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RETROFIT VEHICLES IN MEXICO CITY



MINISTRY OF ENVIRONMENT AND PASSENGER TRANSPORT RED

MEXICO CITY METROPOLITAN AREA



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Mexico City Metropolitan Area:

16 boroughs of Mexico City

59 municipalities of the state of Mexico

1 municipality of the state of Hidalgo.

Mexico City Metropolitan Area population:

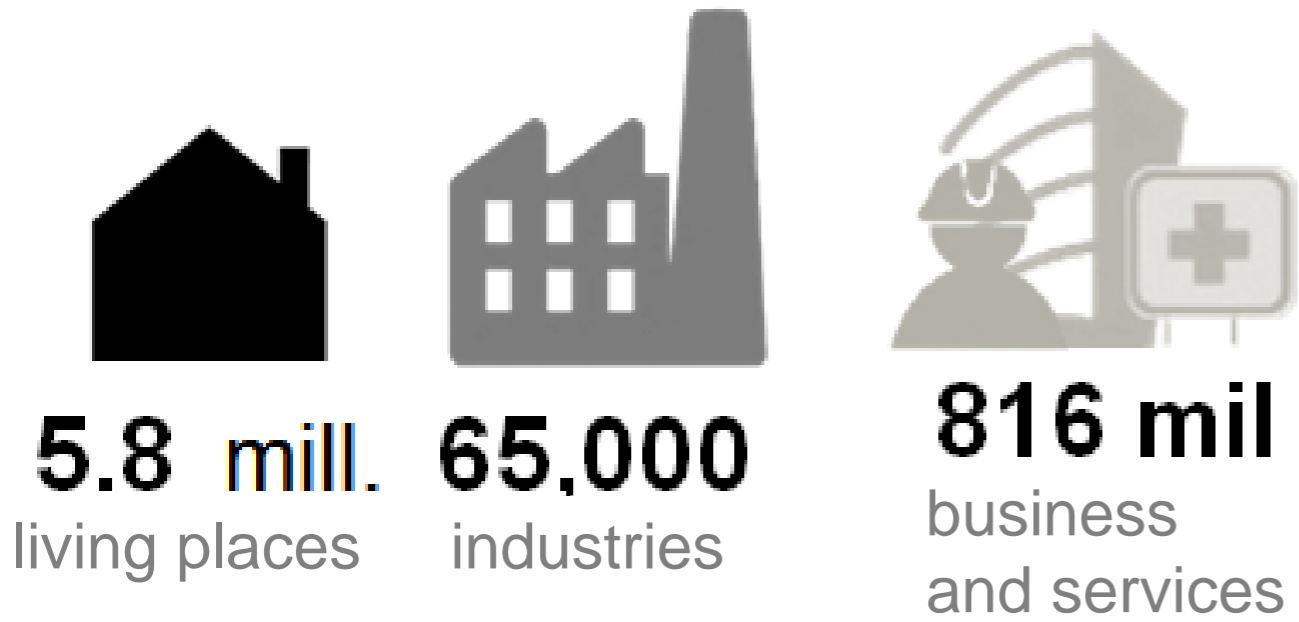
Just over 20 million, making it the largest metropolitan area in North America followed by the New York metropolitan area.

Mexico City Metropolitan Area geography and environment:

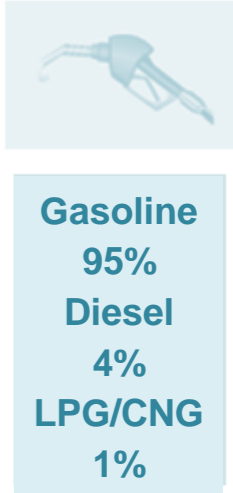
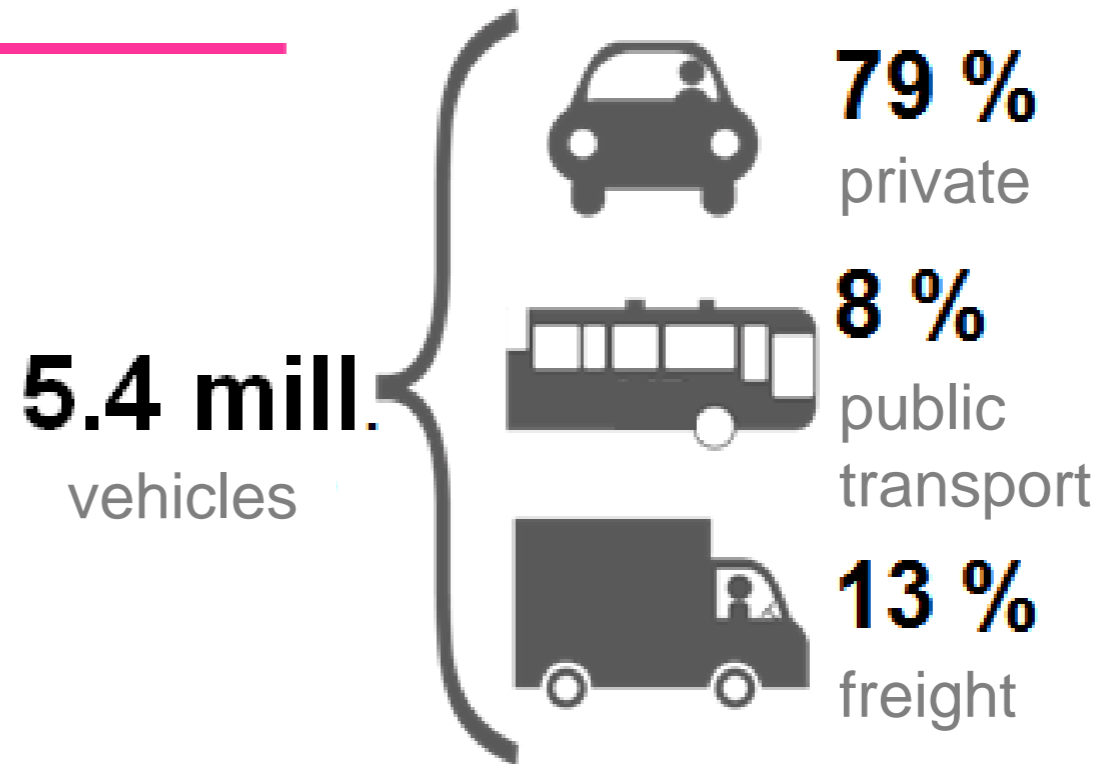
Spreads over the valley of Mexico, at an average of 2,240 m (7,349 ft) above sea level.

The valley of Mexico is surrounded by mountains creating a basin with only one small opening at the north, trapping all exhaust emissions of the city.

BACKGROUND



Mexico City's
diesel:
15 ppm



Anual Emissions

criteria pollutants

2.5 million
tons/year

greenhouse gases

≈50 million
tons/year

Trips / day

+21 MILL ZONA METROPOLITANA
METROPOLITAN AREA

6.8 MILL
TRANSPORTE PRIVADO / PRIVATE TRANSPORT

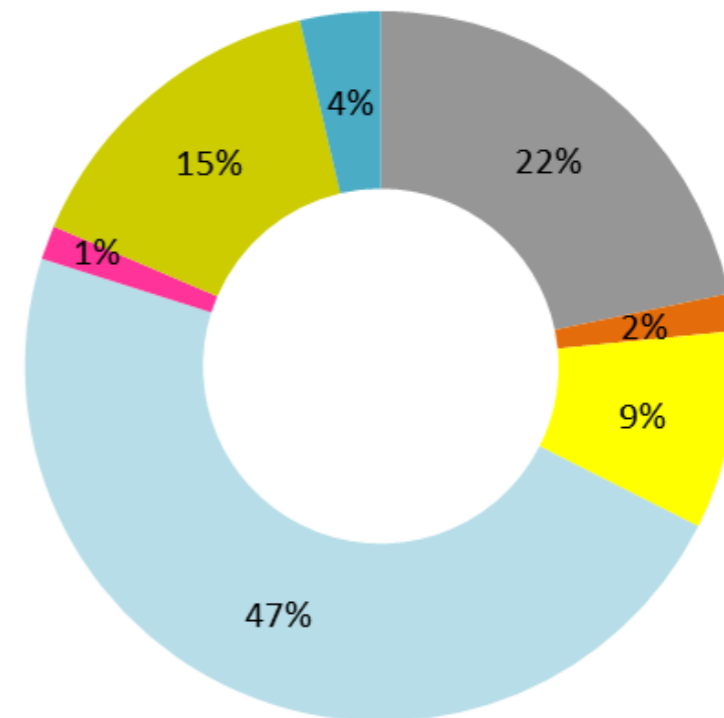


14.8 MILL
TRANSPORTE PÚBLICO / PUBLIC TRANSPORT



PM_{2.5} emissions from combustion processes of diesel vehicles is the second category of importance for issuance, contributing to 15 % in MCMA.

