

# Khelil: things will be different from now on

By Tom Nicholls

Oil and gas explorers will have to make much greater concessions to Algeria if they want to be successful in future licensing rounds, energy minister Chakib Khelil said yesterday.

"Sonatrach can develop these reserves on its own with help from services companies," Khelil told *Petroleum Economist* in an exclusive interview. "Technology, I have. Money, I have. Reserves, I have. Markets, I have. "What do you bring?"

Khelil's comments come at a time when cash-rich and increasingly market-savvy national oil companies (NOCs) are tightening their grip on their oil and gas, leaving international oil companies deeply concerned about access to reserves.

Algeria's next bidding round, which Khelil says will be held later this year, will depend partly on financial parameters, as in the past, but also on the strategic benefits foreign companies are able to offer Sonatrach – such as access to reserves in another country or access to markets.

"The philosophy is going to be very different and I'm sure other countries are going to be looking at it the same way."

Meanwhile, recent changes to Algeria's upstream terms – Sonatrach has a mandatory minimum 51% share in oil projects and windfall taxes are being imposed on some contracts when oil prices exceed \$30/b – are unlikely to deter investment because of the need to gain access to reserves, said Khelil. "Even with harder conditions than we have now, Algeria still remains a very attractive destination. The world has changed a lot."

Separately, Khelil said the government hopes to conclude negotiations with KBR for the construction of a new 5.5bn cubic metres a year (cm/y) LNG train at its damaged Skikda plant "very soon", but that it is also considering other companies. Algiers hopes construction will begin this year and that the new facilities will be on stream in about four years' time.

That means Sonatrach will miss its original 2009 target start-up date, but even given delays to that project and

Gassi Touil LNG (see sidebar), Khelil says the country should meet its 2010 export target of 85bn cm/y.

Output capacity has already reached 85bn cm/y, he said. Total export capacity stands at 62bn cm/y and additions to export pipeline capacity of 23bn cm/y are expected in the next three years. The Medgaz pipeline, running directly to Spain, will provide an extra 8.0bn cm/y from 2009. Galsi – Algeria's fourth subsea pipeline to Europe – is due to start up in 2010, adding another 8bn cm/y. The Enrico Mattei pipeline, to Italy, has already been expanded by 7bn cm/y and this extra capacity will be fully available by next year.

Separately, Khelil said gas-to-liquids schemes in Algeria are "probably out, basically we don't have any bidders" and because the gas can be monetised more profitably using other methods.

He also had a sideswipe at some EU countries for preventing Algeria from selling directly to gas distributors and forcing it to go through intermediaries such as GdF – ultimately raising costs for consumers.

## Algiers on collision course with Spanish firms

By Tom Nicholls

The Algerian government expects Repsol YPF and Gas Natural to honour their commitment to bring the Gassi Touil LNG project on stream by November 2009, energy minister Chakib Khelil said yesterday. Ruling out any renegotiation of terms, Khelil told *Petroleum Economist*: "We expect them to meet the [start-up] deadline. This project was awarded three years ago and Repsol YPF/Gas Natural have had plenty of time." Gassi Touil is an integrated project, involving upstream development, transportation and LNG. The Spanish firms hold an 80% share in the planned 4m tonnes a year LNG terminal. Khelil said he has not been informed by either that the schedule cannot be met. And he said Sonatrach has commitments to deliver part of Gassi Touil's LNG to US buyers and that Algiers is counting on project revenues from November 2009. Repsol YPF and Gas Natural are understood to be experiencing technical difficulties upstream and to be reassessing development plans to account for massive recent inflation in contracting costs. But Khelil said they should absorb any losses from the project. LNG experts say the project cannot be completed until 2011 or later. Khelil has, in the past, said the Spanish firms will have to pay costs associated with any delay.

