

BY KERRY DIMMER

# POWER FOR CHANGE

## Mexico's Energy Reform Is Paying Off

**F**or more than 80 years, the state-owned Petróleos Mexicanos, or PEMEX, hegemony on the energy sector restricted Mexico's ability to adapt to changing global energy markets.

The impacts have been profound. One of the most significant changes saw the country's oil and gas production decline, which in turn increased the nation's dependency on imports of gas and oil products. Further exacerbation to its economy came from rising power production costs, aging infrastructure and a widening human resources gap, among other negatives.

So, it was with some relief that the government in 2013 announced its energy reform bill. Conceptually, it is an extremely significant and insightful document, because it underscores the government's commitment to change Mexico's economy and is touted as the catalyst for continued and sustainable growth and welfare.

With it comes a new era of free trade for the nation, with new global partners that view it as a strong and competitive energy hub, and one that also endorses environmentally friendly practices, a sign of Mexico's intention indicated by it being one of the earliest nations to sign the Paris climate accord.

Fast forward to 2017 and Mexico seems to have made good on its promises, having agreed:

- Eleven free-trade agreements with 46 countries.
- Nine economic cooperation agreements.

- Thirty-three Reciprocal Investment Promotion and Protection agreements.

These indicate that Mexico's energy reform just might be something special to tap into.

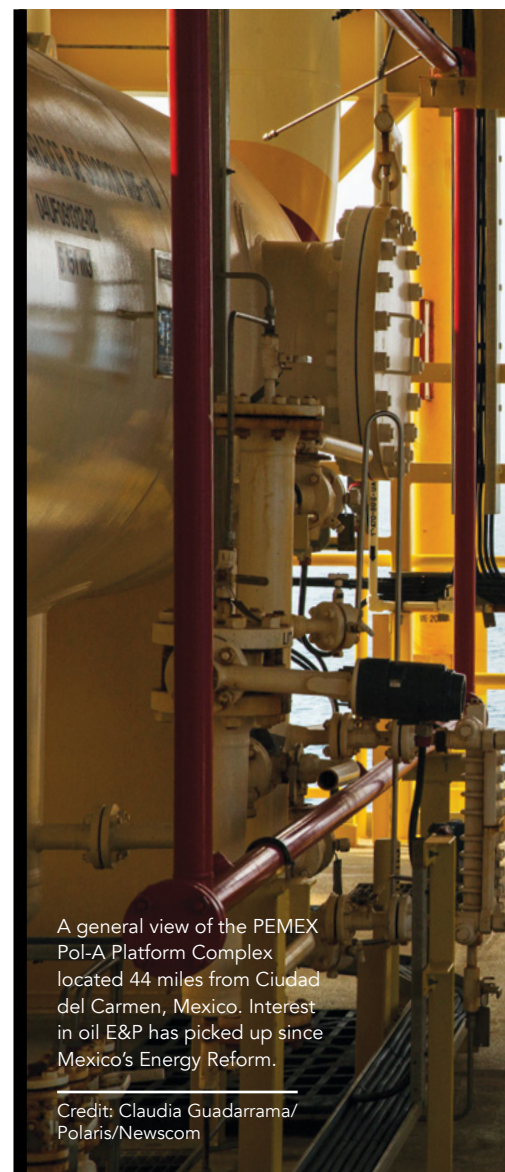
### MAKING MOVES IN RECORD TIME

It is remarkable that Mexico has been able to initiate its energy reform in just a few short years, compared with the 20-plus years that more mature markets have faced. As the world's 10th-largest export economy, according to MIT's Observatory of Economic Complexity, Mexico has also been named as the 21st-most complex according to the Economic Complexity Index. Whether its energy reform can bolster these rankings will be clear by the end of the decade, as Mexico hits the seven-year marker for its reform.

What makes Mexico's progress all the most notable is that this blueprint has been actioned at a time when oil prices are in a tailspin and global economic volatility is at a peak.

National policies to improve energy efficiency are critical to all countries, but perhaps more so for Mexico, whose oil sector has taken serious knocks over recent years. Despite attempts to diversify away from hydrocarbons, oil revenue still accounted for about one-third fiscal revenue in 2014, according to the International Energy Agency, or IEA.

