enhancement of market transparency, cooperation on energy efficiency and renewables, research & technology innovation, assessment of long-term energy supply and demand perspectives.

The EU for its part has a lot to offer to its international partners: an integrated internal market of some 500 million consumers, a world-class energy technology industry, very advanced research in renewable energy and energy efficiency and a stable, transparent, non discriminatory and legally binding energy policy framework. ■



European Union Energy Commissioner Günther Oettinger made these comments in a speech at the 5th OPEC International Seminar in Vienna on June 13, 2012.

Maersk Oil's TriGen Technology Makes CO2 Capture Commercial

By Bob Alford

Maersk Oil, a medium-sized Danish E&P company, is advancing a novel power generation technology to deliver clean energy and enable enhanced oil recovery to maximize value from the world's scarce natural resources.

THE TRIGEN 'oxycombustion' technology is derived from the space industry and involves burning gas together with pure oxygen to produce clean power, pure water and 'reservoir ready' carbon dioxide. The compact TriGen combustor fits in a box the size of a Maersk shipping container and combusts natural gas at high pressure and high temperature to provide optimal efficiency and complete combustion. The resulting high purity CO2 is then fully captured – making the power generation emission-free – and pipelined to oil fields for Enhanced Oil Recovery (EOR).

The A.P. Moller-Maersk (APMM) Group of companies is active in deploying technologies that reduce the carbon footprint of its global operations for the benefit of all its stakeholders. The added benefit of TriGen for APMM's Maersk Oil subsidiary is that the resultant low cost carbon capture also makes EOR operations economic creating both an environmental benefit and an attractive investment opportunity. CO2 is already a well proven EOR agent to produce oil that would otherwise not be recovered. The CO2 is injected deep underground in reservoirs that have already stored hydrocarbons without leakage for millions of years which ensures the CO2 storage integrity.

It was TriGen's potential to enable EOR that first caught the eye of Maersk Oil, which had already started to study whether it could use CO2 to enhance recovery from its own mature oil fields and was seeking low cost sources of the gas. But the company soon realised that the technology's multi-stream output, including its ability to burn CO2-contaminated gas as fuel without any pre-treatment, actually gave it access a number of

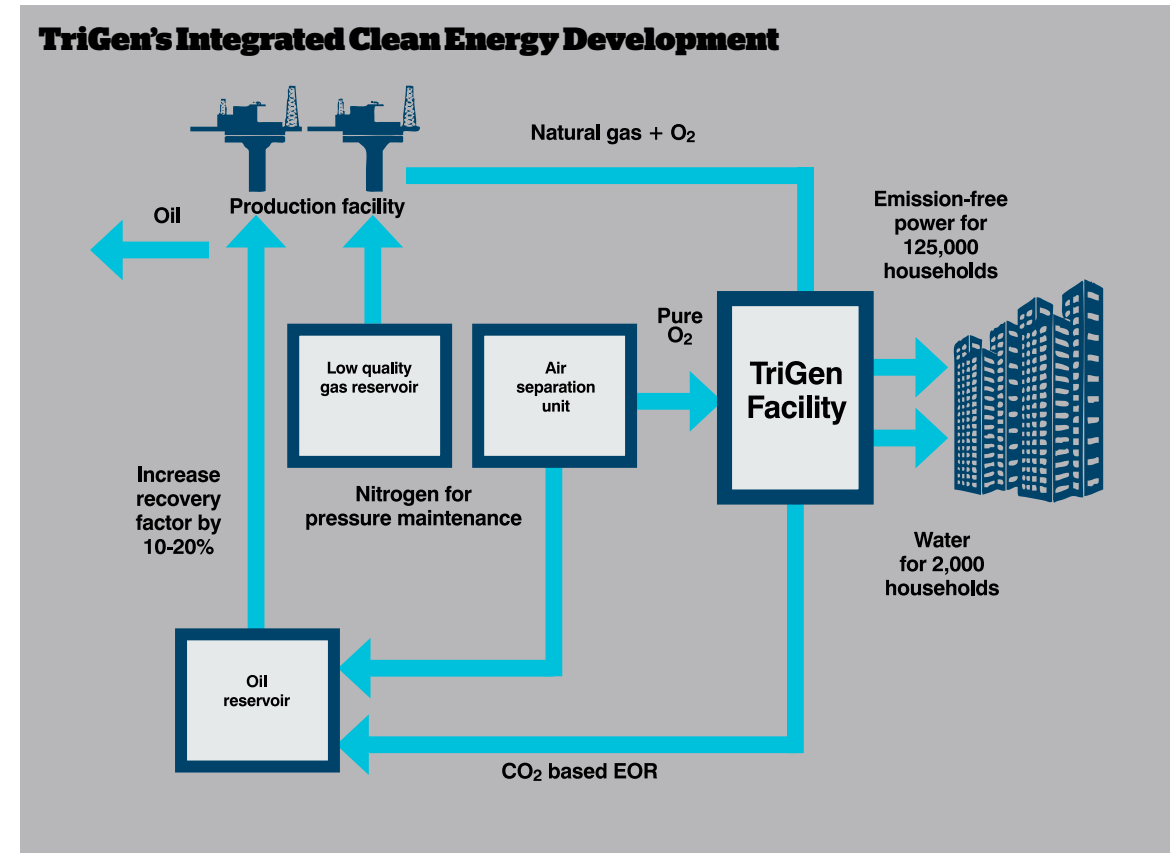
global business opportunities and provided a new source of zero emission energy to meet the needs of growing worldwide demand in an environmentally responsible manner.

"We're currently exploring opportunities in the Middle East and South-East Asia that have different value chains and benefits, yet both can now be made commercial from the implementation of the TriGen technology," said Bob Alford, TriGen Project Manager.

