SHALE GAS – JURISDICTIONAL UPDATE (UK, CENTRAL AND EASTERN EUROPE, NORTH AND CENTRAL AMERICA, SOUTH AMERICA, ASIA AND AFRICA)

UK

On 27 June 2013, the British Geological Survey ("BSG") report[1] identified a larger volume of potentially exploitable shale gas within the north of England than previously thought, with as much as 1,300 trillion cubic feet at the Bowland site in Lancashire. Whilst the report does not detail how much of these reserves are exploitable, the confirmation of such significant volumes raises the potential commercial value of the UK shale gas industry, making entry into it more attractive. BSG are currently working on a resource estimate for the Weald Basin in the south-east, which is thought to be the second most promising area in the UK.

Simultaneously, the Government published a report[2] incentivising entry into the industry through the taxation benefits previously announced under the 2013 Budget. Alongside the announcement of the report, the Government confirmed that they were consulting on the extent of the incentives to be offered to those involved in the exploitation of shale gas. In the Spending Round 2013 presented before Parliament on 26 June 2013, George Osborne said it was the Government's intention to "make the tax and planning changes which will put Britain at the forefront of exploiting shale gas…We will provide our country with the energy of the future at a price we can afford".[3]

The report highlights the following measures:

- allowing the Environment Agency to offer permits on an expedited basis;
- guidance to clarify the interaction of the planning process with the environmental and safety consenting regimes;
- an industry-led scheme of community benefits so communities are rewarded for their part in the UK's energy sector; and
- consultation on tax incentives.

Osborne, in interviews regarding the report, has emphasised that planning permission will remain a key hurdle to all proposed fracking activities. He anticipates that the financial benefits being offered to communities in which fracking takes place will assist in obtaining the necessary support to award planning permission. Both he and the consultation document have provided further indications of the likely benefits.

Environment Agency

The Environment Agency has previously published a statement to streamline and simplify the process of issuing licences for exploratory activity for shale gas. This would ensure that shale gas permits are issued within the standard 13 week period by September 2013, and by February 2014 issued within 1-2 weeks by developing standard rules.

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[1] https://www.gov.uk/government/publications/bowland-shale-gas-study
[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209279/PU1524_IUK_new_template.pdf
[3] https://www.gov.uk/government/speeches/spending-round-2013-speech

The latest consultation document published by the Environment Agency states that the non-statutory 13 week determination timescale for environmental permits does not apply where a site is defined as 'high public interest'.[4] The consultation document warns that the Environment Agency may take 4-6 months to determine a permit where there is much public interest and that a second public consultation may be required.

Planning process

On 19 July 2013, the Department for Local Communities and Local Government published guidance to local councils taking planning decisions on how applications for shale gas developments should proceed through the planning system.[5] It sets out the procedures in which applications should be made and that planning permission that is required for each of the three phases; exploration, appraisal and production.

It also sets out a list of planning matters called 'material considerations' to be taken into account when a decision is made on a planning application. A list of 'principal issues' included noise association, air quality, landscape character, land stability/subsidence, ecology and site restoration and aftercare. Issues such as loss of property value, loss of view and opposition to the principal of development activity shall not be considered when a planning decision is taken.

Local Community Benefits

On 27 June 2013, the industry trade body, UK Onshore Operators Group (UKOOG), published a charter setting out the minimum standards that communities should expect from operators in shale reservoirs that display the UKOOG logo.[6] These commitments include consulting open and honestly with communities in advance of any application for planning permission, providing continuous points of contact with developers, organising logistics and minimising disruption during operations and a commitment to employing local workers and suppliers where possible. Operators will also commit to provide local communities at the exploration/appraisal stage of £100,000 per well site where hydraulic fracturing takes place and provide a share of proceeds at production stage of 1% of revenues to communities that host them. UKOOG will also review, monitor and publish transparent data and publish data each year of how they have met these commitments.

