Mexico:

An Opening for Energy Reform

A Working Paper of the
Americas Society/Council of the Americas
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FOREWORD

Investor interest in Mexico is arguably higher today than at any time since the passage of the North American Free Trade Agreement 20 years ago. While North American economies have integrated more and more during this period and regional supply chains have developed to previously-unanticipated levels, broader regional competitiveness has been held back by structural obstacles to growth and economic development, several of which exist in Mexico.

The election of Enrique Peña Nieto in 2012 brought into power a reform-minded president with the political machinery to move beyond aspiration to implementation of politically-difficult reforms. In short order, even before he was inaugurated Peña Nieto moved ahead with initiatives on labor and education, competition policy, taxation, and political issues, all of which had been discussed for years but never consummated. Perhaps the most complicated of all is energy.

There is virtually nothing in the Mexican political and historical context more politically fraught than energy, and the difficulty of reform cannot be overstated. The simple fact, however, is that Mexico's energy sector is running out of steam, not because resources do not exist, but because capital cannot be deployed to develop the immense resources that do exist due to investment restrictions memorialized within Mexico's constitution.

Once fully implemented, Mexico's energy reforms have the potential to transform this sector while giving a significant boost to broader competitiveness issues given current high energy costs. Increasing Mexican competitiveness would be very good for the United States. According to the National Bureau of Economic Research, 40 percent of Mexico's exports to the United States represent U.S. input. Therefore, a growing Mexican economy will draw in increasing U.S. production supporting economic growth and contributing to U.S. export statistics.

Canada would also benefit from the reforms. Canadian companies are eyeing investment opportunities in Mexico's energy sector. Furthermore, increased competitiveness throughout North America – through lower energy prices – benefits Canadian firms. A further integrated North American market would strengthen Canadian value chains across the region.

Energy reforms in Mexico are both vital and game-changing. Once in place, Mexico and the broader North American economic platform will have the potential to drive enhanced global growth. Much hard work remains in order to realize the promise of liberalized energy production in Mexico. But the potential rewards for Mexico's people and the North American economy are immense.

For these reasons the Energy Action Group of the Council of the Americas is pleased to present this paper as a means to understand more fully the reform process and its implications. It is the product of a March 2014 conference held in Mexico City in conjunction with the Center for Global Sustainability at the Instituto Tecnológico Estudios Superiores de Monterrey, and numerous subsequent conversations. I want to thank Christian Gomez, our Director for Energy at the Council, for his leadership of the initiative and his work to put this paper together. We also deeply appreciate the support of the Inter-American Development Bank and various private sector entities for our energy related activities.

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I. MEXICO'S ENERGY REFORMS

Mexico has proposed far-reaching reforms to its energy sector which will liberalize investment opportunities and dramatically increase overall economic competitiveness. Subject to passage in the legislature, the Mexican energy reforms contemplate opening up the energy industry by bringing in private partners to participate in the energy sector, largely through joint ventures. This participation will happen through profit-sharing agreements, production-sharing agreements, and licenses.

Authorities tend to use a profit-sharing agreement, where companies are paid a portion of the profits in cash, when there is perceived to be lower risk in exploration and production. Investors use production-sharing agreements when there is more risk, as the company ends up losing more should exploration not yield oil. Production-sharing contracts allow companies to report projected income and are thus seen as more attractive to foreign investment.

One of the reasons observers of the process are so pleased with the reforms is the inclusion of licenses, which allow companies to manage recoverable hydrocarbons directly and will be used in part for shale gas exploration. The contractual medium may also be used for deep and ultra deepwater where companies would better manage risk through the use of licenses. Licenses act in many way like concessions, where companies control hydrocarbons and pay royalties and taxes to the government.

An unexpected outcome of the approved bill, and one of the reasons observers of the process were so pleased, was the inclusion of licenses.

The Mexican government also announced the creation of a sovereign fund. The fund will channel all of the earnings from oil sales and service contracts into savings and pensions. Mexico's Central Bank will operate the fund.

