



Mexico's Energy Regulatory Commission: The Reform and its Challenges

Calgary, Canada
June 8, 2016

Guillermo I. García-Alcocer
Chairman

www.cre.gob.mx



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



156 billion dollars:
Public and Private Investment



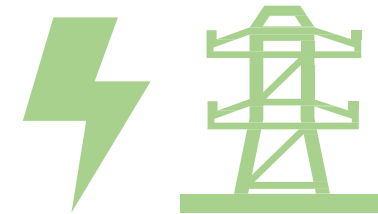
Hydrocarbons “Round One”

1st Tender: **2.7** USD billion
2nd Tender: **3.1** USD billion
3rd Tender: **1.1** USD billion



Natural Gas Transportation

Awarded projects, tendered or under construction: **4.4** USD billion
Five Year Gas Pipeline Plan (2015-2019): **10.2** USD billion



Power Sector

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

* Total expected investment throughout 2030.

The energy reform strengthened the industry’s institutional framework



Main Features

- Both new and reinvigorated institutions
- Clear rules, interaction and distinct responsibilities among agencies
- Agile and effective decision-making processes



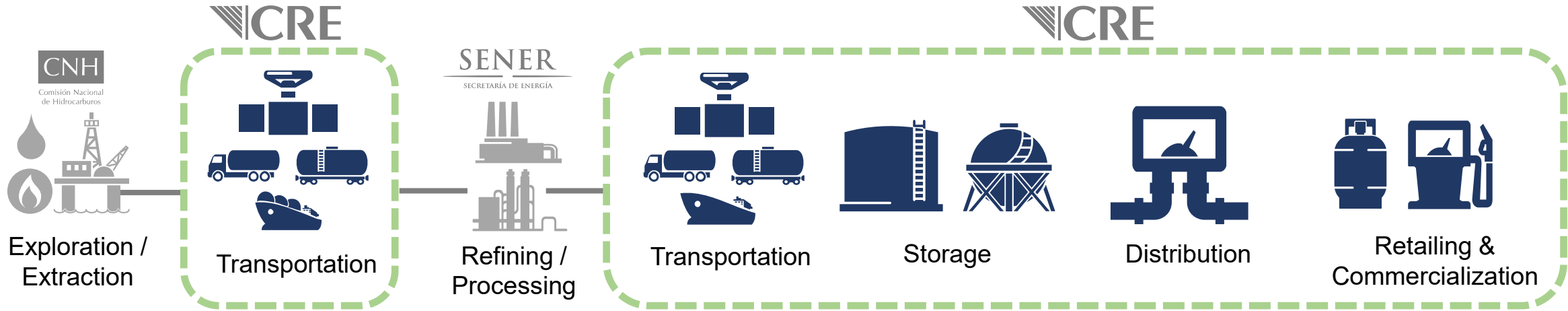
Energy Sector Coordination Council

Led by the Energy Ministry, the Council issues recommendations and sets coordination mechanisms in line with Mexico’s energy policy objectives.

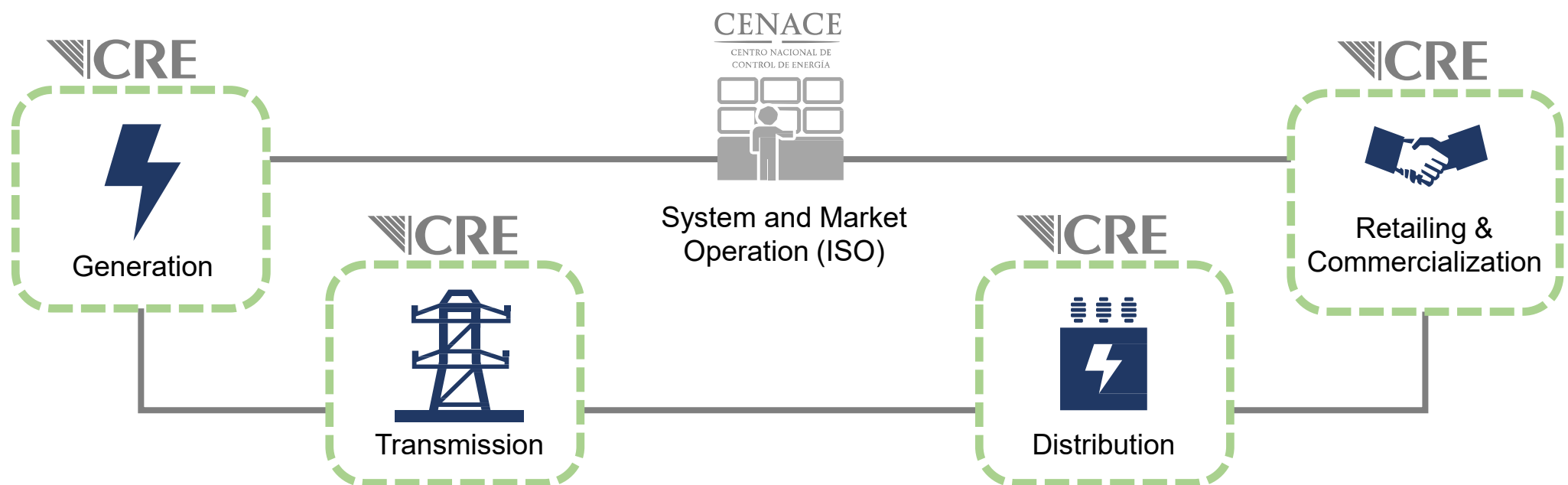
The Energy Regulatory Commission (CRE) has effectively become the regulator of the mid and downstream segments of the oil and gas value chain, as well as the entire electricity supply chain



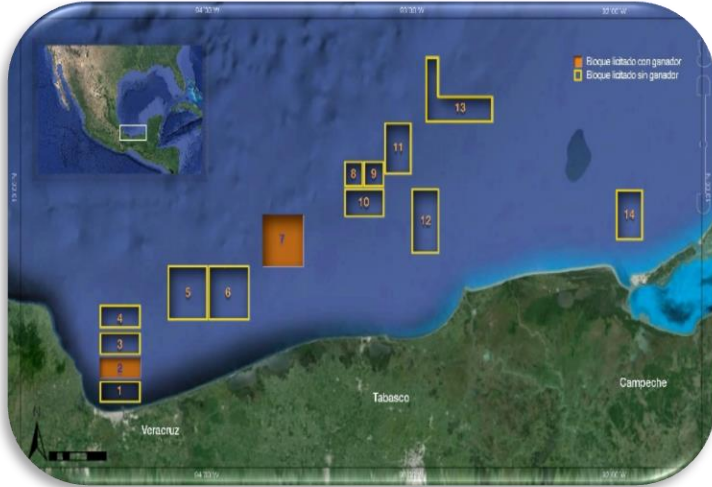
Hydrocarbons



Electricity



Mexico's upstream contracting and licensing "Round One" has started and yielded positive results



First Tender: Shallow Offshore Exploration

Contract: Shared Production
Awarded on July 15th, 2015
Outcome: 2/14 blocks awarded