In the Middle East, Maersk Oil is investigating how TriGen's low cost CO2 can benefit EOR projects. Gulf countries in particular have increasingly focused on clean energy, while many of their oil reservoirs are suited for CO2 / N2 based EOR. Here, gas would be burned to produce clean power and water for households. Nitrogen, a by-product from the production of pure oxygen, and CO2 would be supplied to oil fields – nitrogen to maintain the pressure in depleting reservoirs and CO2 as the EOR agent coaxing out oil that would otherwise not be recovered.

Traditionally, CO2-based EOR has only been feasible in areas with large sources of natural CO2 – chiefly in the United States. But the ability to produce CO2 as a by product of a commercial power generation venture now makes CO2-based EOR attractive in regions such as the Middle East, which has limited sources of natural CO2. TriGen also provides resource owners a full life cycle development concept for EOR as its oxyfuel combustion process can accept the CO2 in the associated gas coming back from a CO2 EOR flood again without requiring any pre-treatment for CO2 removal.

"The technology provides a compelling investment opportunity in the Gulf region as it offers both the benefit of clean power and



low-cost CO2 to increase recovery potential. The technology also complements Maersk Oil's current work and studies on CO2-based EOR in Denmark and Qatar, enabling us to offer integrated field development solutions in this area," Alford said.

In South East Asia, the value chain starts at a different point – at world class gas fields that lie undeveloped because they are naturally contaminated by CO2. Such stranded gas fields could now potentially be produced economically and with full carbon capture because the TriGen technology can burn gas contaminated with up to 90% of CO2 without requiring any costly pre-treatment for CO2 removal. TriGen also offers an efficiency advantage over conventional gas power generation processes with carbon capture - especially on power plants fed by CO2 contaminated gas fields that would require both pre and post combustion CO2 separation. Conventional gas turbine based power plants suffer flame-out when the level of non combustible gas (i.e. CO2) reaches approximately 40% necessitating the addition

of pre-combustion gas treatment processes. TriGen thus allows countries to use their clean gas for export and their contaminated gas for domestic power to address the needs of the regions rapidly expanding economies.

"We would be unlocking enormous value to the states that have been sitting on these fields, unable to produce them commercially," Alford said. "Although it is early days yet – there are technical and commercial challenges to overcome – these are just the kind of projects that affirm Maersk Oil's pioneering approach to business."

Maersk Oil launched the project in January 2011 when it acquired rights to the combustion technology, from U.S.-based Clean Energy Systems (CES). CES has proven the technology over the last 15 years, and now in collaboration with industry heavyweights Maersk Oil and Siemens, is deploying the technology at a commercial scale.

More information on the innovative TriGen technology solution is available at: www.maerskoiltrigen.com.



Bob Alford is a Sr. Business Development Manager at Maersk Oil Middle East. He is leading the eastern hemisphere growth business for Maersk Oil enabled by the innovative TriGen technology system.



Global Energy Industry Faces
Biggest Upheaval in a Decade
to Bolster Competitive Edge

By James McCallum, CEO, Senergy

THE ENERGY INDUSTRY is witnessing the most disruptive shake-up since a wave of takeovers in the late 1990s created the super-majors such as ExxonMobil and BP. The good news is that the changes are largely positive, creating an industry that is better positioned to solve the world's great energy challenges.

Here's the bigger picture: the neat, familiar defining lines separating different types of energy companies are becoming blurred. When I entered this industry three decades ago, those lines were crystal clear. National Oil Companies (NOCs) were the state-owned firms in charge of domestic assets, such as Abu Dhabi National Oil Company or Petronas in Malaysia. They stayed at home.

Then you had International Oil Companies (IOCs) – private sector operators loosely grouped into major energy companies such as Exxon, and smaller independent production companies such as Maersk Oil. Service companies sold technical services and provided equipment such as drilling rigs, while trading companies bought and sold end products like crude oil and diesel.

Today many NOCs are increasingly acting like IOCs, expanding beyond their national boundaries and competing for assets overseas – the arrival of Statoil, China National Petroleum Corporation and Korea National Oil Corporation into the Gulf's upstream energy sector are three good examples. For some NOCs the motive is commercial, while for others it's all about security of future supply for their home countries.



Meanwhile, some super-majors are operating more like super project managers. Back in the 1970s and 80s, IOCs controlled the identification, extraction and productisation of three quarters of global hydrocarbon reserves. Today, state-owned NOCs control roughly three quarters of the world's reserves, leaving super majors on occasion to accept the role of glorified service providers. If you study many of the big energy concession deals signed these days, governments pay IOCs a fee to get oil and gas out of the ground, but the IOCs don't own the assets and cannot book them on their balance sheets.

Iraq's recent contracts are a good example.

If NOCs are challenging the super-majors from above, service companies are encroaching into their space from below. To an extent, the IOCs only have themselves to blame for from the late-1980s to the late 1990s as oil prices fell to \$10 a barrel, major operators downsized and outsourced much of their technical work to service companies such as Schlumberger, Halliburton and Baker Hughes.

Today those services companies have grown so big and so capable that they are beginning to do deals directly with resource-owning countries. We see a good example of this in Mexico, where a joint-venture between Schlumberger and Petrofac – two service companies – has won major development contracts from the state monopoly NOC Pemex.

Some commentators are already writing the obituaries of the super-majors, but I think this is extremely premature.

"The super-major model is broken," said Investec analyst Stuart Joyner earlier this year, quoted by Bloomberg News. This comment was spurred in response to BP's decision to streamline operations, including the sale of billions of dollars of Russian assets.

I would argue that super-majors still have an essential part to play in developing new discoveries that require massive capital expenditure – large reserves that are climatically and geologically challenging such as very deep water close to the Arctic Circle. They also have a pivotal role in the Middle East, where successful partnerships with NOCs built over decades will not simply be discarded overnight.