On 30 July 2013, the Department of Energy & Climate Change also published a collection of frequently asked questions in relation to shale gas and fracking. This 36 page paper includes responses from the UK Government on regulation and monitoring, local planning and the environmental impacts. This shows the continued communication with both investors and local communities.[7]

Tax Incentives

On 19 July 2013, the UK government unveiled draft tax breaks for shale gas investment. The new tax 'pad allowance' will mean that tax payable on income from shale production will be a fraction of traditional oil and gas taxation, creating a tax rate of 30% as opposed to the current 62% taxation for oil and gas companies. It will operate in a similar fashion to existing field allowances, exempting a

[4] https://consult.environment-agency.gov.uk/portal/ho/climate/oil/gas?pointId=2582509
[5] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224238/Planning_practice_guidance_for_onshore_oil_and_gas.pdf
[6] http://www.ukoog.org.uk/elements/pdfs/communityengagementcharterversion6.pdf
[7] https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking

proportion of production income from the supplementary charge. The amount of production income exempt from the supplementary charge would be a proportion of cumulative capital expenditure incurred on a shale gas pad.

The draft bill was subject a three month consultation which completed on 13 September 2013. The Treasury confirmed that these tax benefits would not just be a temporary measure and that it hopes the changes will have worldwide impact. Mr Osborne in the Treasury statement made in commented 'We want to create the right conditions for industry to explore and unlock that potential in a way that allows communities to share in the benefits,' and also that '[t]his new tax regime, which I want to make the most generous for shale in the world, will contribute to that.' It is likely that the new tax regime will enter the Finance Bill in 2014.

All of the latest announcements and publications are in-keeping with the Government's encouragement of unlocking shale gas reserves in the UK and reducing reliance on natural gas imports, with a hope to creating jobs and keeping energy bills low. Many within the shale gas industry viewed tax incentives as vital for encouraging participation given the high costs associated with exploration.

A report in May 2013 from the Institute of Directors presented a scenario where UK shale gas production attracts investment of £3.7 billion per year and supports up to 74,000 jobs, often focused in regions with currently high unemployment and in sectors such as manufacturing. It states that it potentially contributes significant tax revenue.[8] The Secretary of State repeated these figures from the report in a speech in September 2013 and hypothesised that '[o]ne policy proposal before out party conference is that a Low Carbon Transition Fund is established from some of the tax revenues from any future shale gas production'. However, he did emphasise that there are a great number of uncertainties surrounding shale gas and its effects on gas prices.[9]

Current Investment

The Government is hoping that such significant financial benefits will lead to further involvement, such as Centrica's purchase of part of Cuadrilla's Bowland Basin interest in July 2013, from investors, kick-starting a potentially promising industry in the UK.

Total announced earlier this year they are "interested in shale gas in the United Kingdom…we are awaiting the bidding rounds" having had initial discussions with current licence holders as to buying into prospects. In May 2013, the Energy Minister, Michael Fallon, speaking at the first meeting of the new All Party Partliamentary Group for Unconvnetional Gas & Oil (APPG) in the House of Commons said that DECC expect to launch a new 14th round of onshore licence applications in 2014 and that AMEC would carry out the Strategic Environment Assessment for this.[10] The Government is in its final stage of consultation according to maps released recently by DECC.

However, more recently there has been much media focus on the Balcombe protests and the company has now withdrawn its application for a six month extension to its current drilling permit. It has also announced it is focusing on sites other than the St Annes test location in Lancashire, because of technical constraints related to over-wintering birds.[11] Moreover, the UK continues to face backlash from environmental groups such as Greenpeace, who in mid-October started a legal challenge to shale gas exploration in the UK in relation to the law of trespass.

[8] http://www.iod.com/influencing/policy-papers/infrastructure/infrastructure-for-business-getting-shale-gas-working
[9] https://www.gov.uk/government/speeches/the-myths-and-realities-of-shale-gas-exploration
[10] https://www.gov.uk/government/news/robust-regulation-in-place-to-accelerate-shale-development-says-energy-minister
[11] http://www.cuadrillaresources.com/news/cuadrilla-news/article/cuadrilla-update-on-bowland-exploration-programme/

The negative focus is not indicative of the industry as a whole. Cuadrilla is continuing to assess site options for shale gas exploration wells as part of its work programme to unlock the potential of Lancashire's Bowland shale. [12] Coastal Oil and Gas has carried out test drilling for unconventional gas at six sites without protest or disruption to local residents.[13] Further, IGas Energy is preparing to drill an appraisal well for gas, including shale gas, in the fourth quarter of 2013 and the company already holds licences for up to six wells in the Bowland shale. It has also been reported that Dart Energy is also looking to expand its UK portfolio and is looking at the Bowland shale in Cheshire and prospective partners.[14]