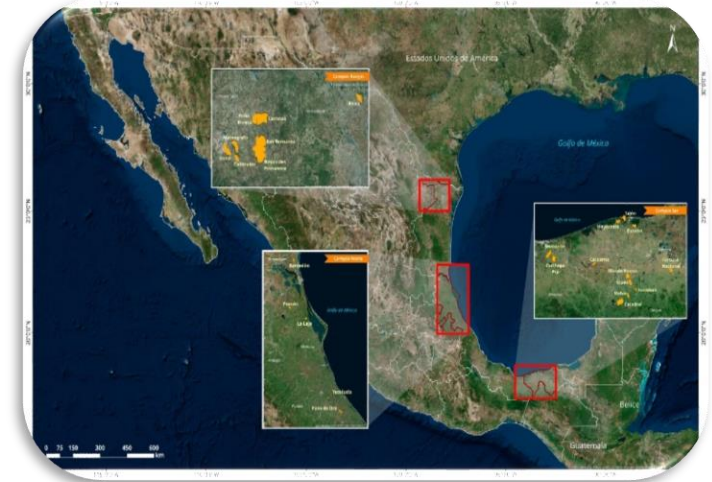
Total expected investment:
2.7 billion dollars



Second Tender: Shallow Offshore Extraction

Contract: Shared Production
Awarded on September 30th, 2015
Outcome: 3/5 blocks awarded
Equilibrium Price: \$15 USD

Total expected investment:
3.1 billion dollars



Third Tender: Onshore Extraction

Contract: License
Awarded/Signed on May 10th, 2016
Outcome: 25/25 blocks awarded
Renaissance Oil: 4 blocks awarded
Equilibrium Price: \$14 USD

Total expected investment:
1.1 billion dollars

The fourth tender of Round One will comprise substantial deepwater prospective resources in the Gulf of Mexico



Type of contract: **License**

10 exploration areas

Depth: **500-3,600 Meters**

Resources: **super light, light and heavy oil, dry and humid gas**

New risk balancing model designed to attract greater investments and provide access to cutting-edge technology

Block	Surface (km ²)	Average Prospective Resources (MMboe)*	Seismic 3D Coverage %	Depth (m)	Type of expected hydrocarbons
1	1,678.0	273.5	100	1,000 – 3,100	Super Light
2	2,976.6	1,439.7	79.2	2,300 – 3,600	Light & Super Light Oil, Humid Gas
3	1,686.9	1,304.0	100	500 – 1,700	Light & Super Light Oil
4	1,876.7	540.5	100	600 - 2,000	Light & Super Light Oil
5	2,381.1	1,851.9	100.0	2,000 – 3,100	Light & Super Light Oil
6	2,411.2	1,446.0	62.5	2,000 – 3,000	Heavy & Light Oil
7	3,287.1	1,668.9	100.0	1,000 – 2,500	Light Oil & Humid Gas
8	2,358.7	392.1	100.0	1,000 – 1,500	Heavy & Light Oil, Gas
9	2,573.2	621.4	100.0	1,000 – 1,500	Heavy & Light Oil, Gas
10	2,605.5	999.2	100.0	500 – 1,000	Heavy Oil
Total	23,835	10,537			

*Million Barrels of Oil Equivalent

<http://ronda1.gob.mx/>

Over 20 national and international oil companies have entered into the fourth tender's pre-qualification process. Contracts will be awarded on December, 2016



31

Companies have shown interest



23

Companies have requested access to the **Data Room**



21

Companies have been granted access to the **Data Room**



21

Companies have initiated the **pre-qualification** process

Companies participating in the pre-qualification process

- 1. **Atlantic Rim** México (Anadarko)
- 2. **BHP Billiton** Petróleo Operaciones de México
- 3. **BP** Exploration México
- 4. **Chevron** Energía de México
- 5. **China Offshore Oil Corporation** E&P México (CNOOC/Nexen*)  
- 6. **ExxonMobil** Exploración y Producción México
- 7. **Hess** México Oil and Gas
- 8. **Inpex** Corporation
- 9. **Mitsui & Co. Ltd**
- 10. **Murphy** Sur
- 11. **NBL** México (Noble Energy)
- 12. **ONGC** Videsh Limited
- 13. **PC** Carigali México Operations (Petronas)
- 14. **Petro-Canada*** 
- 15. **Petróleos Mexicanos** (Pemex)
- 16. **Repsol** Exploración México
- 17. **Ophir** Mexico Holdings Limited
- 18. **Shell** Exploración y Extracción de México
- 19. **Sierra O&G** Exploración y Producción
- 20. **Statoil** E&P México
- 21. **Total** E&P México

*Companies from Alberta. 7

CRE faces several challenges and opportunities ahead...



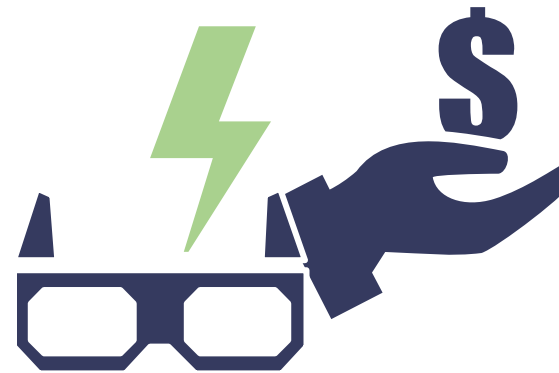
“Ensure that all energy flows are delivered to industrial, commercial and residential consumers in the demanded quantities, with the appropriate specifications, and at competitive costs.”



Strengthen the link between **natural gas and electricity**; without a robust natural gas market, an efficient electricity market won't be feasible



Guarantee efficient operation and costs for the **hydrocarbons transportation and storage network**



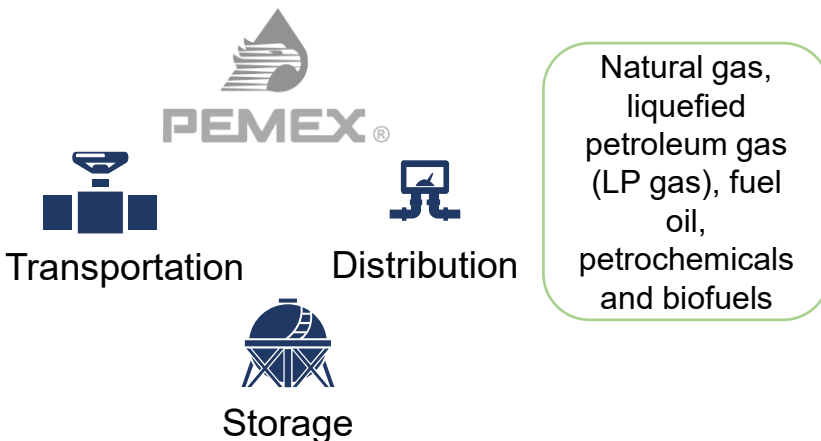
Oversee **generation** activities, as well as the operation of the **wholesale electricity market**.
On **transmission and distribution**, guarantee open access to the grid and set competitive rates that foster long-term investment. CRE must also monitor **retailing and commercialization** activities



Promote a competitive environment for the uptake and deployment of **renewable energy** sources

CRE's regulatory obligations in the hydrocarbons sector

Monopolistic Industry Model (1995/2008-2012)

