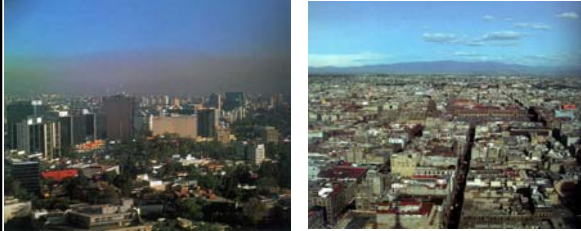


**“Emissions standards for new vehicles:
a negotiation analysis approach”**



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Hewlett Foundation Workshop
Sao Paulo, Brasil
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**Análisis de Beneficios por reducción de azufre en
gasolinas**

- **Resultados de reducciones en emisiones:**
 - 1,048 toneladas anuales de HC
 - 1,866 toneladas anuales de NO_x
 - 3,580 toneladas anuales de SO₂
- **Reducciones en concentraciones ambientales**
 - Modelo de forma reducida basado en modelos tridimensionales y observaciones
 - Ozono – resultados de corridas del MCCM para determinar % de reducción en ozono por % reducción en HC y NO_x (Salcido et al., 2001)
 - Partículas – resultados de Source Apportionment (Chow et al. 2002)

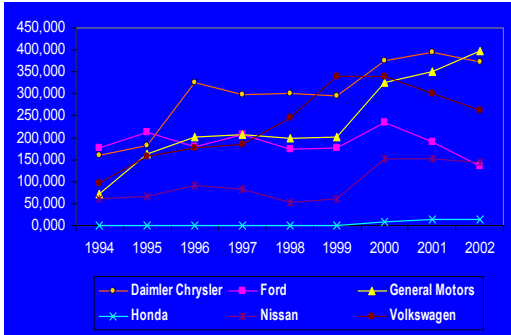
**Beneficios por reducción de azufre en gasolinas -
Resultados**

- Estimated benefits from reduction of emisiones of HC, NO_x y SO₂ from 2006 al 2012:
 - 400 defunciones/año
 - 2760 casos de bronquitis crónica/año
 - 81,617 días de trabajo/año



Savings of US 650 million per year

Exportaciones

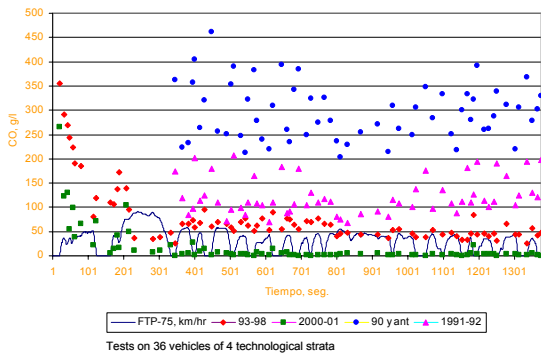


Outline of presentation

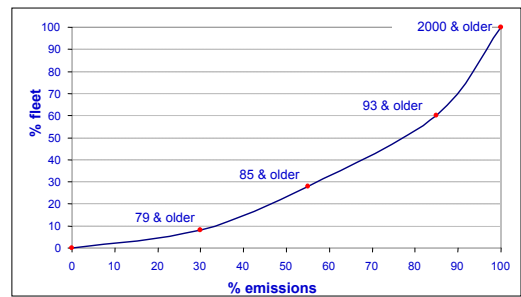
EMISSION STANDARDS FOR NEW VEHICLES: A NEGOTIATION ANALYSIS CASE STUDY

- Why bother about new vehicles?
- Negotiating TIER I
- What about TIER II?
- "persuading consumers"

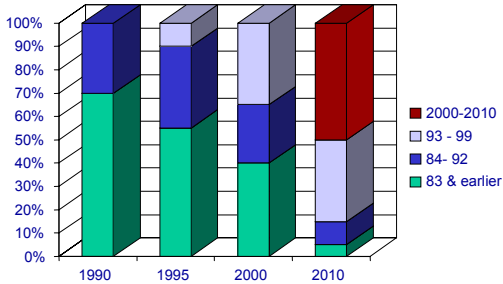
Tailpipe emissions of CO in g/l FTP-75 cycle tests



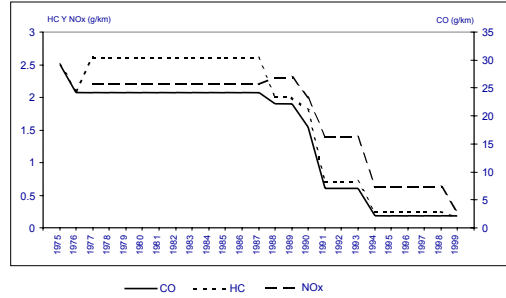
Emissions contribution of different categories of vehicles in Mexico City



Rational for taking action with new cars



Evolution of emission standards for new vehicles in México



Comparison of USA and Mexican Standards

Tail-pipe emissions in g/km			
	HC	CO	NOx
US emission limits			
1972	2.2	24.2	NR
1975	0.94	15.0	1.94
1978	0.94	15.0	1.25
1981	0.25	2.1	0.62
1994	0.16	2.1	0.25
Mexican emission limits (0 km)			
1975	2.5	29.2	NR
1977	2.6	24.2	2.2
1988	2.0	22.2	2.3
1990	1.8	18.0	2.0
1991	0.7	7.0	1.4
1994	0.25	2.1	0.62
2001*	0.16	2.1	0.25