On 2 October 2013, Michael Fallon said that it would be "irresponsible" not to allow companies to find out if the underground reserves can be extracted, despite concerns over fracking and that he thinks "we're going to see maybe 30, 40 wells drilled over the next couple of years to see what the real potential is - whether this gas can be got out easily as they have been getting it out in the United States and whether they can get it out as cheaply as they have got it out in the United States".[15]

[12] http://www.cuadrillaresources.com/news/cuadrilla-news/article/cuadrilla-update-on-bowland-exploration-programme/
[13] http://www.walesonline.co.uk/news/wales-news/south-wales-shale-gas-10m-5760679
[14] http://www.proactiveinvestors.co.uk/companies/news/61651/dart-energy-search-for-shale-gas-partners-ongoing-61651.html
[15] http://www.bbc.co.uk/news/uk-24366443

CENTRAL AND EASTERN EUROPE

Poland

The Polish government has shown continuing strong support for the shale gas industry in the past six months. On 12 June 2013, two draft bills were published, one entitled 'Bill on Hydrocarbon Taxation', the other 'Bill to Amend the Geological and Mining Act'. These bills are intended to address gaps in the existing legislation, to better provide for shale gas, and eventually to increase government revenues.

The bills are still subject to further amendment and are expected to be submitted to the Polish Parliament by the end of 2013 where they will be debated and may be approved. If it were to be approved in their current form, there would be no need to obtain a concession in Poland for prospecting, there would be one concession for both exploration and production, there would be a more transparent tender process with applicants needing to meet a list of criteria, and the winner of the tender process will enter into a cooperation agreement with the state-owned company Narodowy Operator Kopalin Energetycznych Spółka Akcyjna ("NOKE"). NOKE will receive a share of the profits but its share in the costs is to be capped.

The Polish government has granted over 100 concessions for the exploration of non-conventional hydrocarbons as companies have flocked to the country. Although some players left earlier in the year, significant players such as Chevron are still operating in Poland and the biggest holders of shale gas concessions are state-owned companies, most notably Polish Oil and Gas Company (PGNiG). There has been recent success for Lane Energy Poland (a subsidiary of ConocoPhillips) which announced that it is extracting in the region of 8,000 cubic meters of shale gas per day at a test well in the north of the country. This is the highest amount seen in Europe to date and the company is planning to drill two or more wells in 2014.[16]

Despite the new Government proposals as yet being unapproved, it seems the Polish government is working hard to reduce uncertainty about its legislation within the shale gas sector. It has been widely reported that Polish lawmakers are analysing ways to make shale more attractive for U.S Companies whose expertise will be invaluable to the country. It will be interesting to see how much progression is made in the next six months.

Germany

The German government is keen to explore its domestic energy sources and exploring the domestic potential for shale is being raised as an option, as the nation has a forecast potential of 17 Tcf of technically recoverable reserves, according to information published by the U.S. Energy Information Administration.[17]

In February 2013, the Chancellor's government set up a draft law to allow hydraulic fracturing in the country. The proposed legislation will not allow drilling activities to be carried out in protected areas or in close proximity to drinking wells. It will also provide terms that all potential projects are to carry out an Environmental Impact Assessment[18]. However, progress was postponed due to federal elections,

[16] http://www.reuters.com/article/2013/08/28/poland-shale-idUSL6N0GT0OI20130828
[17] http://www.shalegas-europe.eu/en/index.php/resources/shale-opportunities-in-europe/germany
[18] http://www.bloomberg.com/news/2013-02-26/germany-agrees-on-regulation-to-permit-fracking-for-shale-gas.html

which were held on 22 September 2013. Since then there have been no further proposals relating to the regulations in place on fracking.[19]

Currently, onshore licensing is governed by local mining legislation. This requires an authorisation for exploration and a concession to be granted for exploitation activities. According to the European Commission, 12 exploration licences have already been granted to companies including ExxonMobil and BNK Petroleum. There are nine other projects that are pending authorisation.[20]

Although the country still needs to deal with strong public opposition, recent reports have suggested that companies are still viewing Germany as a potential destination for exploration. GDF Suez has stated that they are 'evaluating and analyzing' exploration in Germany. Therefore it seems that despite the slow pace of progression with shale gas in Germany there may be some positive movement ahead.

Lithuania

In 2011, the U.S. Energy Information Administration the (EIA) estimated that Lithuania had 4tcf of technically recoverable shale gas reserves. Aiming to reduce the country's dependence on gas imports, in June 2012, the Lithuanian Geological Service entity that granted exploration and production licenses, announced that a bidding round would take place in September that year.

