IRAQ’S MAJNOON OIL FIELD STARTS PRODUCTION

“LARGEST GREENFIELD PROJECT IN 30 YEARS STARTS PRODUCTION”

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The turret built in sight of a dramatic skyline
How Dubai’s DryDocks is helping to create the largest structure to go to sea

The unseen gas grid that meets a growing need
A virtual network of LNG supply links the countries of the Middle East
This issue celebrates the startup of the Majnoon field in southern Iraq. It has been a long, challenging but ultimately rewarding story, marking Shell’s return to this historic country after an absence of many years. Everything about Majnoon is impressive: it’s the fifth largest oil field in the world. Built on a battle field, we have already cleared more than 14,000 explosive remnants of war, and the work continues.

As well as being very proud of everybody who worked on the project, I am also delighted that we are able to contribute so much to the local community particularly through job creation and engaging the local private sector. For me, that is the heart of what we do at Shell.

Another project also full of superlatives is underway at Dubai DryDocks, not far from our headquarters in the Middle East. The turret of Prelude FLNG is being constructed and will then be shipped to South Korea for assembly. Prelude, once complete, will be the single largest vessel ever put to sea, with the displacement of six US Navy aircraft carriers. It is a great example of expertise and investment here in our region.

Nobody knows more about investment in the oil and gas business than Nordine Ait-Laoussine, the former Algerian energy minister. A veteran of our industry and on the eve of Sonatrach’s 50th anniversary, he tells us how he became employee number four at Sonatrach, masterminded the nationalisation and later privatisation of Algeria’s oil and gas industry, and was even taken hostage by Carlos the Jackal in Vienna.

I have singled out three of this issue’s stories for special mention, but the others are equally noteworthy. I hope you enjoy this issue of the magazine.
Cover image: Iraqi technicians working on upgrading existing facility. Majnoon Oil Field - DS1

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LARGEST GREENFIELD PROJECT IN 30 YEARS STARTS PRODUCTION

The Majnoon oil field near Basrah in southern Iraq is one of the largest in the world, so it’s hardly surprising that its development is full of superlatives. The field covers an area 52 kilometres long and 15 kilometres wide at the peak. More than 48,000 tons of equipment was brought to the site, greater than the equivalent of the weight of six Eiffel Towers. The Shatt-Al-Arab waterway was cleared for the first time in generations, using a giant crane to lift the stranded vessels out of the water, and a jetty was built to unload the cargo that arrived. Residents of the Basrah Corniche were surprised to see barges sailing past their back door for the first time in 30 years. At the peak of construction around 2,850 Iraqis were employed. New technologies were used for the first time in the country to increase the recovery speed of the reservoirs, maximise production, increase safety and minimize costs and environmental exposure. It was also the largest greenfield facility constructed in the country during the past 30 years, and the largest new oil facility in Iraq for a decade. In the process, 14,000 explosive remnants of war were cleared. Despite these dangers safety remained a constant theme, with more than 10 million hours completed accident free.

For Hans Nijkamp, Country Chairman for Iraq, what is really impressive is the impact that Shell and the development of Majnoon has had on the local population. The region in the south of the country has been a war zone for years, first in the Iran-Iraq conflict, then the Gulf War. “Because we invest on such a large scale we make an impact,” he says. “All of us have become emotionally engaged in the project, we do it because we see the difference it makes and the positive impact it has on the people. I met an Iraqi woman, at Basrah Airport, who grew up in Holland and has returned to her country to help rebuild it, so we speak Dutch together. I can’t tell you how good that makes us feel.”

“DESPITE THE DANGERS SAFETY REMAINED A CONSTANT THEME, WITH MORE THAN 10 MILLION HOURS COMPLETED ACCIDENT FREE”
For Shell, Majnoon represented an opportunity to return back into one of the major oil producing countries. Shell works closely with the Government of Iraq in support of the development of local content. Given the current challenges that Iraq’s economy faces such as high unemployment and a growing population, the local private industry can only benefit from the development of the oil and gas supply-chain. Shell has a long history in developing oil and gas supply chain in a number of countries such as Oman, Malaysia, the United Kingdom and Norway, and is working in a number of strategic areas in support of the local industry. Technically, the field was not expected to be too difficult. “The business of extracting oil from Majnoon is not one of the most challenging we have ever experienced as a company,” says Davesh Patel, Operations and Asset Manager for Majnoon. “There is some hydrogen sulphide, but we can cope with that. The difficulties lay mostly elsewhere.”

Simon Daman Willems, General Manager at Majnoon, agrees that most of the challenges did not lie underground. He arrived in Iraq at the beginning of 2013 to find that the project was not progressing as quickly as everybody had anticipated. “I think we were initially too optimistic about the non-technical risk,” he says. “What we tried to do was to set realistic goals that everybody could reach. When developing an oilfield, one of the biggest challenges is logistics. Can you get all the equipment and people you need quickly into the site? In other parts of the world, when you need a new part, you can just get in a pick-up truck and drive and get it, you could have it fixed the same day,” says Mr Daman Willems. “Unfortunately many of the moving parts we needed in Majnoon became held up.”

It soon became clear that there were a number of areas where delays were most prevalent. The first was in the area of securing visas for the sub-contractors. Another was the length of time that it took to import goods.

