SUB-REGIONAL WORKSHOP ON SHARING RESULTS OF POLICY STRATEGIESTHE GLOBAL FUEL ECONOMY INITIATIVE

THE KENYAN EXPERIENCE

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INTRODUCTION: GFEI KENYAN PILOT PROJECT

- The GFEI study in Kenya for the 2010-2012 period.

- The study was to support the government develop strategies for improved fuel efficiency of vehicles.

- Light duty vehicles inventory for the period 2010-2012, was compiled, analysed and synthesized.

T.O.R. OF THE GFEI KENYAN PILOT PROJECT

- Develop vehicles inventory for Kenya during the 2010-2012 period and assess the trend in average fuel economy and CO_2 emissions.

- Review existing National regulations/incentives to promote cleaner and fuel efficient vehicles.

- Establish the amount of green house gas emissions and the related social and health costs.

- Conduct a cost benefit analysis of various policy interventions / scenarios.

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VEHICLE INVENTORY 2010-2014

VEHICLE REGISTRATION DATA AND PROJECTIONS

Year	2010 (Actual)	2011 (Actual)	2012 (Actual)	2013 (Actual)	2014 (Actual)	2030 (Projected)	2050 (Projected)
Light Duty Vehicles	93,136	96,484	110,474	94,017	102,606	307,445	518,025
Cumulative (All vehicles in Millions)	1.65	1.85	2.02	2.2	2.5	5.0	8.0

Fuel Economy and CO_2 emission standards

Year	Average fuel Consumption Metric combined(L/100Km)	Average CO_2 emission (g/Km)
2010	7.4	178.2
2011	7.6	182.0
2012	7.7	185.4
2013	7.9	178.0
2014	6.7	160.0
Grand Average	7.5	181.7

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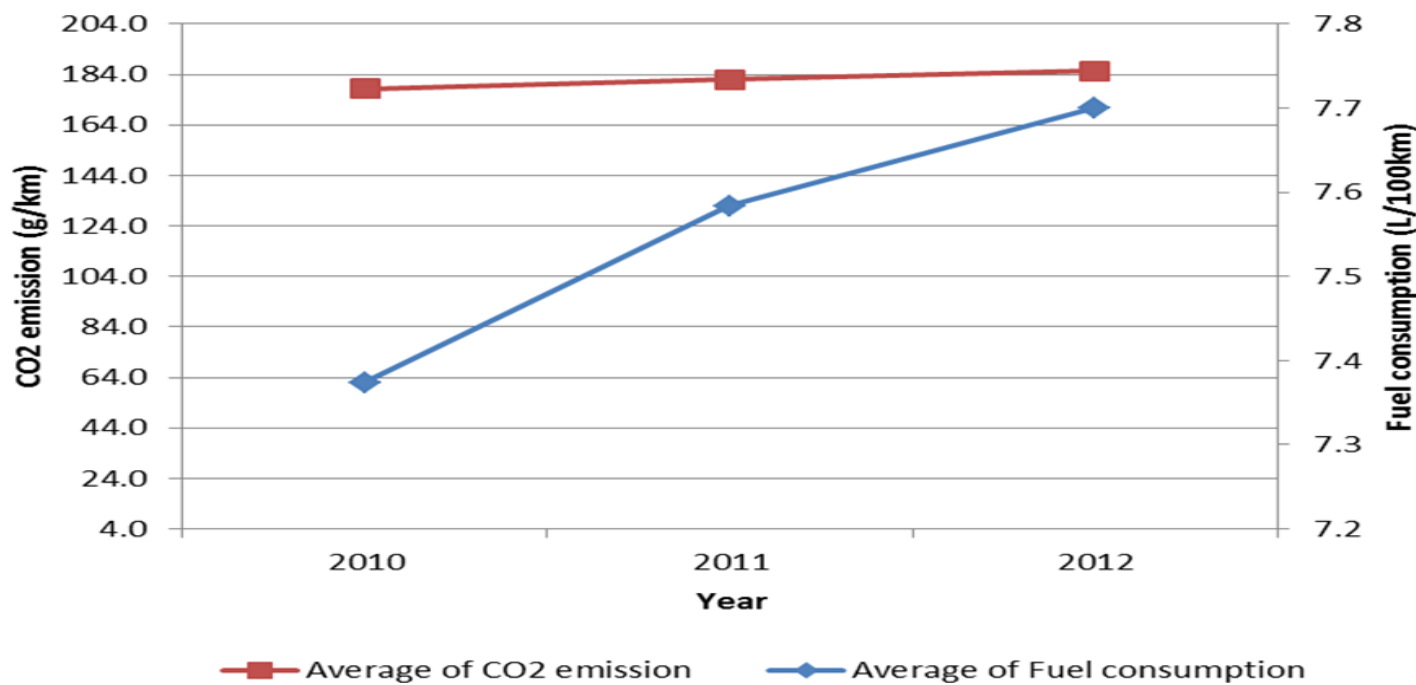
CO$_2$ (g/km) and fuel consumption (L/100km)

Vehicle Condition	Average of Fuel Consumption (L/100km)	Average of CO2(g/km)
New	8.5	208.6
Used	8.8	215.3
Grand Total	8.8	215.2