Perhaps the most interesting space for change is just below the super-majors, where a growing number of smaller, independent operators are active. In some ways, these are the modern equivalent of the "ma & pa" oil speculators who dug an oil well on their ranch in Texas a century ago. The North Sea is a great example



of where such companies work very effectively. As previously discovered fields began reaching maturity in the 1990s, many of them ceased to be commercially attractive to the handful of major British and Norwegian companies who pioneered that area.

Today you have dozens of small operators in the North Sea, many of them listed on junior stock exchanges in London and Oslo and founded by entrepreneurs who cut their teeth with the supermajors and service companies in the early days of their careers.

This is significant.

Individually their contributions may be small, but collectively they are extending the productive life and recovery factor of the entire North-Sea basin. Twenty years ago, the rule of thumb in the North Sea was that no field was economically viable if it held less than 60 million barrels. Today the cut-off point is nearer three million barrels. We're also seeing this entrepreneurial trend in parts of Asia, and it's beginning to emerge in the Middle East with companies such as Kuwait Energy Company, Dragon Oil and DNO although it is still very much in its infancy.

Collaboration is key to this new model, and companies such as Senergy are an important cog in the wheel. Senergy is an energy services company with a series of global knowledge hubs, including in the UAE, employing hundreds of people dispersed around the global energy centres with high-end knowledge skills focused on upstream exploration, production and project management. The industry faces a severe shortage of these talented engineers,

“If NOCs are challenging the super-majors from above, service companies are encroaching into their space from below. To an extent, the IOCs only have themselves to blame for from the late-1980s to the late 1990s as oil prices fell to \$10 a barrel, major operators downsized and outsourced much of their technical work.”

geoscientists and project managers, and there's no way that smaller Exploration and Production companies can retain this full capability in-house.

This new energy ecosystem is still evolving. NOCs, super majors, independents and service companies are increasingly entrepreneurial, adapting to the changing demands of the industry.

This is why I say the current shake-up is good news for the industry. There can be no doubt that the world faces a significant challenge in the coming decades to meet demand for energy, which is still increasing every year despite the volatile economic environment. The more dynamic, flexible and collaborative the industry becomes, the better position it will be in to help keep the lights on. ■



James McCallum is CEO of Senergy; an integrated global energy services company, specialized in the upstream skills associated with the identification, quantification and extraction of hydrocarbon structures.



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Energy Industry Outlook: Game Changers



Technology Breakthroughs to Deliver New Energy Supplies Needed to Meet Demand

By Ryan Lance, ConocoPhillips Chairman and CEO

CONOCOPHILLIPS is now the world's largest non-government independent E&P company, based on production and reserves following our strategic transformation earlier this year when we spun off our downstream operations into a separate company, Phillips 66. With our independent status, we will focus exclusively on global exploration, development and production of oil and natural gas.

We are excited about the future of our company, and of the world energy business -- there are several reasons.

Demand outlook -- as you know, over the short term, we face economic uncertainty. There's the European sovereign debt crisis, as well as slower growth in the U.S. and such emerging markets as China and India. But long-term, the outlook is bullish.

That's thanks to the 80 million people a year joining the global middle class -- approximately half in China. This is more than double the recent historical average of 30 million. These new consumers need energy for homes, for appliances, automobiles and workplaces. This creates significantly higher oil demand in the developing countries.

“All credible forecasts indicate that even by 2035, oil will still be the number one source. It will be followed by coal, natural gas and renewables.”

This growth will outweigh market trends in the developed or OECD countries, in which oil demand has probably peaked. We also do expect a transition in energy sources. But it will be a very slow one. It will take decades for renewable sources to achieve the price competitiveness and scale they'll need to meet a major portion of society's energy needs.

Keep in mind that an earlier transition -- from coal to oil as the world's leading energy source -- took about a century. And even decades afterward, coal remains the second-leading source. All credible forecasts indicate that even by 2035, oil will still be the number one source. It will be followed by coal, natural gas and renewables. So oil has a long future ahead.

Meanwhile, natural gas will be essential in helping meet rising world electric power demand.

This will be thanks to its resource abundance, environmental attributes and the near-global availability of LNG. In fact, LNG is already helping fill the energy gap created by countries that are abandoning nuclear power following Fukushima. And for countries that wish to quickly and inexpensively reduce their greenhouse gas emissions, natural gas can replace other fossil fuels.

Throughout history, we've seen technology push back successive forecasts of peak oil and gas production. The North American shale revolution is the latest example.

We're also optimistic that both governments and consumers are becoming more aware of the greater abundance of oil and natural gas. For too long, we've faced inaccurate perceptions in consuming nations of resource scarcity. In the U.S., substantial investments have been made in coal and renewable sources. And state governments have mandated the use of renewable power.

Much of this was done in the belief that natural gas would be too expensive. In fact, it's now the lowest-cost power source given its low fuel and capital costs. But even with today's greater resource abundance, it will be challenging to develop supplies fast enough to satisfy demand. Also, energy security remains a strong concern. So we expect continuing interest in diversification of energy sources.

Meanwhile, within our industry, a great deal of new production will be needed. Not only to meet new demand, but also to replace the natural decline in production. In fact, 80% of new supply by 2035 will go to make up for this decline.

Anyone who mistakenly believes that oil and natural gas isn't a growth business need only consider one statistic. The IEA estimates that cumulative investments of \$20 trillion will be necessary to satisfy energy demand by 2035. And some of this investment will be needed in the OPEC nations.

Although some supply uncertainties remain, they are primarily political or geopolitical in nature -- in short, governmental actions or turmoil that might restrict resource access or production. This is a different type of challenge than resource scarcity, with different policy implications.

Our optimism about the future is also based on several game-changers that are transforming our industry such as the shale revolution in North America.

