

THE ENERGY
REGULATION
AND MARKETS
REVIEW

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Editor
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PREFACE

In our 12th year of writing and publishing *The Energy Regulation and Markets Review*, the most pressing global concerns continue to be inflation, supply chain concerns, the Ukraine war and continuing efforts to combat climate change. Accordingly, many of our contributing authors have emphasised concerns associated with the effects of these crises on infrastructure development, commodity purchases and energy demand. We have also seen industry and regional specific changes that have added uncertainties to global energy policies. For example, oil and gas prices have remained high, compared with three years earlier. European demand for natural gas has remained an important energy security issue in light of the region's historical reliance upon supplies from Russia, which, in turn, dramatically increased European electricity prices. Additionally, there has been a sharp increase in the development of liquified natural gas (LNG) facilities in the United States and increased export activity as a result of the pricing changes globally. The convergence of these events has created a catalyst for increased investment in renewable energy and energy efficiency in order to further reduce reliance upon Russian natural gas and oil. Additionally, the United Kingdom continues to experience uncertainties resulting from its transition, not only in terms of energy resources associated with decarbonisation efforts, but also out of the European Union (a process known as Brexit). The Biden administration has continued to reassure US allies and historical trading partners that it remains committed to the 2015 Paris Agreement, notwithstanding the Trump administration's previous withdrawal. And the memory of the 2011 Fukushima nuclear incident continues to affect energy policy in many countries. Finally, there are continued efforts to liberalise the energy sector globally.

I CLIMATE CHANGE DEVELOPMENTS

We continue to see significant carbon reduction efforts globally, including increased use of renewable resources and measures to improve energy efficiency and reduce demand.

In the United States, the Biden administration has continued to commit to the fight against climate change, despite the previous administration's support for fossil fuels. While coal and other aged fossil fuel plants continue to retire at an unprecedented rate (primarily because of the economics of those facilities), the Texas winter storm in February 2021 and winter storm Elliott in the north-east and mid-Atlantic regions in December 2022 have raised questions about whether renewable resources alone will be sufficient for long-term reliability. The US Federal Energy Regulatory Commission has continued to focus on ensuring resource adequacy at just and reasonable rates, and on winter gas-electric coordination in the northeast markets. While many states have continued to award procurements of thousands of megawatts of new offshore wind development projects on the east coast, companies that were awarded

contracts have initiated renegotiations of those contracts due to price increases emanating from supply chain issues and inflation. The Federal Energy Regulatory Commission has continued to struggle with whether and how to impose regulatory restrictions on the ability of states to subsidise renewable energy projects in light of their adverse impacts on competitive market prices. The Inflation Reduction Act provides additional incentives to assist in the conversion to renewable resources.

The European Union's Renewable Energy Directive II seeks to reach 32 per cent of the region's total energy needs through renewable energy and 14 per cent for the share of renewable fuels, both by 2030, and climate neutrality by 2050. This past March, the EU Commission published proposed changes to regulations and market issues that will create further divergence from the United Kingdom's regulatory approach. France is seeking to double its wind and solar capacity and President Macron has announced a goal to close the remaining coal plants by 2022. France has recently updated its national policy priorities with respect to climate change to include low-carbon hydrogen resources as well as power plants equipped with pumped storage, and provided a new certification process for biogas. Italy had previously targeted a 28 per cent reliance on renewable energy by 2030 but is now working to reach the 32 per cent target adopted by the European Union, and has changed the recently formed Ministry of Ecological Transition to the Ministry of Environment and Energy Security to assist with the fight against climate change. To reduce reliance on Russian oil and gas, Belgium seeks to triple its offshore wind capacity to 5.8GW by 2030. Portugal is retiring coal generation and replacing it with renewable and hydrogen generation resources, and recorded a 7 per cent drop in carbon emissions in 2020. Greece is decommissioning some of its old lignite plants and has begun implementation of a 'just transition' plan (increasing renewables from 14 per cent to 43 per cent of all generation), while increasing domestic coal production in the near-term, and accelerating its effort to develop offshore natural gas resources and increase LNG storage.