## Khelil sees oil prices steady to year end

Algerian energy minister Chakib Khelil expects oil prices to stay around present levels – over \$65 a barrel – for the rest of the year and he says there is little Opec can do to take the heat out of the market. Nigeria's general election and the stand-off over Iran's nuclear programme have added at least \$10/b to the price, he said. An expected rise in US gasoline demand as refineries return from maintenance and as the driving season gets under way are adding to market buoyancy, he said. "The price level is going to be [at the present level] for the rest of the year. I don't think the geopolitical situation will change between now and the end of the year."



Photograph © Eric Kampherbeek, www.lacouleur.nl

IOCs: What do they bring? – Chakib Khelil



Delivering LNG to the world

## China and India won't live up to LNG expectations

By NJ Watson

China and India will become major importers of gas and LNG, but predictions that these two countries would become the dominant demand centres are likely to be proved wrong, according to Graham Hartnell, vice-president of consultancy Nexant.

"We foresee LNG coming in to both India and China and they will be significant players, but not at the rates predicted four or five years ago – they're not going to be overtaking Japan or South Korea," Hartnell told *Petroleum Economist*.

The reason is that while India and China are enjoying spectacular economic growth – since 2000, China's GDP has grown by 57% and India's has risen by 36% – several factors have prevented an equivalent rise in gas and LNG imports.

Five years ago, both countries' gas markets were remarkably similar in how they operated: they were controlled by the state and pricing was heavily subsidised. But the subsequent huge rise in the price of oil has created a sellers' market and India and China have been priced out of the market.

India has moved more quickly than China to adapt its gas market to costlier LNG imports, said Hartnell. China is moving more slowly – mainly because it has large coal reserves, which it uses for 96% of thermal power generation and some 80% of total electricity generation, compared with almost 50% in India.

However, China's continued reliance on coal for power is creating serious environmental problems, especially in the industrialised south of the country, and this should encourage the switch towards gas.

"Air quality in Guangdong and Hong Kong has notably degraded even from where it was just a few years ago," Hartnell said. "If the government starts to take this into account by pricing environmental issues into the coal industry or using policy actions such as a moratorium on building coal-fired plants, these should all play into the hands of gas and LNG."

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## Staff retention vital to maintain safety record

By Tom Nicholls and NJ Watson

Encouraging people to join and stay in the LNG shipping trade has become one of the most acute problems facing the industry, James MacHardy, general manager of the Society of International Gas Tanker and Terminal Operators, said yesterday.

And improving the public's perception of the trade is key to solving the looming staffing shortage, he added. If left unattended, this will eventually start to affect shore-based parts of the LNG industry, given that there are five seafarers in on-shore roles for every one at sea, he said.

While MacHardy stressed that the LNG shipping business has an excellent safety record, with no major incident in 43 years, he warned that "we are witnessing an increasing number of minor incidents". He put that down, in part, to a lack of trained personnel and called for companies and organisations that undertake training to be regulated.

This comes at time when the shipping industry is having to cope with rapid expansion. There are 32 LNG vessels due for delivery this year – up from 26 in 2006. Next year, 57 new vessels will start trading.

"Recruitment and training is important, but retention is vital," said MacHardy, who called for seafarers to be treated with "more dignity and respect" to encourage young people to consider careers in shipping.

Improving the public's perception of the LNG trade is key to solving the looming staffing shortage – James MacHardy



He added that it was important to maintain a strong engineering capability within the marine industry to maintain and operate the LNG business' steam-propelled vessels well into the future.

Indeed, the ageing LNG fleet is another important reason for improving politicians' and the public's understanding of the industry. With some vessels approaching the 40-year age mark – seven LNG tankers are over 35 years old – the industry "needs to start preparing the public for acceptance of LNG carriers beyond 40 years".



Toyo Engineering provides Feed and EPC services, and fantastic origami flowers

## LNG 15 News at the Poster Sessions

By NJ Watson

Everything in the LNG business is getting bigger – demand, trains, tankers, terminals. This of course means more storage at either end of the LNG chain, so the storage tanks are also growing, with the size of the average above-ground storage tank now being around 160,000 cubic metres (cm).