On the power generation side, the reform calls for the CFE, Mexico's electricity monopoly, to become a "productive enterprise," similar to Petróleos Mexicanos, or Pemex, allowing for private companies to generate and distribute electricity. Secondary legislation, which governs the bidding process, consists of 21 laws –

modifications to 13 existing laws and the establishment of eight new laws. The laws state that hydrocarbons are property of the Mexican state in the subsoil but that there is free and open competition among state enterprises and private companies. In addition, the legislation calls for 25 percent local content by 2025. This 25 percent will be averaged out throughout the whole industry. Currently, limited local capacity exists to supply the needs of potential deep and ultra deepwater projects. In addition, Pemex will take at least a 20 percent stake in cross-border projects, requiring Pemex to participate in, but not operate, transboundary fields. The Mexican government intends to have the state involved in any project that would be shared by two nations in order to have oversight. Investors are positively receiving both the 25 percent local content requirement and the 20 percent stake in cross-border projects.

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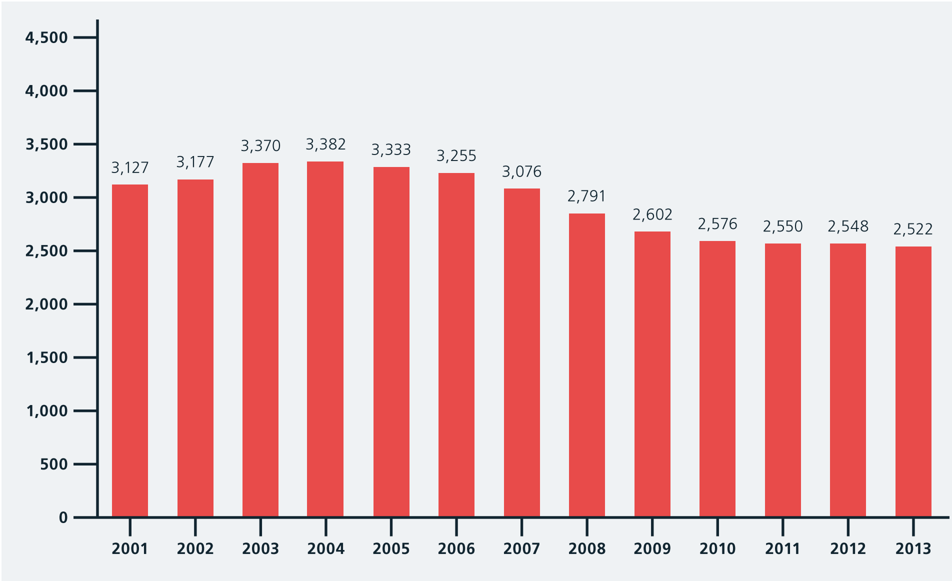
Moving forward, the Ministry of Finance will no longer administer the budget and finances of Pemex. In addition, the union will no longer make management decisions nor will it participate in Pemex's administration, having lost five seats on the Board as a part of the reforms. Pemex will also reduce its fiscal burden, paying 65 percent taxes instead of 80 percent. This tax will be paid over profits as opposed to a set percentage of its assets. These moves indicate that Pemex will be more independent, with more autonomy from its union and also from the Ministry of Finance. This is a positive step towards modernizing Pemex by providing more profit-making incentive.

II. IMPACT OF THE REFORMS

According to the Mexican government, the cost of energy will decrease, 2.5 million new jobs will be created by 2025, and GDP will increase by two points by 2025 because of the reform.

Mexican oil production has decreased in the last ten years, from 3.8 million barrels per day in 2004 to 2.5 million barrels in 2013.[1] Pemex has not invested enough in the Cantarell oil field, once considered the jewel of Mexico's shallow water reserves, which has constrained the field's production. Cantarell was discovered in

1 Ortiz, Fabiola. "Mexico's Energy Reform Issues. A Comparison with Brazil and Colombia." *Standard & Poor's,* February 28, 2014



Mexico Oil Production (kbpd)

Source: *Standard and Poor's*

1976 and production peaked in 2003, when it produced 2.1 million barrels of oil per day. Now producing less than one-fourth of its peak, the aging field is a symbol of what Pemex once was and of the need to move in a different direction.

With increased investment and technology transfer, Mexican oil production should increase significantly. It will not happen overnight; the first auctions are estimated for 2015 and actual production increases are not foreseen until at least 2020.

A large impact will also be felt in the increased availability and lower price of natural gas. Currently, Mexico must import liquefied natural gas from the Middle East and Africa, paying four times the going rate in North America, in order to keep up with domestic demand.[2] Despite the surplus of natural gas in the United States, all inbound pipelines are full, forcing Mexico to import from other parts of the world at a premium. Mexico is estimated to hold approximately 500 trillion cubic feet of natural gas reserves. Since natural gas is an input into manufacturing, lower costs will increase Mexico's global competitiveness.

