

Mexico's Energy Regulatory Commission: **Challenges and Opportunities in Reforming the Energy Industry**



asociación iberoamericana de entidades reguladoras de la energía

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Comisión Reguladora de Energía

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"In terms of scope, depth and space of implementation, Mexico's energy reform ranks as the most ambitious energy system transformation worldwide in a long time"

Paul Simons, International Energy Agency (IEA), Deputy Executive Director (February, 2017)*



The Energy Reform ended the longdecades monopolies in the sector

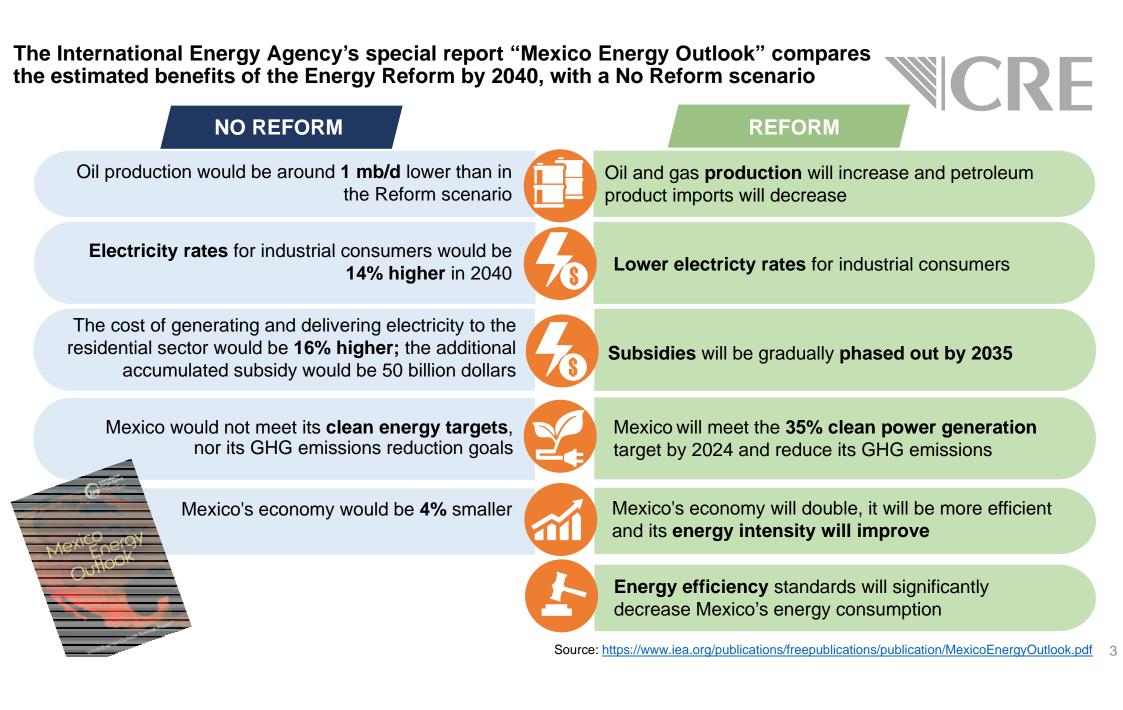




Interest (trust) shown by international investors



Will boost oil production, increase the share of renewable energy sources and increase energy efficiency



Mexico's landmark Energy Reform is now a reality, creating significant investment opportunities throughout the entire value chain

Estimated Investment: 242 billion dollars

Hydrocarbons "Rounds One and Two"

Round 1:

1st Tender: 2.7 billion USD
2nd Tender: 3.1 billion USD
3rd Tender: 1.1 billion USD
4th Tender: 34.4 billion USD Trión: 11 billion USD

Round 2:

1st Tender: **11.3** billion USD 2nd Tender: **5.0** billion USD 3nd Tender: **1.0** billion USD **Seismic data: 2.5** billion USD

Natural Gas and Petroleum Products

Gas pipelines: **16** billion USD Petroleum Products: **16** billion USD

- Transportation and Storage: 4.0 billion USD
- Distribution and Retailing: 12.0 billion USD

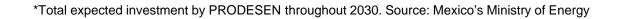
Power Sector

First Power Auction: **2.6** billion USD Second Power Auction: **4.0** billion USD Generation: **98.7** billion USD * Transmission: **15.3** billion USD * Distribution: **17.7** billion USD *

A total of **82 companies** from **18 countries** have won contracts for the development of hydrocarbons and electricity projects

Committed Investment:

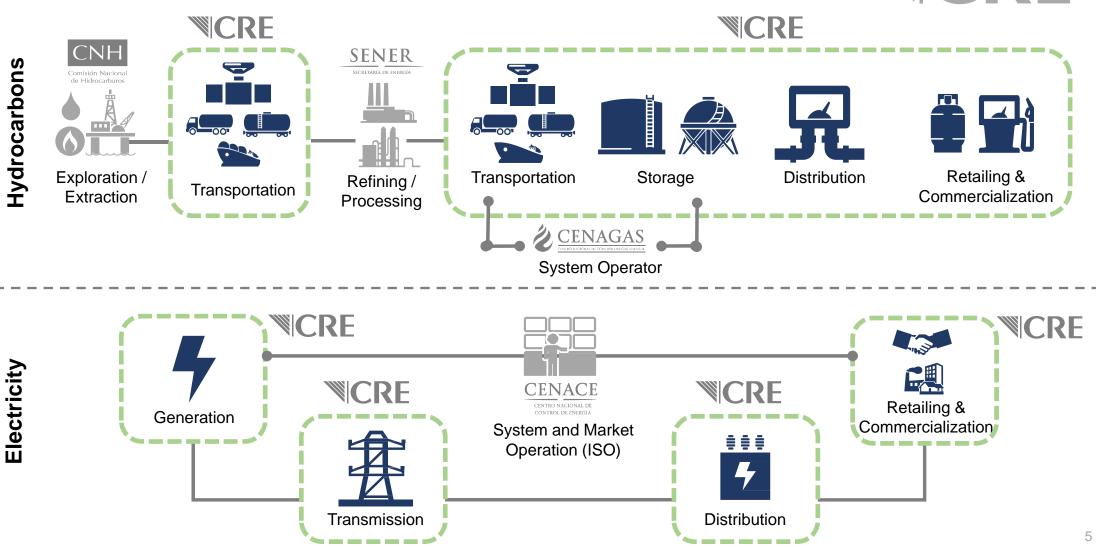
70 billion dollars







The Energy Regulatory Commission (CRE) has become the regulator of the mid and downstream segments of the oil and gas value chain, as well as the electricity supply chain



