PARTNERS ON IRAQ’S ENERGY JOURNEY
CELEBRATING TWO YEARS OF OPERATIONS AT BASRAH GAS COMPANY

ALSO IN THIS ISSUE:
Exploring Egypt’s energy potential in the western desert
The Assil Karam fields began production
Innovation Driving Development
Shell Kazakhstan
The power of strong partnerships cannot be underestimated. In over three decades with Shell, I have witnessed the success of Joint Ventures that bring together the best talent, technology, and expertise to achieve industry leading results for all the partners.

Shell has a long history of successfully working together with host governments and national oil companies across the globe. We share our strong operational, financial and technical capabilities, while learning from the local knowledge and experience of our partners. I am proud to say that our ventures in Iraq share that heritage of cooperation and expertise, and are on track to meet the aspirations of our partner, the Government of Iraq, to develop hydrocarbon and human resources while improving the lives of millions of Iraqis.

Iraq has the world’s third largest proven oil reserves, and Shell is one of the largest and most committed investors of its energy industry. Working across major projects like the Majnoon oilfield and the unique mid-stream Joint Venture, the Basrah Gas Company (BGC), Shell and its partners daily deliver the technical experience and expertise that will help Iraq regain its place as a major player in the global energy market.

As Managing Director of BGC, I am very proud to be a part of this. I feel privileged to be leading over 5,500 fine staff who together form this unique Iraqi company. At BGC we recently celebrated our second anniversary. In barely 24 months we have made great strides in support of the Government’s vision to capture and process previously lost gas, doubling production and delivering the energy to transform people’s lives. At the same time we are developing a strong cadre of local Iraqi professionals who will manage future challenges with minimum external support.

Knowledge sharing and successful partnering are at the very core of Shell’s values, it is why companies and governments seek us out as a partner. This latest edition of Shell World Joint Ventures magazine showcases several examples, including the safe and successful development of the Assil-Karam gas fields in Egypt and the completion of Malaysia’s second deep-water project, Gumusut-Kakap. These projects demonstrate the power of joining local experience with Shell’s global knowledge and technology.

As the oil and gas industry ventures into more technically demanding areas, excellence in partnering becomes ever more important. At Shell we continue to develop strong partnerships and foster local talent, as we work together to meet the energy challenges of the future.

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Cover image: Boats cross the Shatt al-Arab waterway which leads to the port of Umm Qasr, near Iraq’s second largest city of Basrah.
Photographer: Nabil al Jorani
One of the Iraqi BGC secondees working at the facility
PARTNERS ON IRAQ’S ENERGY JOURNEY

CELEBRATING TWO YEARS OF OPERATIONS AT BASRAH GAS COMPANY

“PROVIDING CLEAN AND RELIABLE ENERGY TO OUR PEOPLE IS OUR TOP PRIORITY.”
Unlocking Basrah’s Rich Resources

Emerging between the lush, fertile land in southern Iraq where the ancient Tigris and Euphrates rivers meet, Basrah overflows with an abundance of natural oil and gas resources. Considered the cradle of civilisation, Basrah possesses enough oil and natural gas to provide power to an area far beyond its borders. With the third largest proven oil reserves and the 11th largest natural gas reserves in the world, Iraq’s natural and human resources hold the key to unlocking a secure source of power and prosperity for a country that has suffered from three decades of conflicts and debilitating sanctions.

Basrah Gas Company: The Largest Gas Investment in Iraq’s History

Mandated by the Iraqi Government, Basrah Gas Company (BGC), the largest gas investment in Iraq’s history, was inaugurated on May 1, 2013, together with partners South Gas Company, Shell and Mitsubishi. Designed to be a unique, fully integrated Iraqi midstream energy company, BGC gathers and processes flared gas from three giant oilfields - Rumaila, West Qurna 1 and Zubair - and turns it into dry gas for power generation, liquefied petroleum gas (LPG) used for bottled gas and condensate for fuel. The treated gas is then sent back to South Gas Company for distribution within the country.

Currently celebrating its two year anniversary, BGC has already achieved many significant operational milestones, including doubling the volume of gas processed to levels last seen a decade ago and is on track to quadruple the gas processing capacity. This is a substantial achievement on BGC’s support of the country’s journey towards a sustainable energy industry and turning one of its most precious resources into useable power for the region. Mr Simon Daman Willems, Managing Director of Basrah Gas Company, notes, “BGC is a key part of the government’s aspirations for the entire country and has the potential to really change the lives of all Iraqis.”

Prior to 2013, as southern Iraq increased the rate of oil production, up to 70% of associated gas was being flared, losing millions of dollars each day of the country’s valuable resources. Seeing much of the wealth of Basrah’s gas resources literally going up in smoke, while Iraq’s population suffered extreme electricity shortages in the summer with temperatures regularly reaching 50 degrees Celsius, was upsetting to Mr Ali Hussein Khudair, Director General of South Gas Company, particularly since Basrah Province possesses enough natural gas to supply the whole of southern Iraq and beyond. BGC was created from this vital need that Basrah capture and process this gas to provide the country with the secure and reliable power that is fundamental to any modern society. >>
510 MMSCF/D: HOW DOES IT HELP IMPROVE PEOPLE'S LIVES

IT IS THE RESPONSIBILITY OF THE COMPANIES THAT RUN THE THREE GIANT OIL FIELDS OF RUMAILA, ZUBAIR, AND WEST QURNA 1 TO CAPTURE THE NATURAL GAS AND SUPPLY IT TO BGC. OTHERWISE, THIS GAS IS FLARED.