As recently as the early 1990s, U.S. natural gas production, reserves and demand were



all falling. But since then, proven reserves are up 68%. The U.S. now has nearly a century of supply. And production is up one-third just since 2005, with further growth of 20% expected by 2035.

The greater availability of natural gas has brought prices down and helped revive demand, particularly in energy-intensive industries. We're seeing construction of new petrochemical plants, steel mills and other facilities in the U.S. that in years past would have gone elsewhere.

North America is now essentially energy independent in natural gas -- an achievement until recently thought impossible.

The new shale technologies are being applied to production of light, low-sulfur liquids. Keep in mind that U.S. oil reserves peaked in 1970, then by 2008 had fallen by half. But since then reserves have grown, while annual production is up 14% -- mostly

from shale. This is the first meaningful growth in 20 years.

We expect U.S. shale liquids production to grow 150% by 2020. Thanks to both shale and the Canadian oil sands, North America could become self-sufficient in oil as well by 2025, and even a net exporter.

Although it's too early to predict how far the shale oil revolution will go, no one expects a level of exports anywhere near Saudi Arabia's 8 million barrels a day. Meanwhile, shale is found worldwide. Production potential has been identified in dozens of countries, and in many more has not yet been assessed. Development in most cases won't be as rapid as in North America.

We don't yet know how significantly international shale development will impact global markets. But falling North American imports will certainly enable the industry to better meet rising demand elsewhere. ■



Ryan Lance,
ConocoPhillips
Chairman and CEO,
made the above
comments in a speech
at the 5th OPEC
International Seminar
in Vienna on June 13,
2012

The Financialization of Oil

By Michael W. Masters

THERE HAS BEEN a buyer and seller for every transaction (by definition) in history. Yet prices move. The sole function of all markets (including commodities markets) is to match buyers and sellers via price movement. So while in theory there is an infinite supply of futures contracts, there is only a finite supply at any given price.

Therefore, when there are capital inflows from new buyers, the market mechanism adjusts the price in order to incentivize new sellers willing to transact (and vice-versa). Through this locative process, money flows move prices in stocks, bonds, currencies and all other markets.

This includes all commodities markets!

Goldman Sachs invented the “Commodity Index Fund” in 1991. Around 2004, Wall Street aggressively and successfully marketed commodities as an asset class to large institutions, primarily via commodities index swaps. Academic support was based largely on research by two Yale professors -- Gorton and Rouwenhorst.

From 2004 onwards, commodity indices saw a huge inflow of investment capital from institutional investors. Wall Street then promoted other products, including single commodity swaps, commodity ETFs, commodity linked notes, new CTA funds and other products designed for capital market investors to easily allocate large pools of capital into the commodities markets.

Since then, commodity markets have displayed features of capital markets, including increased correlation with capital markets, financial intermediary-driven noise and associated volatility, and even speculative booms and busts.

In the last decade, financial markets in oil have grown exponentially -- estimates vary from \$200 billion to upwards of \$400 billion. In crude oil alone, there is approximately \$50-\$100 billion of institutional money.

There are strong correlations between index fund flows and commodity prices. Since 2009, more money has been flowing into ETFs, CTAs and other alternatives to the traditional Total Return Swap vehicle. This has made it harder to track investment precisely, but the correlations remain despite imperfect data.

The traditional make-up of oil futures markets, where commercial participants dominated, has been reversed. Now, financial

“In the last decade, financial markets in oil have grown exponentially - estimates vary from \$200 billion to upwards of \$400 billion. In crude oil alone, there is approximately \$50-\$100 billion of institutional money.”

participants are in the majority. As more capital markets participants have invested in commodity indices, they have become more correlated with capital assets. In addition to any absolute price impact, new research by Better Markets shows: During the monthly GSCI roll period, WTI crude oil prices display a clear contango bias in the contracts that are rolled.

Synthetic ownership of physical commodities through index investment inevitably induces “hoarding,” driving a Bubble/Burst market cycle. Cheng, Kirilenko & Wong (2012) find that when financial markets are stressed, non-commercial traders transmit price shocks into commodity markets, harming liquidity and raising costs for end users.

Commodity Index Funds and other long-only “passive” investments strategies provide no benefit to the commodities markets. Yet, they come at a cost: volatility, less liquidity, distorted prices. To restore balance to the markets, Commodity Index Funds and other similar vehicles must be eliminated. This should be implemented in all major commodity trading centers, as part of a comprehensive position limits regime that limits non-commercial participation in commodities markets.

Businesses and households rely on fair and accurate energy prices, based on actual supply and demand. Governments in Europe must co-ordinate on MiFID2 to ensure an effective position limits regime is put in place. Institutional investors must be directly engaged so they understand the risk and damage associated with their commodity derivatives “investments.” ■



Michael W. Masters made these comments in a speech at the 5th OPEC International Seminar in Vienna in June 2012. Mr. Masters is the founder of Better Markets, a Washington, D.C.-based nonprofit, nonpartisan organization established to promote transparency and accountability in the financial markets for the public interest.



Energy Industry Should Try Attract Retirees Back from the Golf Course to Mentor Next Generation of Talent

By Adam Lomas

THE RELATIONSHIP between NOC's IOC's and service companies has changed beyond recognition, but one parameter has remained the same throughout these turbulent years – the need for Talent to develop the increasingly complex oil and gas fields.

In 2002, from the IOC perspective, it was obvious that the constraint on being able to deliver the mega projects required to “beat the competition” would not be due to a lack of capital or even the increasingly complex technology required to drill deeper, horizontal or in (sub) arctic conditions, it was the lack of talent to deliver projects which would determine

the winners. The oil industry has experienced a number of “boom and bust” cycles since the 1970's and each oil price crash has led to massive cuts to keep operating costs low. Unfortunately the first cuts almost always hit training and travel budgets, and the 10\$ oil in the late 90's once again – predictably led to a freeze on hiring new graduates into the industry and massive cuts in training and development, where in the 1990's there were thousands of graduates in Petroleum Engineering worldwide, by 2005 there were only a handful. This trend was exacerbated by the rise in demand for graduates in the dotcom

businesses of IT and telecommunication. By the early years of the 21st century it was obvious that the combination of the lack of graduates, cuts in IOC training budgets and the looming retirement of the baby boomers would lead to severe shortages in the marketplace -- a radical change in strategy would be required to ensure that projects would continue.

