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Comment

DIVESTMENT AT ANY COST?

This month in World Pipelines we are featuring a special Latin America section, comprising a selection of articles addressing pipeline issues across the region. Gulf Interstate writes about international collaboration efforts for a new 75 km Mexican gas pipeline project, plus associated meter stations, flow regulation facilty and tie-in with an existing pipeline. SICIM discusses a Peruvian gas pipeline contract for the Gasoducto Sur Peruano, in which it performed EPC operations, facing the challenges of remote locations and extreme topography. Valvo looks at Mexico, Argentina, Bolivia and Peru and describes a host of pipeline projects in these nations. Shawcor focuses on Argentina: where it recently worked on a project to incorporate a continuous thermal insulation process in one of its facilities. And finally, we provide a South America overview, to make sure you’re up to date with all developments in the wider region.

Much news coverage has focused on Brazil in recent months, where President Dilma Rousseff has been forced to step down after impeachment proceedings were brought against her; she will face trial and Vice President Michel Temer will take her place for the duration. Brazil faces many stumbling blocks at the moment: a deep recession, inflation, the Zika virus and a corruption probe into Petrobras, the nation’s state-owned oil company.

Petrobras is the most indebted oil company in the world and, in the midst of globally low oil prices, it is having difficulty reducing its debt burden. The company has just announced a 1Q16 loss of Rs 1.2 billion (US$340 million) combined with a 5.4% decline in profits compared to 1Q15, and a loss in operating earnings (cash flow). March 2016 heralded the company’s biggest quarterly loss ever, after it wrote off Rs 49.75 billion (US$1.37 billion) in assets and investments. Petrobras Chief Executive Aldemir Bendine is due to be relieved of his position soon: at the time of writing, former Presidential Chief of Staff Pedro Parente is being tipped for the role by Temer’s interim government. Parente’s immediate tasks as a new CEO would probably include the fast tracking of a US$15.5 billion asset sale plan to raise cash, repay debt and cut costs.

The government is set to support legislation that will reduce Petrobras’ control over some offshore oil resources. New rules will allow companies other than Petrobras to operate some oil production sharing contracts in pre-salt blocks. Petrobras has historically been very reluctant to relinquish control in these profitable, but challenging, offshore blocks.

Petrobras is also in talks to sell the natural gas pipeline unity Nova Transportadora do Sudeste SA (NTS), as part of the asset disposal plan. Brookfield is rumoured to have offered Rs 18 billion for the pipeline network, amid competition from Gas Natural Fenosa SA (Spain), Engie SA (France) and Mitsui & Co Ltd (Japan). The NTS comprises 2500 km of pipelines.

The interim government has suspended negotiations with construction companies caught up in recent corruption probes: to make sure that leniency deals are fair. Leniency deals would allow construction companies blacklisted in the corruption charge to bid for new state contracts if they admit wrongdoing and collaborate with investigators (as well as pay a fine). Some 31 contractors have been banned from signing new contracts with Petrobras since late 2014 amid bribery allegations. The leniency rules were expected to help boost the economy, which has stalled in the wake of impending corruption trials, but federal prosecutors object to the scheme, which they say encourages coverups.

The new Energy Minister, Fernando Bezerra Filho, hopes to improve the investment climate in the country by instigating a new tough approach to regulations and the contract awarding process. But with Petrobras potentially pulling out of entire market sectors in its efforts to divest debts, will this be enough to save Brazil?
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ArcelorMittal supplies TAP with hot rolled coils

ArcelorMittal is supplying over 75,000 t of hot rolled coils (HRC) for the Trans Adriatic Pipeline (TAP). TAP, the construction of which will begin mid-2018, is the final European leg of the 3500 km Southern Gas Corridor and will transport natural gas from the giant Shah Deniz II field in the Caspian Sea to Europe, improving Europe’s energy security. The steel coils for the project are being produced at ArcelorMittal Bremen (Germany) and then shipped to the group’s partner Corinth Pipeworks in Greece, where the pipes are being produced. Deliveries of the HRC began in late 2015 and will continue until the first quarter of 2017.

ArcelorMittal Bremen was selected to produce the HRC because of the mill’s longstanding experience in pipeline steels. In 2011, ArcelorMittal Bremen installed the world’s largest heavy duty crop shears on its hot rolling mill, enabling the site to produce heavy wall and super heavy wall pipeline steels which meet the most stringent requirements. The pipes used on the TAP lines have wall thicknesses of 18 mm and must pass strict mechanical testing requirements and dimensional tolerances. The steel used is X70, high end grade for pipeline applications. All the steel and the majority of the pipes will be produced in Europe.

“We have provided steels for the global oil and gas pipeline industry for more than 30 years. ArcelorMittal has a proven track record in this field, ensuring proximity to the customer and continuous technical support – in combination with the high quality products provided by our mill in Bremen. ArcelorMittal Europe - Flat Products is proud to be a part of this vital strategic project, which is creating value for local communities as well as securing Europe’s future energy supply,” said Stéphane Tondo, Chief Marketing Officer, in charge of packaging and oil and gas at ArcelorMittal Europe - Flat Products.

