



Developing Clean and Efficient Vehicle and Fuel Policy for Nepal

Prabha Neupane
Program Officer, Clean Energy Nepal
prabha@cen.org.np



CLEAN ENERGY NEPAL

स्वच्छ ऊर्जा नेपाल



Clean Air &
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Introduction



CEN is an independent, non profit service oriented, policy, research and implementation organisation focusing on research based education and advocacy campaigns with policy inputs and implementation on issues related to sustainable energy use and environmental conservation.

Vision: Towards Clean and Sustainable Environment for All

CEN's missions are:

- To educate and aware people on issues related to climate change, energy and other environmental issues.
- To work for reducing air pollution and global warming impacts to natural and human system.

The objectives of CEN are:

- Investigate issues relevant to energy, environment and climate change
- Facilitate discussions, information sharing and knowledge management among key stakeholders
- Educate the public on the importance of these issues and what they can do about it
- Advocate for change
- Initiate and conduct projects that benefits most vulnerable section of society

Nepal



Environment Performance Index (EPI) Ranking for Nepal's Air Quality

2014

177/178 Countries

2016

177/180 Countries

2018

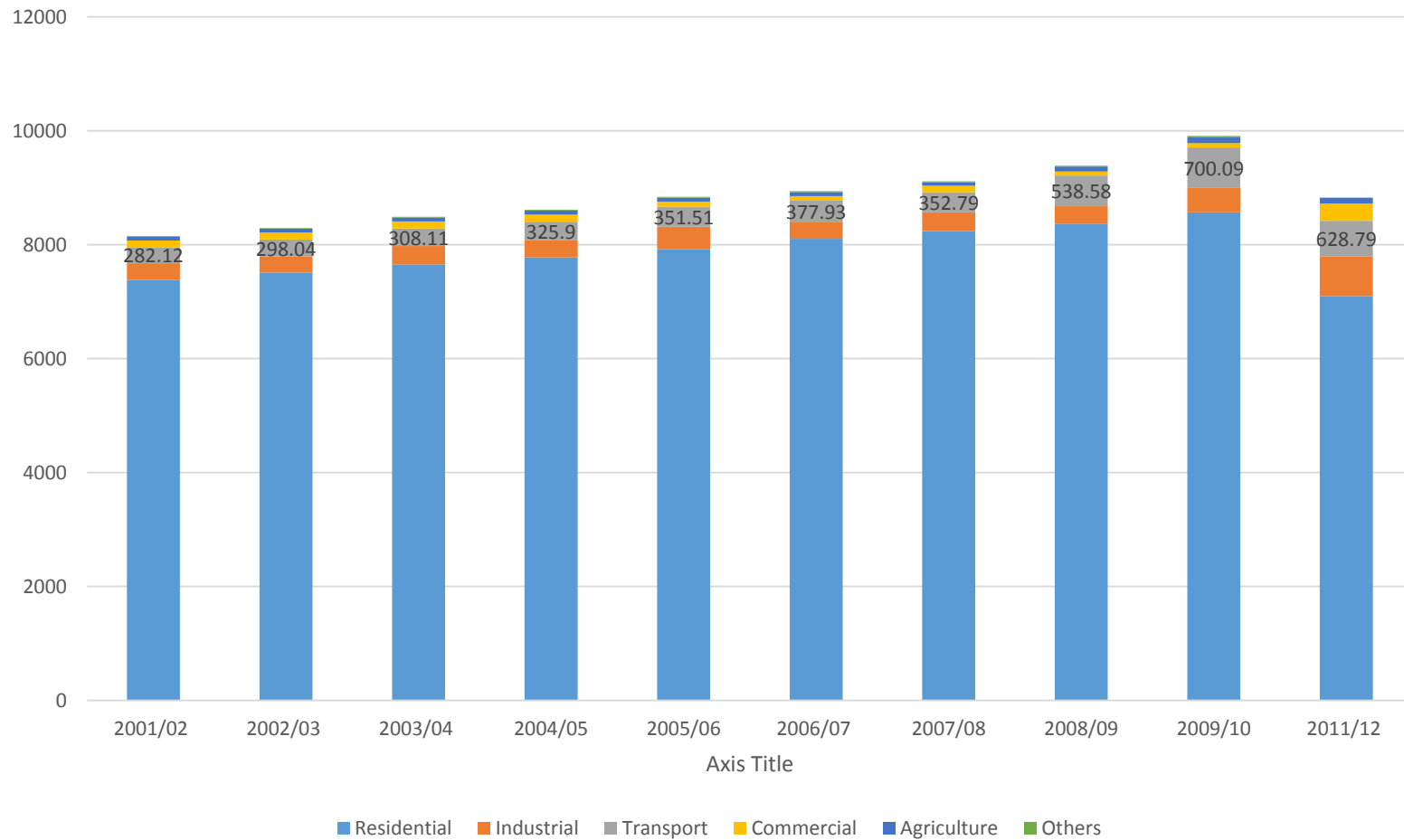
180/180 Countries

Air Pollution in Nepal

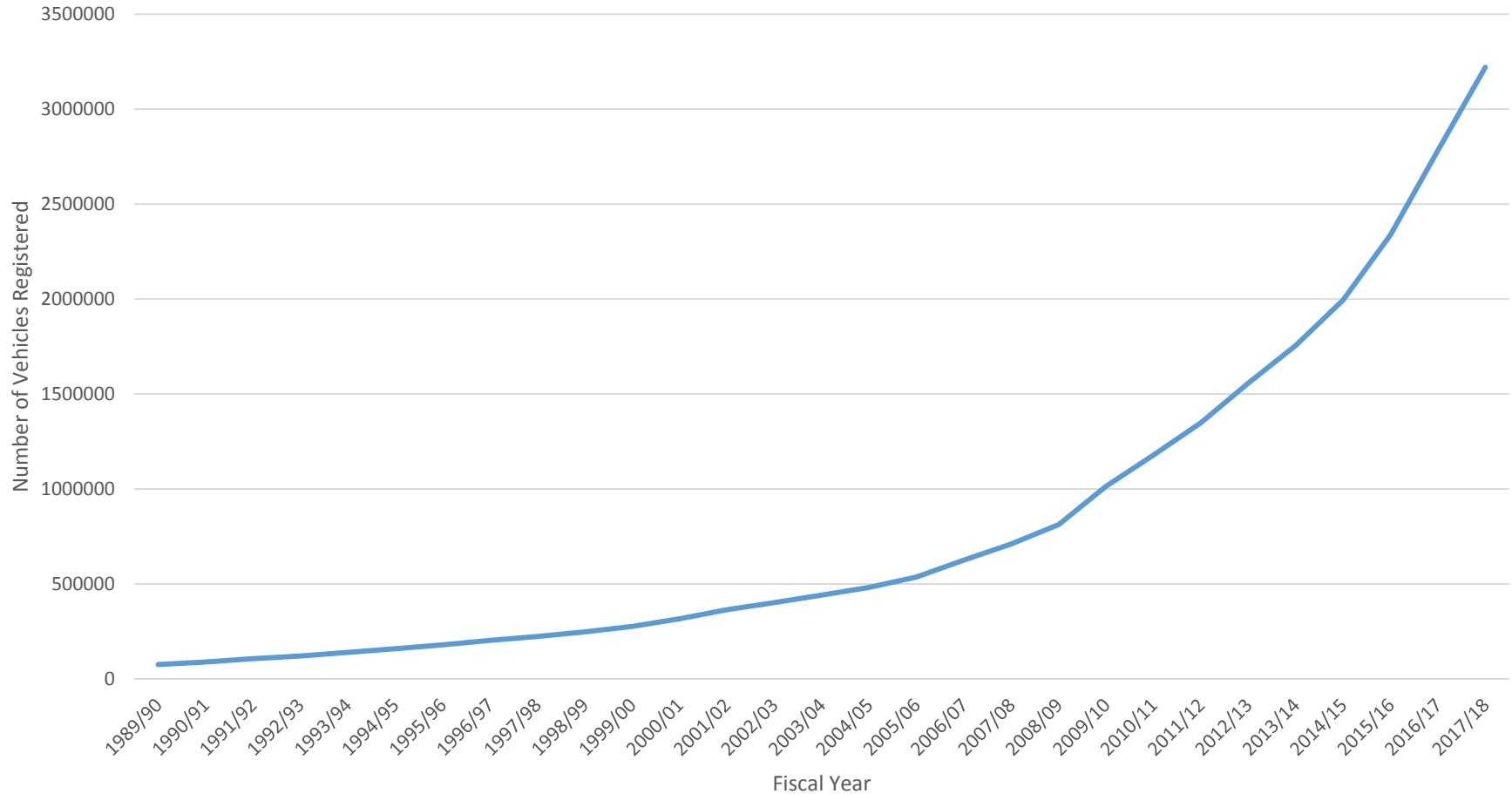
- Annual average PM_{2.5} concentration:
 - 49 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) (NHRC, 2013)
- In contrast:
 - Ambient air quality standards:
 - WHO Annual: $10 \mu\text{g}/\text{m}^3$,
 - WHO 24 hour: $25 \mu\text{g}/\text{m}^3$
 - Nepal government 24 hour: $40 \mu\text{g}/\text{m}^3$
- Estimated economic costs of urban air pollution in Nepal - USD 21 million, or 0.29% of Nepal's GDP (CEN, 2012)
- Leading environmental risk factor
 - Deaths
 - 740 - acute lower respiratory infection
 - 1,770 - Chronic obstructive pulmonary disorder
 - 932 - Lung cancer
 - 3,328 - Ischemic heart disease
 - 3,183 - Stroke