The name of the winner was expected to become public in the first quarter of 2013 and Chevron was the only company to submit a bid.[21] Due to public protests by the local communities over the impact hydraulic fracturing could have on underground waters, the Government postponed the decision.

If Chevron's bid is finally accepted, they will be required to agree on a minimum investment plan in exchange for a seven-year permit. New regulations require an Environmental Impact Assessment to be presented, as well as a public consultation to be carried before the commencement of exploration activities.[22]

In August 2013 the country's reliance on Russian gas was of 100% and it is expected that the potential shale resources would satisfy the domestic gas needs for approximately fifty years.[23] Lithuania's territory is already covered by a gas transmission system of 1, 865 km long. According to the Lithuanian Geological Survey, the shale reserves are placed about two kilometres deep. These factors should contribute to harness the domestic shale gas potential, since a reliable local market and transportation infrastructure are already in place. Also, the depth of the reserves must make it more attractive (less costly) to drill in Lithuania when compared to Poland, since there their average depth is expected to be of four kilometres.

Norway

In 2011, the prospected volume of technically recoverable shale reserves in Norway was of 83 Tcf, located in the Alum Shale area. However, the EIA changed this figure to zero on the report published in June 2013.[24] According to the EIA, the number was amended because it still lacks of data to reliably assess Norway's shale resources.

[19] http://www.shalegas-europe.eu/en/index.php/resources/shale-opportunities-in-europe/germany

[20] http://ec.europa.eu/energy/studies/doc/2012_unconventional_gas_in_europe.pdf
[21] http://www.lithuaniatribune.com/28660/president-backs-chevrons-investments-in-lithuania-advisor-201328660/
[22] http://www.bloomberg.com/news/2013-09-16/lithuania-regulates-shale-gas-works-as-chevron-tender-advances.html
[23] http://www.lithuaniatribune.com/6637/lithuania-to-find-out-quantity-of-shale-gas-in-month-or-two-20116637/
[24] http://www.eia.gov/analysis/studies/worldshalegas/archive/2011/pdf/fullreport.pdf?zscb=83511321

In September 2013, what appears to be shale gas has been discovered in an onshore well in Spitsbergen by the mining company Store Norske. It is unclear as to the quantity of gas found within the well, which was drilled by UNIS CO^2 Lab, and any evaluation of the discovery will not be made available until UNIS CO^2 Lab completes its CO^2 storage project.

NORTH AND CENTRAL AMERICA

USA

The shale boom in the U.S continues to move from strength to strength. On 8 August 2013, the Department of Energy authorised Lake Charles Exports (a joint venture between BG Group and Energy Transfer Partners' Southern Union Co) to ship up to 2 billion cubic feet per day over 20 years to countries that do not have a free trade agreement with the US. This allows for exports to countries including China, Japan, India, Taiwan and Thailand.[25]

Moreover, the benefits of the shale boom are not limited to those companies producing it has extended to other parts of the industry in the US. It has recently been reported that a $20bn export terminal in Louisiana is being prepared with the first shipments scheduled for 2015. The terminal was originally built for importing natural gas into the US, however, because of the abundance of shale gas in the area the owners have decided to reverse the process. News of the export terminal was embraced on both sides of the Atlantic with Centrica being tipped to sign one of the initial contracts.[26] Other examples include the company Linde, which supplies carbon dioxide and nitrogen to companies that are using the technique of waterless fracking, which has seen a drastic improvement in profit[27] and in Pennsylvania, an estimated 250,000 shale related jobs have been added in recent years.
A trend that further demonstrates the success of shale gas in the US within the past 6 months is the shift that is appearing from nuclear to shale gas. EDF are not the only company to withdraw from nuclear in the US due to shale gas; Duke Energy have also withdrawn from a planned $24 billion nuclear project in central Florida and there is a list of companies that have either cancelled construction plans or announced the closure of reactors.[28]

As the industry develops in the US, individual states are considering how they regulate the practice. Colorado Governor John Hickenlooper together with the Colorado Oil and Gas Conservation Commission has appointed locally designated inspectors to supplement state oversight at drill sites.[29] Elsewhere, some states are requiring mandatory liability insurance for shale gas producers.[30]

