



Balancing Power: How Transparency Can Help Shape Mexico's Energy Reforms and the Future of Its Electricity Sector

Dr. Jose Maria Valenzuela

Dr. Yolanda García

November 2024

[The Energy for Growth Hub](#) is a global think tank advancing data-driven solutions to end energy poverty. [PPA Watch](#) is a Hub project focused on power purchase agreements in emerging markets. These complex contracts are the foundation for most power projects and have major consequences on everything from sovereign debt sustainability to energy security. This country summary was prepared based on the Hub's independent research and consultation with key market actors.

Summary

Mexico's new government, led by President Claudia Sheinbaum, is implementing major legal reforms to the country's electricity system, including changes to the market framework, state-owned energy companies, and transparency regime. The government aims to recentralize the power sector, targeting a 54%-46% split between state-owned and private generation, with the goal of providing affordable electricity and protecting energy sovereignty. This approach presents a new set of risks regarding excessive state control, potential corruption and a lack of clarity regarding the role of the private sector, possibly undermining public and private confidence in the system.

The country's history of electricity contracts has been marked by political contention, multiple models of contracting and ownership, and limited public disclosure. With plans to add over 60 GW of capacity in the next 15 years, despite no new contracts having been issued since 2019, the new government should leverage transparency in long-term electricity contracts to legitimize reforms and improve governance. This will be particularly important as the national electricity company, Comisión Federal de Electricidad (CFE), acquires new renewable energy projects and other SOEs sign long-term contracts to supply new services, such as storage, to the power system. Transparency should also bring to light contingency costs, which are often not considered when accounting for these types of projects, an issue highlighted by specialists within the current left-wing coalition.

This report analyzes transparency in public power generation contracts, focusing on Independent Power Producers (IPPs) and long-term renewable energy auctions, to inform debates about the future of and opportunities for contract transparency in the electricity sector's new legal framework.

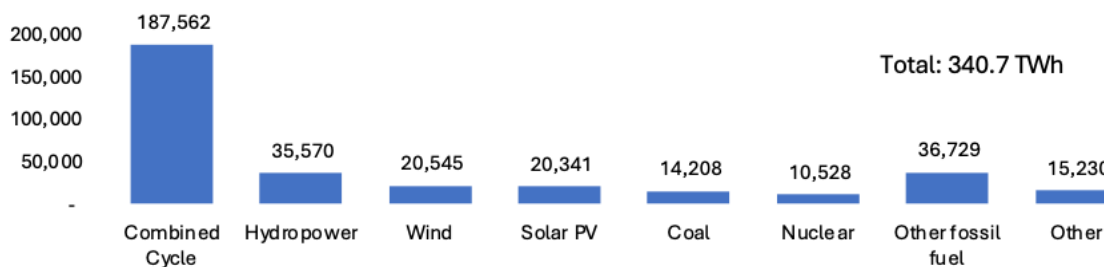
Context

Mexico is the second largest electricity market in Latin America, after Brazil, and the region's largest fossil-fuel-based electricity power producer, relying heavily on natural gas combined cycle power plants (NGCC). The country faces two challenges: managing increasing demand growth on one hand and reducing carbon emissions in the power sector on the other. With respect to the first challenge, Mexico's electricity demand growth is driven by global economic shifts, with the country emerging as a key manufacturing export hub experiencing expansion due to nearshoring of production to cater to the United States market. This is coupled with rising internal demand stemming from domestic industrialization policies. Even the official estimates of demand growth of 40% in 15 years may need to be revised upwards, accompanied by an increased share of low-emission electricity generation to align with the country's climate targets.

On the climate front, Mexico has short-term low-emissions electricity targets and ambitious long-term climate goals. The country has a legal target to reach 35% clean electricity generation in 2024, a goal that will not be achieved given the recent historic drought, which decreased hydropower output by 15 GWh or 42%.¹ In the long term, the country does not have a clean electricity target but a 2050 GHG emissions target, requiring nearly complete decarbonization of electricity generation according to experts.² In line with that target, the president-elect has announced plans to achieve 45% low-emission electricity by 2030.

In 2022, the country reported 87 TW of installed capacity and 340.7 TWh of generation,³ of which 31.16% was supplied by clean energy sources.⁴ NGCC accounted for 55.1% of power generation, and hydropower, wind, and solar comprised 22.4%, as described in Figure 1.

FIGURE 1: Net Generation in 2022



¹ Doramé D.S. (2024). "Sequía agudiza la crisis energética; en riesgo, plantas hidroeléctricas. *Excelsior* (11/05/2024). <https://www.excelsior.com.mx/nacional/hidroelectricas-se-suman-a-crisis-energetica/1651412>; Energy statistics available at Ember Climate <https://ember-climate.org/data/data-tools/data-explorer/>.

² Buirá, Daniel, Jordi Tovilla, Jamil Farbes, Ryan Jones, Ben Haley, and Dennis Gastelum. (2021). 'A Whole-Economy Deep Decarbonization Pathway for Mexico'. *Energy Strategy Reviews* 33 (January): 100578. <https://doi.org/10.1016/j.esr.2020.100578>

³ SENER. 2024. *Prospectiva ... Op. Cit.*

⁴ Clean energy refers to nuclear, all renewable energy, including hydropower, as well cogeneration under certain performance criteria and technologies with CO₂ capture (See: Cámara de Diputados. (2015). *Ley de Transición Energética*. Mexico: Diario Oficial de la Federación. <https://www.diputados.gob.mx/LeyesBiblio/pdf/LTE.pdf>)

Mexico’s electricity system is best characterized as a hybrid system, with a wholesale electricity market, a dominant state-owned electricity enterprise (SOE), and the subsistence of business models created before the wholesale market to foster private investment on the margins of the SOE. The market encompasses state monopolies in distribution, transmission, and system operation, complemented by privately run operations authorized by central authorities. It also includes two segments: retail, which provides CFE’s service to the public, and competition over more significant consumers (qualified consumers) between private suppliers and CFE’s subsidiary for qualified consumers.

