

11-14-2011

# Will Mexico Be Able to Exploit Its Shale Gas Resources?

Inter-American Dialogue's Latin American Energy Advisor

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## Recommended Citation

Inter-American Dialogue's Latin American Energy Advisor. "Will Mexico Be Able to Exploit Its Shale Gas Resources?." (2011).  
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***Q and A: Will Mexico Be Able to Exploit Its Shale Gas Resources?***

**Citation:** Inter-American Dialogue's Latin American Energy Advisor, November 14-18, 2011; pp. 1, 3, 6. Also online at [www.thedialogue.org](http://www.thedialogue.org).

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Mexico is abandoning plans to build as many as 10 nuclear reactors and will focus instead on natural gas-fired electricity plants, Bloomberg News reported last week. According to Energy Minister Jordy Herrera, Mexico is shifting course in light of new discoveries of natural gas deposits. He added that Mexico would seek private sector investment for about \$10 billion during five years to expand a natural gas pipeline network. Is Mexico's plan to scrap new nuclear projects a good idea? How significant are the new natural gas deposits? Will Mexico be able to exploit them to meet growing energy needs? Should the country be looking at other energy sources?

**A: George Baker, publisher of Mexico Energy Intelligence:**

"On a visit to the state of Sonora on Nov. 9, President Felipe Calderón unveiled a vision of a 40 percent expansion in Mexico's system of natural gas transportation pipelines. Of the eight projects that were mentioned, two had already been the objects of public tenders, and one of these, the Manzanillo-Guadalajara pipeline, was already under construction. The announcement included no liberalization of the natural gas market that would increase market-driven investment opportunities, nor was there any news about plans to restructure Pemex's gas processing, pipeline and marketing subsidiary (PGPB). While the president promised that the new projects would bring a 'cleaner' and 'cheaper' fuel to new customers, there were no signs that the government is aware of the resistance that will be put up in local markets by LPG distributors who will not look kindly on the prospect of being displaced by natural gas. (Nor will criminal elements be pleased by any reduction in the daily cash-flow of these distributors with which narco money may be laundered.) Where the government plan shows innovation and creativity is the so-called 'Northwest Pipeline,' which would extend from Ciudad Juárez on the Texas border to Mazatlán (and, presumably, at a future date, onward south to make a complete circle with Guadalajara). The concept of such a pipeline dates from 1979 in a map of prospective pipelines that Pemex included in its annual report of that year. The government proposes to move CFE power stations inland from the border, thus artificially creating a 'need' for a gas pipeline. The pity is that it would be yet one more case of the CFE as the main creditworthy, anchor customer for midstream projects in Mexico. The government's imagination has not yet visualized a market-driven alternative. While the pipeline would seem to draw on U.S. shale gas, Pemex has also talked about its own shale resources. However, the outlook for Mexican shale gas is doubtful given its

location is in desert regions where water supplies in the quantities necessary would be unavailable."

**A: Duncan Wood, professor and director of the International Relations and Canadian Studies Programs at the Instituto Tecnológico Autónomo de México:**

"The identification of the world's fourth-largest shale gas deposits in Mexico is truly a game changer for the country. From being a country that was relatively gas poor, it has the potential to become one of the world's gas superpowers. To do so will require massive investment on the part of Pemex to both develop the resource and to build the gas pipeline network needed to get the gas to market. Pemex currently lacks the funds and the expertise required and will therefore have to work with the private sector. Sources within Pemex are saying that this is the perfect opportunity to use the new incentive based contracts that have recently been issued for oil E&P. The recent announcement by Jordy Herrera that Mexico will focus on gas-powered electricity plants makes perfect sense in this context as the country can utilize its gas resources and benefit from the very low prices that are now predicted for gas. This will help to drive competitiveness, not just of the energy sector, but of the economy in general, both in Mexico and in North America as a region. The decision to scrap plans to build new nuclear power stations is perfectly understandable too, particularly in the aftermath of the Fukushima disaster. Another impact of shale gas development on the energy sector in Mexico and the region will relate to renewable energies. Whereas cheap gas further reduces the competitiveness of renewable energy, gas-powered plants make a perfect backup for intermittent supply from wind and solar farms."