Mr Daman Willems is full of admiration for the way that the Iraqis managed to keep their oil industry going during both wars and sanctions. His task was to marry this pragmatism with Shell’s own working practices and new technology. “I like the challenge of how you make relationships work between different companies and governments,” says Mr Daman Willems. “Business can be difficult...
I found that the Iraqis were very proud of their history and civilization, and willing to work as partners once we listened to them and built their trust.

Shell’s investment in the community also began to bear fruit. The focus was in three main areas: health, education and capacity building. Mobile clinics were equipped to tour remote areas of the community and treat patients with a range of illnesses. Literacy campaigns for women are running, along with mine-awareness campaigns and road-safety courses. Training is being given in a number of different areas, ranging from lifeskills for widows to courses in entrepreneurship. At the Majnoon site there is a large training centre, where Iraqis are being taught to operate modern equipment to an international standard. A course of Shell’s Round 1 drilling qualification has already taken place. >>
A great emphasis is also paid to health and safety. Shell adopted and is implementing a Health, Safety, Environment (HSE) and Social Performance Control Framework for Majnoon. Its “life saving rules” are making a significant difference in reducing incidents on site. Shell is the first independent oil company to introduce an in-vehicle monitoring system that monitors driver speed and skills. Its HSE training includes defensive driver training, supervisor safety training, oil spill response and fire fighting training. It has also installed a waste incinerator and sewage treatment facility and started an air quality monitoring programme.

As Majnoon begins its first commercial production of oil, with initial production of about 175,000 b/d, the plan is to increase this in stages until it reaches the plateau production. “We have to look at Majnoon as a trust fund for future generations,” the Iraqi Minister of Oil was quoted in the local press as saying. This is a sentiment that...
Mr Nijkamp absolutely concurs with. There are still a number of areas for further development. One includes the expansion of the Central Processing Facility. Another is to increase the number of wells. At present there are about 20 existing wells and Shell drilled a further 18. However, Mr Nijkamp suggests that a further 1,000 could be drilled. “It’s hardly surprising that with so many drills needed we are training Iraqi drillers,” he says.

Other areas that Shell intends to focus on include conducting a full seismic survey of the site as well as developing a biodiversity action plan according to World Bank/IFC standards for the Marshes area. “Anyone can build an oil field in the North Sea,” says Mr Daman Willems. “The challenge here was to build an oilfield combining modern technology with social performance that really makes a difference. My vision is to return here in ten years’ time with my children and walk along the Basrah Corniche, perhaps stopping here and there for an Iraqi cup of tea.”
THE TURRET BUILT IN SIGHT OF A DRAMATIC SKYLINE

HOW DUBAI’S DRYDOCKS IS HELPING TO CREATE THE LARGEST FLOATING FACILITY TO GO TO SEA
A short speedboat ride up the coast from the famous landmarks of the Palm and the Burj Al Arab lies Dubai’s DryDocks. It is almost a small city in itself, home to a multinational workforce of more than 12,000 people who have their own restaurants and entertainment, with the backdrop of Dubai’s dramatic skyline. DryDocks World is the fifth biggest shipyard in the world, currently carrying out more than six major projects, while the QE2 looks on, ready for its next cruising destination.

Under the chairman HH Sheikh Ahmed bin Saeed Al Maktoum of Dubai World and DryDocks World chairman HE Khamis Buamim, the company refocused its activities from ship repair to the oil and gas industry in 2010, on the grounds that merchant shipping was not going to grow, but that engineering for energy projects would remain in high demand for at least the next 20 years. The benefit of this shift of activity, including rig refurbishment and repair, is clear to see.

One of the largest of these projects under construction is a 96-metre tall turret for the world’s first floating liquefied natural gas (FLNG) project. Its aim is to unlock new offshore energy resources, and in the process revolutionise the way natural gas resources are developed. The floating facility will chill natural gas produced at the field to \(-162^\circ C\), shrinking its volume by 600 times so it can be shipped to customers in other parts of the world. Ocean-going carriers will load the LNG as well as other liquid by-products such as condensate and LPG for delivery to market. The Prelude FLNG facility will be 488-metres long and when fully loaded weigh more than 600,000 tonnes. It will be the largest floating facility ever sent to sea, displacing as much water as a fleet of six US Navy aircraft carriers. The bulk of the facility is under construction at Samsung Heavy Industries’ Geoje Island in South Korea, but the turret is taking shape in Dubai and will be shipped to Asia in segments for assembly.

“There are six modules,” says Mr Buamim. “The first module is ready and has been shipped. The work is very interesting, technically challenging and as it has to stay in operation for 25 years, the precision and quality needs to be top. It’s a mammoth project in its own way. This is the largest non disconnectable internal turret ever built in the world and the most sophisticated.”
“LARGEST NON DISCONNECTABLE INTERNAL TURRET EVER BUILT IN THE WORLD”
More than 800 workers have laboured to bring the vision of Shell to life. The turret is where the anchor lines and gas lines come together with the facility. While the facility moves freely the turret remains stationary depending on the waves, wind and current. The turret also contains a fluid transfer system called a swivel stack which is designed to safely and reliably transfer the gas and other associated fluids between the subsea system and the topsides. The swivel stack is made up of many layers of bearings stacked on top of one another, and will look rather like giant doughnuts.