TABLE 1: Market Segments

Segment	Participants
Retail	<ul style="list-style-type: none"> - Private suppliers for qualified consumers (above 1 MW). - CFE for qualified consumers (above 1 MW). - CFE public supply.
Distribution	<ul style="list-style-type: none"> - CFE Distribution. - Private networks (i.e., industrial parks)
System Operation	<ul style="list-style-type: none"> - Centro Nacional de Control de Energía, or National Energy Control Center (CENACE), is a public agency with technical autonomy.
Transmission	<ul style="list-style-type: none"> - CFE Transmission. - Public-Private Agreement (by request of the Department of Energy and not exercised yet).
Generation	<ul style="list-style-type: none"> - CFE Generation subsidiaries. - IPPs represented by CFE in the market. - Private generators participate in the wholesale market and auctions. - Private generators with legacy contracts/permits. - Distributed generation

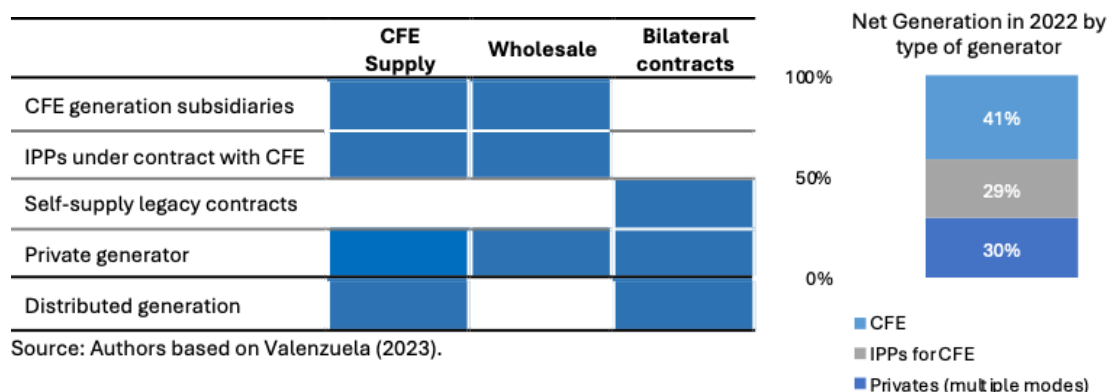
Some generators operate differently, as summarized in Figure 2. The relation of each type of generator to consumers is also the result of a layering of business models, some of which have persisted even after the reforms, as described below.

- (a) **CFE generation subsidiaries:** Five subsidiaries provide electricity through long-, mid-, and short-term contracts with *CFE Supply* or in the open wholesale market. Initially, the Department of Energy decided the length of the contracts, with the expectation that after their expiration, each CFE generation asset would participate in the wholesale market.
- (b) **IPPs for CFE:** These contracts, signed between 1997 and 2016 under a single-buyer model, have their contracted energy output and capacity sold in the new market by a dedicated CFE subsidiary.

- (c) **Self-supply:** Before the reforms in 2014 large consumers and private generators established “self-supply” societies and companies to obtain regulator-sanctioned permits to engage in bilateral purchase agreements amongst the members of the society. These generator-consumer societies were allowed to keep their arrangements after the wholesale market reform in 2014, including the benefit of highly discounted transmission charges for renewable energy generators, estimated to be 50% of the regular transmission charges.⁵
- (d) **Private generators:** Under the wholesale markets, suppliers can participate in auctions to sell energy to *CFE Supply*, and they can also sell electricity in bilateral contracts and the day-ahead market.
- (e) **Distributed generators:** Small-scale suppliers (<0.5 MW) are allowed to sell energy at regulated tariffs to the energy supplier and potentially to other private retailers.

In 2022, the state-owned CFE generated 41% of power, 29% came from IPPs under contracts with CFE, and 30% was generated by the private sector (see Figure 2).

FIGURE 2: Structure of generation markets in Mexico



Transparency from IPPs to auctions

The two forms of long-term government contracting are IPPs and auctions. The legal design of the market also considers midterm auctions to contract for energy and capacity, especially for the regulated retail supplier. However, these midterm auctions are not considered in this review as these contracts are intended to resemble the wholesale market, with significant liquidity and less government intervention.

⁵ Valenzuela, J.M. 2023. ‘State Ownership in Liberal Economic Governance ? De-Risking Private Investment in the Electricity Sector in Mexico’. *World Development Perspectives* 31 (September): 100527. This business model was described as a violation of the original intention of Constitutional restriction to privates selling electricity under the legal framework before 2014, including by President Andrés Manuel López Obrador, and documented by the Supreme Audit Authority (ASF) in 2004(See: Auditoría Superior de la Federación. (2004). *Informe del Resultado de la Revisión y Fiscalización Superior de la Cuenta Pública 2004*. Vol. 3, pp. 709-724).

