Fuel Economy Policy Impact Tool Case Study One- Kenya.

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Background

- July 2013- Global Fuel Economy Initiative (GFEI), UN Environment and Energy Regulatory Commission of Kenya (ERC) launched project with University of Nairobi Enterprises and Services Limited (UNES) to highlight:
  - National inventory of vehicles
  - Average fuel economy
  - Average carbon dioxide emissions.
  - Regulations governing transport
  - Period under study: 2010-2012
  - Light Duty Vehicles (Less than 3500 kg tare weight)
Cumulative Total Vehicle registrations In Kenya

\[ y = 115940x \]
\[ R^2 = 0.93 \]
Trends in Fuel Economy
Recommendations of 2010-2012 study

- Enhanced inspection of all vehicles
- Establishment of mass transport
- Carry out health surveillance of air pollution related illnesses
- Feebate/Rebate to encourage more efficient/low emission vehicles
- Improve fuel standards
Feebate/Rebate

• June 2016, GFEI, UN Environment and ERC engaged UNES to develop Fuel Economy Labeling and Feebate Programme for LDV Fleet.

• Outcome was a recommendation of a non-continuous feebate with a benchmark at 169-169.99 g/CO2/km

• A single rate parameter of $15 per g CO2/km was determined for both feebate and rebate for revenue neutrality
Proposed Feebate System for Kenya

![Graph showing rebate (Kshs) vs. CO₂ emissions (gCO₂/Km)]
Fuel Economy Labeling

• The strategy functions through ‘Education and Information’ to encourage voluntary response.

• Fuel labels indicating the absolute fuel economy and CO₂ emission of vehicle were developed.
Update assessment of Trends

- July 2017, update study was carried out to assess trends in characteristics and performance for the period 2010-2016.
- Cumulative registration
- Fleet profile
- Age profile
- Average Fuel Economy
Current Fleet Profile

Number of vehicles by type (2016)

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>862,795</td>
</tr>
<tr>
<td>Bus</td>
<td>27,626</td>
</tr>
<tr>
<td>Minibus</td>
<td>77,470</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>971,081</td>
</tr>
<tr>
<td>Van</td>
<td>283,884</td>
</tr>
<tr>
<td>MedTruck</td>
<td>125,959</td>
</tr>
<tr>
<td>HeavyTruck</td>
<td>32,164</td>
</tr>
</tbody>
</table>
Average private car age is 11 years
Trends in CO₂ Emission and Average Fuel Economy (2010-2016)

Average CO₂ Emission (g/km)

Year of Registration

Average Fuel Consumption (L/100km)

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Registration of LDV by Fuel Type

- Diesel powered
- Hybrid Vehicles
- Petrol powered
Comparison of Average Fuel Economy (L/100km) with selected countries

Year
Fuel Consumption (L/100km)

USA
Canada
EU
China
Japan
S.Korea
Australia
Kenya
Impacts on fuel economy

- Policy scenarios considered:
  - Past trend
  - Average fuel economy target (GFEI global fuel economy target)
  - Fuel taxation
Outcome of scenarios

- For base year 2016 and projection year 2030
  - Hybrid electric cars will be 0.1% from negligible percentage in base year.
  - LDVs with fuel economy of 5-6.2 lge/100 km increases from 31.7% to 41.3%
  - Average fuel economy will decrease from 7.37 lge/100 km in base year to 6.2 lge/100 km by year 2030.
Registration of Motorcycles and LDV 2008-2016

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High Motorcycle Registration

- Attributed to their convenience and accessibility as motorized transport.
- **Social cost concerns:**
  - Significant source of particulate emissions, hydrocarbons and carbon monoxide.
  - Prominent contributor to increased number of accidents.
The end

- Thank you