Most recently the EIA on 4 October 2013 estimated that the US had pulled ahead of both Russia and Saudi Arabia as the world's top oil and gas supplier for 2013. The US is on target to produce 25m barrels of oil, gas and related fuels per day with Russia producing 22m barrels. The steep increase has been attributed to steep increases in production in North Dakota, Texas, New Mexico, Wyoming, Colorado, Utah and Oklahoma. Whilst Russia is said to hold the world's largest oil-bearing shale formations the US have utilised the resource more effectively. This trend is said to continue with production in North Dakota and Texas said to steadily increase.[31]

Mexico

As reported in our August 2013 update, an energy reform bill is being considered in Mexico after it was presented to the Mexican Congress. The bill is designed to open the energy sector to private participants through revenue or profit sharing mechanisms. If passed, this bill would represent a

[25] http://www.theaustralian.com.au/business/mining-energy/us-approves-third-lng-export-terminal/story-e6frg9df-1226696476712
[26] http://www.bbc.co.uk/news/science-environment-23317370
[27] http://www.ft.com/cms/s/0/73bb84c6-fd03-11e2-955a-00144feabdc0.html
[28] http://www.theglobeandmail.com/report-on-business/breakthrough/florida-nuclear-project-cancelled-in-face-of-shale-gas-boom/article13611690/
[29] http://www.ogj.com/articles/2013/08/shale-gas-renaissance-makes-governments-examine-regulatory-roles.html
[30] http://www.ogj.com/articles/2013/08/shale-gas-renaissance-makes-governments-examine-regulatory-roles.html
[31] http://www.theguardian.com/business/2013/oct/04/us-oil-natural-gas-production-russia-saudi-arabia

fundamental shift in the country's approach to oil and gas as, following nationalisation of the oil industry in 1938; the country has one of the most controlled industries in the world.[32] The proposal rules out the possibility of granting oil and gas concessions as resources would remain the property of the state, but the government would be permitted to enter into agreements with the private sector for exploration and production.

In its current form, the proposal appears more attractive than the existing system (using service contracts which pay a fixed fee per barrel of oil equivalent) as the return for investors will be linked to the marked price. The areas in which the private sector could participate have not been stated in the proposal but Fitch Ratings (which views the bill as a long-term positive for the energy sector and the country) believes that the government would consider the unconventional hydrocarbons area where Pemex (Mexico's state-owned oil company) lacks the requisite technology and expertise.[33]

Despite the reform bill, significant investment in Mexico's energy industry is still some time away. If Congress approves the bill (which will require the acceptance of two-thirds in Congress and the approval of more than half of the 31 state congresses) it will take time for the federal government to implement the new energy regulations. Foreign companies will most likely wait until all uncertainties are clarified before making any investment. EIA's 2013 report estimates that Mexico holds 545 trillion cubic feet of shale gas, the sixth largest resource in the world.[34]

Despite having such large resources at home, Pemex is planning to form a new company to explore and produce shale gas in the US. Pemex is already present in the US via its joint venture with Royal Dutch Shell owning a stake in a refinery in Texas.[35]

[32] http://www.breakbulk.com/breakbulk-news/industry-sector/government-regulation/mexico-mulls-foreign-oil-company-participation/
[33] http://www.marketwatch.com/story/fitch-mexican-energy-bill-faces-political-hurdles-l-t-benefits-depend-on-legislative-outcome-2013-08-14
[34] http://www.eia.gov/analysis/studies/worldshalegas/
[35] http://www.reuters.com/article/2013/08/19/mexico-pemex-idUSL2N0GK0FW20130819

SOUTH AMERICA

Brazil

In January 2013, Agência Nacional do Petróleo, Gás Natural e Biocombustíveis (ANP) of Brazil said that estimated potential for unconventional resources in Brazil was 88% higher than the 226 tcf forecasted by the U.S. EIA[36] (245 Tcf in June 2013 most recent numbers[37]). The head of ANP has also stated that the roughly estimated shale deposits could exceed the pre-salt potential and that Brazil also holds other unconventional sources. These numbers show the potential of technically recoverable reserves, meaning what can be produced with the technology currently available.

