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POLICY REFORM IN MEXICO'S ELECTRIC SECTOR, 1992-2016

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THE MARKET-ORIENTED RESTRUCTURING of Mexico's electric sector during 2013-15 was built on the shoulders of the visionary work that the four prior presidential administrations had undertaken. To better appreciate the new market model for the electricity sector in Mexico, a quick review of the efforts of policymakers and legislators is in order. We shall then turn our attention to the features of Mexico's new Wholesale Electricity Market.

THE ROAD TRAVELED

New vision to increase generation capacity in 1992

The amendments to the Electricity Law that was in force in 1992 allowed varying niche opportunities for private sector participation in the industry under a permit regime. A permit would be needed for each of the following activities: self-supply, cogeneration, independent production, small production, imports or exports of electricity. But the other principal functions—transmission and distribution--were reserved to the **Federal Electricity Commission (CFE)**, the state power utility that was responsible for providing public

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This essay was prepared as part of the introduction to the Bilingual Glossary of Mexico's Power Industry that was commissioned by the Gulf Coast Power Association for its annual meeting that was held in Mexico City on June 2, 2016. His office also provided a title list of the laws and legal dispositions related to the electric sector.

Houston, December 1, 2016

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electricity service throughout Mexico¹ as well as for the operational control of the National Electric System.

Unfortunately, this arrangement failed to achieve the desired increase in generation capacity, the reduction of cost in the generation of electricity, or the introduction of better and more friendly environmental technologies. This situation negatively affected the competitiveness in the industry and created burdensome costs for society. Household consumption of electricity would continue to be financed through governmental subsidies, thus shielding residential consumers from paying the true costs of production.

The electricity market envisioned in 1999

The policy goal to reform the electric sector, initiated under the presidency of Carlos Salinas (1988-94) was carried forward by his successor, Ernesto Zedillo (1994-2000).

In 1999, in a renewed effort to encourage investment to increase capacity to serve a growing national demand, the Mexican government proposed the creation of an electricity wholesale market, one in which the generation, transmission, distribution and retail sale of electricity were to be opened to state and private companies, both national and foreign.

The wholesale electricity market would enable transactions among generators, distributors and high-consumption users (termed "qualified"). There would be a government agency in charge of operating the market, allocating generation capacity to meet demand under the criteria of minimum cost and reliable network security.²

There would be a restructuring of CFE) that then enjoyed the status of state monopoly. It was proposed to create one or more state-owned enterprises to manage hydroelectric plants. Another proposal was to offer portions of CFE's generation infrastructure as concessions to private parties.

In parallel, the government was considering a plan to create distribution areas and to offer, as concessions, the distribution networks of electricity to regional energy companies. There would also be a role for private companies to become involved in the construction of transmission lines that were not interconnected with the National Transmission Network. In this arrangement, the State would retain ownership of the elements that integrate the National Transmission and Distribution Networks by means of a decentralized government agency.

The government would set maximum rates and mechanisms for rate-monitoring and review.

¹ Except in Mexico City and the nearby areas of the States of Mexico, Morelos, Hidalgo and Puebla, which were served by another state company, **Luz y Fuerza del Centro** (closed by presidential decree in 2009).

² To do so, amendments were proposed for Article 27 (6th paragraph) of the Constitution so that the Transmission Network would remain in government hands, whereas the other activities would be opened to investments by the public and private sector. Amendments were also proposed for Constitutional Article 28 (4th paragraph) where operational control of the electricity sector would be kept as a strategic activity, since it was considered as a priority area for other activities.

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Unfortunately, for complex, largely political, reasons, this reform was not possible in 1999. Several sectors of society questioned the feasibility of the project and its likelihood to achieve the benefits that society needed.³

Energy reform, 2000-12

In the summer of 2007, two acts of industrial sabotage of Pemex's natural gas pipelines curtailed natural gas supplies to Guadalajara for several weeks, causing billions of dollars in losses. As a consequence, the government began to focus on the need for supply redundancy. Since then, two additional LNG terminals have been built (one to supply Guadalajara and the western market), and the gas pipeline network has been substantially expanded, bringing natural gas to the northwestern coastal cities for the first time.