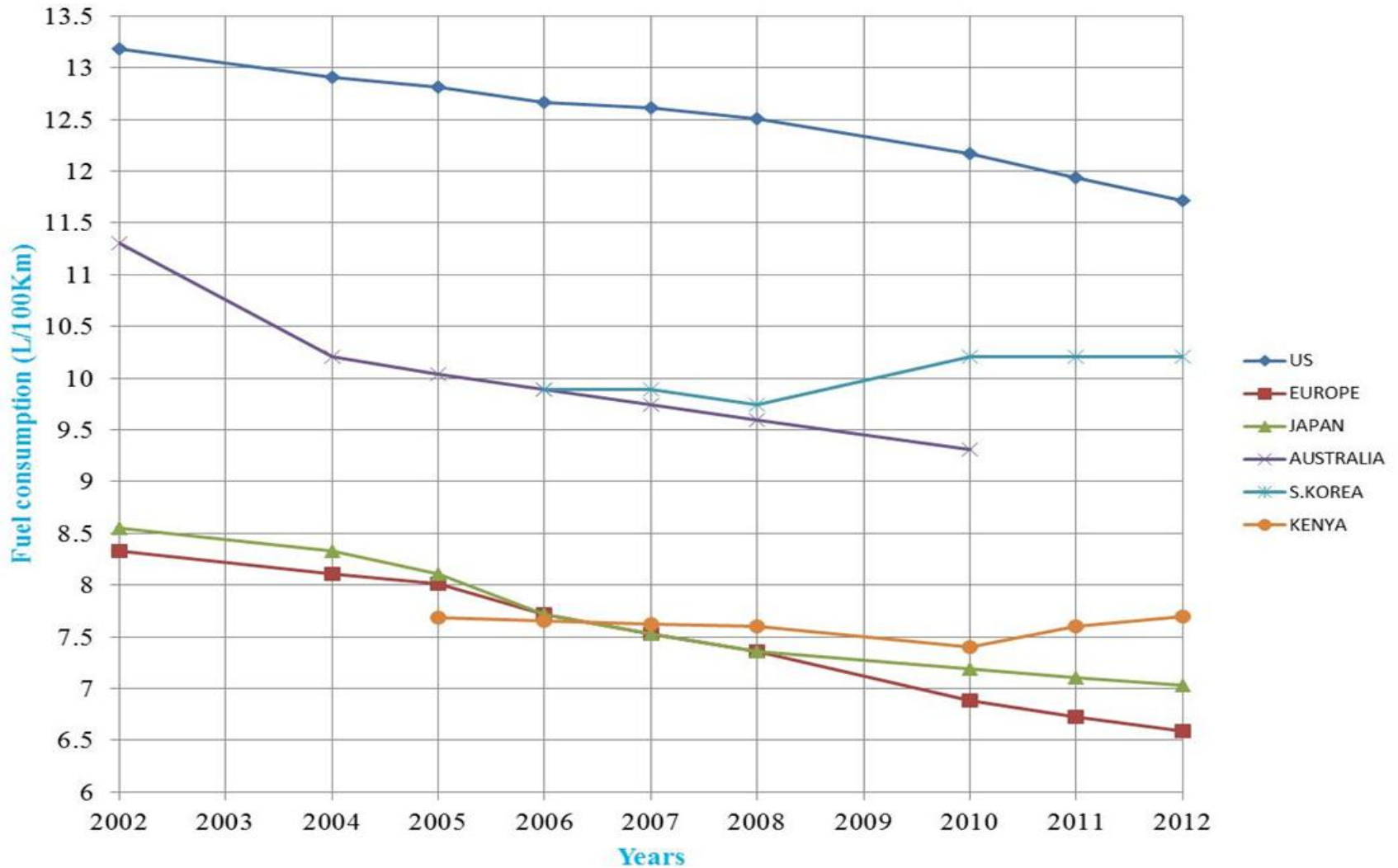| Year of vehicle registration	Fuel Type		
2010	8.0	7.2	7.4
2011	7.9	7.5	7.6
2012	8.0	7.6	7.7
Grand Average	8.0	7.4	7.5