In Brazil, the rights to exploration and production of mineral resources belong exclusively to the Federal Government and, out of the pre-salt polygon[38], may be explored under a concession regime, where companies are subject to the payment of i) signature bonus; ii) royalties; iii) surface rental fees; iv) special participation (capture upside in highly profitable projects); and v) taxes. For onshore oil and gas exploration, companies will also have the obligation to pay 1% share to the landowner of the area where activities are carried. The Central Government also holds the exclusive rights to built and administrate gas transportation infrastructure, but the gas distribution system (after the citygate) must be administrated by the local Estate authority. Petrobras owns most of the pipeline capacity in the country and is responsible for selling gas to the local distributors.

In August 2013, the President Dilma Rousseff announced that the first auction of shale gas would come in a near future it has been announced more recently that the 12th onshore bidding round is planned to happen in November 2013. The tender protocol for the 12th bidding round contains 240 blocks in seven different prospective basins: i) Acre-Madre de Dios; ii) Paraná; iii) Parecis; iv) Parnaíba; v) Recôncavo; vi) São Francisco and vii) Sergipe-Alagoas.

The model contract published for unconventional resources is generally similar to the contract used for the previous onshore gas licensing round (11th round). The exploration phase can be extended for six years, in three subsequent sections of 2 years. The royalties were imposed at 10% (ANP has the option to set it as low as 5% to areas regarded as technically or economically challenging). Surface rental fee will range from R$34.39/km^2 and R$161.20/km^2 during the initial exploration phase. The latter will be increased by 100% during any extension to the exploration phase and during development and by 900% during production.

São Francisco Basin has already 39 licensed blocks under exploration[39]. Companies with interest in the acreage already under concession include CEMIG, Orteng, Imetame, DELP, Shell, Petrobras and Petra. Petra, OGX, HRT, Orteng, Cemig e Petrobras have openly mentioned that would be offering bids on the forthcoming round of onshore licensing.

Besides the uncertainties recurrently associated with shale gas developments (mainly impacts on the environment and to the local community), companies operating in Brazil may face peculiar challenges related to: i) access to gas transportation infrastructure; and ii) compliance with the standards of local contents (minimum of 20% to these blocks).

[36] http://www.bloomberg.com/news/2013-02-08/brazil-prepares-to-surprise-drillers-this-time-with-gas.html
[37] http://www.adv-res.com/pdf/A_EIA_ARI_2013%20World%20Shale%20Gas%20and%20Shale%20Oil%20Resource%20Assessment.pdf
[38] The Pre-salt polygon areas as defined by Law No. 12,351/2010 must be explored under a Production Sharing Regime.
[39] http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/conhecimento/bnset/set3702.pdf

The access to infrastructure can be particularly challenging since it will involve the coordinated efforts of different levels of State authorities. Currently, the domestic gas transportation system extends for 11.757 km and, apart from Recôncavo, does not cover most of the areas offered for exploration of unconventional gas. Also, lack of geological data, unpredictable scenario for costs estimative and lack of transparency about gas prices in the country may deter private investment in processing and transportation capacity since there is no certainty about such reserves being commercially recoverable.

Whilst it is arguable that high levels of local content can help to develop technology and create a domestic service industry, to make these projects economically viable, the country still needs to ensure that other factors are in place, such as availability of data, technology and services, access to gas transportation infrastructure and a reliable local market. All these factors will need to be coordinated through a stable and predictable legal and fiscal regime.

Argentina

Argentina rose to second in the world for technically recoverable shale gas reserves in EIA's latest report, with an estimated 802 trillion cubic feet. The state owns all subsurface mineral rights and regulatory control is divided between the federal and provincial governments.[40]

This follows news that YPF have signed a number of high-profile agreements for shale recently. As well as the reported partnership between YPF and CNOOC, Chevron reached an agreement with YPF to invest $1.24 billion in the Vaca Muerta formation.[41] Neuquen, a province in Argentina, are required to ratify a decree granting YPF and Chevron exploration and production rights until 2048. The deal includes a 16% return on investment for YPF and Chevron and also grants the province $8.9 billion in royalties.[42]

The Petrochemical giant has also signed a deal with Dow Chemical to spend up to $188 million on a 16 well programme to develop a shale block in Argentina. The deal set up a five-year convertible finance option of $120 million that would give YPF a 50% stake in the 45 km^2 El Orejano block.

The government is easing existing restrictions in order to create more regulatory certainty. Decree 929/2013 has created a new Promotion Regime for Hydrocarbons Exploitation which states that any new investment in both conventional and non-conventional oil and gas projects will receive extraordinary benefits. Companies will need to meet the following criteria, registration before the Hydrocarbon Investment National Register and during the five years of investment projects companies are to invest no less US $1 billion.