Enbridge invests in oil spill control equipment for its underwater pipelines

Enbridge Energy has invested CAN$7 million in oil and gas spill control and recovery equipment for its pipelines laid in the Straits of Mackinac. The company has twin pipelines in Lake Huron and Lake Michigan.

Enbridge intends to utilise its skimming and containment devices to assist crews in recovering oil quickly and effectively in the open water of the Straits. The company has also purchased two new booms, which are also designed to recover the released oil in open water.

“Obviously, the Straits of Mackinac is a very special area. It’s important to the folks who live there, the business owners and the recreational boaters. We really wanted to make sure we stepped up our game in regard to open water responses. And, in the very unlikely event that we have to respond to a pipeline incident, we’re ready. Preventing all spills or leaks is our ultimate goal. Still, we want to go above and beyond to be prepared for any incident,” said Stephen Lloyd, a Senior Manager of Emergency Response for Enbridge Energy.

However, many still oppose Enbridge’s lines. Protesting groups such as Oil & Water Don’t Mix have called for the lines to be shut down. Mike Shriberg, National Wildlife Federation’s Great Lakes Regional Executive Director, stated: “While we welcome Enbridge bringing its response equipment more up-to-date, this investment pales in comparison to what is at risk from an oil spill from this ageing pipeline. There is very little hope of effectively cleaning up an oil spill in the Straits of Mackinac. That’s why decision makers are turning their attention to stopping the flow of oil on the bottom of the straits by finding an alternative that protects our Great Lakes, public health, communities and economy.”

Vancouver challenges Trans Mountain approval

Vancouver (Canada) has recently joined other cities in challenging the National Energy Board’s (NEB) recommendation to approve Kinder Morgan’s CAN$6.8 billion Trans Mountain pipeline expansion project.

Vancouver’s Mayor, Gregor Robertson, stated: “The NEB failed to properly and thoroughly consult local communities on the pipeline and tanker route, ignoring key pieces of scientific evidence showing the potential for real and catastrophic damage to local waters in the event of an oil spill, and the impact of an expanded pipeline on greenhouse gas emissions both locally and abroad. Vancouver still has significant concerns about Kinder Morgan’s expansion and we’ve concluded it’s simply not worth the risk to our environment or economy.”

The city wrote, in its statement to the Federal Court of Appeal, that the NEB “excluded any opportunities for oral cross-examination of experts and evidence; provided inadequate information sharing; and failed to properly consult affected communities along the pipeline and tanker route.”

Additionally, Vancouver has requested that the federal government not make a decision on the pipeline project until the NEB carried out a lawful review.

The NEB has not commented on the city’s application. Additionally, a decision from the court has not yet been made.

NEB determines Energy East applications

The Government of Canada believes the environment and the economy go hand in hand. Accordingly, proposed major resource projects need to undergo a thorough review and must carry the confidence of Canadians if they are to proceed.

The NEB has stated that the applications for TransCanada’s Energy East and Eastern Mainline pipeline projects are complete. This means the 21 month NEB review period will now begin. The NEB will use this time to review the two projects, as required under the National Energy Board Act and Canadian Environmental Assessment Act. In addition, Canada’s Minister of Natural Resources, Jim Carr, will recommend the appointment of up to four temporary board members to the NEB. These new members will engage communities and Indigenous groups along the proposed pipeline route, listen to comments and concerns raised by Canadians and report back to the NEB.

Once the review is completed, the NEB will make a recommendation to the government on whether the projects are in the public interest. The government will then consider the NEB’s recommendation and make a final decision on the project.

“Major resource projects must go through a review and consultation process that carries the public trust, and today marks a key milestone in that process. I encourage Canadians to take part in the NEB’s review as this will help inform our decision on Energy East.”
**World News**

IN BRIEF

**China**
Chu Kong Petroleum and Natural Gas Steel Pipe Holdings Ltd has announced that it has won two bids from China Petroleum and Chemical Corp. (Sinopec). The company will supply approximately 10,000 t of longitudinal submerged arc welded steel pipes for a natural gas project in Tianjin.

**Austria**
During a meeting between Gazprom and OMV AG, it was discussed that the demand for Russian gas in Austria has been growing. According to estimates, the company supplied 19.8% more gas via pipeline to Austria from 1 January through 9 June of this year than in the same period of 2015.

**USA**
The American Petroleum Institute (API) has welcomed a new pipeline safety legislation, signed into law on 22 June by President Obama. S. 2276, the PIPES Act, gives the Congress and pipeline operators transparency into the regulatory process and sets timelines for feedback to operators on pipeline inspections.

**Australia**
Joint integrity specialist Hydratight has completed an upgrade project on a section of subsea pipeline on the North West Shelf of Western Australia.

