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Will Mexican energy reform survive political transition?

What Mexicans think

Carlos Pascual, David G. Victor, and Rafael Fernandez de Castro Medinas

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Executive Summary

On July 1, 2018, Mexicans will select their next president. As of early June 2018, polls show that the candidate of the left, Andrés Manuel López Obrador, has built a significant lead, founded on a public backlash against corruption and a feeling that the establishment has failed—sentiments at the core of other populist backlash elections in recent years. Indeed, almost half of Mexicans polled indicate that they will vote against the current party in power.[1] At question is whether this public resentment will also unravel some of the signature accomplishments of the administration of President Enrique Peña Nieto, including a quiet, steady effort to reform Mexico's energy markets and roll back the monopolies of Mexico's state-owned energy companies. These energy reforms have already triggered substantial benefits, such as contracts that could yield $200 billion in investments in the coming years.[2] But those benefits, for the most part, are not visible or tangible to average Mexicans.

Until now, nobody has really known what Mexican voters think about all this change. Yet those attitudes matter because the contending candidates for the presidency have outlined starkly different visions for the future. In March 2018, we ran—in tandem with The Brookings Institution, the University of California at San Diego, the global consultancy IHS Markit, and a leading Mexican newspaper, *El Financiero*—the first systematic poll of Mexican voter attitudes on

[1] "Asi cierran las precampañas," Grupo Reforma, 2018, https://gruporeforma.reforma.com/interactivo/encuestas/enc_cierre_precampanias/index.html?lc=1.

[2] Secretaría de Energía, "Con los proyectos en este año las inversiones totales comprometidas con la Reforma Energética rebasarán los 200 mil millones de dólares: PJC," Government of Mexico, February 8, 2018, https://www.gob.mx/sener/prensa/con-los-proyectos-a-realizar-en-este-ano-las-inversiones-totales-comprometidas-con-la-reforma-energetica-van-a-rebasar-los-200-mil-millones-de-dolares-pjc.

energy reforms. This paper explains the results of the poll, key insights, and policy lessons.[3]

What we found is important and disturbing. The poll suggests a substantial risk that what has become perhaps the most ambitious energy reform program undertaken in any country in such a short period of time could be delayed or even diverted. The Mexican public has little knowledge of the crisis that precipitated the need for energy reform, believes that the energy reform has not produced positive results, and distrusts private investment in the energy sector. Despite all that, a modest majority of Mexicans still favor continuing with the country's energy reforms, rather than rolling them back. Many of the broad insights from our poll transcend national borders:

- Public support wanes when the costs of reform are immediate, but the benefits take years to materialize.
- The public is quick to latch on to populist promises that benefit them personally, with little attention to who pays for delivering the promises.
- Public myths around resource nationalism—and the evils of private investment—are hard to break once entrenched in the public consciousness, including in Mexico, a country with an open economy and a legacy of free trade agreements.
- Still, consumers can be very pragmatic, welcoming private competition and imported commodities if they provide the best value for the money.

These insights also offer lessons for public and corporate policy:

- Active efforts to create clarity on the cost and timeline to benefit from reforms—even if they complicate consensus-building at the outset—can help avoid the unraveling of support from unmet expectations. Politicians need to address constituencies forthrightly to shape expectations.
- Once public disappointment in reforms is rooted in personal experience, reshaping the public outlook may require alternative positive personal experiences—for example, retail supplier competition delivering better quality gasoline or ensuring that a liter bought is a liter delivered at the pump. Government promises that conflict with people's personal experiences have little credibility.
- National benefits and timelines must be made concrete. For instance, politicians could highlight the oil and gas contracts awarded, timelines for exploration and production, power auctions completed, and contracted prices to supply electricity—actions that make credible the flow of future benefits.
- Populist myths—such as the idea that setting low gasoline and electricity prices has no cost—are hard to puncture when the public wants to believe them. Not challenging them ensures they will persist. To effectively challenge such myths, the alternative benefits must be tangible and personal: new jobs, better service, fuel or power supplies where and when the public needs them.

[3] Poll was conducted by *El Financiero* from March 9 to 14, 2018, polling 1,200 Mexican adults nationwide with face-to-face interviews. Confidence level of 95 percent with a +/- 2.8 percent margin of error. Summaries of the poll results can be viewed at: "El respaldo y la desconfianza a la Reforma Energética," *El Financiero*, April 27, 2018, http://www.elfinanciero.com.mx/opinion/colaborador-invitado/el-respaldo-y-la-desconfianza-a-la-reforma-energetica and Carlos Pascual, David G. Victor, and Rafael Fernandez de Castro, "North America's energy future on trial in Mexico's presidential campaign," *Brookings Institution*, June 5, 2018, https://www.brookings.edu/blog/order-from-chaos/2018/06/05/north-americas-energy-future-on-trial-in-mexicos-presidential-campaign/.

Energy reform in the context of Mexico's history

Mexico's energy reforms were launched in December 2013. Two-thirds of the Mexican Chamber of Deputies and Senate, and a majority of the 32 state legislatures, passed a constitutional amendment to allow private investment in every aspect of the energy sector. This opening came 75 years after the expropriation and nationalization of the oil industry in March 1938, followed shortly by the creation of the national oil company of Mexico, Petroleos Mexicanos (PEMEX). Even today, the nationalization of the oil industry is celebrated as one of Mexico's national holidays. Around this time, the Comisión Federal de Electricidad (CFE), the state-owned electric utility in Mexico, was also created. [4]

Oil exploration in Mexico began in the late 1800s with private entrepreneurs drilling in the states of Tabasco, Tamaulipas, and Veracruz. By the early 1920s, Mexico had become the world's largest exporter of oil, and the second largest producer after the United States. Even after nationalization, production grew steadily in the 1900s, but eventually peaked in 2004, at about 3.4 million barrels per day (bpd).[5] Since then, production has fallen off a cliff because PEMEX was unable to invest in continued exploration and production. Output since 2004 has declined 43 percent to 1.95 million bpd.[6] While the rest of the world entered a technological revolution in oil and gas, PEMEX could not legally seek private investment, and, by 2005, PEMEX was also financing about 35 percent of the Mexican federal budget. In effect, national policy starved PEMEX of the resources it needed to modernize and grow.

By the time of Mexico's political debate on whether to pursue a comprehensive energy reform in 2012-13, energy resource nationalism had been engrained in Mexican popular culture. It took an extraordinary coalition of political forces known as the Pact for Mexico to amend the constitution and then pass the necessary implementing legislation by August 2014. The Institutional Revolutionary Party (PRI), the Green Party, and the National Action Party (PAN) together could then generate the constitutional majority that made the reforms possible in 2013-14. Meanwhile, the opposing leftist Revolutionary Democratic Party (PRD), once led by López Obrador, split into two parties on the left (largely over who controls the party). The old PRD has aligned for the 2018 election with the center-right PAN in an alliance of convenience, to oppose López Obrador and his new National Regeneration Movement (MORENA) Party. Many expect that if López Obrador wins the 2018 elections, the PRD will rebuild its relationship with MORENA. For the purposes of energy reform, the core alliance of the PRI and PAN that made the energy reform possible will almost certainly lose its parliamentary majority.