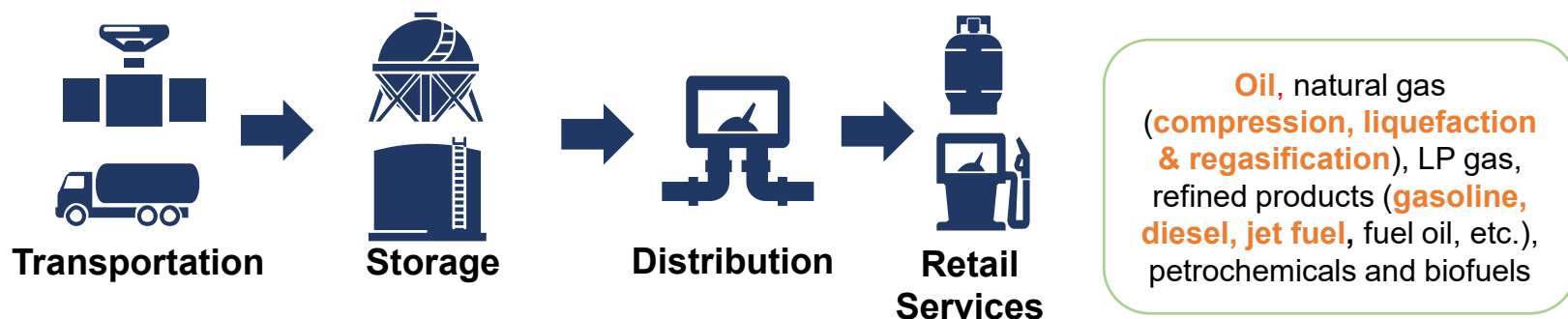


Regulatory Obligations

15

- Pemex maintained a substantial market share in the entire value chain.
- CRE approved terms and conditions for transportation, storage and distribution.
- CRE issued rate-calculation methodologies.

Open Industry Model (2013/2014 - onwards)



Regulatory Obligations*

Hydrocarbons Law

61

1. **Regulate** several participants in a competitive environment.
2. **Issue** transportation, storage, distribution, retail services and commercialization permits.
3. **Set** transportation, distribution (by pipeline) and storage rates.
4. **Set** maximum prices for First Hand Sales (FHS).
5. **Regulate** technical conditions for related products and services.

* The Energy Regulatory Agencies' Law comprises 54 additional regulatory obligations.

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



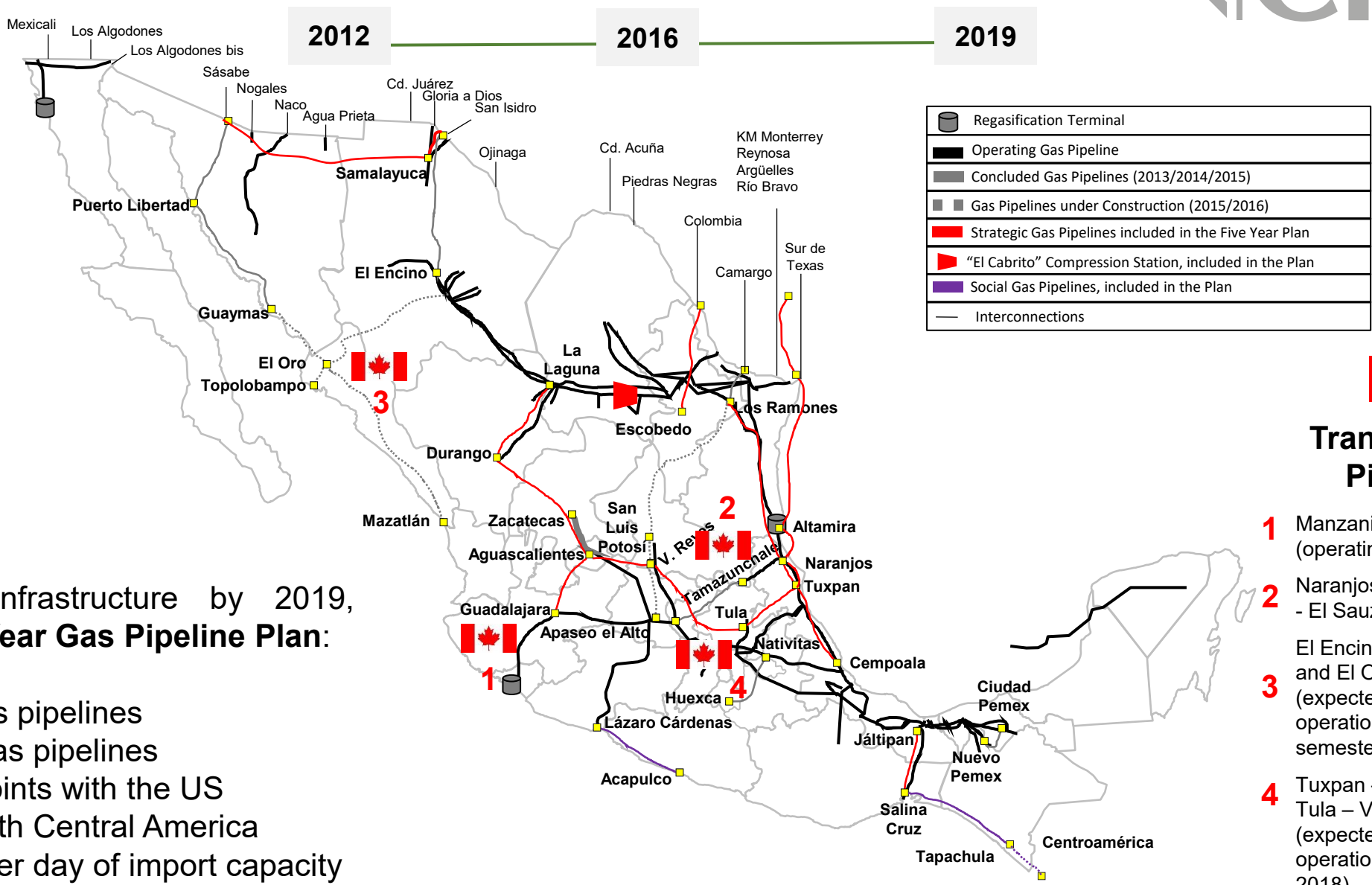
Total expected investment



10.2 billion dollars

New transportation infrastructure by 2019, according to the **Five Year Gas Pipeline Plan**:

- 10 new strategic gas pipelines
- 2 social coverage gas pipelines
- 7 interconnection points with the US
- 1 interconnection with Central America
- 9 billion cubic feet per day of import capacity



TransCanada* Pipelines

- 1 Manzanillo – Guadalajara (operating)
- 2 Naranjos - Tamazunchale - El Sauz (operating)
- 3 El Encino – Topolobampo and El Oro – Mazatlán (expected start of operations: second semester 2016)
- 4 Tuxpan – Tula and Tula – Villa de Reyes (expected start of operations: first semester 2018)

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
non-discriminatory
open access and
pipeline capacity
reserve conditions



4. Issue
asymmetric regulation
for high market
concentration and in
case of price
distortions



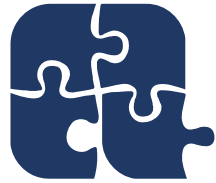
5. Publish
volumes, prices,
discounts, locations
and trade information
for retailing and
commercialization