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The energy reform laid the foundations for an open and competitive natural gas market



1. Enhance natural gas availability throughout the country



2. Separate pipeline transportation from natural gas commercialization



3. Establish open access and pipeline capacity reserve conditions



4. Issue

asymmetric regulation for high market concentration and in case of price distortions (First-Hand Sales in the south, gas release program)



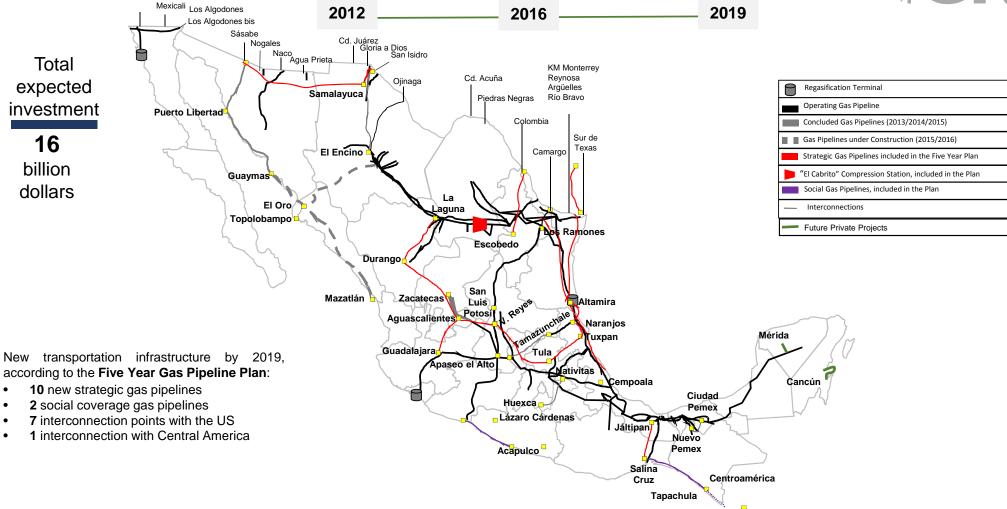
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5. Publish

volumes, prices, discounts, locations and trade information for retailing and commercialization of natural gas

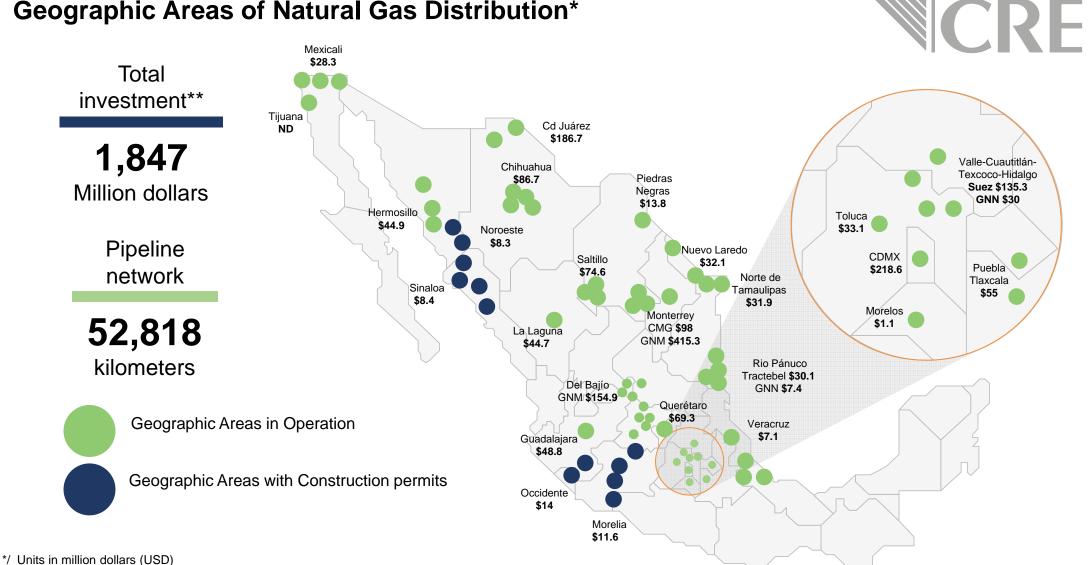
Mexico's Gas Pipeline Network will expand considerably from 2012 to 2019





*Participation of American and Canadian capital in Mexico's Gas Pipeline Network

Source: Five Year Gas Pipeline Plan 2015-2109, http://www.gob.mx/sener/acciones-y-programas/plan-quinquenal-de-gas-natural-2015-2019



Geographic Areas of Natural Gas Distribution*

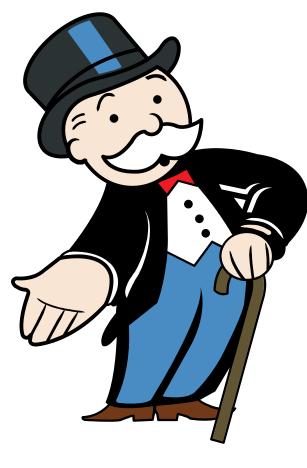
**/ Investment corresponds to Geographic Areas in Operation. Geographic Areas with Construction permits estimate an investment of 42.3 million dollars.