These twists in national politics contrast with the speed and purposefulness of the implementation of the energy reforms. Oil and gas bidding rounds commenced in December 2014. The Mexican government has now awarded 107 exploration and production contracts to private operators, including a number of strategic partnerships with PEMEX. With the recent liberalization in Mexican retail fuel markets, the number of import permits has soared—332 gasoline and 457 diesel import permits had been issued as of March 2018.[7] A newly competitive natural gas sector has given Mexico the ability to tap more fully the massive volumes of low-cost natural gas available for import from the United States. Mexico's power sector now has competitive energy, capacity, and clean energy markets. Since a new legal framework was established late in 2014, the Mexican government cites that it has concluded contracts

[4] President of Mexico, "The Federal Electricity Commission serves 98.6 percent of Mexicans: Enrique Peña Nieto," Government of Mexico, August 16, 2017, https://www.gob.mx/presidencia/prensa/the-federal-electricity-commission-serves-98-6-percent-of-mexicans-enrique-pena-nieto.

[5] "Crude Oil Markets Annual Strategic Workbook 2018: Latin America," IHS Markit, April 2018, https://connect.ihs.com/Document/Show/phoenix/491102?connectPath=Search&searchSessionId=3e9c4385-4c03-41db-8a72-286b7c7d0e2c

[6] Ibid.

[7] Secretaría de Energía, "Permisos otorgados por SENER para la importación de petrolíferos," Government of Mexico, March 27, 2018, https://www.gob.mx/sener/articulos/permisos-otorgados-por-sener-para-la-importacion-de-petroliferos.

across the energy sector that will deliver $200 billion in investments.[8]

The July 2018 election—in which Mexicans will select a new president, Senate, and Chamber of Deputies—will happen just on the verge of seeing energy investments turn into higher energy production and better services. These elections could produce political changes that profoundly stall or reverse aspects of the energy reform. Pre-election polls consistently show López Obrador favored by over 40-50 percent of respondents and 15-20 percentage points ahead of his closest competitor, depending on the poll.[9] López Obrador opposed energy reform in the 2012 presidential election. He has publicly pledged to review all new energy contracts and accept only those that he considers legitimate and in Mexico's national interest. By contrast, the second and third place candidates both have pledged to advance Mexico's energy reforms.

Facing the prospects of a resurgence in economic nationalism in Mexico, we designed our poll on public attitudes toward energy reform to help identify the critical issues that could make or break its success and continuity.

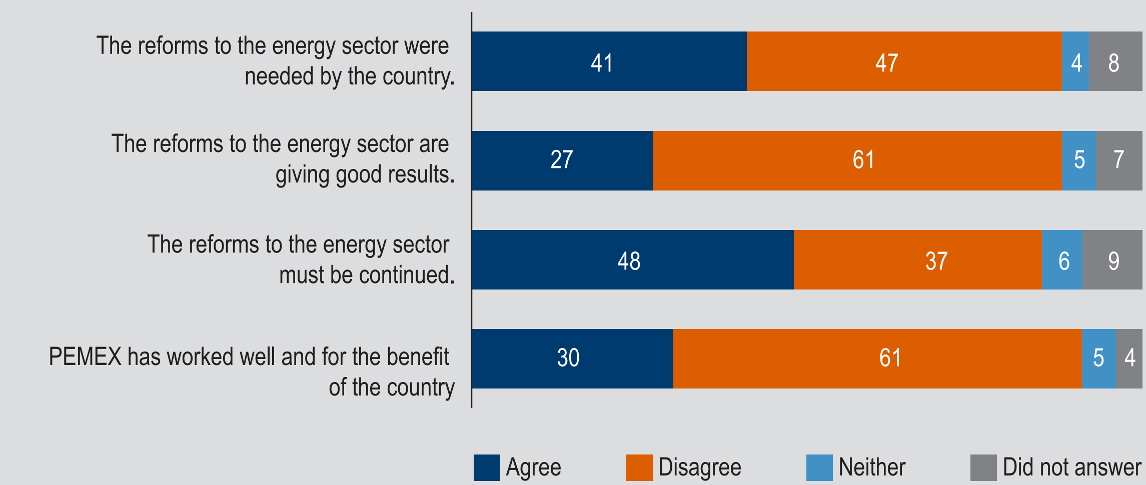
Public distrust, grudging acceptance

Most strikingly in our poll, as demonstrated in Figure 1, a plurality of the public supports continuing the energy reforms (48 percent versus 37 percent opposed) even if they feel they are not producing good results (61 percent versus 27 percent), or that they were not necessary (47 percent versus 41 percent). Mexicans feel that returning to the past is not a solution. For decades, Mexicans saw PEMEX as the country's crown jewel. Those days are gone. In our poll, Mexicans opined that PEMEX has not acted in the benefit of the country (61 percent versus 30 percent). Mexico is at a crossroads—the old models

Figure 1. Survey opinion results on Mexican energy reforms

RELUCTANTLY MOVING FORWARD

In 2013 reforms were made to the Constitution to change the way the energy sector works in Mexico, including oil and electricity. Do you agree or disagree with the following statements? (%)



[8] Secretaría de Energía, "Con los proyectos."

[9] This Bloomberg poll provides a weighted average of the main Mexican election polls: "Mexican Election Coverage," *Bloomberg*, June 6, 2018, https://www.bloomberg.com/graphics/2018-mexican-election/.

do not work, yet none of the new models have fully taken shape.

Digging deeper into the polling reveals disturbing insights. Mexicans, like Americans, actually know very little about the problems and opportunities in the energy sector. 63 percent believed that Mexico's oil production either increased or stayed the same in the 10 years prior to the constitutional changes in 2013. In reality, Mexico's oil production peaked long ago in 2004.

As PEMEX atrophied, the global oil and gas industry has gone through a revolution in technology that has transformed production and costs.[10] Hydraulic fracking and horizontal drilling (commonly called unconventional production) have lifted U.S. oil production from 5.3 million bpd in 2009 to 10.54 million bpd in April 2018, its highest level ever.[11] Canadian oil production rose from 2.71 million bpd in 2009 to 4.45 million bpd in 2018.[12] The global oil price collapse from 2014-16 forced new efficiencies on the industry. Breakeven costs in U.S. unconventional production declined from $77.80 per barrel in 2014, to $39.40 per barrel by 2017.[13] Similarly, global breakeven costs in deep water production plummeted 44 percent from $61.00 in 2014 to $34.00 in 2017.[14] Internationally, private investment, innovation, and technology intensified competition in oil and gas. PEMEX and Mexico were left behind—and the decline suffered over a decade will not be reversed in just a few years.

