

Country Assessment Report

Country/Region Name- Mexico:

Mexico is situated in North America; bordered by the United States, to the North, and with Guatemala and Belize, to the South. It has a population over 127 million and GDP of 1.253 trillion, with a growth rate of -0.146%.

(World Bank 2018)

Economic structure and activity:

Mexico is an emerging market economy, which is heavily diversified and manufacture oriented. The service sector accounts for 60.51% of GDP, spearheaded by information, high-tech, software development and tourism. Industry contributes 30.15% to the nation's GDP, specialising in the production of Mexico's vast mineral wealth, including silver, zinc and mercury. Since the establishment of NAFTA (North American Free Trade Agreement), the manufacturing sector has accelerated, with particular growth amongst the aerospace and motor industries. The agricultural sector accounts for 3.47% of GDP, dominated by coffee, sugar, corn, oranges, avocados and limes, alongside cattle farming and fishing.

(Statista 2019; Santander 2020)

Top private companies with RE commitments:

Grupo Bimbo (baking) - the world's largest baking company joined RE100 in 2018, committing to source 100% of their electricity needs from renewables.

Grupo Mexico (mining) - announced a \$250 million investment in 2019 for the development of a 168 MW wind farm. If developed, the company's generation capacity would reach almost 800 MW, making Grupo Mexico one of the largest energy producer's in the country.

Generation and demand: (e.g. type, MW, TWh)

In 2017, 15% of Mexico's installed capacity derived from renewable energy resources (Mendoza 2018). Figure 1 conveys the breakdown of each renewable's contribution to Mexico's overall installed capacity, with hydropower dominating existing generation. Figure 2 displays the projected growth for renewable energy's share in the power mix, with the government aiming to achieve a contribution of over 40% from renewables by 2030.

■ Hydropower ■ Biomass ■ Photovoltaic ■ Wind ■ Geothermal

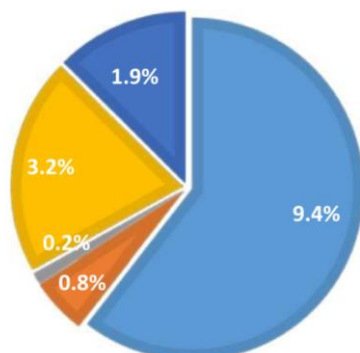


Figure 1. Share of total electricity production per renewable technology (Mendoza 2018).



Figure 2. Clean energy generation targets for years 2018, 2024 and 2028 (KPMG 2016).

Electrical Interconnection and import/export:

Mexico has electrical interconnection with all its neighbouring nation states: US, Guatemala and Belize. 11 transmission lines exist between Mexico and the US, situated in Texas and California with capacities ranging from 36-800 MW. A 400 kV transmission line interconnects Mexico with the Guatemalan national grid, enabling electricity trade to SIEPAC (Central American Electrical Interconnection System) members. A 65 MW interconnection also exists with Belize.

(IRENA 2015)

Market Structure:

Mexico’s market structure was traditionally vertically integrated, owned and operated by government controlled CFE (Federal Electricity Commission). The energy reform in 2013 liberalised the electricity sector, enabling private sector participation and greater competition between generators and suppliers. Energy consumers can now source their electricity needs from a wide array of suppliers, as opposed to the previously monopolised entity CFE.

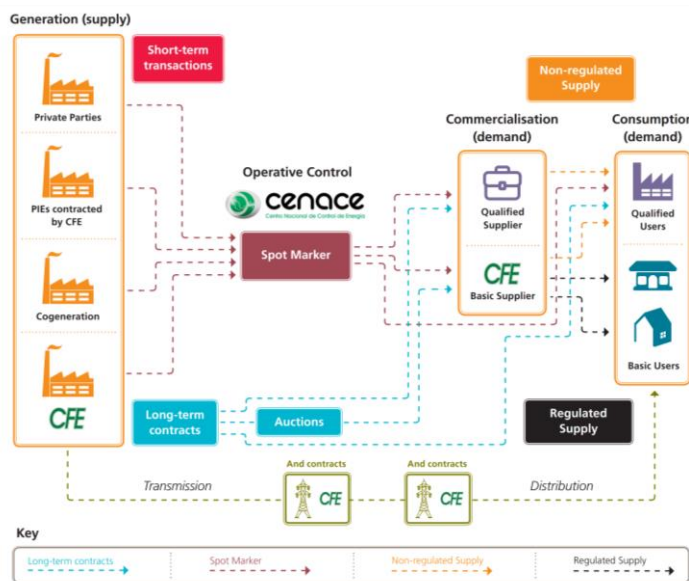


Figure 2. Market structure of Mexico’s power sector (CMS 2017)

Responsible Government Department: (include key contacts)

Ministry of Energy (SENER) is the main government agency charged with the design and development of energy related policies.

Federal Commission for Electricity (CFE) is a government owned utility company, structured into three separate entities: transmission, distribution and power generation. Prior to the 2013 energy reform, CFE operated as a monopoly with control over much of the electricity generation and operation.

Energy Regulatory Commission (CRE) is responsible for regulating the electricity sector. It grants permits, issues standards, directives, methodologies and further administrative procedures for energy technologies.

