Houston, January 30, 2016
MEI Report No. 835

MEXICO'S ENERGY SECTOR IN 2016

As reported by Mexico Energy Intelligence®

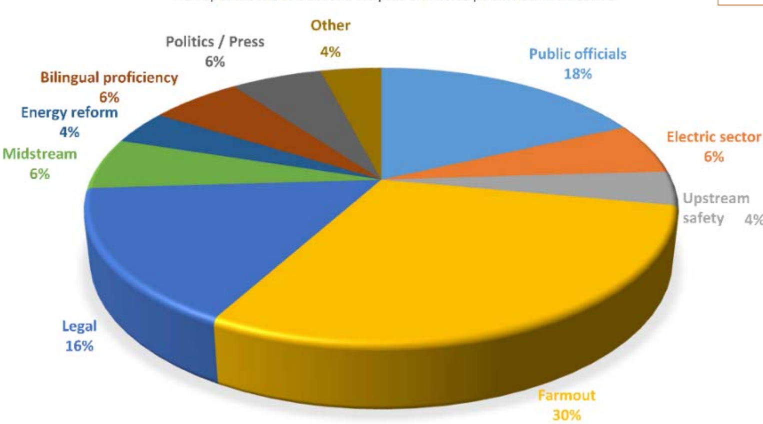
MEXICO'S ENERGY REFORM took giant leaps forward in 2016 on both the oil and power sides of the street. As for the oil side, in the upstream the government—after 15 years of failed experiments—finally achieved the commitment of a major oil company to invest in a petroleum block (in Round 1.4). As important, the government orchestrated the auction of a majority working interest in a Pemex lease (Trión), thereby accomplishing the first partnership between Pemex and a private oil company for exploration and development.

This report looks back on 2016 by reference to the forty-two reports that were issued by Mexico Energy Intelligence® and the eight articles that were published in the column *"La Energía de Baker*," in MILENIO, a newspaper in Mexico City (Exhibits B and C).

The topic that received our greatest attention concerned the form in which an upstream partnership with Pemex would be designed and carried out. In mid-July, 2016, Pemex officials appropriated a term that was unfamiliar in Mexico: "farmout" to apply to its plans to auction working interests in its legacy blocks (see insert).

Contents

Fig. 1
Reporting in 2016 by Mexico Energy Intelligence®
42 reports sent to subscribers plus 8 articles published in MILENIO



Our general conclusion is that the present regimes in oil and power are transitional, and that there will be yet another energy reform ahead. We speculate about some of the features of the future upstream regime (Table 1).

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MEXICO'S ENERGY SECTOR IN 2016

Advances in oil and power

INTRODUCTION

THE YEAR 2016 saw the most important developments in Mexico's energy sector in a half-century: In the oil sector, the government broke with fifty-five years of Mexico as a one-company town in which all commerce in petroleum products would be handled by Pemex. The constitutional amendments of 2013 introduced a new model, one in which multiple economic actors could participate in all links of the hydrocarbon value chain.

In the power sector, the long-stalled vision of the PRI administration of Ernesto Zedillo (1994-2000) to create a wholesale power market was taken up by the Peña administration, which created a never-before-seen market model. The new model features a hybrid of a network system operator and centralized planning agency (CENACE), which is responsible for a) operating the network, 2) holding public auctions for power and capacity and 3) planning for the expansion of the network.

Unlike the oil sector, where all links were opened to commerce in which the private sector could invest as an economic actor, in the power sector, the private sector was restricted to the wholesale market. Transmission and distribution, in contrast, were reserved to the State, allowing the private sector investment opportunities as contractors but not as economic actors.

BACKGROUND

IN RELATION TO MEXICO, our goal as political and market analysts has been to serve as an honest broker between national and international expectations, goals and sensitivities. We offer value to current and prospective investors by alerting them to issues that are politically complex and where their assets could be at risk as an outcome of unwarranted assumptions about public institutions and the operating environment.

In parallel, we offer value to regulators and other public servants in Mexico by providing feedback from Houston about the perceptions of investors, regulators and academics regarding legal and commercial innovations in Mexico. At the same time, we offer an understanding of relevant technical topics that are alien to Mexican law and institutions. The best example of such a topic in

2016 is the legal figure of farmout. How—and why—Pemex chose this term is not in the public record. In a series of reports, we explained (after considerable research on our part) the legal and commercial nature of a farmout agreement.

MEXICO ENERGY INTELLIGENCE®

PUBLISHED SINCE 1994, the files of Mexico Energy Intelligence® constitute a unique contemporary witness to the evolution of Mexico's energy sector in legal, institutional and commercial matters. Our reports often deal with the political, institutional—even lexical—uncertainties that introduce risk for investors, policymakers and regulators. We are keenly aware that there are subterranean forces that can have great disruptive power in the energy sector.