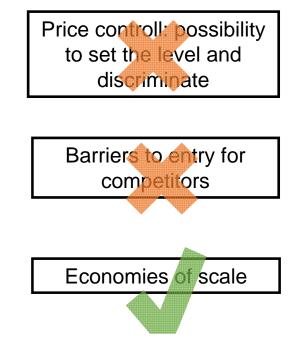
The distribution of natural gas has been considered a natural monopoly. However, if the relevant market is defined as the consumption of energy, we observe that it doesn't have most of the characteristics of a monopoly





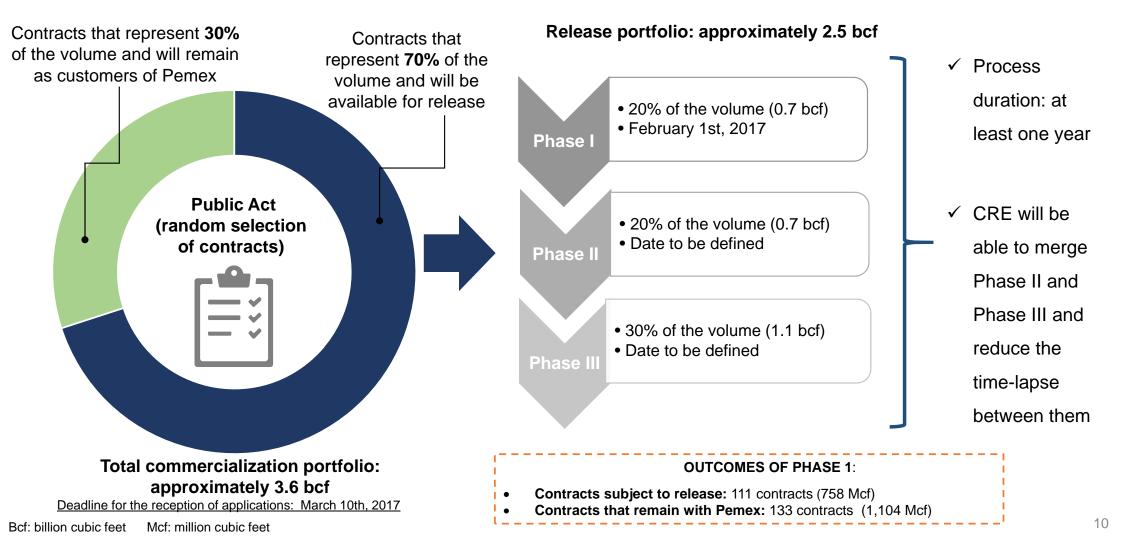




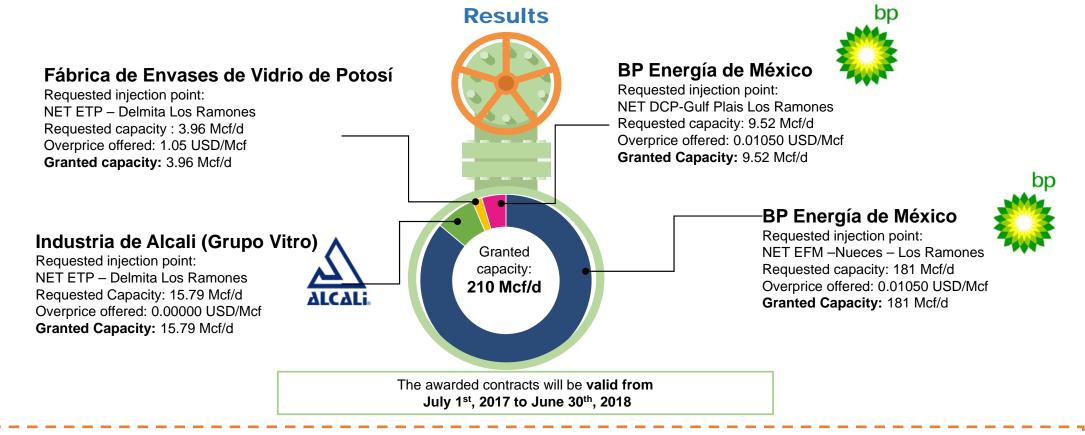


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The Gas Release Program, an asymmetrical regulation instrument to Pemex, seeks to promote the participation of new stakeholders in the industry

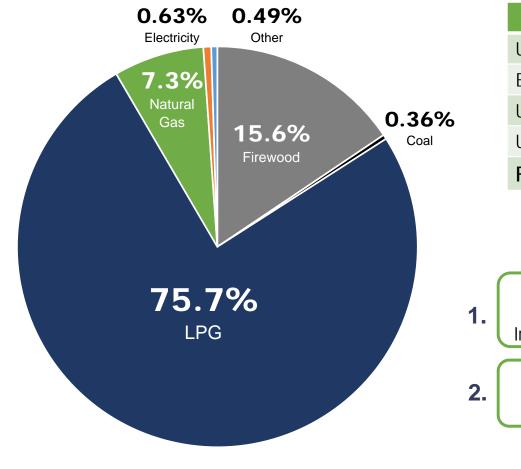


On February 17th of 2017, CENAGAS executed the first annual auction of import pipelines' capacity. A total capacity of 718 Mcf/d was offered, of which, 29.2% (210 Mcf/d) was allocated



As a result of this process, BP, the largest natural gas trader in North America, begins its participation in the national market. Also, Mexican industries have begun to diversify their portfolio options to satisfy their supply needs

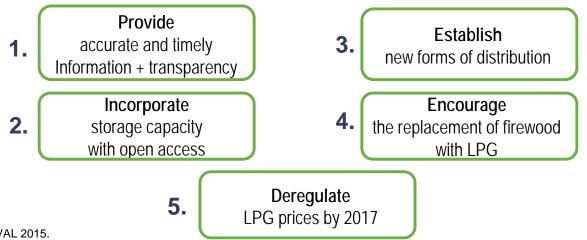
76% of Mexican households use Liquefied Petroleum Gas (LPG) as the main fuel for cooking and water heating, followed by firewood with 16% of households



Source: Encuesta Nacional de Ingresos Gastos de los Hogares (ENIGH), 2014 and CONEVAL 2015.

