



SHELL IRAQ

JEWEL OF THE SOUTH



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Shell Iraq is part of a consortium working to significantly increase production at the Majnoon oil field in southern Iraq. But the project has not been easy: some of the major challenges to date have included de-mining, safety and marsh preservation, as Becky Done discovers

Erection of first pipe rack module



Iraq's Majnoon oil field is one of the largest in the world, with estimated volumes of 38 billion STOIP (stock tank oil initially in place). But increasing daily output at this one-time battlefield from its current estimated 50,000 barrels to a projected plateau in excess of one million has so far proved to be no easy task.

As lead operator, Shell holds a 45 per cent share in the project, with partner Petronas holding 30 per cent and Iraqi state partner Missan (spun off from the South Oil Company in 2008) the 25 per cent remainder. A plan was agreed with Iraq's Ministry of Oil to develop the field in several phases, and activity on the first phase—referred to as first commercial production—is already well underway, says Shell's Majnoon general manager, Ole Myklestad. "This first phase deals with reaching a specific production threshold of 175,000 barrels per day."

To achieve this, several activities are currently ongoing. The drilling campaign has already commenced, with two drilling rigs in place and a third set to move in shortly. Between them, the three rigs will drill between 15 and 20 new wells by the end of this year, giving Majnoon the boost it needs to hit daily production of 175,000 barrels.

Leading oil and gas services provider Petrofac has been brought in to provide engineering, procurement, fabrication

and construction management services to support the development of the new early production system (EPS). The EPS comprises two trains, each with a capacity of 50,000 barrels of oil per day, along with an upgrade of the existing facilities. "We awarded this contract following a tender process, of which Petrofac emerged the winner. From both a technical and commercial point of view, Petrofac was the most attractive choice for us," confirms Shell's project manager for Majnoon, Nasser Al-Bader.

In addition to upgrading existing facilities, Shell is also building new ones. "Part of the reason this project is so challenging is because we are building new facilities; and new facilities require new equipment, materials and logistics arrangements," explains Al-Bader. "On a plant already in production with sufficient overcapacity, you might only need to make

1,600

Approximate number
of personnel working
in the Majnoon field

minor modifications to existing facilities and drill more wells—but it's nothing like developing a greenfield site, which is what Majnoon is all about."

With such high levels of construction activity in the field, one of the biggest hurdles for Shell has been tackling the complex logistics challenge of bringing materials and equipment—in some instances weighing up to 100 tonnes apiece—onto the site. "So in February we concluded the construction of a small jetty right in front of our existing production station at Shatt al Arab," says Myklestad. "And that allows

INTERNATIONAL DELIVERY, LOCAL CAPABILITY

Petrofac is a leading provider of oilfield services to the international oil and gas industry. Our focus is on supporting our customers, the oil and gas resource holders, to unlock the potential of their assets—whether on or offshore—covering both greenfield and existing brownfield developments. Our track record spans more than 30 years; we have 28 offices and some 15,000 staff worldwide; and we are a constituent of the FTSE 100 Index.

In Iraq, we are working on three projects; but our inaugural and significant step into the country was with Shell Iraq Petroleum BV

when we were awarded a contract in excess of US\$240 million for developments in the Majnoon Field, southern Iraq.

Work on the project began in mid-2010 and is expected to complete during the fourth quarter of 2012.

THE PROJECT

Petrofac's scope of work includes the provision of engineering, procurement, fabrication and construction management services for the development of a new early production system comprising two trains each with capacity for 50,000 barrels of oil



Petrofac 

per day, along with the upgrading of existing brownfield facilities. Crude export from the processing facilities will be via a new pipeline which will be tied into the existing network.

STRATEGIC IMPORTANCE OF THIS PROJECT

The Majnoon project represents Petrofac's first significant step into Iraq, a market in which we are very keen to offer our extensive capability, particularly through enhancing our local presence. Having had its major operational centre in the Middle East for the past 21 years, Petrofac also understands the dynamics of the landscape well and has a portfolio of ongoing projects in the region.

Our participation in this project and the final delivery for both Shell and Petrofac is of strategic importance for our businesses and

indeed the Iraqi authorities. Both companies are working very closely together, and with many stakeholders in and out of Iraq, to ensure that we have shared knowledge and mitigated and managed any ensuing challenges as Iraq's emerging economy develops.

Projects such as Majnoon will pave the way for future opportunities and developments in the country.

As with all our projects, we have strong management commitment and support. This support translates into the commitment of our task force teams and the integrity and motivation with which our personnel go about their day-to-day tasks.

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us to bring in heavy loads.” Shell uses the main Iraqi port of Maaqal at Basra to bring what it needs into the country, and barges then proceed to the jetty. “This means that equipment and other materials that are not found in Iraq can be brought directly into the field, which avoids sending heavy traffic through populated areas—thus significantly reducing accidents and helping to preserve local road infrastructure.”

Al-Bader explains that the jetty is already benefiting the surrounding area. “When we talk to contractors and people in Basra, they are very appreciative of the new jetty, as commercial navigation through Shatt al Arab had not been witnessed for 30 years. It has widened horizons here, giving other companies the opportunity to be part of this overall process—in fact, they are now approaching us with the services they can provide.”

But perhaps one of the greatest challenges Majnoon has presented to date has been the immense task of de-mining the field. “In order to build new facilities or to expand existing ones, you must clean up the area and ensure that it is safe,” says Myklestad. “So de-mining is, and will continue to be, one of the critical activities which has so far taken priority. Majnoon was highly



Skid module

contaminated with mines during the Iran-Iraq war back in the 1980s, and de-mining has taken longer than we initially expected.”