“The anchor tower is the biggest fixed internal tower ever built,” says Didrik Reyment, project director of Prelude FLNG. “My responsibility is to make sure that the Prelude FLNG facility including the turret is built safely, and that it is a safe and operational facility, and make sure that this all gets done on budget and on time.” The size and complexity of the FLNG structure, where the LNG, LPG and condensates will be stored, was one of the biggest engineering challenges. Prelude FLNG is the first LNG facility where the designers had to take into account the centre of gravity and the weight of the installation.

The floating production facility will produce 3.6 million tonnes of LNG every year and 1.7 million tonnes of LPG and condensates. Once constructed, the facility will be towed to its location, approximately 200 kilometres off the northwest coast of Australia. The facility will be moored and hooked up to an undersea infrastructure. It has been designed to withstand the unlikely event of powerful tropical cyclones, and will remain permanently moored at the location for around 25 years before needing to dock for inspection and overhaul.

Dubai DryDocks has its own in-house team of designers, who coordinate with a joint team of engineers from Single Buoy Moorings (SBM), Technip and Shell’s own engineers. “As you will appreciate in a project like this you will always have changes or development while you are developing it,” says Mr Buamim. “We have a team, including Shell personnel, located in Dubai, who are on hand to see how the work progresses and solve any challenges that may occur.”

This is the biggest engineering offshore process that DryDocks has ever undertaken. Like Shell, Dubai’s DryDocks World takes safety very seriously. “We have introduced ‘zero harm’ as a concept and have just completed 21 million hours without an incident,” he says. “I am very proud about this. It is an incredible number, safety means everything to us: we want people to go home to their families safely.”

DryDocks World has also taken great strides as an environmentally responsible shipyard, successfully recycling 85 per cent of its waste, up from 79 per cent from the year before. “We believe our human assets to be the most important thing we have,” he says. “We have a huge medical centre; we need to look after our people who work in shifts that run 24 hours a day.”

Mr Buamim says that it has been a pleasure working with Shell. “It’s been exceptional, Shell is a great company, I have always admired it, Shell always looks ahead and shares its knowledge base with other companies,” he says.

“The Prelude FLNG Facility Will Displace As Much Water As A Fleet Of Six US Navy Aircraft Carriers”

HE Khamis Juma Buamim,
Chairman of Drydocks World
and Maritime World

FLNG VESSEL LENGTH IN PERSPECTIVE

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Some observers regret that the Middle East and North African countries have not yet created an integrated network of pipelines for gas delivery. They argue that politics, geography and cultural differences should not be used as an excuse to delay the construction of the necessary infrastructure. However, there is an alternative view. One could almost argue that the preference for Liquefied Natural Gas (LNG) is a more modern solution, a wireless network if you will, compared to pipeline gas. “There are a number of advantages to LNG in the region,” says Mr. Moon Hussain, Shell’s General Manager of LNG in Doha where Shell has a 30% stake in Qatargas4. “LNG gives the buyer the freedom to access the global market, rather than just the neighbour with an over-supply of domestic gas. This can bring with it security of supply and the flexibility to source supplies from other regions.”

What can be seen is the increasing demand for gas in the Middle East. This is coming from a growing population that needs energy, but also from industry that requires power and feedstock. And LNG is often preferred over piped gas for a number of reasons. These include the fact that few countries in the region have plentiful sweet gas, there are pipeline issues which LNG can circumvent, and that the subsidies surrounding...
domestic gas make it easier to price. “There is a clear aspiration from customers that they can buy not just from anyone in the region, but from anyone in the world,” says Mr Hussain. “That is one of the reasons preventing the creation of a grid.” But is it wise to rely on an LNG market, even if it is local? “The supply and demand balance in the global LNG market is tight at the moment,” says Mr. Hans Stinis, Shell Integrated Gas Strategy & Portfolio Manager. “But this doesn’t mean that the lights will go out anytime soon.” The decline in European LNG imports is rebalancing the global LNG market. The ongoing recession means that European demand continues to be weak and overcapacity in European power generation, combined with low CO2 prices, in Europe is resulting in a resurgence of coal in Europe.

According to Mr. Domenico Dispenza, president of the International Group of Liquefied Natural Gas Importers (GIIGNL), LNG capacity additions have been insufficient to make up for the higher loss of capacity due to planned shutdowns and unscheduled production interruptions, mainly resulting from a shortfall of feed-gas. “As a result, in 2012, LNG trade declined by 1.9%, the first drop in 30 years,” he says. At the same time, LNG demand continues to be strong in China, Brazil, India and Japan, the latter because of the closure of its nuclear power plants following the 2011 Tohoku earthquake.