In the fall of 2014, we designed a database (using the FileMaker 6.0 platform) to capture the defined and undefined neologisms that were introduced in the energy reform legislation. The database has upwards of 2,500 terms that are found in legal and institutional dispositions related to the energy sector. The database allows for customized glossaries.

BILINGUAL PROFICIENCY

We believe that improvement in bilingual proficiency contributes to the expansion of commerce and the improvement in law and regulation. Toward that end, we periodically dedicate reports to improving the bilingual proficiency of non-native speakers of English and Spanish.

During the course of the year, in three reports we reaffirmed our commitment to contributing to the bilingual proficiency of our readers. Two reports deal with technical issues facing the non-native student of Spanish. The other report introduces basic concepts from linguistics that a non-native speaker of English needs to understand to be able to hear English precisely, as, for example, to be able to register the difference in the vowel quality between "see" and "sit."

PUBLIC OUTREACH

In Mexico's energy sector, there are self-imposed limits on the freedom of speech. Investors, suppliers, lawyers, academics and consultants of all variety know that open criticism of public or union officials, government policy or of Pemex or CFE carries a business risk. Because of the dominant role of government agencies in the energy sector, access to senior officials is a highly prized asset, one that should not be put at risk unnecessarily. Decades ago, Mexican corporations decided that the figure of a trade association would provide the invisibility needed to express disapproval. Generally, these organizations smile in public, but frown in off-the-record, private meetings with public officials. The collateral effect is that there are gaps in the public media regarding problematic issues in the energy sector.

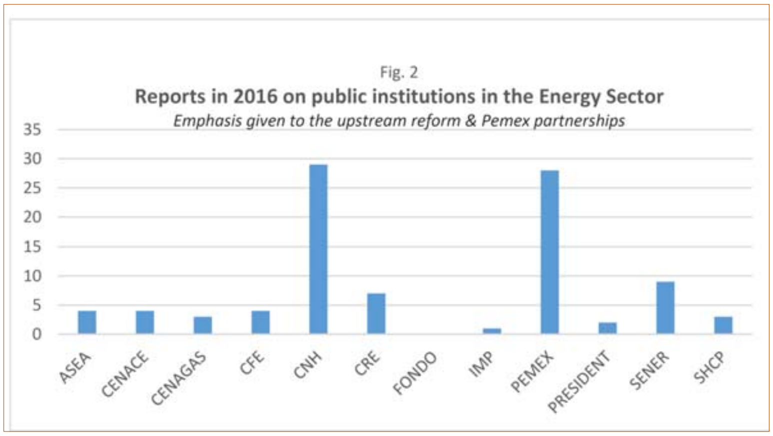
In mid-2015, the daily newspaper MILENIO, published in Mexico City, offered us a twice-monthly column for articles on energy topics, to be submitted Spanish. The column presented an opportunity to bring into public discussion topics and points of view that, otherwise, would likely not be seen. In the fall of 2016, the newspaper informed us that, for the reason of budgetary restrictions, the column would be discontinued. The article submitted in September (but not published until January) may be the last; it concerned the gaps and abuses of the press in the energy sector.[1]

DISCUSSION

IN THIS SECTION, we shall review topics to which we dedicated staff time during 2016. We shall also consider several topics that we ignored. We provide a tentative list of topics that shall receive attention in our reports in 2017 (Table 1). We conclude with a note of appreciation to the many persons who contributed data and insights during the course of the year.

PUBLIC INSTITUTIONS IN THE ENERGY SECTOR

In our research and reporting on Mexico's energy sector, we pay close attention to public institutions in the areas of policy, regulation and commerce. In 2016, sensing that the eventual selection of an upstream partner for Pemex would be the most important accomplishment in the year, we devoted an extraordinary number of work-hours to reporting on Pemex and the National Hydrocarbon Commission (CNH). In contrast, there were no reports at all that focused on the Petroleum Fund (Fig. 2).



PERSONNEL CHANGES

The year also saw important personnel changes in public institutions in the Mexican energy sector. Emblematic of the close connection between the governing Institutional Party (PRI) and the energy sector, in midyear the director general of the Federal Power Company (CFE), **Enrique Ochoa Reza,** was appointed president of the executive committee of the PRI.[2]

After two terms and ten years at the head of the Energy Regulatory Commission (CRE), **Francisco Salazar** left public service. There were other departures from the CRE staff, notably **Alex Breña**,

[1] http://www.milenio.com/firmas/george_baker/espada-escudo-periodismo_espurio-proteccion_periodistas-reporteros-milenio_18_879692044.html

[2] Going in the other direction, Ignacio Pichardo and Pedro Joaquín Coldwell both held that position prior to being named energy minister, the first in 1994, the second in 2012.

who had served since the 1990s during the tenure of its first president, **Héctor Olea**.[3] The new president, **Guillermo García Alcocer**, came from the Energy Ministry where he had served in diverse positions.