Independent Power Producers (IPPs)

No new publicly-funded power projects are allowed under the current legislation signed in 2014. *CFE Supply* can purchase electricity in the market or via long-term auctions for renewable energy and capacity (see below). Yet, the portfolio of operating IPPs is substantial. The first IPP contracts were signed in 1999 and continued until 2016.⁶ All IPPs signed were for NGCC power plants, except a single package of wind energy projects in the southern state of Oaxaca, which was part of a Global Environmental Facility (GEF) program.⁷ IPPs were implemented after the 1997 financial crisis when the federal government could not take on additional debt. The mechanism placed responsibility for financing, construction, and operation on the winning bidder, but the contingent financial liability was still placed on the state.⁸ Payments were disbursed for available capacity, ensuring a baseline return on investment and costs for the energy supplied to the grid. Critics of the mechanisms highlighted two main concerns. Firstly, they emphasized the state's responsibility over contingent liabilities, particularly those arising from force majeure events, notably including delays in the construction of gas pipelines.⁹ Secondly, critics pointed out that it is generally cheaper for the SOE to secure financing directly and build power plants on its balance sheet, for instance, in 2004, this approach could have potentially reduced the amortization period from 20 to 12 years, nearly halving it.¹⁰

IPPs will continue to be important for at least the next decade. In 2020, the average age of fossil fuel IPP power plants was already 13.9 years old for 25-year contracts. However, information about the performance and contract conditions of the IPPs is sparse. For instance, according to the Supreme Audit Authority, in 2020, the average cost of 153 power plants from CFE was 1.40 pesos/kWh,¹¹ while IPPs had an average cost of 0.76 pesos/kWh.¹² These figures are disputed, and a lack of transparency has hindered public debate. Two main points of contention persist: (a) cost incurred by the CFE subsidiary representing the IPPs in the market and (b) potential financial efficiencies resulting from CFE's inability to develop the project directly.

⁶ The 2014 legislation made an exception for IPPs bidding processes that had already been included in the federal budget investment plans to avoid disrupting plans for supply growth.

⁷ The project benefited from a 1.1 cent/kWh subsidy from GEF. Source: World Bank. (2016). *Implementation completion and results report on a grant from the Global Environmental Trust Fund in the amount of US\$25.0 Million (TF-56781)*. USA: World Bank.

<https://www.gefio.org/sites/default/files/documents/projects/tes/1900-terminal-evaluation.pdf>

⁸ Tépac M., Reyes and Pitalúa Torres, Victor David. (2003). *El financiamiento privado de electricidad a través de los esquemas Pidiregas*. Mexico: Cámara de Diputados. <https://www.diputados.gob.mx/sedia/sia/se/SIA-DEC-44-2003.pdf>

⁹ Comisión Federal de Electricidad. (2022). "Reforma Eléctrica va Contra Monopolios Privados". *CFE*. (January 19), from <https://app.cfe.mx/Aplicaciones/OTROS/Boletines/boletin?i=2439>

¹⁰ See ASF. 2004. Op. cit... p. 217. For more recent CFE contracted debt on \$200 million EUR from the Agence Francaise de Developpement with a maturity in April 2041 at a rate of EURIBOR plus 2.10% (Comisión Federal de Electricidad. (2023). *Condensed Consolidated Financial Statements as of June 30, 2023 and December 31, 2022*. Mexico: CFE. p. 32. <https://www.cfe.mx/finanzas/financiamiento-financiamiento/Financiamiento%20Results%20Documentos/2023/2Q%20of%202023.pdf>).

¹¹ 0.074 cents & 0.040 cents

¹² Auditoría Superior de la Federación. (2021). *Desempeño Integral de la Comisión Federal de Electricidad. Auditoría de Desempeño: 2020-6-90UJB-07-0469-2021*. Mexico: ASF. https://www.asf.gob.mx/Trans/Informes/IR2020c/Documentos/Auditorias/2020_0469_a.pdf

The 2018-2024 Mexican administration publicly criticized the legacy IPPs and structured the purchase of 13 IPP plants co-owned by Iberdrola at USD 6.2 billion in 2023. Based on the decision from the national economic competition regulator, Cofece, these power plants won't be managed by a CFE subsidiary but by a fiduciary financial entity selected by the Department of Finance (SHCP). The power plants would maintain the same status in the market for all regulatory purposes.

In terms of transparency, the government's purchase of power plants does not alter current disclosure practices unless the government unilaterally decides to publicize operational and contractual information.

Long-term auctions process

The left-wing governments since 2018 also criticized long-term auctions, suspending them in 2018, for reducing the market share of CFE and placing pressure on grid expansion. Nonetheless, auctions remain a viable tool in the current legal framework that can be re-initiated at any point. The existing pool of contracts remains significant, with 69 power plants listed in the database, of which 10 have been canceled, suspended, or remain non-operational. By 2022, when all projects were expected to be operational, half of the projects from the latest auctions were not operational due to unforeseen events, such as significant delays due to social impact evaluations and community approvals.¹³ In 2024, most projects are operational, with 15-year contracts for energy and 20-year contracts for clean energy certificates.

It is important to consider that, in the past, auctions were intended for the SOE and other market participants who could join the bidding process as buyers. However, the market for auctions developed due to the demand for CFE, which developers consider a quasi-sovereign institution with little risk of defaulting on its payments.

TABLE 2: Types of guarantees

Type	Guarantees	Contingent guarantees
IPPs	Capacity payment for 25 years.	Compensation payment for events not under the developer's control, including access to natural gas.
Auctions	Contract for energy, capacity for 15 years, and Clean Energy Certificates (CECs) for 20 years with an SOE.	There is no cost associated with balancing or market price variations. Development bank loan.

¹³ Comisión Federal de Electricidad. (2023). *Informe Anual 2022*. Mexico: CFE, p. 178. <https://www.cfe.mx/finanzas/reportes-financieros/Informe%20Anual%20Documentos/Informe%20Anual%20Portal.pdf>

Long-term auctions were politically less controversial and more transparent. Critics in government institutions have argued that CFE must internalize balancing costs and price differentials from the market for variable renewable energy projects. Transparency is also important in these debates, but in this case, it is not only about the conditions of the contracts but also about the nature of balancing services and costs in the energy system.

