



Rio 02
World Climate & Energy Event
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Project
ECONOMIZAR

Best Practice in Fleet Operation

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CONPET Energy Efficiency Programme

- Brazilian Government National Programme for Rationalization of Oil Products and Natural Gas Use (CONPET)
- The main aim is to maximize the utilization in Brazil of existing technologies and experience concerning energy conservation and efficient energy use
- Build public awareness of the opportunities for rational use of energy throughout the Brazilian economy and motivate consumers to achieve the consequent benefits

CONPET is funded and managed by the State-owned oil company PETROBRAS

- PETROBRAS has the resources to make the programme a success (administrative infrastructure, technical support, fund, etc)
- PETROBRAS has the credibility to make programme a success – partly because the long experience in energy efficiency programme – developed since 1974

Project

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**A leading energy conservation project in Brazil
for the transport sector**

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Main Objectives

- Optimize the use of diesel oil
- Minimize fuel waste
- Reduce black smoke emissions

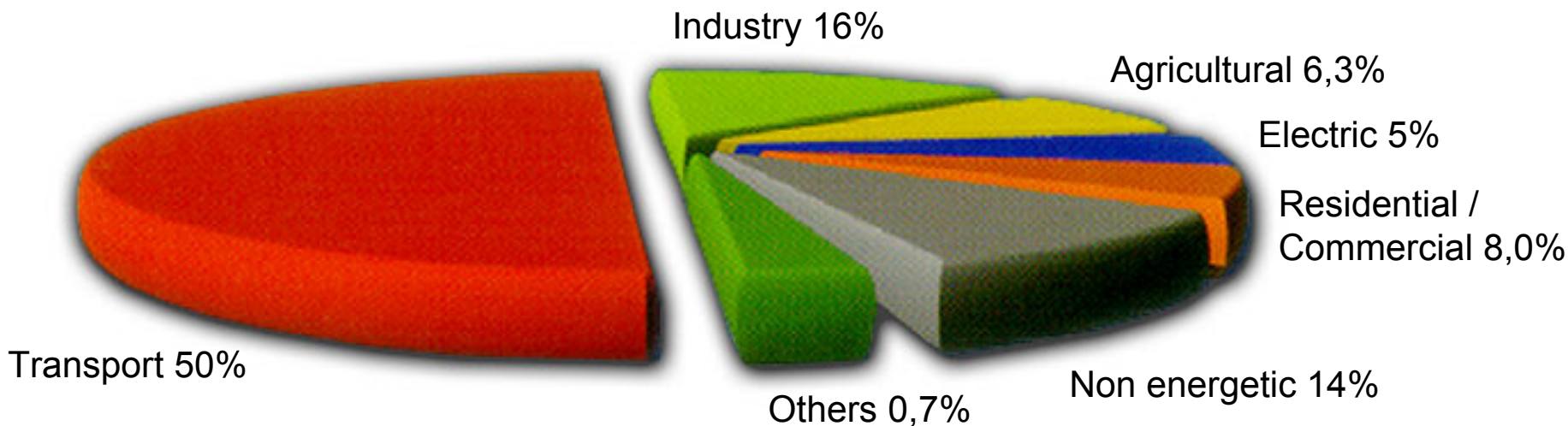
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- People and goods moved through 1,7 million km of highways in 8,500,000 km² of the country
- Urban and road transport represent 96% of passengers movement and 62,6% of cargo transport

