

MEXICO'S DIESEL EMISSIONS INITIATIVES

SECRETARÍA DE
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RECURSOS NATURALES



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Secretariat of Environment and Natural Resources

**General Directorate for Air Quality and Public Release and Transfer
Registry**



PREVIOUS

2005 TRANSPORT STATISTICS



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Concept	Measure Unit	Value
Total volume loaded in all transport modes, 2005 ^P	Metric tons in millions	808.9
Total load volume, moved by road ways, 2005 ^P	% total volume loaded	53.8
Railways length, 2005 ^P	Kilometers	26 662
Net road length, 2005 ^P	Kilometers	355 796
Net toll road length, 2005 ^P	Kilometers	7 409
Sea Ports, 2005 ^P	Units	96

PREVIOUS

BOARDING CROSSES 2001



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- MAIN BORDER PORTS (LAND LOAD)

– Nuevo Laredo/Laredo	1,419,165	32.8 %
– Tijuana / Otay Mesa	700,453	16.2 %
– Cd. Juárez/El Paso	656,257	15.2 %

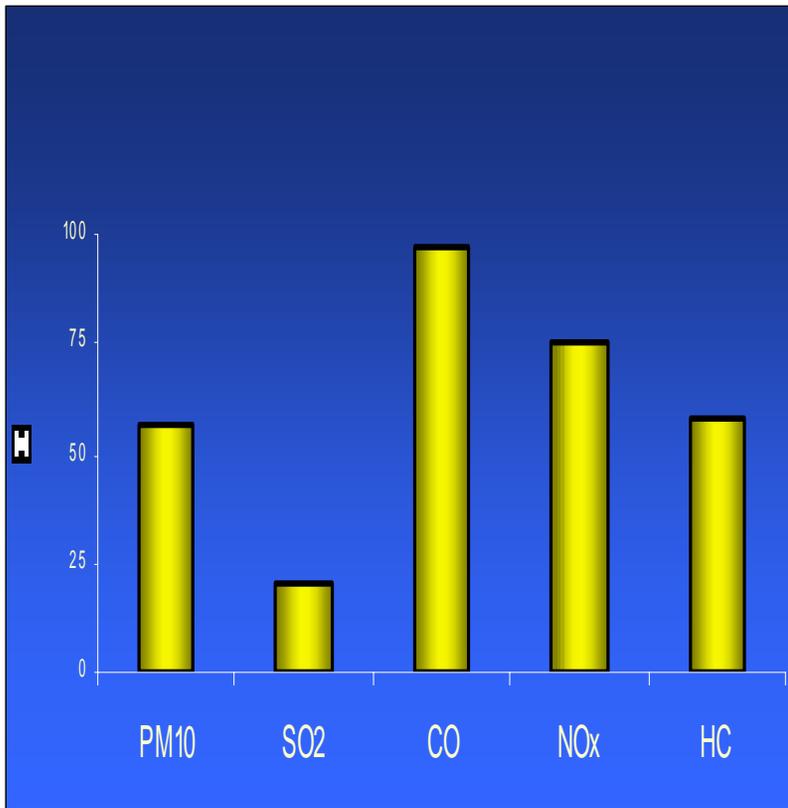
PREVIOUS

Motors Vehicles: main cause of air pollution in cities



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- In Mexico runs almost 20 millions of vehicles.
- Most of them are concentrated in medium and big cities.
- Nowadays motors vehicles contribute with:
 - 95% Carbon monoxide.
 - 75% Nitrogen oxides.
 - 50% Hydrocarbons.
 - 60% Fine particles.
 - 25% Sulfur dioxide.