The 5 conditions in order to ensure the optimal operation of the natural gas market:



Natural Gas
Availability

—



Conflicts of
Interest

+



Open Access
and Reserve
Capacity

—



Barriers to
Entry

+



Availability of
Relevant
Information

=



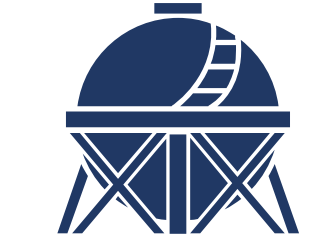
**Effective
Competition
and Efficient
Provision
Costs**

CRE has strengthened its natural gas regulatory obligations. As of June 2016, the following operating permits have been issued:



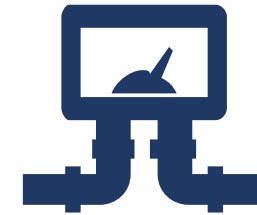
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**Transportation
Permits**



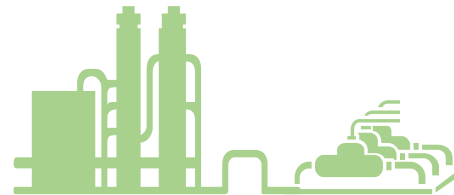
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Storage Permits



38

**Distribution
permits**



46

**Compression, decompression, liquefaction,
regasification and service station
permits**

As a result of the energy reform, CRE now issues the following permits along the hydrocarbons supply chain:



1,765

Petroleum
products
**Transportation
and Distribution¹**
permits



139

Petroleum
products **Storage²**
permits



11,451

Gas Station³
permits



336

LP Gas **Transportation,
Storage, Distribution, Service
Station and Self Supply**
permits



62

Hydrocarbons, Natural Gas
and Petroleum Products
Commercialization
Permits

Data as of June 2016

1/ Includes Crude Oil and Petrochemicals

2/ Includes Aerodromes

3/ Includes self use service stations and
aerodrome service stations.

CRE's regulatory obligations in the electricity sector



Monopolistic Industry Model (1995-2012)



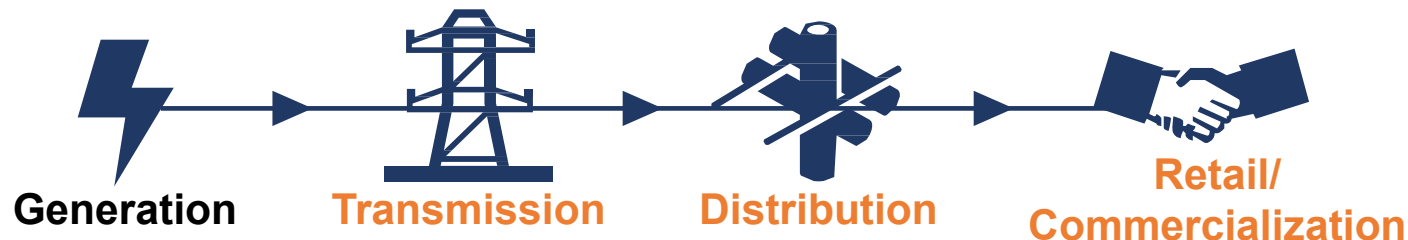

**Private
Sector
Generation**

Regulatory
Obligations

16

- CRE issued generation permits: self-supply, cogeneration, imports, exports, independent power production (IPP's) and small-scale generation.
- Basic regulation between CFE and permit holders.

Open Industry Model (2013/2014 - onwards)



Regulatory Obligations*

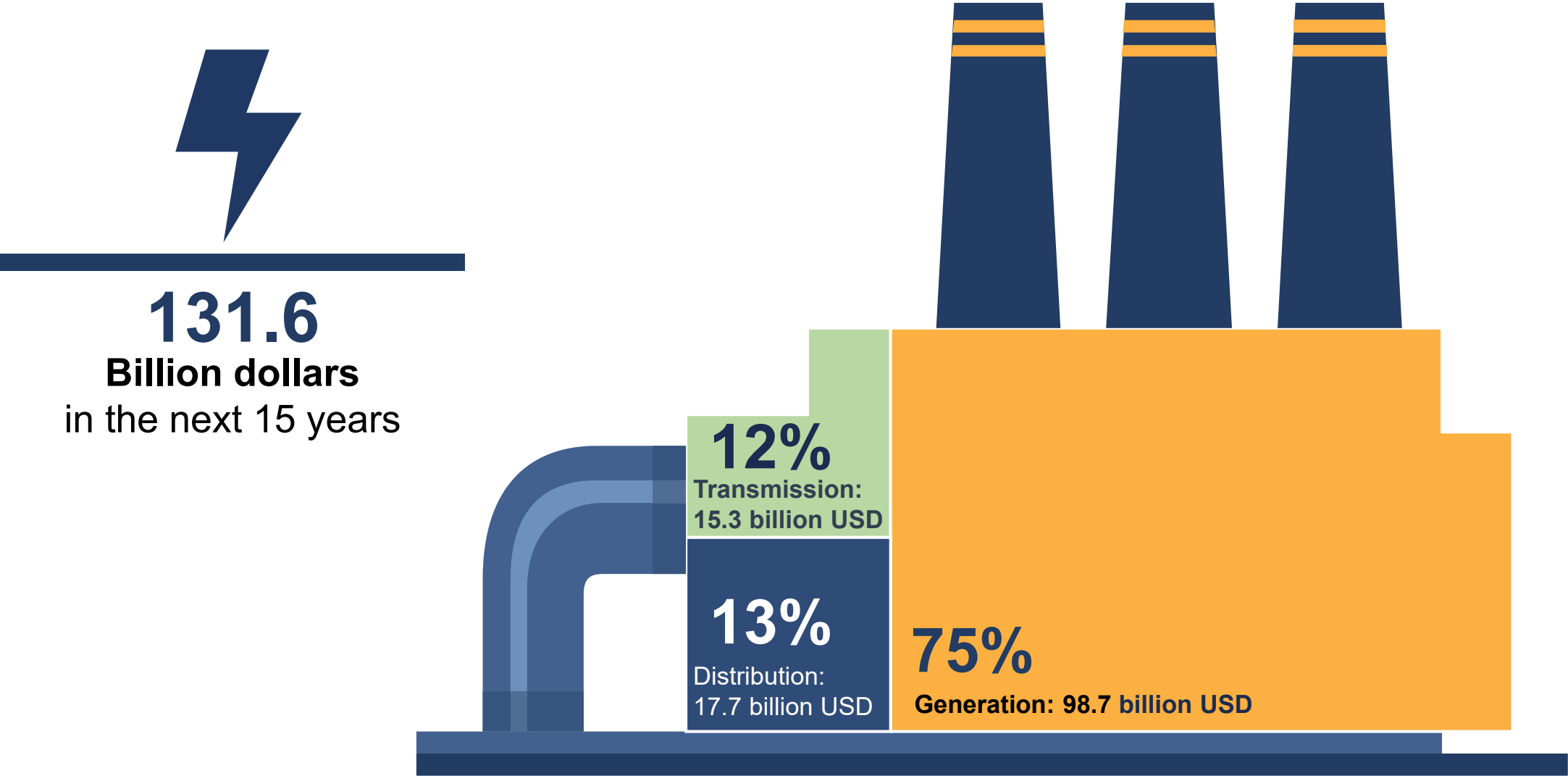
Electric Industry Law

60

1. **Regulatory obligations** throughout the entire value chain.
2. **Issue** generation and retail permits, as well as import and export approvals.
3. **Oversee** the wholesale electricity market.
4. **Set** transmission, distribution and basic retail rates.
5. **Regulate** technical conditions supporting the National Electricity System.