GHG CO₂ equivalent Emissions by sector



- Industrial
- Residential
- Agriculture and Livestock
- Other sources
- Commercial - Institutional
- Transport
- Waste

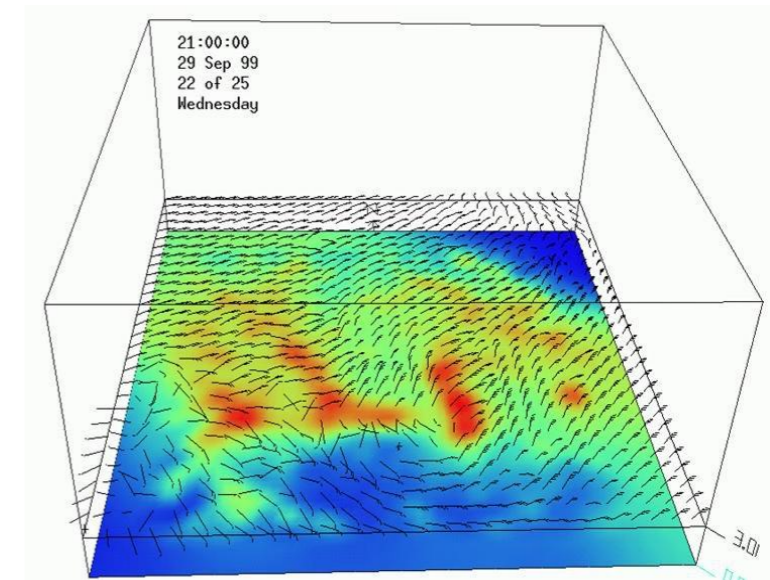
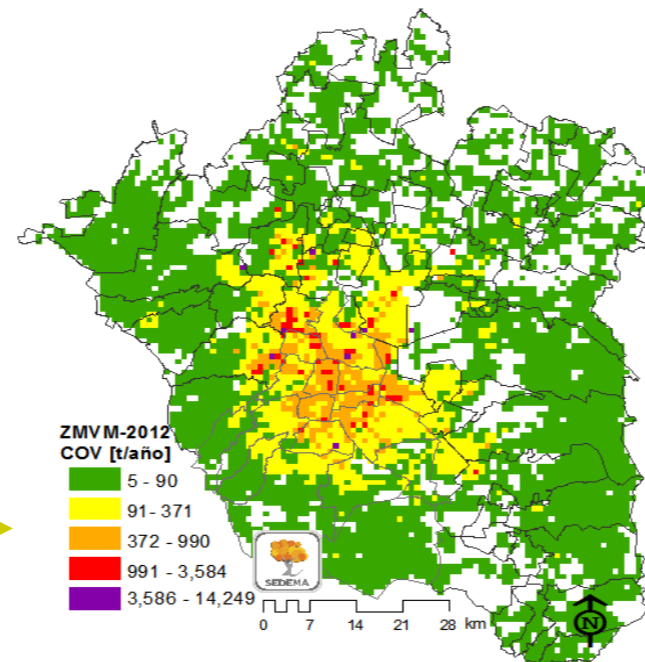
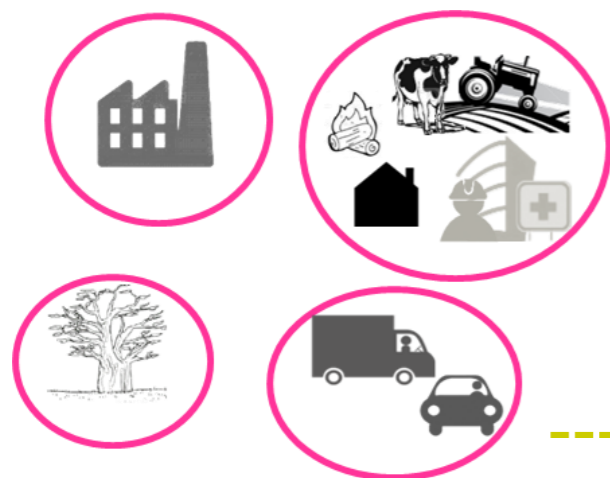
AIR QUALITY MANAGEMENT TOOLS

- ✦ Programs, laws, regulations y standards
- ✦ Air quality monitoring
- ✦ Emissions inventory and PROAIRE
- ✦ Mobile sources and sustainable transport programs