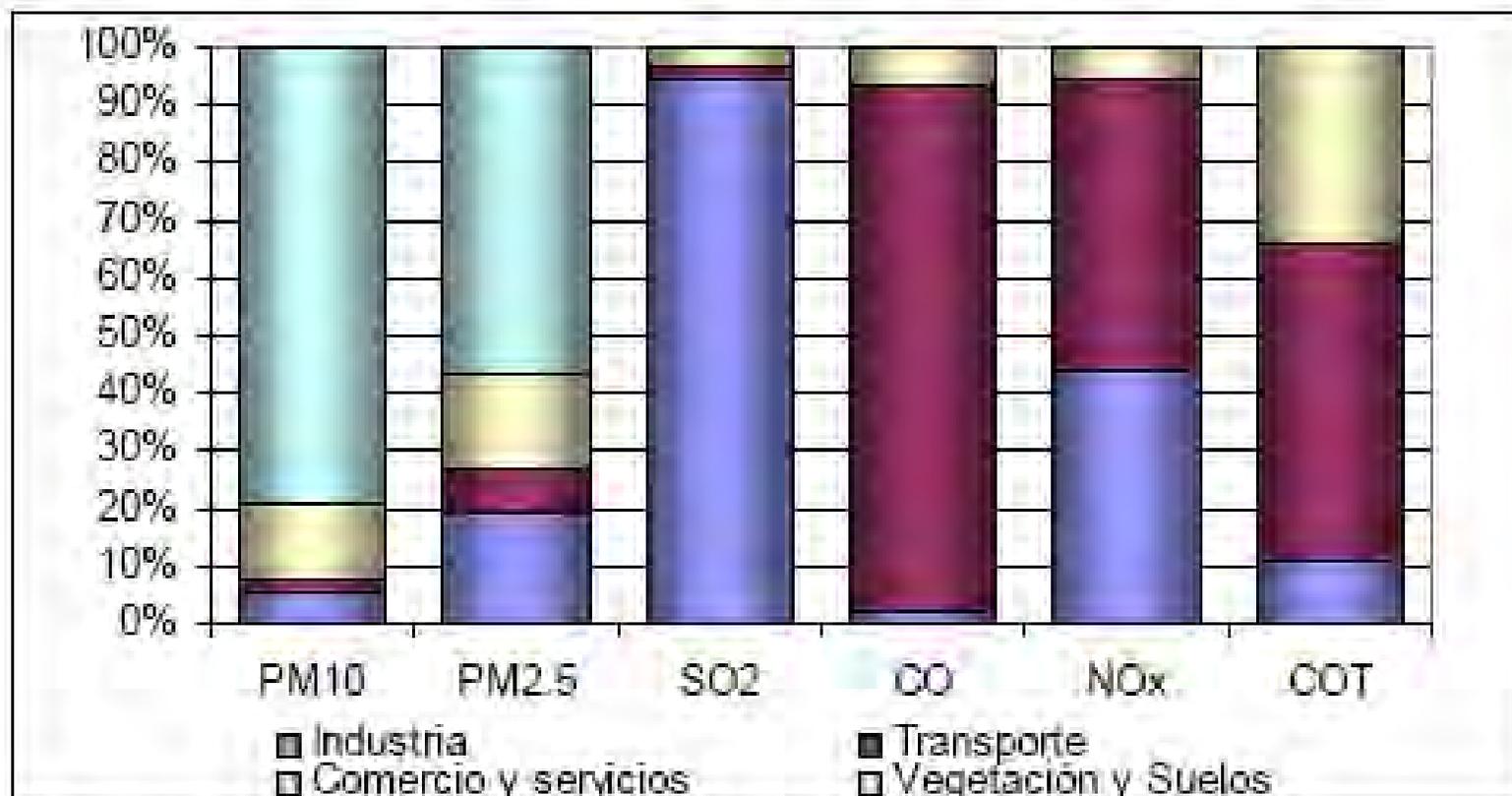
PROAIRE DE JUÁREZ 2006-2012



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Contribución porcentual de emisiones por sector, 2002



Fuente: SEMARNAT, DGGCARETC.

“Transport in Mexico”

- In Mexico the transport generates 95% CO, 75% NOx, 50% HC, 60% PM and 25% SO₂ (total emissions into the atmosphere of anthropogenic origin).
- In Mexico runs almost 20 millions of vehicles, they contribute with 28.8% CO₂ emissions.
- It is estimated that average age of heavy-duty trucks is 17 years old.



Main Diesel Control Emissions Policies



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In order to progress on diesel emission reductions, the key element of Mexican Strategy must focus on: Clean diesel, stricter regulations for new engines, reinforce I&M programs, and voluntary programs or incentive programs like “Smartway” and “Chatarrización”.

- **Ultra Low Sulphur Diesel Introduction**
- **Load Transport Measures**
 - **New Engine Standards & I/M New procedure (Rules and Regulations)**
 - **“Smartway” (Voluntary Program)**
- **Renovation of Federal Fleet (“Chatarrización” Program)**

FUELS IMPROVEMENT

2003 2004 2005 2006 2007 2008 2009 2010 2011 2012



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Premium



Magna ZM¹



Magna RP²



Diesel ZM¹



Diesel ZF²



Diesel RP³



FUELS IMPROVEMENT

Fuel distribution facilities in border zone



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FUELS IMPROVEMENT

Fuel distribution in Baja



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BAJA CALIFORNIA NORTE

ESTADOS UNIDOS DE AMERICA



FUELS IMPROVEMENT

Fuel distribution in Sonora



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FUELS IMPROVEMENT

Fuel distribution in Chihuahua

CHIHUAHUA



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Fuel distribution in Coahuila