RECEIVING 510 MMSCF OF GAS PER DAY

COMPRESSOR STATIONS

NR & KAZ NGL PLANTS

POWER PLANT

432 MMSCF/D DRY GAS CAN GENERATE AROUND 1700 MW ELECTRICITY FOR MORE THAN 3,500,000 HOMES

TURNING IRAQ’S WASTED RESOURCES INTO RELIABLE POWER SUPPLY TO LIGHT UP THE LIVES OF IRAQI PEOPLE

~550 TONS/D CONDENSATE FUEL FOR MORE THAN 4,000,000 CARS

TURNING IRAQ’S WASTED RESOURCES INTO EFFICIENT ENERGY TO FUEL THE LIVES OF IRAQI PEOPLE

2825 TONS/D LIQUIFIED PG ~140,000 LPG CYLINDERS PER DAY

TURNING IRAQ’S WASTED RESOURCES INTO CLEAN ENERGY THAT IMPROVES THE LIVES OF IRAQI PEOPLE

IT IS THE RESPONSIBILITY OF THE COMPANIES THAT RUN THE THREE GIANT OIL FIELDS OF RUMAILA, ZUBAIR, AND WEST QURNA 1 TO CAPTURE THE NATURAL GAS AND SUPPLY IT TO BGC. OTHERWISE, THIS GAS IS FLARED.
Safe Natural Gas Liquid (NGL) storage tanks

Rehabilitation efforts included 1,800 kilometres of pipelines, more than 18 compressor stations, two major gas processing plants, and a marine and storage terminal. In just two years, BGC has not only significantly reduced flaring, but is on track to recover from 30 years of low investment in the energy infrastructure.

Recently, BGC achieved a record 515 million standard cubic feet per day (mmscf/d) of raw natural gas and produced a record 3,075 tonnes of LPG, equivalent to supplying more than 150,000 gas cylinders a day. Through the rehabilitation efforts, BGC has also increased its raw gas processing capacity to 650 mmscf/d, roughly equivalent to the amount of electricity that could power more than seven million homes, much more than the entire population of Basrah.

The BGC team is also upgrading the North Rumaila Natural Gas Liquids plant in addition to the West Qurna 1 field gas gathering system. At the first stage, this will allow the company to capture an additional 100 mmscf/d towards the end of the year, and more will be possible through greater collaboration. Mr Khudair adds, “Bringing more gas from the wells to the light switches and power sockets of people’s homes…”

Two Years of Growth: Delivering on a Vision for a Prosperous Iraq

Two years into the journey, BGC has become a professional, modern Iraqi company that is on its way to securing a leading position in the country’s energy industry and delivering on the Government’s energy vision. “BGC is adding tremendous value to the economy,” adds Mr Khudair. Today Basrawis are “getting a more reliable electricity supply because of the gas that we’re capturing and bringing into the grid,” adds Mr Daman Willems.

A major part of this rehabilitation includes the inspecting, repairing and upgrading of nearly 1,800 kilometres of pipelines – roughly the distance from Basrah, Iraq to Ankara, Turkey as well as more than 18 compressor stations, two major gas processing plants, and a marine and storage terminal. In just two years, BGC has not only significantly reduced flaring, but is on track to recover from 30 years of low investment in the energy infrastructure.

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“WE CAN SEE THE FLARES ON THE HORIZON GETTING LOWER.”
not only requires investment in assets and capabilities, but also cooperation between oil producers and BGC.”

**Developing Iraq’s Human Capital**

BGC is also developing the capacity of another one of Iraq’s greatest resources – its human capital. BGC employs technical experts from more than 30 different nationalities and more than 5,000 local Iraqis spread over more than 22 different locations across southern Iraq. “We are bringing together the best of South Gas Company and our international partners to create a solid foundation for BGC’s future,” says Mr Daman Willems. BGC is keen to capture the extensive local knowledge that kept the energy infrastructure running for the past three decades whilst providing world class development programmes that give Iraqis the opportunity to achieve internationally recognised standards.

As part of this development process BGC offers robust training programmes to upskill current and future generations of Iraqi leaders within the company. Training subjects range from learning and development focused on health, safety, security and environmental (HSSE) training to project management and technical courses. To date, BGC has delivered double its targets of more than 65,000 man-days of training to the Iraqi staff. BGC also focuses on developing the local supply chain, awarding more than 1,000 purchase orders to Iraq-registered companies, expanding the economic impact for the benefit of Basrawis by adding millions of dollars into the local economy.