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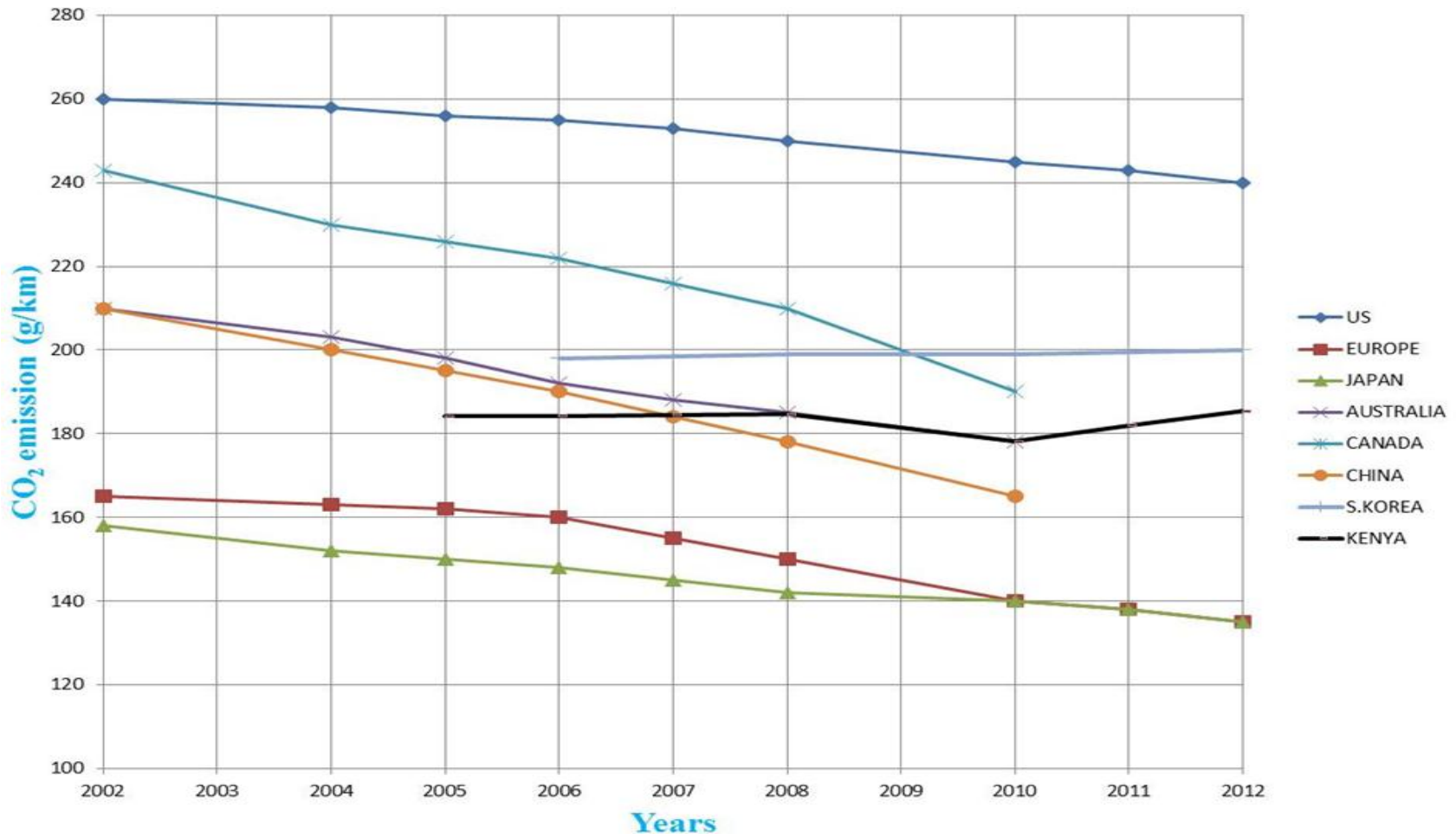
Fuel Consumption by Engine Displacement
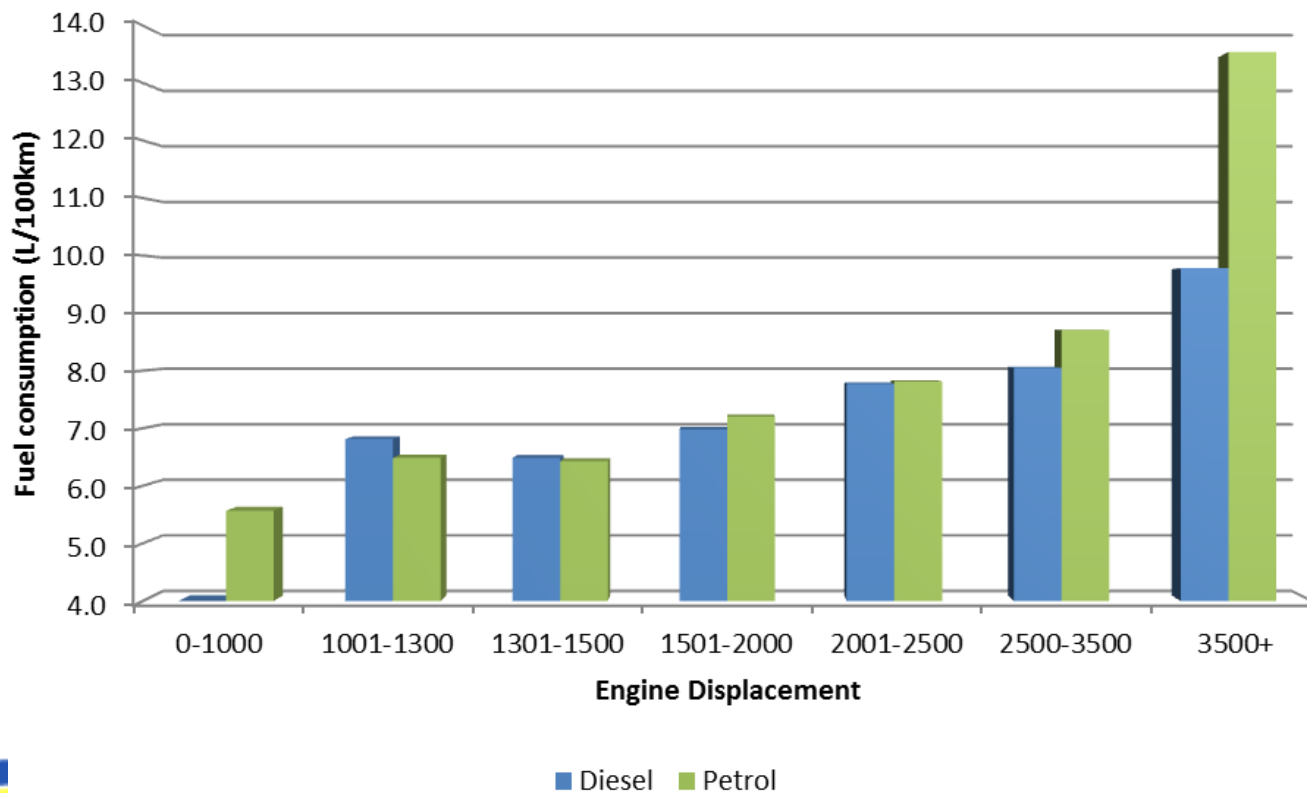
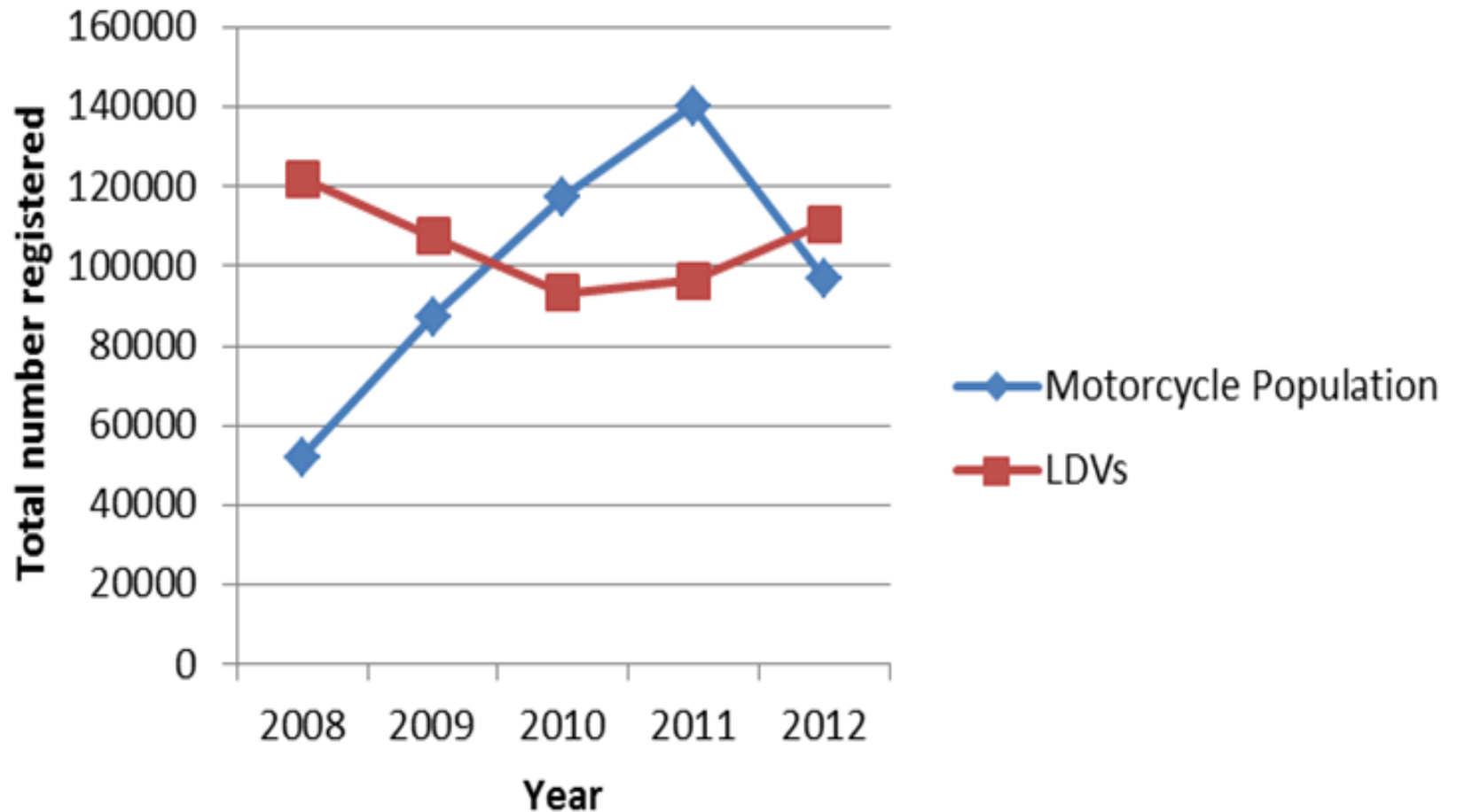# Registration of Vehicles by Year of Production
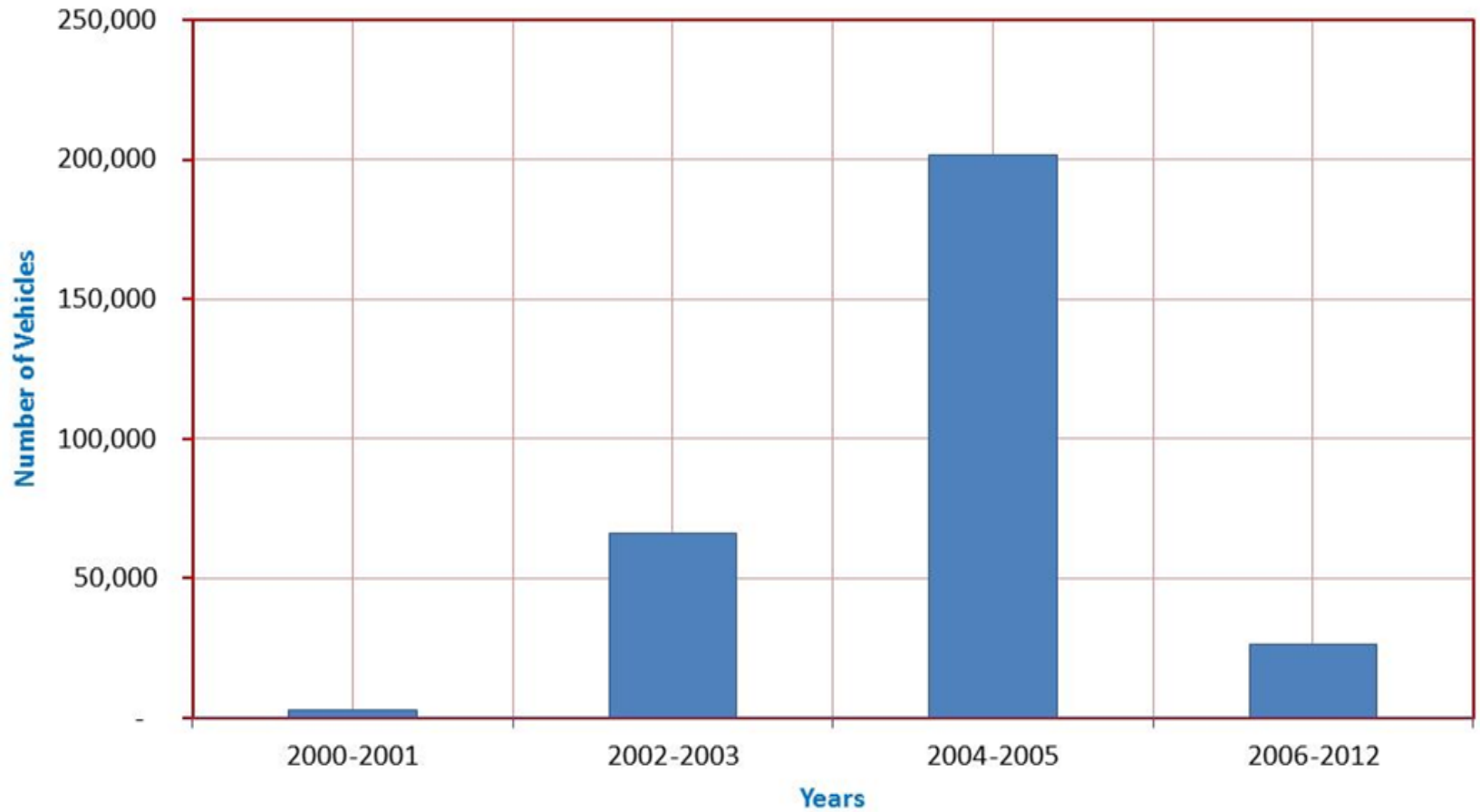
Comparison of L/100km with selected countries

