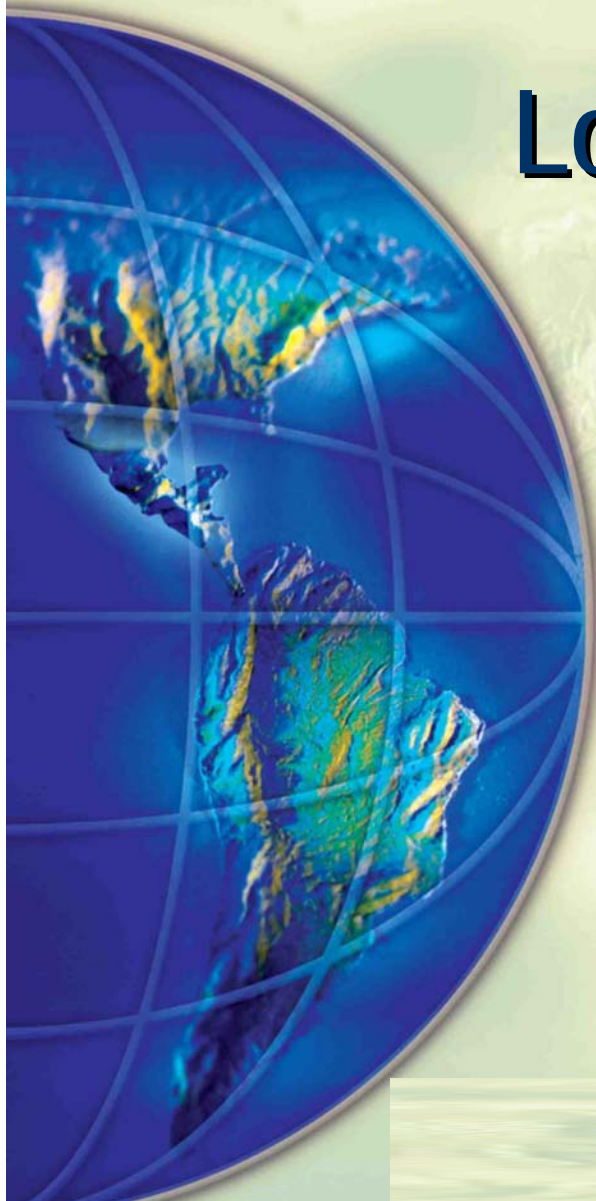


# **Local Climate Action Strategy Mexico City**

**Claudia Sheinbaum Pardo**  
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**Oscar Vázquez**  
Secretariat for the Environment  
Mexico City Government

**September, 2006**



# Reflections about ELAC

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- Mexico do not belong to the Annex 1, even though, we are the thirteenth country in the world emissions contribution
- The Mexico City Metropolitan Area contributes with around 12% of the total emissions generated in the country from energy consumption, but less than 0.1% of the forest emissions

# Reflections about ELAC

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- We believe in the need of incorporate the climate change component in the governmental projects, within the framework of the needs and priorities of the sustainable development, on the regional and local scales

# Background



## México:

1,964,375 km<sup>2</sup>

100 millions of habitants

75% live in city areas

## Federal District:

8.6 millions of habitants

Surface : 1,484 km<sup>2</sup> (0.1%)