Rather than building two tanks to accommodate all the LNG, David Scarr of BP and Gordon Jackson of Arup Energy asked, what is the largest tank that is technologically feasible?

Their paper, *Achieving economies of scale with very large LNG storage tanks* tested the viability of building a 300,000 cm tank by looking into such construction factors as the type of ground conditions and seismicity of the area. The result?

"We found no technological barriers to go up to a 300,000 size," said Jackson.

Meanwhile, gas explosions at LNG plants are mercifully rare, but they are still a risk. How much of a risk is something that Kiminori Takahashi, the principal engineer at JGC Corporation, together with his colleagues Kenichiro Hara and Nobuyuki Hara, are trying to find out.

For their paper, *Advanced numerical simulation of gas explosions for assessing the safety of LNG plants*, the three engineers spent two years integrating 3D-CAD data, computational fluid dynamics and finite element analysis to come up with a programme that predicts what the design of an LNG plant will mean in terms of gas diffusions, gas explosions and blast pressures – basically how safe it is. "Understanding explosions at LNG plants can avoid risks," says Takahashi-san.

## Comment

Qatar hopes to launch the first LNG exchange by the end of this year. The International Mercantile Exchange hopes to cash in on spot-market growth.

Separately, there are plans for a 40bn-65bn cf LNG storage facility in Dubai – a hub that will enable customers to plan trading operations more effectively. Over time, the developers of the storage facility hope to offer financial LNG and shipping derivatives.

The Middle East is a logical place for an LNG trading hub: Qatar alone will account for about 20% of world trade by 2010 when it reaches its 77m t/y output target. Also, the region is conveniently sandwiched between the markets of East and West – ideal for arbitrage.

But are these ventures putting the cart before the horse? After all, most LNG is traded in fixed long-term contracts; only 10% of LNG changes hands on a spot or short-term basis (see p4). Shell predicts the spot market will remain the "junior partner" of the long-term market and that a global LNG price is a long way off. Buyers, it says, will continue to lock in volumes under long-term contracts to guarantee supplies. High capital and transportation costs, the complexity of the technology and the difficulty of storing gas are further barriers to a global spot price, it says.

Certainly, it would be simplistic to assume LNG trading will follow oil's trajectory. Yet the LNG market is becoming more flexible. Whereas deals used to happen on a regional basis – mainly in Asia – the range of trade is now global: the US is likely to source cargoes from markets as far away as Australia on a regular basis; and Asian buyers have recently competed in auctions for west African LNG – traditionally marketed in Europe and the US.

The size of the LNG market is increasing rapidly: Shell forecasts growth in demand of as much as 10% a year until 2020, when LNG could be meeting 20% of global gas needs. The number of buyers is rising too: by 2020, says Wood Mackenzie, 40 countries could be importing, compared with 17 last year. Then there is compressed natural gas to consider.

Companies are salivating at the thought of the arbitrage business that will be created through the proliferation and expansion of markets, and enabled by LNG's flexibility. Woodside, for example, has reserved a third of the output of Pluto LNG's first train for short-term and spot trade and will probably do the same with future projects. It is also considering taking equity in Atlantic basin export plants to widen its supply base away from Asia-Pacific, which will improve its ability to arbitrage between the main consumption centres.

Contracts are becoming more flexible too. Diversion clauses are being built in to facilitate arbitrage so suppliers can send cargoes destined for one market under a long-term contract to another, depending on need – and, of course, price.

There is no lack of confidence in the market's strength over the next decade or so. Woodside expects it to remain tight until at least 2015 and chief executive Don Voelte has warned import-terminal developers that if they don't tie in supply through long-term contracts, their terminals may well sit idle.

And the majors involved in Qatar's various projects have not felt the need to match off-take commitments with equivalent downstream contracts. ExxonMobil has bought all the LNG from Qatargas 2. In theory, the LNG is destined for the UK, but the destination is flexible. Similarly, ConocoPhillips has earmarked the output of Qatargas 3 for the US, but has no downstream contracts to match. Shell's 7.8m t/y from Qatargas 4 and ExxonMobil's 15.6m t/y from RasGas 3 do not appear to have been accounted for by downstream sales agreements.