Mr Khudair says: “IOC’s have a large role to play in the transfer of knowledge, and I hope to see even more training and collaboration in the future,” echoing the desire Mr Daman Willems sees in the local Iraqi talent who continuously want to improve their skills. Mr Daman Willems adds: “Even though the BGC team work under very difficult circumstances in a frontier market, they are very positively engaged. They really see themselves making a difference.”

**Partners in Iraq’s Future: A Look Forward**

While BGC has achieved much in the past two years of operations, there remains much more to do. BGC’s future success will require the long-term effort of a united, high-performing team to build Basrah Gas Company into a regional energy leader. Mr Daman Willems says: “Our aim is for BGC to become a world-class Iraqi company that through safe and profitable growth, contributes to an improved standard of living and increases the opportunities available for hundreds of thousands of Iraqis.”

As the Iraqi output increases, BGC is moving into a second stage of development, working towards achieving the government’s ambition of bringing the total gas production capacity to 2 billion scf/d, which has the potential to supply enough dry gas to replace more than 140,000 barrels of fuel each day. As Mr Khudair says: “Providing clean and reliable energy to our people is our top priority,” which highlights the importance of BGC’s role towards realising this objective.

“We still have a long way to go to meet Iraq’s future demands, but people are really looking to the future,” says Mr Daman Willems, “but with the combined efforts and support of our stakeholders and our staff, we can see the flares on the horizon getting lower, more electricity being delivered into the grid, more money flowing into the economy, and we are proud that BGC is an integral part of realising Iraq’s full energy potential.”
All eyes are on Shell’s Pearl Gas-to-liquid (GTL) plant as Qatar Shell delivers the biggest turnaround (TA) in the company’s history. Located in Qatar, Pearl is the largest GTL plant in the world, considerably larger than Shell’s other GTL plant in Bintulu, Malaysia.

Turnarounds are a critical part of any plant’s life cycle and are usually scheduled to take place every four to six years. By shutting down production, the plant can be opened up for inspection to verify the integrity of equipment, replace worn components, make modifications that cannot be done while the plant is in service and most importantly, maintain safety. Pearl GTL began the shutdown of Train 1 in February, 2015, and this will be followed by Train 2 in 2016. “Pearl is a project that has broken records and achieved a number of industry breakthroughs in scale, safety and innovation, and this event is yet another first for Pearl GTL,” says Mark Pattenden, the Train 1 Asset Manager, due to take over the reins as Pearl GTL General Manager in May, 2015. >>
Remarkably, Pearl GTL has the capacity to produce 140,000 barrels of GTL products each day, as well as 120,000 barrels of upstream products including ethane, sulphur, LPG and condensate. “The team developed detailed plans and schedules to make sure that during Turnaround not a second is wasted,” explains Pattenden, who joined in 2014. “It was important that for every minute of downtime, value was being added, doing the right things, spending time and money effectively, all to ensure that the plant starts up safely and runs reliably for another six years.”

Although the mechanical work was planned to take six weeks, the meticulous planning for the event took three years. It included 20 major milestones in the turnaround phase and 50,000 activities, including mechanical, electrical, etc. Carlos Gamio, the Site Turnaround Manager, is no stranger to this process. He has spent more than two-thirds of his 32-year career in the oil and gas industry, working primarily on turnarounds. He states pragmatically, “This was never going to be an easy task. For a major undertaking like this, it was not possible to be over-prepared or over-vigilant.”
Pearl GTL runs two trains each consisting of almost 30 utility and process units per train. The first event, which began in February, 2015, required an integrated team to systematically shut down each of the individual, but interconnected, units until the entire first train comes to a complete stop. All of this has to take place while keeping the second train operating normally. The whole sequence is carefully orchestrated to ensure the shutdown goes smoothly, without impacting the running train.

A turnaround has to be done right the first time to avoid delays and most importantly, to prevent problems and safety issues during re-start. Gamio understands more than most, “We had a lot of work to do to make sure that we had a truly integrated plan and that it was carefully synchronised across all units. What really makes this difficult is that Pearl GTL is a new site with no previous turnaround history.” No two turnarounds are ever the same, and even with an extensive planning team who boast years of turnaround experience, nothing can beat historic knowledge when it comes to planning. “The first stage in planning a turnaround is usually to refer back to the lessons learnt from the last turnaround,” states Richard Boll, the Turnaround Operations and Integration Manager. “We’re all used to come from sites where there’s a corporate turnaround memory of the operations and contractors. We have none of that. We’re breaking new ground.”

And while time is money when it comes to a turnaround, the most important success factor for Shell is safety. Above all else, a turnaround is remembered for its safety performance. “The money and time can usually be explained if you go over, and the overtime can be forgiven. If you hurt someone, it never goes away,” says Pattenden. As for all operations in Shell’s portfolio, Goal Zero is the top priority. Goal Zero means no one gets hurt, there are no quality defects, and no leaks when the train is re-started.