China continues to have ambitious renewable energy goals, aiming for an emissions peak by 2030, carbon neutrality by 2060 and a goal of 25 per cent of generation supplied by non-fossil fuel generation by 2030. India aims for almost half of its generation capacity to be made of renewable energy resources by 2030, which would amount to 500GW. Singapore has a Green Plan to meet its sustainability targets, including increasing solar energy deployment fivefold to 2,000MW, having 200MWh of energy storage deployment after 2025, and increasing clean energy imports. A new law was enacted last year in Indonesia that sets forth a path to meet its climate-change commitments, including new coal-fired power plant commitments, as well as a law (enacted the previous year) on carbon pricing. While there remains significant debate in Australia regarding the role of gas and coal in the energy landscape, which has led to a patchwork of national and state policies that point to continued uncertainty regarding Australia's commitment to carbon reduction, Australia has already met its legislated target of 23.5 per cent of power generation from renewables.

Nigeria is targeting to have 30 per cent of its electricity generated from renewable resources by 2030 and net zero carbonisation by 2060. In Brazil, hydroelectric resources constitute more than half of its installed generation capacity, and efforts continue to increase wind and solar generation as the cost of renewable generation has decreased.

II INFRASTRUCTURE DEVELOPMENT

The multiple crises so far this year (e.g., inflation, the war in Ukraine, supply chain issues, etc) have made infrastructure development difficult for many countries, particularly those in which a reliable energy supply remains the primary concern, regardless of fuel source. Even the United States is no exception, as controversy remains over the Dakota Access Pipeline, development and approvals for which have continued to stall, and the Biden administration revoked the Keystone XL Pipeline's presidential permit in January 2021, regardless of the recent dramatic increases in oil prices, leading to an arbitration claim by Keystone against the United States government for US\$15 billion. The European Union has recognised the need to secure a diverse energy supply, particularly in view of Russia's invasion of Ukraine and the desire to reduce reliance on Russian oil and gas. Belgium is expected to increase investment not only in renewable generation but also in hydrogen and geothermal energy to combat reliance upon Russian oil and gas. This was, for example, the first time in over a decade that Spain exported significant amounts of natural gas to France. Portugal is also expanding the development of green hydrogen as an alternative fuel source, including development of the Sines project, which is intended to replace in part the capacity lost following the retirement of coal generation. It is anticipated that Brazil may be able to produce the cheapest green hydrogen in the world, due to geographic and climate conditions. Furthermore, and unsurprisingly, Russia has not received any foreign investment from Europe, the United States or the United Kingdom due to sanctions imposed by these countries related to Russia's invasion of Ukraine. Singapore is adding to its LNG import capabilities. Ever since sovereign power was transferred to Myanmar's Commander-in-Chief of the Defence Services three years ago, foreign investment in infrastructure development has stalled, which has made the country's goal of electrification of 75 per cent of the population by 2026, and electrification of the entire population by 2030, a challenge. Lebanon has consistently faced energy shortfalls and is now in a full-blown economic crisis that has made significant infrastructure development extremely difficult. Nigeria has only 16,000MW of installed generation capacity, which is insufficient to meet its needs, and is looking to the gas sector in the country to supply sufficient fuel to support additional generation resource development. The energy infrastructure of the Democratic Republic of the Congo is even more challenging, as there is only enough electricity to power 19 per cent of its approximately 90 million people.

III NUCLEAR POWER GENERATION

Ten years after the Fukushima disaster, there is a struggle between efforts to limit reliance upon nuclear energy and the emissions reductions and fuel diversity benefits nuclear power offers. Because of the Ukraine war and the need for fuel diversity, and the importance of nuclear power for fighting climate change, Belgium has extended the economic lifetime of two nuclear power plants until 2035 and is now considering extending three other plants beyond 2025. France had previously sought to eliminate nuclear generation by 2025 but has extended that date. In the United States, although the early retirement of certain nuclear plants has been driven by cost and power market considerations (rather than safety concerns), some states have passed legislation to subsidise nuclear energy to allow owners to continue to operate through zero emissions credit programmes, including Illinois, New York, New Jersey and Ohio.

