

## Namibian player targets onshore play to rival Kudu



ANE claims to have predicted much of Tullow Oil's success in the East African Rift Basin. (Tullow Oil)

**Tom Hoskyns**  
Western Europe editor, London

A small UK-based exploration company, Africa New Energies (ANE), holds two licences along the Namibian border with Botswana that could prove a better commercial prospect than the giant offshore Kudu field, which has so far proven difficult to develop.

ANE plans to develop its acreage using a new exploration technique that employs satellite surveys to map so-called hydrocarbon lead indicators – evidence of oil and gas at ground level – of subsurface oil and gas traps. According to its developers, Scotforth, set up by ex-BP geologist Peter Hutchison, the new approach triples the chance of finding oil and gas compared with conventional seismic methods, while keeping costs to a minimum.

“At the moment our satellite tool is allowing us to predict what the industry is doing, where they're drilling, when they will succeed [and] when they won't. The East African Rift Basin [in Uganda and Kenya], where Tullow Oil has had lots of success, we could predict with a high 80% effectiveness ratio,” said Hutchison.

ANE's book of prospects, which lists prospective resources of 1.63 billion barrels of oil equivalent, estimates its chances of

success at between one in four and one in six, said Hutchison. With further funding, it could lower those odds to around 50/50 by the time drilling is scheduled to begin in early 2016.

“This could be... transforming for an industry spending billions each year on a 10% chance of success,” Hutchison said.

The failure of various major oil and gas players to make a success of the Kudu gas field means the African nation is badly in need of projects to help with energy self-sufficiency. Developments surrounding the Kudu gas-to-power project early in 2014 appeared positive (see *The stars are aligning for Kudu gas-to-power – Globeleg*, 14 January 2014), but according to ANE Chief Executive Stephen Larkin a number of flaws in the project make it unlikely to progress.

“They want to build an 800 MW [gas-fired] plant, but the problem is there's only 1.4 trillion cubic feet [40 billion cubic metres] there, which would only run it for 22 years, and not only that but the demand's only 550 MW, which means they'd need a power purchase agreement with [South African utility] Eskom, but they would only keep it going for five years before local demand overtook supply and so they'd need something else to fill the gap,” said Larkin. ■

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# Japan's solar wave could herald new energy age

A surge of solar applications in Japan could mark the beginning of the end for the dominance of LNG in the country's energy mix, writes East Asia Editor **James Byrne**

GENEROUS subsidies and falling costs have caused a dramatic spike in solar installations in Japan that could begin eroding LNG's dominance in the country's post-Fukushima energy mix.

After introducing a national feed-in tariff (FIT) in 2012 of ¥42/kWh (\$0.41/kWh), Japan saw a surge in solar plant applications, licensing 12 GW of new capacity by July 2013 and adding 6.9 GW by the end of the year.

"Japan saw a rush to install capacity in response to its national FIT, adding 6.9 GW in 2013 for a total of 13.6 GW. The majority of Japan's capacity is in rooftop installations, and homebuilders are promoting solar homes to differentiate their products. For the first time, however, the non-residential sector represented Japan's largest market," the Renewable Energy Policy Network (REPN) said in its *Global Status Report* earlier this week.

But despite two cuts to the subsidy since 2012, the Ministry of Economy, Trade and Industry (METI) had licensed 66 GW of residential and non-residential solar capacity by March 2014 – close to 36% of Japan's installed thermal capacity. The UK had 89 GW of total installed capacity in 2012.

"The 66 GW of solar capacity certified by METI by March this year would take Japan through to its 2030 renewable targets – a truly unbelievable number," said Tom O'Sullivan, founder of Tokyo-based Mathyos Energy.

"Even assuming all that capacity is actually built, that would only generate about 100 TWh of electricity, or 11% of Japan's current requirements. But it would begin to displace the most expensive marginal power: fuel oil and LNG".

Some of the world's largest investment banks, such as Goldman Sachs and Deutsche Bank, have already moved into Japan's solar market. Deutsche Bank said earlier in July it had set aside roughly \$1 billion to finance six projects in the next 18 months. Western banks have followed Softbank, whose owner Masayoshi Son made large solar investments in the wake of the Fukushima disaster.

"The surge in applications was because of the subsidy and particularities of the application system, so we don't know how much of this 66 GW will be built," said Mika Ohbayashi, director of Japan's Renewable Energy Foundation.

"None of us believe that all of the 66 GW of capacity applied for will be built. But what we have learned is that FIT has been very powerful in attracting investment, and the interest shows the huge potential for renewables in Japan," said Ohbayashi.

## The European path

A rapid build-out in renewable capacity generation could also push Japan down a similar road to that travelled by Germany and

other European countries, where solar and wind power have eroded utility margins and helped wipe close to half a trillion dollars off the continent's leading power stocks.

Undoubtedly the hardest hit in the European power mix has been gas. With solar plants producing electricity for free during peak demand periods, gas-fired plants across the continent have seen output plummet.

As a result, more than 21 GW of gas-fired plants were mothballed across Europe in 2013, as utilities took close to \$8 billion of impairment charges, according to an Oxford University study, *Stranded Generation Assets*, released in January.