IOC's have for years relied on expatriates from their base country to fill the most senior positions in their overseas ventures, and training programmes were (in the most part) designed to fulfil these objectives, local manpower was mostly restricted to oil field service work. The countries of the Gulf, along with other oil producing regions, place a high priority on the development of local talent. Thoughtful IOC's recognise that the key to securing acreage for the future (a key determinant in the share price) relies on delivering on the promise of local talent development.

Particularly in the Gulf region where NOC's now hold the majority of the producing assets and IOC's are competing to maintain their positions, delivering on the promise of transferring skill becomes a key competitive advantage. NOC's are no longer interested in IOC capital -- the Sovereign wealth funds of most Gulf countries far outweigh the capital budgets of any IOC. Technology is becoming a commodity – at least in the relatively non-complex fields of the Gulf, a key differentiator therefore becomes IOC Talent, and most importantly the willingness and the implementation of skill transfer.

In the ten years since it first became apparent that there was a looming “cliff”, with many baby boomers expecting to retire with good IOC pensions, many factors have combined to push this reality a little further into the future – the financial and banking crisis and the pensions sell offs persuaded many expatriates to work a little longer. But even baby boomers don't live for ever and most of the talent which developed the North Sea fields is now either retired or getting ready for the golf course.

But the challenges of delivering an increasing number of mega projects and the aspirations of the NOC's have not changed, in fact the NOC's are now increasingly competing with the IOC's outside their own countries, which increases the need for Talent.

There remains a significant need to transfer skills from the talented oilfield workers of the IOCs to the developing staff of the NOCs – driven by the demographics in these countries, the aspirations of the NOCs and the competitive necessities of the market place.

Some IOCs have preferred to keep all their talent in-house, in the longer term I believe they will regret this lack of generosity. Some IOCs have outsourced all their training and development, again I believe this will prove to be a massive strategic error, talent development should be and is a competitive lever. Even the wise IOCs have once again succumbed to the desire to save operating costs and cut training and development budgets, the industry will not be able to sustain another shock like the lost talent generation of the 1990s.

There is however light at the end of the tunnel, the retirement of the baby boomers has released a huge pool of talent who were previously working on delivering projects for the IOCs, and many of these retirees are not content to do nothing given that in most cases they can have the expectation of a long and relatively comfortable retirement. If these talented folk can be persuaded that there is a richly rewarding and part time retirement activity which involves transferring their skills to the next generation, then the Learning & Development budgets of the IOCs will have not only delivered the mega-projects of the 1980s, 90s and 2000s, but can now help deliver a new generation of NOC talent to continue to supply the energy required into the decades ahead, everybody wins!

This strategy however requires some major changes in perception, whilst the average expatriate in the Gulf recognises that a part of his (or her) job is transferring skills, many simply succumb to the pressures of the daily job, and in the face of often less than enthusiastic apprentices, coaching and mentoring becomes a low priority. Actually for many the training of Nationals looks like hastening retirement! But once retired this hurdle is passed, the retiree and other expatriates can still have a role to play in the industry. But the contract has to change, there must be a real recognition and increasingly measurement of the success of transferring skills.

In the ten years as Head of Learning and Leadership development for an IOC before retirement, I observed that 10% of the talent pool is really good at coaching and mentoring the next generation, 10% probably don't have the required “skill transfer” gene! But the vast majority can be “encouraged” to transfer skills given the right incentives. In the 3 years since I have further observed in my own life that transferring skills – when freed from the burden of the corporate greasy pole is an intensely satisfying retirement activity.



Adam Lomas is the owner of castor & partners – a company dedicated to excellence in Leadership and particularly in developing a leadership style which is sympathetic to the Arabic and Gulf culture. Prior to retirement he was Head of Learning and Leadership Development for Shell International.

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Cyprus Targets Role as
Regional Energy Hub for the
Eastern Mediterranean

**By Mr. Demetris Christofias,
The President of the Republic of Cyprus**

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THE GEOPOLITICAL and geostrategic characteristics of Cyprus are very well known. Cyprus is located in the South–Eastern corner of the Mediterranean Sea, at the crossroads of three continents – Europe, Asia and Africa – is adjacent to the main international energy corridors and close to busy sea routes and air routes linking Europe with the Arab world and the Far East.

Additionally, since 2004 Cyprus is a full member of the European Union which seeks to ensure both its short term, as well as its long term energy supply, through the creation of secure alternative supply corridors. In addition, the EU aspires to complete the integration of the internal energy market and to end the isolation of all member states from the European energy networks by 2015.

Undoubtedly, Cyprus' role in the global energy map has been enhanced, following the discovery of natural gas in our Exclusive Economic Zone. International interest for the second Licensing Round increased. A total of 33 applications from 15 companies/joint ventures from 14 countries, including France, the USA, Russia, South Korea, Malaysia, Italy and Australia were finally submitted. As a consequence, new perspectives are opening up giving new impetus to Cyprus' role within the global energy system and the European energy market.

Natural gas deposits contribute substantially to Cyprus' energy self-sufficiency, a prerequisite for its economic and social growth, and place our country in the major international oil and natural gas networks. This opportunity creates the conditions for Cyprus to become a regional energy hub.