IV LIBERALISATION OF THE ENERGY SECTOR

We have seen significant energy sector regulatory reforms in many countries. The European Union has sought to continue efforts to centralise the regulation of the EU energy sector, albeit without the participation of the United Kingdom. Belgium, Portugal, Greece and France (among others) have each taken significant steps towards further liberalisation of the energy sector. This was particularly important for countries (such as France) that had longstanding state-owned electricity and natural gas monopolies. However, many countries, including Spain, Portugal and Australia, imposed regulatory limitations on electricity and gas prices, due to the sharp price increases, and adopted a new resource-specific pricing mechanism that resulted in significant differences in electricity prices from renewable generation compared to natural gas generation. Australia has opened access to transmission through regulatory reforms to ensure timely transmission investment and encourage market entry, and continues to engage in significant changes in the regulation of the energy market, including increases in the wholesale market price cap. Brazil has recently implemented net metering regulations and is now implementing distributed generation regulations. China has reduced subsidies for renewable energy and has implemented a market-price mechanism for pricing coal-based generation. The United Kingdom has implemented a competitive tender process for the development of offshore transmission. In the United States, while states have continued to subsidise renewable generation (particularly significant new subsidies for offshore wind development in the Northeast), the Federal Energy Regulatory Commission has continued to struggle between deference to states in making procurement decisions and protections against adverse impacts on competition by implementing minimum offer price rules to combat buyer-side mitigation markets. Mexico appears to be taking an anti-liberalisation approach, seeking to unwind reforms from previous years, and favouring state-owned electric and oil companies over non-Mexican companies.

I would like to thank all the authors for their thoughtful consideration of the myriad interesting, yet challenging, issues that they have identified in their chapters in this 12th edition of *The Energy Regulation and Markets Review*.

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MEXICO

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I OVERVIEW

The open market of Mexico's energy sector, with its free competition and private participation in almost all activities, has been challenged since 2019 by the current administration under the discourse of 'energy sovereignty'. The governmental policies championed by President Andres Manuel Lopez Obrador tend to favour state-owned Pemex and Mexico's utility company, Comisión Federal de Electricidad (CFE), as preponderant players in the oil, gas and power industries.

Actions taken by the Obrador administration include amendments to laws and regulations that were implemented between 2013 and 2016 to end state monopolies. The new or amended laws proposed by the Obrador administration have been largely challenged before federal courts and the Supreme Court of Justice by private stakeholders and other public bodies (i.e., the Federal Antitrust Commission (COFECE) and some local governments). As a result, several of the new regulations issued to favour state preponderance in the energy sector have been fully suspended or declared unconstitutional. In 2022, President Obrador wanted to amend the Constitution in relation to the power sector and to ensure the predominance of CFE, a change which was not passed by Congress.

In addition, the covid-19 pandemic brought additional challenges. Regulatory agencies were shut down for almost three years, with very few regulations and permits or authorisations being granted, based on 'urgency' considerations that were not always clear.

Even though Mexico's investment doors and legal framework in the energy sector are open for private participants since the 1990s, with a further broad opening in 2013, the political views of the current federal administration and the response given by the regulatory agencies since 2020 have certainly affected the attention of direct investment in energy projects, either from national or international players.