There is a parallel but less dramatic story in the power sector. In the past, CFE, as the national power company, controlled all generation, dispatch, transmission, and final distribution of power to households and industry.[15] Private power producers like the electricity companies ENEL and Iberdrola could sell electricity to CFE through power purchase agreements, but they were suppliers to CFE, not competitors. In years prior to the energy reforms, Mexico did not have the infrastructure to increase natural gas imports by pipeline, or the capacity to increase domestic production. Shortages in natural gas supply had driven Mexico to rely increasingly on heavy fuel oil and liquid natural gas (LNG) imports at costs in the range of $15-$20 per million British Thermal Unit (mm btu), when U.S. natural gas prices by 2012-13 had fallen to $3-$4, driving up marginal electricity costs.[16] CFE continued as the face of electricity distribution to households and industry. In our poll in 2018, the majority of respondents (63 percent versus 23 percent) believed that CFE had the capacity to generate all the electricity that Mexico needs. In reality, Mexico's power sector had already come to rely on private investment, but Mexico did not have the physical means to access the cheapest fuel sources or drive investments that would force competition with CFE.

The dilemma between the immediacy of public expectations for reform and the long gestation between investments and visible impact makes reform particularly complicated in the energy sector. Almost everything that is important in the energy sector takes a long time to bear fruit—because investment cycles are long, and longer still when investors are not sure whether new policies will hold. In most cases it takes three to five years for investments in oil and gas to translate into production. Optimistically, most countries would need at least two years to create the laws and regula-

[10] David Victor, "Tsunamis of innovation are shaking the energy industry," Brookings Institution, March 15, 2018, https://www.brookings.edu/blog/planetpolicy/2018/03/15/tsunamis-of-innovation-are-shaking-the-energy-industry/.

[11] "Short-Term Energy Outlook," U.S. Energy Information Administration, May 8, 2018, https://www.eia.gov/outlooks/steo/.

[12] "Crude Oil Markets Annual Strategic Workbook 2018: North America," IHS Markit, April 20, 2018, https://connect.ihs.com/Document/Show/phoenix/491101?connectPath=Capabilities_COM.COM_LTO.

[13] "Performance Evaluator," IHS Markit, May 2018, https://perfeval.ihsenergy.com/.

[14] "Upstream Cost Services: First quarter 2018," IHS Markit, May 31, 2018, https://connect.ihs.com/Document/Show/phoenix/746356?connectPath=Capabilities_COT.COT_ALL.

[15] In 2009, the Mexican government took over a public company (Luz y Fuerza) that provided electricity for Mexico City and folded it into CFE, making CFE the sole public power company in Mexico.

[16] See Latin American Natural Gas Price Report: Mexico," IHS Markit, April 23, 2018, https://connect.ihs.com/Document/Show/phoenix/907937?connectPath=TcpEnergyPowerGasCoalAndRenewables.PGCRKeyReportsWidget and "Latin American Power Price Report: Mexico," IHS Markit, April 23, 2018, https://connect.ihs.com/Document/Show/phoenix/908303?connectPath=TcpEnergyPowerGasCoalAndRenewables.PGCRKeyReportsWidget.

tions needed to attract investors and execute a bid round. Thus, when Mexico changed its constitution in 2013 to open oil production to outside investors, one might have expected it to take at least five to seven years before oil production might increase.

By that standard, Mexico's reforms are exactly on schedule in the oil and gas sector. Today, 107 fields have been awarded for investment to 73 companies, there have been significant initial commercial finds, and production is set to rise around 2020. No country in the world has managed such a complete transformation of its energy sector faster—from changing its constitution, to passing implementing legislation, to creating or rebuilding the necessary regulatory and implementing institutions—than Mexico. Still, it is not surprising that Mexicans are confused about the solutions—most do not realize that oil production had collapsed. Fewer still would understand the complexity of fixing the problems—and the implications for attracting capital and technology, implementing new projects, shutting down past mistakes, and finally seeing the benefits of new investment.

Unraveling a legacy of distrust in private investment

As much as Mexico has evolved as a competitive global economy, the public fears that private investment in oil exploration and production will not benefit the Mexican people (51 percent versus 34 percent). In our poll, and as depicted in Figure 2, only 41 percent agreed that private companies should be allowed to invest in exploration and production for oil and gas, versus 47 percent that disapproved. 50 percent versus 36 percent felt that oil production should be controlled by the state. Similarly, 58 percent versus 26 percent believed that the national power company should be the only provider of electricity. If Mexico hopes to build an energy sector that matches its aspirations for growth as an Organisation for Economic Co-operation and Development (OECD) country, it will need to overcome the fears of private investment embedded in decades of myths about resource nationalism. Political leaders are swimming against a tide of mistrust about the private sector.

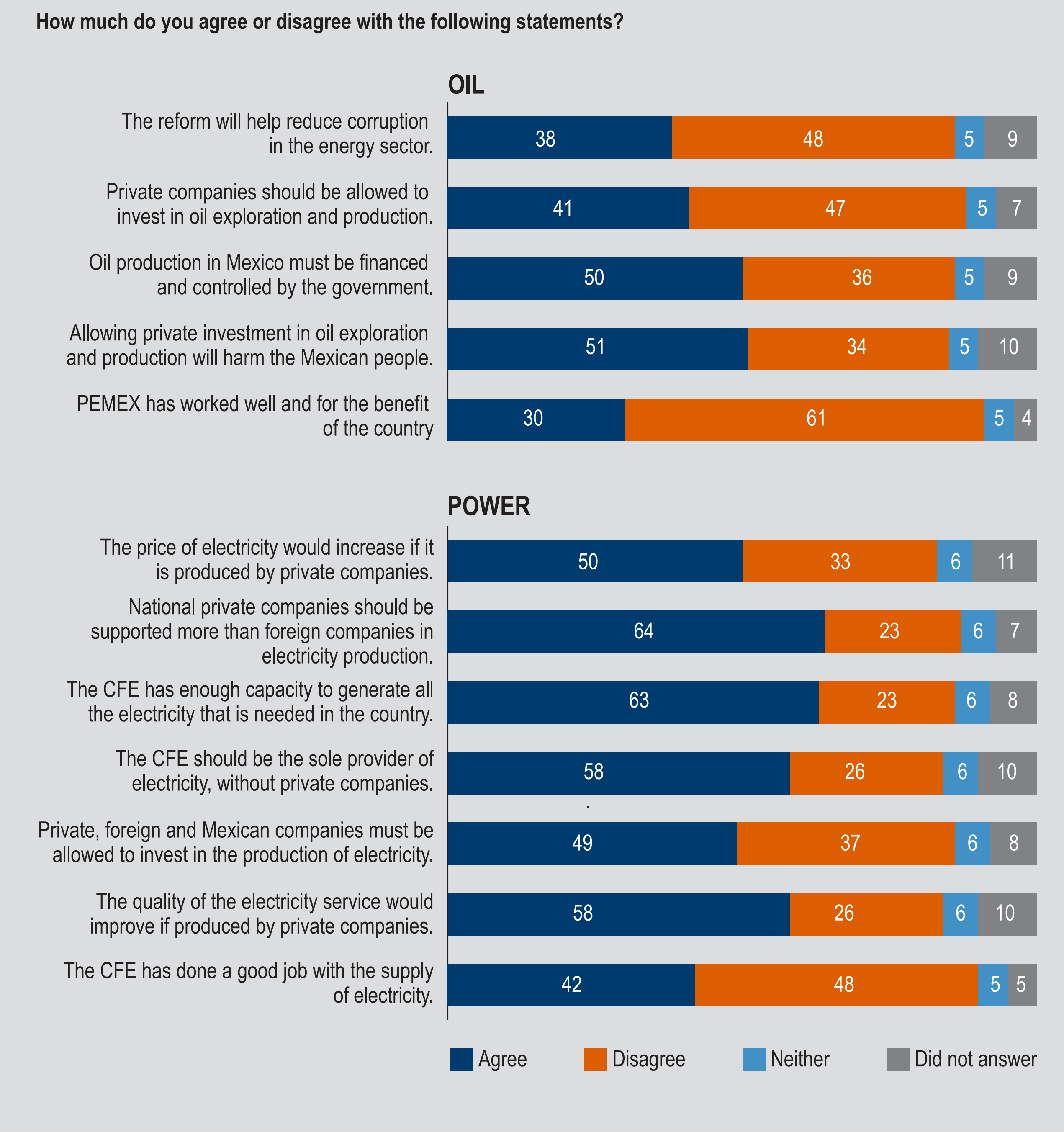
We expected to see this dilemma in public attitudes about the private sector—on the one hand, a desire for change that benefits Mexico, but on the other hand, wariness about letting private players into a cherished economic activity that has been the province of the state. We thus designed the survey to elicit more detailed insights about three key issues that affect how political and corporate leaders can manage distrust in private capital. First, the Mexican public is angry about political corruption—and inevitably the very size of most energy infrastructure contracts foments distrust of private investment in energy. Second, the world of energy for most Mexicans has been PEMEX, and most citizens have little understanding of the current global competition for private energy investment, or that private investment can be a means to harness a state's natural resources, and not to give them away. Third, the political debate over energy needs to reflect the personal benefits, such as better quality and services from retail competition to supply gasoline, that Mexicans increasingly see in their daily lives. Below we explore each further.