Average CO$_2$ emission for select countries

Registration of Motorcycles

COST BENEFIT ANALYSIS

CBA: Options on fuel and CO_2 emission controls

Transport Sector Management Options	Scenarios
Option 1: Status Quo	▪ Predominantly based on vehicle technology ▪ No enhanced enforcement of all regulations ▪ No inspection routines for all vehicles ▪ Current state of infrastructure
Option 2: All policies in place	▪ Full regular inspection and enforced compliance to existing standards ▪ Improved infrastructure ▪ Increased population of hybrid vehicles
Option 3: Vehicle Options	▪ Labelling of CO_2 emission of vehicles ▪ Restriction on age of imports ▪ CO_2 based acquisition costs
Option 4: Fuel Tax Options	▪ Tax and levies on fuel ▪ Taxation incentives on acquisition of fuel efficient vehicle

CBA: Options

Table 1: Identification of Direct Policy Effects on Fuel Efficiency and Vehicle Emissions

OPTION 1	2012	2030	2050
If Status quo (gCO2/Km)	185.35	137	105
(L/100km)	7.73	5.82	4.51
OPTION 2	**2012**	**2030**	**2050**
All Policies Implemented (gCO2/Km)	185.35	113	69
(L/100km)	7.73	4.79	2.95
OPTION 3	**2012**	**2030**	**2050**
Vehicle Options (gCO2/Km)	185.35	123	82
(L/100km)	7.73	5.21	3.49
OPTION 4	**2012**	**2030**	**2050**
Fuel tax Options (gCO2/Km)	185.35	138	104
(L/100km)	7.73	5.88	4.48

Challenges for Reduction of Vehicle Emissions

- Lack of full implementation of existing laws and standards

- Inspection of not done for all Vehicles.