II REGULATION

i The regulators

The main governmental authorities and regulators with jurisdiction over Mexico's energy sector are:

- a the Ministry of Energy (SENER), which is in charge of public energy policy;

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- b* the National Hydrocarbons Commission (CNH), the agency in charge of regulating oil and gas upstream activities;
- c* the Energy Regulatory Commission (CRE), the primary regulator of the midstream and downstream oil and gas sectors and power-related activities, which is in charge of, among others things, issuing permits to industry players and secondary regulations;
- d* the National Energy Control (CENACE), which is (by law) the only ISO in Mexico, and is in charge of the control and operation of the national grid as there are no regional transmission organisations (RTOs) in the country;
- e* the National Agency for Industrial Safety and Environmental Protection of the Hydrocarbons Sector (ASEA), which is responsible for regulating and supervising safety and environmental protection for the oil and gas industry; and
- f* the Federal Antitrust Commission (COFECCE), in charge of sanctioning anti-competitive practices, including those related to the energy sector.

According to the Mexican Constitution, the energy industry is regulated at the federal level, as local states lack jurisdiction to regulate energy matters. However, within the scope of their powers, local governments can issue zoning regulations, local licences, collect taxes and similar actions that may impact the energy industry.

Considering the foregoing, the regulations applicable to the energy sector derives from the Constitutional principles outlined by the 2013 reform (2013 Reform). However, the specific requirements for each activity are further regulated through federal laws, its regulations and the secondary regulations issued by the governmental agencies overseeing the energy market (e.g., CRE, CNH CENACE and ASEA). In any case, any such laws or regulations need to be consistent with the constitutional principles outlined in the 2013 Reform.

ii Regulated activities

With few exceptions (mostly in the upstream oil and gas sector) energy-related activities in Mexico are subject to a permit regime where all qualified interested parties are allowed to participate (as opposed to concessions or licensing regimes where only certain bidders are allowed to participate). More specifically, such activities are divided as follows.

Oil and gas sector

Upstream

Licences to explore and extract hydrocarbons (i.e., natural gas and crude oil) are tendered by the CNH and awarded to the highest bidder. According to CNH, at the time of writing, 107 upstream contracts allow private entities and Pemex to perform onshore and offshore upstream activities throughout Mexico. Calls for new tenders have been suspended since President Obrador took office in 2018.

Midstream and downstream

These activities include:

- a* crude oil treatment, gas processing and refining of such products for further transformation (including into petroleum products and petrochemicals for industrial uses);
- b* storage, transportation and distribution, involving natural gas, refined products or petrochemicals for retail sale or final consumption; and

- c marketing (commercialisation), including the sale to users and end-users of hydrocarbons, refined products or petrochemicals or the participation of the marketer as broker of storage or distribution services.

Marketing permits do not entail the ownership of the infrastructure or the provision of the corresponding regulated service.

Power sector

Transmission and distribution

Even though most power-related activities were opened to private investment with the 2013 Reform, power transmission and distribution activities were kept as public monopoly which may only be provided through CFE's subsidiary companies expressly incorporated for such purposes, namely CFE Transmisión and CFE Distribución.

Despite such participation restrictions, private entities participate as partners of CFE in the construction, improvement and expansion of any portion of the grid through public-private partnership (PPP) structures.

Power generation

Any entity interested in generating power in Mexico above 0.5MW requires a power generation permit issued by CRE. Requirements to obtain such permits include that the applicant:

- a describe the proposed generation facilities;
- b demonstrate financial and technical soundness
- c provide details of the operation of the power plant; and
- d pay application fees.

Power generation activities are not subject to a concession regime but to a permit framework. Therefore, any interested party meeting the required criteria may apply for a power generation permit. Obtaining a power generation permit from the CRE does not guarantee interconnection availability at the grid nor compliance with corresponding zoning, environmental or social requirements.