Corruption, anger, and distrust

No issue has more sharply defined the current Mexican election campaign than the public intolerance of corruption in government. Transparency International's 2017 Corruption Perception Index indicated that Mexicans experience a greater infiltration of corruption into daily life than any other country in Latin America. As depicted in Figure 3, 51 percent of Mexicans responded that they have had to pay a bribe, give a gift, or provide a favor for a teacher or school official; a health worker, clinic, or hospital staff; a government official to get a document; a government official to receive utilities; or a police officer, judge, or court. In that same poll, 61 percent of Mexicans believed that corruption had increased.[17]

[17] "Corruption Perceptions Index 2017," *Transparency International*, February 21, 2018, http://www.transparency.org/cpi2017.

Figure 2. Dilemmas over private investments

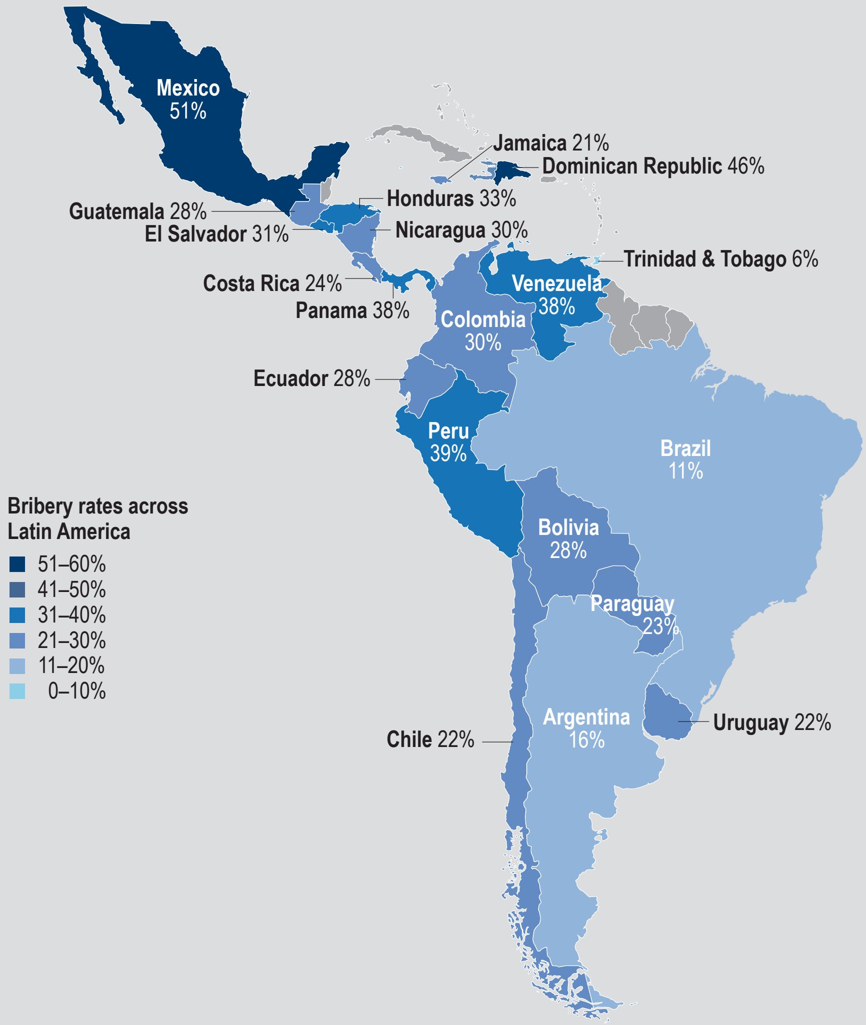


Based on personal experience on how corruption has touched their lives, one can see why Mexicans believe that huge public tenders in the energy sector are tainted by corruption. In our poll, only 38 percent believed that energy reform would help reduce corruption. Mexicans also see their government as less corrupt than others in Latin America. In Brazil, President Dilma Rousseff was impeached and former President Luiz Inácio Lula da Silva is in jail over corruption scandals tied to the Brazilian construction company, Odebrecht. Meanwhile, Peru's Prime Minister Pedro Pablo Kuczynski resigned

Figure 3. Map of bribery rates in Latin America

CORRUPTION IN MEXICO

How often, if ever, did you pay a bribe, give a gift or provide a favor for: a teacher or school oficial; a health worker or clinic or hospital staff; a goverment oficial in order to get a document; a government offical in order to receive utilities; a police officer; or a judge or court oficial?



Source: IHS Markit, with information from Transparency International Corruption Perceptions Index 2017.

over the same Odebrecht scandals. In Guatemala, former President Otto Pérez Molina and Vice President Roxana Baldetti are in jail for customs fraud. In contrast, Mexico's Attorney General Raúl Cervantes, who led an investigation into alleged Odebrecht bribes connected to the energy sector in Mexico, resigned before presenting his case, and no action has been taken.[18] Energy, for Mexico's public, has been perceived as another vehicle for corruption, fueling a fear that private energy investment will stimulate more graft.

