

MEXICO LIGHT-DUTY VEHICLE CO₂ AND FUEL ECONOMY STANDARDS

ICCT POLICY UPDATES

SUMMARIZE

REGULATORY

AND OTHER

DEVELOPMENTS

RELATED TO CLEAN

TRANSPORTATION

WORLDWIDE.

On June 21, 2013, the Mexican government published final standards regulating CO₂ emissions and the fuel economy equivalent for new passenger vehicles, including cars, pickup trucks, and SUVs. The final standard, titled NOM-163-SEMARNAT-ENER-SCFI-2013,¹ *Tailpipe emissions of carbon dioxide (CO₂) and the equivalence in terms of fuel economy, applicable to new automobiles of up to 3,857 kilograms of gross vehicle weight*, will apply to vehicle model years 2014 through 2016. Automakers may take advantage of early action credits for model years 2012 and 2013. Taking into account all annual credits but not credit banking and trading, the standard is expected to result in a new car fleet average fuel economy of 14.6 km/L in 2016.²

BACKGROUND

Three federal ministries in Mexico—the Ministry of the Environment and Natural Resources (SEMARNAT), the Ministry of Energy (SENER), and the Ministry of the Economy (SE), together with the National Institute of Ecology and Climate Change (INECC), which is the research arm of SEMARNAT—have been working together since 2009 to develop NOM-163. Mexico has not had fuel economy standards or labeling requirements in place for passenger vehicles since 1990.

This standard is one of the first regulations to execute part of the General Law on Climate Change, signed in 2012, which requires mitigation of climate change through such actions as establishing efficiency standards for new vehicles.³

1 *NORMA Oficial Mexicana NOM-163-SEMARNAT-ENER-SCFI-2013, Emisiones de bióxido de carbono (CO₂) provenientes del escape y su equivalencia en términos de rendimiento de combustible, aplicable a vehículos automotores nuevos de peso bruto vehicular de hasta 3 857 kilogramos*, DOF: 21/06/2013: http://dof.gob.mx/nota_detalle.php?codigo=5303391&fecha=21/06/2013

2 This estimation assumes the manufacturers have the same sales composition (average vehicle size and fleet mix) as in 2010 and are exercising full use of available credits, with exception of early action credits (for model years 2012 and 2013) and banking and trading of credits between years and among manufacturers.

3 Ley General de Cambio Climático, Nueva Ley DOF 06-06-2012: <http://www.diputados.gob.mx/LeyesBiblio/pdf/LGCC.pdf>.

THE CURRENT SITUATION

New light vehicles sold in 2011 averaged 13.1 km/L, up from 11.8 km/L in 2008,⁴ which is an 11% increase in fuel efficiency and a 3.5% annual rate of improvement. In terms of CO₂ emissions, new vehicles decreased from a fleet average of 198 gCO₂/km in 2008 to 180 gCO₂/km in 2011 a 9.3% reduction.

Vehicles sold in Mexico tend to be both smaller (average footprint of 4.1 m² as opposed to 4.5 m²) and less powerful (approximately 25% lower for MY2008) than vehicles sold in the U.S. The average fuel economy of new vehicles was also 3% higher in 2011 in Mexico. While the new regulations requires manufacturers to meet a very similar overall fleet average in Mexico and in the U.S., Mexico's standard requires a lower overall annual rate of improvement—2.2% in Mexico compared to 3.6% in the U.S.—from model year 2011.

KEY ELEMENTS OF THE REGULATION

The standards regulate CO₂ emissions in grams per kilometer, providing the equivalent regulatory metrics for fuel economy in km/L. The standard uses footprint (defined as the area between the four wheels of the vehicle in m²) based curves similar to those in the U.S. and Canada regulations, providing goals for model years 2012 through 2016, and automakers must submit data for each model year. The standards require automakers to meet a single sales-weighted fleet average over the period of 2014 to 2016, and allow credits generated in 2012 and 2013 to be used towards compliance. Manufacturers may also pool compliance for additional flexibility.