At an event on Tuesday, May 3, in Houston at the Offshore Technology Conference (OTC 2016), **Gustavo Hernández** was director general of Pemex's upstream business unit, but by Friday of that week he had been reassigned to a staff position as director of the Office of Reservas y Asociaciones [Reserves and Strategic Associations]. **Juan Javier Hinojosa** was named as the new director general.

On September 1, **José Antonio González Anaya** replaced **Emilio Lozoya as** director general of Pemex.[4]

In 2016, the two public officials in Mexico's energy space with the most name and face recognition in Houston decided to resign from public service. Just days before he had intended to make his decision public, CNH Commissioner **Edgar Rangel** died on March 23 at age 42 in a hospital clinic during what had been scheduled to be a routine catheter procedure on his heart. Gregarious and with a Ph.D. in petroleum engineering from Stanford, he had impeccable credentials and a winning personality.[5] His loss was felt throughout the upstream sector. *"Edgar was the reason why one day my company might invest in Mexico*," a senior staff from a major oil company remarked. A commemoration of his public service was subsequently held at the Energy Ministry (SENER).

On July 31, **Lourdes Melgar**, who had served as Deputy Secretary for Hydrocarbons in the Energy Ministry since the beginning of the current administration, announced that she would step down and take up an academic position in the United States. Other executive personnel changes included the substitution of the finance minister, **Luis Videgaray**, by **José Antonio Meade** and of the director general of Pemex, **Emilio Lozoya**, by **José Antonio González.**

OIL SECTOR

We shall review developments by reference to market segments.

UPSTREAM

Investment promotion

We paid the most attention to the government's efforts to induce major oil companies to commit to investing in petroleum blocks under the rules of the new hydrocarbon regime. The government was anxious to convince top-tier companies

3 Other CRE professionals who resigned included Luis Alonso González, Efraín Téllez and Carlos Jaime.

4 Only once since 1976 has a director general of Pemex completed the full six years of the presidential term.

5 He was one of the original commissioners and had served since 2009. The day before his death he had set June 1 as the date to begin his appointment at Rice University's Baker School of Public Policy. In January 2014, we held a reception for him, *en casa,* attended by two dozen guests from industry.

1) to participate in a bid round in deep-water blocks, and
2) to the bid in an auction of a majority working interest in a Pemex legacy license (*asignación*) that was located in the vicinity of four of the blocks in the Perdido Area.

The auctions held on December 5, 2016, produced bidders for eight of the ten blocks offered by the government as well as bidders for a working interest in a Pemex lease. In the spotlight for this entire process was the CNH, which was charged with publishing the bidding guidelines, operating the data room, conducting the auction and administering the contracts.

Farmouts

Because the term was unfamiliar to readers in Mexico, we spent a good deal of time explaining the theory and practice of farmout as a commercial arrangement used in the United States. The essential element of a farmout agreement is an *if-then* clause: "If you do this, then I'll do that," referring, respectively to the obligations of the farmee (sublessee) and farmor (original leaseholder). Normally, a farmee has to do something before the farmor permanently conveys title to a portion of the original lease. Typically, what is conveyed is a portion of the area covered by the original lease, defined either horizontally or vertically. Sometimes, what is conveyed is a percentage of the working interest in an undivided lease.

The farmout adaptation that was devised in Mexico was neither the one nor the other; but it does contain an if-then clause: Pemex would contribute to ongoing capital costs and operating expenses once the farmee had invested an amount in an approved work-program that would be equal to Pemex's prior investment costs that were associated with drilling the discovery wells. The working interest was conveyed at once, the perfecting of which would require the farmee to make the required investment else the working interest would be lost.

As the possibility of a geographical division of a government lease is not (yet) legally possible, the conveyance of a working interest was, initially, for the entire area covered by the Pemex lease (termed the Contract Area). By a schedule of relinquishments, however, the Contract Area would be gradually reduced within the area of the original Pemex lease. At the end of a period of thirty-five (or at most, fifty) years, the farmee's working interest in the Contract Area would expire, leaving Pemex with the asset for whatever residual production it might be able to achieve.[6]

Deepwater Monday: December 5, 2016

By a logic that was never explained, the government pushed for the simultaneous scheduling auction of a working interest in a Pemex block (Trión) with auctions of ten other deep-water

[6] In a normal farmout agreement in other jurisdictions, its validity is coextensive with the period of the original leaseholder or for the commercial life of the field. **Chevron's** oil fields near Bakersville, California, have been in production for more than a century and have produced upwards of two billion barrels.

blocks that had been chosen by the government. The CNH had given prospective bidders almost a year to prepare for the auction of the ten blocks, but gave them just four months (August-November) to prepare for an auction of a working interest in a block belonging to Pemex.

There were bids on nine of the eleven blocks. A number of the awards were unexpected, especially in relation to the two blocks near the U.S.-Mexico maritime border that were awarded to a Chinese state oil company (**CNOOC**).[7] **Pemex** and **Inpex** combined with **Chevron** and won a block also located in the Perdido Fold Belt. The fourth block in that area was won jointly by **Total** and **Exxon**. The working interest in Pemex's block was won, narrowly, by **BHP Billiton**. Tellingly, perhaps, **Shell** did not bid for any block in the Perdido Area.