Social Lagging Indicators	Share of Households
Unavailability of power	1.0%
Earthen floor	3.5%
Unavailability of tap water from the public grid	5.1%
Unavailability of drainage	6.0%
Firewood Use	15.6%

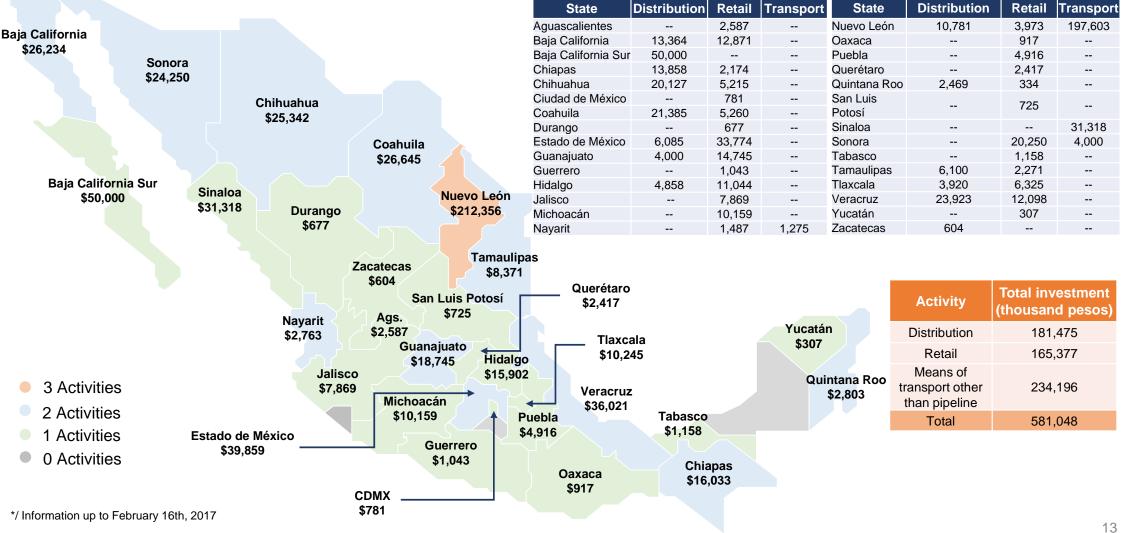
The **government** has various **tools** to **promote** a **competitive environment** in the LP Gas industry



NCRE

2016-2017 LPG planned investment per state* (in thousands of pesos)





Prior to the Reform, Mexico's fuel retail model generated significant inefficiencies:



Fixed Price Regime

- National single price (prevented adequate cost recognition on a regional basis)
- Fluctuations of international prices were reflected with a delay
- Lack of efficient price signals resulted in underinvestment throughout the value chain
- The excessive subsidy benefited the population with the highest income (200 billion pesos per year)





• Pemex lost resources for unacknowledged logistical costs in the overall gas price