* The Energy Regulatory Agencies' Law comprises 54 additional regulatory obligations.

Power sector planning through 2030 is essential to boost Mexico's economic competitiveness

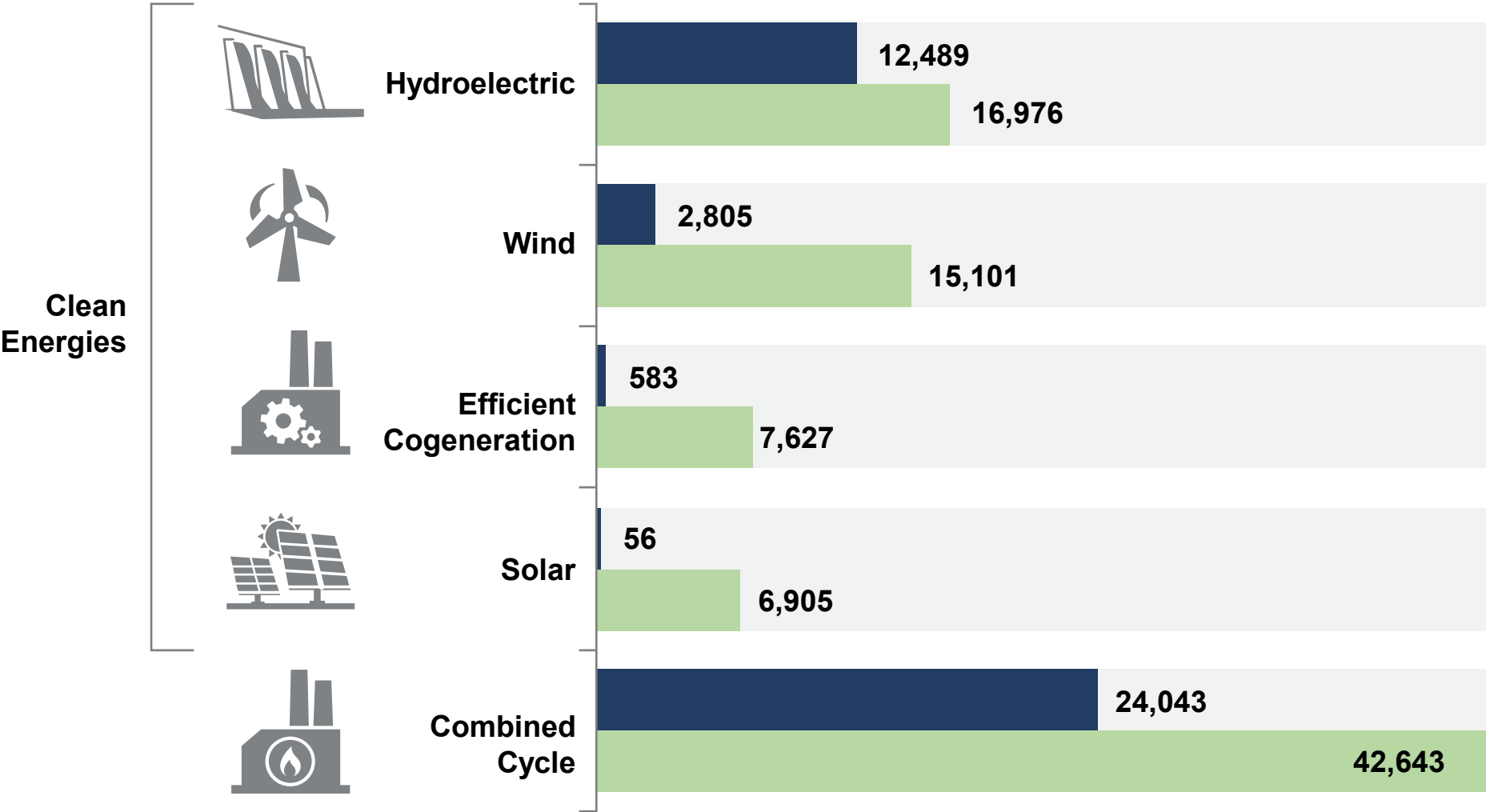


Mexico will increasingly rely on clean energy sources and natural gas instead of carbon-intensive fuel oil and diesel generation plants



Installed capacity (MW)

2015 2030



200%

Capacity Increase in Clean Energy Sources

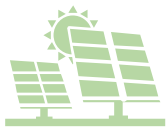
75%

Capacity Increase in Natural Gas Combined Cycle Plants

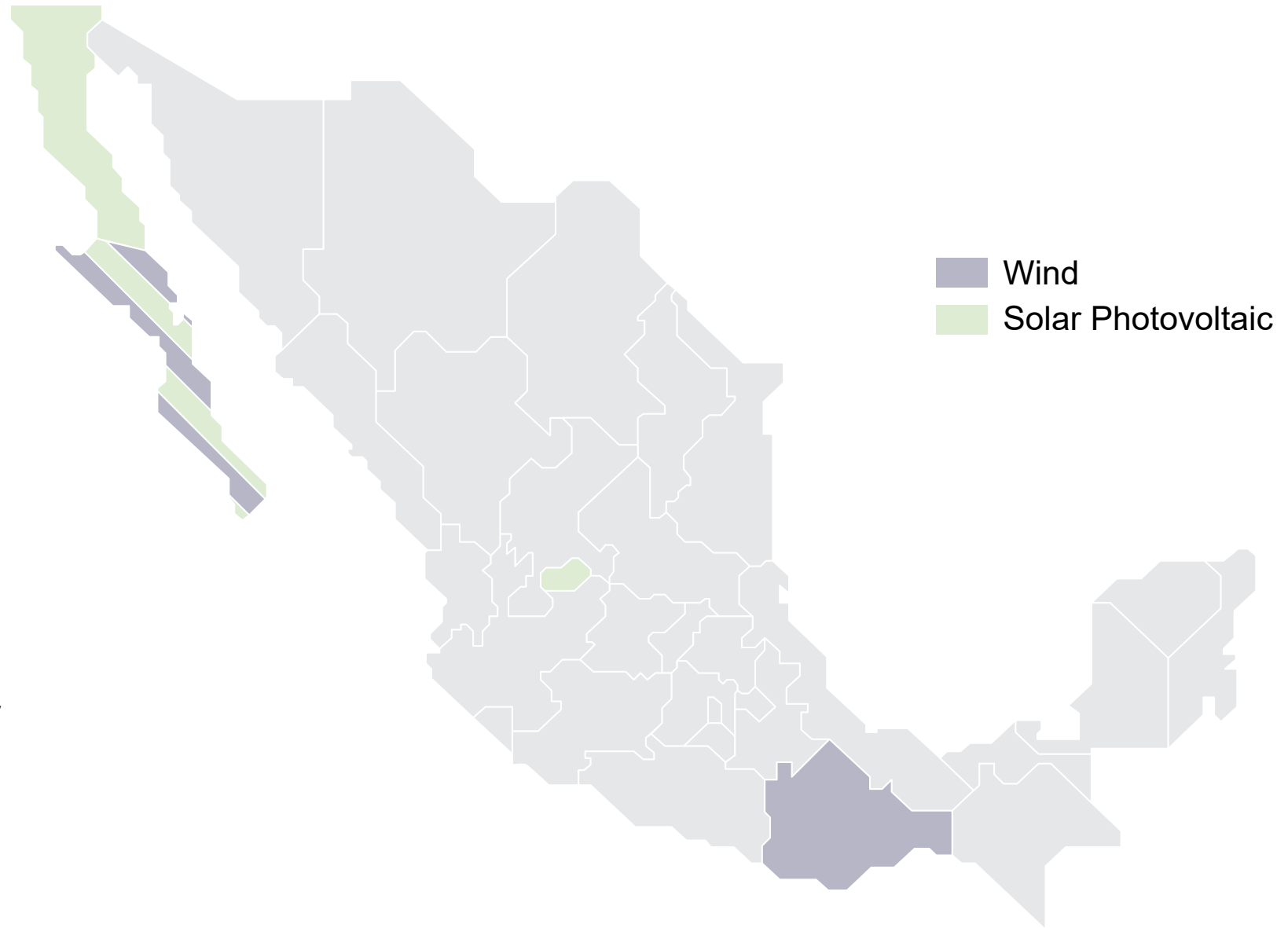
By 2015, Mexico had only installed 2,861 MW of wind and solar photovoltaic capacity