The appropriate exploitation of these prospects requires strategic planning and well designed steps. The Government of Cyprus has charted its energy policy on three pillars -- shield the geostrategic, geopolitical and geo-economical role of our country; enhance the security of Europe's energy supply, with the creation of a third corridor to meet its energy needs in natural gas; diversify Cyprus' energy mix, by integrating natural gas and Renewable Energy Resources in our energy system, so that gradually we reach energy self-sufficiency.

The undeviating aim of implementing our energy is premeditated on achieving two prerequisites --the development of the necessary energy infrastructure and the establishment of new institutions.

Energy infrastructure is essential for the exploitation of Cyprus' hydrocarbon deposits, as well as the deposits that have been discovered, or are expected to be located in the wider Eastern Mediterranean region. We should not forget that, according to the estimation of the United States Geological Survey, the Levantine Basin, located in the South–Eastern Mediterranean, contains hydrocarbon reserves equal to 1.68 billion barrels of oil and 122 trillion cubic feet of natural gas.

One such infrastructure, that makes this goal possible from a technical point of view, is the construction of a Liquefaction of Natural Gas (LNG) plant in Cyprus. In our view, this regional infrastructure project is necessary. It will contribute to diversifying substantially the energy supply sources, since it will provide a flexible hub that would link the large quantities of natural gas of the broader Mediterranean and would transport them to the European and the Global market.

Another important project contributing to the implementation of our policy is the construction of a subsea pipeline to transfer the natural gas to Cyprus, as well as the interconnection of Cyprus–Greece–Israel, through an underwater cable, for electricity supply purposes. At the same time, our Government, recognizing the importance of oil in global energy as the primary fuel in some sectors and as a backup fuel for power generation, and acknowledging the need to maintain strategic stocks, is proceeding with the construction of an Oil Storage Terminal. It will provide facilities for the storage of operational oil reserves/stocks and strategic oil reserves stocks. Additionally, its facilities will enable the Terminal to be used as a transit hub for oil products.

It is clear that the cost of such infrastructure, especially the construction of an LNG plant,



Levant Basin: Can Future Opportunity Trump Past Rivalries?

is extremely high. For this reason we aim at multilateral cooperation with the involvement of other influential countries, as well as major companies, retaining however a leading role for Cyprus, since it is an infrastructure of strategic importance. In this context, we also look forward to utilizing relevant EU funds that will be allocated in the context of the new EU energy policy.

The implementation of the Government's energy policy requires the establishment of new institutions in our country in order to manage efficiently emerging developments. These institutions will be established based on successful models and standards that have been developed by other countries. I particularly refer to the establishment of the National Hydrocarbon Company.

I also refer to the establishment of Hydrocarbons Fund, in order to ensure that part of the wealth from the exploitation of our natural resources will be handed down to the next generations. This, after all, is the essence of sustainable development: To respect the rights and not to neglect the interests of our children and of our children's children.

The project for the construction of the natural gas distribution network in the domestic market is underway as planned. This network will initially provide natural gas to the power stations of Vasiliko, Moni and Dhekelia. At a later stage the network will cover hotels,

industries and residential areas. This is a project that needs to be launched immediately, following the Council of Ministers' decision to begin negotiations to import natural gas in Cyprus as soon as possible for purposes of power generation, as an interim solution, until we have our own natural gas.

Regarding the Second Licensing Round, the issue is now before the Advisory Committee, which is evaluating the applications.

It is evident, therefore, that in conjunction with domestic and global developments, we have reached a crucial turning point regarding the energy sector in Cyprus. We have a clear picture of the parameters, as these have been formulated, we have identified our goals and we are proceeding cautiously, consistently and in a structured manner in order to fulfill them.

The Eastern Mediterranean Sea region could be transformed in an area of common borders and interests for all of us, offering prospects for peace, prosperity and progress in the wider area. At long last, we have the historic opportunity to work sincerely, constructively and in good faith for the benefit of our people.

We soon expect ratification by the Parliament of Lebanon of our agreement on the Common Exclusive Economic Zone of our countries, because we look forward to co-operating closely with the friendly country of the Lebanon. An agreement has been signed with Egypt. ■



The President of the Republic of Cyprus Mr. Demetris Christofias made these comments in a speech at The Gulf Intelligence Levant Energy Forum in Nicosia on June 26th 2012



Lebanon Urges Cyprus to Correct Maritime Border to Allow for Energy Cooperation

**By HE Gebran Bassil,
Lebanon's Minister of Energy and Water Resources**

LEBANON HAS been an energy importer as far as modern history has recorded -- our limited territory and lack of resources have compelled us since antiquity to explore new worlds in the quest of all kinds of recourses but water. Our energy bill today stands at 15% of our GDP. Our strategic location on the East Mediterranean has been a blessing and a curse at the same time.

Maritime routes to the West and pipelines to the East have insured our supply in peace time and have threatened our energy security in times of crises. Our aim has been the same as any other nation -- achieve "Self Reliance" in energy matters and avoid the back turns of the geopolitics of the region. To that end we have thrived on three different, parallel but complementary tracks.

Firstly, the Exploration and Exploitation of our hydrocarbon resources -- we have passed a law; launched all subsequent activities and started building up our capacities to be sole masters of this wealth which is the property of the Lebanese people, present and future generations.

“Lebanon is determined to exercise our full rights on every inch of our EEZ and compel the strict respect of the borders which have been drawn according to the international law.”



The Lebanese government issued the Petroleum Activities Regulation in January 2012 along with all administrative, organizational and financial bylaws for the Petroleum Administration. The Strategic Environmental Assessment study has also been completed. Models for the Exploration and Production and Joint Operating Agreements and the delineation of the sea blocks are also ready.

Lebanon has gathered all geophysical data pursuant to the sub-sea of our Exclusive Economic Zone and installed a full-fledged permanent data room at the Ministry of Energy and Water. We became one of the rare countries in the world that have covered nearly all its maritime waters with over 14,000 linear Kilometers of 2D scans and more than 10,000 square kilometers of 3D scans.