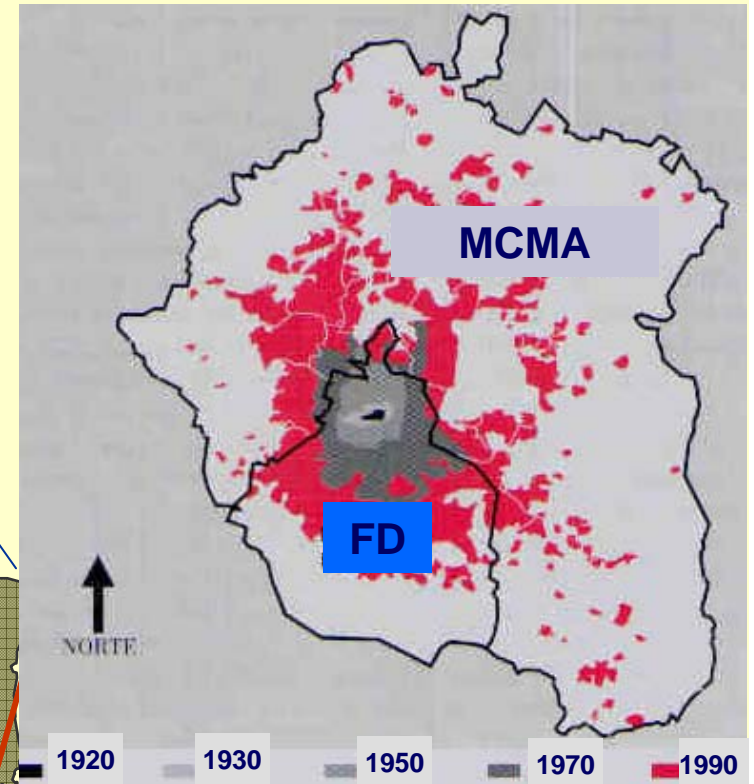
## Mexico City Metropolitan Area:

FD & 18 municipalities of Estate of Mexico

18.7 millions of habitants

35 000 Factories,

4 millions of vehicles



**Local Actions, Global Challenges**



# Toward sustainable development



- Promote the sustainable economic growth
- Support the implementation of public policies focused to reduce of poverty and social inequality, to the stimulates the employs generation and to promote a sustainable development with justice equity and social inclusion
- Sustainable management of the natural resources