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Fuel distribution in Nuevo Leon

NUEVO LEON

ESTADOS UNIDOS DE AMERICA

COAHUILA

TAMAULIPAS

SAN LUIS POTOSI

TAMAULIPAS



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Fuel distribution in Tamaulipas



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FUELS IMPROVEMENT

Terminals where Ultra-Low Sulfur Diesel supply is standardized

- Rosarito – Mexicali – Ensenada (Baja California)
- Ciudad Juárez (Chihuahua)
- Laredo (Tamaulipas)



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Terminals where Ultra-Low Sulfur Diesel supply is intermittent (no quality controls)

- Nogales y Magdalena (Sonora)
- Sabinas (Coahuila)
- Reynosa (Tamaulipas)

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EMISSION STANDARDS DIESEL ENGINES



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EPA 98 & EURO III / EPA 2004 & EURO IV

Emission Standard for Diesel-Powered Vehicles (gross vehicular weight over 3,587 kg)* (in grams/brake horsepower hour)					
Pollutant \ Year	Standard referred to	Hydrocarbons (HC)	Carbon Monoxide (CO)	Nitrous oxides (NOx)	Particles
1993		1.3	15.5	5.0	0.25
1994-1997		1.3	15.5	5.0	0.1
1998 – 2003		1.3	15.5	4.0	0.1
2004 – VI 2008	EPA 98	1.3	15.5	4.0	0.1
VII 2008 – VI 2011	EPA 2004	0.5	15.5	2.5	0.1
Emission Standard for Diesel-Powered Vehicles (gross vehicular weight over 3,587 kg) (in grams per kilowatt hora)					
2004 – VI 2008	Euro III	0.66	2.1	5.0	0.10
VII 2008 – 2011	Euro IV	0.46	1.5	3.5	0.02

Source: Own data based on [Directive 1999/96/EC](#) [Directiva 2001/27/EC](#) y 40 CFR section 50.10

INSPECTION AND MAINTENANCE



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I. I&M Improvements

- Fixed I&M Centers for Federal Fleets (trucks on federal roads – main load transport companies)
- Introduction of New Procedure for Truck I&M Program (test SAEJ1667 will be enforced by new regulations – will be official in three weeks more).



VOLUNTARY PROGRAMS

“Mexican Smartway”



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- **Voluntary Program, “Partnership between SEMARNAT and Transport Industry (load and passengers)”.**
 - The “program” design take “Smartway” as a model – focus on impulse clean and energy efficient transport.
 - In “planning and design stage”.
 - Will start with pilot program in the border area.
 - Three regional workshops are programmed with EPA support.
 - Other government agencies are adding to this effort (Energy Secretariat)



VOLUNTARY PROGRAMS

“Mexican Smartway”

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- **Smartway is also a good opportunity to support “retrofit” in transport fleets.**
 - “Retrofit” equipment could be supported for economic and image benefits of “Smartway”; would be easier impulse “Retrofit” in fleets, as a part of “Smartway” program.
 - Border region is a good start for multiply “Retrofit” actions because has Low Sulphur Diesel.
 - Open the border on selective way to “Mexican Energy Efficient and Clean Transportist” can contribute to impulse “Mexican Smartway Program”.



“Chatarrización Program”

Goal: Renew federal fleet, looking for competitiveness and productivity of load transport

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- ✓ Who? – Passengers or Load Transport (federal jurisdiction)
- ✓ How? - With a fiscal incentive (money) offer by Federal Government.
 - ✓ The sale price of used truck, or
 - ✓ 15% price of new or semi new truck, or
 - ✓ Specific money quantity (between \$140,000 - \$60,000 pesos, in function of truck or bus class)
- ✓ When? – the program is on wheels since October of 2003.

“Chatarrización Program”

HANDICAPS

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- ✓ The Federal Fleet Volume (around 600,000 trucks and busses)
- ✓ Transporters still need expend a lot of money to change their truck or bus
- ✓ Involve local governments to reach heavy duty local fleets



We are working for...

- Reduce emissions from diesel engines in all regions of Mexico, focus on priority areas (Metropolitan areas and border region)

Our main strategy...

- Take technological and administrative proved measures as a main tools to reach faster emissions reductions in diesel fleets

Finally we expect...

- Retrofit technologies, clean fuels and operational changes can make a difference in reducing diesel emissions.



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THANK YOU

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