From 1994 to 2015, Mexico installed **2,805 MW** of wind power capacity



From 2011 to 2015, Mexico installed **56 MW** of solar photovoltaic power capacity



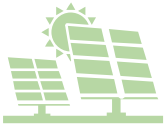
The first long-term power auction, carried out in March 2016, unleashed Mexico's renewable potential



- The auction increased existing wind and solar power capacity by **75%**



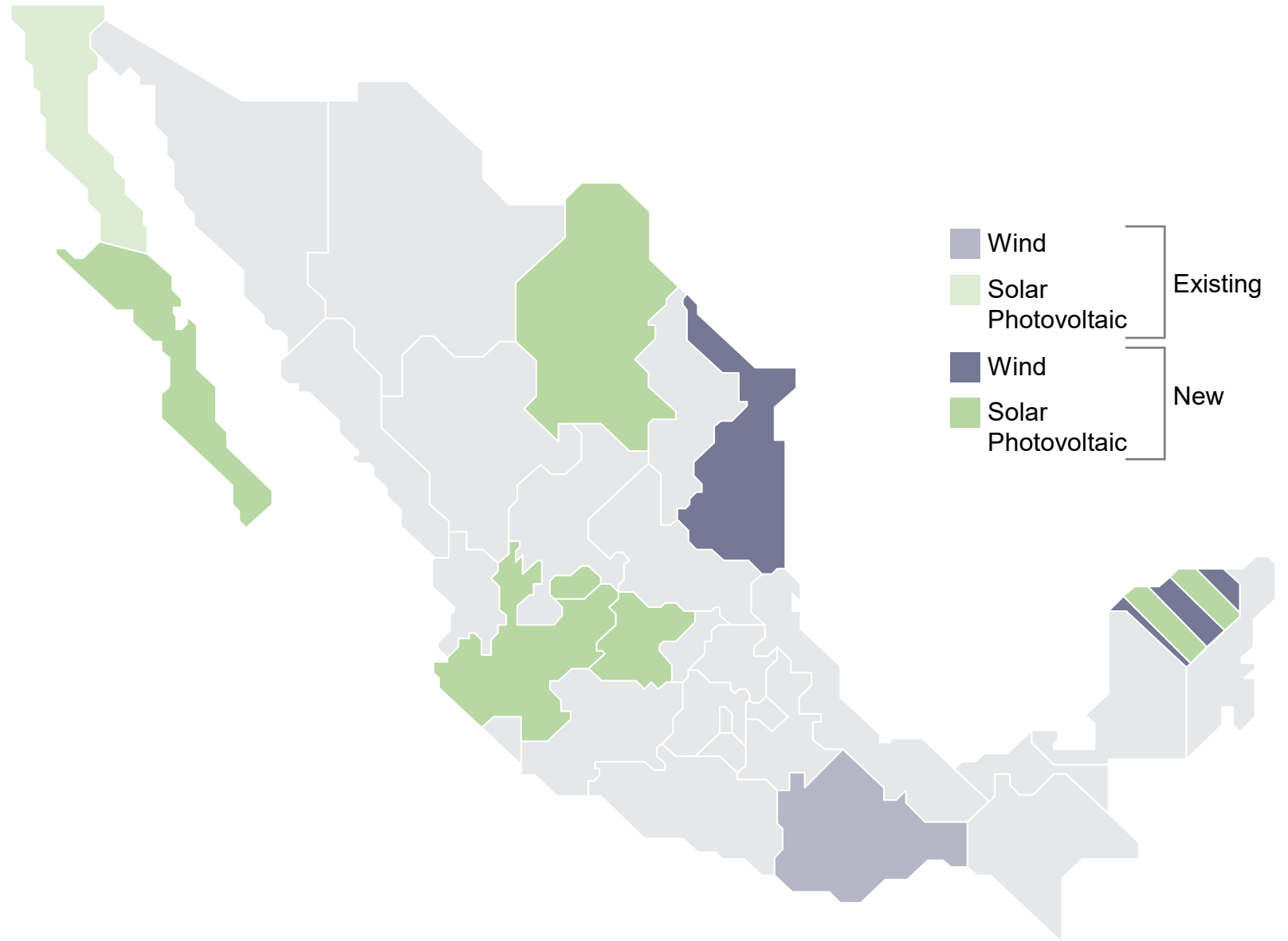
2,085 MW to be installed: 1,691 MW solar and 394 MW wind



1.9% increase in annual power generation



2.6 billion dollar investment



Some examples of international press coverage of Mexico's first long-term power auction

Bloomberg
NEW ENERGY FINANCE

Mexico auction result in record low PV prices

Analyst Reaction by Lilian Alves / 31 March 2016

Mexico's first power auction was marked by drama, first in a false start announcement of the wrong winners then later by producing the lowest subsidy-free solar project contract we have ever seen. The auction contracted 5.4 TWh of clean energy power from wind and solar and another 5.4m clean energy certificates (CELs) at an average Price of \$47.8/MWh.