MENA remains the largest single source of LNG supply in the world, about 40% of the world’s total, according to the GIIGNL. However, not just for LNG but for gas in general there are supply issues throughout the region. Egypt, once the largest gas producer in North Africa, is no longer exporting at its previous levels and these are unlikely to recover. “Egypt has low domestic gas prices resulting in high internal gas demand,” says Mr Stinis. “Egypt could even become a net importer of LNG. This situation shows how artificially low domestic gas prices can lead to unintended consequences.” Algeria is one of the region’s biggest gas producers and has both LNG export infrastructure as well as gas pipelines to Europe. The new 4.7 mtpa LNG train at Skikda was scheduled to be operational in 2012 but has been deferred to this year 2013. Even so, Algeria is unlikely to fully utilise its export capacity. Across North Africa, Morocco has very little gas itself, but hosts a pipeline that ships gas to Spain. There has been talk of it building a regasification terminal to import LNG. On Algeria’s other side, Tunisia also has some gas of its own, but also relies on Algerian output. In Libya, the Marsa El Brega plant remains shut down as a consequence of the political tension in the country. >>
Qatar, of course, is the largest supplier of LNG in the world, accounting for 35.5% of the total global LNG production. It is followed by Nigeria (15.2%) and Trinidad (8.7%). Qatar is expanding its supply footprint in the region, with LNG sales to countries like UAE and Kuwait and more recently a swap agreement with Egypt in 2013 for 5 cargoes to ease growing summer shortages. Qatargas (of which Qatargas4 is a part) is the largest LNG producer in the world. Shell’s role is not only as an investor, but also has a number of other ways that it supports Qatargas and Qatar Petroleum, its partner in the Qatargas4 joint venture. “We bring in access to markets, shipping support, key staff, and also expertise,” says Mr Hussain. Qatargas Chief Operating Officer is a Shell secondee as are a number of other key staff. At the start of the project all of the production was under contract by Shell’s LNG trading arm, which over time has been diverted to third party buyers in Middle East and Asia. Other countries across the Middle East and North Africa are seeing the benefits of this flexible supply via LNG.

Outside the Gulf, Jordan and Lebanon are considering constructing import facilities. “There is a lot of demand for LNG in Jordan,” says Mr. Thomas Meijssen, Shell’s general manager and country chair in Jordan. “Current pipeline gas supply is intermittent, so the Jordanian Government has issued a tender for 5-year supply of LNG to power the country’s pipelines.” To help meet LNG demand, the world is waiting for the Australian projects to come on-stream, and also exports from the United States, with the US mandating its projects one by one to also export to non-Free Trade Agreement countries. “The world will need these exports to balance the future LNG market,” says Mr Stinis. “LNG demand will continue to grow with countries as for example China appreciating...
the benefits that gas brings in comparison to coal to support its growing economy."

Asia remains the continent importing the most LNG, some 70%, according to GIIGNL. In the MENA region, Iraq is flaring significant amounts of associated natural gas. The Basra Gas Company (BGC), a 25-year joint venture with state run South Gas Company (51%), Shell (44%) and Mitsubishi (5%), is working to capture, treat and monetize associated natural gas that is currently being flared in the license round 1 oil fields of West Qurna 1, Zubair, and Rumaila. Once domestic needs are met, BGC may consider developing LNG exports, a decision to be taken jointly with the relevant Iraqi authorities.

Ten years from now, the LNG business in the Middle East is likely to grow even bigger. Despite the lack of integrated pipelines, the Middle East’s LNG virtual network is growing rapidly, both in size and importance. ■
SHELL’S PRESENCE HELPS PUT SAFETY FIRST

NATGAS TAKES HEALTH AND SAFETY VERY SERIOUSLY DURING CHALLENGING TIMES

This summer was not the calmest in Egypt’s long and distinguished history. But as tensions flared on the streets, it was business as usual for NATGAS, a local gas distribution company. For the past four years it has been working with an NGO running a Technical Training Programme for Secondary School children during the summer in coordination with Arab Contractors Company, one of the largest contractors in Egypt, and this year was no exception. Courses were run in July, August and September, and no amount of political wrangling was allowed to derail them. On the contrary, the project has developed to include 6 new sponsoring companies this year. The aim is to give poor children the skills to become technicians, with the best given jobs when they finish school.

“The main objective,” explains Magdy Metwally, chairman and managing director of NATGAS, “was to prevent those kids from hustling during the summer in order to provide for their poor families. NATGAS supports the families so they can leave the children in the programme. NATGAS’s health and safety department also arranges necessary safety training for the kids and provides them with all Personal Protection Equipment.”

This obsession with safety – particularly in a country that was not renowned for such a feature – can be traced back to Shell’s involvement. NATGAS was set up in 1998 and Shell acquired 18% of it in 2001. Thus began a series of measures to increase the company’s awareness of the issues. “Once Shell was a shareholder, there was an increasing focus on health and safety,” says Zaki Youssef, HSE Manager at NATGAS. “Shell appointed an HSE adviser to fully support and assist NATGAS. Our team was coached by Shell to establish a new culture, and training was given to all staff. NATGAS also implemented HSE/MS step by step, implementing Hearts and Minds programme and Life Saving Rules.”

Shell World Middle East & North Africa

Shell’s Presence Helps Put Safety First
“NATGAS’S HEALTH AND SAFETY DEPARTMENT ALSO ARRANGES SAFETY TRAINING FOR KIDS”
Natgas is the largest private sector natural gas distribution company in the country, with four concession agreements in Alexandria, Beheira and two districts of Cairo, as well as the two large industrial zones of Borg El Arab and 6th October. It has nearly 800,000 domestic customers, 600 industrial Customers, 6,000 commercial customers, 10 CNG filling stations and two mega power plants of 3,000 MW total. It carries out the financing, studying, designing, supply, installing, commissioning, managing, operating and the maintenance of the natural gas distribution networks and facilities. It also converts customers into natural gas users and delivers the gas via pipeline networks.