Latin America and Caribbean initiative for sustainable development

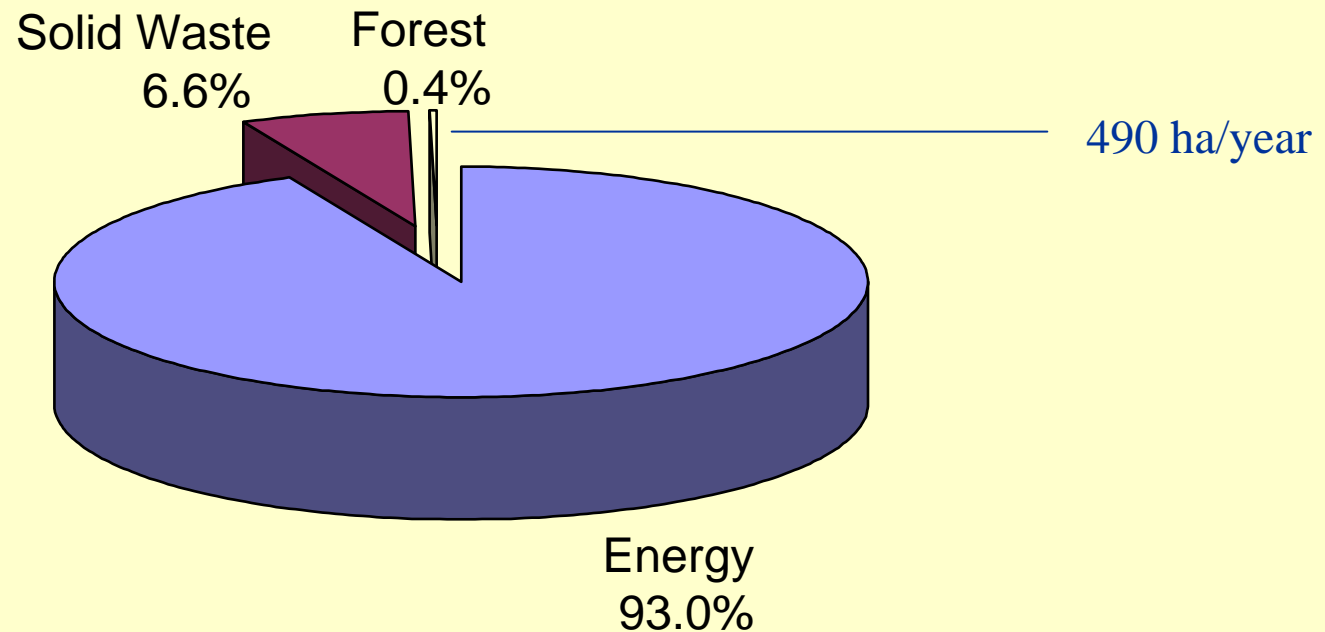
May 2002

# Local Strategy of Climate Action

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- GHG Emissions Inventory
- Greenhouse Gas Emissions Trends to 2012
- Mexico City's Vulnerability Analysis
- Mexico City's Adaptability Analysis
- Emissions Mitigation: Programs and Projects

# CO<sub>2</sub> Equivalent Emissions by sector in the MCMA



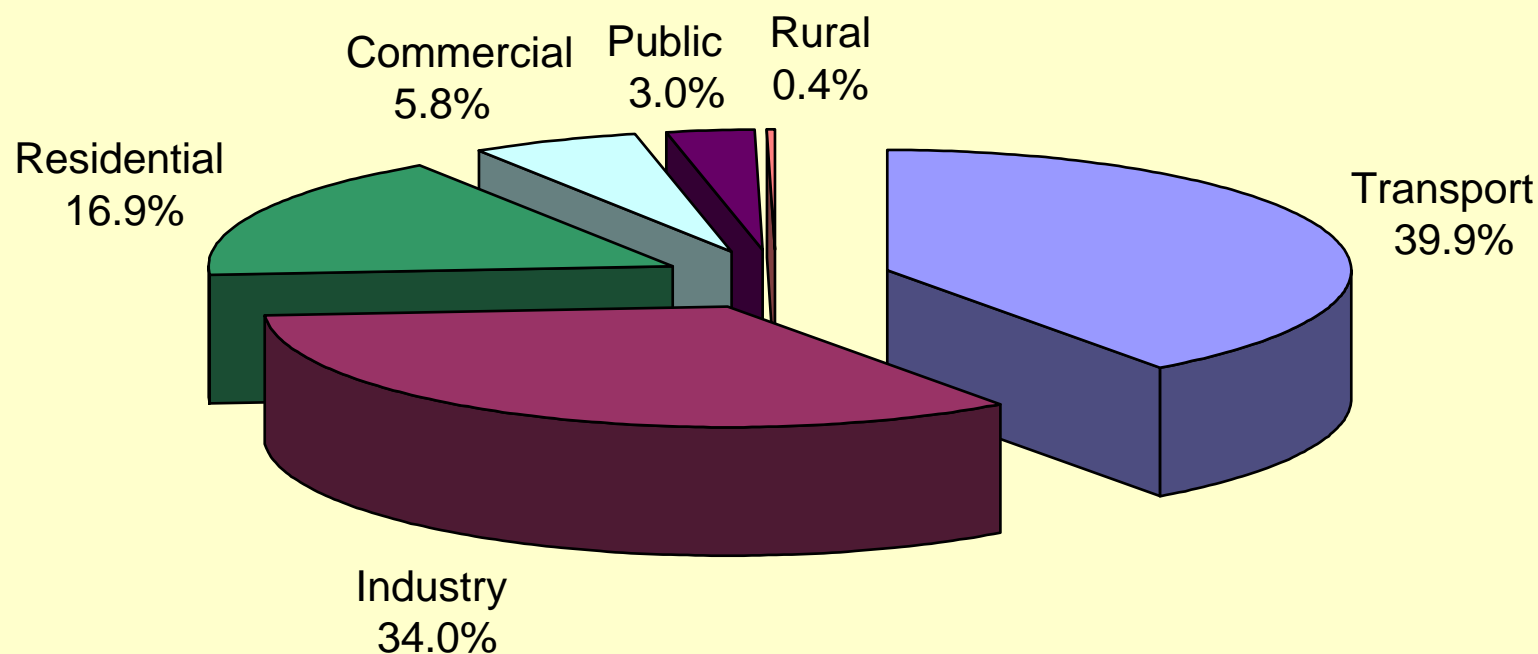
**Mexico City Metropolitan Area:** 54.1 millions metric Tons CO<sub>2</sub> equivalent / year