The Energy Reform of 2008 stretched the existing legal framework as far as it would go without amending the constitutional mandate that required the entire electricity value chain to be in public hands. In that world, there was no competition, and, as a consequence, no market-driven pricing for electricity, the high cost of which served as a disincentive for both Mexican and international investors.

In 2009, the government ordered dissolution of **Luz y Fuerza del Centro**, the state electric utility that served the greater metropolitan area of Mexico City.

As of 2012, CFE was the sole, vertically integrated electric utility that served all industrial, commercial and retail markets, and additionally served, through its contracts with independent power producers (IPPs), as the anchor customer for stand-alone (non-recourse) financing for private developers and their lenders.

ENERGY REFORM, 2013-15

Thanks, finally, to a series of constitutional amendments that came into law on December 20, 2013, the principal impediments to the reform of the electricity sector were eliminated.

The current reform in the electricity sector fosters competition in generation and supply of electricity. Except for the nuclear technology and the operation of the National Transmission System, the private sector is allowed in virtually all activities of the electricity industry.

The creation of the Wholesale Electricity Market (WEM) is the key element in the electricity sector reform. The WEM in Mexico operates similarly in the way it does in many countries. The WEM permits the several Market Participants to carry out transactions in electricity and ancillary services in short-term market (spot market) as well as to negotiate long-term contracts for electricity, capacity and clean energy certificates and other services among generators, suppliers, retailers and large (qualified) consumers.

³ <https://www.gob.mx/cms/uploads/attachment/file/118729/2372.pdf>. The annual report of the Energy Regulatory Commission (CRE) provides a description of the proposed restructuring.

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Role of CENACE

Of the various technical aspects of the reform in the electricity sector, none is more important than the restructuring of the market dispatching unit (which, previously, had been a department within CFE), into a public, regulatory agency. Only the name remained the same: what was known (by its acronym) as CENACE (National Center for Energy Control) is still CENACE, but the changes are as dramatic as substituting a diesel engine for a gasoline engine in a car.

CENACE, created in its present form in November 2014, is the arm of the government that was restructured to operate the WEM, the National Electric System and to ensure the open and nondiscriminatory access of the different market participants to the Transmission and Distribution Networks in order to achieve fair competition.

Following its creation, CFE transferred to CENACE the human, financial and material resources in order to enable CENACE to operate the national electricity system, ensuring its continuity, quality, efficiency and safety.⁴ CENACE must also ensure the collection and payments in the spot market, the management of the Financial Transmission Rights (FTRs) and the compliance of Market Rules.

Role of CFE

The transformation of CFE was necessary in order to ensure the nondiscriminatory access for the new entrants and to strengthen CFE so that it can participate effectively and competitively in the energy industry, generating economic value and profit for the Mexican government. With the new structure, CFE has budgetary and administrative autonomy and may establish subsidiaries and affiliates, as it deems necessary. In this way, CFE would be able to choose its business strategy and to collaborate with other companies.

CFE is becoming more efficient by gradually replacing expensive and polluting fuels such as fuel oil and diesel for energy sources less expensive and environmentally friendly, such as natural gas and hydropower. CFE's fuel oil consumption for power generation decreased by 6.8% from January to December 2015 if compared with the same period of 2014. In contrast, the use of natural gas rose 8% in the same period.⁵

⁴ The Electricity Industry Act (LIE) grants different attributions to CENACE so that it is able to provide interconnection of generation units, connection of load centers, and dispatch of generators in a merit order (cost based) and carry out the planning for the expansion of the transmission system.

⁵ Data provided by CFE.

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THE ELECTRICITY REFORM IN THE FUTURE

The Electricity Reform will bring greater transparency in the electricity industry. In addition, the new legal and institutional framework provides certainty for governmental and private investments by creating the WEM and promoting its efficient operation.