[18] "Tras Odebrecht, Cervantes aparece en la campaña de Meade y le presta una oficina," *La Política*, May 13, 2018, http://www.lapoliticaonline.com.mx/nota/111921/.

Nonetheless, Mexico's politicians were sensitive to corruption when they designed the energy reforms in 2013-14, but the public is not aware of the precautions taken or why they might help. All upstream tenders for oil and gas exploration and production were taken away from PEMEX. The Ministry of Energy defines the terms and conditions of the bid, including the selection of the area and the type of contract; the Ministry of Finance establishes the economic and fiscal terms; and the National Hydrocarbons Commission (CNH) conducts the tendering process. Then, CNH signs the contract on behalf of the state and administers the contract. All communications with bidders are handled electronically. Answers given to one company during a bid round are publicly posted to make all others aware. Bid awards are based on quantitative criteria, electronically calculated, and posted publicly during public bid awards. All contracts are publicly posted.

Quite positively, about 50 percent of respondents to our poll consistently indicated that such measures could help significantly or somewhat to control corruption. Most likely, few understand the measures taken or what impact they have had. In the electoral debates, the leading candidate on the left, López Obrador, has said that, if he is elected, he will review all oil and gas contracts to determine which are in Mexico's interests. These contracts are now public and available for review. The potential impact should he cancel a signed contract could reverberate beyond the energy sector and broadly affect foreign direct investment flows to Mexico. To build credibility for the future, Mexican politicians and the industry itself will have to make the case that the new procedures for private investment are a break with the past—and a break with the daily reality of corruption that Mexicans see in their personal lives.

Global competition for capital and state stewardship

In its report, World Energy Investment 2017, the International Energy Agency (IEA) cited total global investment in oil and gas in 2016 at $649 billion.[19] Key questions for Mexico's future oil and gas production are what share of this global total could Mexico attract—and how much does it need to attract to restore production to 3.4 million bpd? Another IEA special report on Mexico's energy reforms in 2016 addresses the second question: to reach 3.4 million bpd by 2040, Mexico would need to invest $640 billion in upstream energy supply.[20] In the real world, those investment flows may not be linear and would be driven by commercial opportunity, costs, and international prices, but let's assume they could occur at a sustained annual average of $29 billion over 22 years. For comparison, from 2005-10 Mexico annually invested an average of $11.5 billion in upstream production. Under any circumstance, restoring previous peak production will be a stretch. Mexico will need capital and technology from investment partners to stabilize or achieve any significant increase in production.[21] If it wants to maximize its productive potential, Mexico will need a greater share of global investment—and it will need to attract the best technology with it.

Not only has Mexico not kept up with the trend in global investment, the competition for investment has grown only sharper. Hedging against a potential for peak oil demand in the future, oil-producing states like Saudi Arabia, the United Arab Emirates, Kuwait, Iraq, Iran, Qatar, and Russia are seeking private partners in many different ways—alongside efforts to launch initial public offerings and diversify their economies. In the United States, the ability for unconventional production to ramp up or down within 6-12 months has attracted hedge funds and private equity investments—most strikingly into the Permian shale play in west Texas and southeastern

[19] "World Energy Investment 2017," (Paris: International Energy Agency, July 2017), https://www.iea.org/publications/wei2017/.
[20] "Mexico Energy Outlook," (Paris: International Energy Agency, October 2016), https://www.iea.org/publications/freepublications/publication/MexicoEnergyOutlook.pdf.
[21] "Crude Oil Markets Annual Strategic Workbook 2018: Latin America," IHS Markit.

New Mexico—that now see in the oil sector a three-year entry and exit strategy that is fundamental to their business model.[22] Similar efforts are underway in Canada to make that country's oil and gas sector a more attractive site for investment. As countries like Mexico and Brazil have re-entered the oil and gas sector with new policies, they have had to set fiscal terms that make them competitive with global alternatives. And the competition for capital extends further to international oil and gas companies, as many seek to reinvent themselves as "energy companies," with diversified portfolios that include renewable energy and power, amidst a broader global "race to reduce emissions."[23]

Perhaps a critical lesson from our poll is the need to educate the public that competing for capital does not mean giving away a state's natural resource endowment. Rather, the goal is to mobilize the capital needed to develop a nation's energy resource potential. Many citizens do not know that states often receive 80 to 85 percent of the profits from private investment in oil and gas through royalties, taxes, bonuses, and other fees.[24] In the poll, Mexicans responded that this was excessive (30 percent) or adequate (31 percent), and only 21 percent said it was not enough. In other words, most Mexicans would consider the government take from oil and gas investment as a fair return for allowing private companies to develop these resources—resources that the state alone would not have the capital to develop fully on its own.

Mexico will need to make a choice about how it addresses private investment in the energy sector: it will either pursue it actively and competitively, or capital will flow elsewhere. A decade ago, PEMEX's inability to invest adequately or seek private capital while it regularly sustained a third of Mexican public expenditures induced Mexico's collapse in oil production. The global revolution taking place in energy today has made the issue of private investment even more acute. It is not just a matter of capital, but one of harnessing the technology necessary to stay competitive. Of this Mexico can be sure: whether or not it seeks private investment going forward, its competitors will.

Pocketbook economics and consumer pragmatism

The poll revealed a divide between what Mexicans believe are legitimate reasons for the state to pursue energy reforms, and what Mexicans personally want to get out of these reforms. That dichotomy can complicate any reform process, since the fulfillment (or not) of personal expectations is profoundly real to each individual, while benefits accruing to national interests can seem distant and theoretical.

Despite the lack of confidence in private investment, when asked about possible reasons that would explain the state's pursuit of energy reforms, 56 percent versus 40 percent said to attract foreign investment, and 51 percent versus 45 percent said to help Mexico attract the technology and capital to compete with other countries, as shown in Figure 4. More than half, 52 percent versus 45 percent, indicated that reducing the price of gasoline was not a rationale to reform the energy sector. But the nature of the responses changed radically when the respondents were asked about the importance specifically for them about the benefits of energy reform. The majority overwhelmingly stated that what they wanted most from energy reform was to reduce gasoline prices (70 percent versus 17 percent) and electricity prices (68 percent versus 19 percent).

Predictably, then, perceptions of the energy reform in Mexico took a tumultuous blow in January 2016 when the government—in what the national press labeled the gasolinazo, or the gasoline tsunami—raised gasoline prices by 25 percent, continuing a process that began in 2012 to phase out subsidies,

[22] Jeffrey Ball, "Inside America's Oil Boom," Brookings Institution, June 1, 2018, https://www.brookings.edu/blog/planetpolicy/2018/06/01/inside-americas-oil-boom/.