**Federal District:** 33.5 millions metric Tons CO<sub>2</sub> equivalent per year

2

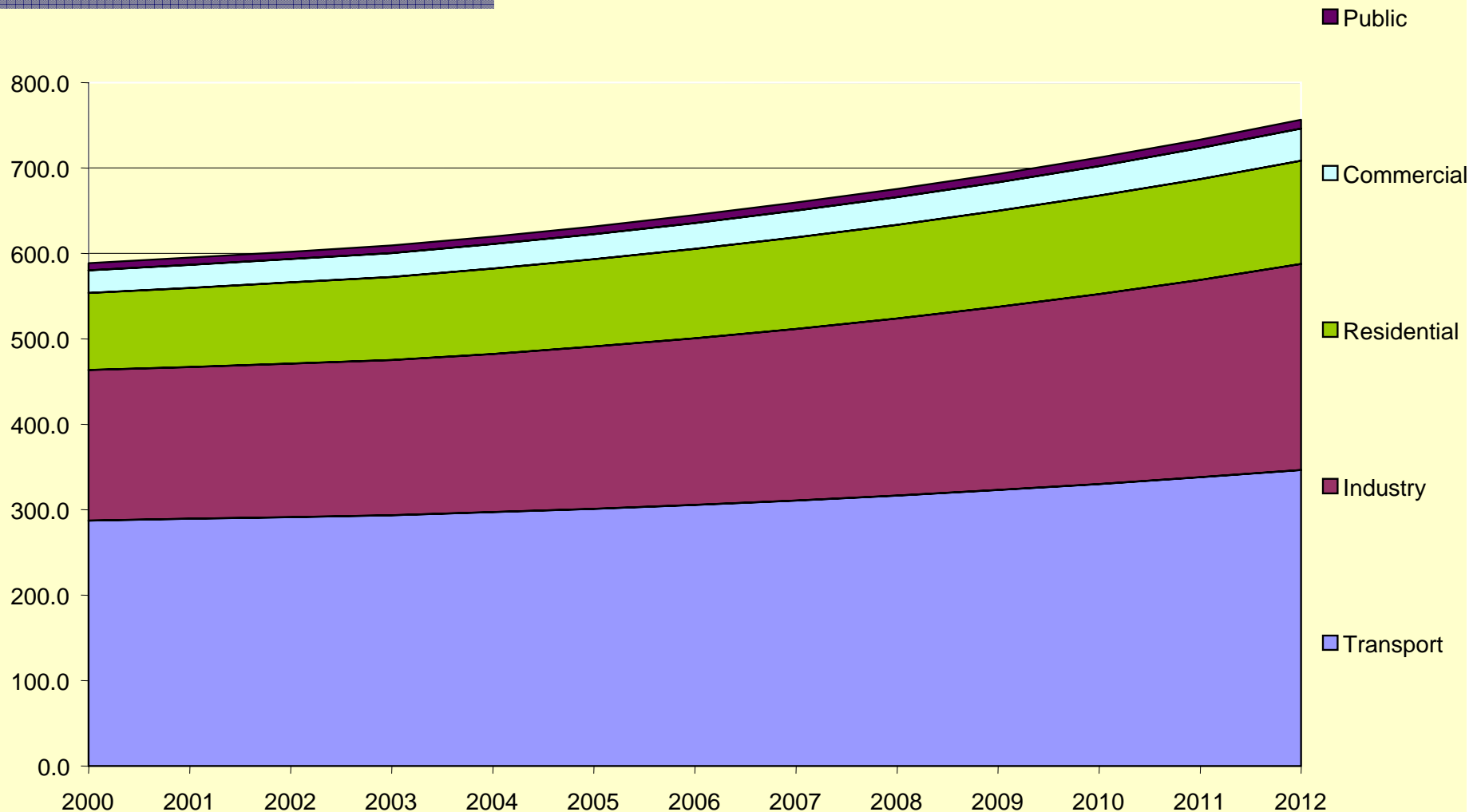
13.7 Tg CO<sub>2</sub> are emitted outside of the MCMA produced by the electricity consumption