Tens of IOCs have already bought geophysical data; while we are conducting additional three dimensional seismic scans to prospect areas; as well as preparing to start the geophysical survey of the Land and shallow waters. We can proudly claim we've reached a level of accuracy allowing a 25% probability in drilling success.

The Lebanese Government is currently in the process of naming the Petroleum Administration board, which should be our last action before launching the licensing round hopefully before the end of 2012.

Secondly, the Gas pipeline distribution network and LNG importation terminal -- we have accomplished the design study and tender documents for the coastal gas pipeline which will link all coastal power plants and industrial agglomerations thru the Arab Gas Pipeline to the Near-Eastern and Eurasian gas networks and insure all necessary quantities of natural gas to Lebanon, representing security of supply and a saving of 1,033 million US\$ per year.

At the same time we have completed the feasibility study for the LNG re-gasification plant on the Lebanese coast and have launched an Expression of Interest (EOI) request for the rental of a re-gasification plant and will eventually start the negotiations for LNG supply. This project, once executed, will insure diversification of supply and preserve the country from the downsides of the region geopolitics, as demonstrated lately during the Egyptian events when gas supply was interrupted on the AGP.



Thirdly, the Rehabilitation and Development of our oil storage, and refining facilities -- we have accomplished the study for the rehabilitation and development of the two storage facilities in Zahrani and Tripoli, and are receiving expressions of interest, from international oil companies to invest in these facilities for their strategic location on the East-Med as well as for the large storage capacity they represent.

This project, once achieved, will insure a strategic reserve in oil refined products, and hence an increased immunity against the vicissitudes of the region's geopolitics. The increasingly worldwide scarce energy resources could become subject to fierce competition for the control of the reserves and induce tensions between neighboring states and stake holders, or the opposite -- incite collaboration between the concerned parties for the better exploitation of these reserves and all subsequent activities and trades i.e. the processing, the marketing, the transportation, the refining, the storage, the pricing and the distribution, All this in the aim of achieving the best and well being of the peoples of the region.

Lebanon has chosen the second path -- we have thrived all along to operate in the strict

respect of international law, regulations and treaties. We drew the borders of our EEZ according to UNCLOS' equidistant method; we duly communicated the relevant coordinates to the United Nations and pledged full respect of neighboring states rights to their own maritime waters and expect the same towards us.

We are determined to exercise our full rights on every inch of our EEZ and compel the strict respect of the borders which have been drawn according to the international law. We expect Cyprus, as a friendly nation, to exhort all possible efforts to correct the flagrant technical mistake that occurred while addressing a tripartite point in the border delimitation with Israel without our knowledge or approval.

Lebanon and Cyprus have long common maritime borders together, hence high probability of common energy reserves. Our collaboration on energy matters should come normally and naturally in the course of our long exceptional relations dating back to Phoenician times, we both have the obligation to cleanse it from all contingent flaws caused by ephemeral accidents of history.

These good relations and our future cooperation should not be jeopardized because of this border mistake. ■



Lebanon's Minister of Energy and Water Resources HE Gebran Bassil made these comments in a speech at The 2nd Gulf Intelligence Levant Energy Forum in Nicosia on June 26th 2012

Noble Energy is First to Strike Riches in the Levant Basin Black Gold Rush

By Terry Gerhart, Vice-President East Mediterranean, Noble Energy



Levant Basin: Can Future Opportunity Trump Past Rivalries?

THE CYPRUS AI ultra-deep-water well was drilled in 2011 and in December Noble Energy announced we had encountered natural gas, an historic moment for Cyprus and for the people of the region -- the estimated reserve discovered ranges between 5 and 8 Trillion cubic feet, with a gross mean of 7Tcf.

What's not mentioned here though is that we are going to have to do some more appraisal work and are intentions are to drill another well, an appraisal well hopefully by the end of 2012 or more than likely early next year depending upon rig availability and the time to get it will take to secure the products and services tendered.

Noble Energy has had 6 consecutive discoveries in the Levant Basin for a total of 35Tcf – the estimate by the U.S. Geological Society of 122Tcf potential gas reserves in the Levant Basin appears to be a reasonable forecast as Noble has gotten a good part of it and we anticipate and see more of it to come.

The commercial agreement between Noble and Cyprus has been announced by the Nicosia government and we will be working with them to come up with a framework to build a Liquefied Natural Gas plant so that we can monetize the gas discovered.

One of the things about an ultra-deep water development is that it takes a lot of money – cost estimates range, just on the upstream part of this, in the \$3.5 to \$4 billion range – that's for the wells, the subsea architecture and the host facility, a floater, along with the pipeline to get it to shore.

The projected delivery timing for these projects ranges anywhere between 3 to 8 years -- we have looked at it very closely and it's our view that we can get this thing accomplished in 38 months, and from the standpoint of the export facility, the LNG plant, it's our view that this could be developed within 48 months from the Final Investment Decision (FID) -- Noble Energy has a track record of achieving ambitious timelines.

One challenge on projects of this scale is the procurement map – with our project in Israel, the Tamar Field, which is a multi-billion dollar project developing a field in ultra-deep water. The goods and services

“Noble Energy has had 6 consecutive discoveries in the Levant Basin for a total of 35Tcf – the estimate by the U.S. Geological Society of 122Tcf potential gas reserves in the Levant Basin appears to be a reasonable forecast as Noble has gotten a good part of it and we anticipate and see more of it to come.”

that we are procuring are coming from many different countries – North and South America, Asia, Europe and the Middle East.

One of the things that certainly drove this home was back in March 2011 when the Tsunami occurred in Japan, we had on order quite a bit of steel for pipes and we had to quickly change to different mills because of something that occurred on the other side of the world effected our project. Fortunately we were able to get that done and we are on track.

