Promoting low emissions transport in Africa

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The Challenge

→ Small particulates (PM$_{10}$ or PM$_{2.5}$) are estimated to cause over 7 million premature deaths per year worldwide;
→ In 2012, diesel PM was officially classified as carcinogenic (WHO);
→ The smaller part of PM is black carbon (BC), now believed the second most important climate pollutant;
→ Vehicular emissions, esp diesel vehicles, are responsible for 50-80% of the PM/BC pollution in cities
→ More fuel-efficient vehicles emit less CO$_2$ emissions
Reducing Vehicle Emissions
Cleaner Fuels and Stricter Vehicle Emission Standards

BETTER COMBUSTION
TAILPIPE EMISSION CONTROLS
CLEANER FUEL
Reducing CO$_2$ Emissions

GFEI HDTs Target

• Reducing per-kilometer fuel consumption by **35% by 2035** and **70% by 2050** (relative to 2005) through
  • improved ICE efficiency
  • introduction of electric HDTs
• ICE fuel consumption needs to improve by an average of 1.7% per year from 2020 to 2050
• Global sales of electric HDT needs to increase to 19% of sales in 2030 and 66% of sales in 2050
Canadian Vehicles and Fuel Quality Regulation

- Air Pollutants
- GHGs
- HDV On-Board Diagnostic
- Renewable Fuels
- Coal-Fired GHG Electricity

Proposed Regulations:
- Air Pollutants Phase 2
- Renewable Fuels (2 and 5% exemp.)
LDV Emission Standards - actual and regional commitments
About the Used HDVs Report (2024)

- Globally HDVs accounted for 44% of on-road NOx emissions and 63% of PM 2.5 in 2015 and over 20% of BC
- Sale of new and used HDVs doubled between 2000 and 2015, and CO2 emissions increasing by 30%
- **Between 2015 and 2020:**
  - Japan was the largest exporter of used HDVs, exporting around 1.3 million units
  - The EU exporting close to 1 million used HDVs
  - ROK exported about 134,000 used HDVs globally - more used buses than trucks
  - One-third of the total used HDVs are traded within the EU, **20% exported to Africa**, another 20% to Asia-Pacific and the rest is exported to the other regions
  - The cheapest HDVs are exported to Africa, indicating aged and lower quality used HDVs are shipped to Africa.
Destinations of Used HDVs from EU, Japan and ROK (2015-2020)
Current state

All adopted regulations implemented

Used HDVs Regulations in Importing Countries
The Real Urban Emissions (TRUE) Initiative - Kampala

- UNEP/FIA Foundation/ICCT and local partners
- Measure vehicles emissions during real-world driving
- Remote sensing technology
- Data generated can help:
  - to better understand the levels and causes of vehicle pollutant emissions
  - characteristics of vehicles in the city
  - support policies to curbing emissions, such as stricter regulation, low emissions zones and incentive programs
ICCT report: Race to Zero: European heavy-duty vehicle market development quarterly (January–December 2023)

Sales of heavy trucks by powertrain:
- 97% Diesel
- 2% Natural gas
- 1% Battery electric

Sales of light and medium trucks by powertrain:
- 91% Diesel
- 3% Natural gas
- 6% Battery electric
Conclusion:
1. Fuel economy improvements/CO2 reduction: fuel-efficient vehicles including electric, eco-driving, better infrastructure
2. Better air quality: stricter HDT emissions standards, cleaner fuels, inspection and maintenance
Thank you

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