**Denmark**
Hess Denmark ApS has awarded a contract to DNV GL to provide the asset integrity inspection management of its South Arne oil export pipeline and offloading buoy.

**UK**
Following its decision to leave the EU, the future of the UK’s oil and gas industry is uncertain. The Institution of Engineering and Technology (IET) is calling for an urgent discussion to mitigate the impacts on the oil and gas engineering sector, which is vital to the UK’s economy. Yet, Royal Dutch Shell announced it will work alongside the British government and European organisations, and will continue to supply energy to customers both in the UK and in Europe. How the Brexit will affect the UK’s oil and gas industry in the long run is unknown.

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**Emergency repair clamp for Nord Stream pipeline**
Sheffield Forgemasters has delivered two clamp bodies for Oil States Industries each to form a crucial emergency repair back-up for the 1224 km Nord Stream pipeline, which runs along the Baltic Sea floor from Vyborg in Russia to Lubmin in Germany.

The hydro-clamp is designed to provide risk mitigation in the event of a breach in a subsea pipeline. Designed by Oil States Industries, the specialised unit takes subsea engineering design to a new level of expertise.

George Brown, Group Projects Director at SFIL, said: “The Nord Stream clamps are hydraulically operated repair mechanisms, designed to reinforce the Nord Stream pipeline at any required point along the Baltic Sea floor. The clamp comprises of two matched halves, which can be locked around the pipeline in order to stop any leakage. With a forged weight of over 200 t, no subsea clamp of this size has ever been produced before and if required, can restore full structural and pressure integrity to the Nord Stream pipeline in the event of a leak or identified weakness.”

Problems and challenges that occurred throughout production were investigated and resolved with the help of SFIL’s in-house R&D resources of RD26, which continues to grow its project team in order to meet the demands for industry led solutions to technological challenges. The clamps are currently in the testing phase at Oil States Industries in Houston, Texas, before they are shipped to the Nord Stream project where they will be reserved for emergency back-up use.

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**Inspection activities on Trans-Mediterranean pipeline project**
Next Geosolutions, an independent geoscience and engineering service provider, have shared lessons learnt from the company’s involvement in the Trans-Mediterranean pipeline inspection activities.

In 2014, Next Geosolutions completed the first of a two campaign project of nearshore survey and inspection works of the Trans-Mediterranean pipeline; a natural gas pipeline system running from Algeria via Tunisia to Sicily, and then to mainland Italy.

The second campaign, due to be carried out by Next Geosolutions in September 2016, will involve further geophysical surveys and ROV inspections in the nearshore sections. On 2 June 2016, the Italian-based company presented its findings from the initial campaign at the event workshop on integrity management of offshore pipelines, organised by the Association Algérienne de l’Industrie du Gaz (AIG) in Algeria.


Francesco Fevola, Commercial Manager at Next Geosolutions, discussed the results obtained from the first Trans-Mediterranean pipelines survey campaign, which investigated overall asset integrity of the pipelines, identifying potential weakness points that required further inspection repair and maintenance actions, such as free spans and coating cracks.

Fevola said: “Next Geosolutions has been involved in many challenging projects relying upon the company’s survey and inspection work knowledge and expertise. Sharing lessons learnt and experiences with the wider industry is so important to ensure projects can be completed in a more efficient and successful manner.”

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**WBI Energy’s pipeline expansion project**
WBI Energy, Inc., the pipeline and midstream subsidiary of MDU Resources Group, Inc., has announced plans to build an approximately 38 mile pipeline with the primary purpose of delivering natural gas to eastern North Dakota and far western Minnesota. An open season seeking capacity commitments on WBI Energy’s Valley expansion project was initiated on 13 June, and will be open until 15 July.

The proposed pipeline would connect the Viking Gas Transmission Company pipeline near Felton (Minnesota) to WBI Energy’s existing pipeline near Mapleton (North Dakota). The project is estimated to cost US$50 million.

David L. Goodin, President and CEO of MDU Resources, stated: “The project will provide another source of natural gas to help fuel industrial and commercial growth in the area, and will greatly enhance supply security for existing end users in eastern North Dakota and western Minnesota.”

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PennEast pipeline approval delayed

PennEast’s proposed pipeline project in New Jersey and Pennsylvania (USA) is considerably delayed in gaining the necessary approvals from the Federal Energy Regulatory Commission (FERC), affected by the trend of beleaguered gas pipeline projects throughout the US, and widespread, growing opposition by legislators, regulatory agencies and the public.

The FERC recently published a schedule that delays the review of the project by as much as a year. In a recent press release, PennEast acknowledged the delay, stating: “Based on a preliminary review, PennEast anticipates an in-service date in 2H18 rather than late 2017.”

The FERC continues to request the missing information from PennEast needed to complete the Draft Environmental Impact Statement (DEIS).