Evolution of Transparency from IPPs to Auctions

The old single-project IPP relied on a closed bidding process as part of traditional approaches to public contracting. The bidding processes were closed to the public with the presence of a Social Witness as required by the Law of Public Acquisitions.¹⁴ Usually, organizations like *Transparencia Mexicana*, the Mexican chapter of Transparency International, would be invited to observe these processes and participate in all bidding meetings and events. Generally, information about IPPs is scattered and lacks a centralized repository. Auditing authorities can provide summarized findings about the conditions of IPPs either at the request of the national congress or through routine audits.^{15,16}

The auction processes set a very different standard. The long-term auctions (currently suspended) were public, even live-streamed online. One of the dedicated market regulation rulebooks (Base 14 Subastas de Mediano y Largo Plazo) provides a detailed guide on how the auction should take place. A public website was created to host all relevant documentation, including the Bidding Rules, the Sample Contract, and the results of each stage of the process, including reports from external technical observers.¹⁷

An important element of transparency in these types of auctions is that, unlike traditional bids where a handful of bids are evaluated for one project based on price and technical expertise, the auction bidding relies on a software calculation to define the economic value of the offers and set the cut-off point for dozens or even hundreds of competing projects. In Mexico's case, an adjustment criterion based on location was integrated into the economic evaluation to account for grid topology and subregional energy scarcity (or node-based differences). The models and results of the calculations are also publicly shared. After the auction, authorities published information on the winning bids. Mexico's auction system is operated on a "paid-as-bid" basis, meaning transparency regarding the price paid to each project is key for the public to understand the cost structure of supply contracts.

There is therefore a gap: while the model contracts for each auction are made available to participants and the public, the final contracts are not publicly disclosed. There is no central data repository with all updated information on auctions but the system operator CENACE and the Department of Energy (SENER) provide some aggregate details of the auction projects in planning documents.

¹⁴ Cámara de Diputados. (2000). *Ley de Adquisiciones, Arrendamiento y Servicios del Sector Público*. Mexico: Diario Oficial de la Federación. https://www.diputados.gob.mx/LeyesBiblio/pdf/14_200521.pdf

¹⁵ Tépac M., et al. 2003. *Op. cit.*

¹⁶ ASF 2021. *Op. cit.*

¹⁷ See, for example, the website of the first auction: https://www.cenace.gob.mx/Paginas/SIM/SubastasL_P12016.aspx.

The Framework for Transparency

The high level of transparency in auctions shows that sector-specific legislation is the most effective approach to regulating transparency. However, other instruments, such as audits, can also be used to enhance overall transparency in the sector. Table 3 provides a comprehensive description of the legal and regulatory instruments that are most crucial to establishing transparency obligations.

TABLE 3: Legal and regulatory instruments for enhancing transparency in electricity market contracts

Legal instrument	Relevance
<p>Electric Industry Act</p> <p><i>Ley de la Industrial Eléctrica</i></p>	<p>Defines the contracts for state institutions, including the state utility as a State Productive Enterprise in the electricity industry. This legislation could define clear terms or principles to enhance transparency, especially for IPPs.</p> <p>Article 139 establishes the role of the Regulatory Commission (CRE) to publish a “calculation log” for Basic Supply tariffs, which currently include most of IPP generation.</p>
<p>Market Rules. Auctions</p> <p><i>Base 14. Subastas de Mediano y Largo Plazo</i>¹⁸</p> <p><i>Manual de Subastas de Largo Plazo</i>¹⁹</p>	<p>Regulatory instruments establish requirements for long-term auctions, including requirements conducive to significant transparency in the auction processes.</p>
<p>Market Rules. Market Information System</p> <p><i>Base 15. Sistema de Información del Mercado</i>²⁰</p>	<p>It specifies a general obligation to maintain public access to all non-confidential information. It provides specific obligations regarding market participants but not the general public.</p>
<p>Market Rules. Market Supervision</p>	<p>Establish the general principles of the work of the Independent Market Monitor, which is able to</p>

¹⁸ Cámara de Diputados. (2015). *Base 14. Subastas de Mediano y Largo Plazo*. Mexico: Diario Oficial de la Federación. [https://www.cenace.gob.mx/Docs/SubastasLP/Base%2014%20de%20las%20Bases%20del%20Mercado%20Eléctrico%20\(DOF%20SENER%2008-Sep-15\).pdf](https://www.cenace.gob.mx/Docs/SubastasLP/Base%2014%20de%20las%20Bases%20del%20Mercado%20Eléctrico%20(DOF%20SENER%2008-Sep-15).pdf)

¹⁹ Cámara de Diputados. (2015). *Séptima Sección. Manual de Subastas de Largo Plazo*. Mexico: Diario Oficial de la Federación. [https://www.cenace.gob.mx/Docs/SubastasLP/Manual%20de%20Subastas%20de%20Largo%20Plazo%20\(DOF%20SENER%2019-Nov-15\).pdf](https://www.cenace.gob.mx/Docs/SubastasLP/Manual%20de%20Subastas%20de%20Largo%20Plazo%20(DOF%20SENER%2019-Nov-15).pdf)

²⁰ Cámara de Diputados. (2015). *Base 15. Sistema de Información del Mercado*. Mexico: Diario Oficial de la Federación. [https://www.cenace.gob.mx/Docs/APSIM/Base%2015%20de%20las%20Bases%20del%20Mercado%20Eléctrico%20\(DOF%20SENER%2008-Sep-15\).pdf](https://www.cenace.gob.mx/Docs/APSIM/Base%2015%20de%20las%20Bases%20del%20Mercado%20Eléctrico%20(DOF%20SENER%2008-Sep-15).pdf)