Power supply

The Mexican power market is operated through a wholesale electricity market (WEM) administrated by CENACE as the sole ISO in Mexico. Therefore, with a few exceptions, any entity interested in either buying or selling power must be registered as a market participant with CENACE. In addition, power suppliers shall obtain the relevant power supply permit from CRE. Requirements to obtain such a permit are similar to those listed above for power generation permits, with the distinction that there would be no infrastructure associated with the power supply activity (and therefore no need to describe any such facilities). Please note that power supply for large consumers (i.e., final users with power consumption above 1MW, known as qualified supply) is not subject to tariff regulation, while power supply to smaller (mostly household) consumers (known as basic supply) is subject to tariff approvals. As of today, CFE (through its basic supply branch) remains as the sole basic supply provider in Mexico, although private entities are allowed to participate as basic suppliers should they become interested in such market.

iii Ownership and market access restrictions

Restrictions in Mexico to foreign investment in the energy sector only apply to the supply of aviation fuel, which is limited to a 49 per cent direct foreign participation. Limitations to foreign investment could change in time, so it is advisable to perform an updated review before an investment decision.

There are some restrictions applicable to the change of control or change of corporate structure of energy-related permit holders, depending on the specific activity they are providing. CNH (for upstream activities) or CRE (for pipeline transportation activities) prior authorisation is normally required, although this would need to be analysed on a case-by-case basis as different conditions may be applicable to different permit holders, mostly based on the wording of the corresponding permit title or licence.

Despite the applicability (or not) of a change of control or change of corporate structure approval from CRE or CNH, any transaction surpassing certain economic thresholds provided for under the Antitrust Law may be subject to pre-merger review approvals from COFECE. Furthermore, if the underlying activity performed by the permit holder experiencing a change of control or change of corporate structure is subject to open-access regulations (e.g., transportation and storage activities for oil and gas), a cross-ownership authorisation from CRE (with COFECE's previous opinion) may be necessary if as a result of such change of control or change of corporate structure, two or more permits regarding open-access infrastructure become held by the same corporate group (at any level).

III TRANSMISSION/TRANSPORTATION AND DISTRIBUTION SERVICES

i Vertical integration and unbundling

With the 2013 Reform, vertical integration for both Pemex and CFE (as incumbents) was initially restricted, resulting in open access rights available to any third parties interested in using transmission and distribution facilities or in receiving unbundled retail of power and petroleum products offered by such state-owned companies.

CFE was required to assign transmission and distribution activities to individual subsidiaries (still managed by CFE, but somehow isolated from other activities performed by CFE) while the operation of the national grid was transferred to CENACE, a new entity no longer under CFE's administration.

For natural gas transportation systems, with a few exceptions, Pemex had to transfer the ownership of all natural gas transportation pipelines it owned to the Integrated National Natural Gas Transportation and Storage System (SISTRANGAS), a nationwide system of natural gas pipelines. SISTRANGAS is managed by the Centro Nacional de Control de Gas Natural (CENAGAS), a government agency in charge of operating and administrating access to such pipelines. As a result of the creation of SISTRANGAS, any interested party may apply for any available capacity in such pipelines.

Please note that private entities are still allowed to operate private pipelines that may or may not be interconnected to the SISTRANGAS.

ii Transmission/transportation and distribution access

Although transmission and distribution activities are reserved for the state-owned companies, services provided by such companies shall be, in all cases, subject to open access obligations, including non-discriminatory access to third parties. (See answer II.ii.)

In the oil and gas sector, transportation activities of natural gas or petroleum products are not restricted to Pemex and therefore are open to any third party interested in investing and operating a pipeline transportation service. However, in all cases such pipeline transportation facilities shall be subject to a transportation permit issued by CRE and would also be subject to open access obligations.

Pemex's storage terminals and associated transportation facilities of petroleum products are theoretically subject to open access obligations. However, given the limited capacity available at Pemex' terminals, only a couple of open seasons have been performed by Pemex so far (mostly for its maritime terminals located in the northern region of Mexico), resulting in very few contracts awarded to private entities.

iii Rates

For the power sector, transmission tariffs are determined by the CRE pursuant to the calculation guidelines provided for under the Electric Industry Law (LIE). These tariffs are determined on an annual basis and shall reflect, among other things, operational and capital expenses of the transporter, the expected demand for the year (transmission offer/demand), the required voltage (i.e., high vs medium or low voltage), plus a reasonable profit for the transporter as well as other adjustments. Similarly, tariffs for distribution services are also determined by CRE annually under the LIE and shall be primarily based on the operational and capital expenses of the distributor, plus a reasonable profit.