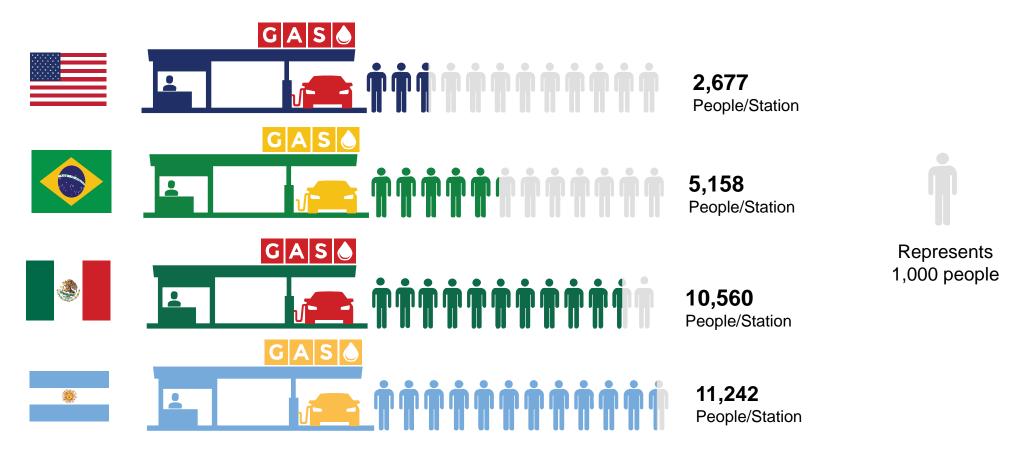


Underinvestment in the industry

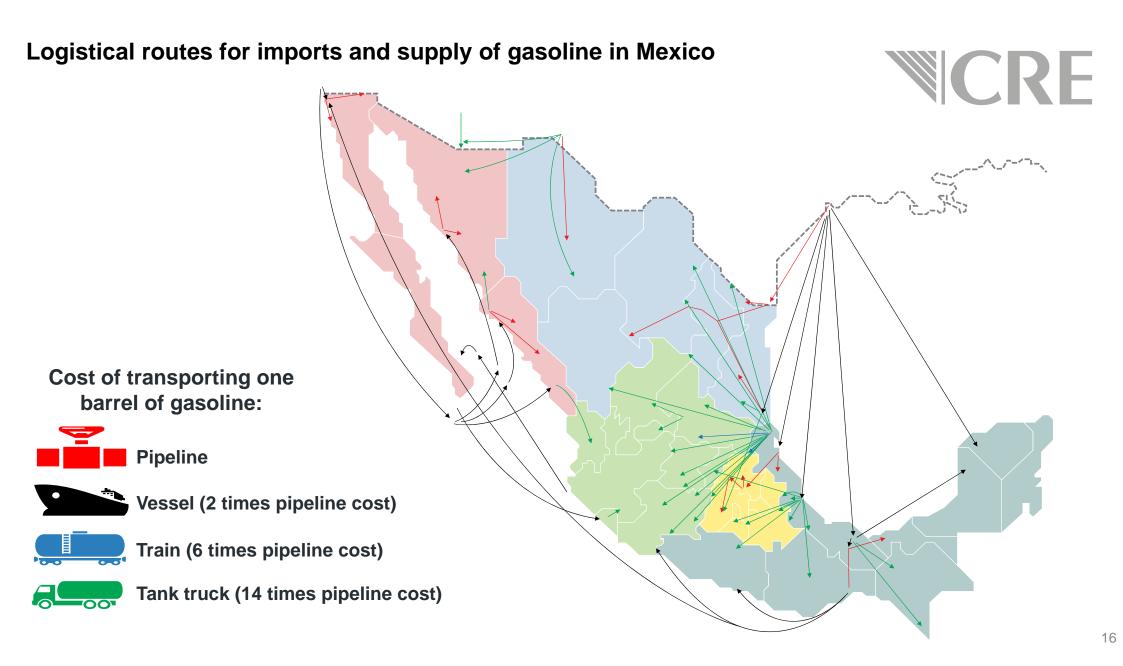
- Limited infrastructure: low capacity and vulnerability (extreme weather events)
- Lack of incentives to improve service quality in gas stations
- •40% of municipalities do not have gas stations

RF

Fuel price flexibility will trigger significant investments and create new jobs at the retail level. Also, it will enhance fuel availability and supply security for consumers



Source: US Department of Transportation, Country Meters, "Global Health Observatory Data Repository" by World Health Organization (ONU); "Anuario estadístico de 2016" published by Agencia Nacional del petróleo, gas natural y biocombustibles





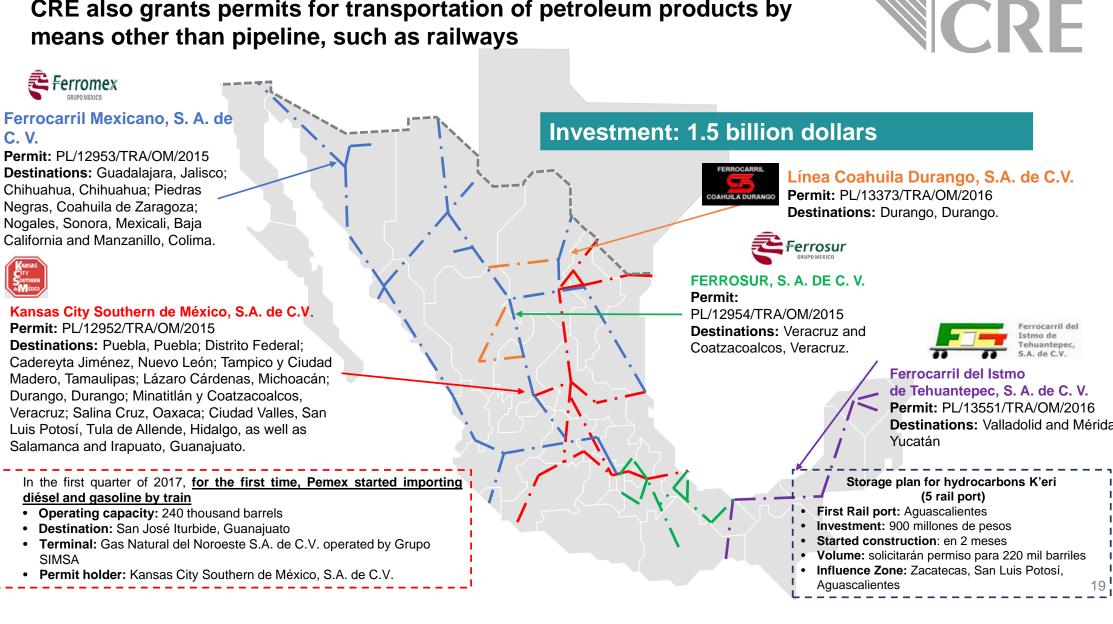
The opening of refined product logistics (gasoline, diesel and jet fuel) has triggered the interest of <u>new</u> investors in the energy sector



18

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CRE also grants permits for transportation of petroleum products by means other than pipeline, such as railways



Gasoline and diesel storage is a business line which is also drawing investment attention