The Economist

Solar Energy

Follow the sun

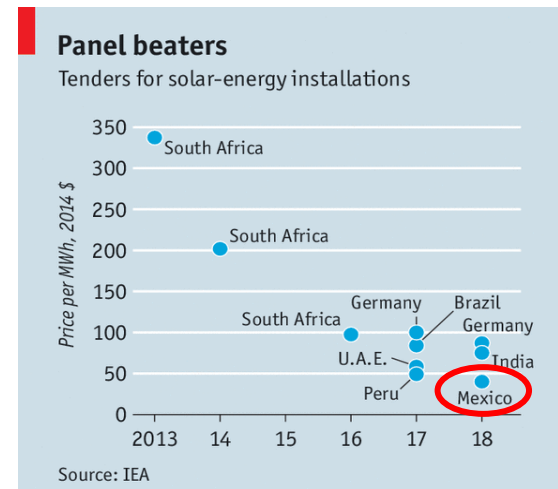
Let the sunshine in

Italy's Enel Green Power (EGP) is also attracting attention. In February it won a tender to provide Peru with 20 years of power from solar PV at just under \$48 a MWh. Just over a month later Mexico awarded it a similarly lengthy contract to generate solar power in the arid northern state of Coahuila at a price of about \$40 per MWh. Bloomberg New Energy Finance (BNEF), a research firm, called it "the lowest subsidy-free solar contract we have ever seen". EGP's head of business development, Antonio Cammisecra, says there is a clear trend of falling prices. "We are trying to drive it," he says.



Un **75%** de los participantes encuestados considera que la subasta fue un éxito porque:

"Hubo una elevada participación, se asignó el 85% de las ofertas de compra a precios competitivos"



Some examples of international press coverage of Mexico's first long-term power auction



Steven Chu: Mexico's Energy Auction Reveals True Price Of U.S. Renewables

Jeff McMahon
Forbes, 8th May, 2016

“If you want to know the true price of renewable energy in America—free from subsidies and mandates—look to Mexico, former Energy Secretary Steven Chu said Friday.”

...

“So I look to the South,” Chu said of Mexico’s auction. “This is the best way to actually back out what the subsidies are. What are other economies doing nearby with great wind and great solar the way that we have?”

Forbes

MAY 8, 2016 @ 12:01 AM 25,135 VIEWS

Steven Chu: Mexico's Energy Auction Reveals True Price Of U.S. Renewables



Jeff McMahon
CONTRIBUTOR

I cover green technology, energy and the environment from Chicago.

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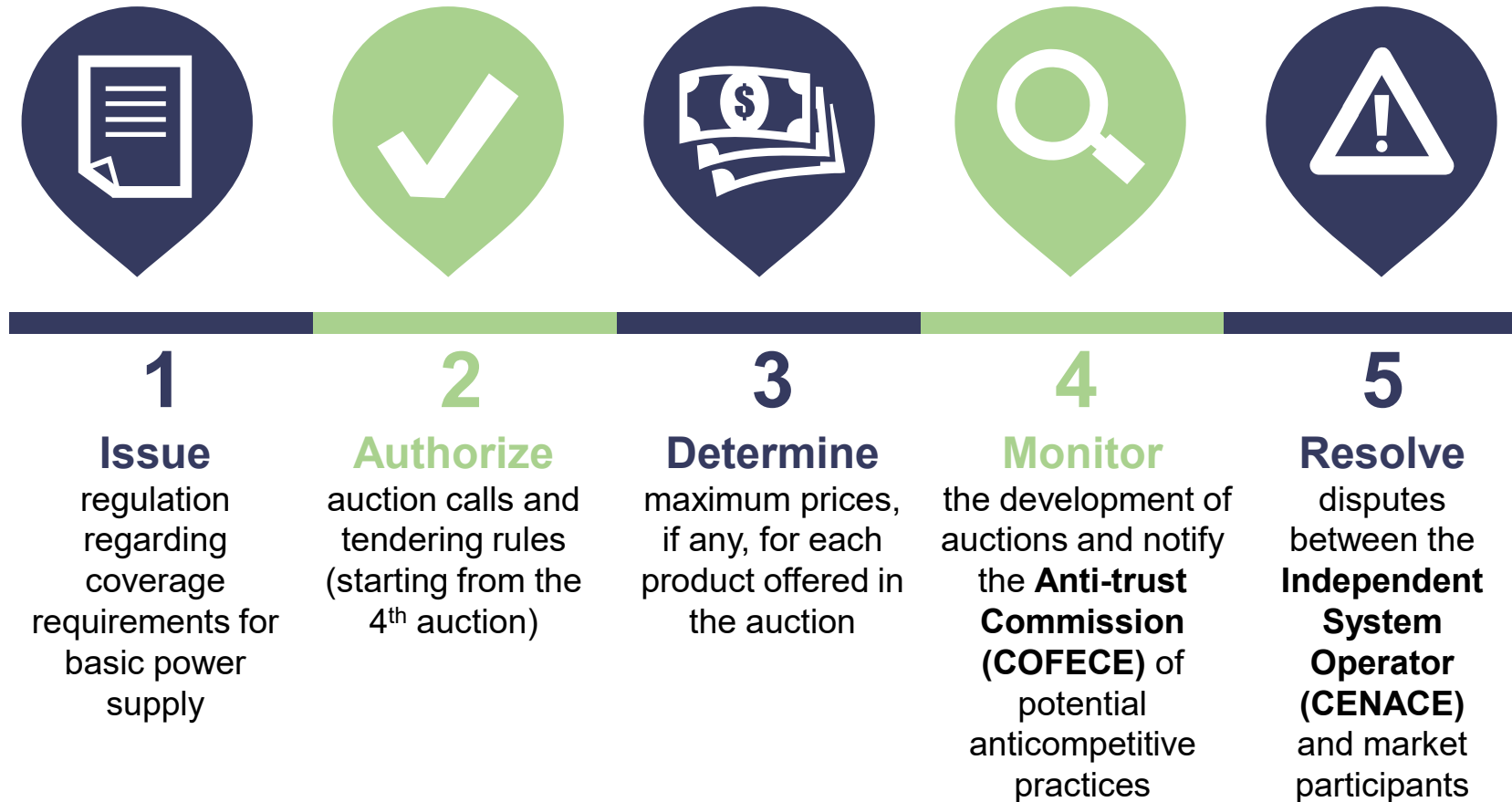
Former Energy Secretary Steven Chu. (Photo by Brendan Hoffman/Getty Images)