“Highly relevant to PennEast’s problem-ridden application, is the fact that multiple natural gas infrastructure projects have faced unprecedented regulatory problems in recent months,” said Tom Gilbert, Campaign Director, ReThink Energy Conservation Foundation.

Gilbert concluded: “PennEast is facing enormous opposition and is under intense scrutiny by regulatory agencies and the public. The problems they’ve encountered thus far indicate that PennEast could be the next pipeline to go down.”

Monitoring pipelines from space

Orbital Eye has created a service that can monitor oil and gas pipelines by using satellites from space. A pipeline operator from Africa has shown interest in the service.

As pipeline safety is so important, operators implement aerial surveys and/or walking along the right of way (ROW) in order to monitor and inspect the pipeline.

However, whilst the overall detection rate for inspection surveys is 17% and 37% by the public, the company’s PIMSyS service is able to improve this detection rate.

The PIMSyS tablet app uses radar images and information from Europe’s Sentinel satellites, in combination with smart software, to detect potential threats and ground movement.

Jan Ridder, Managing Director at Orbital Eye, stated: “We have been using Sentinel-1A imagery since the satellite was launched, and the results have been very positive. Currently, Sentinel-1A data are refreshed on average once every 12 days. Initially, some operators prefer a higher frequency, but once they start using the system they find that the current rate is adequate in many cases.”

Yokogawa receives SCADA system order

Yokogawa Electric Corp. announced that its subsidiary – Yokogawa India – has received an order from the Gas Transmission Company Ltd (GTCL) to supply a monitoring and control system for the gas pipeline system in Bangladesh.

GTCL is to build an integrated SCADA monitoring and control system that will ensure the stable and efficient supply of gas to three of the country’s eight administrative divisions: Dhaka, Chittagong, and Sylhet. GTCL plans to increase its gas transmission volume to 550 million ft³/d.

Tsutomu Murata, Managing Director of Yokogawa India, commented: “I am honored to receive this order, which is Yokogawa India’s largest project to date in Bangladesh. By carrying out this large project, we aim to help ensure a stable energy supply for the people of Bangladesh.”

News Highlights

➤ Fugro secures three trenching contracts
➤ Ithaca granted pipeline access for GSA project
➤ McDermott awarded further offshore pipeline contract
➤ Positive feedback on Smart Connected Pipeline solution
Construction contract for Sur de Texas-Tuxpan pipeline

TransCanada Corporation (TransCanada) has announced that its joint venture with IEnova, Infraestructura Marina del Golfo (IMC), has been chosen to build, own and operate the US$2.1 billion Sur de Texas-Tuxpan natural gas pipeline in Mexico. The project will be supported by a 25 year natural gas transportation service contract for 2.6 billion ft³/d with the Comisión federal de Electricidad (CFE), Mexico’s state-owned power company.

“We are extremely pleased to further our growth plans in Mexico with one of the most important natural gas infrastructure projects for that country’s future,” said Russ Girling, TransCanada’s President and Chief Executive Officer. “This new project brings our footprint of existing assets and projects in development in Mexico to more than US$5 billion, all underpinned by 25 year agreements with Mexico’s state power company.”

TransCanada expects to invest approximately US$1.3 billion in the partnership to construct the 42 in. dia., approximately 800 km (497 mile) pipeline and anticipates an in-service date of late 2018. The pipeline will begin offshore in the Gulf of Mexico, at the border point near Brownsville, Texas and end in Tuxpan, in the state of Veracruz.

In addition to a connection with CENAGAS’s pipeline system in Altamira, the project will interconnect with TransCanada’s Tamazunchale and Tuxpan-Tula pipelines as well as with other transporters in the region.

Leak detection and security contract awarded for TANAP

OptaSense (a QinetiQ company) and its partner Optilian (a telecommunications systems integrator) have been awarded the combined leak detection and security package from ABB; the engineering, procurement and construction prime contractor for the delivery of the control infrastructure for the Trans-Anatolian natural gas pipeline (TANAP).

The contract was awarded at the start of 2016, and is now entering into the equipment delivery phase. This will be the world’s largest fibre distributed sensing project; protecting and monitoring more than 1850 km of pipeline, including perimeter security for all facilities.

The TANAP natural gas pipeline runs from Azerbaijan through Georgia and Turkey to Europe. The project is of strategic importance for the region, as it will enable the first Azerbaijani gas exports to Europe, while strengthening the role of Turkey as a regional energy hub. Construction of the pipeline began in 2015 and is scheduled to be completed in 2018, with expected costs in the region of US$10 - 11 billion.

Magnus McEwen-King, Executive Director at OptaSense commented: “This project marks a significant turning point in the adoption of fibre sensing globally with delivery of security and leak detection from a single fibre system. This approach will enable us to demonstrate superior technical performance and value for money. With our partners ABB and Optilian, we look forward to helping TANAP use the OptaSense technology to deliver the highest levels of pipeline availability and reduce the cost of asset ownership.”

