EMISSION REDUCTION POLICIES & LESSONS LEARNT FROM VEHICLE EMISSION TESTING PROGRAMME IN SRI LANKA

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Emission Reduction policies being implemented

- Implementation of Vehicle Emission Testing Programme
- Banning two stroke Motor Tricycles
- Introduction of taxes for cars, Motor Cycles
- Reduction of Taxes – hybrids – No Emission certificate
- Reduction of revenue licence fees
- Walkability and cycling
- Pilot project- Buses-PPP Model
- Special Trains - Rajadani
- Budget Fare in off peak hours in railway
- Extension of railway line Matara- Kataragama,
- Park N ride
- Special services & concession fares
Emission Reduction policies being planned & implemented

- Review of current the vehicular Emission standards 1, 2014 In progress
- Enhancement of Fuel Quality by 2016
- Master plan for 25 years
  - Road network –In progress
  - Expressway Projects, Southern Transport Development Project, Colombo Katunayake Outer Circular Highway Project, Northern rehabilitation Projects
    - Integrated terminal
    - Bus Network Planning
    - Extension & Electrification of Railway
    - Water based Transport system
    - Mono Rail & BRT
Increase of Total Vehicle Population
# Collecting data in 44 fields (parameters)

1. Testing Company
   - Cleanco or Laufs
2. Vehicle Registration Number
3. Test date and time
4. Result of the Test
5. Test Certificate Number
6. Vehicle Registration year
7. Province (Code)
8. District (code)
9. Institute
10. Make of the Vehicle
11. Model of the Vehicle
12. Year of manufacture
13. Engine Number
14. Chassis Number
15. Number of Cylinders
16. Number of Strokes (2 or 4)
17. Fuel type
18. Current mileage
19. Vehicle Class
20. Test Location
21. Type (Fixed /Mobile)
22. Test type (Initial or Re-test)
23. Test Inspector
24. Lane Number in the center
25. Oil Temperature
26. K-1 Value on Snap 1
27. RPM on Snap 1
28. K-2 Value on Snap 2
29. RPM on Snap 2
30. K-3 Value on Snap 3
31. RPM on Snap 3
32. Average K Value
33. Accelerated HC
34. Accelerated CO (Carbon Monoxide)
35. Accelerated CO2 (Carbon Dioxide)
36. Accelerated O2 (Oxygen)
37. Accelerated Lambda
38. Accelerated RPM
39. Idle HC
40. Idle CO (Carbon Monoxide)
41. Idle CO2 (Carbon Dioxide)
42. Idle O2 (Oxygen)
43. Idle Lambda
44. Idle RPM
Type of data from VET

- **Quantitative data** is a number
  - Some data is a continuous decimal number to a specified number of significant digits
  - Sometimes it is a whole counting number
- **Categorical data**
  - Data is one of several categories
- **Qualitative data**
  - Data is a pass/fail
How the Data is Transferred

Fixed 67
Mobile 87

Cleanco Lanka

Information & Communication Technology Agency

Air Resource Management Center (AIRMAC)

Department of Motor Traffic

Fixed 72
Mobile 116

Laugfs Eco Sri

VET Centers
Fuel Type Pass/Fail Comparison in Vehicle Categories in Year 2012

- **Pass : Diesel**
  - Bus/Motor Coach/Omnibus: 1.27%
  - DUAL PURPOSE: 5.74%
  - MOTOR CAR: 1.12%
  - Motor Cycle: 0.00%
  - MOTOR LORRY: 5.51%
  - Motor Tricycle: 0.87%
  - Prime Mover: 0.03%
  - Land Vehicle: 0.02%

- **Pass : Petrol**
  - Bus/Motor Coach/Omnibus: 0.01%
  - DUAL PURPOSE: 0.82%
  - MOTOR CAR: 9.08%
  - Motor Cycle: 42.41%
  - MOTOR LORRY: 0.40%
  - Motor Tricycle: 16.28%
  - Prime Mover: 0.00%
  - Land Vehicle: 0.00%

- **Fail : Diesel**
  - Bus/Motor Coach/Omnibus: 0.21%
  - DUAL PURPOSE: 1.23%
  - MOTOR CAR: 0.23%
  - Motor Cycle: 0.00%
  - MOTOR LORRY: 0.83%
  - Motor Tricycle: 0.19%
  - Prime Mover: 0.00%
  - Land Vehicle: 0.00%

- **Fail : Petrol**
  - Bus/Motor Coach/Omnibus: 0.00%
  - DUAL PURPOSE: 0.09%
  - MOTOR CAR: 1.02%
  - Motor Cycle: 9.06%
  - MOTOR LORRY: 0.09%
  - Motor Tricycle: 3.50%
  - Prime Mover: 0.00%
  - Land Vehicle: 0.00%
Year wise CO$_2$ Comparison for all data in Year 2012, 2011, 2010 and 2009
Vehicle Category wise CO$_2$ range comparison in Year 2012
Vehicle Category wise CO and HC range comparison in Year 2012

Vehicle Category wise CO range comparison

Vehicle Category wise HC range comparison
Vehicle Category wise Avg. K range comparison in Year 2012
Establishment of Data Management Network for VET Programme

VET Centre Data collection

ICTA

District / Divisional secretariat

DMT data

Centralized Database in Project Office

Data storing

Data Retrieving

WEB

Air MAC
CEA
MUSSD
Other organ.

Vehicle Owner

Police
Lessons learnt Emission Reduction policies in the Implementation analysing VET data

- Acceptance of the public all the new policies
- Improve the Traffic conditions
- PPP- model can decide on policies
- Monitor Testing Canter Area wise, district wise and provincial wise
- Audit the performance of Inspectors by various indicators
- Audit the accuracy of the test procedure
- Check inconsistency of data or any incorrect data
- Comparison of Test Data of the two companies

- Comparison of data for taking policy decisions and to adopt new policies
  - Reduction of 3 year to 1 year, Importation policies
- Statistics related to the active Fleet
  - Cumulative total
- Identify defects of the machine and the software
  - Comparisons at inspections
- Accuracy of Data collection could be ensured
  - Correction of the identity
Conclusion

• Pilot Project and models are very important in Implementation

• VET data is useful to decide on Policies and for the policy makers to make decisions

• Formulation of Vehicular emission Standards and update them accordingly

• VET data could be used for Auditing supervision and monitoring of the Programme

• To decide life time of a Vehicle

• VET data is very useful to observe different trends and pattern identification

• It’s very supportive to make new enhancements to the current VET program