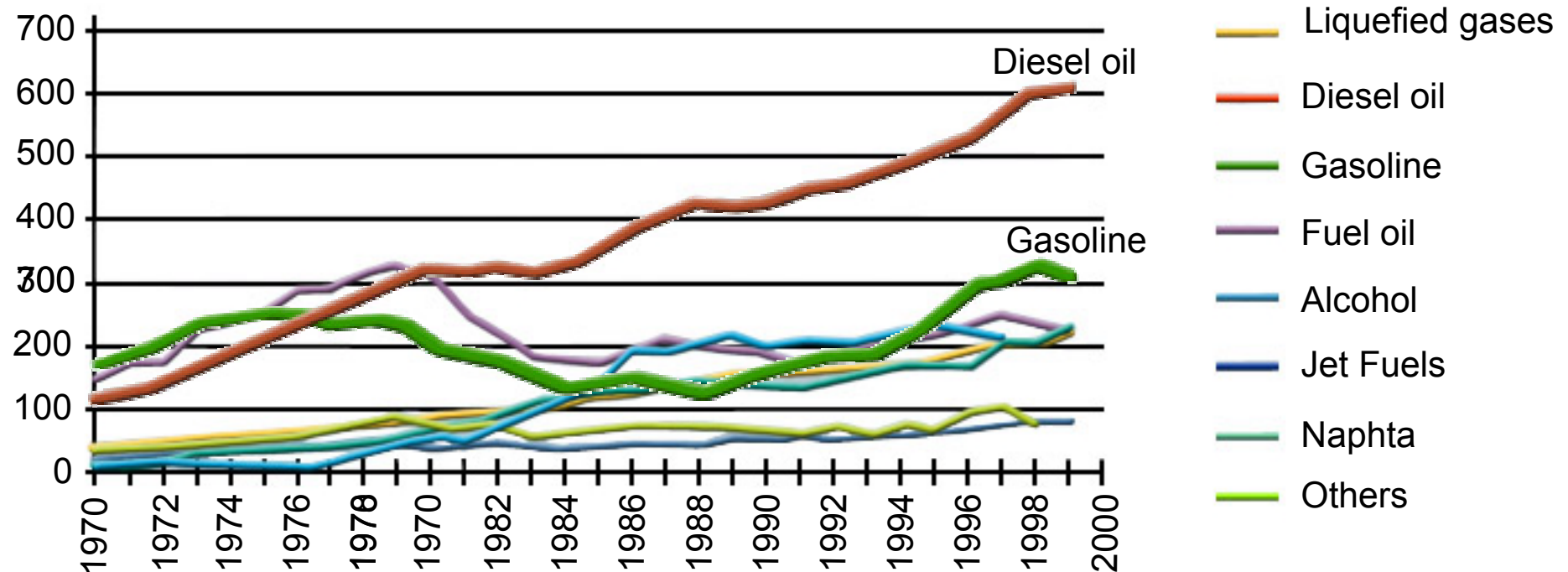


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Petroleum products consumption distribution



Petroleum products and alcohol consumption in Brazil



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Transport sector in Brazil :

- 40,000 companies
- 2.5 million of workers
- 300,000 one-man company (medium and heavy trucks)
- 6.4% of GDP (US\$ 29 billions)
- Bus fleet 420,000
- Medium and heavy trucks fleet 1,775,000

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Project Economizar

- Developed and coordinated by PETROBRAS/CONPET and CNT/IDAQ (Brazilian national confederation of transport)
- The target is transport sector (freight and passengers)
- Voluntary participation
- Technical assistance
- Free of charge

Economizar Mobile Unit



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Project Economizar – Basic concept

Technical assistance to foster coordinated measures in order to:

- Improve management and guarantee the diesel oil quality at the end use (storage and refueling procedures)
- Improve personnel qualification (drivers, maintenance staff, management)
- Vehicles diagnosis
- Engine diagnosis using modern tools such as opacimeter

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Project Economizar – Goals

- Reach, until 2003, 13% diesel oil saving in trucks and buses fleets
- Minimize vehicle emissions in order to improve air quality
- Eliminate tailpipe black smoke
- Increase participation of trucks and buses fleets companies raising awareness and encouraging transportation sector to use diesel more rationally
- Increase companies profits