IN CYPRUS the subsea architecture looks similar to Tamar in the initial phase where there are 5 wells. All of the work and installation of this is done with underwater subsea robotics and the technology for this is quite extensive.

The landscape of the offshore Cyprus Seabed will present challenges as we proceed to lay pipelines to bring natural gas ashore in Cyprus for we have to navigate a Subduction Zone -- where the plates come together and one goes beneath the other. Then as we bring the pipes closer to shore we have quite a bit of a steep grade to go up, as well as underwater mountains and canyons that we are going to have to traverse through. The preliminary work shows that there is a route and we are working towards that. ■



Terry Gerhart, Vice-President East Mediterranean, Noble Energy made these comments in a speech at The Gulf Intelligence Levant Energy Forum in Cyprus on June 26, 2012.



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Turkey Turns Soft Power Eastward to Secure Contracts Rebuilding the Orient

**By Tim Reid, Regional Head of Commercial Banking,
HSBC MENA**



TURKEY HAS IDENTIFIED a very unique selling point as a European country – it would like to project itself as an emerging Asian market with a very strong position in the Middle East.

It should. It is. It has.

For a nation that spent much of the 20th century seeking adoption from Europe and being spurned, it has spent much of this century rediscovering old trading relationships with its Eastern neighbors that has proved to be a very wise and fruitful bet as Europe wallows in austerity triggered by the Great Recession while \$100 oil has spurred an economic boom in the energy-rich Arab states.

Turkey's historic relationship with the Arab countries of the Middle East and North Africa has wavered between indifference and courtship, but the constant has been a layer of mistrust emanating from both ends of the neighborhood that appears to be set aside on this occasion of rapprochement – at least for the time being.

“Turkey has identified a very unique selling point as a European country – it would like to project itself as an emerging Asian market with a very strong position in the Middle East. It should. It is. It has.”



Turkey's ambition to secure membership of the European Union had almost by default compelled it to pass through a period of ambivalence towards its Arab neighbors, but that all changed in 2001 when the new Turkish government reversed the status quo and embraced a proactive policy of engagement that has successfully catapulted Turkey into a major economic player in the Middle East.

Turkish investment in MENA has soared six fold to over \$30 billion in a decade, a period in which saw per-capita income in Turkey almost triple as it enjoyed Asian-Tiger style growth. Turkey's expanding trade with the region now accounts for approximately a fifth of Turkey's external trade and MENA now accounts for close to 10% of foreign direct investment into Turkey.

A cornerstone of Turkish policy, defined by the foreign minister as “zero problems with the neighbors”, has delivered bountiful rewards over the past five years with Turkish firms securing almost \$20 billion-worth of contracts on some of the largest construction schemes in the Gulf States. The deals include the \$2.1bn contract secured by Yapi Merkazi for work on the Haramain High-Speed Rail Network in Saudi Arabia and Baytur's \$800m contract for work at King Khalid University in Saudi Arabia.

Perhaps the most symbolic example of this new regional partnership was in June when Turkey's TAV Insaat led a consortium that included two of the largest Arab contractors -- Arabtec Holding and Consolidated Contractors Co. -- to win a \$3 billion contract to build the new terminal at Abu Dhabi International airport, which is the largest construction contract ever awarded in the UAE.

Turkish contractors have a few inherent advantages when competing in the GCC market against more established regional and global players that should see this trend of success continue -- they have some very capable companies that have moved up the quality curve and are as good as their international counterparts, but cheaper. Their cost advantage is bolstered by a geographic and cultural proximity advantage.

Turkish television soap operas have become massively popular across MENA from Morocco to Iraq, as millions of Arabs stop everything each day to view the latest episode of shows such as 'Hareem Al Sultan' and 'Fatima', going along way to bolster a positive image of Turkey on the streets of the Middle East.



The tumultuous Arab Spring, which over the last 18 months has seen social unrest and governments overturned in many Arab countries, has not disrupted Turkey's engagement in MENA. If anything the opposite has occurred as it has allowed Turkish companies to demonstrate their unwavering long-term commitment to their partners in the region. The result of this could be seen in the speed with which Turkish exporters have found new channels to the lucrative Gulf markets -- the first cargo-ferry vessels left Turkey at the end of April to take Turkish goods to the Gulf Arab states via Egypt.

Making use of Egypt as a logistics hub, Turkish firms could significantly boost their exports to MENA. Turkey is now planning to establish a logistics center in Alexandria to allow Turkish exporters to continue to supply the Gulf markets as well as Africa. In addition, the government is considering setting up a second logistics center near the Libyan border.

Turkey is a major energy importer,

consuming some \$60 billion of oil and gas imports a year that account for about two-thirds of the country's current-account deficit. Energy security has become a key platform of government policy, resulting in support for projects such as the proposed oil and gas export pipelines from Iraqi Kurdistan, which reinforces the need for closer trade ties with Turkey's Middle Eastern neighbors from where it will continue to need to source more and more of its hydrocarbon needs.

Energy could anchor this new found partnership for Turkey presents Arab oil exporters with a useful alternative to ever-more treacherous sea routes as the old Ottoman foe is increasingly at the crossroads of world energy trade. Due to tanker traffic through the Bosphorus and Dardanelles straits, Turkey has become an important north-south oil transit route, and the Baku-Tbilisi-Ceyhan oil and Baku-Tbilisi-Erzurum gas pipelines, as well as oil from Iraq, make Turkey an important east-west route as well. ■



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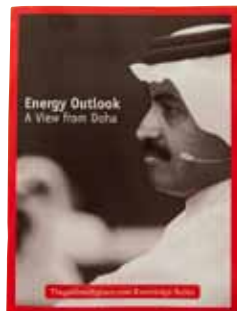
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