Offshore safety

The regulation of safety is a topic at the interface between the social and management sciences and technology. In relation to regulation in the oil industry, it's common to speak of different safety regimes: auto-regulation, prescriptive regulation, performance regulation (US, Mexico), safety case regulation (North Sea, Cuba) and play-based regulation (Canada).

As part of the energy reform legislation of 2014, the government created a separate safety regulatory agency for the whole hydrocarbon value chain. Not until early December, 2016, however, did the agency (ASEA by its acronym in Spanish) issue regulations. In our review of the regulations, we were struck (and concerned) by the reliance of the propose regime on "authorized third-party inspectors" whose qualifications were yet undefined.

Midstream and Downstream

In the midstream, a Pemex's subsidiary, **Pemex Logística,** put in motion plans to lease storage facilities and pipeline capacity for refined products. In the downstream, the government changed the pricing of gasoline from a national price *(precio único)* to zone pricing by which each of ninety districts would have its own maximum price based on the opportunity cost of the molecule plus transportation.[8]

Electric Sector

On the power side, wholesale market rules were published and two auctions for power and capacity were held by the national system operator (**CENACE**). The **CFE** created an unregulated subsidiary (**CFEnergia**.com) as a natural gas marketer, in effect borrowing the business model that had been used during 1992-2014 by Pemex's gas unit (**PGPB**).

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7 The speculation has been voiced in Houston (and probably in Mexico) that the new U.S. administration of Donald J. Trump would have concerns about CNOOC's presence on the edge of the U.S. maritime border.

8 This scheme would be criticized in January when it was learned that the price of gasoline was higher in Mexico City than in Toluca.

In December, following a presentation at the University of Houston Law Center by Electricity Undersecretary César Hernández, we prepared a report on residual concerns about the electricity reform. Our chief concern is twofold: the continuing requirement for centralized planning of the expansion of the national grid, and the corresponding (if only implied) sovereign guarantee that is attached to all contracts for energy infrastructure.

These features carry two negative consequences: 1) the expansion of the grid is not driven by market signals but by decisions of public officials and 2) project financing is obtained at below-market rates because of the implied sovereign guarantee. A pipeline developer who would want financing for a project that is not anchored by Pemex or CFE would find lenders (if any) who would require a higher interest rate than the same developer applying for financing of a CFE-anchored pipeline.

The energy business of a government-anchored pipeline, meanwhile, will be managed by Pemex and CFE and its marketing subsidiary, **CFEnergia.**[9] Taken together, these features mean that Mexico's electric sector remains a creature of the State, not a true market where capital is deployed based on signals of supply and demand and the expectations of profits.

BILINGUAL GLOSSARIES

MEI bilingual glossaries in 2016

Published	Topic	Reports: File #	Reports: Pages
May 18, 16	Glossary of Mexico's Wholesale Electricity Market: A Start	811	33
Aug 23, 16	Glossary of the Pemex Trión Tender	815	28
Dec 15, 16	Bilingual Glosssary of ASEA's Safety & Environmental Guidelines	832.1	29
		Totals	90

Regarding the reform of the electric sector, we spent the entire month of May in the preparation of a 150-page *Bilingual Glossary of Mexico's Wholesale Power Industry*. In July, August we examined the Pemex Trión bidding guidelines, and in December, we prepared a report on the residual concerns about the design and purpose of the restructured electricity market (see insert).

BILINGUAL PROFICIENCY

In Market Note 216, issued on January 27, we examined just one sentence from an official document of the Mexican energy reform in regard both to its meaning and the phonological features of the words employed. Without an explanation, the sentence is confusing, even unintelligible, to the native Spanish speaker who is not a member of the Mexican congress or a public official in the upper echelons of the federal government. Correctly translated, the sentence reads thus:

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9 http://cfenergia.com/styled/index.html is under development. CFEnergia is led by the intrepid Guillermo Turrent, assisted byTania Rabasa, who, formerly, was on the staff of Rogelio Gasca Neri when he served as an independent board member of Pemex.

> *In the regular session of congress, under consideration were bills for 21 items of legislation that were grouped in 9 areas of public policy; these were promulgated as 9 new laws and 12 amendments to existing legislation, as follows:*[10]

Later, in August, in preparation for a workshop in Advanced English Proficiency that was scheduled with an agency of the Mexican government, we issued Market Note 219, which introduced basic concepts of linguistics that the competent, non-native speaker of English needs to understand in order to advance to the next level of proficiency. The report explained the rule that governs the stress, or accented syllable, in words like *business, memory*, *camera and chocolate*, noting that not even native speakers of English are aware of the rule.

