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Can Shale Gas Really Transform the Region's Energy Sector?

Inter-American Dialogue's Latin American Energy Advisor

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Q and A: Can Shale Gas Really Transform the Region's Energy Sector?

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Argentina has the world's third largest technically recoverable shale-gas resources, according to the U.S. Energy Information Administration, with several large shale gas discoveries recently announced in the country's Neuquén Basin. Mexico is ranked fourth globally, while Paraguay, Uruguay, Brazil and several other Latin American countries also boast of the potential for their shale resources. Will shale gas lead to another energy boom for Latin America? How do investors view the potential for shale gas deposits, which involve new technologies and uncertain regulatory structures, compared to the region's rich conventional resources? How will shale gas affect existing natural gas businesses, as well as the development of plans for liquid natural gas and other sources of energy such as wind and solar? What are the environmental challenges associated with shale gas? How should the exploitation of shale gas be regulated in Latin America?

A: Paul Isbell, visiting senior fellow at the Inter-American Dialogue:

"If shale gas can successfully deal with a number of challenges, it could underpin a new global gas bridge to a feasible low-carbon future. These challenges include serious environmental concerns about the potential effects of 'fracking' on the quantity and integrity of water supplies, the potential for 'fugitive emissions' of methane to escape during the fracking process and lingering uncertainties surrounding the cost equations of shale basins beyond North America. Nevertheless, the shale gas boom in the United States has been real and its demonstration effect has been powerful. Only time will tell if shale gas potential can be successfully (and safely) demonstrated on a significant scale elsewhere; but if it is, the full-blown global gas revolution will be on. Argentina and Mexico are estimated to possess the world's third and fourth largest potential reserves respectively, but significant resources are also believed to exist in Brazil, Paraguay and Bolivia. Successful exploitation of Argentine shale gas could reverse the country's dangerous energy slide. It might also harness shale gas by partnering with the South Africans to produce synfuels for export using Sasol's gas-to-liquids technology. For Argentina, the stakes are high in the shale game: it is theirs to be astutely leveraged to produce one of history's most impressive geopolitical comebacks, or theirs to tragically waste. The world's army of convinced Argentina pessimists should remember that promising discoveries have already been made. Despite Argentina's horrible reputation with regards to regulatory affairs, this nascent shale boom was both preceded and underpinned by changes in regulations to provide companies with sufficient terms, clarity and confidence. Whatever might be said about the unsustainability of

Argentina's long and unexpected economic growth spurt, significant shale gas production over the mid-term future would transform the relationship between 'sustainable economic possibility' and the current 'Argentine growth model.'"

A: Leni Berliner, chair of M3 Investment Group and president of Energy Farms International:

"Domestic sources of natural gas could be a boon to those countries seeking to reduce reliance on imports to meet steady increases in demand. It should also appeal to those working to increase the proportion of renewable fuels in their energy matrices, since natural gas is useful for transitioning from fossil fuel. Natural gas can be compressed for vehicle transport, it can generate power when solar and wind farms lacking storage facilities cannot and it can serve as an alternative to hydrogen for certain fuel cell applications. The likely impact of shale gas production will be downward pressure on prices relative to imports, and on projected profits from investment in LNG facilities. Projections of price declines, while attractive to consumers, could constitute a barrier to investment in the building of infrastructure to serve those shale deposits not co-located with existing oil and gas fields. In such 'new' locations, as in northeastern Brazil, state-level incentives could be offered to make it more attractive to develop local resources than to build pipelines from existing fields. Environmental concerns—largely related to the possibility of contaminating water supplies—could dissuade some developers who need to lease access to land. This is an issue in the United States, where mortgage documents stipulate that the borrower may not do anything that could cause environmental damage to the land under mortgage."

A: John C. Ale, partner and head of the Houston office of Skadden, Arps, Slate, Meagher & Flom LLP, and Jorge H. Kamine, counsel in the firm's Washington office:

"Developing shale gas reserves almost certainly will result in a dramatic drop in gas prices, as it has in the United States. This can promote gas consuming industries but also adversely affect producers that acquired conventional resources assuming much higher prices. If successfully developed and managed, these resources should provide positive, long-term energy price reductions and supply stability in the face of substantial increases in electricity demand. In particular, gas can substitute for oil and coal, reducing carbon emissions while wind, solar, and other technologies become more economical, though cheaper gas also makes the cost target even lower. While shale gas development in Asia might limit the need for LNG exports from Latin America, intraregional gas trading may increase, particularly where existing gas transportation infrastructure already exists. Much of the exploitation of U.S. shale gas reserves has taken place in areas where conventional drilling was not common, leading both to an economic boom in depressed areas such as the Appalachians and to pressure on roads, pipelines and other infrastructure not ready for the work. Shale deposits in Latin countries may be located in areas that already are equipped for oil and gas development, meaning local job markets benefit less and infrastructure may already be in place, but they also may be in regions that will face issues similar to those in the United States. Regardless of locale, 'fracking' consumes significant quantities of water, which is scarce in many areas with shale deposits, such as the Neuquén Basin, and the content of fracking fluids and possibilities of leaks no doubt will be debated

vigorously. Finally, one must not overlook finding oil in shale deposits, as has occurred in several of the U.S. areas. That could be another game changer."

A: Caldwell Bailey, editor of The Shale Report at Regester Larkin Energy:

"The prospects for developing shale gas and other unconventional hydrocarbon resources in Latin America appear excellent. Smaller countries such as Chile and Uruguay can potentially make significant headway with regard to energy security issues. Chile's shale gas reserves, though a 'modest' 64 tcf, would supply it with gas for 640 years at current consumption levels. In the larger producing countries like Argentina and Mexico, shale gas might even reverse the trend of rising gas imports—Mexican natural gas imports have risen 64 percent since 2005 and Argentina's have been steadily increasing since the country became a net importer of gas in 2008. A number of factors, however, will impact the speed of development, including local natural gas prices, entrenched thinking at state companies, regulatory regimes that differentiate shale gas development from traditional oil and gas development and lack of local service sector experience with hydraulic fracturing and horizontal drilling. Argentina, with 774 tcf of potential unconventional gas resources, according to the U.S. Energy Information Administration, is a good case in point; announced discoveries of unconventional gas by companies already doing exploratory work in the country total over 4.5 tcf, in part confirming the resource. But the investment climate is clouded by the 2001 debt default (and continuing lack of access to international credit markets) and a decade of government intervention in natural gas markets. Without any doubt, shale gas development in the region has great potential, so long as political and regulatory conditions allow for efficient exploitation."

The Energy Advisor welcomes responses to this Q&A. Readers can write editor Gene Kuleta at gkuleta@thedialogue.org with comments.