<i>Manual de Vigilancia del Mercado</i> ²¹	produce its own evaluation of the economic arrangements in the market and their effects on the functioning of the market itself.
Transparency and Access to Public Information Act <i>Ley de Transparencia y Acceso a la Información Pública</i> ²²	Established minimum transparency obligations for public authorities and the mechanisms by which citizens can request public information from authorities. While responses to citizens' information requests are public, these are not systematized. So, if information on IPPs or auctions has been made public through these means, it is not accessible to the public in practice.
Federal Fiscalization Act <i>Ley de Fiscalización Superior de la Federación</i> ²³	The law establishes the conditions and process by which the Superior Audit Authority performs audits over public expenditure and public institutions, for instance, over the implementation of auctions or the operation of CFE Generation V, the subsidiary in charge of representing IPPs in the market.

Information accessibility presents a key opportunity for authorities. Although some information is available, particularly regarding auctions, it may be fragmented across different repositories or documents, such as the system operator's website, the Department of Energy's yearly planning documents, or evaluation and auditing reports from the Independent Market Monitor and the Supreme Audit Authority.

Harmonized information for auctions and IPPs could be included as an appendix in the yearly Electric Sector Development Program (*Prodesen* in Spanish) or made available on the system operator's website.

Finally, the Regulatory Commission (CRE) has the opportunity to clearly report the cost of different generation sources, as well as projections of future costs from variable generators, through its assessments of basic supply tariffs.

Enhancing transparency under the 2024-2030 government

Mexico elected a new president and national congress on June 2, 2024. President Claudia Sheinbaum has a doctorate in energy engineering and served as a co-author of the IPCC Fourth Assessment Report. Her electoral coalition holds a comfortable legislative majority, a

²¹ Cámara de Diputados. (2018). *Manual de Vigilancia del Mercado*. Mexico: Diario Oficial de la Federación. https://dof.gob.mx/nota_detalle.php?codigo=5510541&fecha=12/01/2018#gsc.tab=0

²² Cámara de Diputados. (2015). *Ley General de Transparencia y Acceso a la Información Pública*. Mexico: Diario Oficial de la Federación. <https://www.diputados.gob.mx/LeyesBiblio/pdf/LGTAIP.pdf>

²³ Cámara de Diputados. (2000). *Ley de Fiscalización Superior de la Federación*. Mexico: Diario Oficial de la Federación. https://www.diputados.gob.mx/LeyesBiblio/abro/lfsf/LFSF_abro.pdf

qualified majority in the Chamber of Deputies, and just one vote short of a qualified majority in the Senate. Within a few weeks, several constitutional reforms have been approved, including reforms related to the election of justices, social rights, train concessions, and classification of the electricity industry as a matter of national interest, along with reaffirming the public interest role of the energy SOEs. Additional reforms aim to centralize economic and transparency regulation. There is significant room for redesigning the transparency framework, as the constitutional reforms establish principles for secondary legislation that will define concrete institutional designs. If the main reforms are passed between October and November 2024, secondary legislation should be approved by February 2025, as the proposals allow up to 90 days for the secondary legislation to pass. The key opportunities emerging from these reforms are outlined in Table 4.

TABLE 4: Key constitutional reforms

Area	Key aspects of reform	Key opportunity	Key risk
State-owned companies*	SOEs status lose their “productive” mission and return to being public service companies.	As public service companies and not productive companies, transparency over contracts need not be protected for commercial reasons.	Insufficient transparency leads to a loss of confidence from the public and private sectors.
Transparency	The National Institute of Transparency (INAI) will be absorbed into the Department of Public Service (SFP).	The government can standardize transparency to the highest level possible across different contract types.	The expansion of transparency depends only on incumbent governments.
Regulators and market rules	Regulatory authorities will be partially re-centralized into the Department of Energy.	Market rules can be revised to expand the scope of transparency to the general public.	Market rules further entrench limits to transparency for commercial or strategic reasons.

*Approved on 18 October 2024.

President Sheinbaum has confirmed her commitment to a governance model in which the state maintains a market share above 54% and the government plans and manages the transformation of the power system. During her campaign, she emphasized expanding renewable energy in the power sector to meet Mexico’s climate commitments and stabilize household retail tariffs in real terms, which currently depend on a central government subsidy. However, the specific legal model she will pursue has not been disclosed in detail.

Recommendations

Enhancing transparency can galvanize public debate and legitimize legislative reforms through the following recommendations:

Transparency over IPPs. Although single-project IPPs are inconsistent with current legislation and the new government's policy preferences, existing IPP contracts will remain integral to the market for the foreseeable future. The government can conduct a comprehensive review of all existing contracts with IPPs. If commercial issues limit public access to these contracts, aggregated information can still enhance public understanding of the role of IPPs in the electricity system. This review could be carried out by SENER (especially if it centralizes regulatory roles) with the support of the system operator CENACE. New legislation could mandate transparency obligations that override commercial limitations. The transparency standards set by auction processes could serve as a benchmark.

Increase transparency over the performance of auction-based projects. There is no systematic reporting of the performance of awarded contracts despite the auction bidding process being transparent. CENACE could make this information accessible to the general public, while SENER can include a summarized analytical description in the yearly electric sector development plan (PRODESEN). For example, in the UK, the Low Carbon Contract Company (LCCC), a state-owned counterpart to Contracts for Difference (CfDs), provides significant information to markets and can serve as a model to publicize the performance of existing contracts.