WHAT WE MISSED

Eastern Gap negotiations

In July, trilateral discussions began among officials from the U.S., Mexican and Cuban governments to establish a definitive boundary line in the area of the Eastern Gap in the Gulf of Mexico. Progress had taken place following the logic and text of the bilateral treaty signed on June 9, 2000, that defined the boundary between the U.S. and Mexico in the Western Gap.[11] An agreement was reached on January 1, 2017, in the final days of the Obama presidency. Settling the boundary allows the governments to devise ways to evaluate the natural-resource potential of their respective areas.

Gasolinazo

In October 2016, the Mexican congress amended the legal dispositions related to the prices of motor fuels, allowing for their adjustment to take into account international indexes of crude oil prices and the exchange rate of the peso in relation to the U.S. dollar. At that time, the outcome of the presidential election overwhelmingly favored Hillary Clinton, the Democratic candidate. When the votes were counted, however, her Republican rival, Donald J. Trump, unexpectedly received the number of electoral college votes needed to win.[12] The election of the candidate that during the campaign had spoken harshly about Mexican immigrants and about NAFTA alarmed currency traders, and the Mexican peso would depreciate by 16% in the coming six weeks.

To achieve parity with international indexes, the government exercised its legal authority to adjust the prices of motor fuel upward by a percentage that certainly had not been imagined in October.

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[10] *En el proceso legislativo ordinario se involucraron 21 leyes agrupadas en nuevo iniciativas, de éstas se expidieron 9 y se reformaron otras 21, a saber:*

[11] https://www.boem.gov/US-Mexico-Delimitation-Treaty-2000/

[12] Mrs. Clinton received 2.8 million more popular votes than did Mr. Trump, but in the key states of Florida, Wisconsin and Michigan and Pennsylvania, her votes were less than a majority.

The CRE announced that it was developing a time-line for the easing of government price controls. In a press release of November 4, the Commission rightly observed that

> this process will allow the country to move from a monopolistic structure based on a model in which the price of gasoline and diesel is impacted by administrative decisions or the political context, to one in which the cost will be determined according to the supply and demand of fuel, as in any other competitive market in the world.[13]

News of the impending price increase appeared in the Mexican press in the final days of December, but we did not flag the issues or foresee the popular reaction to the price increases.

LOOKING AHEAD

In the last week of December, we began the first of two retrospectives on the energy reform, written as an imagined memorandum of the outgoing president to his successor. The first perspective (MEI 831) concerns the hydrocarbon sector; a future report will deal with the electric sector.

How the opposition could jolt the energy reform in 2018

The year 2016 saw the disenchantment in Western democracies of policies related to immigration and trade. In the United Kingdom, a narrow majority voted to leave the European Union, while in the United States sixty million voters supported an outlier candidate that had never held public office. In Mexico, opposition parties gained a new platform from the negative backlash in January of the increases in the prices of motor fuel.

By means fair and otherwise, since 1988 the political elites of the Center-Right (and their allies in the electronic media) have been able to derail the presidential aspirations of a candidate from the Left. If the 12% approval rating of President Peña in January of 2017 is a guide, there are strong reasons to believe that the presidential election in 2018 will be won by an opposition party. While the National Action Party (PAN) would support the strengthening of the energy reform, other opposition parties would oppose it.

Government speakers assure industry and academic audiences that the energy reform is "bullet proof," emphasizing that it is embodied as transitional articles in the constitution. There are numerous ways, however, for a new government that would reject the expanded roles for international capital can shut down the energy reform, especially on the oil side. For example, while the hydrocarbon law allows the government to hold public auctions for petroleum blocks and for working interests in Pemex leases, it does not require the government to do so.[14] As for the

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[13] http://bit.ly/2fmt5Dy. La flexibilización de los mercados de las gasolinas y el diésel promoverá la inversión y mejores servicios para el consumidor.

[14] Article 11 of the Hydrocarbon Act of 2014 specifies that the Executive Branch may issue contracts *(podrá celebrar);* it does not say that it must do so and no schedule is provided. Article 13 requires that a public

existing contracts that have already been issued, doubling the turn-around time for issuing permits could ruin the economics of an investment.

The Energy Reform as an a transitional regime

We see the 2013-16 energy reform as a transitional regime, one that will be replaced by stronger and restructured institutions. In the language of the fairy tale, we see the current regime as a house made of wood; it replaced the previous one made of straw, but will in turn be replaced by one of bricks. In the new regime, the most notable difference would be that Pemex, or its successor enterprise, is (finally) an investor (non-operating) as well as operator in offshore projects outside of Mexico, starting with the U.S. jurisdiction. We shall explore other aspects of the future, made-of-brick oil regime in future reports.[15]

IN APPRECIATION

Our reports were informed by insights and generous guidance from sources in industry, government and academia. Many conversations and email exchanges from persons who have advised us are off-the-record and the sources themselves may not be named. Long-time advisors who are not in this category include, on the oil side, Juan Carlos Collado, Humberto Muñoz and Guillermo Suárez y Farías. On the power side, in 2016 we benefitted from the insights and suggestions of Andrea Calo, Don Cortez, Carlos Jaime and José María Lujambio. As for politics, Ismael Martínez in Houston and Eduardo Martínez in Mexico City alerted us to developments, sometimes on an hourly basis.