At Pepsi Factory in the 6th October industrial zone on the outskirts of Cairo, the company is supplying gas that heats steam for cleaning Pepsi’s bottles. Much rigour is taken to ensure that correct safety standards are followed. “Shell has definitely been very helpful, we have started to follow and implement their standards throughout the business,” says Omar Massoud, assistant chairman of Natgas. “Since working with Shell as a partner we have achieved 10 million hours without lost time injury. We have also been granted the OHSAS18001, ISO 14001 and ISO 9001 certificates. We are working to the highest international standards.” Jeroen Regtien, Shell’s Egypt Chairman commented favourable on NatGas safety performance, “The safety leadership demonstrated by NatGas management is highly commendable and Shell will continue to support NATGAS in achieving its safety objectives.”

The management is determined that this commitment goes right the way through the company, and that staff take some of these lessons home. On occasions it lines up special training sessions, such as a week-long health and safety awareness campaigns for school children in Kabary, Alexandria. NATGAS has also organised events for more than 1,000 children from orphanages in the company’s concession areas. “The health and safety of our employees are of utmost importance to our company, says Mr Metwally. “Protecting the wellbeing of employees and the public will always take precedence over the desire for expedience. Safety is a twofold commitment. The success of NATGAS’s safety programme relies not only on management’s commitment to provide a safe work environment, but also on the individual commitment of each employee to uphold safe working practices. Good physical health and a serious safety attitude are key contributions that employees must make in order to reduce injuries and promote an environment marked by safety consciousness. NATGAS will continue to do its best to create and provide the necessary programmes, information, and environment which will promote an injury free workplace.”

The young graduates of the Technical Training Programme can testify to NATGAS’s rigorous commitment to health and safety, as well as being grateful for learning something during the long hot summer, rather than hustling on the streets.
“SINCE WORKING WITH SHELL AS A PARTNER WE HAVE HAD 10 MILLION HOURS WITHOUT LOST TIME INJURY”
In a fold in a valley not far from Muscat lies the Five Oceans Fish Processing Plant. It’s an unusual place to find a fish factory, as you would normally expect to find one close to the ocean. Its nearest landmark is the Bidbid Castle, which looks like a giant version of a child’s sand castle. The Five Oceans plant is strategically located close to the intersection of a number of roads, so that fish can be driven from the coast more than 400 kilometres away, packaged, then quickly transported to the airport. The building is clean and white, like a Swiss pharmacy. Inside the factory, Dawood Al Wahaibi, the managing director of Five Oceans, is overseeing the handling of the latest delivery of fish. He buys the catch of small fishing boats along the coast, mainly around the Duqm region and further towards Yemen at Al Jazir. The fishermen start at six o’clock in the morning, are finished by lunchtime, then the catch is driven to Bidbid. “We guarantee to buy their catch, and loan them money for fuel and food, so they are pretty loyal,” he says. He is the son of a farming family, which moved to Muscat in the 1970s. “I’m a farmer without any land,” he says. “So I turned to fishing.”

He studied marine science at Rhode Island State University in the United States, and returned to work as a section head in a marine science and fishing centre. But the idea to open a fish factory was always in the back of his mind. His operation began after a visit to Italy in 1994. Two years later he started shipping fresh fish to the country, mainly sea bream, grouper and amberjack, using an intermediary to process the fish. He wanted to expand his business but, like many small and medium sized enterprises (SMEs), he struggled to find the backing he needed to open a processing factory of his own. “This type of challenge will be familiar to every entrepreneur around the world,” said Shell Foundation Director, Chris West. “It’s very difficult to find the right combination of skills and finance that you need to start-up or grow a business. As a result, countries miss out on a huge potential for job creation and sustainable growth.”

Shell Foundation has a mission to develop market-based solutions to global development challenges such as this. For the past decade, the Foundation has partnered with GroFin – a specialist SME development financier - to pioneer a solution to enable the growth of SME sector and generate jobs at scale. Building on their proven success in Africa - where support to local SMEs has already created over 14,000 jobs – Shell Foundation and GroFin launched Nomou with an aim to support 600 local SMEs and thereby create over 15,000 sustainable jobs in the MENA region. The MENA region has the highest unemployment in the world at over 10 per cent. The World Bank estimates that Arab countries need to create 100 million new jobs by 2020 to ensure sustainable social development and economic growth. >>
Through the Nomou initiative, local GroFin teams will provide a blend of support to viable startup and growing SMEs. “We are trying to invest where we can add value through providing critical business skills support and patient capital to SMEs in Oman and across the MENA region,” says Mr Sami Omar Al Hassan, General Manager of GroFin Oman. With the help of GroFin Oman, Dawood opened a new factory in November 2010. This included support to secure the best factory equipment from Europe. “The blast freezer takes the temperature down to -40 degrees in ten hours,” he says with obvious pride. “It preserves the precious oil of the fish. We ran into lots of problems with contractors early on. GroFin was both flexible and helpful and gave us lots of great advice and help with financial forecasting that enabled us to overcome these challenges.”

