



RECA

Petroleum Solutions

1.

O&G Mexico Overview

Chief Advisor Reca Petroleum Solutions

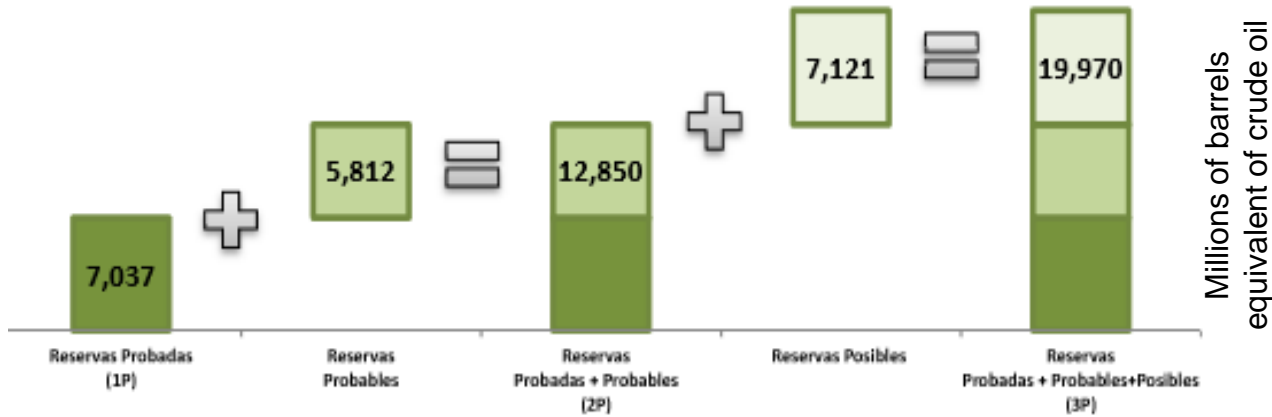


Jose Luis Garcia

Geologist with 30+ years of experience in a multitude of technical and management roles within PEMEX, recently serving as Senior Advisor for PEMEX Exploration and Production Executive Team. Expertise in geophysics, project evaluation and management, data analysis and well interpretation with advanced degrees from UDLAP, ITAM, and Texas A&M University.

Currently, he is serving as the president for the Mexican Association of Petroleum Geologists (AMGP).

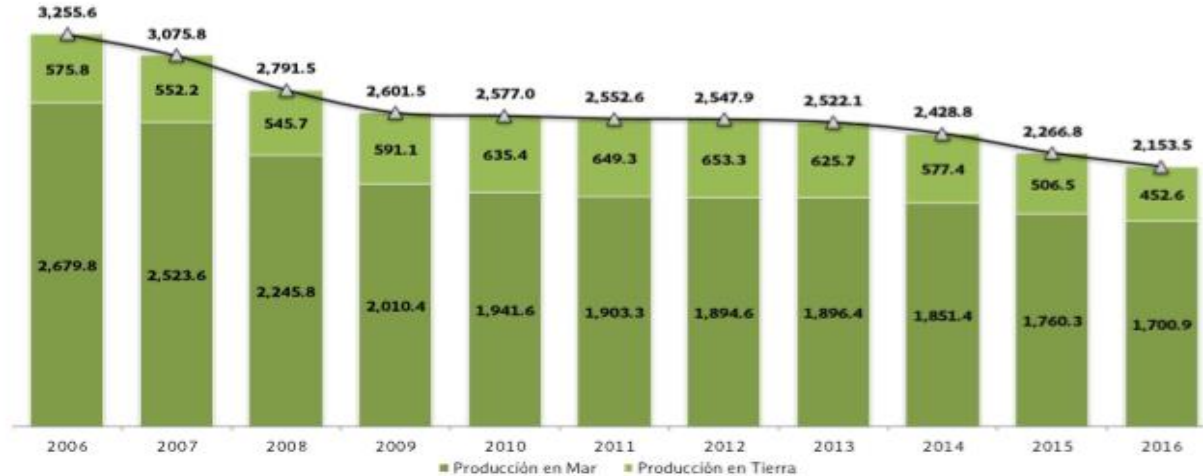
Total oil reserves in Mexico as of 1-1-2017