This is a significant vote of confidence by the main players in the future strength of the global LNG market. It also means there will be a considerable volume of LNG available for spot trade, with no particular place to go, but with plenty of bidders ready to fight it out.



# Seven and counting for Nigeria LNG

By Martin Clark

Despite production problems, and violence in the Niger Delta, Nigeria remains an important LNG supplier to the Atlantic basin and continues to expand its export operations. But cost pressures and industry bottlenecks are a threat to progress.

It is less than a decade since the first cargo set sail from Nigeria LNG (NLNG), in 1999. But by the end of this year, NLNG's 4.1m tonnes a year (t/y) Train 6 will push total plant production capacity to 21.15m t/y. The SevenPlus project will add an 8.4m t/y train to the Bonny Island complex from 2010 and there is talk of an eighth train. And final investment decisions (FID) are expected on two greenfield projects – Brass LNG and Olokola LNG (OK LNG).

In theory, if all the projects were to go ahead, the country's LNG-export capacity would rise to around 70m t/y, putting Nigeria a close second to Qatar, as the world's largest supplier.

In February, NLNG appointed Foster Wheeler and Chiyoda to start front-end engineering design (Feed) work on Seven-Plus. They will produce a project specification package to form the basis for an invitation to bid for an engineering, procurement and construction (EPC) contract.



There is a brownfield plot available for the expansion of the Bonny Island liquefaction plant to eight trains

NLNG spokesman Ifeanyi Mbanefo says plans are still evolving. "There is a brownfield plot available for the expansion of the Bonny Island plant to eight trains," he says. "Now we are planning a seventh train. This would require an extension of the existing complex, but not a material alteration of the existing facilities."

With supply from Train 7 already contracted, the prospect of an eighth unit does not seem remote. In February, NLNG signed sales and purchase agreements for the full 8.4m t/y with BG, Occidental, Shell, Total and Eni. BG, which will take 2.25m t/y from SevenPlus under a 20-year deal, says deliveries to its Lake Charles, US, terminal will commence in 2011. Total is also targeting the Americas, with its 1.375m t/y off-take heading for the Sabine Pass and Altamira regasification terminals.

As is the case with the existing NLNG trains, gas supply for SevenPlus will be supplied by the venture's shareholders – Nigerian National Petroleum Corporation (NNPC), Shell, Total and Eni.

NLNG has not disclosed the cost of the project, however. Like other operators, it has inevitably suffered from sharp rises in the price of services, labour and equipment. Mbanefo says only that SevenPlus will have a unit cost "in line with industry trends". However, Wood Mackenzie LNG analyst Andrew Pearson claims cost hyperinflation could affect both the NLNG expansion and the two greenfield initiatives, both now reaching a critical stage.

Oluwale Agunbiade, a spokesman for OK LNG, which groups NNPC with

Shell, Chevron and BG, admits there are added pressures facing developers. "The initial cost is under review as a result of the sudden rise in the cost of steel," he says. The cost of OK LNG has been estimated at around \$7bn, although Agunbiade insists all figures are "speculative".

With Feed work nearly complete, the next stage is the awarding of the EPC contract, for which bids are under evaluation. BG says the contract will "probably" be settled this year, which would suggest a likely start-up date of 2012.

But the four-train, 22m t/y scheme faces a long road ahead. "There is still an enormous amount of technical and commercial work to do before we can sanction the project," BG says.

Although longer in the planning, the two-train, 10m t/y Brass LNG scheme, appears to be at a similar stage. FID and the appointment of an EPC contractor are due this year, but, again, the timing may have been unsettled by rising industry costs. This project groups NNPC with Total, Eni and ConocoPhillips.