Economic benefits from the reform are now coming into view: electricity rates paid by consumers have been reduced: During 2015, industrial tariffs decreased between 30 and 42%. The reduction for the commercial sector was between 13% and 27%, and for the residential sector the decline was around 13%. In addition, the rates for the residential sector load consumption, which increased 4% annually from 2006-2014, decreased by 2% during 2015 if compared to December of 2014.

The Energy Reform is fostering investments in renewable energy generation, which contributes in increasing the energy security of the country and diversifies the generation technologies mix. The use of renewable energies is promoted as the regulation eliminates barriers of entry and simplifies interconnection procedures encouraging investment in mechanisms such as the Clean Energy Certificates (CELS). The energy reform legislation included a Geothermal Resources Act.

The Energy Reform also fosters investment in different types of technologies resulting in a bigger generation infrastructure and more sustainable energy model because efficiency in the sector is promoted with the aim of generating higher revenue from profitable resources.

CLOSING OBSERVATIONS

For more than a century, access to affordable electricity has been the doorway to modern life and civic responsibility. The road to providing electricity to all corners of Mexico has been a long one. The road ahead is also long—but today, thanks to our most recent energy reform, there is much better lighting.



LEGAL FRAMEWORK‡

- Decreto por el que se reforman y adicionan diversas disposiciones de la Constitución Política de los Estados Unidos Mexicanos, en Materia de Energía (DOF 12/20/2013)

FEDERAL LAWS

- Ley de la Industria Eléctrica (DOF 08/11/2014)
- Ley de Transición Energética (DOF 12/24/2015)
- Ley de Energía Geotérmica (DOF 08/11/2014)
- Ley de Aguas Nacionales (DOF 12/01/1992), y sus reformas y/o adiciones.
- Ley de los Órganos Reguladores Coordinados en Materia Energética (DOF 08/11/2014)
- Ley de la Comisión Federal de Electricidad (DOF 08/11/2014)
- Ley Orgánica de la Administración Pública Federal (DOF 12/29/1976) y sus reformas y/o adiciones.
- Ley Federal de las Entidades Paraestatales (DOF 05/14/1986) y sus reformas y/o adiciones.
- Ley de Inversión Extranjera (DOF 27/12/1993) y sus reformas y/o adiciones.
- Ley de Asociaciones Público Privadas (DOF 01/16/2012) y sus reformas y/o adiciones.
- Ley de Adquisiciones, Arrendamientos y Servicios del Sector Público (DOF 01/4/2000) y sus reformas y/o adiciones.
- Ley de Obras Públicas y Servicios Relacionados con las mismas (DOF 01/4/2000), y sus reformas y/o adiciones.

REGULATIONS

- Reglamento de la Ley de la Industria Eléctrica (DOF 10/31/2014)
- Reglamento de la Ley de Energía Geotérmica (DOF 10/31/2014)
- Reglamento de la Ley de Aguas Nacionales (DOF 01/12/1994)
- Reglamento de la Ley de la Comisión Federal de Electricidad (DOF 10/31/2014)
- Reglamento de la Ley Federal de las Entidades Paraestatales (DOF 01/26/1990) y sus reformas y/o adiciones.
- Reglamento de la Ley de Inversión Extranjera y del Registro Nacional de Inversiones Extranjeras (DOF 09/8/1998) y sus reformas y/o adiciones.
- Reglamento de la Ley de Asociaciones Público Privadas (DOF 11/5/2012) y sus reformas y/o adiciones.
- Reglamento de la Ley de Adquisiciones, Arrendamientos y Servicios del Sector Público (DOF 07/28/2010)
- Reglamento de la Ley de Obras Públicas y Servicios Relacionados con las mismas (DOF 07/28/2010)
- Reglamento Interior de la Secretaría de Energía (DOF 10/31/2014)

‡ This list of legal dispositions pertaining to the electricity sector in Mexico was provided for this glossary by the courtesy of Dr. César Hernández and his staff in the Energy Ministry.