For the pipeline transportation services provided through SISTRANGAS, tariffs shall be determined by CRE, pursuant the guidelines provided for under the Hydrocarbons Law. These tariffs should consider reasonable maintenance costs, taxes, expected demand and depreciation and a reasonable return on investment of all the transportation pipelines comprising the SISTRANGAS.

Regarding private pipeline transportation (i.e., those not performed through SISTRANGAS), tariffs may only be determined by the CRE in those cases where the pipeline would have a relevant impact in the region. In those exceptional cases, CRE may approve the applicable tariffs taking into consideration, among other things, opportunity cost, prevailing market conditions, returning invested capital, cost of financing and inherent risks of the project, plus a reasonable profit.

However, in any case, such tariff regulation determination by CRE may be reversed if COFECE finds that there are market conditions to consider in the relevant region.

iv Security and technology restrictions

Energy activities in Mexico are considered to be of public interest (*utilidad pública*) and therefore, the performance of all permit holders is constantly reviewed and monitored by the Mexican government through different governmental entities.

As a result, for the power sector, the Mexican government may expropriate any energy power-related assets for national security reasons to guarantee the continuity of the services. Such expropriation shall result in the payment to the permit holder of the real value of the asset or, if the owner of the infrastructure disagrees, shall be the value determined by expert witnesses to be appointed by the parties.

Regarding the oil and gas sector, the Mexican government may also intervene (i.e., take temporary possession) of any oil and gas infrastructure for national security reasons mentioned above. During such intervention, the facilities would be operated and maintained by any entity appointed by the government, including CFE or Pemex.

The Obrador administration has also made evident its intention to fight organised crime in fuel theft (commonly referred to as *'uachicol'*). Regulatory agencies, accompanied by national security forces, have performed inspections to refined products' terminals and transloading facilities, to verify the origin of the fuel kept at those installations. Although those inspections resulted in the closing of private terminals for formalistic omissions, the underlying motivation was, assumed to be generally rightful by federal judges that reviewed these cases.

IV ENERGY MARKETS

i Development of energy markets

There are no natural gas markets in Mexico, as wholesale natural gas is privately traded with no market visibility.

However, for the power sector, WEM has been operating since 2016 as the only market where power purchase transactions can occur. WEM is disaggregated in different sub-markets, as follows.

Power markets

Clean Energy Certificates Market

In this market, participants may submit offers to buy or sell clean energy certificates at any target price. CENACE reviews those offers and prepares a balanced price considering all individual prices offered. CENACE will clear all buy and sell offers considering the balanced price mentioned above. This market must be operated by CENACE at least once a year.

Spot markets

The day-ahead market

As its name indicates, this market focuses on energy-sale for the following day.

The real-time market

Participants submit hourly offers to sell and buy energy for the same day, which will result in the physical delivery or receipt of energy on the same day.

The one hour ahead market

Participants may submit one-hour ahead hourly offers for the sale and purchase of energy. All offers will be binding and will be cleared once the target hour has been reached. This market is not operative yet, as it will only be implemented during the second phase of the WEM (to be determined).

Long-term market

CENACE may, at its discretion, call for tenders for long-term power purchase agreements with a term ranging from three to 20 years. Rules for these types of auctions will be published by CENACE on a case-by-case basis.

Regardless of the specific market where the energy transaction occurs, the LIE provides that power should be dispatched by the market should be operated by CENACE once a year

(during the first quarter of the following year), once the 100 critical hours of the previous year are determined by CENACE. In this market, entities with surplus capacity may sell such capacity to users that were unable to meet their capacity demand, as required by CRE.