- General Awareness of environmental issues is limited

- Inadequate inter-sectoral mechanisms

- Data on vehicles, vehicular emissions and air quality not aggregated and accessible

- Some provisions in the legislation needs review.

- Lack of Urban Transport Policy

- Lack of policy frameworks on Biofuel Development

- Lack of Adequate Vehicle Standards and Specification

- Lack of Law to Reward use of Fuel Efficient Vehicle

- Lack of Laws to Promote Less Polluting Fuel

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Discussion

- The absence of prominent contribution from electric/hybrid vehicles is unusual and attributable to insufficient general public awareness of fuel efficiency issues.

- Increased population of motorcycles and their extensive use has high social cost in form of increased accidents and contribution to deterioration of urban environment.

- Diesel engines produce less CO and HC, have greater fuel economy and produce less CO_2 per km.

- Petrol engines produce virtually no particulate matter, produce more CO_2 per km and have higher emission of the regulated pollutants.

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RECOMMENDATIONS

Vehicle Inspection:

- Regular inspection inclusive of monitoring of emissions need to be enacted and enforced for all vehicles.

- The capacity of the Motor Vehicle Inspection Unit should be increased . Consideration should be given to licensing of credible garages in the inspection process.

- Social costs associated to motorcycles can be reduced through ensuring of competency of riders , enforcing proper loading and regular assessment for road worthiness.

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Recommendations Cont.……

- Motorcycles with two stroke engines are highly polluting and have high fuel consumption. The country should restrict/ban their import.

Taxes:

- Fuel tax options not to be implemented as stand alone

- Introduce Tax Rebate System to Reward Less Polluting Vehicles while charging a fee for the more polluting

- Apply revenue from fuel taxes in transport management

Recommendations Cont……

Infrastructure:

- The development of an urban transport policy is imperative

- Updated traffic management information systems should be maintained.

Health surveillance:

- Surveillance of total suspended particulate (TSP) matter and elemental concentrations should be continuous.

- Conduct periodic estimation of economic burden of vehicle emission pollutants related illnesses to plan and implement control and prevention policies & programs

Recommendations Cont……

Public Awareness:

- Enhanced public awareness on vehicle usage and vehicle efficiency implications to environment.

- Capacity building to improve competencies through on job training to screen diseases related to air pollutants

Vehicle Standards:

- Reduce use of private cars and enhance mass transit

FUEL ECONOMY LABELING AND FEEBATE PROGRAMME

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FUEL ECONOMY LABELING AND FEEBATE PROGRAMME STUDY

- In February 2015 the Energy Regulatory Commission contracted UNES Ltd to carry out a feebate and vehicle labeling study as a follow-up to the recommendations proposed in the GFEI study.

T.O.R. OF THE LABELING AND FEEBATE PROGRAMME

- Conduct comparative analysis of various programs in the world.

- Identify success factors for vehicle labeling and feebate programs through review of programmes implemented world-wide.

- Undertake feasibility assessment based on interaction and study of stakeholders.

- Conduct surveys and analysis of consumer behavior focusing on car dealers.

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Cont.…

- Design of a vehicle labeling system of both new and used imported vehicles.

- Economic /Financial models analysis to guide selection of candidate proposals.

- Review various models of new vehicle purchase schemes, e.g., Trade-ins/scrappage/Buy backs, credit schemes etc., for both public and private sectors.

- Recommend type and age of vehicle for scrappage.

- Establish terms and conditions for scrappage programmes.

- Design of suitable new vehicle purchase schemes.

INTERNATIONAL BEST PRACTICE ON FUEL ECONOMY LABELING

- Mandatory labeling for all LDV

- Presentation of fuel consumption data and CO_2 emission

- Presentation of cost estimate for the next few years on the label

- Link label to fiscal policies

- Point out Influence of driving style and vehicle use

- Use branding strategies and supplement label with online-tools

# VEHICLE LABELING FOR SELECTED COUNTRIES

Countries	Test Cycle	CO_2 emission Displayed?	Fuel Consumption /Economy Unit	Comparison	Mandatory (Yes/No)	Year of Introduction
United States	5 Cycle	Yes	mpg	Relative: Fuel economy Absolute: GHG and smog	Yes	1975
China	NEDC	No	l/100km	---	Yes	2010
South Korea	FTP-75 (up till 2011) US comb. (2012~)	Yes	km/l	Relative: Fuel economy	Yes	2006
India	NEDC	No	km/l	BEE: Relative and absolute SIAM: Relative	No	2012
Singapore	UN ECE R 101 (NEDC)	No (old)	l/100km	Relative: CO_2 emission Absolute: Fuel consumption	Yes	2013
		Yes (new)			Yes	
Brazil	FTP-75	No	km/l	Relative: Energy consumption by car class	No	2009
Chile	FTP-75	Yes	km/l	Absolute	Yes	2011
Australia	ADR 81/02 (NEDC)	Yes	l/100km	Absolute	Yes	2000
New Zealand	NEDC (new cars)	No	l/100km	Absolute	Yes	2011
	Japanese 10-15 (used cars)					
EU	NEDC	Yes	l/100km	Absolute	Yes	2011
South Africa	SANS 20101: 2006	Yes	l/100km	---	Yes	2008