More shuttered plants have followed in 2014, with the latest casualties reported by RWE Generation in March. "RWE Generation has decided to temporarily mothball the two older gas-fired power plants at the Lingen site, Emsland B and C, from the second quarter of 2014," the German utility said.

Already faced with the highest gas prices in the world, Japanese utilities have looked to cut costs and place greater emphasis on coal-fired plants. Japan's first energy policy document released in the wake of the Fukushima disaster designated geothermal, hydro, nuclear and coal as sources of baseload power generation, relegating gas to an "intermediate power source".

Meanwhile, restarts at some of Japan's shuttered nuclear plants could begin to trim demand for thermal power in 2015.

A recent study by Bloomberg New Energy Finance (BNEF) predicted solar photovoltaic would account for 20% of Japan's generation capacity by 2020 and 32% by 2030.

"Japan is expected to see its levelised cost of energy for renewable sources significantly improve by 2030. Utility-scale PV will be competitive with fossil fuels by 2020, and onshore wind will do the same a decade later," said BNEF in its *2030 Market Outlook*.

This build-out in capacity will affect fossil-fuel generation by pushing thermal generation to 51% of the energy mix by 2030 from 66% in 2010 said BNEF. ■

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Sanyo's Solar Ark in Gifu prefecture in central Japan. (PA)

# Changing the rules of onshore exploration

A new prospecting technique could revolutionise the way companies search for hydrocarbon resources, and independent explorer Africa New Energies is planning to use the technology in Namibia. **Tom Hoskyns** reports

INDEPENDENT Namibian explorer Africa New Energies (ANE) is using a new onshore exploration technique it says triples the chance of success for a fraction of the cost of conventional seismic methods.

*Interfax* spoke to former BP geologist Peter Hutchison – the man behind the technology – and ANE's Chief Executive Stephen Larkin, to find out about the company's plans to deploy its technology in East Namibia.

**Interfax:** *What led you to develop this new exploration technique?*

**Peter Hutchison:** We've got an industry spending billions every year defining rocks and structures, and not finding sufficient hydrocarbons. So 20 years ago, when I came out of BP, that was very much in my mind – somehow we had to get a toolkit that much more directly addressed hydrocarbon possibility and probability in a detectable form.

After I left BP and was consulting in and out of the FSU, I met some Russian guys. Their domestic market had imploded [after the Soviet Union collapsed] but prior to that they had been developing an emerging technology of using satellite imagery, processing it for its spectral mapping of landscapes, and I said: 'Well, if you can show me enough evidence I'm prepared to JV with you and try it on a number of different places I know well.' We

teamed up in 1996 and we've been together since then.

**Interfax:** *How does it work?*

**PH:** The essence of it is: subsurface hydrocarbon traps are not absolute. They have hydrocarbon discharge to surface, be it at the molecular level through diffusion or at a microseepage level – there is no absolutely perfect hydrocarbon seal. Under the primary laws of gravity, you are going to get vertical release of hydrocarbons.

This induces an array of eco-environmental changes at the surface in all sorts of ways – for example, changes in the oxidation status of minerals and changes in the nutrient balance of soils [which consequently change] the chlorophyll content of vegetation. So we needed a tool that could detect these effects – natural 'hydrocarbon footprints' – at the surface.

The American Association of Petroleum Geologists has a long history of writing up some of these changes as observed in North American petroleum provinces – so nothing new there. But the Russians I'd teamed up with had been ground-truthing this in Siberian oil and gas fields. They had been putting ground-truthing teams into the field to do soil science, geobotanical surveys and so on.

I found this very intriguing. And on the basis of that, I saw we had the ability to start

detecting hydrocarbon indicators directly and remotely.

We've been working together now for 18 years. I've back-migrated it into the conventional exploration/analytical approach of western companies, and what I can say with confidence is that – with all the countries and all the basins I have examined with my Russian colleagues – I'm quite convinced that every significant hydrocarbon field – be it oil or gas – has a spectral signature that can be identified at the surface if you know how to process the satellite imagery in that particular environment. So, there's no single recipe that covers all – you need to have knowledge over each of the environments you're working in.

**Interfax:** *How confident are you in the new technology?*

**PH:** Our effectiveness is about 70-90% in proven provinces. We've been working in two recent hotspots – one is the Zagros deformed belt in Kurdistan, which is a prolific province. It had a very easy run in the first licensing round by industry players, but they are drilling an increasing number of dry holes. Our effectiveness [in Kurdistan], having analysed previous industry drilling, is around 90% – not just on the positives, but also the dry holes.

At the moment our satellite tool is allowing us to predict what the industry is doing, where they're drilling, when they will succeed and when they won't. The East African rift basins [in Uganda and Kenya], where Tullow is having lots of success – we could predict with an effectiveness ratio in the high 80% range.

**Interfax:** *What's the timeline for development in Namibia?*

**PH:** We've got a seven-year journey ahead of us to further de-risk, rank and prepare for drilling to test to see if we have a new petroleum province on our hands. We like the initial indicators; we've got a book of prospects at one in four, one in five and one in six chance of discovery. We know that with the next round of surveying – which we're doing a private placement

> 04



A Namibian desert. Africa New Energies is hoping to use a new exploration technique in the east of the country. (PA)

**> 03** to fund – we should be able to progress those to a one-in-two chance of success or better before we drill. For frontier drilling, that is unprecedented.