Market and economic implications of the introduction of the TIER I standards

- Large utility vans such as the Suburban and the Silverado, small vans such as the VW Combi, and small sedan cars like the old VW "Beetle" and the Nissan "Tsuru", dominated their market sectors
- These vehicles were using technologies developed locally, similar to those used by pre-1994 US cars
- These vehicles were the cheapest within their categories (10-20% less than competitors) and therefore they had the highest sales

Background for the TIER I negotiations (1)

- In 1997 INE started negotiations with Car Manufacturers Association (AMIA) to review standards for new vehicles
- Until 1998 emission standards in México were similar to those applied in the US for 1981-1993 vehicles
- The difference in NOx emissions between a 1997 Suburban and a Cavalier was 7:1 (1.2 g/km vs 0.17 g/km, TIER I standard was 0.25 g/km)
- AMIA's position: earliest possible date to meet the new standards TIER I (EPA 1994) was 2001

Background for the TIER I negotiations (2)

- INE could not impose obligatory standards unilaterally, Trade Ministry could stop the process
- Individual car companies had different positions: GM and Nissan were against; VW adopted the "wait and see" position, Ford and Chrysler were in favor.
- The Car Manufacturers Association (AMIA) was against; as usual, they adopted the lowest common denominator.
- Trade and Commerce Ministry was "invited" by AMIA to negotiation sessions to guarantee that INE would not affect seriously the interests of the car industry.

Arguments stated by AMIA members in 1997:

- Regulatory efforts should concentrate only in old cars
- Altitude played an important factor
- Gasoline quality was a serious problem (*sic*)
- Costs for meeting TIER I (EPA 1994) will be too high
- Earliest possible date for TIER I = 2001

The "leadership" of General Motors

- GM led the opposition against the new standard, playing "hard ball" at the regular AMIA meetings
- Tried to lobby separately with the other two members of the Metropolitan Commission: the Gov. Of the Federal District and the Gov. Of the State of Mexico.
- Tried to persuade top policy makers: first President of INE and then Secretary for the Environment.
- GM threatened to close the Toluca plant and insinuated that INE wanted to favor "other" companies

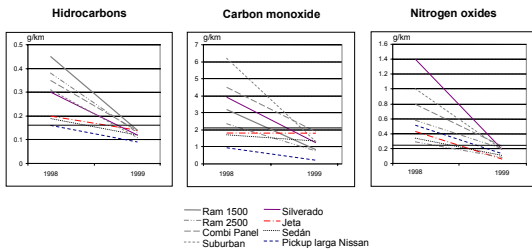
I/M PROGRAM



Creating value: the 2-year exemption of the vehicle inspection program

- Current federal standards mandate an inspection for all vehicles twice a year, irrespectively of age and model. I/M annoys people, and there is a risk of failing the test
- INE proposed to CAM a voluntary standard: "1999 & 2000 vehicles meeting TIER I (instead the obligatory target of 2001) would obtain a 2-year I/M test waiver
- Key issue: the scheme would generate competition, because some vehicles were already TIER I while others were not. Consumers would have more choices
- Result: all 1999 vehicles met the "voluntary" standard

Emission levels of some 1998 & 1999 models



Revisiting the 2-year I/M waiver in 2000: time for TIER II

- In 1999 INE sent a memo to AMIA saying that in the future the time lag for adoption of international standards in Mexico should not exceed 2 years
- In early 2000 INE told AMIA that to get the I/M waiver extended for 2001 vehicles, they should make a proposal for compliance with: durability standards and OBD II systems
- AMIA "ran the ball" for four months hoping for an automatic renewal of waiver

Quedará doble '0' sin efecto

Los vehículos nuevos volverán a verificarse semestralmente a partir del 2001

In May 2000 INE told the media that the I/M waiver would be cancelled because authorities had no news from AMIA

The following week AMIA sent a proposal to INE and went back to the negotiations table

Revisiting the 2-year I/M waiver in 2000: time for TIER II.. cont.

- INE persuaded AMIA to go ahead without PEMEX
- In September 2000, the Metropolitan Environmental Commission signed an agreement with AMIA:
 - OBD-II and 50,000 miles durability standard phase-in calendar was agreed upon: 2001-2005
 - Phase in of TIER II linked to US calendar was agreed upon (2006-2009)
- Early 2001 INE started media campaign asking the Treasury to give PEMEX 1,000 million dollars for the phase I reduction of sulfur (300 ppm nation-wide); in 2004, an additional 1,000 million dollars will be needed for the phase II (30-50 ppm nation-wide)

Modification of Standards

- These negotiations led to the modification of the following Federal standards:
 - NOM-041: Establishes emissions standards for vehicles in circulation
 - NOM-042: Establishes emissions standards for new vehicles
- An agreement was established that future emissions standards would lag U.S. Standards by 2 years

Tier 1 outcomes

- The modifications of the standards did not include durability standards nor OBD2 requirements.
- However, under the agreement of the Metropolitan Environmental Commission, AMIA allowed for the incorporation of OBD and durability standards to 80,000 km with the following phase in:

Model Year	2001	2002	2003	2004	2005
% of Fleet with OBD and durability	Start	20%	40%	60%	100%

Low Sulfur Fuel Negotiations

- The current proposal, which has also been signed by the working group, would imply the following phase in:
- Pemex estimates that this program would cost 1.3 billion U.S. Dollars.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
PEMEX Premium	300/500								
PEMEX Magna ZMVM		250/300							
PEMEX Magna RP			300 / 500					30 / 80	
PEMEX Magna ZMVM									30 / 80
PEMEX Magna RP		1000							
PEMEX Magna ZMVM				300 / 500					
PEMEX Magna RP								30 / 80	
PEMEX Magna ZMVM		500							
PEMEX Magna RP					300				
PEMEX diesel								15	

Thank you

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