Benefits to companies will include free use of 20% of company export proceeds abroad (under the current exchange controls regime all exporters need to bring their export proceeds into the country), no withholdings or duties on such exports (the current withholdings leave the exporters at US$ 70 per barrel) and in cases where production needs to remain in Argentina for local consumption, exporters will receive compensation from the Government to equal the international price otherwise received, with the possibility to send those funds abroad.

There is still a degree of uncertainty in Argentina due to the nationalisation of Repsol's stake in YPF in 2012 following allegations that the Spanish company was under-investing.[43] This coupled with general regulatory uncertainty and exchange rate restrictions make Argentina a challenging location to

[40] http://mepriv.mecon.gov.ar/Normas/24145.htm
[41] http://www.ft.com/cms/s/0/73bb84c6-fd03-11e2-955a-00144feabdc0.html
[42] http://www.bloomberg.com/news/2013-08-21/argentina-prepares-china-shale-deal-to-boost-gas-reserves.html
[43] http://www.forbes.com/sites/christophercoats/2013/06/27/argentinean-ypf-calamity-drags-on-for-repsol/

produce shale gas. However, the recent investments show that the vast resources will attract interest and that the government is slowly incentivising companies to do so.[44]

[44] With thanks to Saúl Ricardo Feilbogen from Vitale, Manoff & Feilbogen law firm in Argentina for his contribution to this section.

ASIA

China

The Chinese shale gas industry is making steady positive progress. The U.S Energy Information Administration (the "EIA") report in 2011 estimated China to have 1,275 trillion cubic feet of shale gas reserves, making it the world leader with 6,622 trillion cubic feet estimated globally.[45] The 2013 updated EIA report, published in April 2013, estimates global recoverable shale gas reserves at 7,299 trillion cubic feet with China still in the leading position despite a lower revised estimate of 1,115 trillion cubic feet.[46]

These world-beating estimates have led companies such as China National Petroleum Corporation, Sinopec, China National Offshore Oil Corporation ("CNOOC"), Yanchang Petroleum, China United Methane Co., Henan Coalbed Co., and China Huadian Corporation to explore shale gas opportunities.[47] Overseas companies such as Weatherford, Baker Hughes and Halliburton are also active in the Chinese shale industry.[48] Furthermore, despite infrastructure problems, Royal Dutch Shell continues to operate proactively, and is said to have invested over USD$1 billion on 30 wells.[49]

As of August 2013, only 6 wells (all drilled by either Sinopec or CNOOC) had daily output capacity of 10,000 cubic meters or more. Daily production at the Yang 201-H2 shale gas well in Sichuan reached 430,000 cubic meters and the Ning 201-H1 well produced over 120,000.[50] Chinese companies, such as Sinopec, have invested billions of US dollars into US shale gas companies such as Chesapeake Energy and Devon Energy and will therefore have learned a great deal about the technology involved.[51]

Whilst the shale industry in China still faces challenges, such as state-controlled prices, the state also provides a number of benefits. For example, until 2015 the Chinese government will still be offering 0.4 yuan per cubic meter for shale gas that is developed and consumed in order to encourage exploration and development.[52] It definitely is one jurisdiction to watch the progress for the set production goal of 6.5 billion cubic meters of shale gas by 2015.

India

An optimistic and important new phase in India's Shale Gas policy was announced on 24 September 2013, as a ministerial panel in government agreed to a carefully controlled opening up, exploration and extraction of India's untapped shale reserves, initially building on Nomination blocks already awarded to two state-owned companies (Oil and Natural Gas Corp ("ONGC")) and Oil India Ltd ("OIL")).[53]

The nomination blocks were given to the state-owned companies before the competitive biding process (under the New Exploration Licensing Policy) came into effect in 1999. The terms of the contract governing the blocks held under nomination are broad and can therefore extend to shale gas[54].