But it's not by happenstance, it's by design – and it's by one or two individuals stepping outside the conventional wisdom of exploration and saying: 'we've got to change the rules of the game – we've got to find a new approach'. This is what we call hydrocarbon lead indicators (HLIs). By adopting that concept and working it through certain tools, we can get to – we anticipate – a 50% chance or better of success by the time we're drilling in early 2016. This could be transformational for an industry spending billions each year on a 10% chance of success.

**Interfax:** *Why not set up a services company using this technology?*

**Stephen Larkin:** The best way for us to capture the value of this technology is to secure the basin – a very large area – show there are hydrocarbons there, and release the production to companies with larger balance sheets and more experience

in that area; that is what the majors are very good at. What is so powerful about this is we're letting our investors get in at about \$0.02 per barrel as a prospective resource, and every barrel we prove up we can sell for \$4 as a contingent resource. That's a great deal for the Shells and BPs, because it's costing them \$17 to find it.

Therefore, by far the best way of securing our intellectual property is through controlling the acreage and releasing it once a discovery has been made. It's transformative that we're able to do that.

**Interfax:** *Why not take the company to AIM?*

**PH:** We can take it much further up the value curve before we either farm out or, if we had a bigger portfolio of opportunities under our tenure, maybe then one would say: 'it's time to list'.

**SL:** We're not saying no to AIM, but the best way to create shareholder value is not to need much money from them in the first place. Setting up an AIM listing is not cheap; but once you're there, you're not exploring,

you're in the game of financial PR – you need constant news feeds to stop your share price sagging.

**Interfax:** *What's the background to the company?*

**SL:** We were invited by the Namibian government to assist them with energy self-sufficiency, with a particular focus on electricity. One of our colleagues managed to get a UN-affiliated NGO to task us with helping the Namibians to come up with a prefeasibility strategy to give them energy self-sufficiency.

We looked at every single renewable opportunity, which was our default position, and it just wasn't possible, because the cost of capital was so high for a relatively small African economy. So we said 'you need to involve gas', which brings us to Kudu.

**Interfax:** *What are your thoughts on the Kudu project?*

**SL:** Well, firstly they'd have to break the world record for having the longest underground pipeline yet built, of about 170 km – with a cost conservatively estimated at \$1 billion. They want to build an 800 MW [gas-fired] plant, but the

problem is there's only 1.4 trillion cubic feet [40 billion cubic metres] there, which would only run it for 22 years.

Not only that, but the demand is only 550 MW, which means they'd need a power purchase agreement with [South African utility] Eskom. But that would only keep it going for five years before local demand overtook supply, so they'd need something else to fill the gap. The offshore platform is easily another \$1 billion – so you're talking about \$3 billion of capex, possibly more, to supply an electricity problem for them.

But an obscure clause in their electricity legislation states that every Namibian power purchase contract has to be signed in local currency. If you want to fund a project like that – which is 20% of GDP – you're going to need to fund it internationally. Which means funding it in dollars, so your revenue stream needs to be in dollars or you need to hedge it.

You can't hedge a project like that beyond five years, which is why Kudu has never been developed. And that assumes selling at \$4/GJ. So Kudu was never going to work. ■

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## POLICY & REGULATION | CYPRUS

# Cyprus 'not oblivious' to LNG project challenges – minister

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AN LNG export plant on Cyprus could be an important first step for new gas supplies to the EU from the East Mediterranean, Yiorgos Lakkotrypis, Cyprus's minister of energy, commerce, industry and tourism, said in Malta on Thursday at a joint EU/Maltese/Cypriot energy summit.

"As of today, more than 35 trillion cubic feet [991 billion cubic metres] of gas have been

discovered offshore Israel, approximately 5 tcf has been discovered in Cyprus's exclusive economic zone and, according to Lebanese officials, preliminary estimates from seismic surveys show resources of about 30 tcf of gas in Lebanon," Lakkotrypis said.

He also discussed plans for an onshore LNG plant on Cyprus's southern coast at Vasilikos, but admitted there will be challenges. Critics argue Cyprus has made little progress in securing enough gas to justify the development of even an initial 5 mtpa train,

making the project doubtful.

"We are not oblivious to the commercial challenges this option carries – neither in terms of required capital or time-to-market. But we are determined to face them responsibly and pragmatically. We are confident an onshore LNG plant could be an important first step towards the concept of an 'Eastern Mediterranean Gas Corridor,'" the minister said.

Bulgarian Minister of Economy and Energy Dragomir Stoynev was understood to be scheduled

to meet EU Commissioner for Energy Günther Oettinger at the summit on Friday to discuss the South Stream pipeline project. A joint press conference between Lakkotrypis, Oettinger and Malta's Minister for Energy and Health Konrad Mizzi is expected to take place on Friday.

Mizzi said at the conference that Malta's position between Italy and gas producer Libya gives it strategic value in energy supply to the continent. ■

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POLICY & REGULATION | RUSSIA

# Moscow considers profit-based taxation

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RUSSIAN hydrocarbon companies which have been lobbying for a transition from revenue-based taxation to a profit-based system saw a glimmer of hope this week, with tentative proposals for a pilot project.