Adopt additional criteria for long-term capacity contracts, using auctions not only for energy procurement but also to secure capacity. Historically, capacity contracts have included fossil fuel generators, contrary to the perception that auctions exclusively support renewables. However, as battery technology deployment is projected to exceed 6 GW by the mid-2030s, long-term capacity contracts will become increasingly essential. Whether through public procurement or as build-operate-transfer agreements, additional criteria—beyond dispatchability—may be needed to support electricity system needs like frequency control for greater reliability.

Conclusions

Long-term contracts with public entities in Mexico have shaped the electricity industry over the past two decades. Although no new bids have taken place since the suspension of auctions in December 2018, nearly a hundred contracts were signed, most of which are operational and supply electricity from natural gas, solar, wind, and geothermal energy. These contracts, most of which will remain active until the end of 2030, hold significant operational and political importance.

The Mexican case illustrates two contrasting approaches to contract transparency. Firstly, transparency for single-project IPPs signed between 1999 and 2016 is limited. Secondly,

long-term auction bidding is highly transparent. The government has an opportunity to expand public information about IPPs and streamline the reporting of operational performance for both IPPs and auction-based projects. The new government seeking to achieve its goals of reorganizing the industry and encouraging public and private investment would benefit from enhancing public access to data on existing long-term contracts and their operational performance. Discussion over the reorganization of different actors, including the relation between the authority SENER, and the regulator CRE, should address the allocation of responsibilities to ensure transparency that holds private operators accountable, not just the SOE. This would facilitate public discussion about industry management and support the development of new public contracting models suitable for renewable energy and storage technologies.

The incoming government will be in a position to enhance transparency within its current institutional framework. Ongoing constitutional reforms, which are anticipated to pass, aim to prioritize state control over private interests in the electricity sector and clarify the state's role in directing the energy transition. These reforms provide a legal foundation to build upon existing transparency practices, from state-run Build-Operate-Transfer (BOT) projects to the current portfolio of IPPs, enhancing accountability and disclosure in Mexico's evolving energy market.

Annex 1:

CB: Competitive bidding; A: Auctions; NGCC: Natural Gas Combined Cycle; PV: Photovoltaic; Hydro: Hydroelectric; Geo: Geothermal; Com: Completed; Can: Canceled; Proj: Started or in project; Nyc: Not yet commenced

#	Plant	Original owner [Current owner]	Award process	Capacity (MW)	Year signed	Tech	Duration	Project Status
1	Altamira II	Mitsui & Co / Falcon Group	CB	495	1999	NGCC	26	Com
2	Altamira III y IV	Iberdrola [Comisión Federal de Electricidad]	CB	1153.7	2000	NGCC	27	Com
3	Altamira V	Iberdrola [Comisión Federal de Electricidad]	CB	1088.84	2003	NGCC	27	Com
4	Río Bravo II (Anáhuac)	Electricité de France (EDF)	CB	568.6	1998	NGCC	27	Com
5	Baja California III	Iberdrola [Comisión Federal de Electricidad]	CB	294	2014	NGCC	25	Com
6	Bajío (El Sauz)	Saavi Energía (formerly called Intergen)	CB	626	1999	NGCC	27	Com
7	Campeche	Saavi Energía (formerly called Intergen)	CB	275	2000	NGCC	28	Com
8	Chihuahua II (El Encino)	Saavi Energía (formerly called Intergen)	CB	327	2000	NGCC	27	Com
9	Hermosillo	Unión Fenosa Desarrollo y Acción Exterior (currently called Naturgy)	CB	250	1998	NGCC	27	Com
10	La Laguna II	Iberdrola [Comisión Federal de Electricidad]	CB	517	2002	NGCC	28	Com
11	Mérida III	AES Corporation	CB	531.5	1997	NGCC	28	Com
12	La Rosita I (Mexicali)	Saavi Energía (formerly called Intergen)	CB	597.25	2000	NGCC	27	Com
13	Monterrey III	Iberdrola [Comisión Federal de Electricidad]	CB	570 MW	1999	NGCC	27	Com
14	Naco- Nogales	Unión Fenosa Desarrollo y Acción Exterior (currently called Naturgy)	CB	250	2000	NGCC	28	Com
15	Norte Durango	Unión Fenosa Desarrollo y Acción Exterior (currently called Naturgy)	CB	480	2007	NGCC	28	Com
16	Norte II	Korea Electric Power, Samsung C&T Corporation y Techint	CB	433	2010	NGCC	28	Com
17	Río Bravo III	Valia Energía/ Electricité de France (EDF)	CB	495	*	NGCC	28	Com
18	Río Bravo IV	Valia Energía/ Electricité de France (EDF)	CB	500	*	NGCC	28	Com

Annex 1:

CB: Competitive bidding; A: Auctions; NGCC: Natural Gas Combined Cycle; PV: Photovoltaic; Hydro: Hydroelectric; Geo: Geothermal; Com: Completed; Can: Canceled; Proj: Started or in project; Nyc: Not yet commenced