Arranged by density classification

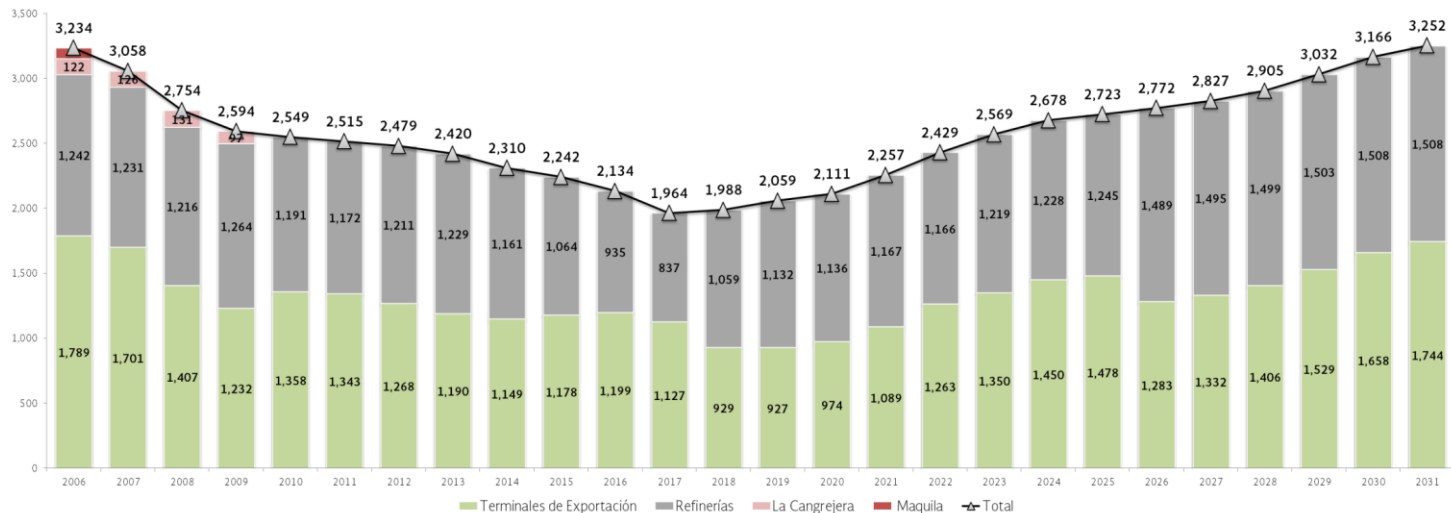
- **Reserves 1P:** *heavy oil* 58.8 %, *medium weight* 15.6 %, *light weight* 14.8 %, *extra light* 6.1 %, *extra-heavy* 3.1 % and *Round 1*, 1.6 %.
- **Reserves 2P (Proven Probable):** 53.2 % *heavy oil*, 21.3 % *medium weight*, 14.5 % *light weight*, 5.3 % of *super light*, 3.7 % of *extra-heavy* 2.0 % of *Round 1*.
- **Reserves 3P (Proven+Probable+Possible):** 46.8 % *heavy oil*, 21.5 % *medium weight*, 14.0 % of *light*, 8.4 % of *super light*, 7.2 % *extra-heavy* y 2.1 % of *Round 1*.

National Crude Production 2006-2016 (Mbd)



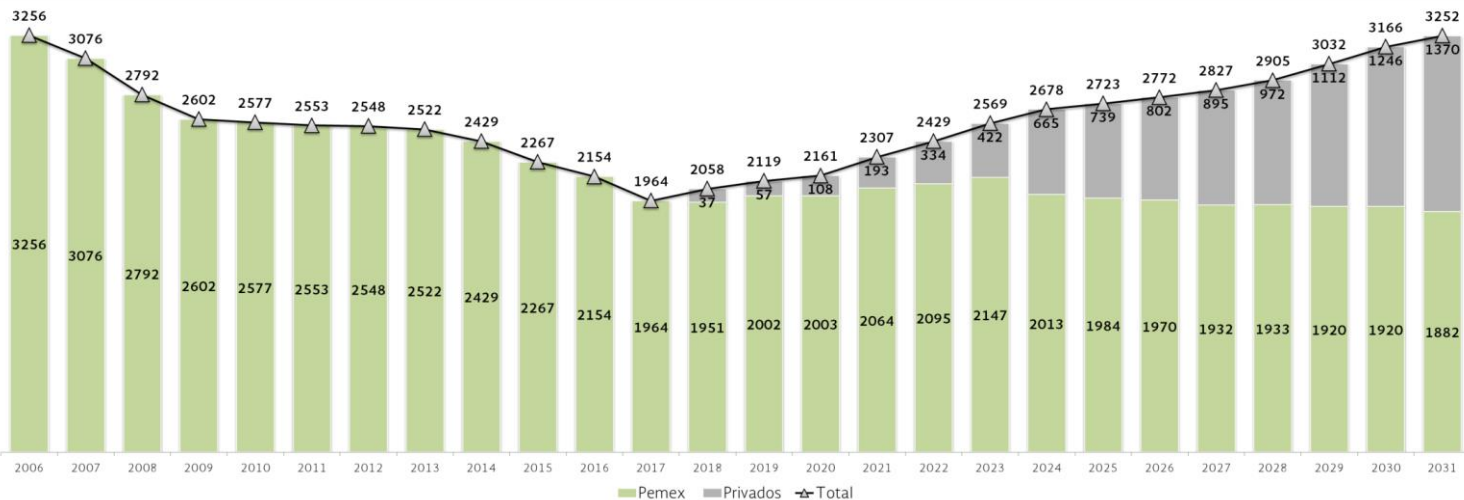
- During the last ten years there has been a downward trend in the production of crude oil, equivalent to an average annual growth rate of -3.8%.
- In 2016, the national production of petroleum stood at 2154.5 thousand barrels per day (mbd), 5.0% less than the previous year equivalent to 112.3 thousand barrels per day (mbd).