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# They're all after one thing Going global

With world demand expected to double by 2010, Australia's Woodside can't make LNG fast enough, writes Tom Nicholls

Perth, in Western Australia, may be the most isolated city in the world, but – says Woodside Energy's chief executive – that doesn't stop people visiting. "It's amazing the guest list we have at our office," says Don Voelte. "It's everybody – from the US to Europe. Chile. Everybody." They're all after one thing: LNG. "You couldn't give the stuff away four years ago. Now we can't keep up with demand."

Gas demand is so robust that until now Woodside has not had to look further than Japan and South Korea. When it planned its marketing campaign for LNG from its fully owned Pluto project, off the coast of Western Australia, it started with a shortlist of established customers. "We went to three; two of them [Tokyo Gas and Kansai Electric Power] sold us out. Immediately."

## Confident in Pluto

Those commitments are yet to be formalised with contracts. But Woodside is confident enough in Pluto LNG's marketability and economics to have booked its entire equity entitlement from the project – 357.8m barrels of oil equivalent – although it is not expected to take a final investment decision on the scheme until the middle of the year. That volume is equivalent to 90% of the project's proved reserves; although Woodside holds 100%, both off-takers have an option to buy a 5% stake.

With world LNG demand expected to double by 2010 to more than 280m tonnes a year (t/y), Australia's biggest LNG producer forecasts global shortfalls until at least 2015. So, from Voelte's point of view, there must be something faintly surreal about frequently aired concerns in the US that LNG suppliers will suddenly start dumping excess production on the US' doorstep, swamping the market and battering local gas prices.

"LNG is too valuable and clean a fuel source and I don't think we'll ever get to the dumping stage," he told journalists on the sidelines of the recent Cambridge Energy Research Associates conference in

Houston. "Our Asia-Pacific customers want every bit of LNG we can produce."

Indeed, unless the US starts to secure large volumes of LNG on long-term contracts, it may be caught short. Robust demand and import infrastructure alone will not guarantee supplies, says Voelte, a former Mobil man. "An awful lot of terminals are being built on speculation with money that doesn't understand that just because you build it all of a sudden ships are going to show up."

For now, Japan and South Korea are taking almost all of the LNG Woodside wants to allocate under long-term contracts; the Asia-Pacific region accounts for an estimated 67% of world LNG trade and Asian demand is expected to grow by 80% by

## Woodside is looking to boost its Atlantic-basin supply capability to complement its Asia-Pacific supply base

2015. But Woodside is also interested in Atlantic basin markets – particularly the US, where it expects an eightfold increase in LNG consumption by 2015. "We like the US market a lot," says Voelte.

The company should have large amounts of LNG to offer in the coming years. At present, it operates four liquefaction trains, with a combined capacity of 12m t/y, at Western Australia's North West Shelf (NWS) venture. Its share is 16.67%. When the under-construction Train 5 – about 50-60% complete – starts up in the fourth quarter of 2008, output will rise to 16.3m t/y.

The venture has already renewed contracts associated with output from the first three trains – which start expiring in 2009 – with its eight original Japanese LNG customers. And the length of contracts is shorter because of the strength of the market. In February, Woodside signed a heads of agreement with Kyushu Electric Power to supply 0.73m t/y for eight years from

April 2009. Kyushu Electric's original contract with Woodside, signed in 1985, had a 24-year term.

Woodside's Australian LNG business is set to expand beyond the NWS venture. Train 1 at Pluto, which will cost between A\$6bn (\$4.5bn) and A\$10bn and have a capacity of up to 6m t/y, is under construction and Woodside has secured approvals for additional trains. The company will retain a third of the train's capacity to market on a spot and short-term basis – a measure of its bullish expectations for LNG pricing and for its ambition to branch into trading.

The firm is also appraising Browse – a "huge NWS look-alike" – and has started testing the market for the field's gas. Browse's reserves, aggregated from various fields some 400 km offshore Western Australia, amount to over 20 trillion cubic feet (cf) of gas and 300m barrels of condensate, says Woodside. An LNG plant could be in service by 2013 or 2014.