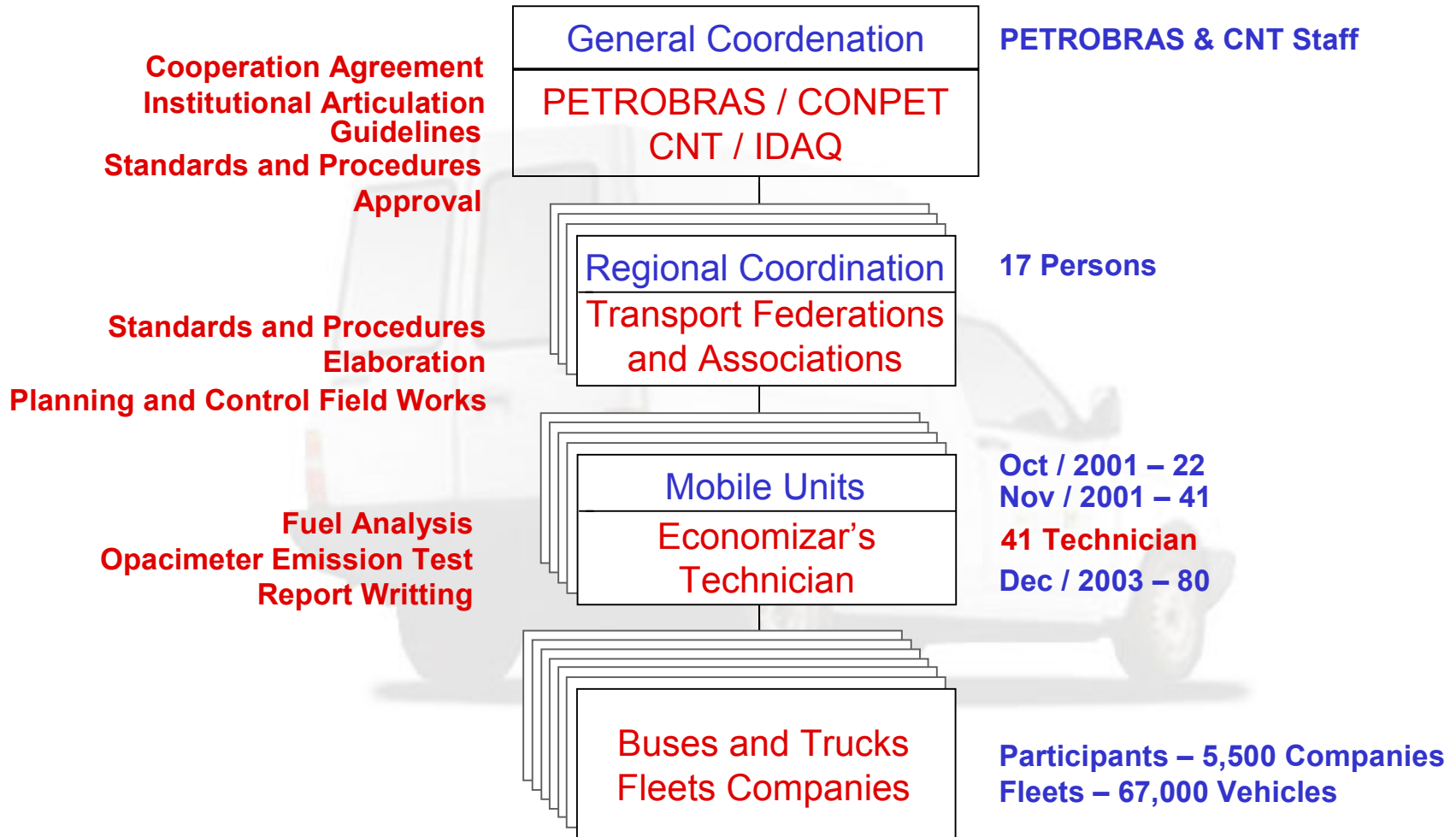
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Project Economizar – Organization and Operation

- National Coordination (PETROBRAS / CONPET and CNT / IDAQ) responsible for:
 - Setting goals
 - Approving standards and operational procedures
 - Monitoring and evaluating results
- Regional Supervision (syndicates and federations linked to CNT)
 - Elaborate standards and procedures
 - Plan and control field programs within their areas of influence

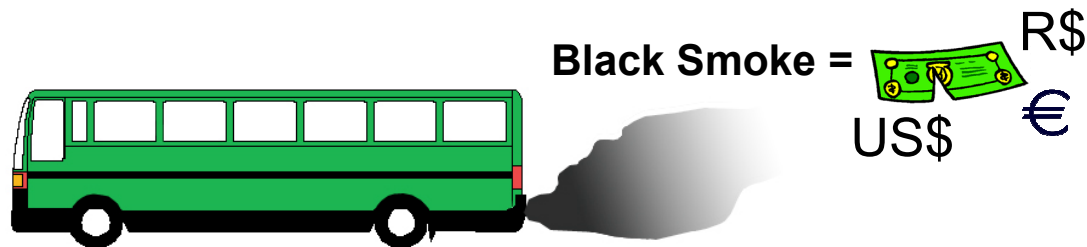
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FRAMEWORK



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Drive Force



- **Benefits:**
 - Economic – Profit Increase
Diesel Oil Saving (US\$ 46,000,000 / year)
 - Social
Environmental Protection
Jobs Creation (41 to date)
- **Costs (until 2000):**
 - Investment in Mobile Units – US\$ 330,000 (22 units)
 - Running Costs – US\$ 528,000 / year

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Mobile unit

Vehicle and running cost supplied
by private sector



Equipments, methodology, training
and technical support supplied by
PETROBRAS

Mobile unit equipment

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Project Economizar – Operators

- High qualified technicians
- Rigorous selection
- Specific training by PETROBRAS