PROPOSED VEHICLE LABELS FOR KENYA
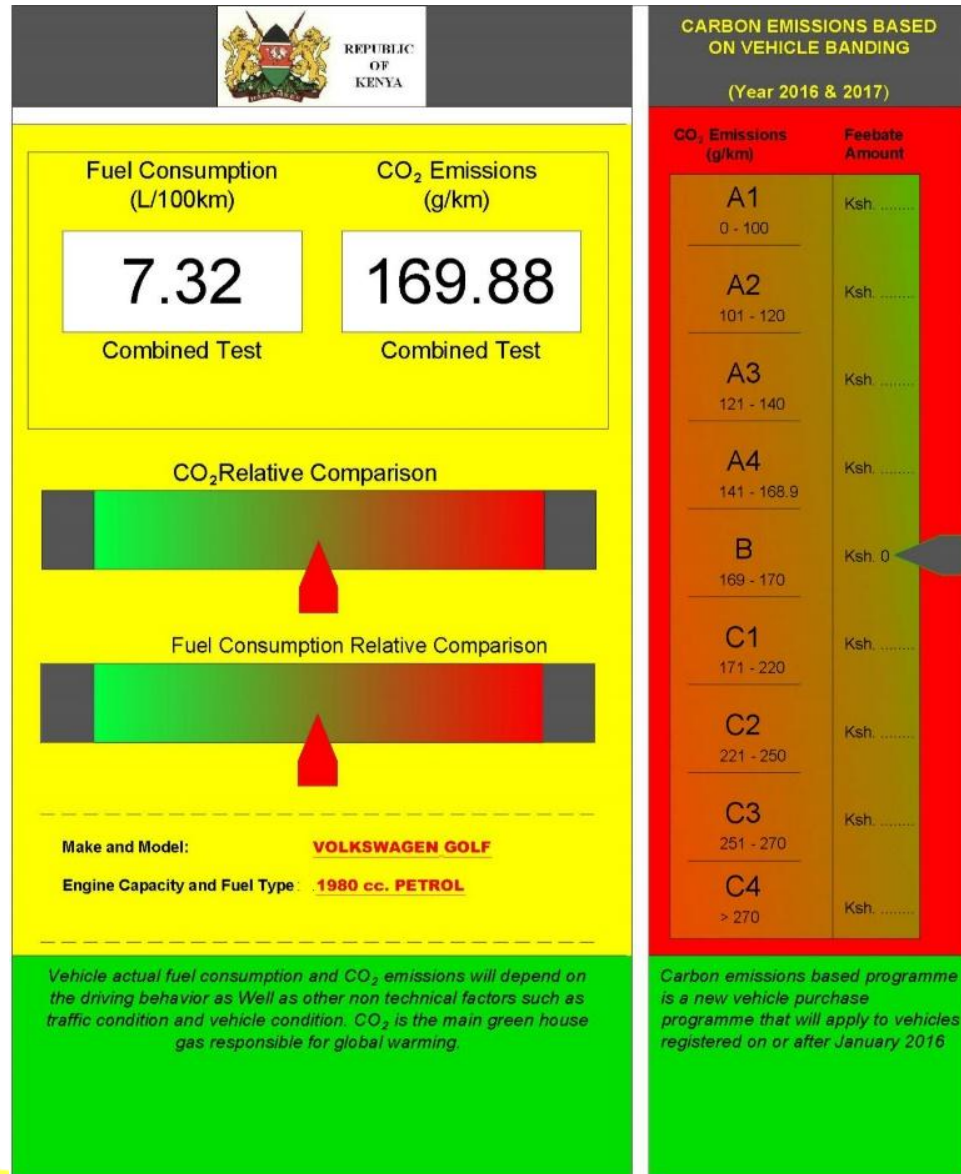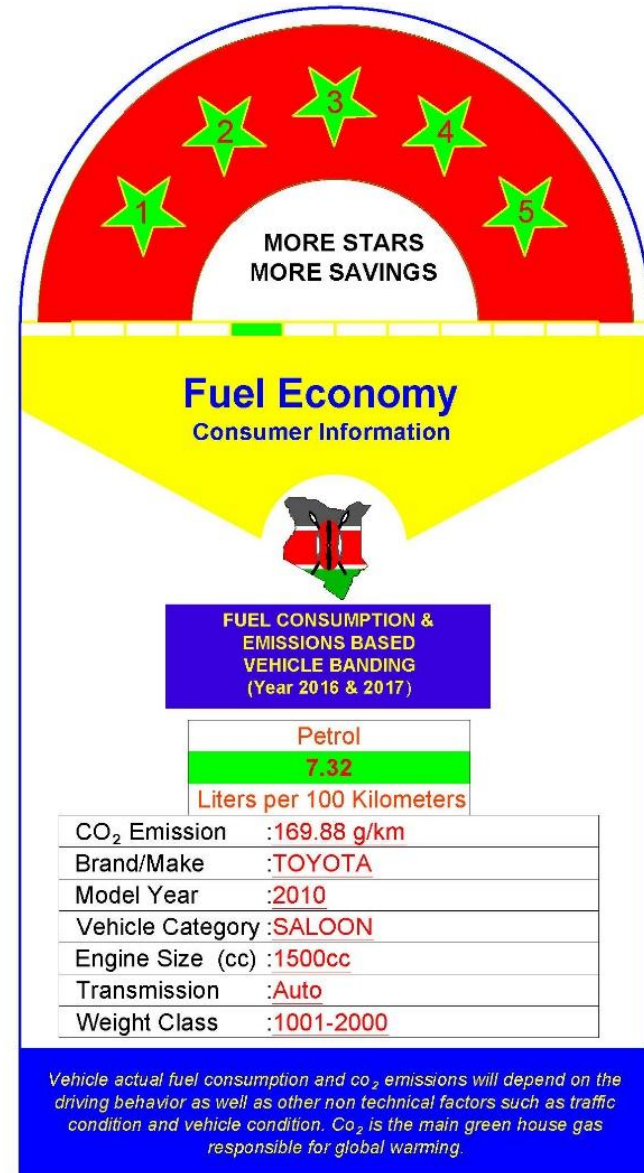