GroFin has supported over 20 other enterprises like Five Oceans in the last six years in Oman, investing $8 million and generating over 350 jobs. With support from Shell Foundation, GroFin has established other offices in Jordan and in Iraq, and is planning to open offices in Saudi Arabia and Egypt as part of the Nomou initiative. “We aim to give business support to more than 250 local SMEs, creating 2,000 jobs” says Alfinaz Murad, General Manager of GroFin Jordan. Shell is an active supporter of Nomou, particularly with respect to helping identify local SMEs that could benefit from the integrated support provided by GroFin in ways that help them access supply chain opportunities in the energy sector. Other active partners of Nomou include the Jordan Enterprise Development Corporation, UK’s Department for International Development, UK Aid and J.P. Morgan Chase Foundation.

Back at the Five Oceans fish factory, a catch of white gizzard from the Indian Ocean has arrived. The fish needs to be graded, cleaned and frozen before being shipped to Asia. Groupers, snappers, sea bream, emperors, amberjack, rabbitfish, yellow stripe trevally, sardines and barracudas all pass through these doors on the way to Brazil, Italy, Bangladesh, Egypt and many other countries. Dawood himself is clearly in love with his work: he keeps a boat just up the coast from Muscat and in his spare time goes out in search of his...
favourite catch, sea bream. Running the factory has been challenging but immensely satisfying, he says. “Developing the local SME sector is paramount” says Mr Al Hassan. “GroFin help these businesses because we are quick, competitive and base our support on the viability of the SMEs business plan as opposed to the availability of collateral. Job creation at scale is what the region requires, and we like to think Nomou will help achieve this.”

ABOUT SHELL FOUNDATION
Shell Foundation is an independent charity set up by Shell in 2000 to catalyse enterprise-based solutions to tackle global development challenges at scale and in ways that are sustainable. The Foundation has pioneered a model that uses business thinking, patient grant funding and extensive business support to address issues such as access to energy, urban mobility and sustainable job creation. It now has several long-term partners that are achieving large-scale impact across Asia, Africa and Latin America.

“NOMOU AIMS TO CREATE OVER 15,000 JOBS THROUGH SUPPORTING THE SME SECTOR IN MENA”

Local fresh fish from the Gulf of Oman
Sonatrach’s fourth ever employee looks at us with intense black eyes and bangs his fist down on the table for emphasis. “I was Sonatrach’s first exploration manager, many people were sceptical that we would be able to operate and find oil. Even within the Algerian media, they said that we would never be able to do it alone,” he says. “But we struck oil with the first well we dug. How? We knew that the Tunisians were drilling on the other side of the border. I told the army to take us as close to the border as possible, so close that we could see their derricks. I said it’s going to be here. Then we drilled and ‘hey presto’, there it was. Black gold. It was December 1965.”

Nordine Ait-Laoussine’s life is one of succeeding against the odds. The eleventh child of an Algerian family who grew up in poverty in Algiers, he went on to become a militant political activist, a successful oil executive, a consultant to...
OPEC, Algeria’s oil minister and, along the way, a hostage of Carlos the Jackal. A keen student, he grew up when Algeria was still considered part of France. He was the first member of his family to study beyond primary school, something he attributes to the fact that with his father’s death, his mother was compelled to work and thus able to pay for his education. “She went to work as a maid,” he says. “Can you imagine? So I was able to study. My mother was exceptional.”

When he was 18, the opposition to French rule within Algeria became serious. The Front de Libération Nationale (FLN) called for all students to strike. As a committed Algerian nationalist, he stopped going to school. To occupy his time and to contribute to the family budget he got a job at Shell, helping as an accountant. “I was on the second floor of the beautiful Shell building in Algiers,” he says. “This was my first job in the oil industry. I enjoyed it and got a relatively good salary.” Six months later the call went out for a general strike. Again he heeded the call, although it was only for a week, before returning to Shell. In 1957 he had to leave the country abruptly, as his political activities were arousing the suspicions of the French police. “I had to run away otherwise I’d have been caught and put in gaol,” he says.

He fled to Carcassonne in south-west France, with the hope of continuing his studies. A keen and useful footballer, he managed to convince the principal of a local college to take him on, partly on the promise that he would play in the college football team. “On January 3, 1958, I went to Carcassonne. I stayed a week, playing in the first team against Narbonne on the right wing. I scored the only goal of the match. But just after the final whistle I received a message that the local police were looking for me in Algiers. I didn’t go back to my lodgings, but stayed instead with a Hungarian friend who was also in the soccer team. Next day I took a train to the Toulouse airport and saw everybody reading the paper about our footballing success. I managed to catch a flight to Morocco and safety.”
At the University of Rabat he studied geology. Many of his contemporaries went to study in Eastern Europe, but he was offered an FLN scholarship to attend the University of Michigan to study for a master’s degree in petroleum geology. That successfully completed, he was in the process of studying for a PhD when a call came from one of the new leaders in Algeria. “You don’t need a PhD, you need to come back home, there’s work to be done.” He returned to Algiers in December 1963 to newly independent Algeria, the same month that Sonatrach was formed. “Why was it called Sonatrach?” he asks. “The clue is in the original name: Société Nationale de Transport et la Commercialisation des Hydrocarbures. It was created to build and run a pipeline. The French offered us minority stake in the pipeline. We said no, we want 50%. A few months later, they came back, and said okay. We said no. Now we want 100%.”