2 Johnson, Tim. "In sign of energy dilemma, Mexico runs low on natural gas." McClatchy. September 18, 2013.

III. SIGNIFICANCE OF REFORMS

The reforms are revolutionary because many governments have attempted reform in the last 75 years but have been stymied by the legislature. Furthermore, a large proportion of the public, which considers hydrocarbons to be part of the national patrimony, has opposed reform efforts. President Lázaro Cárdenas's nationalization of the hydrocarbons sector in Mexico in 1938 is considered a major milestone. Yet people care about the impact of reform on their budget and wallet, and a recent Mitofsky poll[3] indicated that people are not opposed to liberalization if this ensures transparency, lower prices, and other benefits. After a long history of corruption and stagnation in Pemex, society may be frustrated and eager to see something new.

In addition, Pemex is a lucrative state enterprise that pays for around 40 percent of the state budget. Therefore, it has been difficult to move it in any particular direction. Pemex's current leadership is eager to turn it into a productive enterprise, which will put it on more sustainable footing.

IV. REFORM PROCESS

The reform process began via the Pact for Mexico, which was established the day after President Enrique Peña Nieto's inauguration. The pact brought together the governing Institutional Revolutionary Party (PRI), the center-right National Action Party (PAN), and the leftist Party of the Democratic Revolution (PRD). The Green Party later joined the pact, which focused on reforms including political, fiscal, education, telecommunications, and energy. Prior attempts at large-scale reform had failed, which motivated the three parties to work together.

The three major parties entered in talks to initiate the pact starting in October 2012. The PRD joined because they were afraid a PAN-PRI alliance would marginalize them in Congress. Likewise, the PRI was wary of a united PAN-PRD opposition.

With the pact in place, President Peña Nieto's administration moved to design the legislation that would eventually become law. On August 12, 2013, Peña Nieto presented, to a live national and international audience, his administration's proposal for energy reform. Various interlocutors of the Peña Nieto administration

[3] "Necesarias, reformas energética y de Pemex: Mitofsky." *El Economista*. August 27, 2013.

had mentioned many of the key aspects of the bill, and there were few surprises in his speech. Nevertheless, Peña Nieto delivered his vision for reform in Mexico, using as backdrop the need for a stable, affordable supply of energy.

Profit-sharing contracts were the most notable aspects of the announced reform proposal. Previously, legislation in Mexico allowed for private participation only through incentive-based contracts. Instead, the profit-sharing contracts imply that Mexico will maintain ownership of all the reserves, but companies are given permission to undertake exploration and production. Once hydrocarbons are discovered, companies would then recover their costs and share a portion of the profits. This type of agreement exists throughout the world, especially in the Middle East and Central Asia.

The reform would strengthen the national electricity commission, while also promoting renewable energy sources such as solar and wind power.

During his presentation, Peña Nieto did not frame the reform bill entirely in the context of oil and gas. Instead, he also framed the reform of the electricity sector in a similar manner to hydrocarbons – allowing for private participation in the sector while ensuring that the state remains in control. The reform would strengthen the national electricity commission, while also promoting renewable energy sources such as solar and wind power.

On April 30, 2014, the last day of the congressional session, the Ministries of Finance and Energy presented the secondary legislation, which includes the details of how the reform would be implemented. Congress must pass the legislation before it can be implemented.