Petroleum Distribution 2006-2031 (Mbd)



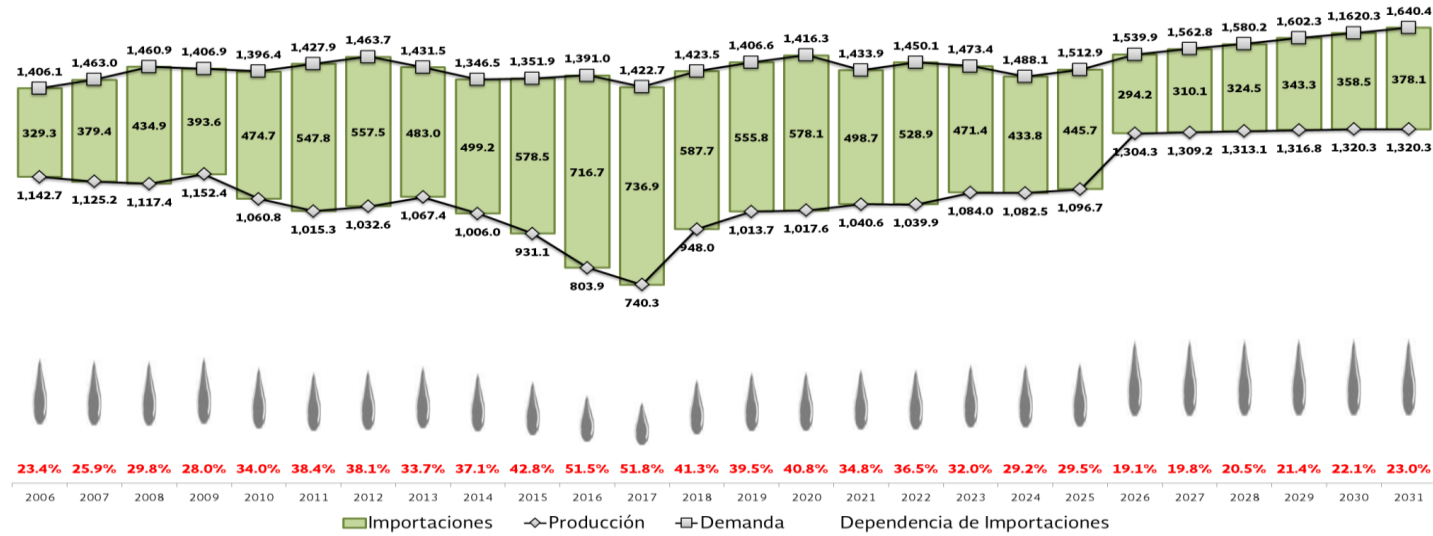
- In 2016, 43.8% of crude oil production was distributed in the National Refining System (SNR) and 56.2% was sent to export terminals.
- From 2017-2031, oil production will show an average annual growth rate of 3.7%. It is expected that by 2031, 46.4% will be sent to refineries and 53.6% to export terminals.

National production of petroleum 2006-2031 (Mbd)



- In 2016, the national oil production was 2,154 mbd, 5.0% less than in 2015. This is associated with the atypical coincidence of natural causes.
- From 2018 to 2031, the largest volume of oil will come from extraction activities by PEMEX.
- It is expected to be in 2019 when the extraction and exploration tenders begin to register production activity, reaching a 42% share in 2031.

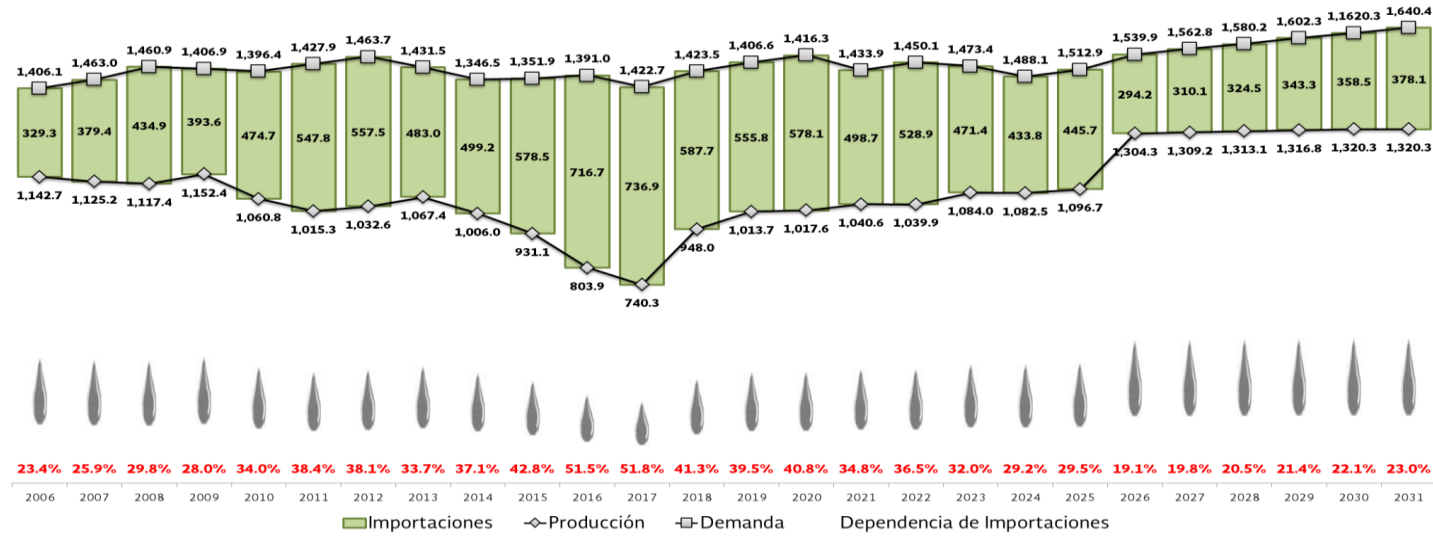
Production-Demand-Import of Petroleum Products 2016-2031 (Mbdpce)



*Consider automotive gasoline, diesel, turbosine, fuel oil and petroleum coke.