We care immensely about wordsmithing, that is, the clarity and precision of the language of our reports. Clarity comes from paying attention to word-choice, grammar and punctuation. For most of our readers, English is a second or third language, so reports written in English need to be attentive to a range of proficiency levels. Throughout the year, we were assisted in this work by Sr. Limpiador, who in retirement from a major oil company, served both as our copy-editor and as advisor on technical upstream issues.[16]

OBSERVATIONS

THE YEAR 2016 saw the most important developments in Mexico's energy sector in a half-century: In the oil sector, the government broke with the doctrine of upstream and downstream autarky. The data and arguments that together forced the government to

auction be used to select a partner for Pemex; but it does not require that such partnerships be sought or that, if requested (Art. 12), they will be approved for public auction.

15 See Table 1 for a preliminary list of topics.

16 The findings and interpretations contained in our reports are ours, and may or may not coincide with those of persons who shared with us their views about the topics covered.

change course are not in the public domain. Our impression is that had become disillusioned with Pemex's claim that "with more money" it could correct the decline in production. In multiple conferences, public officials presented a double-Y line graph that showed on the Y axis how Pemex's capital budget had risen from US$10 in 2004 to US$25 billion in 2014, while on the Y' axis, production had fallen by 1,000,000 b/d.

The new model introduced mechanisms by which other oil companies could come to Mexico as investors and be paid as a function of oil and gas production. The new model was far from an embrace of an open market, as evidenced by the decision to keep Pemex as a 100% state-owned company. The new model fulfilled the twin purposes of attracting investment by major international oil companies and of securing a reputable partner for Pemex in a deep-water lease in the Perdido Basin.

On the power side, as on the oil side, the government kept tight control, allowing private investment in generation but not in transmission or distribution (except under contract with CFE). In relation to natural gas, we do not see any embrace by the government or industry of the need to have a reference price hub inside Mexican territory. The key, yet unanswered question is this:

> *Will a CNH contractor with a lease in a gas-prone basin, be able freely to negotiate a bilateral sales agreement with prospective customer?*

If the answer to this question is affirmative, in time there will be a local price hub in Mexican territory; otherwise, the current netback scheme that uses Henry Hub indexes will continue indefinitely and there will never be a true gas market in Mexico.

Our reports in 2016 were not as celebratory as the tone found in the speeches and slide presentations of policymakers, regulators and executives in Pemex, CFE and other government agencies. We find good decisions for the wrong reasons, as well as bad decisions for the right reasons. We are particularly concerned about the future of CNH. It was originally conceived in the Energy Reform of 2008 as an advisory agency to provide outside public oversight of Pemex. The constitutional amendments of 2013 notionally restructured it as the caretaker of Mexico's petroleum endowment. In practice, however, the agency's actual authority is starkly limited; during 2015-16, its staff was absorbed by the busywork associated with the auctions in relation to which the essential details would be provided by other government agencies.[17]

In 1995, the CRE was established as the regulator of natural gas commerce in Mexico. It has become, in in effect, Mexico's version of a public utilities commission for energy, with the notable difference that there are no elected positions. In its first decade, the prominent position of Pemex

[17] Is there a disillusionment within CNH regarding its role and mandate? Three commissioners either resigned (or intended to do so in the case of Edgar. Rangel) or did not seek reappointment. Of the original five commissioners, only Juan Carlos Zepeda remains in office.

as the bundled supplier of molecules and transportation meant that CRE's role was mainly limited to auctioning distribution franchises and monitoring their tariffs.

The **MidCon** Pipeline project of 1996-99 was the first—and, so far, only—intent by private industry to build a gas transportation pipeline that would compete with those of Pemex. Participation by prospective anchor customers in Monterrey was discouraged by Pemex's Felipe Luna and Adrian Lajous, who reminded them that as customers on the MidCon line they would have to pay the natural gas import duty that was then in effect whereas if they remained loyal customers of Pemex, the import duty would be absorbed by Pemex.[18] Without anchor customers, the project lingered, passing from MidCon Pipelines to **KN Energy** and then to **Kinder Morgan**. The pipeline to Monterrey was eventually built, but under contract with Pemex Gas as the anchor customer—the opposite outcome from the original strategic vision of the pipeline.

The sabotage of Pemex's Western trunk line in the summer of 2007 was a wake-up call to Pemex and the government that the country lacked redundancy in its natural gas transportation grid. Since then, CFE and Pemex have commissioned thousands of miles of new pipelines, the regulation of the tariffs on which will keep the CRE busy for another generation.