Proposed Label - 1

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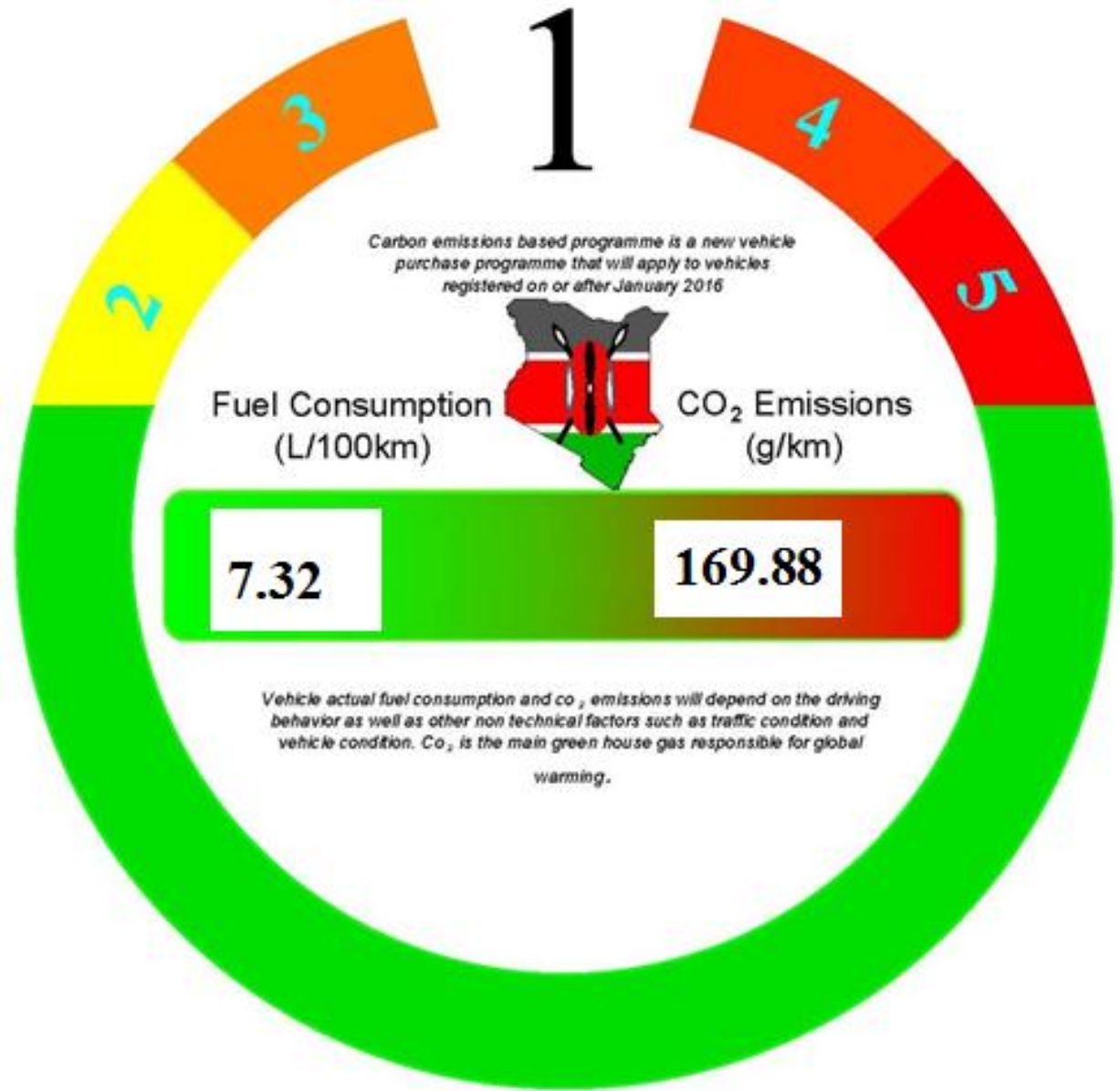
Proposed Label - 2

Cont……

**Proposed
Label - 3**

FORESEEN CHALLENGES

- Challenges in Data Management

- Misrepresentation of Vehicle Information

- Non Compliance

- Ignorance

- Slow Implementation of Proposed Program

NEW VEHICLE PURCHASE SCHEME

- New and more efficient vehicles protect the environment, stimulate the automotive industry and reduce vehicle abandonment.

Typical vehicle purchase schemes:

- **Trade–in's**
- **Scrappage schemes**
- **Credit schemes**

- **Goals of vehicle scrappage:**
  - Stimulator of vehicle industry
  - As a tool to preserve employment and promoting socio economic development.
  - As a promoter of green economy

- Opportunities

- Local manufacturing of affordable vehicles in Kenya, e.g., Peugeot and Volkswagen
- Mortgage Schemes

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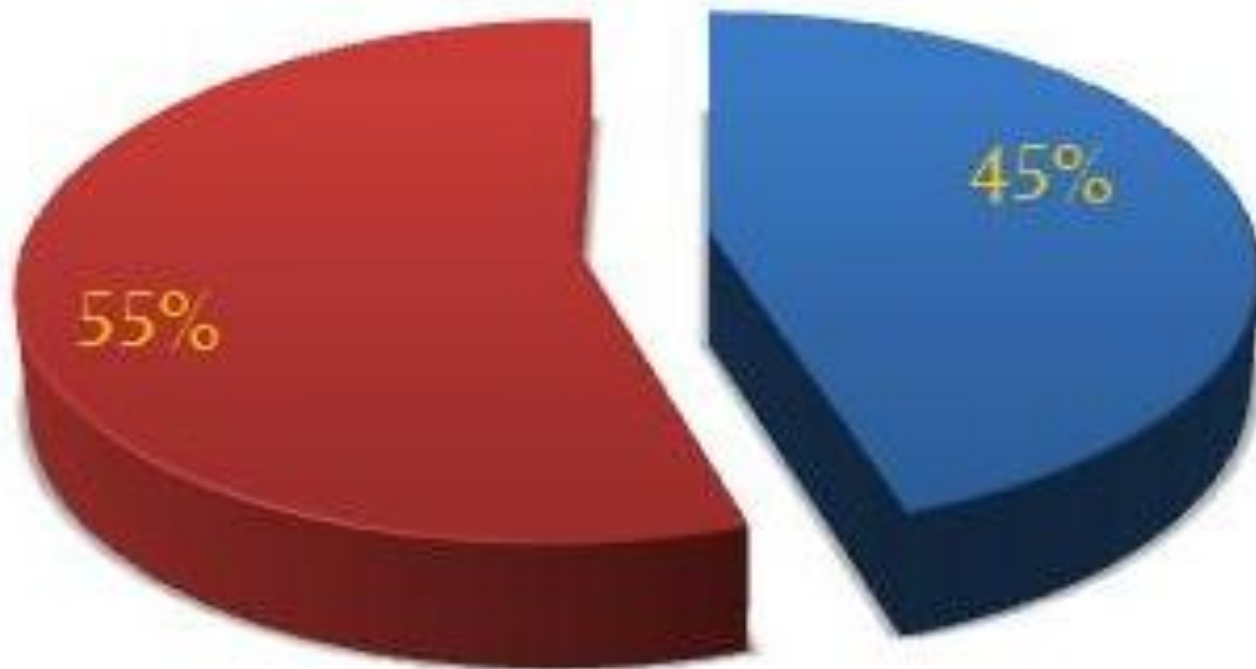
FEEBATE PROGRAMME

- A feebate is a market based policy for encouraging reduction of greenhouse gas emissions from the passenger vehicles by levying fees on relatively high emitting vehicles and providing rebates on lower emitting vehicles.