Arkady Dvorkovich, deputy prime minister responsible for energy, said it may make sense to switch a few projects to profit-based taxation.

"I'm not against pilot projects but [the actual transition] is for future generations, not the current situation," he said at a cabinet meeting on Thursday.

He said the subject of excess profit tax had been raised repeatedly, and most recently at a meeting of the presidential fuel and energy commission in Astrakhan. "The president spoke about the risks with administering the tax, but this doesn't rule out pilot projects... This shouldn't be seen as a cure-all or some sort of recipe to save the situation, because a pilot project would take a few years. It would take around 10 years for it to become clear whether this tax can be administered normally or whether it would be impossible. Otherwise this would not be a true pilot project, just a demonstration of our ability to sign a regulatory act," Dvorkovich said.

"I'm not against pilot projects, to really try things out. We could definitely try one or two, to analyse all the risks, during the next few years," he said.

The issue is more a concern for the oil sector than the gas sector, where production rates are good. Last year, Gazprom postponed the launch of several projects in the Yamal and Sakhalin areas by up to three years and the target dates for them to achieve design capacity by up to four years, because of falling demand. The combined capacity of these projects is about 200 billion cubic metres.

Russia consumed 413.5 bcm of gas in 2013, compared with 416.0 bcm in 2012 and 424.6 bcm in 2011, according to BP's

*Statistical Review of World Energy 2014.*

A proposal to replace the revenue-based tax system with a profit-based system could help avert a fall in output in the next few years, Fitch Ratings said in April.

Energy Minister Alexander Novak said in 2012 he supported an excess profit tax for both onshore and offshore fields and that the revenue-based system is inefficient. He predicted a period of fiscal stability in which investors will see greater clarity and transparency in terms of future investments.

The latest proposal is thin on detail, so the shape of the pilot project remains unclear. "[There will be] no potential impact for the whole industry in the near future... We don't have enough details yet about which company will be the subject of this pilot project," VTB Capital analyst Alexander Donskoy told *Interfax*.

Separately, Dvorkovich said he backed an initiative to deduct exploration costs from the Mineral Extraction Tax (MET). "As far as taxation is concerned, I support the need to deduct exploration costs from MET," Dvorkovich said at Thursday's meeting.

Russian Prime Minister Dmitry Medvedev said at the meeting there were not enough concessions to stimulate exploration. "We're not doing enough – a system of incentives must be introduced," he said.

The Finance Ministry is opposed to the idea. "The suggestion to factor in expenses on geological exploration and subtract this sum from the mineral extraction tax will bring about budget losses of RUB 65 billion [\$1.9 billion]," Finance Minister Anton Siluanov said.

Siluanov added spending on geological exploration was currently calculated in the taxation of company profit.

"We have made many decisions on a preferential tax procedure for new fields. Tax breaks have been implemented for oil and gas condensate production on the shelf when producing oil from tight reserves. A mechanism has been created that incentivises our oil companies to invest resources in exploring new fields," he said. ■

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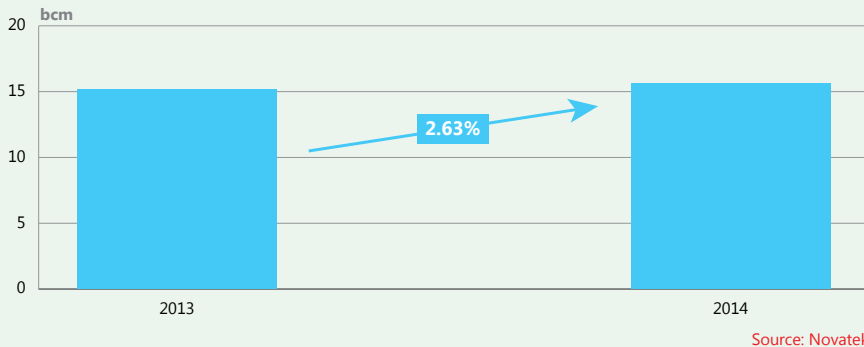
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## NOVATEK NUMBER CRUNCH

Q2 and H1 production figures announced

### Novatek gas production, Q2



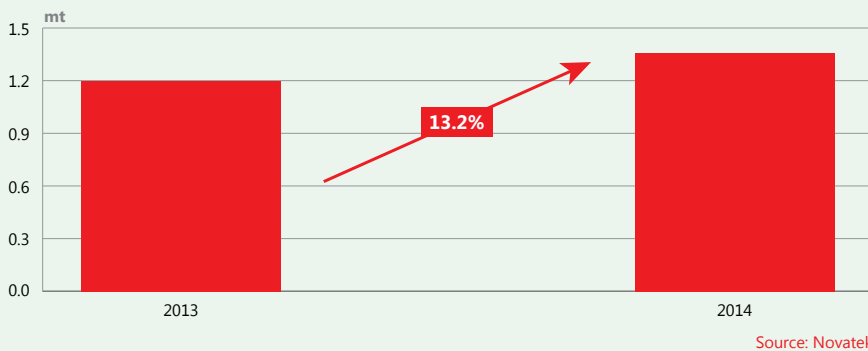
Russian Novatek produced 31.30 billion cubic metres of gas in H1 2014, about the same as in the corresponding period last year, the company said, quoting preliminary production data.