- In 2016, imports of petroleum products were 716.7 mbdpce, which means an increase of 23.9% compared to 2015; mainly as a consequence of the low production in the SNR refineries.
- In 2016, gasoline and diesel consumption grew 3.8% and 1.5% respectively in relation to 2015. Factors such as increased vehicle energy efficiency, associated with demanding environmental regulations, the behavior of the price of gasoline and diesel, as well as the clandestine sale are elements that contributed to the demand for these fuels in the motor transport sector.

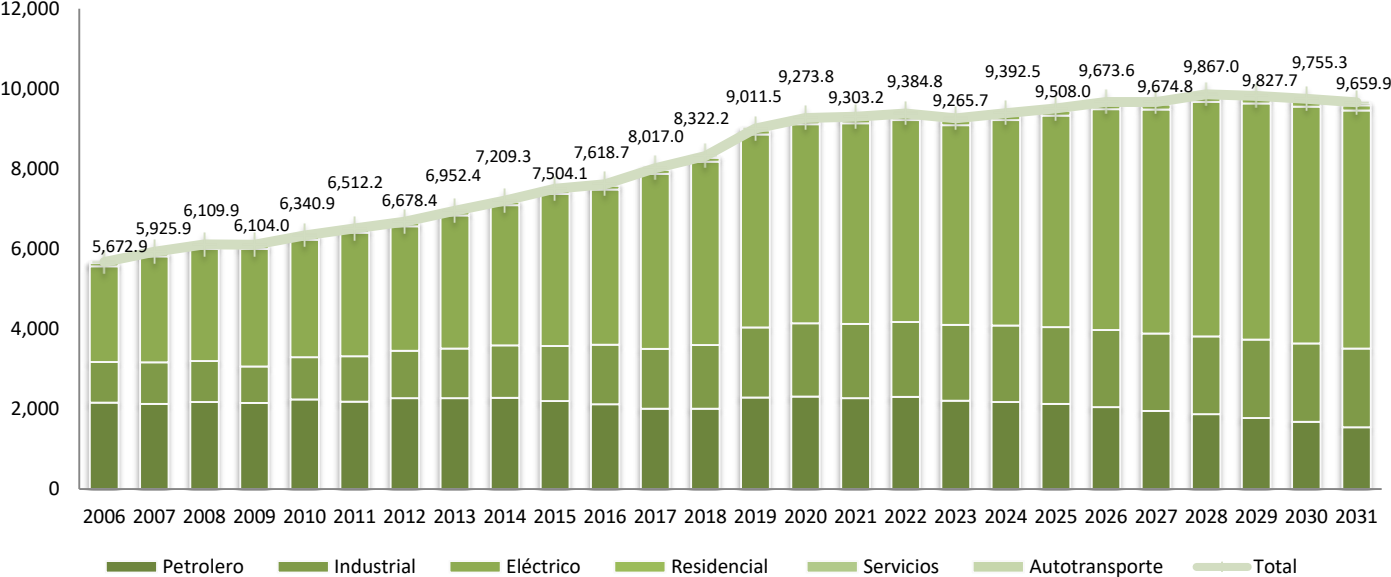
Production-Demand-Import of Petroleum Products 2016-2031 (Mbdpce)



*Consider automotive gasoline, diesel, turbosine, fuel oil and petroleum coke.

- 2018-2031 period, the projected investments for reconfigurations and capacity increases in the SNR processes are aimed at increasing the production of petroleum products, mainly intermediate distillates. Under this context, the expectation of growth in the production of petroleum products is 4.2% on average annually for the next 15 years

Natural gas demand by sector, 2006-2031 (MMpcd)



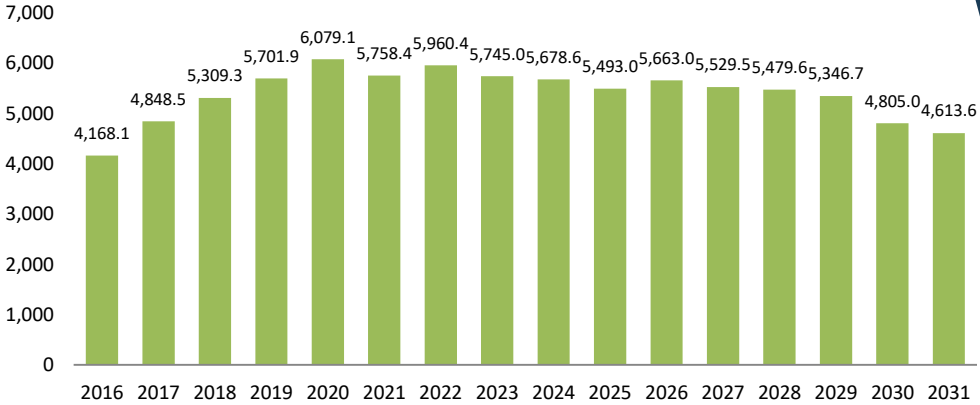
- From 2006 to 2016 the demand for natural gas increased 34.3%, with an average annual growth rate (tmca) of 3.0%, mainly due to its greater use in the electricity sector
- In 2016, the demand for natural gas increased 1.5% compared to 2015
- It is estimated that by 2031, the demand will increase 26.8% with respect to 2016, associated with the expansion of the gas infrastructure as well as the entry into operation of several combined cycle power plants.