V. IMPLICATIONS FOR MEXICO

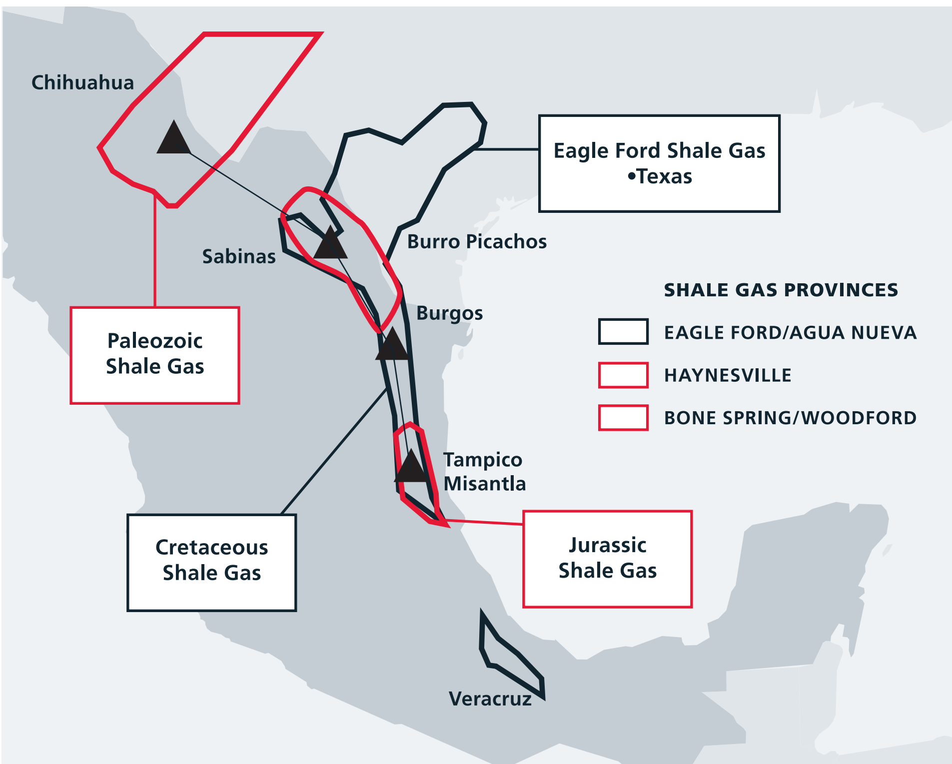
Mexico has significant conventional and unconventional potential that cannot be accessed without international expertise. Mexico's world-class shale gas deposits (sixth in the world according to the EIA)[4], have barely been exploited. The Peña Nieto government would be able to benefit from the technology of major interna-

4 U.S. Energy Information Administration. http://www.eia.gov/analysis/studies/worldshalegas/ Accessed May 16, 2014.

tional oil companies, who would be able to bring the hydrocarbons out of the ground, while at the same time ensuring that Pemex and the Mexican state benefit appropriately.

Shale Plays in Mexico

Mexico will not likely immediately experience a "shale revolution" as is being seen in the United States, because the type of companies and requisite mineral rights are not yet present. The United States has issued over 13,000 drilling permits for shale wells in the Eagle Ford, with an output of 688,000 barrels per day. This compares to just 175 shale test wells in Mexico to date.[5] Medium sized E&P firms in the United States have been successful in quickly moving to drill where resources



Shale Gas Provinces

Source: Pemex

5 "Mexico's Pemex to drill just 10 shale test wells in 2014." Reuters. February 26, 2014.

are present, through the straightforward acquisition of mineral rights. In Mexico, the subsoil belongs to the state, making it complicated for E&P companies to move quickly and drill.

One of the biggest issues for shale development is the current legal system surrounding land ownership and mineral rights. Contractual agreements are lacking clarity, and they will be at the center of development for these types of fields. However, the hydrocarbon law contemplates a system to negotiate land for operations and right of way. Implementation will be key.

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In addition to shale plays, increased investment in deepwater drilling would be a boon for Mexico. The country boasts approximately 30 billion barrels of recoverable reserves in the Gulf of Mexico. Similar to shale, Pemex lacks the technological means to drill offshore in a substantive way. Increased investment in the Gulf via large energy companies from abroad is a major opportunity for Mexico.

VI. IMPLICATIONS FOR NORTH AMERICA

History and geography have linked the North American countries through significant energy reserves. In recent years, the countries have developed these resources through timely policy choices that have increased each country's potential. In particular, the shale gas and oil revolution in the United States, the oil sands in Canada, and energy reforms in Mexico are new developments that have enhanced each country's status as an energy power. While each country on its own would be a dominant producer, greater integration could have benefits greater than the sum of their parts. The U.S.-Mexico Transboundary Hydrocarbons Agreement, passed in December 2013, was a first step in regulating drilling in the Gulf of Mexico, providing certainty for companies drilling in deep water.

Energy exports fuel Canada's economy, and virtually all of its exports are sold to the United States. Despite 410,000 kilometers of pipelines across Canada and the

United States, Canada has been forced to look toward Asia for energy exports.[6] This east-west axis is more challenging in terms of managing Canada's regulatory structure, since individual provinces have a say in pipelines that are built across their territory.

Mexico's potential energy boom represents an important opportunity for both Canada and the United States. Canadian and American companies will be looking to invest both in oil and gas and in power generation. Furthermore, electricity costs 25 percent more in Mexico than in the United States, which has led some manufacturers to leave the country. Lowering costs through more efficient generation lowers energy input costs into manufacturing, which is vital for Canadian and American companies that seek to invest in Mexico.