Bal Kler, Executive Director at Optilian said: “We are pleased to be partnering once again with the world’s leading fibre sensing company to deliver the world’s largest pipeline monitoring project. Implementation of this project for TANAP will deliver total security and monitoring over the entire pipeline length and follows on from other successful security projects in Turkey.”

Intertek provides pipeline inspection services for NGP

Intertek, a leading total quality assurance provider to industries worldwide, has been selected to provide third-party inspection services to support the procurement of Jemena’s Northern Gas Pipeline (NGP) project.

Jemena, an energy infrastructure company with a proven track record in developing and operating major Australian energy supply assets, was chosen by the Northern Territory Government to build and operate the North East Gas Interconnector, now known as the NGP.

The 623 km planned pipeline will connect Northern Australia’s vast gas fields to the east coast gas market, running from Tennant Creek in the Northern Territory to Mount Isa in Queensland, at a cost of around AU$800 million. Intertek will provide critical expertise at the point of fabrication, deploying a team of quality inspectors to oversee manufacture of the pipework including quality of welding, steel composition, compliance with Australian standards and adherence to engineering specifications.

“We are proud to support Jemena in meeting the project quality and schedule requirements to have first gas flowing by 2018. The award of this inspection contract is testament to our experience in the development of major oil and gas projects, and the result of our long-term relationship with Jemena,” commented Sheldon Harvey, Intertek’s Business Development Manager for Industry Services.

“Our technical and qualified inspectors are positioned at Jemena’s suppliers and supported by a project leadership team in Sydney and Melbourne. They will be involved at various points of the project to provide quality assurance leadership in achieving key milestones and mitigation of any potential issues, which may arise during the manufacturing process.”

Spectra secures Nueces-to-Brownsville pipeline contract

Spectra Energy Corp has announced that its subsidiary – Valley Crossing Pipeline, LLC – has been awarded a 168 mile intrastate natural gas pipeline project by the Comisión Federal de Electricidad (CFE), Mexico’s state-owned utility serving 37 million customers, to provide natural gas transportation services beginning in 2018 to meet Mexico’s growing electric generation needs.

“Spectra Energy is pleased to have secured the bid to build and operate this critical infrastructure, which will provide clean burning and reliable natural gas to support Mexico as its electric generators shift away from fuel oil and imported LNG,” said Bill Yardley, President of US Transmission and Storage for Spectra Energy.

“Successfully securing this project adds to our already strong asset portfolio, connects us to another key demand-pull market, and brings us closer to our goal of securing US$35 billion in capital expansion projects by the end of this decade, with approximately US$20 billion either in execution or in service since 2013.”

Valley Crossing will construct and operate a header system of more than 5 billion ft³/d near the Agua Dulce Hub in Nueces County, Texas, as well as a 2.6 billion ft³/d pipeline originating at that header and extending to Brownsville, Texas. There, the pipeline will connect with the Sur de Texas-Tuxpan pipeline, which will extend into Mexico.
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Midstream assets in Latin American countries are in demand, but their fortunes vary greatly from country to country, explains Gordon Cope.

Latin America (the South American continent and Mexico) has significant oil and gas reserves. According to the US Energy Information Administration (EIA), the region registers a total of 340 billion bbls of proven crude reserves and production exceeding 7 million bpd. Latin America also had a total of 277 trillion ft³ of conventional gas reserves and produced slightly over 16.3 billion ft³/d in 2013.

While upstream sectors around the world are suffering from low commodity prices, consumer demand is still keeping pipelines full. How the midstream sectors within Latin American countries fare is far more dependent on how governments treat the energy sector; some are flourishing and others languishing.
Mexico

Mexico offers Latin America’s greatest potential for the pipeline sector. Under President Enrique Peña Nieto, federal reforms have eliminated monopolies in both the oil and gas sector and the electric utility sector. Oil firms are being allowed to participate in exploration and production, and pipeline companies can invest in the midstream sector.

Already, gas pipelines are appearing around the country (see sidebar). Gas demand has been growing at 4% annually as the population and industrial base grows. By 2018, Comisión Federal de Electricidad (CFE) plans to expand and privatise its natural gas infrastructure network (which now covers about 10,000 km) by 75%. The former monopoly has already contracted 19 cross-border or domestic pipelines (that have been completed, are under construction, or are in advanced planning stages), in order to more than triple current imports of approximately 3 billion ft3/d.

Pemex is also divesting assets and seeking joint ventures (JVs). In February, the company announced that it was selling several crude pipelines. KKR, a US-based private equity firm, has agreed to purchase 11 pipelines, a natural gas compression facility and other assets for US$1.35 billion. Since the outlook for oil prices remains bleak, analysts predict many more asset divestitures are in the offing.