The independent gas company's H1 2014 liquids production grew by 14.4% year on year to 2.73 mt.

"For the reporting periods... gas production was affected [by] the disposal of the company's equity share in Sibneftegas at the end of 2013. Excluding the gas produced by Sibneftegas, Novatek's gas production increased by 9.9% in H1 2014 and by 12.8% in Q2 2014... compared with the respective periods in 2013," Novatek said in a statement.

Novatek's production in Q2 2014 amounted to 15.59 bcm of gas and 1.36 mt of liquids, resulting in a 2.6% rise in gas production for the quarter and an increase in combined liquids production of 13.2%, compared with Q2 2013.

### Novatek liquids production, Q2

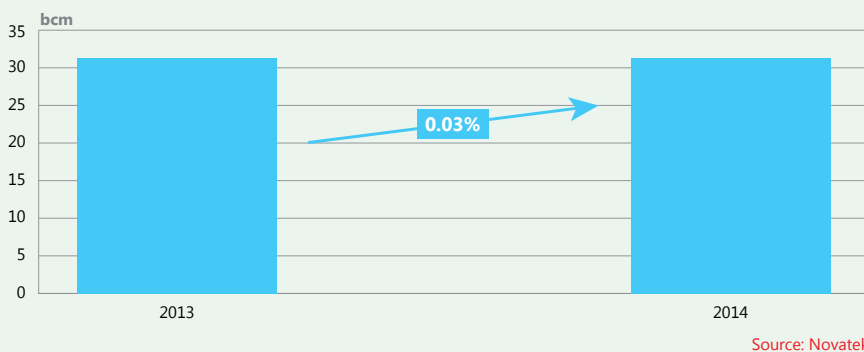


"The performance of the liquids segment should offset the weak ruble and the frozen tariffs affecting the gas sector," analysts at Uralsib said in a note.

Novatek processed 1.43 mt of unstable gas condensate at the Purovsky Processing Plant in Q2 and 2.82 mt in H1 2014. This represented an increase in liquid volumes throughput of 18.1% and 17.3% respectively year on year.

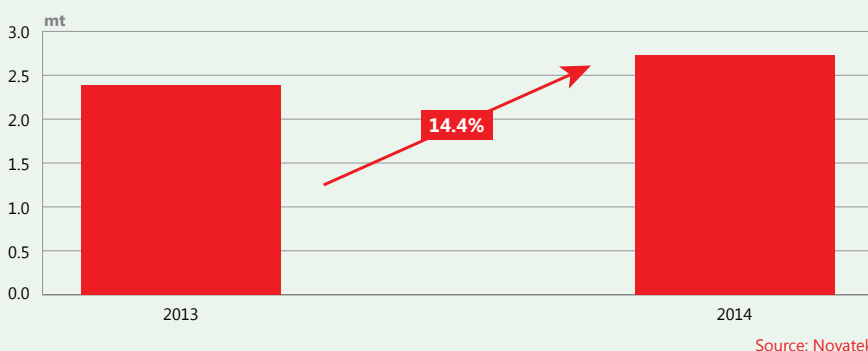
As of 30 June, Novatek had 1.59 bcm of gas and 357,000 tons of stable gas condensate and products in storage or transit and recognised as inventory.

### Novatek gas production, H1



Novatek's Q2 2014 gas output was in line with its 2014 forecast of a 2-3% year-on-year increase, Uralsib said. "However, the increase in liquid output still lags the 2014 20-30% year-on-year growth target. We expect an acceleration of liquids production growth in H2 2014 after the launch of the Yaro-Yakhinskoye field and the third train at the Samburg field."

