

With Huge Shale and Renewable Resources, Export Potential Gains in Argentina

Vaca Muerta has been a godsend for Argentina. It's a shale play in the country's southwest that has so much potential for oil and natural gas production that it could supply Argentina's energy needs for decades to come — and even export a healthy surplus.

The challenge is to put the resources into mass production, so too the offshore potential, one of the last untapped bastions in the world, and its vast renewable power promise.

These questions sparked debate during the Institute of the Americas' Argentina Energy Roundtable on March 21 in Buenos Aires. The Roundtable counted three high-level discussion panels and was attended by over 75 representatives from industry, government, and academia and featured optimistic and robust discussion of Argentina's energy sector, but particularly the structural adjustments and reforms enacted by the Macri administration.

But amid the optimism and positive outlook, there were words of caution. Of greatest concern for all segments of the energy sector are the impacts of stubbornly high costs and inflation, elements that have and will continue to impede competitiveness but particularly the development of the highly-touted Vaca Muerta unconventional play in the country.

What is certain is that Argentina is transitioning out of nearly two decades of dwindling energy supplies. The initial development of Vaca Muerta has made it possible to envision a revival in production and exports. The play, the biggest in the country, has gained comparisons to Eagle Ford and Wolfcamp in Texas for its geology and production potential.

The government is betting on its development to close a 25% gas deficit met by imports. Argentina relies on gas for 50% of its energy needs, and that share is expected to continue, said Mauricio Roitman, chairman of Enargas, the country's gas regulator.

That means there is a big market straight off the bat for gas producers in Vaca Muerta to substitute imports, he said.

Finding Buyers

Even so, the industry has started to question whether that is enough, warning that without steady demand growth investment could slow.

Daniel Ridelener, director general of Transportadora de Gas del Norte, a leading gas pipeline operator in Argentina, said exporting gas must be considered — and soon — to make sure there is a sufficient outlet for the production.

It is a risk to bet only on the local market because the growing use of more efficient gas turbines for electricity and the advance of renewable energy is damping gas demand, he said.

At the same time, there is ample room for gas production and exports to grow.

In the 1990s, Argentina had 25 years of gas reserves and exported the surplus output. Now the potential is far greater with 800 Tcf of shale gas resources, according to the U.S. Energy Information Agency. If just 15% of that is found to be commercially viable, 120 Tcf could be put into production, Ridelener said. If current demand is 1.6 Tcf per year — 1.3 Tcf per year of local production plus 0.3 Tcf of Bolivian gas, LNG and diesel imports — that means the 120 Tcf equates to 75 years of reserves.

"If with 25 years of reserves we thought that it was wise to think of exporting, with 75 years there's no doubt about exporting," Ridelener said.

Gas Exports

Argentina has gas and power lines to export the equivalent of 50 million cubic meters (mcm) per day to Brazil, Chile, Uruguay and other neighbors, according to Ridelener.

However, the wide fluctuations in residential heating and cooling demand in summer and winter make it hard to sustain this level of exports year round. That means the country will have to export further afield as LNG.

Ridelener said the first LNG export project could be 30 mcm per day. While that would be only 3% of the 1 bcm per day of the global LNG market, it would be a lot for Argentina, he said.

"I'm talking about something that is between a dream and something that we have to start to think about between all of us," he said.

The additional sales outlets would help underpin production growth in Vaca Muerta.

“We cannot expect producers to develop an unconventional play to sell gas only five months out of the year,” Roitman said. “It wouldn’t be profitable.”

Gas exports have started again to Chile, and there are plans to renegotiate an import contract with Bolivia so Argentina can bring in more gas supplies at times of need in winter, less at others. That would free up more of the local market to take Vaca Muerta gas in warmer periods.

Another possibility is to build underground storage capacity that can be filled at times of low demand for consumption in the winter to avoid shutting wells the rest of the year, Ridelenner said.

Challenges

Despite the export potential, there are challenges for attracting investment to Argentina. For one thing, the government is behind in paying gas subsidies to producers. The economy is sluggish, taxes are high and inflation is at a painful 25%. This is making it costlier to do business in Argentina compared with other markets, a deterrent for the majors to increase their budgets for Argentina — and the independents from actually being able to afford to come.

Beyond managing labor costs, the topic of how to boost a more competitive oil and gas sector focused on the need to greatly expand not just the number and capabilities of service and equipment providers, but also to exponentially increase the amount of operators in the country’s oil patch. One panelist persuasively argued that an increase on the order of ten times the current number of market participants is required to develop a competitive oil and gas ecosystem; a growth in not just majors, but all manner of companies and expertise.

To make it more appealing, Argentina’s president, Mauricio Macri, has scrapped capital, currency and trade controls, cut some taxes and raised energy pricing to levels that cover costs.