# CO2 Emissions Inventory according to the energy consumption in the MCMA





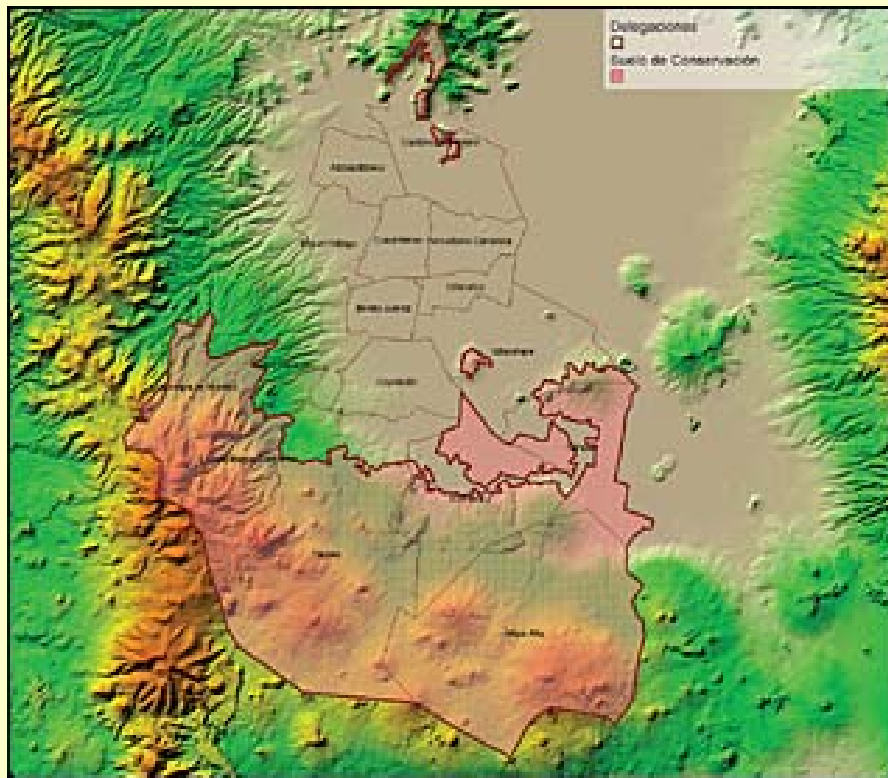
# Energy consumption scenario for the MCMA (PJoules)





# **Emissions Mitigation: Programs and Projects**

# Forest restoration program



- Prevention and fight of forest fires program
- Ecological restoration program
- Protected Natural Areas
- Sustainable rural production
- Ecotourism
- Urban growth control

# Mitigation in the forest sector



## Prevention and fight of forest fires

### Benefit:

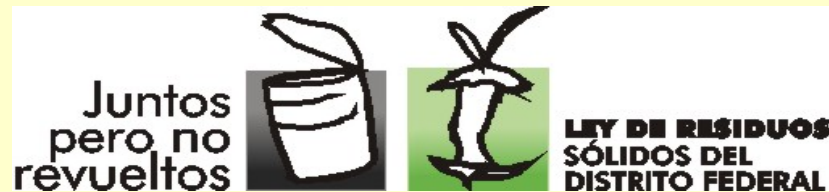
- 2001-2004 where captured 630 thousand ton of CO<sub>2</sub> eq
- 2005-2012 1 million tons