## Bright prospects

Prospects for the Woodside-operated Greater Sunrise LNG project, in the Timor Sea, have also brightened. In February, the East Timorese government ratified a unitisation agreement covering the fields associated with the project, Sunrise and Troubadour, which hold about 8 trillion cf of gas and about 300m barrels of condensate between them.

This removed legal and regulatory uncertainties that have prevented progress. Woodside and its partners, ConocoPhillips, Shell and Osaka Gas, plan to reappraise the fields' reserves and work on commercial aspects of the project.

And it does not seem to want to stop there. "Woodside is looking to increase its Atlantic basin supply capability to complement our huge Asia-Pacific supply base," says Voelte. That will mean a more active role on the spot market – buying and redirecting cargoes – but it could also mean Woodside taking equity positions in LNG terminals in other regions.

Overall, the picture is bright: by 2015, Woodside should be in the world's top-three equity LNG producers. If nothing else, nobody can criticise Woodside for a lack of ambition.

By Tom Nicholls

Woodside Energy is considering taking equity in Atlantic basin liquefaction plants – possibly in exchange for shares in its Australian export terminals – in order to widen its supply base away from the Asia-Pacific region. The Australian company plans to play an active role on the LNG spot market and needs access to supplies elsewhere to be able to arbitrage cargoes between the European, Asian and US markets.

Taking equity in LNG trains in other parts of the world would help it achieve that. "We could trade some of our Australia position for possibly a position that's already established somewhere," Woodside's chief executive, Don Voelte, told a conference call with analysts in late February. Another route would be to develop LNG projects of its own; Woodside has overseas exploration projects that, in theory, could eventually yield LNG.

What is certain, however, is that the company will buy cargoes on the spot market and resell them. "We will buy in arbitrage cargoes, because we have fantastic marketing relationships," said Voelte. "We will have a trading option in this company."

"The LNG value is having the original molecule and not letting any leakage of value from that along the way to the burner tip," Voelte says



Woodside is already keeping back a percentage of its LNG production for trading purposes. A third of the output of Pluto LNG's first train, for example, is being retained for short-term and spot trade. Voelte says the firm will probably do the same with its share of the Greater Sunrise LNG project.

Retaining control of its LNG as far as possible down the value chain – from upstream gas production and liquefaction, through to shipping and marketing – is another part of Woodside's strategy.

"The LNG value is having the original molecule and not letting any leakage of value from that along the way to the burner tip," Voelte says.

## Destination control

In general, suppliers are much keener now to control the destination of their supplies, adds Mark Chatterji, Woodside's chief financial officer. "There's a lot more interest in controlling destinations and making sure buyers do not simply buy something and re-divert it and lock in a spread, because the suppliers can do that themselves," he said in the February conference call. "The majority of economic rent is going to accrue to the people who have spent the dollars to drill up and explore for the resource, and the countries that own the resource."

However, controlling the LNG value chain need not involve ship ownership or buying stakes in regasification terminals, according to Voelte. Woodside already has access to markets in northwestern Europe, and the US Gulf and east coasts, he argues. "We don't need to buy equity. It's too easy to get into the US."



The North Rankin field produces the feed gas for the NWS LNG project. When Train 5 starts up, in fourth-quarter 2008, output will rise to 16.3m t/y. Photo courtesy Woodside

# Putting the cart before the horse

By Derek Brower

Chinese demand for natural gas will dominate world markets in the future. The rapid pace of growth in the country's power sector will be met only by fast development of liquefied natural gas (LNG) terminals and large supply contracts from Russia and Central Asia. In turn, this will push up world LNG prices.

So the thinking went and eager exporters took it at face value. But things have changed. China is now oversupplied with gas. This is partly because of a string of unexpected successes in the country's upstream sector. In October, PetroChina, a unit of state-owned CNPC, claimed a well at the Dabei fields suggested probable reserves of 150bn cubic metres (cm). That would make that field, alone, world-class in size. As a result, China's onshore production potential looks healthy. Offshore, analysts continue to see great promise in Bohai Bay and the South China Sea.