In 2010, the Pearl GTL project set a new safety record for both Shell and Qatar, when it reached 77 million hours without a single injury leading to time off work. Ronald Smits, the Health, Safety, Security and Environment (HSSE) Advisor for the Turnaround, has been leading the drive to ensure that this safety legacy continues. Smits joined Shell in the late 1980s as a...
field operator, climbing the ladder in operations by working on turnarounds as an operator, shift supervisor and production supervisor. The combination of his operational experience and living and breathing Shell’s safety standards for more than 30 years, made Smits an ideal person to lead turnaround safety. “Safety is a culture. It’s a culture that we at Shell developed over the years and not everyone coming into Shell for the turnaround was aligned with that culture.”

During the maintenance phase of the turnaround an additional 5,000 workers and contractor-partners were on site. It was Smits’ job to ensure that each of these new people understood the Shell safety culture and was aligned to our Goal Zero mantra. “One of the biggest things we organised from an HSSE perspective was to provide extensive awareness training for the contractors,” says Smits. Workers came from around the world so language alone was a huge barrier which we had to overcome.

For almost three decades, Shell has been working on creating systems and processes to streamline turnarounds. An important part of these processes is a detailed review of lessons learnt from previous events. While this was not possible in the planning stage of Train 1, key lessons learnt in 2015 will be critical for the Train 2 Turnaround. Generally, planning teams have years to work on this phase, but with the second train at the Pearl GTL scheduled for shutdown in 2016, the process will have to happen in a matter of months in order to add value. He added that there is little to no room for error, “We have to make sure we deliver on the promise to get production up and running when we say we will.”

GOAL ZERO MEANS NO ONE GETS HURT, THERE ARE NO QUALITY DEFECTS, AND NO LEAKS WHEN THE TRAIN IS RESTARTED
For Gamio, the key to success lies in team integration, “Pearl’s first-ever turnaround has a single-minded focus and disciplined delivery. As the best baseball player of all times once said, ‘Talent wins games, but teamwork and intelligence wins championships,’” adding, “This is our time, this is our championship, and together we will win!”
EXPLORING EGYPT’S ENERGY POTENTIAL IN THE WESTERN DESERT

THE ASSIL KARAM FIELDS BEGAN PRODUCTION

THE COLLABORATION BETWEEN BAPETCO AND ITS OPERATING PARTNERS WAS CENTRAL TO SUCCESS.
Spanning a vast 700,000 square kilometres, roughly the size of the state of Texas in the United States, Egypt’s Western Desert is a frontier region offering an enormous source of potential energy for a country that has historically struggled to meet rising energy demands. The recent political unrest in 2011 and 2013 has placed great strain on domestic energy supplies. Against this backdrop, the start of production from two of the deepest gas fields in the Western Desert – Assil and Karam – offers some positive news.

Shell Egypt and Badr El Din Petroleum Company (BAPETCo), in partnership with North Petroleum International Company (NPIC) and Engie (formerly known as GDF Suez) announcement of the initial production successes at Assil and Karam comes at a time when any additional energy sources can have a positive impact.

The Assil and Karam Project

300 kilometers west of Cairo, Assil and Karam’s five deep gas wells, dual pipelines and additional facilities began production in late 2014. The project also includes a state-of-the-art CO2 reduction plant which receives CO2 laden gas from the Karam fields and uses Shell’s Amine System technology to process the gas into useable sources of energy for the Egyptian gas network.

This project alone has increased overall production of BAPETCo, one of Egypt’s gas providers, by nearly 20 percent, producing 130,000 barrels of oil equivalent per day of treated gas including liquids. Engineer Mohamed Zaied, BAPETCo Vice-Chairman for Projects, notes: “The incremental gas production from the Assil and Karam fields comes at a time when Egypt is in a great need of expanding its power generation capacity to fulfill its ever growing consumption.” David Moore, Deputy General Manager Projects at BAPETCo, explains: “Every molecule counts, every well counts. This gas is essential to keeping the lights on in Cairo.”

A Lasting Alliance

The project’s remarkable success in its early stages is one of the factors that has facilitated record levels of production in the first quarter of 2015. The collaboration between BAPETCo and its operating partners was central to success. “Egyptian General Petroleum Corporation (EGPC) provided the local know-how and in-country support, while Shell provided the technical expertise and at the same time leveraged its strengths in a global supply chain,” says Eng. Zaied, explaining that the project utilised the best capabilities of both parties, allowing the partners to enhance the size of the overall investment. >>
Aidan Murphy, Vice President Shell Egypt, Country Chairman and Managing Director, continues: “The Shell contribution is very important but this would not be possible without the dedication and the professionalism of the Egyptian nationals who make up the bulk of BAPETCo.”

**Safety and Quality Drive Success**

Although the political restructuring and desert environment brought additional challenges including a lack of proximity to roads, access to transport, and a challenging safety culture, the team voluntarily set a goal zero safety objective and delivered the first phase of the project on time.

The project achieved five million man-hours and 350,000 kilometers driven to transport materials without any lost time injuries (LTI). Mr Moore adds: “We focused strongly on transport safety, on vehicle and driver compliance, and as the mobilisation on site picked up, we shifted the focus to site safety ensuring that best practice safety standards were deployed. Ultimately we managed to get everything built without a LTI, which was really the teams’ number one goal for success.”