While some believe that increased production of Mexican crude competes with Canada's exports, this will not be an issue due to the different quality of supply and refining process. Increased production will find new export destinations as Canada, the United States, and Mexico reap an energy bonanza. Increased production, lowered costs, and more refined market access will lead to greater competitiveness which can benefit all three nations. Mexico's energy reforms will benefit North America broadly, by providing an opportunity for North American leaders to develop a fully integrated North American energy sector.

VII. ENERGY REFORMS – A COMPARATIVE PERSPECTIVE

Comparing the Mexican energy reform to other countries that have recently opened up their energy sector is instructive. In Colombia, for example, the energy sector opened to private investment in 2003. The Colombian government created the National Hydrocarbons Agency (ANH) to establish terms of reference for the exploration rounds and assign blocks to oil and gas companies. In 2006, the Colombian congress authorized Ecopetrol, the state oil company, to issue up to 20 percent of voting capital stock.[7] Therefore, Ecopetrol gets no special treatment and competes under the same conditions as other domestic and foreign oil and gas companies. Despite the reform, Ecopetrol continues to maintain its dominant position in the energy market, with an 80 percent market share.[8]

6 Gomez, Christian. "North American Energy Integration: The Canadian Perspective." Americas Society/Council of the Americas. February 2014.

7 Ortiz, 4.

8 Ibid, 5.

	COLOMBIA	BRAZIL	MEXICO
OPEN TO PRIVATE INVESTMENT	2003	1997	2014
COMPANY	Ecopetrol	Petrobras	PEMEX
MARKET SHARE	80%	90%	100%
GOVERNMENT OWNERSHIP	88%	50%	100%
CONTRIBUTIONS TO THE GOVERMENT	21%	5%	55%
SOVEREIGN RATING	BBB	BBB	BBB+
COMPANY RATING	BBB	BBB	BBB+

Comparison Table

Source: *Standard & Poor's*

Overall, in terms of new wells and foreign direct investment, the reform helped Colombia considerably. However, Colombia's oil and gas sector is much smaller than Mexico's and the sector is far less politicized. Regardless, the reforms are similar as is the presence of a dominant state oil company that, in Colombia's case, led to further dominance even after the reform. It is likely that Pemex will continue to play a dominant role.

Brazil's experience is different but also worth exploring.[9] The oil sector was deregulated in steps. First exploration and production was opened up in 1997, then refining in 2002. As part of the reform, the Brazilian government must maintain at least 50 percent of Petrobras's capital stock. Similar to Colombia, the Brazilians created an independent regulatory agency – the National Agency of Petroleum, Natural Gas, and Biofuels (ANP). Petrobras maintains a large participation in the energy sector, with over 90 percent ownership of national assets.[10] During Round

[9] Gomez, Christian. "Brazil's Energy Agenda, the Way Forward." Americas Society/Council of the Americas. September 2013.
[10] Ibid, 9.

Zero, Petrobras kept 292 fields and decided to return 62 fields. Furthermore, after the pre-salt bidding rounds, Petrobras maintained the right to participate in the pre-salt fields with not less than 30 percent participation in production sharing agreements – these rules were changed for this particular field only. These are significant local content requirements which are driving up costs and slowing investment and output.

In comparison, during Mexico's Round Zero, which started on March 21, 2014, Pemex expressed its interest in keeping 83 percent of proven and probable reserves and 31 percent of proven, probable and possible reserves. Similar to Petrobras, Pemex is showing that it will keep the most profitable onshore and shallow-water fields, in addition to the few deepwater fields that it has already drilled. Unsurprisingly Pemex seeks to hold on to its most productive assets. It is unclear whether the regulator (the National Hydrocarbons Commission, CNH) will allow Pemex to keep these reserves.

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VIII. CONCLUSION

The next step for Mexico's reforms is execution. Assuming Congress passes the secondary legislation, the various government agencies and actors charged with the execution of the reforms (Pemex, the Ministry of Energy, CNH, the Federal Electricity Commission, and the Energy Regulatory Commission) will be quite busy transforming the sector. There has been talk of a human capital gap to fill the various positions in the new agencies that are being created as a result of the reforms, as there is a limited number of skilled personnel for these positions. There will certainly be hiccups throughout the implementation process, and Mexico will ultimately be judged on its execution of the reforms. Nevertheless, the success of this initiative will represent a major milestone, posturing Mexico to become a magnet for foreign investment, and a more economically competitive nation overall.

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