## Reforestation 2001- 2004

### Benefit:

- 35 thousand ton of CO<sub>2</sub> eq between 2001-2004
- 70 thousand ton of CO<sub>2</sub> eq between 2005-2012
- 10 millions of trees by year

# Waste Separation Program



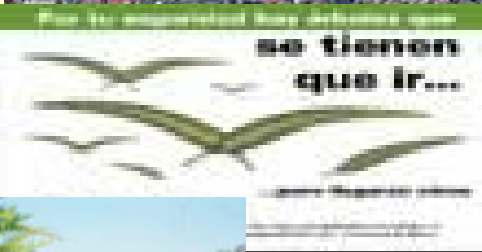
- In the FD are generated 4.2 millions of tons each year
- In the year 2000 were emitted 3.6 millions of CO<sub>2</sub> eq tons
- The waste separation into Organic and Inorganic reduces the organic carbon available

## Benefit:

- 69,736 ton of CO<sub>2</sub> eq by year in 2006
- 1.8 millions of ton between 2006-2012



# Restoration of the urban trees and environmental valuable areas



Green urban areas Inventory

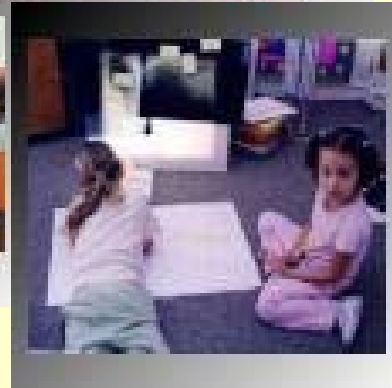
20 m<sup>2</sup>/habitant including private green areas

Declaration of Chapultepec, Aragón and Zacatepetl as Environmental Valuable Areas

Eucalyptus substitution Program



# Environmental education



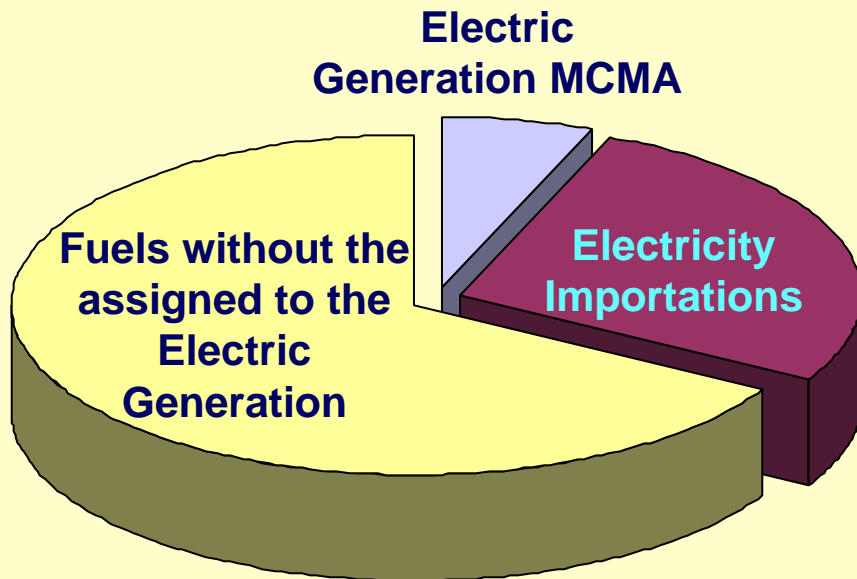
- Child Summit 2003  
With the main subject  
“Climate Change”