### Novatek liquids production, H1



**Tom Washington**  
FSU editor



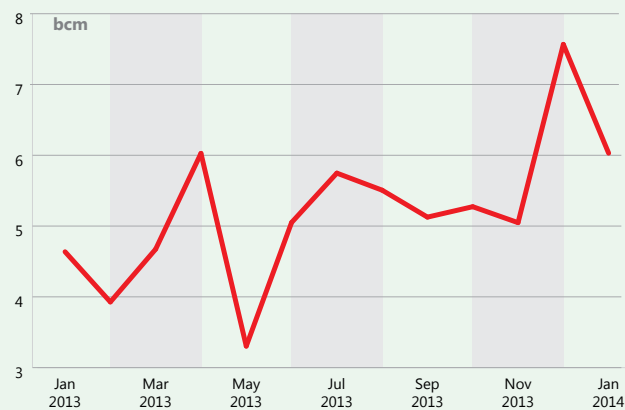
## NIGERIAN NUMBER CRUNCH

Output suffering from vandalism

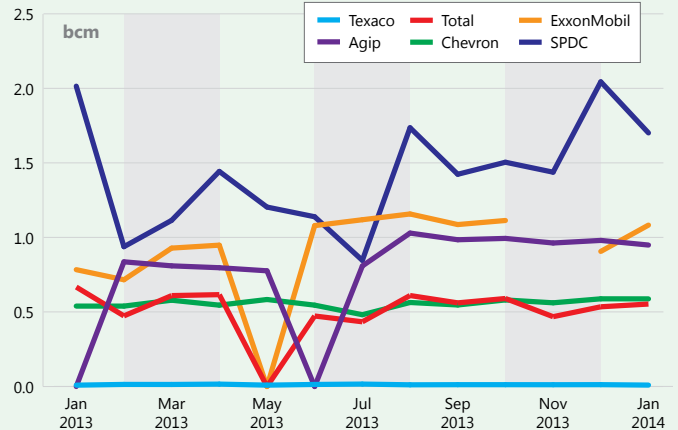
Nigerian output suffered at the beginning of 2014 because of continuing vandalism at upstream facilities and gas-fired power plants. In January, Nigerian National Petroleum Corp. Chief Executive Andrew Yakubu said 30% of installed gas supply capacity in Nigeria was out of action because of vandalism. This reduced domestic demand from the power sector by 13.6 MMcm/d – enough to generate 1.6 GW. Pipelines affected included the Escravos-Warri stretch of the Escravos-Lagos pipeline system and the Trans-Forcados crude oil pipeline, while the Utorogu gas plant was out of service for maintenance work.

Nigerian President Goodluck Jonathan's push to increase gas-to-power output in the country is having limited impact. The power situation this year has remained poor, although operators have reported an increase in gas facilities being restarted as the government encourages independent power projects back into the market. A privatisation process, initiated under former President Olusegun Obasanjo but reinvigorated under Jonathan, was completed last year – with five generating companies and 10 transmission companies now in private hands.

Nigerian gas output, Jan 2013-Jan 2014



Production by company, Jan 2013-Jan 2014

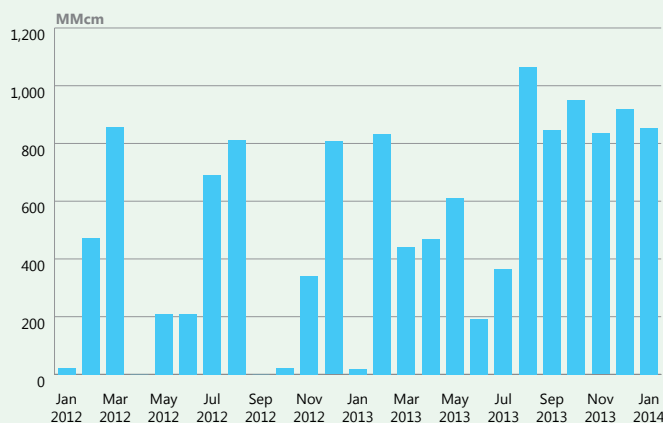


Uses of gas, November 2013 to January 2014 (MMcm)

	November	December	January
Gas used as fuel	268.1	354.2	367.7
Gas sold to third parties	1,682.2	2,279.8	1,688.7
Gas for LNG	834.6	918.4	853.2
Gas lift	87.1	175.3	146.9
Gas flared	1,057.9	1,524.8	851.4
Gas reinjected	751.4	1,582.0	1,688.7

Source: NNPC

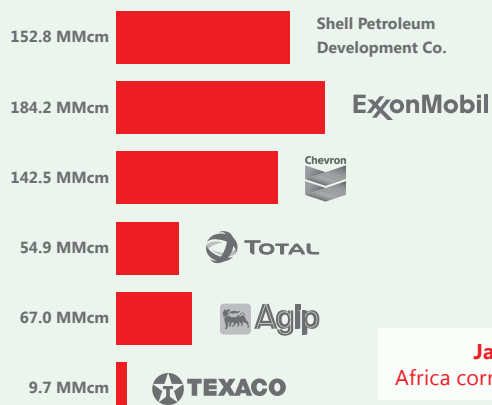
Gas used for LNG



Gas flared in December 2013



Gas flared in January 2014



Source: NNPC

James Batty  
Africa correspondent

## SUPPLY &amp; DEMAND

# Ample supply helps Chongqing revive consumption growth

**Tang Tian**  
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CHONGQING'S gas consumption rebounded in the first half of 2014, after demand for the fuel stalled last year, according to data released by the Chongqing Economic and Information Commission (CEIC).

The municipality, which lies in central China, raised gas consumption by 12.7% year on year to 3.98 billion cubic metres in H1 2014, compared with a growth rate of 7.4% in the same period of 2013. January-March demand was up by 5.5% from a year ago, indicating that consumption accelerated over the following three months.

Tight supply prevented greater use of gas last year. Chongqing consumed 7.17 bcm of gas in 2013, up by only 0.58% from

2012 (see *Chongqing sees little growth in gas use in 2013*, 15 January 2014).

The CEIC attributed this year's increase to restarts at several large chemical companies, which had suspended production so that households had enough gas last winter. "These plants began to receive gas again in March and 90% of their gas demand was met in Q2. Therefore, gas use has increased in H1," said the CEIC.

The industrial sector accounted for 2.4 bcm (60.3%) of Chongqing's H1 consumption, up by 15.5%, as supply availability improved. Residential users accounted for 1.23 bcm (30.9%) – an increase of 10.9% year on year – as a result of assured supply from the suspension of the chemical plants. The remaining 350 million cubic metres (MMcm), 8.8% of the total, fuelled

gas-powered vehicles, which consumed 1.2% more than last year.

