Transportation policies in Brazil

Rui de Abrantes – Cetesb

Buenos Aires, September 25th, 2018

South American Summit on Vehicle Emissions
Governmental structure

President of Republic

Ministry of Transport, Ports and Civil Aviation

Ministry of Environment

Ministry of Industry, Foreign Trade and Services

**IBAMA** – Brazilian Institute of Environment and Renewable Natural resources

**CETESB** – Environmental Company of São Paulo State

Type Approval of vehicles
**Rui de Abrantes**

Control of emissions of in-use vehicles
**André Kuniyoshi**
Brazilian scenario

• Road transport is the main transportation system in the country for goods and passengers;
• With 1,610,076 km of national highways and roads;
• Since 2012 Proconve phase P 7 is the emission control program for Heavy Duty Vehicles (HDV) in Brazil, it is based on Euro 5;
• Next step P 8 (Euro 6) is under discussion;
• Diesel fuel usage is allowed just for vehicles able to carry more than 1 ton.
Brazil has the sixth biggest vehicles fleet in the world, with 42 million units;
5.7% are HDV, with 2.4 millions;
what corresponds to the fourth biggest HDV fleet in the world.
Fuel consumption in 2017

- 54.77 Million of m³ Diesel fuel
- 44.15 Million of m³ Gasoline
- 27.22 Million of m³ CNG
- 13.64 Million of m³ Hydrous ethanol

Source: ANP - National Agency of Petroleum, Natural Gas and Biofuels - 2018
Relative emissions by source type – Metropolitan Region of Sao Paulo

CO:
- LDV: 74.1%
- HDV: 64.3%
- Industrial process: 18.3%
- Fuel Base: 5.0%

HC:
- LDV: 9.4%
- HDV: 7.9%
- Industrial process: 4.1%
- Fuel Base: 5.0%

NOx:
- LDV: 33.4%
- HDV: 47.2%
- Industrial process: 1.1%
- Fuel Base: 18.3%

PM10:
- LDV: 25.0%
- HDV: 10.0%
- Secondary Aerosol: 31.9%
- Fuel Base: 6.3%

PM2.5:
- LDV: 37.0%
- HDV: 51.0%
- Secondary Aerosol: 5.0%
- Fuel Base: 5.3%

SOx:
- LDV: 83.0%
- HDV: 0.1%
- Secondary Aerosol: 11.6%
- Fuel Base: 5.3%

Source: CETESB - 2017
Biodiesel

- Soybean biodiesel is the most common type of biodiesel.

% of biodiesel

Source: ANP - National Agency of Petroleum, Natural Gas and Biofuels - 2018
Bio methane

- Bio methane specification is regulamented already;
- Brazil has the potential to produce 30 million cubic meters per day by 2030;
- What can corresponds up to 44% of diesel fuel consumption.

Source: ABIOGAS
Hybridization and Electrification

- Electrification net for vehicles is in embryonic stage:
  - São Paulo ◄► Rio de Janeiro (6 electro stations);
  - Paranaguá ◄► Foz do Iguaçu (2 electro stations);
  - Some malls and supermarkets.

- Some delivery companies are buying electric trucks;
- Some electric buses are been used in demonstration;

- No importation tax for hybrid and electric vehicles;
- Federal tax for hybrid vehicles was reduced from 25 % to 13%;
- Federal tax reduction for electric vehicles are still under discussion.
Fuel efficiency

- Cetesb proposed to Ibama a regulation for Corporative GHG reduction;
- $\text{CO}_2$ equivalent = $\text{CO}_2 + \text{CH}_4 \times 25 + \text{N}_2\text{O} \times 298$;

<table>
<thead>
<tr>
<th>Categoria</th>
<th>Redução (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veículos de passageiro com PBT ≤ 5 toneladas</td>
<td>10</td>
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<tr>
<td>Veículos de carga com PBT &gt; 3.856 toneladas e ≤ 16 toneladas, e veículos de passageiro com PBT &gt; 5 toneladas e ≤ 7,5 toneladas</td>
<td>10</td>
</tr>
<tr>
<td>Veículos de carga com PBT &gt; 16 toneladas, e para os veículos de passageiro com PBT &gt; 7,5 toneladas</td>
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</tbody>
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- This propose maybe will be discussed next year.
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THANK YOU