- Provision of information on fuel consumption using labels on the vehicle is important in enlightening customers on fuel economy to encourage choices based on financial running costs.

AWARENESS OF FEEBATE PROGRAM IN KENYA
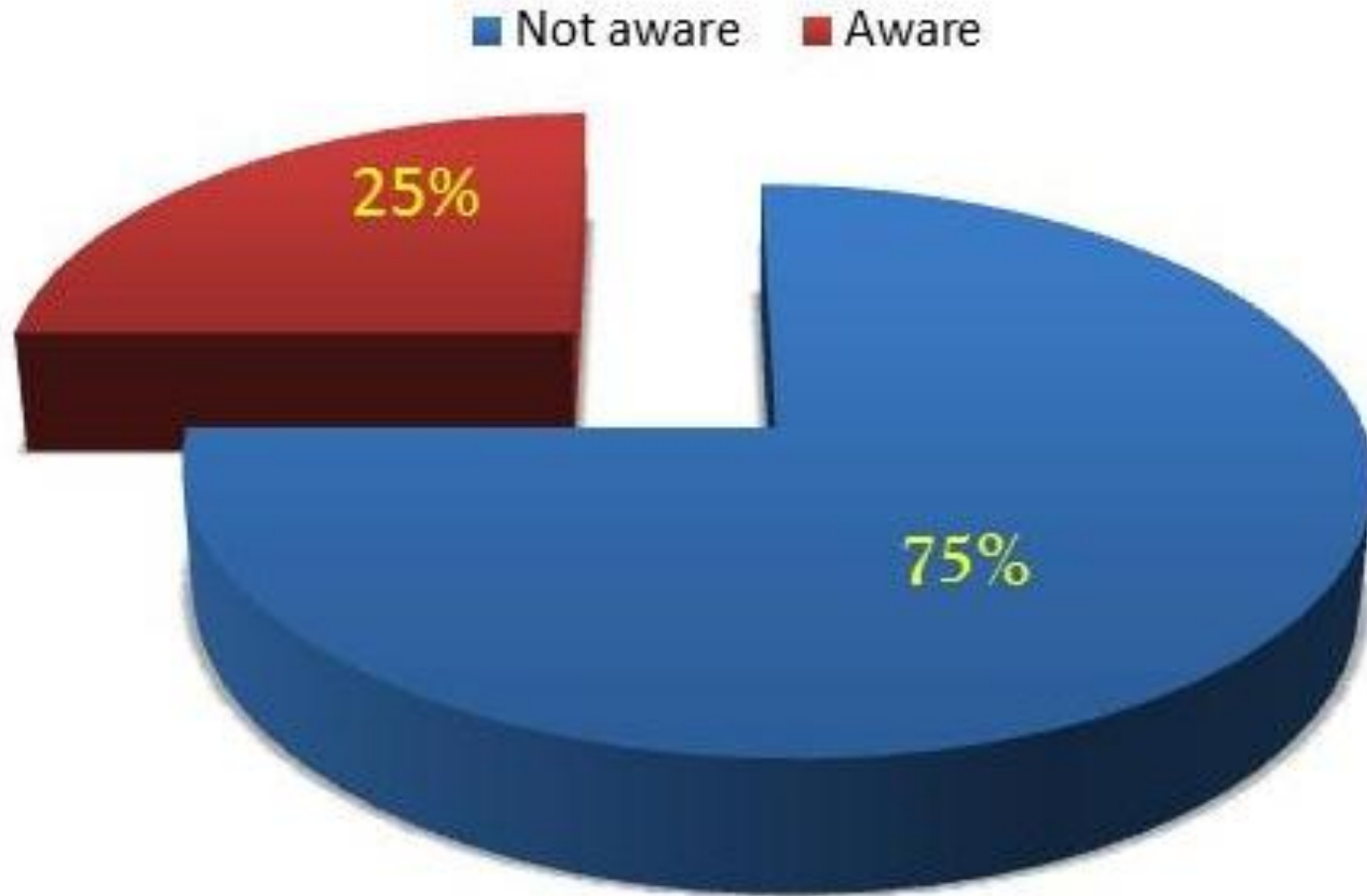
RESPONDENTS WILLINGNESS TO PAY EMISSION FEES

CONCLUSIONS

Feebate Programme

Differentiated Import Duty

- Import of used vehicles – Maximum age is 8 years

- 2015, National Treasury introduced differentiated taxation scheme

  - 0 to 3 years – additional Import Duty of US$ 1,450

  - 4 to 8 years - additional Import Duty of US$ 1,960

- However, it was not well structured and led to reduction in imports of used vehicles and hence reduction of revenues. It was scrapped a year later

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RECOMMENDATIONS

■**Used and New**

■Currently, Government offering incentives for local manufacturing of affordable vehicles. Several manufactures have opened factories in Kenya, e.g., Peugeot and Volkswagen

■ 8 year rule to also be adopted by other East African countries

Labeling Program

■ Kenya Bureau of Standards (KEBs) in consultation with (ERC) and stakeholders to develop a standard on vehicle labeling.

■ KEBS to develop a web site to be launched in conjunction with the new label to consumer-focused to provide more detailed information, with access to tools, applications and social media.

Related Initiatives

- **Supporting initiatives**
  - Air Quality Task Force for Mobile Sources
  - Air Quality Coordination Framework Committee
  - Vehicle Inspection capacity improvement – NTSA
  - Rail
  - Cleaner Fuels – 50 ppm – EAC
  - Improvement of road networks – KENHA, KURRA

- NAMATA This project aims to support Kenya's first Mass Rapid Transit System (MRT) as Nationally Appropriate Mitigation Action (NAMA). The NAMA is designed to provide modal alternatives and aims to shift significant shares of individual travel to commuter rail and a new Bus Rapid Transit (BRT) system.

Partners - Donors

Partners

- Task Team
  - National Treasury
  - Ministry of Transport
  - Ministry of Environment
  - Ministry of Energy and Petroleum
  - Energy Regulatory Commission
  - National Transport and Safety Authority
  - National Environment Management Authority
  - Kenya Bureau of Standards
  - General Motors
  - Sustainable Transport Africa
  - Petroleum Institute of East Africa
- Consultant – University of Nairobi

END

Thank you for listening