Shale gas output from Sinopec's Fuling field in Chongqing was an important local source of supply, said the CEIC. "We made plans for the use of output ahead to secure the shale supply," said the CEIC, noting Fuling is producing 3.1 MMcm/d on average – which would equal 1.13 bcm/y.

Chongqing's dependence on non-local supply sources has been growing amid declining production from fields in the municipality. Around 40% of daily supply in Q1 was provided by the Zhongwei-Guiyang and China-Myanmar pipelines, the CEIC said in April.

"Some of Chongqing's old gas fields are nearly running out of resources but the exploration

and development of new fields is slow, which is why the city faces decreasing gas output," Liu Guangbin, an analyst with energy consultancy Sublime China Information, told *Interfax*.

But production is likely to rise in the future after PetroChina revealed the discovery of a huge gas reservoir at the giant Anyue field in January.

The company said the formation in the Moxi Block of Anyue – which straddles Chongqing and Sichuan province – had technically recoverable reserves of up to 308.2 bcm and 440.38 bcm of proven gas in place.

PetroChina is building a project with first-phase capacity of 4 bcm/y and has started work on the 6 bcm/y second phase. ■

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## EXPLORATION &amp; PRODUCTION

# Henan CBM company enlists partner to explore shale block

**Zhang Yiping**  
Shanghai

A PROVINCIAL CBM developer that won a block in China's first shale gas auction three years ago will team up with a large coal mining machinery and equipment manufacturer to explore the acreage.

Henan Provincial Coal Seam Gas Development and Utilisation (Henan CSG) signed a letter of intent to cooperate with Shenzhen-listed Linzhou Heavy Machinery Group on the Xiu Hill Block in Chongqing, according to the coal equipment maker. Henan CSG won the block in a 2011 auction only open to six state-owned oil and gas companies.

Linzhou's entry into the shale gas sector will diversify the company beyond its core

manufacturing business, which has suffered in the wake of government moves to cut coal burning, a company spokesman told *Interfax*. Shale gas is attractive because it enjoys support from Beijing, he added.

Linzhou's revenue dropped by 14.7% year on year to RMB 199 million (\$32 million) in 2013, a slump it blamed on decreasing demand for coal and a saturated market for coal mining machinery.

The spokesman declined to place a value on the deal, but said Linzhou plans to invest RMB 3-5 billion on expanding its oilfield services business and entering the oil and gas equipment manufacturing industry.

Linzhou will invest no more than 25% of Henan CSG's equity stake in the block and carry

the cost of exploration and development. The companies will also work together on two CBM demonstration projects in Henan.

Two-dimensional seismic surveying finished at Xiu Hill last November with RMB 91.8 million invested in the block, equal to 36.72% of planned total investment, the Xiu Hill county government said at the time.

A drilling programme of eight to nine wells will be completed by the end of this year, the government added.

While Linzhou views the shale gas sector positively, other companies that were previously keen are now staying away.

ODE Energy Equipment announced on Tuesday it will not start any research work this year on technology related to shale gas, according to the company's

development strategy.

Uncertain prospects for China's shale market and difficulties in exploration have tempered the company's enthusiasm, and the numerous unknowns – which include doubts over the output from Sinopec's Fuling shale field in Chongqing – have persuaded the company to persist with its core business of oil exploration, an ODE Energy Equipment representative told *Interfax*.

"The shale gas sector is certainly relevant to our business and we've planned to accumulate some technical reserves. But as things remain murky, we've decided to narrow our focus and wait a few more years before taking any action," said the representative. ■

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## FINANCE

A weekly round-up of the latest headlines in project finance

### Multilateral agency debt agreed for South Tunisian Gas Project

THE African Development Bank (AfDB) has approved a \$75 million corporate loan to Tunisia's state-owned Entreprise Tunisienne d'Activités Pétrolières for the development of the South Tunisian Gas Project (STGP). The debt will mature over a seven-year tenor, the AfDB said. The STGP scheme involves the construction of gas transport and treatment facilities to connect stranded and associated gas from the Nawara concession in the south of Tunisia to buyers. It will include a central processing facility, a 370 km pipeline with a capacity of 10 million cubic metres per day and a gas treatment plant at the coastal Ghannouch industrial area. Austria's OMV is also sponsoring the project. The Tunisian government hopes investment in the STGP will boost foreign direct investment in exploration in the south of the country.

### EIB and GIEK team up for Scandinavian LNG ferry finance

NORWEGIAN passenger ferry operator Fjord Line has taken delivery of two new LNG-fuelled vessels funded by the European Investment Bank. The €124 million (\$169 million) loan from the multilateral agency will fund ferries operating between Bergen,

Stavanger and Langesund in Norway, and Hirtshals in Denmark. Norwegian export credit agency GIEK is supplying guarantees. Both cruise ferries have four LNG-powered engines with 12 cylinders that produce 5.4 MW of power. "In 2015, new and stricter standards for the sulphur content of ships' fuel will enter into force in northern Europe. The LNG engines allow Fjord Line to meet these standards with a large margin," Fjord Line said.