Natural Gas Imports (2006-2031 MMpcd)

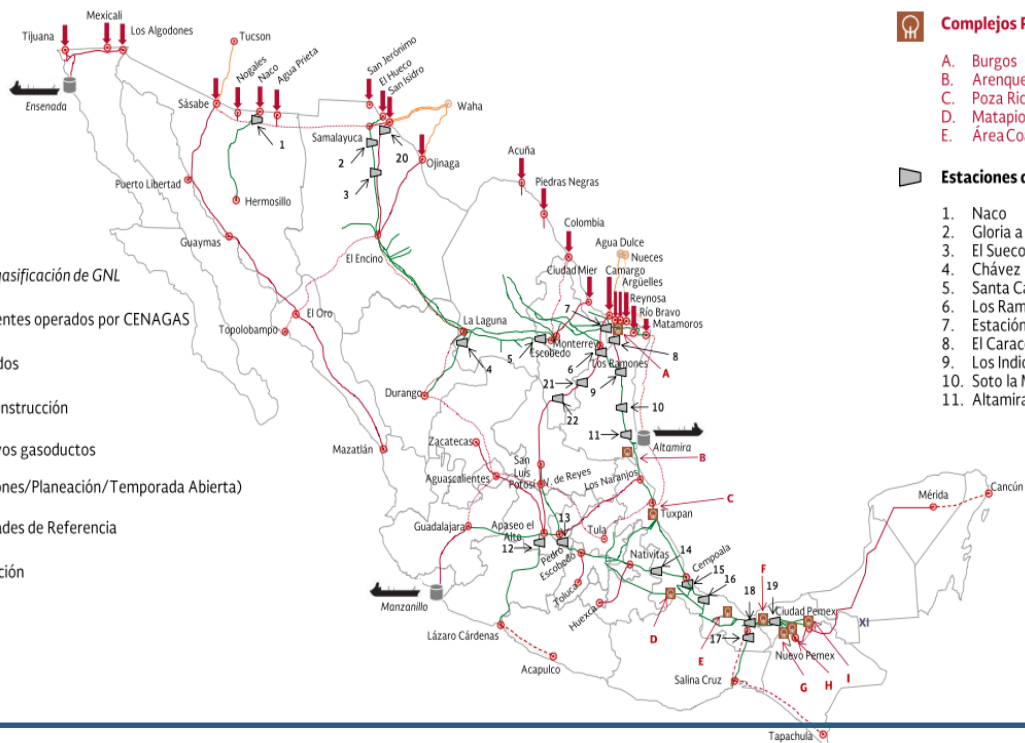


- In the last decade, imports of natural gas are tmca 15.1%
- Imported volumens in **2016, 87.1% were trough pipeline and 12.8% was imported by oil tankers.**

- From 2016 to 2031, natural gas imports will represen a **tmca of 0.7%.**



Natural Gas Infrastructure



Complejos Procesadores de Gas Natural:

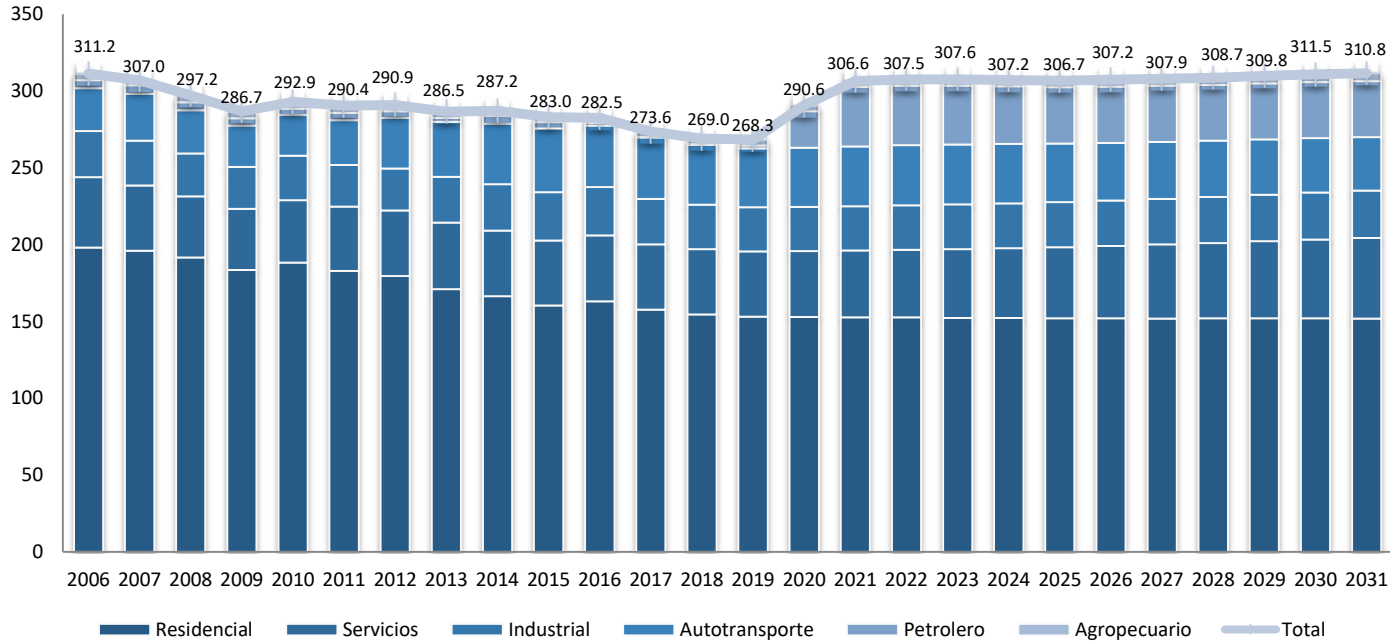
- | | |
|------------------------------------|----------------|
| A. Burgos | F. La Venta |
| B. Areque | G. Nuevo Pemex |
| C. Poza Rica | H. Cactus |
| D. Matapionche | I. Cd. Pemex |
| E. Área Coatzacoalcos ¹ | |