Attended by children  
from Mexico, Latin  
America and  
Caribbean

# Commercial and Services

## Energy Saving lamps in Commerce and Services

**CO<sub>2</sub> eq emissions  
generated by  
Electric Consumption  
2000**



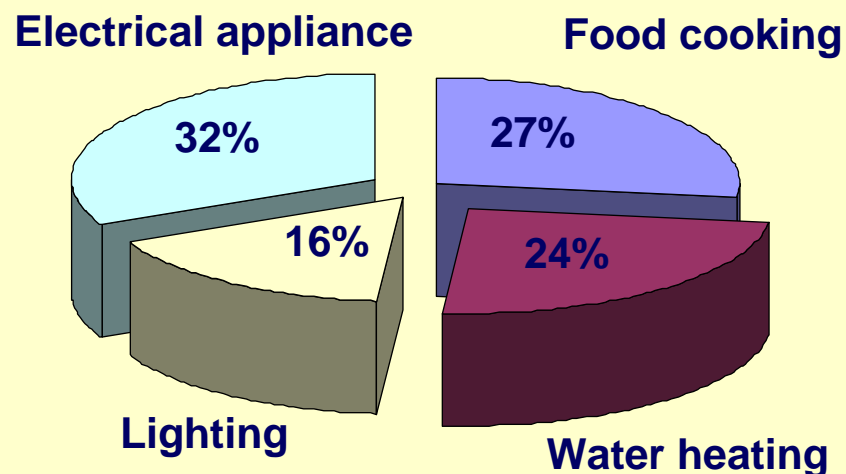
- T-12 by converting to T-8 saves 28.67 kWh/year. Estimating a T-8 penetration level of 5% in 2001 and of 90% in 2012.

### **Benefit:**

- 166 thousand ton between 2001-2004
- 1.6 millions of ton between 2005-2012

# Residential

**CO<sub>2</sub> eq emissions  
generated in the housing  
in the MCMA during 2000**



## Conversion from LPG to CNG in housings

- 242,314 housings with CNG in the FD in 2004
- 2001-2004: 136 thousand housings connected to the CNG network in the FD

### Benefit:

- 797 thousand ton between 2001-2004
- 1.7 million ton between 2005-2012

# Solar Water Heating Rule

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**Solar Percentage: 30%**

- **Swimming pools and diving pools.**
- **Commercial business with 51 employees or more which use hot water for:**
  - **Showers &/or lavatory**
  - **Kitchen**
  - **Laundry & dry cleaners**

# Solar Water Heating Rule

## Sports Clubs



|                         |                    |
|-------------------------|--------------------|
| Project cost:           | \$2,500,000        |
| m2 of solar collectors: | 3,000              |
| Diesel's savings:       | 354,500 Lts/year   |
| Emissions reduction:    | 976 t CO2          |
| Save:                   | \$1,578,000 / year |
| Amortization time:      | 19 months          |
| Maintenance cost:       | < \$25,000         |

**3500m<sup>3</sup> of water between 29 y 45°C**

# GHG mitigation programs linked to local environmental programs



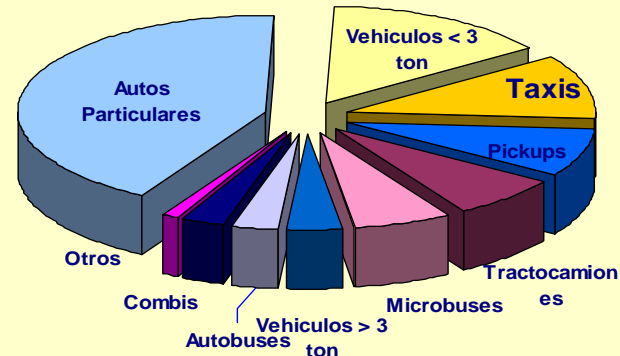
## ■ Sustainable Transport

- Taxi's substitution
- Microbus' substitution
- RTP fleet renovation
- Acquisition of new trains for the Metro (subway)
- 90 km of bicycle dedicated roads
- Conversion of gasoline vehicles to LPG and CNG
- Update the a day without car program
- Bus Rapid Transit Corridors (BRT)