### US Exim loan sought for Russian upstream projects

FUND Energy, which owns oil and gas assets in Russia and was founded by former Russian Energy Minister Igor Yusufov, is hoping to secure debt from the US Exim bank for the development of the Karasevskoe and Yuzhno-Tanlovskoe oil, gas and condensate fields in Russia. The export credit agency first expressed interest in the project in 2014 and confirmed its plans in a letter addressed to both Fund and its new partner – United States-based Halliburton – at the beginning of July, *Interfax* understands. Fund and Halliburton are working to secure \$50 million in financing from the bank, whether in the form of loans or bank guarantees. Discussions are also being held



with a number of commercial banks as potential candidates to serve as intermediary institutions, suggesting US Exim could supply guarantees. "The first stage of cooperation with Fund Energy implies the analysis of exploration wells to obtain subsurface insight and discover new pay zones for potential reactivation, as well as the assistance in the development of project documentation for construction of exploration and production wells, core sedimentology study and log interpretation. Moreover, Halliburton confirmed the plans on further cooperation with Fund Energy on rig sourcing, well construction design, planning and execution of Fund drilling programme in 2014-2015," Fund said in a press release.

## Best of Blogs

### Water waste

A new study reveals the United States has significant untapped hydropower potential, but poor economics means it is not likely to be harnessed.

<http://tinyurl.com/otfv2tg>

### Rising sun

*The Guardian's* Giles Parkinson comments on the falling cost of solar power and how it is undermining the traditional economic model of utilities.

<http://tinyurl.com/kkemuhn>

### ISIL's black gold

Oilfields captured by the Islamic State of Iraq and Levant insurgents are being used as a source of income for the group as it smuggles oil into other countries to sell.

<http://tinyurl.com/kjup8hr>

## Week in Numbers

### Flaring pain

**1** million b/d

Oil production in North Dakota

**28** MMcmm

Production of associated gas in the state

**40%**

Rate of gas flaring in the state during certain months

Source: *Interfax*

### Victoria falls

**91** Mcm/d

Average five-day output from the Logbaba project in Cameroon in April 2013

**119** Mcm/d

Average five-day output from Logbaba in April 2014

**15%**

Recorded fall in share price of operator Victoria Oil & Gas.

Source: *Victoria Oil & Gas*

### China builds

**3** mtpa

Capacity of new LNG terminal being built in Maoming city

**\$1.82** bln

Estimated cost of building the terminal

**4**

Number of terminals in Guangdong province owned by CNOOC

Source: *CNOOC*

## Winners & Losers



China's efforts to expand its LNG shipbuilding capacity received a boost after details emerged that the country's only large-scale LNG vessel shipyard has signed a contract to construct four 174 Mcm carriers for the Queensland Curtis LNG plant in Australia.



The Polish Ministry for the Environment has granted approval for the development of an underground coal gasification project near Krakow from Australia-based Linc Energy. Linc estimates the site could provide 800 bcm of pipeline gas over 80 years at a rate of 10 bcm/y.



Finnish gas importer Gasum is pushing ahead with LNG import projects for both national and regional supply, with the government in Helsinki hoping to meet an August deadline for funding applications. To meet EU funding regulations, the terminal must be developed as a regional facility, allowing onward delivery to the Baltic states, which will free them from dependence on Russian gas.



Chevron has given up on prospects for conventional and unconventional gas exploration in Lithuania, having

closed its office in Vilnius and ceded its stake in the company holding the Rietavas licence to Sweden's Tethys Oil. Last October, Chevron turned down the opportunity to develop the Silute-Taurage concession in Lithuania despite winning the tender as the only bidder. It blamed an uncertain regulatory regime for the decision, and sources in Vilnius argue little has changed.



Scotland's Cairn Energy has been forced to postpone exploratory drilling at its Spanish Point discovery offshore Ireland following delays in rig maintenance. Cairn planned to drill an appraisal well on its licences within the Northern Porcupine Basin – approximately 200 km off the west coast of Ireland – in Q2/Q3 this year, but its inability to source a functional rig has pushed operations back to 2015.



Industrial and commercial gas demand in the UK is set to fall by up to 24% by 2035, according to National Grid's latest set of projections. The *Future Energy Scenarios* report published on Thursday, said industrial and commercial gas demand was set to decline by 17-24% by 2035. ■

## Quotables

**Our analysis suggests solar will be fully competitive with other power sources by 2020**

Milo Sjardin, head of Asia Pacific for Bloomberg New Energy Finance, said regarding the growth of solar PV in the Asia Pacific region, speculating that it will reach parity without subsidies.

**The speech and agreements underline the two main priorities of the administration: strengthening the economy through more transfers of natural resources from Australia to Japan, and strengthening Japan's national security with a more proactive defence posture**

Tom O'Sullivan, founder of Tokyo-based Mathyos Energy, said regarding Japanese Prime Minister Shinzo Abe's visit to Australia this week

**I don't think we should create a Russian shale revolution and thereby strengthen Russia's energy weapon**

Robert Menendez, chair of the United States Senate Committee on Foreign Relations, said calling for further sanctions on Russia

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