DECREES

- DECRETO por el que se crea Centro Nacional de Control de Energía (DOF 08/28/2014)

STATUTES

- ESTATUTO Orgánico del Centro Nacional de Control de Energía (DOF 03/09/2015)
- ESTATUTO Orgánico de la Comisión Federal de Electricidad (DOF 03/10/2004) y sus reformas y/o adiciones.

PROTOCOLS

- Bases del Mercado Eléctrico (DOF 09/08/2015)

GUIDELINES

- LINEAMIENTOS que establecen los criterios para el otorgamiento de Certificados de Energía Limpias y los requisitos para su adquisición (DOF 10/31/2014)

PROGRAMS

- Plan Nacional de Desarrollo 2013-2018 (DOF 05/20/2013)
- Programa de Desarrollo del Sistema Eléctrico Nacional 2015-2029, published on 06/29/2015 in the website of the Ministry of Energy.
- Programa Sectorial de Energía 2013-2018 (DOF 12/13/2013)
- Estrategia Nacional de Energía 2014-2028, published on February 2014 in the website of the Ministry of Energy.

MANUALS

- Manual de Subastas de Largo Plazo (DOF 11/19/2015)
- Manual de Solución de Controversias. (DOF 03/16/2016)
- Manual de Garantías de Cumplimiento (DOF 03/16/2016)

LEGAL FRAMEWORK OF MEXICO'S ELECTRICITY SECTOR

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Provided for this glossary by the Office of the Deputy Secretary for Electricity

RESOLUTIONS

- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las disposiciones administrativas de carácter general que establecen las bases normativas para autorizar unidades de inspección de la industria eléctrica en las áreas de generación, transmisión y distribución de energía eléctrica, el procedimiento aplicable a inspecciones y las condiciones de operación de las unidades de inspección (DOF 01/20/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las disposiciones administrativas de carácter general en materia de verificación e inspección de la industria eléctrica en las áreas de generación, transmisión y distribución de energía eléctrica. (DOF 01/20/2016)
- RESOLUCIÓN que autoriza el inicio de operaciones del Mercado de Energía de Corto Plazo en los Sistemas Interconectados Baja California, Nacional y Baja California Sur, actualizada en el calendario que deberá observar el Centro Nacional de Control de Energía para el inicio de pruebas y operaciones del Mercado de Energía de Corto Plazo y establece disposiciones transitorias para su entrada en vigor (DOF 01/28/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las Disposiciones administrativas de carácter general que establecen los términos para la operación y funcionamiento del registro de Usuarios Calificados. (DOF 02/02/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide el modelo de contrato de interconexión de acceso abierto y no indebidamente discriminatorio para centrales eléctricas interconectadas a la Red Nacional de Transmisión o a las redes generales de distribución, conforme al artículo 12, fracción XV de la Ley de la Industria Eléctrica. (DOF 02/03/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide el modelo de contrato de conexión de acceso abierto y no indebidamente discriminatorio para centros de carga conectadas a tensiones mayores a 1 kV a la red nacional de transmisión o a las redes generales de distribución, conforme al artículo 12, fracción XV de la Ley de la Industria Eléctrica. (DOF 02/04/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide el modelo de contrato de interconexión de acceso abierto y no indebidamente discriminatorio para la importación de energía eléctrica mediante una Central Eléctrica ubicada en el extranjero y conectada exclusivamente al Sistema Eléctrico Nacional, conforme al artículo 12, fracción XV de la Ley de la Industria Eléctrica. (DOF 02/08/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las Disposiciones administrativas de carácter general que establecen los mecanismos para la asignación de usuarios calificados y generadores exentos a los suministradores de último recurso, cuando se requiera en términos de la Ley de la Industria Eléctrica. (DOF 02/09/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las Disposiciones administrativas de carácter general que establecen los términos para la operación y funcionamiento del registro de comercializadores no suministradores (DOF 02/09/2016)
- ANEXO a la Resolución por la que la Comisión Reguladora de Energía expide las disposiciones administrativas de carácter general en materia de verificación e inspección de la industria eléctrica en las áreas de generación, transmisión y distribución de energía eléctrica, publicadas el 20 de enero de 2016. (DOF 02/10/2016)

- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las disposiciones administrativas de carácter general en materia de acceso abierto y prestación de los servicios en la Red Nacional de Transmisión y las Redes Generales de Distribución de Energía Eléctrica. (DOF 02/16/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las disposiciones administrativas de carácter general que establecen las condiciones generales para la prestación del suministro eléctrico. (DOF 02/18/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las disposiciones administrativas de carácter general que establecen los requisitos y montos mínimos de contratos de cobertura eléctrica que los suministradores deberán celebrar relativos a la energía eléctrica, potencia y certificados de energía limpia que suministrarán a los centros de carga que representen y su verificación. (DOF 03/10/2016)
- RESOLUCIÓN por la que se expiden las Disposiciones Administrativas de carácter general para el funcionamiento del Sistema de Gestión de Certificados y Cumplimiento de Obligaciones de Energías Limpias. (DOF 03/30/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía expide las Disposiciones Administrativas de carácter general que contienen los criterios de eficiencia, calidad, confiabilidad, continuidad, seguridad y sustentabilidad del Sistema Eléctrico Nacional: Código de Red, conforme dispone el artículo 12, fracción XXXVII de la Ley de la Industria Eléctrica. (Continúa en la Cuarta Sección) (DOF 04/08/2016)
- RESOLUCIÓN por la que la Comisión Reguladora de Energía modifica la diversa por la que se emitieron las Disposiciones Administrativas de carácter general que establecen los términos para la operación y funcionamiento del Registro de Usuarios Calificados. (DOF 04/14/2016)
- ANEXO de la Resolución RES/948/2015 por la que se expiden las disposiciones administrativas de carácter general en materia de acceso abierto y prestación de los servicios en la Red Nacional de Transmisión y las Redes Generales de Distribución de Energía Eléctrica, publicada el 16 de febrero de 2016. (DOF 02/26/2016)
- ANEXO de la Resolución RES/948/2015 por la que se expiden las disposiciones administrativas de carácter general en materia de acceso abierto y prestación de los servicios en la Red Nacional de Transmisión y las Redes Generales de Distribución de Energía Eléctrica, publicada el 16 de febrero de 2016. (DOF 03/04/2016)

AGREEMENTS

- TÉRMINOS para la estricta separación legal de la Comisión Federal de Electricidad (DOF 01/11/2016)
- ACUERDO de carácter general por el que se determina el concepto de demanda y los requisitos par al a agregación de Centros de Carga para ser considerados como usuarios calificados. (DOF 01/26/2016)
- ACUERDO por el que la Comisión Reguladora de Energía expide los protocolos correctivo y preventivo para que el Centro Nacional del Control de Energía gestione la contratación de potencia en caso de emergencia conforme disponen los artículos 12, fracción XXII, y 135 penúltimo párrafo de la Ley de la Industria Eléctrica. (DOF 02/17/2016)

ANNOUNCEMENTS

- AVISO a los interesados en participar en el mercado eléctrico mayorista (DOF 12/31/2015)
- AVISO a los interesados en participar en el Mercado Eléctrico Mayorista que el día 10 de febrero fue notificada al Centro Nacional de Control de Energía mediante oficio, la Declaratoria de Entrada en Operación del Mercado de Energía de Corto Plazo para el Sistema Interconectado Baja California. (DOF 02/22/2016)
- AVISO a los interesados en participar en el Mercado Eléctrico Mayorista que el día 12 de febrero fue notificada al Centro Nacional de Control de Energía mediante oficio, la Declaratoria de Entrada en Operación del Mercado de Energía de Corto Plazo para el Sistema Interconectado Nacional. (DOF 02/22/2016)
- AVISO por el que se da a conocer el requisito para la adquisición de Certificados de Energías Limpias en 2019, establecido por la Secretaría de Energía (DOF 03/31/2016)
- AVISO a los interesados en participar en el Mercado Eléctrico Mayorista (DOF 04/12/2016)