3

5

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Cabo Fuels Las Torres, S.A. Mexicali Investment: 427 million dollars de C.V. Presidente Juárez y Tijuana Capacity: 7,296 bls. Investment: 24.6 million pesos Location: La Paz, Baja California Sur Ciprés Caborca Combustibles de Oriente, Bulkmatic de México Puerto Libertad (Distribución) S.A. de C.V. • **Investment:** 1 billion pesos Capacity: 5,606 bls. Location: Salinas Victoria, Nuevo León **Investment** 143.3 million pesos Guavmas Nuevo Laredo Location: Matamoros, Tamaulipas ٠ Tamaulipas Corpus Christi, Hydrocarbon Storage Terminal, Texas Monterrev. **Bulkmatic de México** S.A.P.I. de C.V. Nuevo Leór (Distribución) Matamoros. • Capacity: 280,500 bls. Tamps • **Investment:** 1 billion pesos Investment: 1,073.4 million pesos Location: Tula, Hidalgo Location: Acolman, Estado de México • La Paz Interport FTZ S.A. de C.V. San Luis 8 Capacity: 280,500 bls. Potosí, SLP **Investment:** 1,073.4 million pesos ٠ Location: Acolman, Estado de México Tuxpan, Ver Tula, Hidalgo Gas Natural del Noroeste New storage projects VOPAK México, S.A. de C.V San José in development S.A. de C.V. Capacity: 415,190 bls. Veracruz. Ver de Iturbide. Gto Investment: 787.1 million pesos Capacity: 48,000 bls. ٠ Location: Veracruz, Veracruz Investment: 380.3 million pesos Storage permits Location: San José Iturbide. Guanaiuato granted ٠ Hidrocarburos del Sureste, S.A. Comercializadora Larpod, Orizaba Energía, 9 0 Pipelines 8 de C.V. (Distribución) S. de R.L. de C.V. S. A. de C. V. (Distribución) CFE power stations 9 with available Capacity: 2,310,000 bls. Capacity: 450,000 bls. Capacity: 11,007 bls. • • ٠ capacity for Investment: 2,308.8 million pesos Investment: 766.1 million pesos Investment: 19.2 million pesos 20 investment Location: Tuxpan. Veracruz Location: Progreso, Yucatán Location: Puerto Madero, Chiapas

Furthermore, the new business environment allows greater competition and differentiation in product supply, services and retail prices at gas stations in Mexico



A key tool to enhance the consumer's empowerment and price monitoring is the mobile application "Gaso-App"



The app updates based on the **user's** location



The app displays the closest gas stations from the user



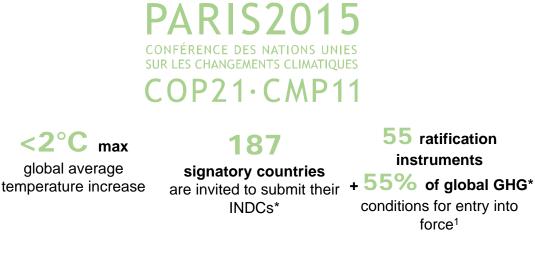
gas station, information on their products, prices, permit number and address will be displayed. Also, the app allows to rate the station's service



Regular - Magna \$ 0 Premium \$ 0

It will be possible to submit a report with a picture to CRE when the offered prices do not match those published in the app Ŀ

Energy production and use accounts for two-thirds of GHG emissions at a global level. In this regard, Mexico is working closely with the international community to meet multilateral climate goals



On March 28th, 2015, Mexico became the first developing country to present its INDC. Mexico has committed to:

25% Unconditional reduction of its Greenhouse Gases and Short Lived Climate Pollutants emissions by 2030

Up to 40% Conditional reduction subject to a global agreement providing an international price on carbon, access to financing and technology transfer

On September 21st, 2016, Mexico ratified the Paris Agreement

¹ As of September 22nd, 60 Parties have ratified accounting for 47.6% of the total GHG emissions. * INDC: Intended Nationally Determined Contributions; GHG: Greenhouse Gas

NORTH AMERICAN LEADERS' SUMMIT



CRF

UTTAWA

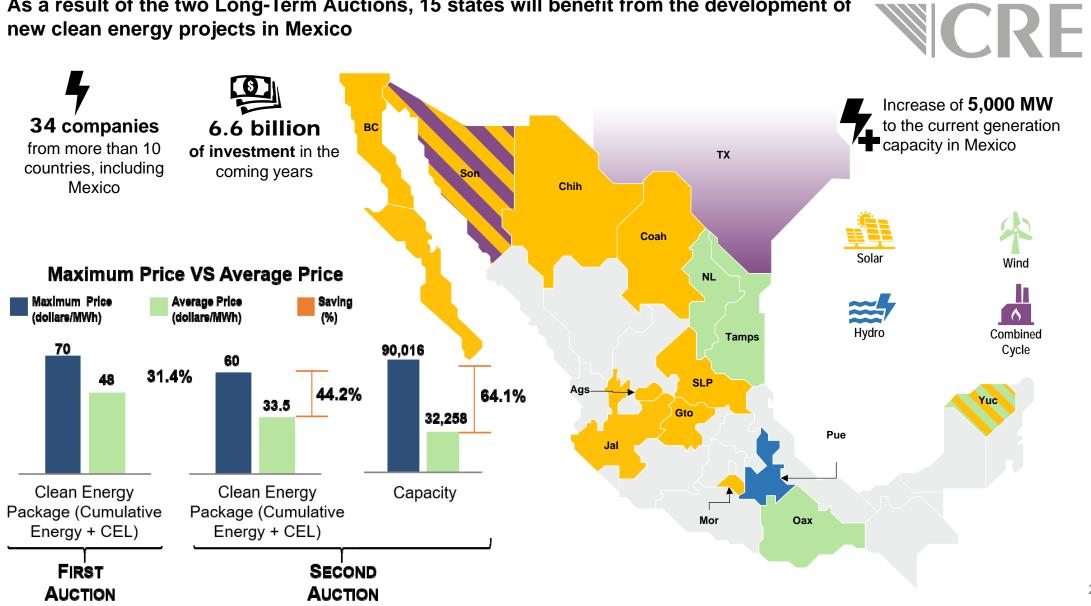
45% reduction of methane emissions in North America by 2025

50% of clean power generation by 2025



Collaborating on cross-border transmission projects

• At least 6 transmission lines currently proposed or in permitting review, such as the Great North Transmission Line, the New England Clean Power Link, and the Nogales Interconnection, would add approximately 5,000 MW of new cross-border transmission capacity.