Estaciones de Compresión

- | | |
|--------------------|----------------|
| 1. Naco | 12. Valtierra |
| 2. Gloria a Dios | 13. El Sauz |
| 3. El Sueco | 14. E. Zapata |
| 4. Chávez | 15. Cempoala |
| 5. Santa Catarina | 16. Lerdo |
| 6. Los Ramones | 17. Jáltipan |
| 7. Estación 19 | 18. Chinameca |
| 8. El Caracol | 19. Cárdenas |
| 9. Los Indios | 20. San Isidro |
| 10. Soto la Marina | 21. Dr. Arroyo |
| 11. Altamira | 22. Villagrán |

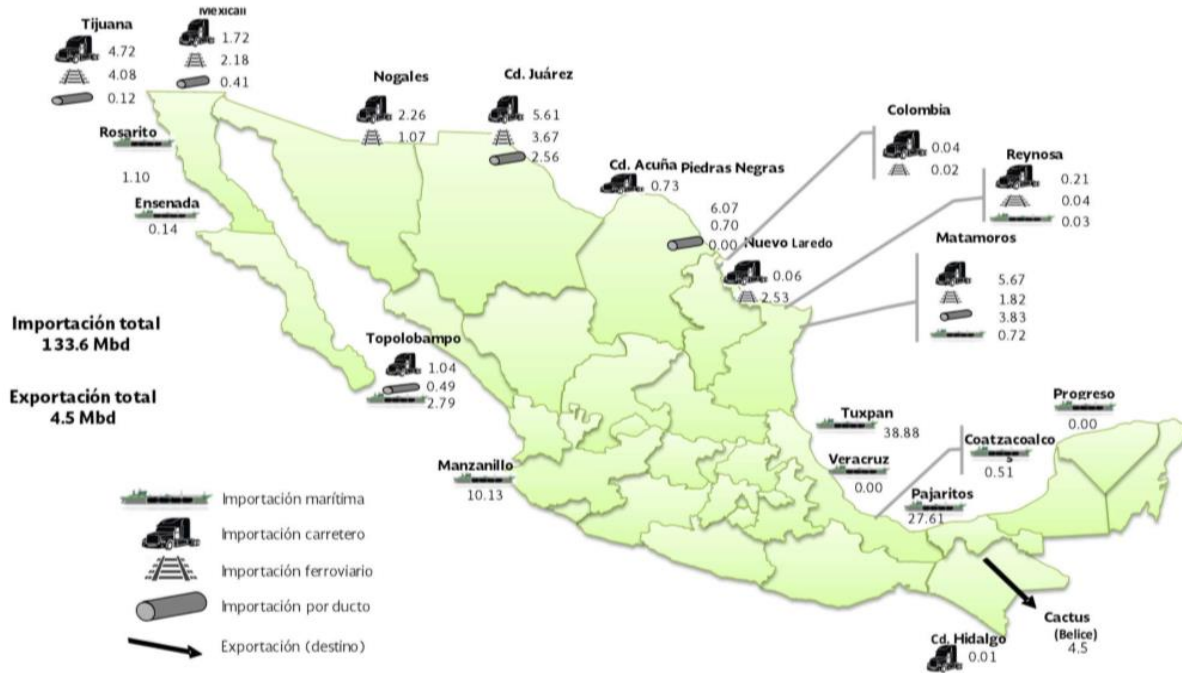
- At the beginning of the new admin, 11,347 km of transport gas pipelines operated in Mexico, currently operating 14,739 km, and it is estimated that in 2020, the network will increase to 20,173 km.
- In addition to the gas pipeline network, the current GN infrastructure includes 9 natural gas processing complexes, 3 liquefied natural gas regasification terminals and 22 compression stations.