Soon, of course, Sonatrach went beyond just transportation. It wanted to explore, to drill, and to operate. Mr Ait-Laoussine, still not 30 years old, in control of a budget of 100 million dinar (about $25 million now), set about finding oil and gas in the country and exporting it. In 1964 Algeria was the first country to start producing...
Liquefied Natural Gas (LNG). He was involved in everything, even renegotiating the Evian Agreement, part of the settlement for Algerian independence that left much of the Sahara (and its valuable oil and gas reserves) under French control. In 1965 he was part of the team that had successfully concluded the Algiers Agreement, which returned full control of the Sahara to Algerian hands. Sonatrach was on the way to becoming the country’s biggest employer, particularly in 1971 when everything was nationalised. “Sonatrach had more than 200,000 employees by then, the biggest company in the country, we had very ambitious goals,” he says. “The 15 years or so that I was involved in Sonatrach were probably the happiest of my life. We were all young, all working with the same salary, the same target in mind; we all wanted the same thing.”

Even so, 1971 was challenging. Algeria’s oil exports dropped by 40%. The country managed to conclude a deal with Total in a couple of months, but in the meantime it had sent a Boeing plane and taken all its 300 technicians back to France. The negotiation with other French companies dragged on. “We paid Total $100 million,” he says. “Peanuts. The cost of drilling a couple of wells these days. But Total stayed in the country and is still working there today, so I guess it turned out right for them too.”

The problem for Sonatrach was then not so much the production, but the marketing. Mr Ait-Laoussine was switched to head the downstream marketing efforts, and by the end of the 1970s sales were buoyant. The intervening years had not been uneventful. At 9 o’clock on a Sunday morning in December 21, 1975, while attending an OPEC meeting in Vienna as part of the official Algerian delegation, Mr Ait-Laoussine suddenly heard gunshots. A group calling itself the “Arm of the Arab Revolution”, led by Carlos the Jackal, burst into the room. A Libyan delegate tried to stop him and was shot. “I found myself under the table. We were all there, although none of us remember how we got there,” he says. “We looked at each other. All under the tables. What was happening? The delegates were split into four groups, depending on how well they were perceived to be treating the Palestinian’s cause. Then the Austrian police stormed the room. Carlos’s girlfriend returned fire and they retreated. I heard a voice say: ‘Get the dynamite out’. ‘Carlos said that he would blow up the building and shoot a delegate every 15 minutes, starting with the Saudis.”

“I gave me my first job in the oil industry”
>> After a largely sleepless night, although Mr Ait-Laoussine says that he slept well. “I didn’t have any worries whatsoever”, Carlos and his gang boarded a plane the next day with a number of hostages. Most of the Algerian delegation, including Mr Ait-Laoussine, was excused from the trip. The plane went to Algeria, Libya, was refused permission to land in Iraq, and then returned to Algeria, where all the hostages were freed. “Other than the distasteful things that he did, you would like Carlos as a person,” he says. “He was an impressive personality, although you would never condone his actions.”

These events in Austria did not deter Mr Ait-Laoussine from returning to Vienna in 1980 and to advise OPEC. A new oil minister had been appointed in Algeria and the two men did not see eye to eye. “I took a two year leave of absence hoping things would change,” he says. “It has lasted quite a bit longer.” He set up his own consultancy called Nalcosa, based in Geneva.

At the same time he helped set up the International Energy Development Corporation. Its first chairman was Maurice Strong, who later chaired the Rio Summit in 1992. The IEDC later merged into Kufpec, a Kuwaiti company.

In 1991 a close friend of his, Sid Ahmed Ghozali, who had been head of Sonatrach, became prime minister. “He called me and said I want you to come back to be oil minister,” he says. “I accepted; it was a chance to go back on my terms.” His return coincided with an election that saw the Islamists win the vote. The army stepped in. A new president, Mohamed Boudiaf, was appointed. Mr Ait-Laoussine was with him when he was shot and killed. “I was standing next to him, I still bear the scars on my hands. His death made me decide not to stay in politics anymore,” he says.

One thing he achieved as oil minister was the privatisation of Algeria’s oil industry. “I was able to do it because I was heavily involved in the 1971

### THE LIFE AND TIMES OF NORDINE AIT-LAOUSSINE

- **1936**: Born in Algiers
- **1958**: Meknès Baccalauréat
- **1960**: University of Rabat Degree in Geology
- **1962**: University of Michigan Master’s degree in Petroleum Geology
- **1963**: Joins Sonatrach
- **1979**: Leaves Sonatrach

- **Today**: Lives and works by Lake Geneva
- **1980**: Sets up Nalcosa
- **1985**: Chief Operating Officer Kufpec
- **1981**: Managing Director IEDC
- **1991**: Advisor to OPEC
- **1991**: Becomes oil minister
nationalization process in the first place,” he says. “I did it with a lot of enthusiasm as part of the revolutionary spirit. Twenty years later I took the initiative to privatise it with similar zeal, allowing more foreign companies back into the country. Our production was down and we were losing out technologically. Sonatrach was not weakened, instead my aim was for it to grow.”

For the past 30 years he has lived and worked by Lake Geneva. He continues to follow the energy business closely, along with events in his native country. “There is no question that Algeria has tremendous resources, number three in the world in terms of reserves of shale gas,” he says. “But there is too much bureaucracy and too many delays. Nobody is willing to take radical decisions. I hope with the new leadership that things will change. But don’t forget I am part of the old guys and we always think we did it best.”