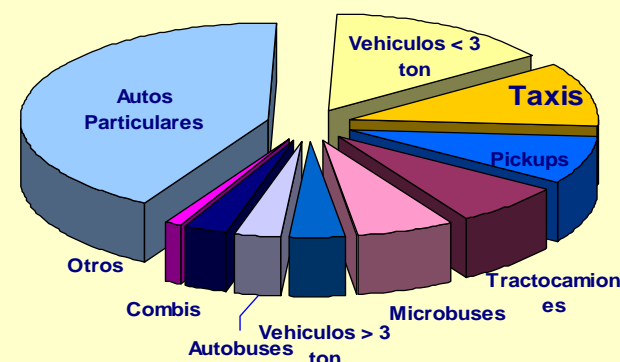
# Taxi substitution



- The taxis contribute with 10% of the total GHG emissions from the transport sector
- Minimum obligatory efficiency of 12 km/lt
- Remotion of the VW sedan model
- With the governmental program was substituted the 2% of the fleet (were scrapped)
- The governmental program induced the substitution of the 20% until now
- Public investment ascended to 13 million USD
- Reduction of 14,165 ton/year of CO<sub>2</sub>



# Substitution of microbuses and conversion from LPG to CNG



- The microbuses are responsible for the 15% of the GHG emissions from the transport sector
- With the governmental program 3% of the fleet were scrapped
- Public investment ascend to almost 10 million USD
- Reduction of 23,000 ton/year for the conversion to CNG

# Update of the A day Without Car Program

- Each vehicle with 10 years or more of circulation, will not be driven one day per week
- 282,935 ton CO<sub>2</sub>/year

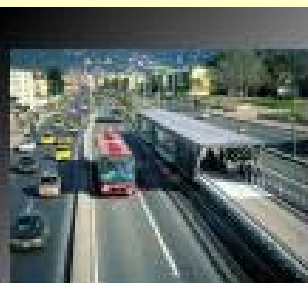


## Other transportation programs

- 500 millions USD to acquire new subway trains with the objective of increase it´s capacity
- Substitution of RTP vehicles, investment of 150 million USD



# Public Transportation strategic corridors program: Metrobus



# Public Transportation Strategic Corridors

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**Sells GHG reductions to Spanish Carbon Found**

**Reductions of around 37,000 ton CO<sub>2</sub> eq per year**

**This project is pioneer in its kind and will contribute with innovating methodologies for the base line, monitoring and verification estimations in transport sector**



# GHG emissions reduction

CO2 equivalent metric tons

|                                  | 2001           | 2004             | 2012              |
|----------------------------------|----------------|------------------|-------------------|
| A Day Without Car (old)          | 282,935        | 211,588          | 31,601            |
| A Day Without Car (actualized)   |                | 13,224           | 175,272           |
| Taxi substitution                |                | 14,165           | 14,165            |
| Taxi Induced by ADWC             |                | 103,873          | 103,873           |
| Microbuses to CNG                |                | 11,454           | 11,454            |
| <b>Burned Biogas in Landfill</b> |                |                  | <b>6,627,975</b>  |
| Waste Separation                 |                |                  | 466,095           |
| LPG & CNG in housings            | 195,574        | 203,214          | 223,353           |
| LCF in Housings                  | 34,487         | 243,818          | 853,190           |
| Commercial & Services lighting   | 7,636          | 74,920           | 320,641           |
| Public lighting                  | 993            | 3,684            | 11,053            |
| Forest Fires                     | 2,212          | 7,382            | 7,382             |
| Reforestation                    | 135,664        | 135,664          | 135,664           |
| <b>Solar Heating Rule</b>        |                |                  | <b>355,264</b>    |
| <b>Transport Corridors</b>       |                |                  | <b>2,079,450</b>  |
| <b>TOTAL</b>                     | <b>709,912</b> | <b>1,072,646</b> | <b>11,416,432</b> |

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