Gas L.P demand by sector 2006-2031 (Mbd)



- The gas demand L.P. it decreased 9.2% from 2006 to 2016, and presented a negative annual growth rate of 1%, mainly due to the substitution of this fuel for natural gas in most sectors, except for the motor transport sector.
- In 2006 the gas demand L.P. decreased 0.1% compared to 2015.
- It is estimated that by 2031, the demand for gas L.P. increase 10.1% with respect to 2016, due to the increase in the supply of propane as a raw material in the plastics production chain from 2020, from the Pemex Ethylene company.

Gas LP Foreign Trade 2016



- In the last ten years, the domestic supply of L.P. It has not been enough to cover the needs of the country and Mexico has to rely in importation particularly from the US.
- At the end of 2016, a volume of 133.6 Mbd was imported, 27% more than the volume imported the previous year Maritime imports were 81.9 mbd (60%), by land 37.5 mbd (30%) and by pipe 14.2 mbd (10%)

Current Infrastructure gas L.P.

Distribution infrastructure for gas L.P.

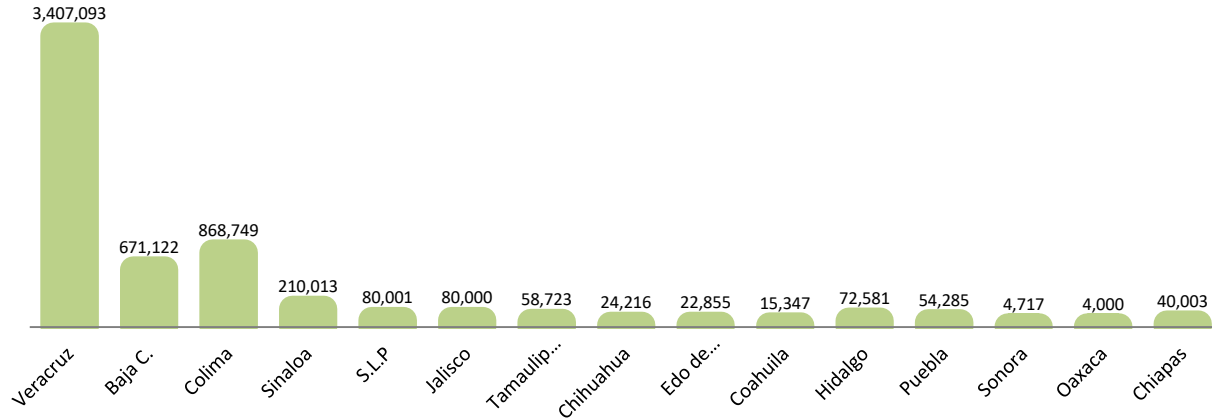


Current Infrastructure gas L.P.

Pipeline infrastructure for gas L.P.

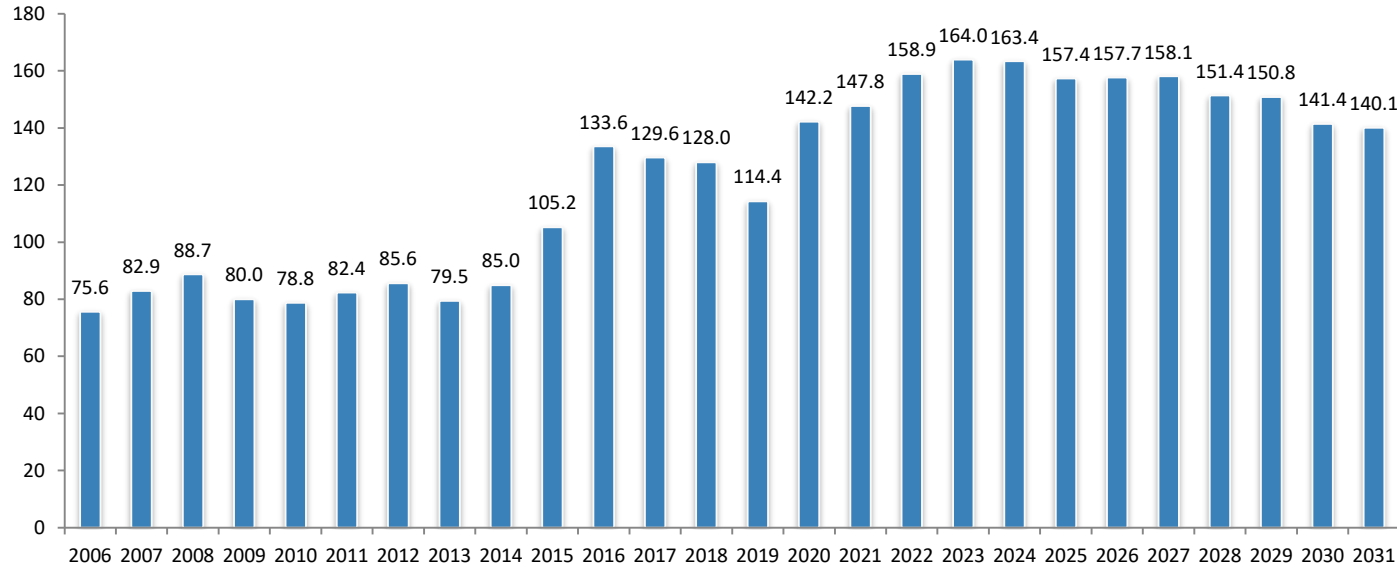


Current Storage Capacity for Gas LP



- Currently, the CRE has issued 5 gas transport permits L.P. through pipelines and 3 distribution permits, in addition to 33 L.P. gas storage permits. distributed in 15 states with a capacity of 5,613,704 barrels.