CONCLUSIONS

OUR GENERAL SENSE is that the reforms of 2013-16 represent a transitional regime, one that will be replaced eventually by a new regime in which an exclusion for the energy sector is enacted in relation to the requirement in Constitutional Article 25 that the State be responsible for "planning and control." Too many errors have been seen in centralized economies around the word to believe that the Mexico's centralized economy for the energy sector would be an exception.

As for an overall assessment of the energy reform to date, *chacun voit midi à sa porte.* We see the half-full glass of water in Mexico's energy space as half-empty.

George Baker
Publisher

[18] The Zedillo government at the last minute imposed a 10% tariff on natural gas imports, effective on Jan. 1, 1994 (coinciding with NAFTA). The duty was, by intent, a market-entry barrier against natural gas transportation pipelines. We have asked the principal NAFTA negotiators about this tariff, and they all deny that it was part of their negotiations.

Table 1. Topics for future reports: Features of an imagined upstream regime in Mexico

1) The National Hydrocarbon Commission (CNH) will have responsibility for the selection of blocks, bidder qualifications and the timing and administration of auctions. CNH and the Petroleum Safety Agency (ASEA) will have the technical staff and mandate to reduce the turn-around time needed for the issuing of permits for wells and for the approval exploration and development plans.
2) The contract model (s), royalty rates and bidding variables will be set by law or fixed in policy.
3) All operators will be given exclusive rights for five years to analyze publicly available and confidential data generated by well logs, seismic studies and other means. Afterwards, with the aim of encouraging new understandings of regional geology, the data sets will be made available to the public on a fee basis under administration of the Servicio Geológico Mexicano (SGM).
4) As requested by the operator of a CNH block, the extension of the contract term to cover the anticipated commercial life of the field shall be normally granted (that is, not unreasonably refused).
5) The process of the selection of blocks for lease shall be made transparent, with both Pemex and oil companies having formal mechanisms to propose or nominate specific areas for exploration.
6) Both Pemex and operators of CNH blocks shall have the right to divide their leases, defined geographically or vertically, via farmouts or sale to other parties who are pre-approved by CNH. With the right to subdivide a block, better economics are obtained and the relinquishment requirement becomes superfluous.
7) References to the ownership of reserves and relinquishment of portions of a CNH Contract Area shall be retroactively excised from all legal dispositions and contracts. It will be sufficient to specify that oil and gas molecules in situ belong to the State.
8) CNH will be relieved from the obligation to administer a public tender for the auction of a working interest in a Pemex lease. In parallel, Pemex will be given the right to enter into bilateral negotiations with prospective partners or farmees.
9) Pemex (or its successor) will be restructured as a public company with the government retaining a significant equity. The new company will have a professional management team and board of directors that will elect its own chairperson.
10) Regulators and public servants who have responsibility for implementing energy policy, or who are responsible for trading petroleum products in real time, shall be exempt from the LFRSP (Public Servant Financial Liability Act of 1982, as amended).

Exhibit A

Bibliography
Edgar Rangel Germán

Year	Date	Title	Venue	pages
2016	Mar. 6	CNH y ASEA deben ponderar la integridad de los pozos, la seguridad del personal y de las instalaciones…	Twitter	**1**
2015	June	Proceso de dictamen y resolución de reservas 2P y 3P	CNH	
2014	April	Reforma energética y las leyes asociados	Academia de Ingeniería	35
2013	Jan.	¿Qué esperarían de una nueva Reforma Energética? …que permita avanzar en la gasificación de México.	Energía a Debate	1
2012	Nov.	Mexico's new chapter in natural gas	Cámara Británica de Comercio	44
	Sept.	Recuperación avanzada y mejorada (IOR-EOR)	CNH	126
	Aug.	¿Dónde está la siguiente cuadrilla para enfrentar los próximos retos de E&P?	Energía a Debate	
	July	El reto de los recursos humanos en la industrial petrolera	Energía a Debate	18
	May	Dictámen técnico del proyecto de exploración Area Perdido	CNH	68
2011	May	Developing heavy oils in Mexico: The role of CNH	CNH	24
2010	April	Herramientas para enfrentar riesgos y retos en la E&P para incrementar las reservas	CNH	28

Preliminary Source: MEI 22-I-2017

Mexico Energy Intelligence®
Reporting in 2016

Published	Topic	File #	Reports	Pages
Aug 31, 16 *Updated* 9/8/2016	**The Case for Oil Concessions in Mexico**	1000085		5
Aug 12, 16 *Updated* 9/8/2016	**Hydrocarbon Contract Matrix: Making Sense of Mexico's Contract Models**	10038		9
Jun 07, 16	**Paths to Pemex Partnership: Farmout, Cash Sale and Carried Interest**	10037		6
Apr 20, 16	**Payout: An important milestone in a farmout project**	100218		11
Mar 10, 16	**Farmout Economics: The Basics**	806		5

3 OPERATING ENVIRONMENT

Published	Topic	File #	Reports	Pages
			1	17
		Topic	1	
Sep 20, 16	**The Press Risk Factor in Mexico: Reputations and Brands in Play in the Energy Sector**	818		17