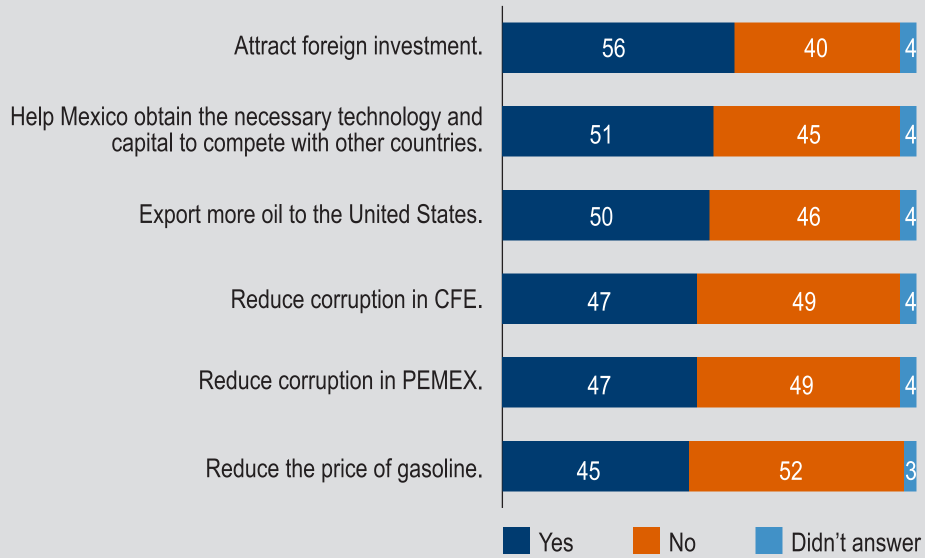
[23] Bob Dudley, "CERAWeek 2018," (speech, Houston, TX, March 6, 2018), https://www.bp.com/content/dam/bp/en/corporate/pdf/speeches/cera-week-2018-bob-dudley.pdf.

[24] "Crude Oil Royalty Rates in Selected Countries," (Washington, DC: The Law Library of Congress, January 2015), https://www.loc.gov/law/help/crude-oil-royalty-rates/crude-oil-royalty-rates.pdf.

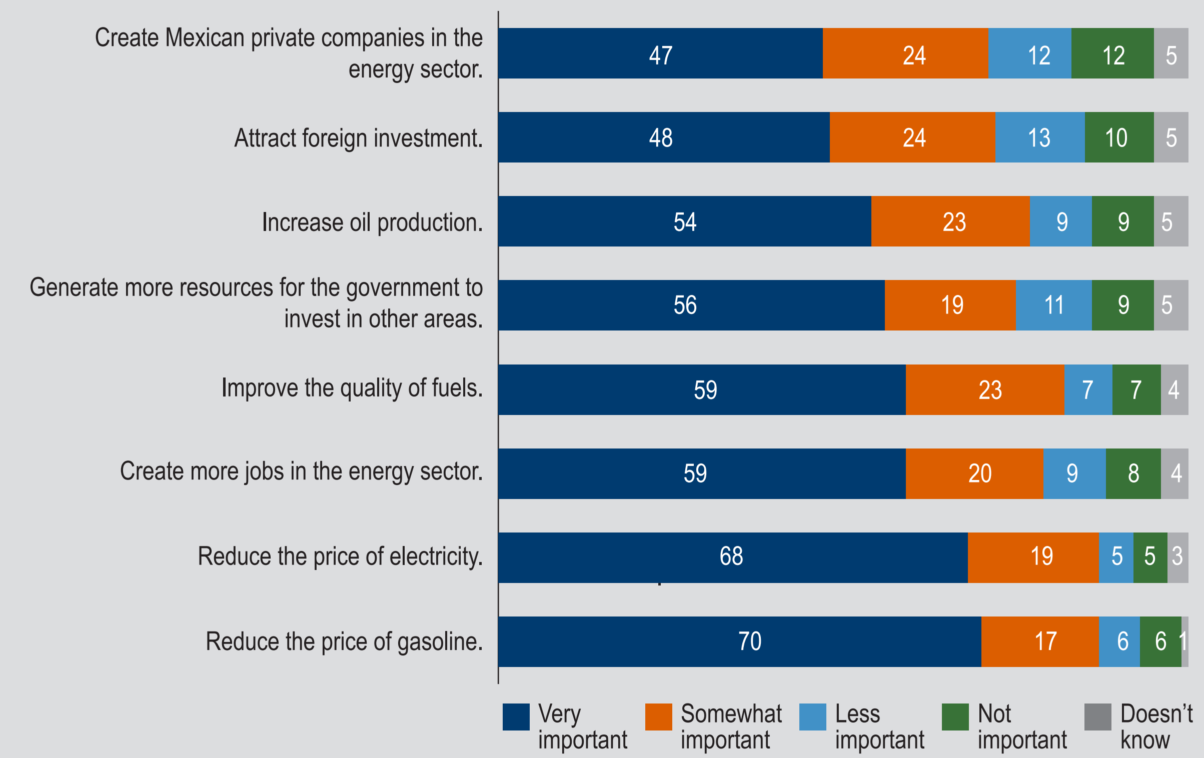
Figure 4. Mexican public opinions on the rationale and benefits of the energy reforms

DIVERGENCE BETWEEN NATIONAL AND PERSONAL EXPECTIONS

What do you think are the reasons why the energy reform was made? (%)



I am going to read you some of the possible benefits of the energy reform. How important is each of them to you? (%)