Separate compliance curves are provided for passenger cars and light trucks (SUVs, minivans, pickups). The standards are based upon the U.S. NHTSA Corporate Average Fuel Economy (CAFE) curves, although the stringency of the curves is reduced by 1% for cars and 2% for light trucks. The resulting regulatory curves would lead to a fleet average fuel economy for 2016 of 14.9 km/L, if average vehicle size and car/truck ratios remain constant. Full application of annual credits reduce the 2016 fleet average goal to 14.6 km/L. Early action credits and credit banking could lead to compliance in 2016 with a lower overall fleet average fuel economy.

The new standards apply to all manufacturers that sell new light-duty vehicles with gross vehicle weights (GVWs) up to 3,857 kg (8,500 lbs) with the exception of those manufacturers that sell less than 500 total vehicles per model year.

CREDITS

The standards include credits for early action, introduction of highly efficient technologies, efficient and low-climate-impact air-conditioning systems, and advanced vehicle technologies. All credits can be banked and used towards compliance for model

⁴ Fleet sales and fuel economy data for model year 2012 is incomplete, although the fleet average fuel economy appears to be similar and only slightly higher than 2011 levels. The most recent year with complete data is 2011. *Nota técnica sobre la evolución de las emisiones de bióxido de carbono y rendimiento de combustible de los vehículos ligeros nuevos en México 2008-2011*, INE, June 2012

years 2014 through 2016, including credits accumulated in 2012 and 2013. The main characteristics of these credits are as follows:

- » Early action credits: If the difference between the regulatory curves and fleet average in terms of grams per kilometer for model years 2012 and 2013 is positive (i.e., over-compliance with the standard), automakers are given a credit equivalent to 1.5 times the fleet average credit value of the two combined years. If difference is negative (i.e., under-compliance with the standard), no penalty is assessed.
- » Introduction of highly efficient technologies: Credits for model years 2013 through 2016 are available to automakers that offer or produce in Mexico a hybrid, plug-in hybrid or electric vehicle model or a vehicle model that has CO₂ emissions 20% lower than the regulatory goals for that vehicle size, type and model year. There is no sales threshold for use of this credit, the vehicle meeting this criteria need only be offered for sale or produced within Mexico for the full credit to be applied.
- » Air conditioning systems: Credits are available for model years 2013 through 2016 to manufacturers that demonstrate plans to introduce air-conditioning systems that reduce CO₂-equivalent emissions (either through low-leak systems or substitution of refrigerants with lower global warming potential gases) and use more efficient technologies for air-conditioning systems (based upon a list of technologies provided) in a minimum of 80% of the vehicles equipped with air conditioning systems. Credits are applied in full for any fleet that complies with the 80% minimum.
- » Technology penetration: Credits are available for model years 2013 through 2016 for manufacturers that demonstrate plans to introduce any listed technology (such as gasoline direct injection, variable valve timing, continuously variable transmissions, etc.) or other accepted or recognized technology (by EPA or similar authorities in the EU or Japan) to reduce fuel consumption in a minimum of 80% of the fleet. Credits are applied in full for any fleet that complies with the 80% minimum.

EXPECTED EFFECTS OF THE REGULATION

SEMARNAT estimated the following benefits from implementation of the standard over the vehicle fleet sales for 2013 through 2032:

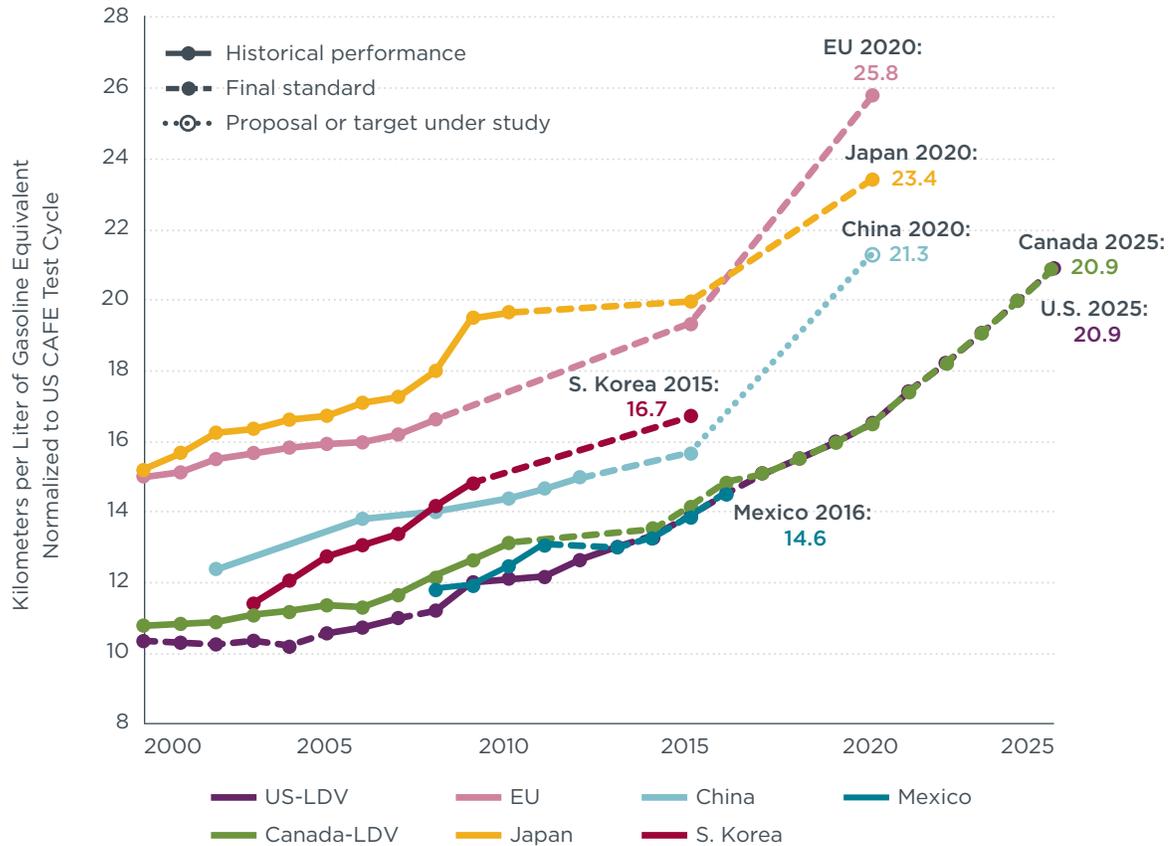
- » Reduction in fuel consumed: 710 million barrels
- » CO₂ emissions avoided: 265 million tons
- » Health benefits due to diseases and deaths averted: 26,818 million pesos (approximately US\$2,024 million)

The reduction in fuel consumption adds up to fuel savings of 1,084 billion pesos (approximately US\$84 billion) for Mexican consumers.⁵

5 Dictamen Total con Efectos de Final sobre el anteproyecto denominado "Proyecto de Norma Oficial Mexicana PROY-NOM-163-SEMARNAT-ENER-SCIFI-2012, Emisiones de bióxido de carbono (CO₂) provenientes del escape y su equivalencia en términos de rendimiento de combustible, aplicable a vehículos automotores nuevos de peso bruto vehicular de hasta 3,857 kilogramos," Oficio No. COFEME/13/1146. http://207.248.177.30/expediente/v99/_COFEME.13.1146.pdf

INTERNATIONAL CONTEXT

In its design and stringency the regulation is aligned with light-duty vehicle standards in both the United States⁶ and Canada⁷. Although Brazil has recently adopted a fiscal measure to encourage more sales of efficient technologies and vehicles,⁸ this will be the only mandatory vehicle fuel-economy standard currently in place in Latin America.



[1] China's target reflects gasoline vehicles only. The target may be higher after new energy vehicles are considered.
 [2] US, Canada, and Mexico light-duty vehicles include light-commercial vehicles.
 [3] Mexico does not include early action credits for MYs 2012 and 2013 but does include full application of other credits.

Figure 1. NOM-163 puts Mexico on track for progress equivalent to that experienced in the other major auto markets of the world.

6 *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule*, Federal Register Volume 75, Number 88 (Friday, May 7, 2010): 25323-25728. <http://www.gpo.gov/fdsys/pkg/FR-2010-05-07/html/2010-8159.htm>

7 *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*, SOR/2010-201, <http://www.gazette.gc.ca/rp-pr/p2/2010/2010-10-13/html/sor-dors201-eng.html>

8 *Programa de Incentivo à Inovação Tecnológica e Adensamento da Cadeia Produtiva de Veículos Automotores - Inovar-Auto*, Decreto no 7.819/2012, http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2012/Decreto/D7819.htm