**Steven Chu,
Former US Secretary of Energy and
Co-winner of the Nobel Prize**

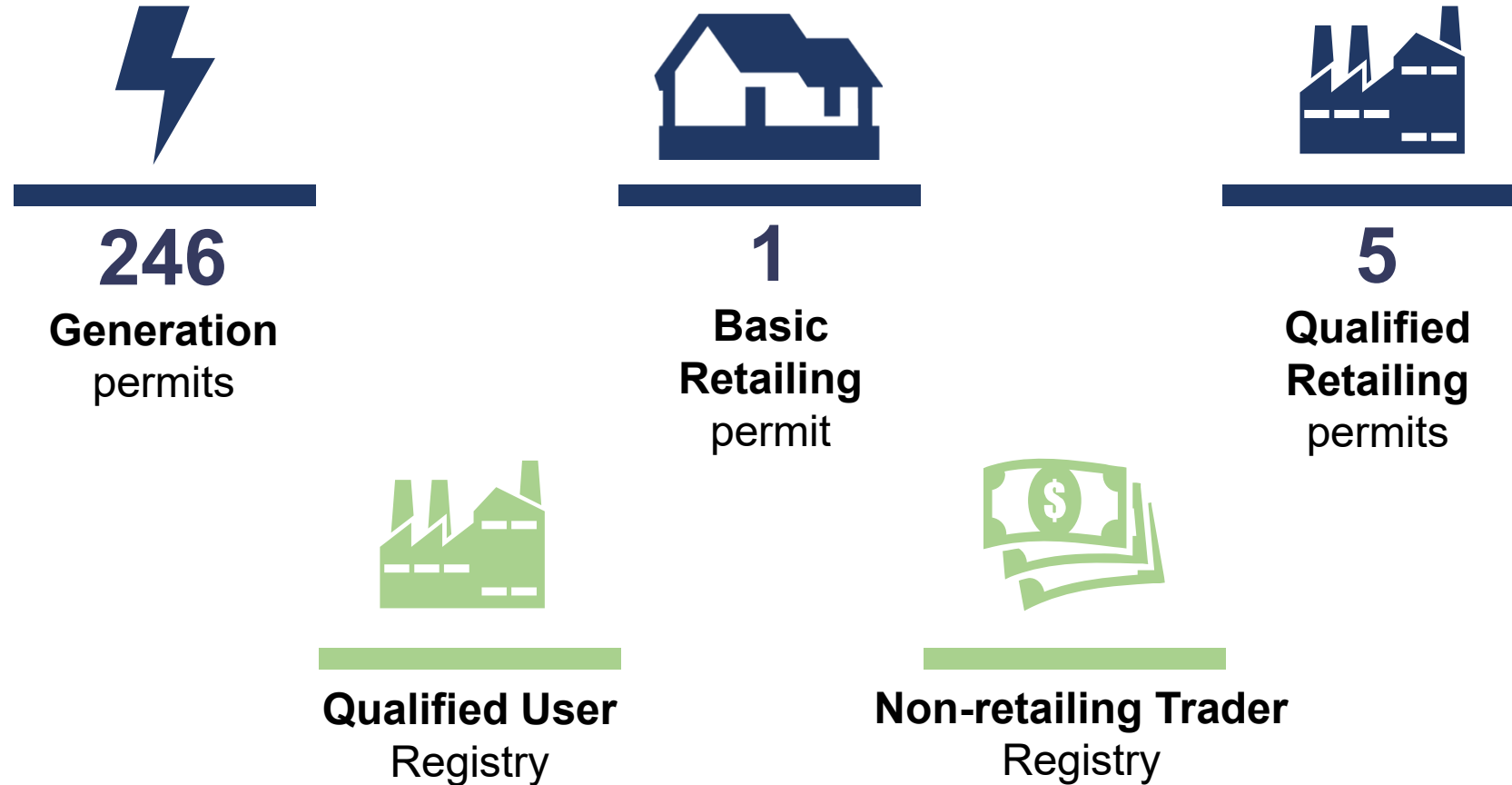
The second long-term power auction will take place between May and September, 2016. Just as the first auction, bidders will offer capacity, electricity and clean energy certificates



CRE has several regulatory mandates throughout a power auction



As of June 2016, the following power sector permits have been issued:



There are 1,096 additional generation permits under the pre-reform legal framework.

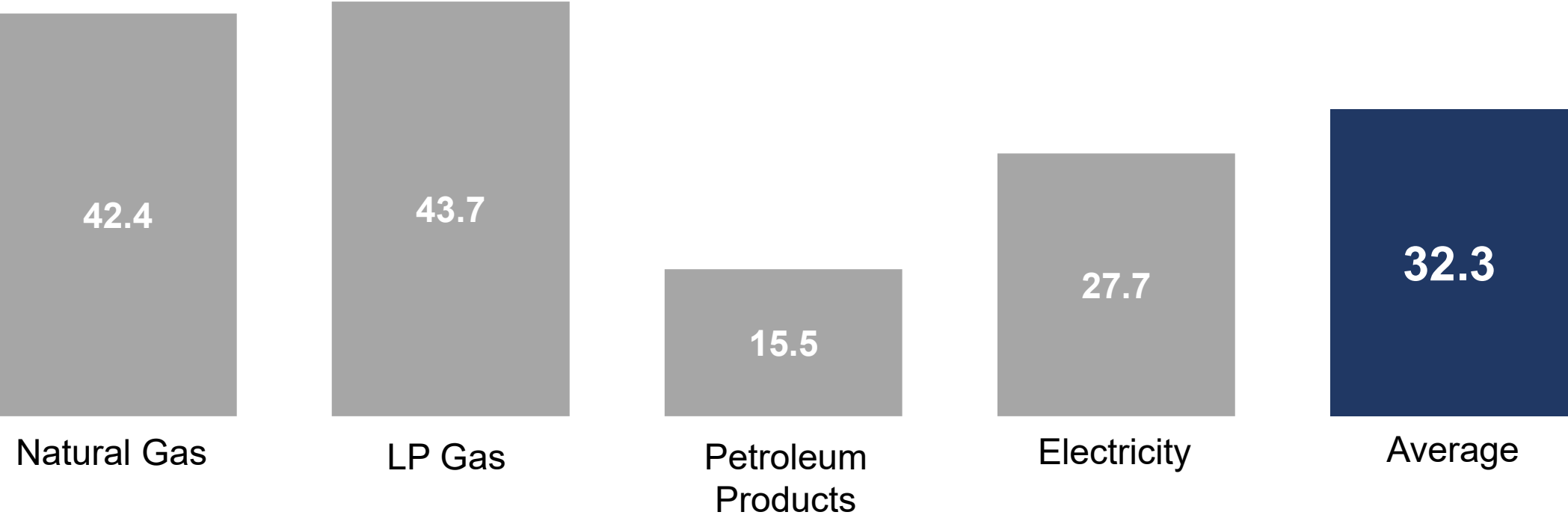
On average, CRE processes permits within the time frames mandated by law, or even less



Maximum Number of Working Days allowed to Process Hydrocarbons Permits: 90



Maximum Number of Working Days allowed to Process Electricity Permits: 60



Note: comprises data between January 2015 and May 2016.

In 2015, CRE granted over 11,000 gas station permits, reducing application costs and processing times; paperwork was completely eliminated



Actions

1

Publish basic requirements for permit applications.

2

Manage pre-existing and operating gas station database.

3

Automatization of permit filing procedures.

4

Establish streamlined reviewing criteria to process permit requests.

The Numbers

Permits granted:*

Regular Gas Stations: **10,788**

Self-Use Gas Stations: **242**

- **Cost reductions** for applicants
- Cut down on **processing times**
- No physical **paperwork**

Permit application **average response time : 13 days**



* As of December 2015.

On December 22, 2015, CRE and the School of Public Policy of the University of Calgary signed a Memorandum of Understanding (MOU)



The MOU defines a common agenda, comprising key issues on which both institutions can collaborate on an ongoing basis:

- Implementation of **international best practices** on regulatory affairs;
- Analysis of **draft regulations** and guidelines;
- Development of **market performance indicators**;
- **Benchmarking** in natural gas markets;
- Criteria for **open season processes** (natural gas transportation);
- Development of a country-wide **clean energy certificate tracking system**; and
- Workshops, lectures and **capacity development**.





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