Associated products market

Under the WEM, associated products and services are necessary to guarantee the quality, reliability, continuity, and safety of the power system. Such products and services include, spinning, operating, and supplementary reserves. Once the One Hour Ahead Market is implemented, this market will also trade secondary regulation reserves. Pricing for the products and services mentioned above shall be determined by the CRE.

ii Energy market rules and regulation

As mentioned in IV above, there is no natural gas open market in Mexico. However, regarding power transactions, the WEM operates as a heavily regulated market operated by CENACE and same is mostly governed by the Market Rules issued by CRE on 8 September 2015. Such rules provide for, among others, the procedure for registration of market participants, dispatch of the grid, clearance of bids, liquidation and reliquidation of bids, and the allocation of capacity to existing power generation facilities

iii Contracts for sale of energy

Under Mexican law, it is possible to register bilateral individual contracts (PPAs) in the WEM reflecting mutually agreed prices and rates which are not affected by market prices determined by CENACE under the WEM. Such bilateral contracts tend to be more common in projects where the generator has a take-or-pay agreement with any given user or supplier and pursuant to which energy prices are determined considering financing and operating costs of the power plant, rather than actual market prices. However, bilateral contracts appear to be less and less common as we note that the current market is leaning towards the spot markets at the WEM.

iv Market developments

Given President Obrador's willingness to prioritise non-open market rules and policies so that Pemex and CFE can effectively exercise market dominance, we do not anticipate any new developments at the WEM nor the creation of a natural gas market that may further enhance the ability to freely trade energy between participants. However, we have no basis to assume that the existing rules governing WEM may be repealed, as the current legal framework resulting from the 2013 Reform requires the existence of the WEM and its operation under open-market principles.

V RENEWABLE ENERGY AND CONSERVATION

i Development of renewable energy

During the previous administrations, Mexico committed to reduce its greenhouse gas production by 50 per cent by 2050. Such commitment has been ratified by Mexico through the execution of different international treaties and protocols, including the Vienna Convention for the Protection of the Ozone Layer (1987), the Montreal Protocol on Substances that Deplete Ozone Layer (1990), the United Nations Convention on Climate Change (1993), the Kyoto Protocol (2000) and the Paris Agreement (2015).

However, the Obrador administration has orchestrated a frontal attack against renewables, arguing alleged reliability and disruption issues of the national grid (resulting from the intermittent nature of renewables), as well as economic losses suffered by the CFE by participating in the power auctions called by CENACE for the power supply to CFE (as basic supplier).

Considering the shift in the public policy mentioned above, some aspects of the renewable power market in Mexico have been materially affected by, among others:

- a* new restrictions imposed by CENACE to interconnect and reach commercial operation for renewable projects (both exiting and under construction);
- b* cancellation of the ongoing and future long-term power and CEL auctions called by CENACE;
- c* changes by SENER in the power generation dispatch order, substantially increasing the curtailment risk for renewable projects;
- d* the renegotiation of the existing take-or-pay agreements entered into by CFE; and
- e* allocation of clean energy certificates to CFE and other grandfathered projects in contravention of existing policies.

To mitigate the effects of the governmental actions mentioned above, industry players together with NGOs, COFECE and state governors have filed several constitutional claims before the Federal Supreme Court as well as federal courts (as applicable) against some of those actions. To this day, many of those actions taken by the Mexican government (through different agencies) have been stopped, judicially reversed or their effects have been suspended as a result of judicial injunctions.

ii Energy efficiency and conservation

Given the recent opening of the Mexican energy market, there have been few attempts to adopt energy efficiency and conservation measures in both the oil and gas and the power sector. However, traditionally, the Mexican government has granted economic subsidies or incentives to certain users, including subsidies (via rate discounts) to small power consumers below certain average monthly consumptions and tax incentives to electric or hybrid vehicle owners.

iii Technological developments

There have been very few technological developments in Mexico directly linked to renewable energy. However, in recent years, the National Institute for Electricity and Clean Energies (INEEL) has been awarded and recognised by international players, such as the Inter-American Development Bank, as a key player for the energy transition in Mexico and Latin America. For the past 50 years, the INEEL has actively participated in the development of more than 350 renewable projects. Among its many achievements, INEEL has facilitated the development of a wind project in 2022 in Mexico using technology designed and manufactured exclusively in Mexico, demonstrating that all the components of a wind turbine (including the foundation, tower, tower, blades, etc.) may be fully manufactured in Mexico.