In addition to asset sales, there is huge potential for liquids new-build. There are only around 5000 km of crude and refined product pipelines in the entire country (in comparison, there are almost 90,000 km in Texas alone). As a result, only 10% of Mexico’s oil and refined products moves by pipeline; the rest is shipped by truck, rail and barge. BlackRock, a US-based private equity firm, and Pemex are investing US$700 million in the latter’s Gulf Centre project in the port of Tuxpan, Veracruz. The project will move gasoline and diesel from a 300,000 bbl storage facility inland to consumers via a 318 km pipeline.

In all, Houston-based law firm Tudor, Pickering, Holt and Co. estimates Mexico will attract US$50 billion in capital spending on pipeline infrastructure and related assets over the next five years. Where will the money come from? Partly from within; Mexico is devising a new investment instrument similar to the Master Limited Partnerships (MLPs) common in the US. The new instrument is called Fibra E, and is based on existing real estate trusts that operate in the country. The instruments can be bundled into trusts and traded on the Mexican stock market where they are attracting the interest of the country’s private pension funds.

Institutional investors from abroad are also looking at Mexican pipeline assets. Recently, TransCanada purchased Columbia Pipeline Group in the US for US$10 billion, and wants to lower its corporate debt by divesting a portion of its Mexican holdings. The Calgary-based company hopes to raise US$2 billion from the sale.

Investing in Mexico is not without its risks; many states are dominated by cartels, and kidnappings and murders are rampant. Theft from refinery product pipelines has reached epidemic proportions, with thousands of incidents reported each year.

On the plus side, Mexico is taking corruption allegations seriously, putting in transparent oil and gas regulations and policies. The federal government is committed to reversing the downward production trend for both oil and gas, and increasing revenues.

Most observers agree that Mexico has taken many positive steps to modernise and grow its oil and gas infrastructure. While no one doubts there are many challenges ahead, the country can be lauded for the immense reforms that have already been successfully achieved, with many more to come.

Colombia

Colombia serves as a guide to Mexico (and other progressive Latin American regimes), when it comes to deregulating the oil and gas sector. Two decades ago, a lack of investment, a civil war with FARC guerrillas, and an indecisive federal government had cut the country’s 990,000 bpd output in half. Under the Uribe government, a series of fiscal and regulatory changes were enacted in 2003 that opened up the sector to privatisation. Since then, international investments exceeding US$5 billion annually have resulted in a rise in production to 1 million bpd, with the majority of new production earmarked for export to the US, China and Europe.

A sound fiscal and regulatory regime has helped to bolster Colombia’s midstream sector. Major existing oil pipelines include the 840 km Ocensa pipeline, which can transport up to 590,000 bpd from the Cusiana area to the Caribbean export terminal at Covenas, the 870 km Cano Limon pipeline with a capacity of 220,000 bpd, and the 340,000 bpd Llano Orientales line, which links the Rubiales field to the Ocensa pipeline.

Colombia is rich in natural gas, with reserves totalling 6.4 trillion ft3. The country produces almost 1 billion ft3/d, and transports it to market on 5000 km of lines, including the Ballena-Barrancabermeja, which transports 260 million ft3/d. For the last decade, an export pipeline – the Antonio Ricuarte line (Trans Caribbean) – has shipped up to 250 million ft3/d to Venezuela, although exports have been partly curtailed due to concerns regarding Colombia’s ability to meet electricity demand.

Resistance groups like FARC remain a problem for the nation’s energy infrastructure, however. Attacks upon pipelines have exceeded 100 annually for the last several years, eliminating approximately 45,000 bpd through unplanned production outages. In March, US Secretary of State John Kerry met with FARC representatives in Havana in order to facilitate talks, but until peace negotiations succeed, industry observers expect production growth in Colombia to slow significantly.

Argentina

Argentina is a textbook example of how to do everything wrong. Thanks to the politicisation of its oil and gas sector over the last decade, production has fallen from over 900,000 bpd in 1998 to current levels of 523,000 bpd, and gas from 4.5 billion ft3/d in 2007 to 3.5 billion ft3/d. The nationalisation of Repsol’s subsidiary YPF was a particularly egregious blow; in 2012, President Cristina Fernandez de
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South American pipelines

New and expanded pipelines are appearing throughout Latin America.

TransCanada owns and operates the Tamazunchale and Guadalajara pipeline systems in Mexico, and is completing construction of the Topolobampo and Mazatlan pipelines. In late 2015, the Calgary-based company won a US$500 million contract from CFE to build, own and operate the Tuxpan-Tula pipeline for 25 years. The 36 in., 250 km line will be able to carry almost 900 million ft³/d from the state of Veracruz to Puebla and Hidalgo.

Atco has agreed to build the Tula Lateral pipeline in Mexico, a US$50 million project which will transport gas to two Petmex combined-cycle power plants, as well as agreeing to become a 50% partner in a new US$820 million cogeneration plant being built by Mexican-based Grupo Hermes, S.A., de C.V.

BlackRock, a private US investment firm, acquired 45% interest in Petmex’s Los Ramones Phase II North and Los Ramones Phase II South natural gas pipelines for US$900 million. The 744 km network transports gas from Texas to several electric utilities in Mexico.