Monitoring network with 28 stations

Emissions inventory



Air quality simulation models

Mexico City's vision of potential DPF application



Year 2016 - 2018

400 RTP vehicles

> for DPF retrofit
> & for substitution



(potential)
6500 vehicles
under self-
regulation



(potential)
1600 garbage
trucks

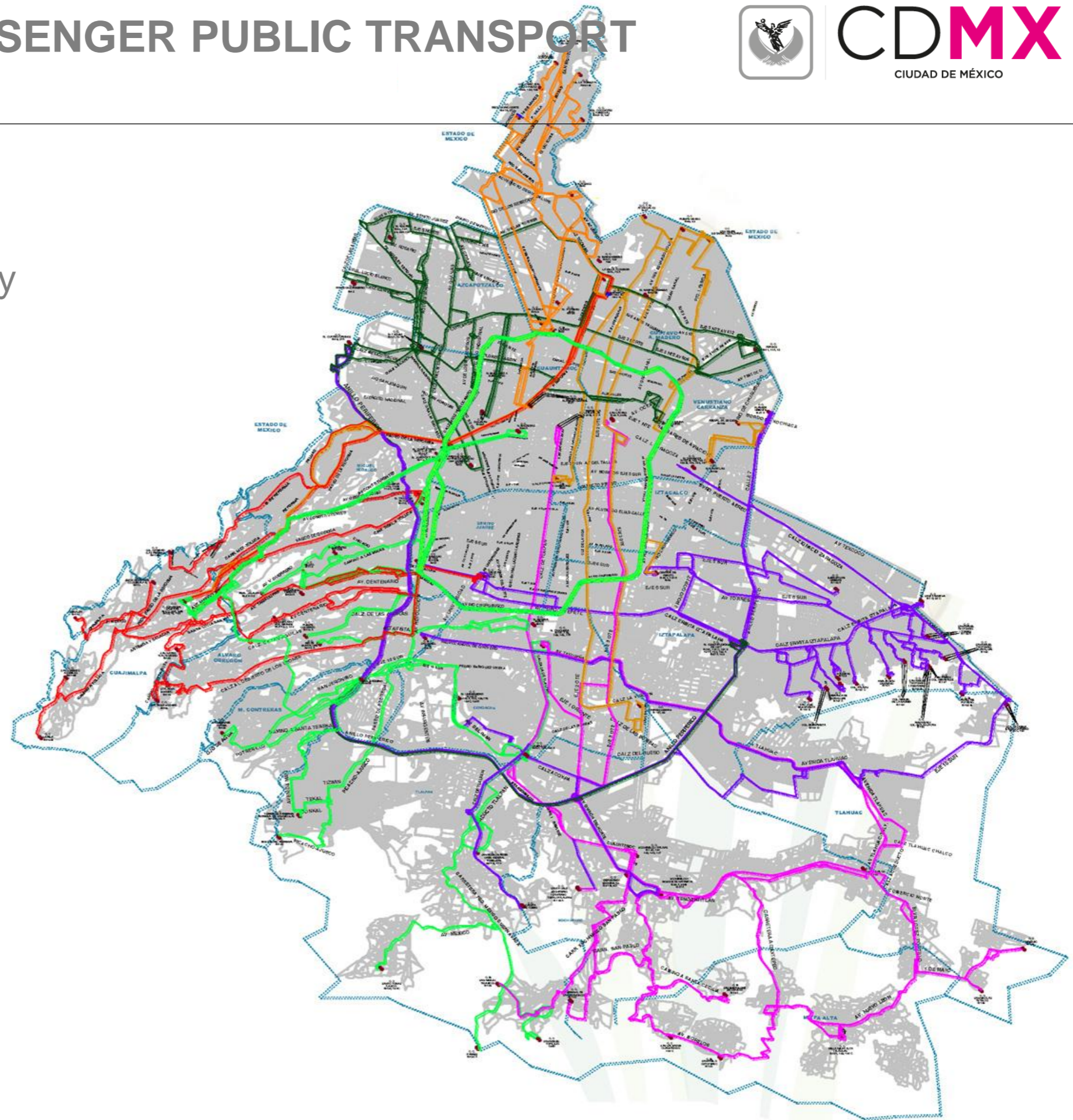


RTP – PASSENGER PUBLIC TRANSPORT

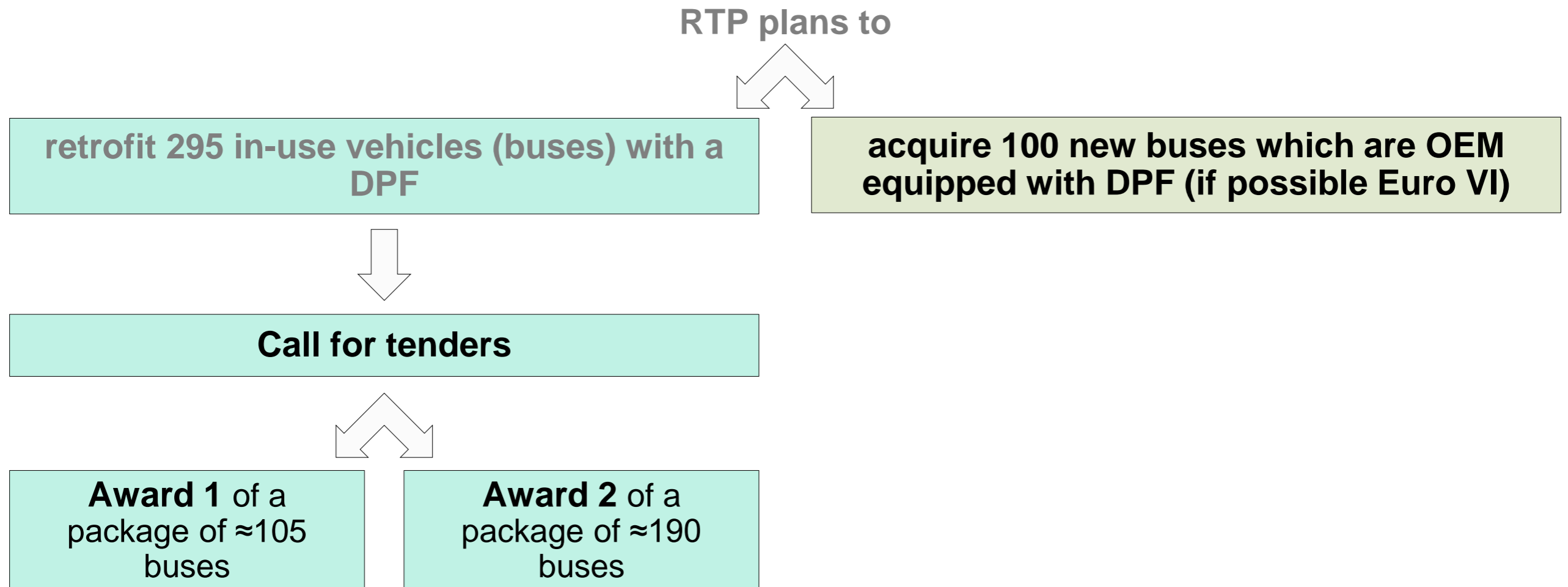


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- RTP is a decentralized government company
- Represents 17% of the population mobility in the city
- Fleet 1,357 buses
- Offers service to 490,000 users per day on 94 routes



DPF program of RTP of Mexico City (for 2016)



Two awards:

- to maximize experience and to establish competition with view to future market
- both are realized in two stages, with the same conditions but each with a specific vehicle categories / list
- offers can be submitted to both packages, however each package will have a different winner

RTP's vehicle categories foreseen for DPF retrofit



Type	& N° of this type	Kind of Service (Scholar bus, Trunk, Zonal)	Chassis Brand & model	Ø age	Engine Brand & model	Ø age	Ø km per year	Power (kW)	Emission class
A	239	Ordinary	Mercedes/Benz/Torino	2006	OM906LA	2006	85,000	230	EURO III
B	145	Expreso	Mercedes/Benz/Torino	2009	OM906LA	2009	86,000	230	EPA04
C	105*	Scholar bus	Internationa I/Reco	2009	DT466	2009	15,000	175	EPA04

*first stage

- **Retrofit (with DPF) of ≈ 105 scholar buses in two steps**
 - Step 1: retrofit N* buses and run a 3-month demonstration test in real operation. *N necessary to demonstrate compatibly (minimum 3)
 - Step 2: if all retrofits successfully pass the test, implement the remaining 147 buses

- **Establishment of a local DPF service organization in cooperation with a competent local firm / representative**
 - providing support to DPF provider for the installation of the DPFs
 - performing aftersales DPF service / maintenance of all installed DPFs (in accordance with aftersales service contract)

- **Certified DPF system according FOEN and CARB list**



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