While China's total reserves are estimated by BP to be 2.4 trillion cm, analysts say recent discoveries could double that figure.

Continued success of this kind should secure the supply side of China's gas sector. Catriona Scott, an analyst at energy consultancy Wood Mackenzie, says do-

mestic production could rise to 145bn cm/y by 2020, meeting 70% of the projected demand. But China could easily end up oversupplied, because it remains eager to import gas from Central Asia and Russia – proposed pipeline capacity would add up to 160bn cm/y of imports.

The problem lies in China's downstream sector, where the expected switch to gas is not taking place. Analysts cannot be blamed for getting it wrong: they took Beijing's 10th five-year plan of 2000-2005 at face value. That envisaged a quadrupling of demand for gas, from 25.5bn cm/y in 2000 to 100bn cm/y by 2010. For 2020, the target was 200bn cm/y.

However, says Steven Knell, a China analyst at consultancy Global Insight, "an insufficient amount of gas-fired power capacity was added to the grid" during the plan, undermining the potential for gas to make sufficient inroads in the country's energy matrix. Coal remains dominant, accounting for 96% of thermal power generation and some 80% of total electricity generation.

The main victim of this will be China's LNG sector, with import-terminal developments unlikely to follow the pace predicted. One LNG terminal is on stream – a 4.6bn cm/y facility in Guangdong, which took its first cargo from Australia's North

West Shelf project in the summer. The second, in Fujian, has a contract to take LNG from Indonesia's Tangguh facility. But Beijing recently pulled out of negotiations with Australia's Gorgon LNG to supply the Zhejiang terminal, saying Gorgon's LNG was too expensive.

And with prices for LNG rising because of tight supply, China's opportunity to develop a large-scale LNG import market at a price it deems acceptable has probably passed. Wood Mackenzie predicts Chinese LNG imports will meet 18bn cm/y of demand by 2015 and 37bn cm/y by 2020. That is far smaller than the country's original plan for 20 terminals each importing around 4bn cm/y.

## Just an illusion?

But is the prospect of over-capacity an illusion? Certain factors suggest it could be. The first is that promises of supply from Russia and Central Asia do not equate to pipelines in the ground. The second is that those projects could prove too uneconomic to bother with.

Russia's Gazprom plans to export up to 80bn cm/y to China and other markets in Asia. Construction of one pipeline, a 30bn cm/y link from western Siberia to Xinjiang region, began in October. That pipeline would connect with the China's West-East line. A second line, not yet under construction, would connect Irkutsk and China. Exports would begin in 2011, says Gazprom. The deals were agreed during a visit by President Vladimir Putin to Beijing in March.

But these two projects will require investment of at least \$11bn – and probably much more. Can Gazprom afford it? And, in any case, does it have enough gas? Gazprom claims the answer to both questions is yes, but critics of the company say that as long as it continues to spend money in areas other than in the upstream sector – where analysts say some \$10bn is needed to keep finding more gas – projects such as the China ones are unlikely to go ahead.

# OMV plans to push ahead with Croatian plant

By NJ Watson

A consortium led by Austria's OMV is close to completing the feasibility study for an LNG import terminal in Croatia. The plant would help eastern Europe reduce its high dependence on Russian gas.

Last month, OMV said gas sales in 2006 had surged by 158% to €2.1bn and that this year its focus would be on developing a 10bn cubic metres a year (cm/y) Croatian terminal. The Adria project was proposed 10 years ago, but its chances of success now look stronger than ever, because of robust demand for gas in Europe and the EU's desire to reduce its dependence on Russia.

"The gas environment was not ready for LNG 10 years ago, but now the market has changed," says Thomas Huemer, an OMV spokesman.

In September, Adria LNG Study Company – comprising OMV, Total, RWE Transgas, Ina and Geoplin – signed an agreement with Germany's E.ON Ruhrgas to prepare joint feasibility studies for the construction of the import terminal. These environmental and technical studies – to be completed "soon" – will update those started in 1995 and will include the preliminary risk assessment of the project.