In its report, the *Mexico Energy Outlook (2016)*, IEA confirmed that Mexico's



A general view of the PEMEX Pol-A Platform Complex located 44 miles from Ciudad del Carmen, Mexico. Interest in oil E&P has picked up since Mexico's Energy Reform.

Credit: Claudia Guadarrama/  
Polaris/Newscom

fiscal revenue fell by more than half in 2015 due to the global decline in oil prices. With crude oil production falling further in 2016, Mexico might have floundered into dire straits were it not for "the increasing availability of relatively cheap natural gas imports from the U.S. providing a welcome boost to Mexico's power sector," the IEA said.

With its energy reform in place, Mexico can return to the benefits of its large hydrocarbon resources, but in a more sustainable, efficient, transparent and productive manner.



For project cargo interest, an indication of what is to come was highlighted by the first bidding process in December 2016 for eight of the 10 blocks of deep-water offerings. This first round opened Mexico's oil and gas scene to international interest, and with some 80 percent of the contracts already awarded, it attracted the oil majors and proved that exploration and production is back on the agenda in Mexico. This bodes well for the project cargo market in transporting the large components needed in the construction of fields and processing plants.

### CHASING GREEN ENERGY

However, while oil remains important, Mexico will also continue to encourage low-carbon sources of energy growth – mainly through gas, solar and wind farm power – on the back of the government's desire to embrace clean power generation.

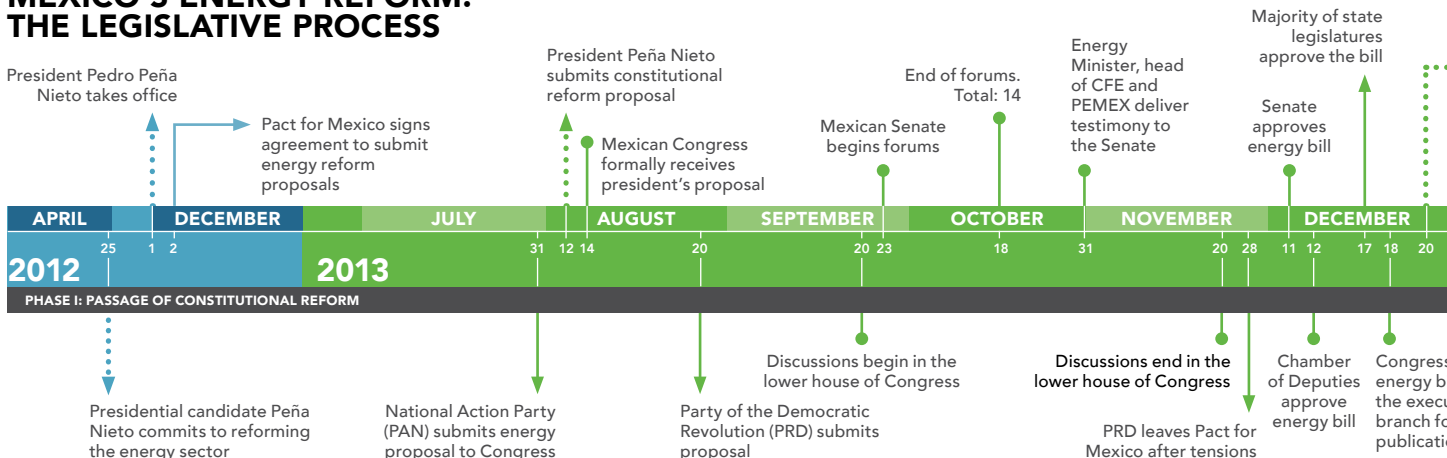
Alternative power source production will go a long way towards easing demands on the national power grid, an imperative given a 25 percent increase in energy demand since 2000. With the energy reform in place, this sector is also

expected to create some 2 million jobs by 2025, as an added benefit.

Generating 35 percent of total energy from clean sources by 2024 and 50 percent by 2050 are the goals, and in facilitating this the government is offering private companies opportunities to produce and sell electricity in competition with its state-owned utility Comision Federal de Electricidad, or CFE.

Solar, followed by wind, are the most dominant and popular projects, unsurprising given the country is blessed with significant renewable natural resources.