“The 15 years or so that I was involved in Sonatrach were probably the happiest of my life.”

After the completion of the first exploration for 1965
Some Jordanians probably think they have been dealt a poor hand with their hydrocarbon reserves. With many of their neighbours awash in oil and gas deposits, all the Hashemite Kingdom of Jordan seems to possess is rocks and empty plains. However, these rocks contain some of the richest deposits of oil shale in the world. Could they provide the answer to the country’s energy needs?

“Over 95% of the country’s energy needs is imported at the moment,” says Thomas Meijssen, General Manager and Country Chair for Shell in Jordan. “Oil shale is an unconventional resource with massive potential.”

The Jordan Oil Shale Company (JOSCO), fully owned by Royal Dutch Shell, was set up in Jordan in 2009 to explore for and evaluate the commercial potential of the deeper layers of Jordanian oil shale and the possibility of turning rock into oil. Out of 220 staff, 95% are Jordanian. Today two teams, each consisting of 20 vehicles and 20 people, are crossing the country’s desert, gathering samples. The company was awarded a concession area of 22,270 km² to explore, nearly a quarter of the country, but is trying to narrow it down to a 1,000 km² area for potential operations in the future. Shams, Sun in English and Gammar (“moon”), are the names of the two drilling rigs and teams. They work 24-hour shifts, with the members doing two weeks on and two weeks off. Together they have drilled hundreds of wells for data gathering operations. At a site south...
east of Amman the Gammar team is shifting from one site to another. The trucks packed, the drivers briefed, they set off in a dusty convoy, each vehicle taking care to stay at least 50 metres behind the one in front, on the way to the next drilling site. Great emphasis is paid to safety. The convoys have covered more than 3 million kilometres without an accident, but before they move, Hassan Hleihel, Logistics Supervisor at JOSCO, gives them all a briefing on what they are doing and where they are going and reminds the team that safety is our top priority.

At the next site the convoy sets up camp, the drill is lowered into an existing well – they are here to check up on progress and take a couple of further samples – and work begins. Some of the wells are dug to more than 1,000 metres. Most of the oil shale rock, which contains kerogen, a valuable mixture of insoluble organic material that can be turned into oil, lies buried below the surface. “We’ve learnt a lot of lessons as we’ve drilled,” says Firas Abdullah, a Rig-Site Oil Shale Engineer with Gammar. “And we’ve got quicker. There are a lot of things to look out for.”

Khaled Alzoubi, a Well Engineer who was one of the first Jordanians to join the company, says that the aim of the drilling is to find the ‘sweet spots’, the areas where the rock offers the best potential and richest deposits of kerogen. “Jordan’s geology is sophisticated,” he says. “You could wait for a few million years for this oil shale to turn into oil. We are trying to speed up the process.”
Every day samples from the drilling operations are driven to JOSCO’s Geo-Chemical laboratory in Amman, which is unrivalled in the Middle East. There a dedicated team of Jordanian staff with top of the line equipment crushes, washes and dries the samples, before they are sent to another part of the laboratory for further testing. Then a Fischer Assay test carries out thermal cracking to find the oil yield in every rock. More than 120,000 samples have been processed over the past three years which is a great achievement. These tests have revealed a promising site where a field experiment is due to take place middle of next year. The site itself offers few clues to its potential, just a dusty strip undistinguishable from the rest of the landscape that is being levelled. But here a number of wells are going to be drilled in a circle, with a well in the middle. Heated rods will be placed in the wells, and the process of cooking the rock to make it molten will begin.

The technology, developed by Shell, is called the In situ Conversion Process (ICP). The heating pyrolyses the organic matter in the oil shale and converts it into oil and gas underground. Pyrolysis is the application of heat to chemical compounds in order to cause decomposition. The decomposed matter is then extracted using conventional techniques. It’s a technique with less surface footprint and could produce larger volumes than the technologies used by other oil shale developers to extract oil shale, which strip mines the rock and then cooks it, creating shale ash that needs to be disposed of, as well as unsightly gashes in the landscape. In a series of field tests since the 1980s, the ICP technology has been proven to work technically in Colorado, United States of America; the Jordan Field Experiment is designed to demonstrate it works in the oil shale deposits of the country. The subsurface will be heated. By the spring of 2015, the Field Experiment could be producing small amounts of oil.

“We have a 120 year concession to operate,” says Mr. Meijssen. “So we have a longterm vision. Obviously solar power at some point could be considered for heating the rods, but at the moment we are considering a number of other options. Whichever we choose, we are helping Mother Nature by heating the rock and converting it into oil and gas for extraction.”

JOSCO is unique within Shell for owning and operating its own equipment, and not using subcontractors for JOSCO operations. However, JOSCO works together with local suppliers to enhance their competencies, by training and developing them while collaborating with the government in Road Safety and Transport. They are all willing the project to succeed. “We’ve also had tremendous support from Government, Ministers and the King,” says Mr. Meijssen. “Now we are working together with all entities to deliver this project safely and responsibly, to face Jordan’s Energy Challenge.”
“WE ARE WORKING TOGETHER TO DELIVER THIS PROJECT SAFELY AND RESPONSIBLY”