**A: José Alberro, director of the Berkeley Research Group and former CEO of Pemex Gas and Basic Petrochemicals:**

"Mexico is updating its long-term energy strategy and, even though the final report will not be ready before early next year, recent speeches by high-level officials suggest a greater reliance on natural gas and a bet that solar energy will soon be competitive. Mexico's oil reserves are growing by leaps and bounds: first there was the EIA's estimate that technically recoverable shale gas reserves amount to 680 tcf; then there were the announcement that recently discovered traditional gas fields in the Gulf of Mexico have increased reserves by almost 1 tcf. President Felipe Calderón also announced a \$10.5 billion investment program to foster natural gas use: private and public funds will be used to expand the natural gas pipeline grid by 40 percent and local distribution networks by 125 percent. A few months ago, the energy undersecretary highlighted Mexico's solar potential, particularly in states where the incidence of solar radiation is estimated to be 6 kWh/m<sup>2</sup>/day, almost 50 percent above the average of several European countries which have invested significantly in solar energy. Indeed, the European Photovoltaic Industry Association estimates that the potential for photovoltaic generation could be between 7 and 9 GW, but grid parity may be a few years off. Mexico needs to increase its electricity generating capacity by 30 percent over the next 30 years. It is unclear whether it is abandoning plans to build nuclear reactors as some observers would have it: while the former Secretary of Energy—who left office six months ago—seemed willing to consider the possibility of nuclear generation, no high level official has mentioned it since. Betting on off-the-shelf gas technology and scrapping dangerous complex nuclear reactors does not seem foolish when gas futures continue to decrease and U.S. production of shale gas continues to grow, particularly given that

Mexico just invested in three LNG regasification plants. As for the environment, few have really studied the long run gas/nuclear trade-off from that perspective."

**A: David Shields, independent energy consultant based in Mexico City:**

"Energy minister Jordy Herrera wants to start a Mexican 'shale gas revolution.' Based on that vision, he says Mexico should focus on gas-fired power plants, rather than nuclear reactors, for future power expansions. He sees how shale gas has taken off in the United States and embraced the still-unproven estimate from the U.S. Energy Information Administration that Mexico could have a shale gas potential of 681 trillion cubic feet. Moreover, gas-fired power plants and gas pipelines take only two years to build, while nuclear power plants take 10 years. Also, unlike nuclear, natural gas development faces neither political nor social opposition. In other nations, talk of giant energy potential is enough to attract massive investment, but not in Mexico. U.S. wildcatters cannot get involved in Mexican shale gas because of legal restrictions that mandate state control over all oil industry operations, which are unlikely to be lifted by Mexico's nationalistic congress, whose attention is now focused on the 2012 presidential elections, not on energy reforms. State monopoly Pemex has drilled only one shale-gas well, has no budget for shale gas and looks on oil as its priority, especially since gas prices are so low. Top energy industry officials acknowledge that successful shale gas development would require a wholly different industry structure, but that is definitely not on the politicians' agenda. So, Herrera's Mexican revolution may be no more than a damp squib, at least for a while."

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

"Mexico has tremendous potential for shale gas development. But while it will help to lessen import dependence on the United States as Mexico builds more gas-fired power generation facilities, pretending that natural gas from shale will be a swift and solitary panacea for the country's energy woes will not help anyone. For many reasons, state-run oil and gas monopoly Petróleos Mexicanos (Pemex) has disdained natural gas development over the years—thus the need for imported gas continues to increase. Despite the news of an abundant shale resource under their feet, decision makers in Mexico have yet to formulate a plan to exploit it with due haste. In fact, to date Pemex has drilled only a single shale gas well, back in 2010 in an area across the U.S.-Mexico border from Laredo, Texas in the Eagle Ford Shale. While nuclear plants may not be Mexico's best option for power generation due to their high construction costs and technical complexities, another compliment to natural gas-fired generation will have to emerge. Natural gas power plants, just like any other technology that is currently available, cannot carry the generation burden alone. In addition to this, pipeline construction is a matter often fraught with impediments in the best of environments. It is not clear to me whether this vital piece of the puzzle will progress as quickly and at such modest cost as Mr. Herrera and other Mexican officials hope. This will push out the impact of shale development to the medium- to long-term."

*The Energy Advisor welcomes responses to this Q&A. Readers can write editor Gene Kuleta at [gkuleta@thedialogue.org](mailto:gkuleta@thedialogue.org) with comments.*