[45] http://www.eia.gov/analysis/studies/worldshalegas/archive/2011/pdf/fullreport.pdf?zscb=59738417
[46] http://www.eia.gov/analysis/studies/worldshalegas/
[47] http://www.marketwatch.com/story/china-shale-gas-goals-pipe-dreams-experts-say-2013-08-26
[48] http://www.dailyfinance.com/2013/08/02/china-ready-to-reap-billions-from-us-shale-gas-tec/
[49] http://online.wsj.com/article/SB10001424127887323980604579030883246871124.html
[50] http://www.marketwatch.com/story/china-shale-gas-goals-pipe-dreams-experts-say-2013-08-26
[51] http://www.dailyfinance.com/2013/08/02/china-ready-to-reap-billions-from-us-shale-gas-tec/
[52] http://www.bloomberg.com/news/2012-11-05/china-announces-2012-2015-shale-gas-subsidies-to-boost-output.html
[53] http://www.ibtimes.co.uk/articles/509161/20130926/india-opens-shale-gas-exploration-coal-fracking.htm
[54] http://www.upstreamonline.com/live/article1338357.ece

The state-owned companies will have to apply for shale exploration rights and will also have to draft a number of qualification documents such as minimum work programmes, field development plans, with penalties for missing timelines. The government will be able to recoup a share of any revenue, likely to be 10%, which would be payable at the same rate as for conventional resources produced in India.[55]

All blocks previously allotted under the New Exploration Licensing Policy are to be excluded from shale gas exploration as the result of contracts specifying that exploration should be related only to natural gas and oil, and therefore not unconventional hydrocarbons like shale gas[56]. However, companies will only have to wait a couple of weeks to profit from the further shale policy as the Indian government planning to approve a second phase which will see an auction of blocks.[57]

The importance of this policy should not be underestimated; if not technically ambitious, the message from government on the exploitation of shale gas reserves is clearly a positive one. The Director-General of Hydrocarbons has previously stated that as many as 176 of the 356 blocks held under nomination may contain shale gas.[58] The decision will have a significant influence on India's geopolitical position in the energy sector and if carried out efficiently the new policy would dramatically cut Indian imports of coal, which currently meets 75% of its energy needs.

Indonesia

According to reports, Indonesia is planning to auction shale gas blocks by the end of the year, with particular interest growing in the Kisaran Block in North Sumatra and the West Tanjung Block in South Kilamantan[59] . It has been reported that Indonesia would offer up to eight shale gas production sharing contracts to oil and gas companies that have conducted studies alongside the government. Though publically available information is lacking Indonesia will be one to watch in the next few months.

[55] http://www.telegraphindia.com/1130826/jsp/business/story_17273025.jsp
[56] http://www.platts.com/latest-news/natural-gas/mumbai/india-to-announce-shale-gas-policy-in-two-weeks-27328076
[57] http://www.platts.com/latest-news/natural-gas/mumbai/india-to-announce-shale-gas-policy-in-two-weeks-27328076
[58] http://www.dghindia.org/
[59] http://www.upstreamonline.com/live/article1338288.ece

AFRICA

Algeria

At the Organization of the Petroleum Exporting Countries (Oil & Money) conference on 1 October 2013, Algeria's Energy Minister, Youcef Youfsi, outlined significant plans for shale gas stating that "we are progressing in the evaluation of shale gas in the country and it's above 700 tcf."[60] This coincides with further developments in Algeria which promises to increase investment in the industry.

These developments include new incentives which have been offered to foreign investors in order to increase international involvement in exploration in Algeria, with shale gas as a particular focus.

Amendments to the Hydrocarbons Code include:

- a change to the tax regime so that taxes are calculated on profitability and not turnover;
- foreign companies now being subject to domestic corporate taxes but have the option to pay a licence fee in-kind;
- guarantees foreign operators access to pipelines owned and operated by Sonatrach (the state-owned operator) for a set tariff; and
- special incentives to encourage activity in under-explored areas or where deposits are small in size.

Algeria ranks third, behind China and Argentina, in total shale gas reserves, with an estimated 707 trillion cubic feet.[61] Eni has signed a Memorandum of Understanding with Sonatrach for a partnership to exploit shale gas in the south of the country following studies carried out by Eni.[62] However, restrictive joint venture structure in Algeria still remains, whereby foreign companies are required to enter into a joint venture with Sonatrach in a 51:49 ratio in favour of the state-owned operator.[63]

[60] http://www.bloomberg.com/news/2013-10-01/algeria-gas-oil-production-to-double-in-10-years-yousfi-says.html
[61] http://www.eia.gov/analysis/studies/worldshalegas/
[62] http://northafricapost.com/4081-algeria-energy-and-mines-minister-discusses-strategy-with-eni.html
[63] http://www.english.globalarabnetwork.com/2013081913222/Economics/algeria-new-incentives-to-encourage-energy-investment.html