## MEXICO'S ENERGY REFORM: THE LEGISLATIVE PROCESS



Source: Wilson Center

Both renewables are expected to account for about half of total investment in generation and half of generation capacity additions in coming years.

### EYE ON DEVELOPMENTS

Augustin Valdivia, owner's engineer at Think Forward Power, said the transition was slow when the energy reform was introduced, but after Mexican state-owned utility CFE and power grid operator CENACE (Centro Nacional de Control de Energía) concluded two public Power Purchase Agreements, or PPAs, more than 5.4 gigawatts of contracted power capacity manifested.



**Augustin Valdivia**  
Think Forward Power

"These PPA auctions appear to have stimulated the market for new project development and construction," Valdivia said, "and those companies that won PPAs from the CFE and CENANCE auction are currently working on developing and building those projects over the forthcoming years."

Think Forward Power, whose main activities include consultancy, outage support, regulatory approvals and permitting, and power generation project development and construction, has

kept a keen eye on the growing energy market, given it is "still maturing," as Valdivia described it.

"One of the current biggest challenges, but which we also see as being an opportunity, is for existing service providers to adapt to a new, more competitive market. New power plant construction is reportedly being developed with very aggressive and competitive prices, which in turn results in reduced project budgets. Spanish companies appear to be well-positioned in the market based on their familiarity with the culture, language compatibility and competitive pricing," he said.

This does not mean, however, that other nations are excluded, Valdivia said. "Mexico welcomes partnerships with foreign organizations and particularly those in oil exploration and production, liquefied natural gas export, solar, wind and gas-fired power generation. Each area of the energy market includes a number of active international participants, and those appear to be driven by individual companies' skills, know-how and interest in investment in Mexico."

Freight forwarders; cargo carriers; engineering, procurement and construction companies; and other logistics suppliers are some of the new investors, particularly for the wind energy projects, which depend heavily on effective, capable transportation and logistics.

"For example, a typical 125-megawatt project may require shipments of

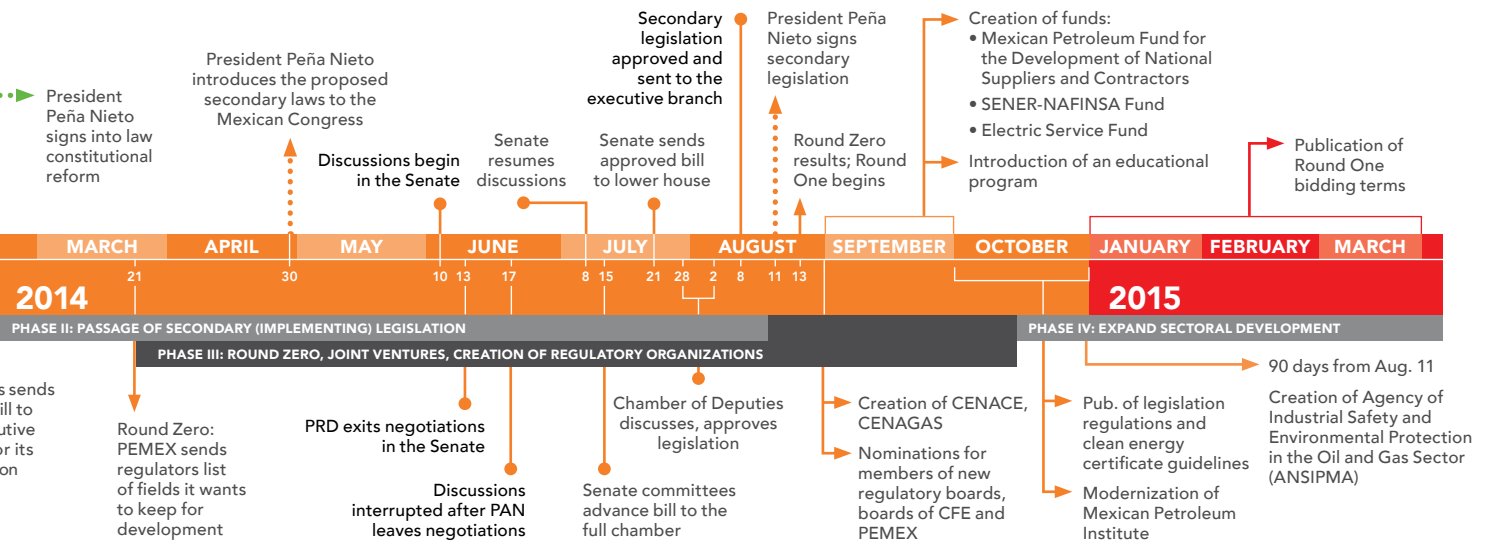
approximately 1,000 large components, including blades, nacelles and tower sections," Valdivia said. "These components are often delivered to Mexico through Altamira Port in the Gulf of Mexico, or Manzanillo Port in the Pacific. Such transportation is going to be crucial in helping contractors to deliver projects on time."