Howard Midstream Energy is planning to build Nuevo Era, a 300 km, 30 in. gas pipeline from Webb County (Texas) to Escobedo (Nuevo Leon). It will deliver up to 600 million ft³/d from the Eagle Ford shale to the Mexican network.

Five years ago, Ecopetrol began construction on the US$4.2 billion Oleoducto Bicentenario pipeline in Colombia. The first phase began operations in late 2013, shipping crude from Araguaney to a connector on the Cano Limon pipeline. Further phases will see the 960 km pipeline deliver up to 450 000 bpd to the port of Covenas.

In order to promote crude exports to Asia, Colombia has been pursuing a new pipeline that would ship from its heavy oil belt to a Pacific port. For the last decade, the country’s energy ministry has been working with Venezuela to create a joint, 3000 km line to ship product from both countries, but recent woes in Venezuela has led Colombia to contact Canada-based Enbridge to build a shorter, 800 km line. Although plans remain nascent, initial blueprints call for a 600 000 bpd capacity and a price tag of approximately CAN$6 billion.

While all oil production in Brazil’s pre-salt play (now in excess of 1 million bpd), is offloaded onto tankers from FPSOs, produced gas must be transported ashore via pipeline. Petrobras contracted with Tenaris to lay several underwater and onshore pipelines. The Rota II project required 300 km of 24 in. line, with a capacity of 13 million m³/d. The Rota III project needs 373 km of 20 - 24 in. line, with a gas flow capacity of 21 million m³/d. The network delivers gas from the Cernabi, Lula and Franco developments. Subsalt gas production now exceeds 600 million ft³/d.

In early 2015, work began on the GNEA gas pipeline in northeast Argentina. The US$2.86 billion project will be built in three sections, with 1800 km of trunklines and 2300 km of branch lines in the provinces of Formosa, Chaco, Santa Fe and Misiones. The new network will be filled with gas imported from Bolivia.

In early 2016, the GasAndes line that carried gas from Argentina to Chile was officially reversed. Approximately 4 million m³/d of gas from Chile’s Quintero LNG terminal will be shipped inland during peak winter months, from June to September.

Kirchner seized control of the busiest explorer in the country.

Not all is doom-and-gloom, however. The EIA estimates that the country could contain up to 774 trillion ft³ of recoverable shale gas and 21 billion bbls of shale oil, mostly in the Vaca Muerta formation in the Neuquen basin in western-central Argentina. YPF and Chevron are major JV players; by early 2016, the Vaca Muerta was already producing 50 000 boed (mostly oil).

Several other international players have stepped in to invest. Sinopec has partnered with YPF to explore a region in the western Argentine province of Mendoza. The US$300 million JV includes 3D seismic surveys, wildcat wells and the refurbishment of existing infrastructure.

ExxonMobil has come to an agreement with the province of Neuquen to develop shale resources. The US firm will invest an initial US$229 million to drill wells and build infrastructure, including a natural gas pipeline. If prospects prove promising, Exxon will invest up to US$13.8 billion over the next 35 years developing the prospect.

Argentina is also a linchpin in the natural gas pipeline network that rings the southern cone of South America. The country has over 30 000 km of line, mainly to transport gas from fields in Neuquen and San Jorge provinces to consumers in Buenos Aires, but it also has extensive infrastructure to distribute gas imported from Bolivia to the north, and export gas to Chile, to the west.

Recent shortages in Argentina, as well as upheavals in other countries (and long-standing boundary feuds), have generally inhibited the international flow of gas. Initiatives by Mercosur seem to be working in favour of greater co-operation, however.

Chile, which has little in the way of energy resources, recently approached its fellow members in Mercosur with plans to create an ‘energy ring’ that would see gas being piped south from Peru into Northern Chile and Bolivia, and hence through to Argentina and Brazil. The plan calls for thousands of kilometres of new pipe, as well as expansion of existing networks. The advantage would be to monetise stranded resources and de-politicise energy trade in the region (see sidebar).

Argentina has taken some steps to encourage international investment; a new policy features a reformed bidding process, more numerous offshore licensing rounds, longer exploration periods and tax exemptions to companies that invest more than US$250 million over a three year period.

However, politics continue to dog the country’s oil and gas sector. Argentina’s offshore potential, which could match Brazil’s, has been complicated by an ongoing feud with the UK. In 2015, the Argentine government filed a suit against five energy companies that are drilling near the Falkland Islands. An Argentine judge subsequently ordered the seizure of assets totalling US$156 million.

Most of the targeted companies do not generally hold assets in Argentina or navigate in Argentine-controlled waters. While such disputes remain at the nuisance level, they still have the effect of raising above ground risk for...
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potential investors. In order for Argentina’s conventional and unconventional oil and gas sectors to prosper, it will require several billions of dollars invested annually over the next decade. Former President Kirchner was recently replaced with President Mauricio Macri. All eyes will be focused on the new administration over the coming year for signs of business-friendly reforms.