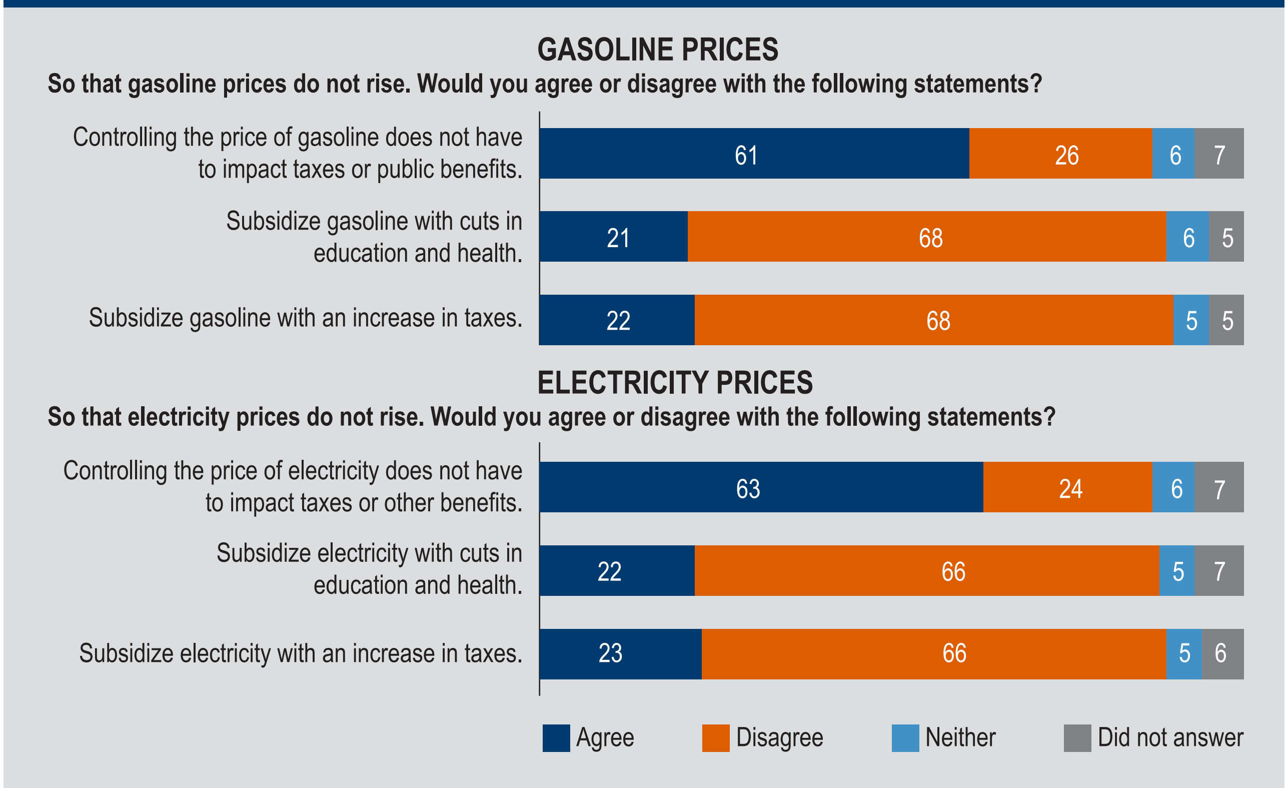


liberalize prices, and reflect the devaluation of the peso. Protests ensued in cities throughout Mexico, from Tijuana, to Mexico City, to Oaxaca. Given the time lags discussed earlier between pricing policies, actual investments, and increased production, the gasolinazo became for most Mexicans their sharpest public understanding of energy reform. Three years into the reforms, gasoline prices increased, oil production continued to decline despite public fanfare over new exploration and production contracts, and the public did not even understand why the reforms were necessary.

That makes some findings from our poll even more surprising. Fourteen months after the gasolinazo, respondents said that private competition on gasoline sales could lead to better quality fuel (54 percent versus 34 percent), would reduce tampering with meters (54 percent versus 34 percent), and could reduce prices (51 percent versus 36 percent). When the first BP gas station was established, daily lines up to a kilometer long would form, rallying behind the slogan "un litro es un litro"—a liter is a liter. Behind the fear of private investment was a recognition that competition also has benefits.

What remains worrisome is that consumers still gravitate toward populist promises to lower gasoline and electricity prices—and toward believing that perhaps there really is a free lunch where no one pays for the implicit subsidies. As seen in Figure 5, the poll showed almost identical results for both gasoline and electricity. Just under 70 percent said that they would not pay higher taxes or forego benefits like education or health care to control the price of gasoline or electricity. If implementing price controls has a cost, respondents were dead set against paying it. But more significantly, most respondents simply rejected the idea that price controls amount to a subsidy that must somehow be paid. Over 60 percent believed that higher taxes or lower benefits have nothing to do with controlling these commodity prices. That presents an overwhelming public policy challenge. Populism has few short-term costs, while

Figure 5. Mexican public opinions on methods to prevent rising gasoline and electricity prices



a stance against subsidies can shorten the political life of most politicians.

That said, our energy poll indicates that there are circumstances when, put head-to-head, pragmatism can prevail over nationalism when the benefits are clear. Not surprisingly, given current political tensions between the United States and Mexico, almost two-thirds of the respondents believed that it is a significant risk for Mexico to import more than half of its gasoline and natural gas from the United States. An unrelated Pew Research poll from September 2017 registered that 65 percent of Mexicans view the United States unfavorably—a decline of 36 percentage points in two years, the largest ever in a Pew poll.[25] Despite concerns about risk and deep resentment about the way that Mexicans have been characterized in U.S. politics, 70 percent in the energy poll responded pragmatically: Mexico should buy its gasoline and natural gas wherever it can get the best price, while it expands its own production capacity.

When issues are narrowed down to personal economics versus abstract policy, personal economics tend to prevail. In our poll, for example, lowering gasoline prices (70 percent in favor) was even more important than creating jobs (59 percent in favor). What remains untested is the durability of populist promises when competing directly with known personal benefits. Specifically in this case, will positive personal experience from many retailers competing to supply gasoline seem more credible and sustainable than political promises to control prices? The future of the reforms could heavily depend on that issue.

Electricity—from all sources, especially if it is green

Mexico's reforms in the electric power sector may be even less known and understood than the changes that have transformed the more symbolic oil and gas industry, but they are more accepted by the public. Despite skepticism about foreign investment, 49 percent versus 37 percent of respondents indicated that private companies, foreign and domestic, should be encouraged to invest in electricity production. Most respondents seemed convinced (58 percent versus 26 percent) that CFE should be the only producer of electricity, perhaps because 50 percent versus 33 percent felt that private producers will charge higher electricity prices. (As noted above, in fact CFE is no longer the sole power generator.) Reflecting a similar dilemma as with private gasoline retailers, 43 percent versus 38 percent said that private generators would offer better quality, suggesting a tension between a desire to get better service from private suppliers and a feared impact on prices.

Through the energy reforms, CFE is still a dominant player in the power sector, but at the heart of the system is now an independent systems operator (ISO). CFE and private companies compete to sell the cheapest power, which is then dispatched through the ISO. There is a capacity market with auctions that establish contracts to ensure long-term generation capacity. Another market for clean energy certificates has fostered both auctions to establish contracts for wind and solar generation, while requiring companies that directly supply customers with electricity to meet national targets for clean energy. CFE runs tenders to build and lease transmission lines. CFE has also transformed national fuel supplies by tendering for new gas pipelines where it commits to purchase gas while private entities build and finance the pipelines.

Even if few Mexicans understand their country's new electricity markets, respondents showed greatest confidence in registering support for clean energy. Citing international trends on the declining costs of wind and solar and the IEA's projections of a further 50 percent reduction in the cost of solar photovoltaics (PV), we asked respondents for their views on investment in renewable power. 80 percent versus 11 percent said that CFE should do everything possible to implement clean energy projects. Interest in

[25] Margaret Vice and Hanyu Chwe, "Mexican Views of the U.S. Turn Sharply Negative," *Pew Research Center*, September 14, 2017, http://www.pewglobal.org/2017/09/14/dramatic-shifts-in-how-mexicans-see-the-u-s/.

private investment was almost as strong: 74 percent versus 16 percent said foreign and Mexican private companies should be encouraged to produce and sell clean energy. Again reflecting the experience in retail gasoline sales, 69 percent supported private companies competing with CFE to supply clean energy, with just 18 percent opposed.