### BOON FOR TRANSPORTERS

Mexico's energy reform is already having positive impacts for the region's transport industry, including for well-established businesses like Mucino Transportes, which offers specialized transport services, particularly those of heavy and oversized loads in Mexico, the U.S. and Canada.

Raúl Cuevas Fernandez, in Mucino's commercial division, said he anticipates being very active with the number of wind farms planned for development next year plus other wind combined cycle projects. Mucino already transports, across distances of 1,000 kilometers, heavy components ranging from 200 to 300 tonnes for energy projects in the towns of Topolobampo, Cortijo and El Carmen. Mucino is also in the planning stages of transporting an oversized load from Topolobampo to San Miguel Zapotitlan in the Los Mochis area.

Given the potential, it's a particularly competitive market. "There are a number of foreign companies entering Mexico, and combined with other major players that are dropping market prices, we are



starting to see some delays on projects. This makes it more difficult to win bids, but we believe there are enough projects in forthcoming years, for many to benefit from,” Fernandez said.

Some transporters were concerned about access to projects, given that wind farms, for example, are usually sited in remote locations. However, Fernandez did not see this as a problem: “Mexico’s infrastructure is constantly evolving, but ultimately it’s about doing business with what exists and adapting to opportunities. As such we are expanding our capabilities with the acquisition of new equipment such as Faktor 5 and Addrive, along with other ultra-long decks so that we are well prepared with the right tools, for when new opportunities arise.”

However, while Mexico’s energy reform is certainly on its way to becoming one of the world’s most attractive investment destinations, challenges remain, including consolidation of the new model, and transparency and accountability. Also, the need to attract private investment means that value chains of supply, and delivery of those, will prove vital in changing the economic landscape for all involved. ■■

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## DELIVERING ON PROJECTS

Mitsubishi Hitachi Power Systems Americas is actively involved in Mexico’s wave of new energy projects.

Brandon M. Strange from the organization told *Breakbulk* he traveled to several areas in Mexico, working with engineers, rigging and heavy companies, ocean carriers, reviewing railroad transport, and exploring customs and import formalities and challenges.

Initially, concerned with communication and response times, Strange said, “these aspects have improved over the course of our projects. Customs is a more rigorous and slower process in Mexico and the Latin market, but this was known to us going into these large-scale projects.”

Mitsubishi Hitachi is working on some of Mexico’s largest projects, such as Noreste/Escobedo, Topolobampo II, and El Carmen. He said Mexico’s energy reform provided opportunities to work with developers and EPCs to supply main equipment for Mexico’s next generation power fleet.

Mitsubishi Hitachi’s projects average 5,500 tonnes per project. While

some auxiliary equipment is sourced in Mexico, most is imported the U.S., Canada and several other countries.

Strange stressed the importance of communication in Mexican projects. “Communicating the critical elements of schedule, equipment specs and handling (i.e. rigging and transport requirements) leads to maintaining budget integrity, which is what we all are paid to do. The dynamics and constant changes of moving heavy-lift equipment drives the need for updates and constant communication.”

Project bidders must also be wary of developments with the North American Free Trade Agreement between the U.S., Canada and Mexico. U.S. President Donald Trump has vowed renegotiate NAFTA.

“Everyone has their eyes on NAFTA to see if any changes are made that could affect import tariffs and the trade lanes,” he said. “This has definitely impacted some of our projects and how our customers have outlined certain requirements to mitigate risk and exposure to potential import cost increases.”