#	Plant	Original owner [Current owner]	Award process	Capacity (MW)	Year signed	Tech	Duration	Project Status
19	Saltillo	Valia Energía/ Electricité de France (EDF)	CB	247.5	1999	NGCC	27	Com
20	Tamazunchale I y II	Iberdrola [Comisión Federal de Electricidad]	CB	1135	2004	NGCC	28	Com
21	Tuxpan II	Kyushu Electric Power Co Inc y Mitsubishi Corp	CB	535	1999	NGCC	27	Com
22	Tuxpan III y IV	Unión Fenosa Desarrollo y Acción Exterior (currently called Naturgy)	CB	1000	2001	NGCC	28	Com
23	Tuxpan V	Mitsubishi Corporation / Kyushu Electric Power Co. Inc	CB	495	2004	NGCC	27	Com
24	Valladolid III	Mitsui & Co. Ltd/ Valladolid International Investments, S. De R.L. De C.V. Av.	CB	525	2003	NGCC	27	NyC
25	Escobedo (Noreste)	Iberdrola [Comisión Federal de Electricidad]	CB	857.18	2015	NGCC	25	Com
26	Topolobampo II (Noroeste)	Iberdrola [Comisión Federal de Electricidad]	CB	1004	2016	NGCC	25	Com
27	Norte III	Abener Energía (Abengoa)	CB	906	2015	NGCC	25	Com
28	La Venta III	Iberdrola [Comisión Federal de Electricidad]	CB	103	2009	Wind	21	Com
29	Oaxaca I	Eyra / Energías Ambientales de Guadalajara	CB	102	2009	Wind	21	Com
30	Oaxaca II	Acciona	CB	102	2010	Wind	21	Com
31	Oaxaca III	Acciona	CB	102	2010	Wind	21	Com
32	Oaxaca IV	Acciona	CB	102	2010	Wind	21	Com
33	Sureste Fase II	Enel Green Power	CB	100	2012	Wind	21	Com
34	Topolobampo III	Iberdrola [Comisión Federal de Electricidad]	CB	766	2017	NGCC	25	Com
35	Guajiro 2	SunPower SLP2015010018-03	A	129.5	2016	PV	15	Com
36	Parque Solar Villanueva	Enel Green Power SLP2015010059-27	A	427	2016	PV	15	Com
37	Parque Solar Villanueva 3	Enel Green Power SLP2015010059-31	A	327	2016	PV	15	Com
38	Parque Solar Don José	Enel Green Power SLP2015010059-45	A	238	2016	PV	15	Com

Annex 1:

CB: Competitive bidding; A: Auctions; NGCC: Natural Gas Combined Cycle; PV: Photovoltaic; Hydro: Hydroelectric; Geo: Geothermal; Com: Completed; Can: Canceled; Proj: Started or in project; Nyc: Not yet commenced

#	Plant	Original owner [Current owner]	Award process	Capacity (MW)	Year signed	Tech	Duration	Project Status
39	Energía Renovable de la Península (Parque eólico Progreso)	Vive Energía SLP2015010134-03	A	92.4	2016	Wind	15	Com
40	Aguascalientes Potencia 1	Canadian Solar SLP2015010148-01	A	60.8	2016	PV	15	Com
41	Kabil I	Aldesa Energías Renovables SLP2015010160-01	A	30	2016	Wind	15	NyC
42	Kabil II	Aldesa Energías Renovables SLP2015010160-02	A	30	2016	Wind	15	NyC
43	Ticul 1 (A)	SunPower SLP2015010319-01	A	300	2016	PV	15	Can
44	Ticul 1 (B)	SunPower SLP2015010319-02	A	300	2016	PV	15	Can
45	Las Viborillas	Jinko Solar SLP2015010331-01	A	113.72	2016	PV	15	Com
46	Concunul (Parque Fotovoltaico Yucatán Solar)	Jinko Solar SLP2015010331-03	A	70	2016	PV	15	NyC
47	San Ignacio	Jinko Solar SLP2015010331-06	A	21.78	2016	PV	15	Com
48	Kambul (Justicia Social)	Alter Enersun SLP2015010350-01	A	30	2016	PV	15	Com
49	El Cortijo	Acciona SLP2015010378-03	A	183	2016	Wind	15	Com
50	Sol de Insurgentes	Engie México SLP2015010445-03	A	27.2	2016	PV	15	Com
51	Tizimín	Alarde Sociedad de Energía SLP2015010455-02	A	84	2016	Wind	15	Com
52	At Solar I	Acciona Energía SLP2016010030-22	A	50	2016	PV	15	Can
53	At Solar II	Acciona Energía SLP2016010030-23	A	30	2016	PV	15	Can
54	At Solar III	Acciona Energía SLP2016010030-24	A	30	2016	PV	15	Can
55	At Solar IV	Acciona Energía SLP2016010030-24	A	30	2016	PV	15	Can
56	Puerto Libertad	Acciona Energía SLP2016010030-24	A	180	2016	PV	15	Com

Annex 1:

CB: Competitive bidding; A: Auctions; NGCC: Natural Gas Combined Cycle; PV: Photovoltaic; Hydro: Hydroelectric; Geo: Geothermal; Com: Completed; Can: Canceled; Proj: Started or in project; Nyc: Not yet commenced

#	Plant	Original owner [Current owner]	Award process	Capacity (MW)	Year signed	Tech	Duration	Project Status
57	Rumorosa Solar	Sempra Energy/ Ienova SLP2016010032-07 (Energía) SLP2016010032-08 (CEL)	A	44.6	2016	PV	15	NyC
58	Salitrillos	Enel Green Power SLP2016010040-08	A	110	2016	Wind	15	Com
59	Gunna Sicarú	Electricité de France (EDF) SLP2016010045-03	A	252	2016	Wind	15	NyC
60	Santa María	Zuma Energía SLP2016010051-06 SLP2016010051-08	A	182	2016	PV	15	Com
61	Azufres III	Comisión Federal de Electricidad SLP2016010066-01	A	252	2016	Geo	15	Com
62	Agua Prieta II	Comisión Federal de Electricidad SLP2016010066-02	A	409	2016	NGCC	15	Com
63	Andalucía II	Opdenergy SLP2016010066-01 SLP2016010096-02	A	83	2016	PV	15	Com
64	Aguascalientes Sur I	Opdenergy SLP2016010096-07 SLP2016010096-08	A	37	2016	PV	15	Com
65	Necaxa I	Grupo Mota-Engil SLP2016010103-01	A	16	2016	Hydro	15	Com
66	Necaxa 6	Grupo Mota-Engil SLP2016010103-05	A	7	2016	Hydro	15	Com
67	Necaxa 7	Grupo Mota-Engil SLP2016010103-06	A	7	2016	Hydro	15	Com
68	Necaxa 8	Grupo Mota-Engil SLP2016010103-07	A	7	2016	Hydro	15	Com
69	Necaxa 10	Grupo Mota-Engil SLP2016010103-09	A	16	2016	Hydro	15	Com
70	Orejana	Zuma Energía SLP2016010124-01	A	125	2016	PV	15	Com
71	Reynosa I	Zuma Energía SLP2016010123-01 SLP2016010123-05	A	60	2016	Wind	15	Com
72	Reynosa II	Zuma Energía SLP2016010123-01 SLP2016010123-05	A	60	2016	Wind	15	Com
73	Reynosa III	Zuma Energía SLP2016010123-01 SLP2016010123-05	A	431	2016	Wind	15	Com