“Mine clearance has been a major, major challenge,” agrees Al-Bader. “Obviously we had a duty to ensure that we completed the work with zero incidents. There were a number of mines that we discovered and removed safely; and we are very proud that we achieved this with no incidents. We spent

a lot of money on armoured vehicles and armoured bulldozers, so that even if there is a mine left behind that we encounter while clearing up, it will bring no harm to the operators of those vehicles.”

Security is also a major consideration, but Myklestad feels that this aspect of operations has run smoothly to date. “The safety and security of local communities and Shell employees—and by that I mean direct employees of Shell as well as the contractors and sub-contractors—is critical for us. We undertake regular security assessments with local authorities and that gives us a good understanding of the current situation. To date we have not seen an increase of incidents beyond the ordinary. Our procedures

regarding security in the field have been implemented and are so far working well—these relate to issues such as facilities and assets, or the mobility of getting people in and out of the field.”

All personnel at Majnoon are expected to conform to stringent health and safety standards; but given Shell’s commitment from the outset to employ as many local people as possible on the project, it was inevitable that a certain amount of training would be required to make this happen. “We try and employ as many local contractors as we possibly can,” explains Al-Bader, “and many of them are not specifically accustomed to working to Shell’s high standards. So we have had to raise the level of consciousness in

“COMMERCIAL NAVIGATION THROUGH SHATT AL ARAB HAD NOT BEEN WITNESSED FOR 30 YEARS”



Erection of second pipe rack module

terms of HSE, planning, work procedures and so on, and that has also been a major challenge.”

“But we are gaining ground in terms of safety behaviours,” says Myklestad, “for example, in ensuring that people follow critical safety processes. On this front we are improving and our statistics clearly show that things are starting to get better, but changing mindsets is an ongoing daily journey. For local contractors and suppliers not yet up to industry standards, we do ensure that they are given the proper training, so they are still able to work for us.”

The company has certainly made major strides in fulfilling its commitment to employ local people. “We have a very high level of Iraqi nationals working in Majnoon: today there are between 1,500 and 1,600 people in the field and at least 1,300 of those people come from the local communities or the Basra area,” reveals Myklestad. “We’re very happy to provide employment, albeit on a temporary basis; but we’re hoping to implement development programmes and ensure people are able to secure further jobs in Majnoon once we go into Phase II development—or join other oil and gas industry projects or indeed, other industries.”

Training initiatives include on-the-job learning covering subjects from English language to technical skills, as well study programmes in the community at vocational training centres. Shell is also looking to develop a large oil and gas training facility in Basra itself.

Unemployment is a major problem in



Jetty completed

Basra, and Shell is doing all it can to improve the situation, says Myklestad. “Clearly, in the bigger scheme of things, we cannot solve all the unemployment in the community. But we are willing to continue working with the local authorities, the director generals, the Basra Provincial Council and Basra’s governor to help in any way we can.”

Meanwhile, social investment has extended beyond training and education into other areas of community wellbeing. Shell has provided equipment and training to doctors

in a number of clinics, and refurbished a park so that local people, especially children, have outside space to enjoy.

But there is also outside space to consider on a much larger scale. The northern part of Majnoon used to be marshland; in fact, there are still some small areas of the oil field which are considered to be part of the Haur al Hawizeh marshes. “In accordance with Shell’s environmental standards, we decided to avoid entering the northern part of the field, therefore helping to protect the Ramsar

“WE UNDERTAKE REGULAR SECURITY ASSESSMENTS WITH LOCAL AUTHORITIES AND THAT GIVES US A GOOD UNDERSTANDING OF THE CURRENT SITUATION”

site [Wetlands of International Importance under the Ramsar Convention]. Such sites are part of a very unique ecosystem in the Middle East,” explains Myklestad.

“We are now about to begin a biodiversity action plan, which will study the state of the ecosystem and the biodiversity—and indeed what it could look like if flora and existing fauna, as well as historical fauna, were to be restored,” he continues. “And

once we understand that, and the impact of potential re-flooding, then we can decide together with local authorities, local and international experts in the field and the national environmental entities, the best way to develop that northern part of the field. So we’re doing our best to develop Majnoon in the most environmentally responsible way.”

The Iraqi people are now pulling together

“MAJNOON COULD BECOME THE JEWEL
IN THE CROWN OF IRAQI OIL AND GAS
PRODUCTION OVER TIME”



Series of skid modules



Perfect fit of two pipe rack modules at site

to make economic rejuvenation a reality, says Myklestad. “There is certainly willingness in country, in central government and locally in Basra to help improve existing infrastructure, and increase production and growth,” he affirms. “There’s still a way to go in some areas—for example customs approvals, visas and the entry and exit of expatriate staff—and we are working on those issues currently. But everyone has goodwill and wants to make things better—and we trust that within a year to 18 months, we will have worked through all these issues and production will have increased.”

Looking forward, the benefits of Majnoon to Iraq as a whole are clear. “We believe that because of its location and technical specifications, Majnoon can help

Iraq to increase and control production in the long term,” says Myklestad. “Shell, its partners and the South Oil Company are working to make Majnoon a world-class operation. In doing that, and through meeting our environmental and social responsibilities in Iraq, Majnoon could become the jewel in the crown of Iraqi oil and gas production over time.

“We hope that Majnoon can contribute to the economic development of Basra and Iraq, and help to provide social stability,” he concludes. **BE**

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