VI THE YEAR IN REVIEW

The energy markets in Mexico have substantially changed during the past few years. Starting with the 2013 Reform, the 75-year monopoly held by the Mexican government came to an end and most of the activities comprising the power and oil and gas industries were finally opened to private participation. Field levelling measures were enacted in order to allow newcomers to effectively compete against CFE and Pemex (who still hold massive market shares) and open access regulations were adopted to ensure that both state-owned companies and private entities grant non-discriminatory access to their infrastructure.

However, not long after the opening of the market, President Obrador took office in late 2018 and governmental policy started to materially drift away from the open market principles outlined in the Mexican Constitution (as amended by the 2013 Reform) to favour the state monopolies held by CFE and Pemex. The first actions championed by President Obrador included the cancellation of power and upstream tenders called by the Mexican government and the enactment of new secondary regulations by the regulatory agencies (i.e., SENER, CRE and CENACE), restricting open access principles.

As such actions were constantly reversed by Mexican courts, in March 2021, President Obrador submitted an amendment proposal before Congress to amend the Mexican Constitution to try to validate governmental actions taken so far and allow for further amendments to secondary regulations affecting open access principles. However, the amendment was rejected by Congress in 2022.

As a result of President Obrador's failure to amend the Mexican Constitution and the upcoming change in administration in 2024, it is unlikely that President Obrador will again attempt to amend the existing legal framework to tip the regulatory scales in favour of CFE and Pemex. Furthermore, President Obrador's administration has taken other non-regulatory actions to strengthen CFE's position as power generator, including the recent announcement of the acquisition of 13 power-generation plants with an approximate 8,534MW generation capacity from the Spanish electricity company Iberdrola SA for around US\$6 billion dollars.

Although the Iberdrola acquisition has been largely categorised as a nationalisation measure, Iberdrola has stated that such purchase is in the best interest of Iberdrola and that they intend to expand its renewable power generation capabilities in Mexico in the near future (as the vast majority of the portfolio sold to the Mexican government are fossil-fuelled).

The federal judiciary (i.e., the Federal Supreme Court and Federal Judges and Magistrates) have played a key role in preventing the enforcement of general rules (laws and regulations) that aim to unwind the 2013 Reform, seeking to significantly favour state monopoly in energy, and affecting acquired rights and legitimate expectations of private stakeholders (including end users, such as industries). To that regard, the determinant role assumed by our judiciary has prevented a wave of investor-state disputes under international treaties, as seen in other jurisdictions when they change their regulations. To this date, there are less than a handful of new arbitration cases that derive from actions undertaken by the Obrador administration.

VII CONCLUSIONS AND OUTLOOK

The governmental policies championed by President Obrador have affected the development of new projects in Mexico (particularly those related to renewables) as he has been very vocal in connection with its desire to empower CFE and Pemex to once again become the principal players in the energy industry. However, the fact that Mexico is still far away from developing

all the infrastructure needed to provide efficient and sustainable energy resource to its users, makes it difficult for the current administration to altogether shut private investment from participating in the energy industry.

Moreover, with the launching of the near shoring strategy between the United States, Mexico and Canada, it is understood that access to reliable energy sources is a key and determining factor to successfully develop new industrial facilities in Mexico. Therefore, we anticipate that the Mexican government will be more open to facilitate energy investments so that major companies can effectively operate in Mexico. A good example of this openness to foreign investment includes the recent announcement by Tesla of a US\$5 billion investment in Mexico in connection with a new manufacturing facility to be located near the US border, where President Obrador publicly stated that such an investment will benefit the region. Therefore, although not stated in President Obrador's announcement, it is clear that additional investments would need to be made in order to secure a reliable energy supply for Tesla and many other companies.