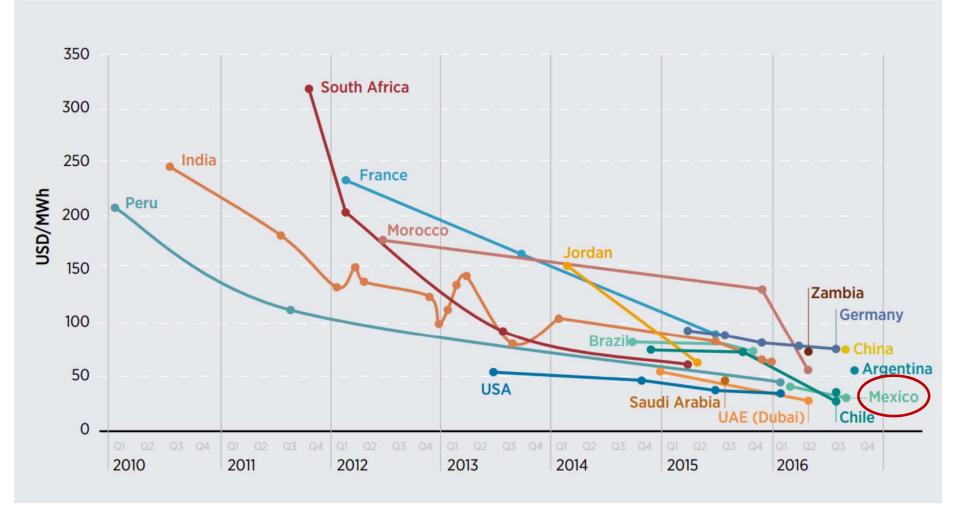


As a result of the two Long-Term Auctions, 15 states will benefit from the development of new clean energy projects in Mexico

Awarded companies of the two Long-Term Auctions



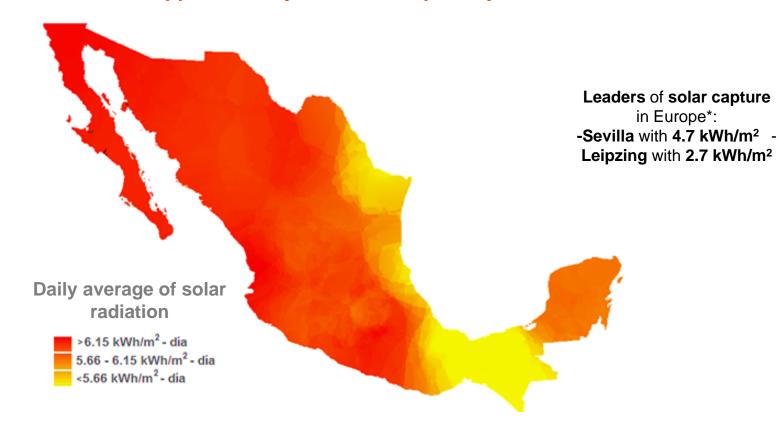
Evolution of average solar prices in auctions, January 2010- September 2016



Energy-related opportunities for businessmen and households: Clean Energies

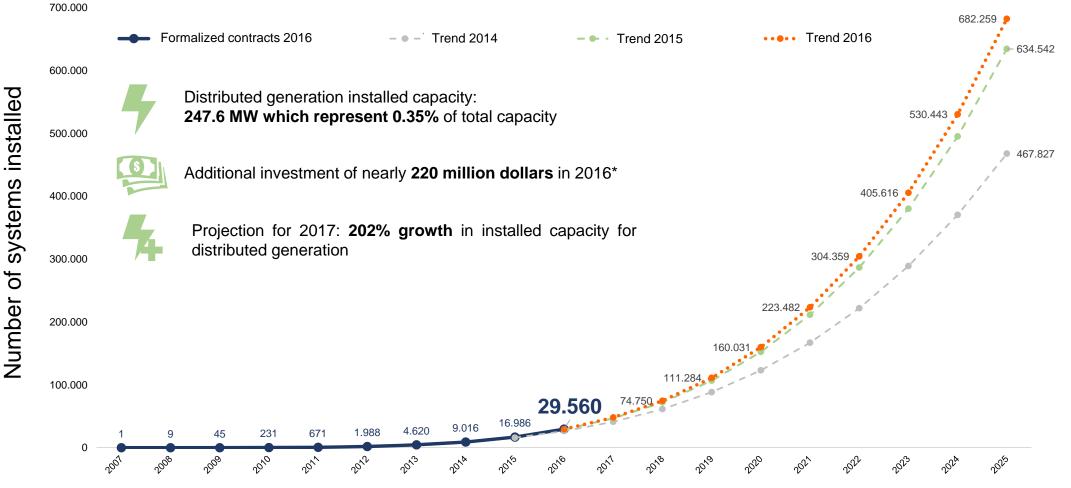


Mexico has a significant, constant and highly predictable renewable potential: a medium annual irradiation of approximately 5.5 kWh/m2 per day



In December 2016, CRE issued a new set of regulations to foster the sustainable integration of distributed generation nationwide