The Fujian import terminal. Image courtesy Emerson Process Management



The planned Croatian import terminal would source supply from North Africa and the Middle East

The studies, carried out over 10 years ago, identified Krk Island, in the Kvarner archipelago in the northern Adriatic Sea, as the best location for the terminal. But the Croatian authorities have also set up a commission charged with finding the best location on the Croatian side of the Adriatic Coast. "The decision for the exact location is still outstanding," says Huemer.

The Adria LNG Study Company partners have also proposed that these studies will be followed by an intensive technical and economic planning stage, during which other local companies will participate. The feasibility and basic engineering studies should be completed by the end of 2008. In principle, the terminal could be commissioned by 2012.

This LNG project, like the OMV-led Nabucco pipeline, which would bring Caspian and Middle-eastern gas to the heart of Europe, is being enthusiastically embraced by the EU. Brussels is seeking alternatives to Russian gas, a goal this LNG terminal would help meet, as it would source supply from North Africa and the Middle East.

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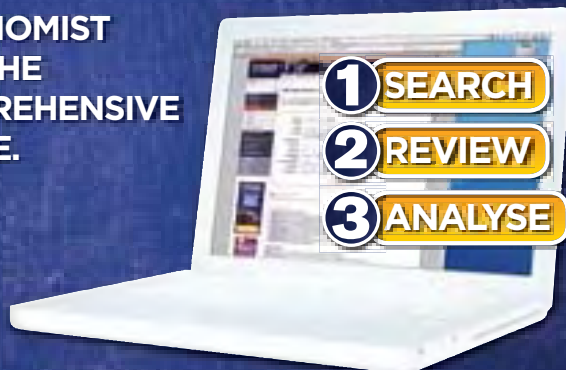
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## Around the conference



Thank you Andrea for keeping the press room awake with fine fresh coffee



Cleaner energy, flower power

Photographs © Eric Kampherbeek, www.lacouleur.nl

### The LNG eye

National oil companies (NOCs), it has often been observed, are far ahead of international oil companies (IOCs) in reserves and catching up fast in technology and wealth. Now the LNG Eye can confirm they are also closing the gap in exhibition-stand freebies (ESFs).

For years, the private sector led the way, with a slightly better line in pointless tat. Although the IOCs still have the edge, the NOCs, led by Malaysia's Petronas, are rapidly gaining ground.

A sweep of some of the biggest stands in the main exhibition hall this week yielded an enormous range of ESF quality. Some IOCs failed to deliver anything of note – there was just a cloth for cleaning spectacles from the world's richest private-sector oil firm, ExxonMobil.

But most of the supermajors put in a reasonably enthusiastic performance: Shell's bag contained binoculars, a V-Power diesel polo shirt, a USB light and a USB hub. Chevron handed the Eye a rather clever wind-up torch (flashlight) – at least consistent with the theme of energy. BP gave away a very small (and fragile) radio, a branded beachball and a frisby. ConocoPhillips handed out overly soft chewing gum, a key-

ring torch and a thermos-style coffee mug.

Some NOCs were way off the pace. Petrobras mustered just a sun hat and a biro, Sonatrach a baseball cap and a stubby felt-tip pen and LNG giant Qatargas nothing more than a yellow bag (other people claimed to have received an SD-card back-up device from Qatargas, but this was not made available to the Eye for consideration).

Petronas, however, proved itself a rival to the IOCs. The Malaysian company's goodie bag contained an international plug adaptor – consistent with the theme of energy. And a roll of bin-liners. At first, this seemed a bit bizzare, but, after due consideration, the bin bags' combination of utility (as a receptacle for some of the other ESFs), relevance to the energy industry (they are made from a high-density polyethylene resin) and sustainability (they are biodegradable) makes them far more useful than their intended contents.

Separately, one delegate suggested that, in the interests of environmental sustainability, it would be simpler if freebies in future were to take the form of cash. The Eye will be back at LNG 16 to find out. (And LNG 17.)



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