Annex 1:

CB: Competitive bidding; A: Auctions; NGCC: Natural Gas Combined Cycle; PV: Photovoltaic; Hydro: Hydroelectric; Geo: Geothermal; Com: Completed; Can: Canceled; Proj: Started or in project; Nyc: Not yet commenced

#	Plant	Original owner [Current owner]	Award process	Capacity (MW)	Year signed	Tech	Duration	Project Status
74	Reynosa IV	Zuma Energía SLP2016010123-01 SLP2016010123-05	A	57	2016	Wind	15	Com
75	Reynosa V	Zuma Energía SLP2016010123-01 SLP2016010123-05	A	158	2016	Wind	15	Com
76	Mexsolar I	Gestamp Solar SLP2016010126-03	A	30	2016	PV	15	Com
77	Mexsolar II	Gestamp Solar SLP2016010126-03	A	30	2016	PV	15	Com
78	Xoxocotla	X-Elio SLP2016010128-07	A	70	2016	PV	15	Com
79	Conejo (Terranova)	X-Elio SLP2016010128-04	A	80	2016	PV	15	Com
80	Patla 2	Mota-Engil SLP2016010103-12	A	15	2016	Hydro	15	Com
81	El Mezquite	Cubico Sustainable Investment SLP2016010151-10 SLP2016010151-11 SLP2016010151-12	A	250	2016	Wind	15	Com
82	Planta Frontera 06PFT-PTA	Fisterra Energy SLP2016010175-01 SLP2016010175-02 SLP2016010175-03 SLP2016010175-04 SLP2016010175-05	A	540	2016	NGCC	15	Com
83	Trompezón	Engie México SLP2016010189-01	A	126	2016	PV	15	Com
84	Tepezalá II	Sempra Energy/ Ienova SLP2016010193-05 SLP2016010193-06 SLP2016010193-07	A	100	2016	PV	15	Com
85	Tres Mesas III	Engie de México SLP2016010203-04	A	50	2016	Wind	15	Com
86	Potosí Solar	Fotowatio Renewable Ventures SLP2016010206-01	A	329	2016	PV	15	Com
87	Laguna Solar	174 Power Global SLP2016010217-05 SLP2016010217-06 SLP2016010217-07	A	101	2016	PV	15	Com
88	Solem I	Alten Energías Renovables SLP2016010233-02 SLP2016010233-03 SLP2016010233-04	A	150	2016	PV	15	Com
89	Solem II	Alten Energías Renovables	A	140	2016	PV	15	Com

Annex 1:

CB: Competitive bidding; A: Auctions; NGCC: Natural Gas Combined Cycle; PV: Photovoltaic; Hydro: Hydroelectric; Geo: Geothermal; Com: Completed; Can: Canceled; Proj: Started or in project; Nyc: Not yet commenced

#	Plant	Original owner [Current owner]	Award process	Capacity (MW)	Year signed	Tech	Duration	Project Status
		SLP2016010233-06 SLP2016010233-07 SLP2016010233-08						
90	Bluemex Power	Electricité de France (EDF) SLP2016010245-01	A	90	2016	PV	15	Com
91	San Miguel de Allende 5	Grenergy SLP2016010255-01	A	30	2016	PV	15	Com
92	Bacabachi I (Navojoa Solar)	X-Elio Energy SLP2017010076-002	A	224	2017	PV	15	Com
93	Pachamama (El Llano)	Neoen International SLP2017010093-002	A	300	2017	PV	15	Com
94	Compañía de Electricidad Los Ramones	Invenergy Investment Company SLP2017010101-002	A	768	2017	Thermal	15	Com
95	Tastiota	Canadian Solar Energy México SLP2017010102-004	A	100	2017	PV	15	Com
96	Horus	Canadian Solar Energy México SLP2017010102-009	A	95	2017	PV	15	Com
97	El Mayo	Canadian Solar Energy México SLP2017010102-011	A	103	2017	PV	15	Nyc
98	Tres Mesas IV	Engie México SLP2017010111-056	A	96	2017	Wind	15	Com
99	Abril 99	Engie México SLP2017010115-014	A	108	2017	PV	15	Com
100	Calpulalpan	Engie México SLP2017010115-026	A	217	2017	PV	15	Com
101	Villa Ahumada	Engie México SLP2017010117-002	A	150	2017	PV	15	Com
102	Energía Limpia de Amistad II	Enel Green Power SLP2017010122-004	A	100	2017	Wind	15	Proj
103	Energía Limpia de Amistad III	Enel Green Power SLP2017010122-007	A	108	2017	Wind	15	Proj