Nacional Centre for Energy Control (CENACE) is responsible for operating the wholesale power market to guarantee the most cost-effective dispatch across all generating devices. It also formulates power system plans, determines capacity requirements and manages auctions.

National Institute of Electricity and Clean Energy (INEEL) is a Mexican public research institute, which conducts innovation projects as regards to clean energy and energy saving

(IEA 2017; Mendoza 2018)

Existing/Planned Energy Legislation: (is there a CPO)

Electricity Industry Law - passed in 2014 to reform Mexico's energy sector, vertically unbundling the electricity industry to enable competition in the sector. It also introduced a new regulatory framework for the power sector, mandating all planning and control as activities performed by only the state.

(IRENA 2015)

Environmental Legislation for RE:

Renewable Energy Law – passed in 2008 to promote the development of renewable and clean energy technologies for power generation. It determined and regulated the use of renewable resources for electricity production. It also delegated SENER the responsibility of conducting research on the nation's availability and potential of renewable energy resources. The law comprised of a mandatory policy document called the National Strategy for Energy Transition and Sustainable Energy Use, which detailed how Mexico would finance a transition to clean energy.

(IRENA 2015)

Existing/Planned Certificate Systems: (purpose, extent)

Clean Energy Certificates (CECs) were introduced as a mechanism for tracking renewable electricity and promoting investment for clean energy technologies. CECs are issued by the CRE and redeemed by participants who claim the number of certificates which reflects the amount they have purchased from the electricity market.

RE market potential:

Hydroelectricity is currently the largest contributing renewable to Mexico's installed capacity, and growth is expected to continue for large, small and mini hydro plants. Mexico has the 5th largest geothermal installed capacity and if all resources were exploited, it could generation could reach 4.3GW. Average solar irradiation levels are 5.5 kWh/m² per day and can reach 8 kWh/m² during spring and summer months, most notably in the northwestern regions. Wind energy is most promising in the south, east and northwest, where speeds range between 6 and 8+ m/s. Technical potential is estimated to be 50 GW, whilst economical potential is between 20-30 GW. In 2019, Mitsubishi's \$1.3 billion Energia Eolica del sur wind farm became operational with an installed capacity of 396 MW.

(IRENA 2015)

Market risks and challenges:

Private sector investment continues to be hindered by the presence of criminal groups across rural areas of Northern Mexico where solar energy is most abundant. Significant investment is required to upgrade the nation's transmission infrastructure, which is increasingly susceptible to distribution losses. New lines must also be created to connect Mexico's vast, but remote renewable energy hotspots with demand centres.

Extent of Engagement with Government: (brief summary of any contact already made with the national government regarding certification in general and I-REC)

Expected response from Government:

Current Environmental Reporting in Energy:

Any other Relevant Information:

In January 2021, the Foundation's Board approved a change in the issuance criteria allowing renewable plants commissioned after August 2014 (non-legacy devices) to issue I-REC(E), but only if they have decided not to participate in the national clean certificate mechanism S-CEL.¹

Considering that the Mexican Regulator (Comisión Reguladora de Energía or "CRE") has issued CECs even for devices not registered in the S-CEL (for 2018 and 2019 clean energy production)² presents a material risk of double issuance for non-legacy devices registered with the IREC Standard³.

¹ <https://www.irecstandard.org/news/change-of-issuance-criteria-in-mexico/#/>

² Please see no. 34 of the "Disposiciones Administrativas de Carácter General para el Funcionamiento del Sistema de Gestión de CECs" in this [link](#)

³ Please see this [link](#)

On July 15th, the Foundation together with Normex⁴, the local issuer in Mexico, met with CRE to present this concern and explore ways to avoid double counting. CRE confirmed that the CELs mechanism does not require clean energy projects to be registered in the CEL system⁵ and that the Mexican ISO (Cenace) and the distribution companies (CFE) report, monthly, all the clean energy generated in the system for the CRE to issue the corresponding CELs for all clean energy delivered to the grid. Therefore, unless the CELs have been retired or cancelled voluntary, clean energy production will be accounted for and the associated CELs may be issued and allocated, at no cost, to all the obligated participants each year.

CRE representatives suggested the I-REC Standard implement the following procedure to avoid double counting for non-legacy generators willing to issue I-RECs: devices must be registered in the S-CEL and request voluntary cancellation of the CEL certificates they would like to be certified as I-RECs.⁶ The voluntary cancellation request cannot be declined by the CRE and its execution should be reflected in the generator's S-CEL account which will see deducted this amount from the available certificates. Thus, non-legacy devices willing to issue I-REC(E) would then need to be registered in the S-CEL system.

As of November 2022, to avoid any potential double counting of certificates, non-legacy devices need to show proof of voluntary cancellation, of the same volumes CELs, prior any I-REC(E) issuance request approval.

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⁴ In April February 2022, the I-REC Standard Foundation Board approved Normex as the I-REC(E) Issuer in Mexico.

⁵ CEL's mandatory requirements apply to Obligated Participants (Suppliers, Qualified Users, Market Participants and End Users) and not to clean generators who, in turn, have the right to issue CELs by registering their plants in the CEL registry (S-CEL) administrated by the regulator (CRE).

⁶ The cancellation request can be done online (prior registration of the generation in the "oficialía de partes física" of CRE) and sent to sistemacel@cre.gob.mx