This has helped reel in companies to develop the country’s large renewable potential, putting it on track to reach a target of getting 20% of its power from wind, solar and other such sources by 2025, up from 2% this year.

Regional Energy Integration

The combination of growth in renewables and shale gas is increasing the opportunities for energy integration in the region at a time when the world is moving toward a model of renewables with gas as a backup. Most of Argentina’s neighbors have been ramping up renewable power capacity, and are even producing a surplus at certain hours.

“We have the best of both worlds. A lot of renewables and a lot of gas,” said Favio Jeambeaut, vice president of business development at ENGIE Latin America, a French power company. “We need to take advantage of the areas that produce energy at times when it is needed elsewhere.”

Marcos Browne, vice president of gas and power at YPF, Argentina’s state-run energy company, said gas will be the transition fuel to increased use of renewable energy in the future.

How long will this take?

Doris Capurro, CEO of Luft Energía, a local renewable power company, said the transition to renewables won’t take decades, but years.

To gauge the speed of the transition, Maurizio Bezzeccheri, country manager of Italy’s Enel Group in Argentina, said it’s wise to analyze trends in demand. The improving efficiency of factory machines and power plants, for example, will reduce energy demand, while the increase of rooftop solar panels will allow more consumers to sell power on the grid. At the same time, electric cars are poised to boom, led by the lure of their cheaper operating costs. To charge an EV it costs a tenth of what it takes to fill a tank with gasoline, and the maintenance costs are lower because of fewer parts, he said.

Needed: Upstream Companies

Despite the rising demand for cleaner and cheaper energy, oil and gas consumption will continue in the long term. This makes Vaca Muerta a key for offsetting declines in output from maturing conventional reserves in Argentina, as it tried to pull out of a production slump.

To ramp up production in Vaca Muerta, producers must slash drilling and completion costs that are “twice” those in North American plays, said Enrique Grotz, a partner at EY

in Argentina, a professional services firm.

YPF, the busiest developer in the play, has halved its costs to \$8 million per well from \$16 million in 2013. To reduce them further, Grotz said technology can help, such as automation to drill at night without people and digitalization to improve efficiency and productivity. Additional reductions can come from improving labor productivity and improving infrastructure, such as by building a cargo train to take sand and rigs to the well sites at a lower cost than trucks, he said.

Another help could come from bringing more independent companies to Vaca Muerta, said Hugo Eurnekian, president of Compañía General de Combustibles, a local oil and gas producer.

Argentina has 40 to 50 companies in exploration and production, when it should have at least 500 when comparing with how the North American shale plays were developed, he said.

An influx of more players would increase competition, helping to drive down costs and speed up the development of Vaca Muerta. The more the companies, the more the ideas and experimentation that can find better practices for developing the play, Eurnekian said.

Even so, he said it is hard for companies to find acreage to enter Argentina. Tenders are few and far between, and there are restrictions on dividing up blocks between companies.

One way to attract independents is for the existing players to farm them in as partners on pilot projects, said Daniel Montamat, an energy consultant and director of YPF. That way, they would be able to show other companies in North America that they are making money in Vaca Muerta, tempting others to follow suit, he said.

Rodrigo García Berro, the Ministry of Energy's coordinator of offshore bid rounds, said a good entry point for new players is marginal fields. That would get their feet in the door to then expand.

Offshore Round

The Macri government is hoping to snare new companies this year in its first offshore licensing round in 30 years. Argentina One, as the round is called, will be launched in the

middle of this year for 240,000 sq. km (59.3 million acres) in three regions of the continental platform: 5,000 sq. km in the Austral Basin, the country's southernmost basin and source of 20% of national gas production, 80,000 sq. km in the Western Malvinas Basin and 170,000 sq. km the Argentina Basin. The licenses are to be awarded at the end of 2018.

Argentina's offshore "is very large and hardly explored," García Berro said.

The challenges are limited seismic data, little infrastructure, few ports and long distances, making it costly to get rigs into place, he said.

Even so, García Berro said fiscal incentives, a well-trained oil workforce and longer exploration permits will attract bidders. So too will the chance to drill in ultra-deep waters, including the deepest in the world at 4,000 meters. What's more, there are practically no exploratory permits in the offshore region, making it wide open for exploration.

Already 14 companies have got involved in monthly roundtable meetings to prepare bidding documents for the first round, and one company has said it plans to acquire 17,000 sq. km of seismic data in the Argentina Basin for \$30 million to prepare for the second round in 2019.

It is increasingly clear that the Macri administration's efforts to "normalize" the sector is beginning to pay dividends with an improved fiscal outlook and institutional and market credibility. A series of regional integration projects and energy exchanges with neighboring countries, ones that were but dots and lines on a power point slide just 2-3 years ago, are now a reality.

The Institute of the Americas recognizes and greatly appreciates the contributions by Charles Newbery in preparing this report.

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