Gas LP Imports 2006-2031 (Mbd)



- From 2006 to 2016 the gas imports L.P. have increased 76.7% presenting a rate of 5.9% and it is estimated that by 2031 they will increase 4.8% with respect to 2016. During 2016, imports increased 26.9% compared to 2015

2.

Opportunities

Executive Director Business Development



Mercy Renteria

Strategist and Consultant with 12 years experience in the O&G industry with a bachelors from UTPA and advanced studies in Strategic management and Project evaluation from Harvard Business School. She has managed projects in Upstream & Midstream. Expert in international business development, technical evaluation and contract negotiation. She has helped companies to enter into new markets to successfully position their products and services in a sustainable and time efficient way.

Opportunities

Cuadro 3.3 Utilización de las refinерías 2010-2016

Refinería	2010	2011	2012	2013	2014	2015	2016
Cadereyta (R)	64%	62%	68%	69%	66%	57%	44%
Madero (R)	67%	62%	67%	68%	59%	69%	46%
Minatitlán (R)	86%	45%	51%	55%	59%	53%	39%
Salamanca	76%	70%	73%	79%	70%	67%	78%
Salina Cruz	82%	85%	78%	86%	82%	72%	72%
Tula	85%	88%	88%	78%	81%	75%	64%
Promedio	77%	69%	71%	72%	70%	66%	58%

Nota: La utilización de las refinерías se calcula como la capacidad utilizada entre la capacidad instalada en la refinera. La capacidad instalada en el SNR en 2010 fue de 1,540 mbd, de 2011 a 2013 de 1,690, en 2014 de 1,640 mbd y en 2015 de 1,615 mbd. (R) Refinería reconfigurada.

Fuente: Secretaría de Energía con información del SIE.

En 2016, la refinera de Salamanca registró el mayor factor de utilización del SNR con 78%, en contraste con las refineras con menor porcentaje de aprovechamiento: Cadereyta y Minatitlán con 44% y 39%, respectivamente. Cabe destacar que estas últimas ya han sido reconfiguradas mediante la instalación de plantas coquizadoras y planta hidrotratadoras de gasóleos.

- Refineries are not meeting the current country demand and Mexico will continue to rely in imports.

Opportunities

Cuadro 3.6 Petrolíferos seleccionados cuya importación está sujeta al requisito de permiso previo de importación por parte de la Sener

Fracción Arancelaria	Descripción
2710.12.04	Gasolina, excepto lo comprendido en la fracción 2710.12.03.
2710.19.04	Gasoil (gasóleo) o aceite diésel y sus mezclas.
2710.19.08	Turbosina (keroseno, petróleo lampante) y sus mezclas.

Nota: A partir de 31 de diciembre de 2015, la importación de combustóleo no requiere de permiso por parte de la SENER.

Fuente: ANEXO I del ACUERDO que modifica al diverso por el que se establece la clasificación y codificación de Hidrocarburos y Petrolíferos cuya importación y exportación está sujeta a Permiso Previo por parte de la Secretaría de Energía.

Al 26 de septiembre de 2017, se encuentran vigentes un total de 652 permisos de importación de petrolíferos, de los cuales 345 corresponden a diésel, 234 de gasolinas y 73 de turbosina.

- Thanks to the new energy reform, since April 1st 2016, Mexico can now import gasoline, diesel, jet fuel and fuel oil.
- The SENER is the entity that regulates and supervises the proper trade, imports and exports.

Opportunities

Cuadro 3.7 Importaciones de petrolíferos seleccionados 2010-2016 (mbd)

Concepto	2010	2011	2012	2013	2014	2015	2016	Tasa media de crecimiento anual (tmca)
								2010-2016
Gasolinas	379.1	404.7	395.2	358.3	370.1	426.6	504.9	4.9%
Diésel	108.0	135.7	133.6	107.1	132.9	145.3	187.8	9.7%
Turbosina	4.0	0.9	3.3	3.2	12.0	23.5	33.4	42.6%
Combustóleo	11.0	25.0	44.6	<u>31.3</u>	<u>13.0</u>	17.0	30.4	18.5%
Total	502.1	<u>566.3</u>	576.7	499.9	527.9	612.4	<u>756.4</u>	7.1%

Nota: Para el año 2016 se considera importación de privados

Fuente: Secretaría de Energía con información del SIE y el Servicio de Administración Tributaria (SAT).

- As for diesel, the first import through sea was received in the Veracruz port in September and now over 11% of all imports have been by private companies.
- Current imports are being made by pipeline, trucks crossing the border & barges but Mexico has not enough capacity of storage.

Mapa 4.1 Infraestructura logística de petrolíferos



Fuente: Secretaría de Energía con información de CRE.

Thank you!

www.recapetroleum.com



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