Looking to the future, the electric power sector could become the impetus to sustain Mexico's energy reforms. The public has accepted private investment in power generation, even if it remains leery about the eventual costs. Auctions to secure contracts for wind and renewable power in Mexico have produced some of the lowest prices in the world for electricity—at under 3 cents per kilowatt hour—with the caveat that this covers only the cost of generation and not all the other infrastructure costs to get it to consumers.[26] Investments in natural gas pipelines connected to the United States give Mexico unique pipeline access to the cheapest natural gas in the world, which over time will help Mexico contain the costs of electricity generation and extend similar benefits to industrial users of gas as we have seen in the United States. Policy clarity on the electricity market will also reduce apprehension on the part of financial institutions and investment funds, which have played important roles in supporting private investment in power, including through Mexico's Fibra E—a trust fund sponsored by CFE to attract private investment in power infrastructure, with CFE power sales underpinning the revenue flows.

Lessons for policymakers and business

Tension and success in Mexico's energy reforms reverberate around three themes:

- The need for private investment to drive the capital and technology necessary to create an energy sector that delivers value to the Mexican public and industry;
- Personal fears that energy will cost more or the national patrimony dispersed if private companies are involved; and
- The time lag between reform and demonstrable benefits that give citizens a personal validation for reform.

The July 2018 Mexican elections add greater uncertainty to how these three sets of issues will balance in the future. Mexico's president, Congress, senior ministers, the chief executive officers of the national oil and power companies, and even the environmental regulator for the energy sector (the National Agency for Safety, Energy, and the Environment, or ASEA) will change. If the pre-election polls stand, the direction of all of these changes could call into question whether and how contracts will be honored, the direction of reforms and price controls, and jeopardize project capital flows while also potentially derailing future bid rounds.

Our energy poll cannot answer all these questions, but it does provide insights into actions that can be taken before December 1, 2018, when a new administration takes office, to sustain Mexico's energy reforms and realize its benefits. The current and incoming governments will need to manage a transition. On some issues, they could mobilize all major political parties to seek consensus on both facts and a path forward. The greater the consensus across the political spectrum, the greater the chance to also forge public consent.

First is the critical need to build a common base of knowledge:

- Mexico needs a fuller appreciation of the problems in the energy sector that drove the energy reforms. Oil production declines a decade before the reforms are a fact. A diminishing trend in investment over a decade before the reforms left a legacy that

[26] "Mexico Gas and Power Insight Series: Navigating the Risks and Rewards of Mexico's Energy Reform," IHS Markit, February 5, 2018, https://connect.ihs.com/Document/Show/phoenix/733569?connectPath=Capabilities_PGC.PGC_ALL.

continued well into the reform period. In the power sector, Mexico did not have the physical infrastructure nor market mechanisms to optimize natural gas and renewable power generation. Accepting these premises opens the door to ensuring the problems are fixed, and that the future does not repeat past mistakes.

- Competition for private investment in the energy sector is global, intense, and cuts across all aspects of the sector—and it determines whether Mexico will have access to the latest technology and business practices. Reliance on state entities caused Mexico to lag behind the rest of the world in developing its resource potential. To keep apace, Mexico needs to compete in a global market that sees over $1.7 trillion in new investment annually in oil, gas, power, and the transit of these commodities.[27]

- Inviting private investment does not surrender national wealth; it is a tool to develop it. Under most contractual regimes, private investors return revenue to the state through royalties, taxes, and bonuses. In some cases, they have production-sharing agreements or carry the costs of the national oil company in joint ventures until there are revenue flows. Typically, governments will capture about 70 percent of the profits from hydrocarbons exploration and production.[28]

Second is the need to build confidence in the legitimacy and benefits of private investment. Whether or not front-runner López Obrador is elected, it could only help build confidence in the future of Mexican energy reform if the public has greater confidence in his two core issues on energy—the legitimacy of the contracts, and that they serve Mexico's national interests. Indeed, if López Obrador is elected, his self-interest as president should be to show action on his campaign promises, not to spook the markets at the time he is taking power.

- López Obrador's party and the oil and gas industry can support a public contract validation, and ideally engage all political parties and the current Mexican government to demonstrate a Mexican consensus to move forward. All the contracts already are public. The processes to award the contracts are well-known and captured on video. Building a consensus behind the legitimacy of contract awards will serve any government that is in power, potentially avoid delays in implementation, and reduce the risk of reneging on contracts that could affect confidence in Mexico's economy more broadly.

- Details are now available on investments and timelines that can allow all Mexicans to judge whether they are in Mexico's national interest: 107 oil and gas fields awarded, three long-term power auctions completed at prices that rival best international practice, the gas pipeline network has been expanded by 150 percent. These are no longer promises, but results.

- The Mexican government could invite consumers to discuss the personal benefits they see from reform—and prospects for the future—much as we have done in this poll. What is clear is that consumers see real benefits from competition among gasoline retailers, they want more clean energy from any source that supplies it competitively, and they are pragmatic about importing fuels if that is their cheapest option. Personal experience with reform will inform their judgments more than political promises.

One other point could be inferred from the study: delays will undermine the legitimacy of state prom-

[27] "World Energy Investment 2017."
[28] "Petroleum Economics & Policy Solutions, Fiscal Rankings (Q2 2018)," IHS Markit, https://peps.ihsenergy.com/CustomPages/PEPS/FiscalGrid.aspx.

ises and policies. One potential bureaucratic fix could help. Among the nine major regulatory approvals needed to implement an oil and gas contract, six of those are the responsibility of the Agencia de Seguridad, Energía, y Ambiente (ASEA). ASEA is a new agency. The draft law to create a professional and rotating set of commissioners, as seen everywhere in the world and in other regulatory bodies in Mexico, did not pass the Mexican Congress before it went out of session in 2018. But it still could become law if passed by a Congressional permanent committee before September. This is a simple step that could help reduce uncertainty around the actions of the most vulnerable of Mexico's regulatory agencies.

For Mexican citizens, the energy reforms may still seem like unfulfilled promises. Internationally, the results matter. The list of investors in Mexico's energy sector now includes the likes of Exxon Mobil, Chevron, Total, BP, Shell, General Electric, Siemens, the Chinese National Petroleum Company, Halliburton, Schlumberger—and dozens more in every aspect of energy production, transit, and delivery. By proximity, American companies—with American jobs and investors—are perhaps best poised internationally to benefit from Mexico's continued opening. A great deal now depends on how Mexican politicians and energy companies address public perceptions—whether they prey on public confusion and ambivalence to unravel the reforms, or act to implement signed contracts now poised to deliver results.

Perhaps one of the wisest findings in our poll was that the public strongly endorsed (64 percent versus 24 percent) debating energy reform during the presidential campaign. Mexicans have seen their country go through profound policy changes. Our poll shows that they sense the potential to make their lives better, but just as profoundly they fear corruption and higher prices, and they are uncertain about when and how political promises will turn into real benefits for their country and for themselves. Building confidence to sustain Mexico's energy reforms through its upcoming political transition will not be easy, but it starts with talking openly—with the public, not just elites—about how reform actually works. Mexico's ability to meet its aspirations for energy security and prosperity could hang in the balance.

DISCLOSURE:

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