4 HYDROCARBON SECTOR

Farmout

Published	Topic	File #	Reports	Pages
			16	212
		Topic	8	
Nov 27, 16	**The Pemex Migration Regime: Discretionality vs. Market Solutions**	827		24
Nov 22, 16	**Understanding Pemex’s Trión Migration**	826		3
Sep 29, 16	**Trion Farmout Analogy**	820		4
Aug 24, 16	**Trión Auction: Problematic Issues**	816		11
Aug 23, 16 *Updated* 8/25/2016	**Glossary of the Pemex Trión Tender**	815		28
Jun 13, 16 *Updated* 6/15/2016	**Trión 101: Pemex proposes fast-track for deep water auction**	1000083		8
Mar 22, 16	**Pemex E&P organizes for Partnerships**	807		8

Mexico Energy Intelligence® Reporting in 2016

Published	Topic	File #	Reports	Pages
Mar 15, 16 *Updated* 3/19/2016	**Outlook for Farmouts in Mexico**	799		42

Midstream

Topic 3

Published	Topic	File #	Reports	Pages
Apr 12, 16	**CRE Milestone Celebrations, 2005-2015**	100217		12
Mar 04, 16	**Mexico's Midstream and Downstream Gas Outlook: Hopeful**	805		12
Jan 28, 16	**Interview with CRE's Francisco Salazar**	801		11

Public officials

Topic 5

Published	Topic	File #	Reports	Pages
Sep 26, 16	**Deconstructing Minister Coldwell: Keynote Speaker at Rice University's Baker Institute**	819		15
Aug 02, 16	**The Departure of Lourdes Melgar**	814		7
Mar 31, 16	**Edgar Rangel Germán: A Remembrance**	808		6
Feb 25, 16	**Interview with Petroleum Geologist Alfredo E. Guzmán**	804		10
Jan 28, 16	**Interview with CRE's Francisco Salazar**	801		11

5 ELECTRIC SECTOR

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Topic 3

Published	Topic	File #	Reports	Pages
Dec 26, 16	**Residual Concerns about Mexico's Electricity Reform**	828		13
Jun 21, 16	**Restructuring Mexico's Electricity Market: Origin and Outlook**	812		11
May 18, 16	**Glossary of Mexico's Wholesale Electricity Market: A Start**	811		33

6 HSE

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Mexico Energy Intelligence® Reporting in 2016

Published	Topic	File #	Reports	Pages
Upstream			Topic 2	
Dec 23, 16	**Mexico's Problematic E&P Safety Regime**	832		15
Dec 15, 16	**Bilingual Glosssary of ASEA's Safety & Environmental Guidelines**	832.1		29

8 SPECIAL PROJECTS

Published	Topic	File #	Reports	Pages
			5	44
International			Topic 2	
Oct 27, 16	**Houston-Latin America Conference**	100220		4
Oct 14, 16	**Inter-American Hydrocarbon Regulators Conference**	822		15
Language, Culture and Politics			Topic 3	
Oct 19, 16	**Challenges of Bilingual Proficiency: the blended consonantal coda**	100211.1		7
Aug 18, 16	**Advancing English Proficiency: What is possible in 75 minutes?**	100219		9
Jan 27, 16 *Updated* 1/6/2017	**Digging Deeper into Spanish 203**	100216		9

8.1 OUTREACH

Published	Topic	File #	Reports	Pages
			9	9
Farmout			Topic 2	
Jul 19, 16	**De las formas paralelas: ¿Trión y Fénix?**	071916		1
Jan 25, 16	**"Farmouts"**	012516		1
Legal			Topic 1	
Sep 02, 16	**Sino mediante**	090216		1

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Published	Topic	File #	Reports	Pages
Pemex			Topic 2	
Mar 28, 16	**No hubo pérdidas in Pemex**	032816		1
Feb 05, 16	**Aplausos y regaños (II)**	021516		1
Public officials			Topic 4	
Aug 15, 16	**La salidad de Lourdes Melgar**	081516		1
May 23, 16	**El ajedrez del 'upstream' [Edgar Rangel]**	052316		1
May 02, 16	**Recordando a Edgar Rangel Germán**	050216		1
Feb 22, 16	**Francisco Salazar**	050216		1
		Totals	51	531

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Reporting in 2016

Published	Topic	File #	Reports	Pages
	Pemex	Topic	2	
Mar 28, 16	**No hubo pérdidas in Pemex**	032816		1
Feb 05, 16	**Aplausos y regaños (II)**	021516		1
	Public officials	Topic	4	
Aug 15, 16	**La salidad de Lourdes Melgar**	081516		1
May 23, 16	**El ajedrez del 'upstream' [Edgar Rangel]**	052316		1
May 02, 16	**Recordando a Edgar Rangel Germán**	050216		1
Feb 22, 16	**Francisco Salazar**	050216		1
		Totals	51	531

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2016

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