Analyzing Diesel Oil



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Economizar Annual Meeting

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Mobile units



Mobile unit equipment

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Collecting diesel oil



Testing diesel oil

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Opacimeter emission test

Smoke emissions measurement



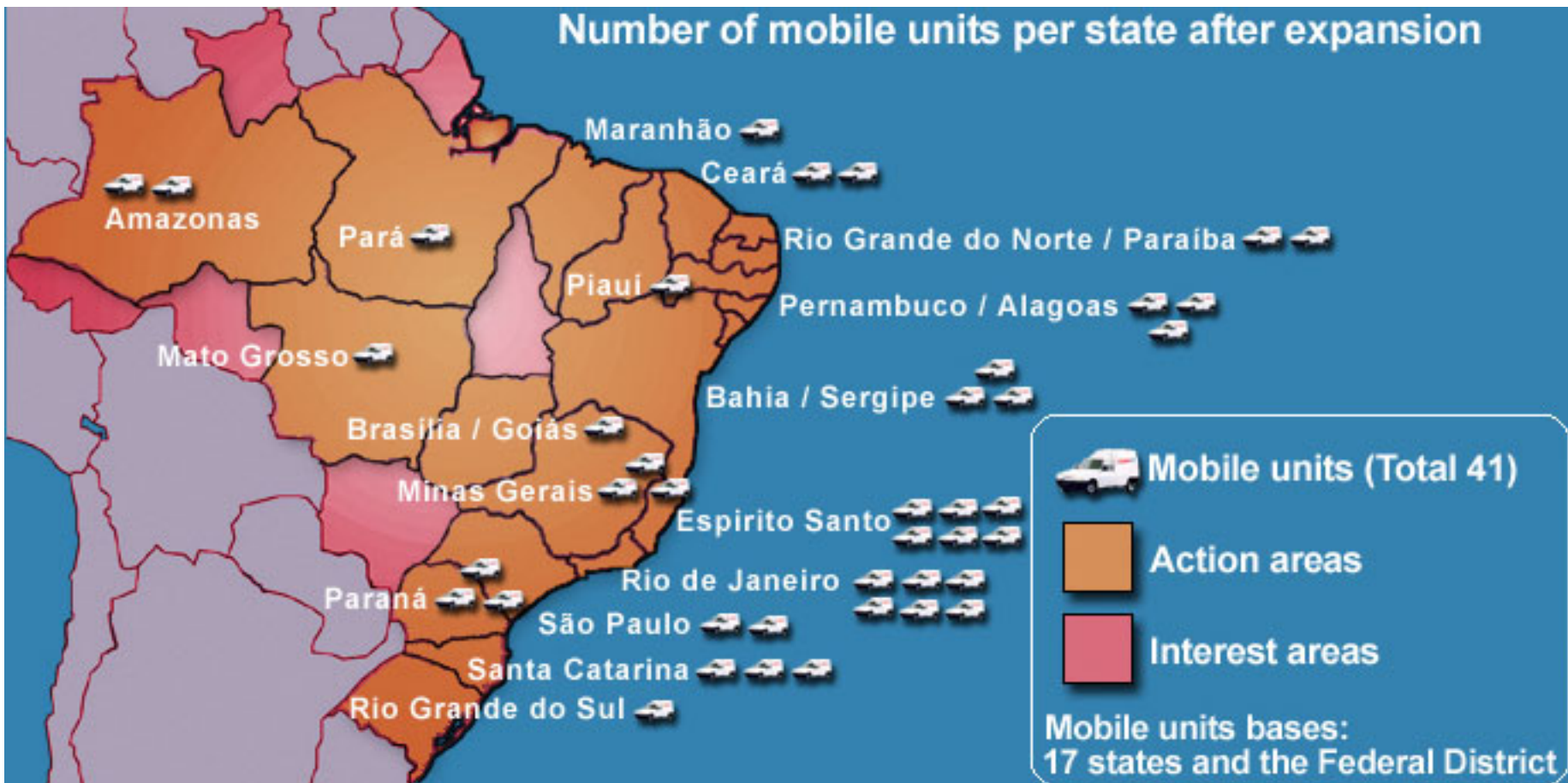
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Vehicles with this label has been approved by environmental and transit authorities in several metropolitan areas without emissions inspection

Energy efficiency typical label

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Project Economizar – Main Results – 2000

| | |
|---|-------------|
| Transport Association | 14 |
| Federation States | 21 |
| Companies | 5.500 |
| Fleet (buses and trucks) | 67,000 |
| Engine Diagnosis | 111,000 |
| Total Fuel Saving Per Year (litre) | 144,000,000 |
| Avoided CO ₂ Emission (ton/year) | 401,000 |
| Avoided Particulates Emission (ton/year) | 8,700 |

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Example: Rio de Janeiro Metropolitan Area

Tailpipe Black Smoke Reductions

| | 1997 (Project Start) | 2001 |
|---|-------------------------|------------------|
| Bus Fleet (Rio de Janeiro – Nova Iguaçu – Caxias) | 10,978 | 11,392 |
| Vehicle without Black Smoke * | 4,940 (45%) | 8,658 (76%) |
| Vehicle with Black Smoke * | 6,038 (55 %) | 2,734 (24%) |

Black Smoke
Reductions 56%

* CONAMA 16/95 - 251/99 CONTRAN 510/77

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**More Information About
Project Economizar and CONPET**

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