**Brazil**

Brazil is both blessed with natural resources and cursed with greed and corruption. According to the EIA, the country has over 15 billion bbls of proved reserves and 1 trillion ft³ of gas. Brazil’s output stands at 2.25 million bpd and 2 billion ft³/d of gas.

Yet, the country’s oil and gas sector faces serious difficulties. Although partly privatised, Petrobras is still the major driving force in the industry. The company has over US$130 billion in debt, and has slashed its budget and shed approximately 1500 non-operational managerial positions.

In addition, the company is hobbled by a serious corruption and kickback scandal. For over a year, federal investigators have been uncovering a massive scheme of chicanery that may reach up to the highest levels of government. As of late 2015, 87 people – including two former Petrobras directors – have been formally accused of offering and accepting approximately US$800 million in bribes and other inducements by inflating Petrobras contracts and funneling part of the money back, including to the ruling Workers’ Party. Most recently, a federal judge sentenced Jorge Zelada, a former Director of Petrobras’ international division, to 12 years in prison after finding him guilty of money laundering and corruption.

No one knows how the situation will end; prosecutors were given Supreme Court permission to investigate senior politicians and promptly brought former President Luiz Inácio Lula da Silva in for questioning (no charges have been laid since this issue of World Pipelines went to press). In early February, a Manhattan judge ordered Petrobras to face class-action litigation from investors who are seeking to recoup billions in losses due to the bribery and political kickbacks scandal. They claim that the company inflated its value of its stocks and bonds by more than US$98 billion. In May, the Senate voted to suspend President Dilma Rousseff and begin an impeachment trial against her.

Various steps are being taken to rectify Brazil’s dysfunctional oil and gas sector. In late February, federal lawmakers introduced legislation that would remove requirements that Petrobras hold at least 30% interest in pre-salt blocks, and be the sole operator of pre-salt development projects. The move is seen as a response to lack of international interest in pre-salt licensing, and the scandal woes that are hindering Petrobras ability to take on further operational duties.

Petrobras is also looking to meet some of its financial responsibilities through asset divestitures. Brazil has an extensive pipeline network, with over 12 000 km spanning the nation. Over the last decade, Petrobras subsidiary Transpetro built GASENE, a 1400 km pipeline that linked the southeast and northeast regions. In addition, it constructed the Urucu pipeline in the Amazon, to facilitate development of extensive onshore gas reserves. Clearly, the gas network has tremendous value; news services in Brazil have reported that Petrobras could make as much as US$6 billion by selling its natural gas network in the southeast. But in order to meet its obligations, the company may end up selling off much more, creating significant investment opportunities.

**Venezuela**

No regional report of Latin America would be complete without mentioning Venezuela, simply because it makes all the other nations look so good. Blessed with the largest proven oil reserves in the world (some 298 billion bbls, mostly heavy crude), it has still managed to stagger from one catastrophe to the next, primarily through the amazing bumbling of its populist government. Under its former leader, President Hugo Chavez, several major projects in the prolific heavy oil belt were nationalised, Petróleos de Venezuela S.A.’s (PDVSA) geoscience and engineering corps were purged, and the national oil company’s coffers plundered. Production fell from a high of 3.5 million bpd in 1999, to an estimated 2.6 million bpd in 2015.

PDVSA is now in dire straits. In 2015, its financial debt stood at US$43.9 billion, and debt to suppliers stood at US$20 billion. Moody’s downgraded PDVSA’s credit rating, and international partners are loath to lend it credit for imports of lighter crude and condensates needed to blend with its heavy crude output. Halliburton and Schlumberger have severely scaled back operations in the country, citing payment woes.

In case one wonders if matters could get any worse, they can. In late 2015, the US Justice Department charged Venezuelan citizens residing in Texas with conspiracy to pay bribes in order to arrange contracts with PDVSA. Between 2009 and 2014, several millions of dollars were paid to PDVSA officials in order to obtain work and services valued at over US$1 billion. One of the conspirators and three PDVSA have pled guilty so far. The US Department of Treasury also alleges that PDVSA has laundered US$2 billion in funds through an Andorran bank.

There may be light at the end of the tunnel. In 2015, opposition parties gained control of the Venezuelan Congress. The super-majority allows them to challenge the rule of President Nicolas Maduro. Members are calling for the dismantling of PDVSA. Although such a step would be hindered by popular sentiment, rampant inflation and currency devaluation have hurt the entire country so badly that the only solution may be the breakup and sale of the national oil company’s assets.

Like all oil and gas regions around the world, the future of the sector in Latin America is very much vulnerable to the capricious ups-and-downs of commodity prices. The current scandals gripping several nations, while causing short-term pain, may in the long run result in greater transparency and lower risk to investment. Through it all, energy demand in Latin America is still growing at a healthy clip, and that means that the region will remain a key area for the pipeline sector. ☛
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