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- Hot Oil facilities, which provide the energy for the CO₂ reduction process
- Amine System technology is an essential part of the CO₂ reduction plant

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“THIS GAS IS ESSENTIAL TO KEEPING THE LIGHTS ON IN CAIRO.”
The recent political restructuring in Egypt posed additional challenges to the delivery time frame, but the venture creatively worked around the uncertainty. Jan Duinhoven, Assil Karam Project Manager and Shell secondee to BAPETCo adds: “This change in Egypt put a lot of pressure on the system because we still had to deliver the project.” By constructing the amine modules in the United Arab Emirates, the project was able to continue on time while the foundations were laid in Egypt in tandem.

According to Eng. Zaied, collaboration with local companies also enabled the venture’s continuation during this time, noting: “In line with our local content policy we worked closely with local contractors who ensured work on the ground continued, enabling the project to continue, ultimately resulting in its successful completion.”

Creative solutions and a driven workforce played a large role in the quality with which the project was delivered. Shamir Salahudin, Technical Manager, Shell Egypt, adds: “Quality was a must. The system had to work from day one, with minimal hiccups. This happened because of the professionalism and attention to detail paid by BAPETCo team, Shell Egypt and the local service providers.”

**Awarding Excellence**

In 2014, BAPETCo won Shell’s prestigious Upstream International (UI) Impact Award for the Assil and Karam project. With over 500 nominations from 21 countries, the program stood out due to the partners’ consistent collaborative work with the site teams and their strong drive to ensure that safety and quality requirements were met, resulting in the full alignment of contractors and stakeholders. Mr Salahudin remembers: “There was a real sense of pride about this recognition from Shell to BAPETCo that ‘We value your contribution, we value your delivery.’”

“This demonstrates that joint ventures really produce world-class successes, that they can set the pace,” says Mr Murphy, explaining that it is not always necessary for a venture to be Shell-operated; outstanding results can be achieved when the partnership is efficiently run.

**A partner for the future**

The BAPETCo joint venture demonstrates the immense value of collaboration and shows that commitment to safety and quality can also boost business outcomes. “Despite a very challenging environment, BAPETCo with the help of Shell was able to deliver outstanding performance in project delivery in terms of safety, schedule and budget – which is an achievement all participants can be proud of,” concludes Mr Murphy.

As the country’s leadership tackles the energy challenges through political reform, Shell Egypt and BAPETCo will continue to invest in the nation, steadily supporting the development of Egyptian energy.
THE BLACK SEA AWAITS

DISCOVERING TURKEY’S ENERGY FUTURE THROUGH FRONTIER EXPLORATION
EXPLORATION REMAINS AN IMPORTANT PART OF ADDRESSING GLOBAL ENERGY DEMAND

The rising energy requirements of a burgeoning global population places increased pressure on governments and businesses to provide solutions to meet the growing need. Frontier exploration has yielded discoveries of new energy fields over the years. Exploration remains an important part of addressing global energy demand, and Shell is committed to this approach.

In February 2013 Shell Upstream Turkey (SUT) embarked on a frontier exploration venture with partner Turkish Petroleum (TP) to explore the possibilities that lie in the western Black Sea. As Turkey continues to import over 90% of its oil and petroleum, data from frontier exploration will be a key determinant in Turkey’s plans to increase domestic oil and gas production. “Turkey’s dependence on external sources makes it imperative to seek opportunities in the Turkish section of the Black Sea,” says Besim Şişman, General Manager of Turkish Petroleum. He adds, “Offshore reserves may become a panacea for Turkey’s increasing oil and gas needs.”
SUT and TP will drill an exploration well, in the western Black Sea about 100 km offshore at a water depth of over 2,000 meters to determine whether viable oil and gas resources are present. Echoing Mr Sisman’s sentiments, Joris Grimbergen, General Manager, Shell Upstream Turkey, adds: “With frontier exploration, the objective is to try new concepts, which due to their nature, might not always bring about the desired result. But if you do have success, you can potentially change things in a material way.”

Data Delivers

The joint venture began when SUT and TP gathered 3-D seismic data, enabling the companies to determine the ideal location to drill the exploratory well. Shell collected over 1,500 square kilometres of data using TP’s seismic vessel, the Barbaros Hayreddin Pasa. By using the vessel contracted to TP, which was already in the Black Sea, SUT was able to deliver the data safely six months ahead of schedule, setting the tone for a venture that understands the importance of teamwork and the compounded effect of united expertise.

“The benefit of this joint venture is that we are combining Shell’s expertise in frontier exploration and deep water, with TP’s expertise and long standing knowledge of Turkey’s geology and their learnings from previous drilling ventures in the Black Sea.” according to Mr Grimbergen. The benefit of the combined learnings allowed for exploration to start a year ahead of schedule. “I firmly believe that joint ventures can create synergy between companies, enabling them to go beyond what is expected. It also helps companies to grow further and increase competitiveness through sharing risks, transferring know-how and technology,” adds Mr Sisman.