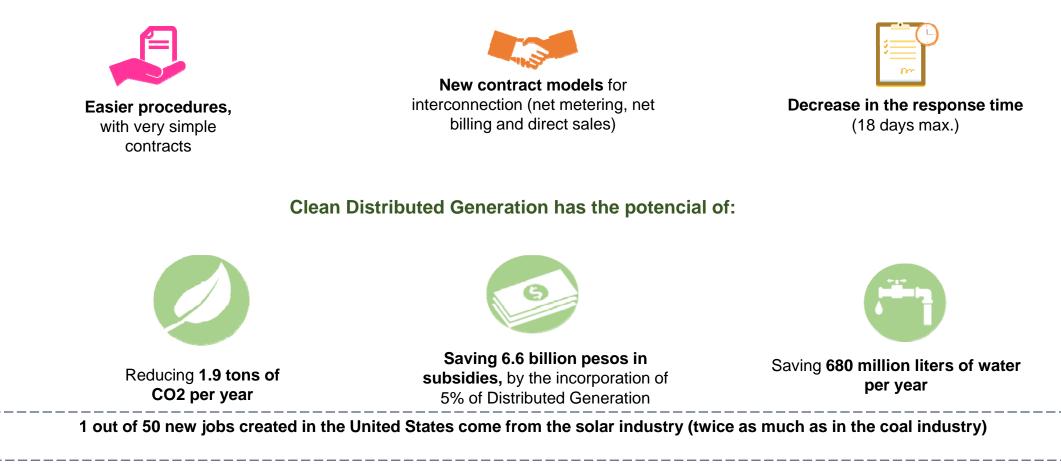




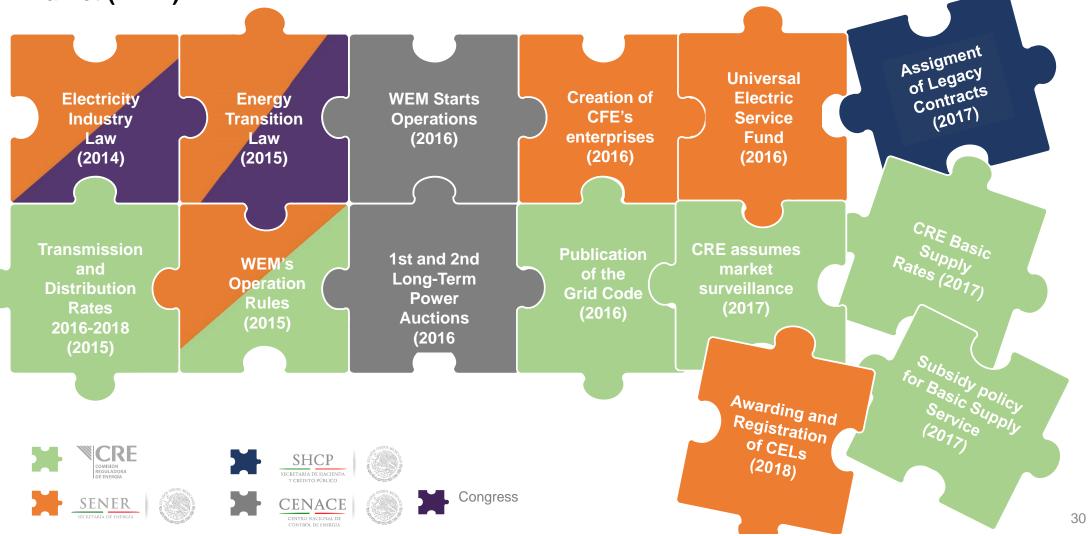
Note: Elaborated with information provided by CFE. Preliminary data up to December 31st, 2016. *Considering an average investment of 1.7 million dollars per MW of installed capacity, according to Bloomberg

Energy-related opportunities for businessmen and households: Clean Energies

A new set of rules for solar rooftops have been developed, promoting the **democratization of electricity in Mexico**



The implementation of the Energy Reform is moving towards the consolidation of a dynamic and competitive Wholesale Electricity Market (WEM)



Mexico is taking steps in the right direction in terms of strengthening its transparency, accountability and anti-corruption frameworks. Recent legal reforms and policies are designed to reinforce the rule of law and enable a more attractive business environment





Establishment of a **National Anticorruption System (NAS).** Constitutional amendment and 7 legal reforms.



NAS: institutional coordination platform among federal and local authorities. Checks and balances.



Steering Committee led by an independent citizen to oversee the NAS's performance.



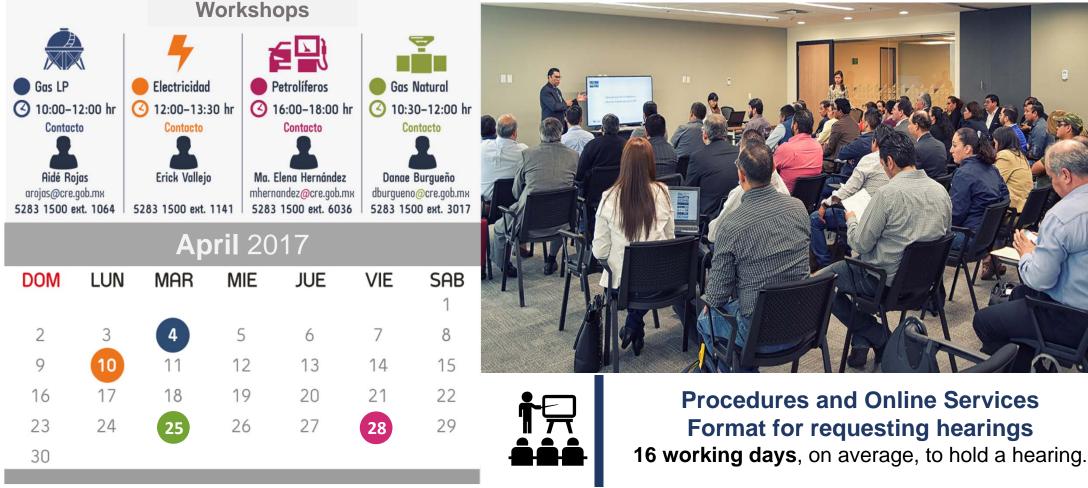
Streamlined and strengthened procedures focused on preempting, overseeing and penalizing corruption.



Establishment of a **National Transparency System (NTS)** covering federal, state and municipal authorities.



New transparency framework enhancing access to **public information**, increasing the number of **regulated entities** and promoting **open government** best practices. CRE has published online tutorials and initiated a workshop program to explain the application process and issuance of permits. Obtaining a permit is <u>easy, fast and transparent</u>



*Petroleum products' workshop to be confirmed

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