Twenty-first century drilling

The use of the latest technology supports efficient and safe deep water drilling operations. Drilling began in early 2015 after the drilling vessel, Noble Globetrotter II (NGTII), passed through the Bosphorus. The NGTII and its predecessor, built by Noble Corporation, are part of a new generation of drill ships that combine innovation and effective design. The ship is equipped with a Huisman Multi-Purpose Tower (MPT), a unique hoisting and handling...
system with pipe storage in carousels that can transfer pipe and equipment between the front and the back of the tower for effective operations. The bolted top of the tower facilitated the fastest mobilisation time to date for a rig entering the Black Sea, as it could easily enter under the Bosphorus bridge and prepare for drilling activity. The vessel was designed to eliminate any extra space, creating a smaller frame, helping with fuel efficiency.

The advanced technology and design of the ship facilitates cost effective and safer exploration. Thor Lovoll, Shell Deepwater Wells Operations Manager, points to the ship’s state-of-the-art design, “The rig is relatively small, but the design maximises space utilisation and still carries the essential equipment. Safety and performance go hand in hand with this rig’s design and concept, and our more than 1 year LTI free records clearly showcases this further.”

Rite of passage

A detail not to overlook was the ability to pass under the Bosphorus Bridge. The bridge only has a 64m air gap, meaning most drilling vessels with a conventional derrick require costly modifications to fit underneath. The MPT on board, specially designed to easily enter the Bosphorus, gave the NGTII a considerable performance advantage. It is equipped with a removable top section bolted in place that can be lifted off by the rig’s own crane. This operation was completed in only thirteen days, as opposed to the normal duration of four to six weeks for conventional rigs.

“The Bosphorus passage was an important milestone. It was key that we were able to make the passage faster than usual and at a lower cost than had been the case with other drilling ships or platforms,” says Mr Grimbergen.

“OFFSHORE RESERVES MAY BECOME A PANACEA FOR TURKEY’S INCREASING OIL AND GAS NEEDS.”

On January 6, the vessel passed through the Bosphorus.

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**Elevating safety standards**

While deep-water drilling is not without risks, SUT, together with TP, are working diligently to enable the venture to not only succeed technically, but safely. “We have a huge responsibility and are focused on process safety. For us, it’s not about just complying with standards, it’s about understanding the purpose of the standard and deliver fit for purpose and ALARP operations,” says Mr Lovoll.

The enhanced safety standards can be seen with a hospital on board the ship. Deepwater Drilling and Frontier Exploration seldom happens close to a proper hospital. The remote healthcare process was specifically developed for this project and combines an on-land emergency response medical team with the hospital facilities on-site, as well as the satellite link and real time medical equipment offshore. The project is also demonstrating Shell’s global health and safety standards to their joint venture partners through on-site training as well as joint participation in Shell’s “Global Safety Day”.

**Exploring Turkey’s energy future**

Turkey’s energy future has the potential to grow through this continued partnership. State-of-the-art drilling technology aboard an equally impressive ship is changing frontier energy exploration in the Black Sea. While the results have yet to be determined, SUT and TP continue to work together to explore opportunities that could impact the energy, economic and geopolitical future of Turkey. “We are not here to do more of the same. We are back to try new concepts that, if they work, could be material for Turkey,” says Mr Grimbergen. “Shell has been operating in Turkey for over 90 years. Shell’s expertise and business excellence aided the development of the Turkish oil and gas industry and domestic hydrocarbon potential, and we are eager to continue this collaboration,” adds Mr Sisman.

Citation for oil import statistic:
http://www.eia.gov/countries/cab.cfm?fips=tu

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**Star of the show**

The centrepiece of the drilling ship is the innovative, multipurpose drilling tower. This new design aims to keep all equipment inside, protected from wind and rain. Thanks to two independent work areas, the workers can drill on one side of the tower while assembling steel well lining or pipes on the other. This improves efficiency and safety. The absence of a heavily bolted overhead lattice structure found in conventional drilling towers reduces the risk of falling parts injuring workers.

**Underwater lift**

This crane has been adapted for deep water, as it adjusts to the vessel motion and has an extra long boom. It contains 3,000 metres (10,000 feet) of wire for installation of equipment on the sea floor. It can also lift off the top part of the drilling tower and place it on the deck so the vessel can pass under bridges. This allows the vessel to enter the Black Sea and pass through the Panama and Suez Canals.
According to the International Energy Agency (IEA), an estimated 270 billion barrels of oil lie beneath the ocean floor. As the global population increases, energy demand is also increasing, driving international oil companies (IOC) and national oil companies (NOC) to explore the depths of the ocean to tap the potential energy sources beneath the surface. Shell has been a pioneer in deep-water oil and gas exploration for decades, delivering more than 20 deep-water projects across the globe and contributing a wealth of knowledge and technology to the sector. Today, off the coast of Malaysia, Shell is partnering to deliver the country’s second deep-water project, Gumusut-Kakap, which aims to unlock Malaysia’s rich energy resources and put the country on the map for deep-water expertise in the region.
A First for Malaysia - Gumusut-Kakap

The Joint Venture (JV) operated by Shell is developing the Gumusut-Kakap deep-water field with partners ConocoPhillips Sabah, PETRONAS Carigali, and Murphy Sabah Oil. Since Shell discovered the country’s first oil well in 1910, Shell has worked with Malaysian partners to advance the nation’s energy industry. By bringing together global technology and partners with local insights, Shell’s latest JV is transforming the local oil and gas industry.

The Gumusut-Kakap deep-water field is located 120 km offshore from Sabah in water depths of 1,200 metres, approximately two and half times the height of the PETRONAS Twin Towers. Mr Nick Turner, Malaysia’s Deep Water Venture Leader, says: “Gumusut-Kakap changes the landscape for Malaysia,” and at peak production contributes up to 25 per cent of Malaysia’s oil production. Safely and successfully delivering the project has resulted in increased energy production, with an annual peak production of 135,000 barrels per day.

Technology Driving Innovation

The project is the first of its kind in the country, boasting the utilisation of innovative technologies. The platform is the first deep-water semi-submersible floating production system (FPS) in Malaysia. The hull floats on four large columns which are partially submerged and anchored to the seabed using 12 two kilometre chains. The capacity it provides, along with its mobility, means it could easily enable future energy discoveries in the area, using the platform as a hub.

The platform itself weighs approximately 40,000 tonnes, equivalent to 30,000 medium-sized cars. Not only did the team deliver a mega-project never before seen in Malaysia, it safely completed a then record-breaking 23,000-tonne onshore lift when it raised the platform topsides in order to place the hull underneath.
AN OPPORTUNITY FOR MALAYSIA TO DEVELOP A DEEP-WATER CAPABILITY

Developing Deep-Water Expertise in Malaysia

Another point of pride for the project is that the platform was built entirely in Malaysia and directly involved 5,000 workers during the construction. Constructing the platform and its components in-country allowed local staff and Shell the opportunity to work together, using Shell’s deep-water expertise to boost the local company’s capabilities. Shell brought in experts from the Deep Water Centres of Excellence in New Orleans, Louisiana and Houston, Texas in the United States. The centres brought in talent and technology during the construction phase, transferring deep-water knowledge to position Malaysia as a regional deep water hub. Mr Milan Hendrikse, Gumusut-Kakap Project Manager adds: “Gumusut-Kakap really is an opportunity for Malaysia as a country to develop a deep-water capability.”

Developing a Deep-Water Hub

The completion of the Gumusut-Kakap project helps deliver upon the Malaysian government’s ambition of creating a deep-water hub. Mr Turner adds: “Shell has been in Malaysia for over 120 years. At the start, of course, the oil industry was very different. Over the years we have progressively gone deeper and into more complex and challenging environments. Shell as a global company has taken that knowledge and deployed it into Malaysia.”
SAVING LIVES WITH SOCIAL MEDIA

The beginning of 2015 marked the launch of ‘Matesswa,’ meaning not worth it, Shell Saudi Arabia’s latest road safety campaign. Shell KSA has taken to social media in the hope that the latest campaign will have a lasting impact on the citizens of Saudi Arabia.

IN JUST TEN YEARS, YouTube has quickly become a leading platform for users around the globe to share a diverse mix of content. In that time, Saudi Arabia has become the worldwide leader in YouTube views per capita (source: Semiacast) – making it the ideal platform for Shell KSA to reach a wide audience with their latest campaign.

Shell KSA has captured real life stories of people who have had their lives changed after road traffic accidents, in the hope of changing driver’s attitudes throughout the country. Each story is a heartbreaking reminder that the consequences of reckless driving last a lifetime.

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One such story Abdullah’s, whose life was changed forever when he was hit by an oncoming vehicle in July of 2012. Just married, life started brightening up when he had his lovely daughter Rania and completing third-year medical resident. Abdullah had his life turned upside down. His bright future came to an abrupt end when an oncoming vehicle hit his car. This reckless accident made him not only suffer physically, Abdullah forgot his own flesh and blood – his daughter – didn’t know who she was. The mixed feelings a daughter can go through when her own father doesn’t remember her is heartbreaking; all because of an irresponsible driver; who crashed not only into Abdullah’s car but also into his dreams of becoming a resident, good husband and most importantly a father.

Since his accident, Abdullah has been on a long road to recovery, regaining his memory and learning how to regain dexterity in his hands – among other challenges. A dream that once was near now is a far, not so easy to achieve, but Abdullah is determined and putting all his heart and soul into his recovery to become the person he once was, not only to his family but to himself as well.

Few expected the programme to receive the attention it did, but Abdullah’s story alone garnered over 260,000 views in only 35 days. Abdullah is featured alongside fellow accident survivors who have bravely told their stories – all in the hope of saving lives.

You can view the stories in the Shell KSA Road Safety Campaign playlist on our YouTube channel: youtube.com/shell

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INNOVATING TO END HUMAN ERROR

In Oman, Shell is using innovative advanced training techniques, at the newly opened Wells Learning Centre, to educate young engineers on the best way to remain calm and solve problems in high-pressure situations when drilling wells. The joint venture with Petroleum Development Oman (PDO) is transforming the level of training available to Oman’s well engineers, emphasising safety every step of the way.

THE STATE-OF-THE-ART Wells Learning Centre in Oman, located in Mina Al Fahal, is the fourth Shell-sponsored training facility of its kind in the world and is the first of its kind in the Sultanate. The centre opened on 4 November 2014, and at full capacity, will help more than 1,000 students yearly develop their wells management skills using some of the energy industry’s most advanced training equipment. The high-pressure reality of a working rig is brought to life, helping trainees master drilling, and teaching them to maintain wells in the safest possible way. A key goal is to build confidence alongside a practical know-how by introducing engineers to the real-life challenges they face.

The centre’s curriculum emphasises human behaviour and aims to instill awareness in the trainees. It is the first training facility in Oman to have access to a DS5000 Well Engineering Simulator, which recreates real-life scenarios on a rig, and a high-tech Cyber Chair, which gives trainees full control of the drill simulator. Shell instructors can create simulated scenarios to test trainees’ emergency problem-solving skills and help them visualise some of the complex issues experienced in the field.

The centre is open to PDO staff, Shell affiliates and other Operators and Contractors in the country and the region, enabling collaboration and cooperation in the industry. The new facility is another milestone in Shell’s longstanding partnership with PDO, working towards an energy-secure future for Oman and the wider region.
SHELL CELEBRATES INTERNATIONAL WOMEN’S DAY IN ABU DHABI

Since 1911, International Women’s Day (IWD) has been a time to herald the social, political and economic achievements of women around the world. Under the IWD theme ‘Make it Happen’ Shell joined the 2015 celebrations in Abu Dhabi, the United Arab Emirates. The event was held under the patronage of Her Excellency Sheikha Lubna bint Khalid Al Qasimi, Minister of International Cooperation and Development, an accomplished and successful businesswoman. The event was organised by several business groups in Abu Dhabi and was chaired by the International Business Women’s Group (IBWG), which Shell has supported for more than 10 years.

SANA BARDAWIL, Shell’s Director of Communications in MENA, and Becky Anderson, CNN Anchor, were the key speakers at the event. The panel discussion, moderated by Mrs Gulizar Jonian from the IBWG, addressed the importance of media and communications in the digital age, and the role of women as leaders and influencers in a fast moving world of information and the challenges faced.

During the discussion, Anderson highlighted the themes of authenticity and honesty when she described managing her role as a female journalist in challenging locations. Reflecting the same key drivers, Sana spoke about her own personal experience in working in a multinational, the importance of gender and cultural diversity as well as the opportunities open to women. The panel discussion included a lively question-and-answer session with the audience, drawn from different professional sectors in the UAE.

The forum was attended by more than 400 people including HE Sheikha Lubna Al Qasimi as well as women from diverse sectors including communications, SMEs, government, finance and academia in the UAE. The event was a reflection of the growth of female leaders, not only within Shell, but in industries around the UAE.

Shell firmly believes in increasing diversity across the company and between 2006 and 2013, the percentage of women in leadership positions in Shell rose from 9.6% to 17.2%, demonstrating the company’s commitment to advancing the careers of women in Shell around the world.
INNOVATION DRIVING DEVELOPMENT IN KAZAKHSTAN

In Kazakhstan, Shell is transferring technology and developing local talent through the establishment of the country’s very first geochemical laboratory. Opened on April 13, 2015, the centre of excellence was developed in partnership with KazMunaiGaz (KMG) to bring cutting edge technologies to Kazakhstan that help increase oil production in mature fields and support the discovery of new oil and gas resources while achieving cost savings.

OVER THE LAST FEW YEARS, Shell Kazakhstan led a collective industry initiative, the “technology road map”, to develop ideas for technology that could have a meaningful impact on the industry. This initiative was endorsed by the President of Kazakhstan. Shell and KMG were the first to answer the directive of the President by identifying geochemical capabilities as an area that could provide insights into discovering hydrocarbon reserves, and subsequently proposed the establishment of a state-of-the-art laboratory. Historically, geochemical technologies were crucial to reduce the risk of hydrocarbon exploration, and by reducing the number of wells to be drilled, helped develop and produce fields at a minimal cost.

This new laboratory will provide geochemical services and research for exploration, development and production. In addition to standard exploration research, the laboratory will be the first location to deploy the Enhanced Water Fingerprinting Technology that was developed at the Shell Technology Centre Bangalore (STCB). These new technologies offer opportunities to address some of the industry’s biggest challenges in Kazakhstan.

By the end of this year Shell will hand over ownership of the laboratory to KMG after which it will offer independent and high quality geochemical analysis to the whole oil and gas industry in Kazakhstan. Following this hand over, Shell will continue to support the training and human capital development for the centre.

“This laboratory facility will open new horizons in the history of Kazakhstan’s oil industry and make the operations much cheaper,” says Mr Kuralbek Keldjanov, Deputy Shell Kazakhstan Country Chairman. Through the development of the centre, Shell is benefiting the entire country of Kazakhstan through its commitment to technology transfer and local talent development.”