(WHO, 2016)

Sectoral Energy Demand

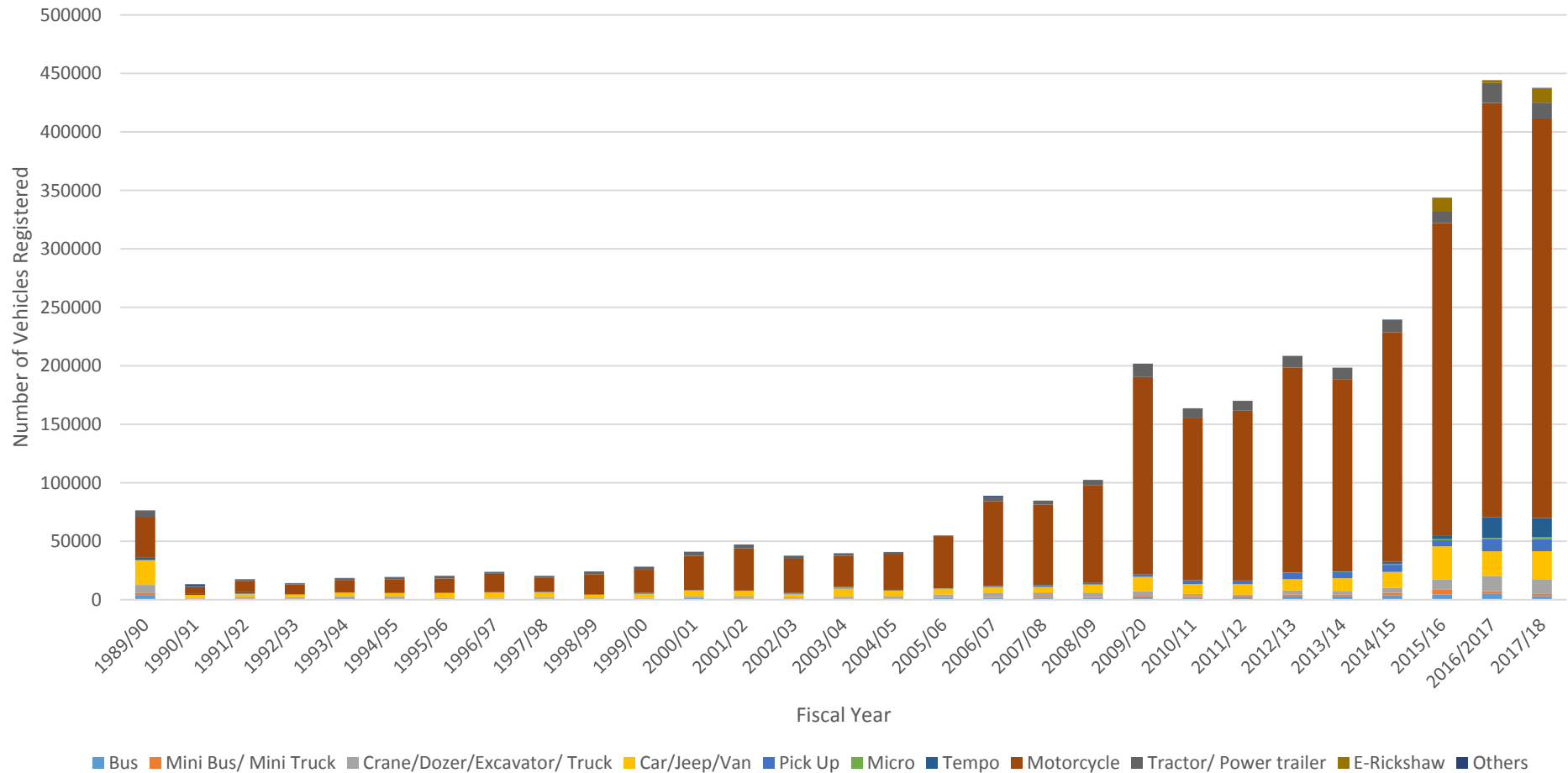


Trend of Vehicles Registration in Nepal



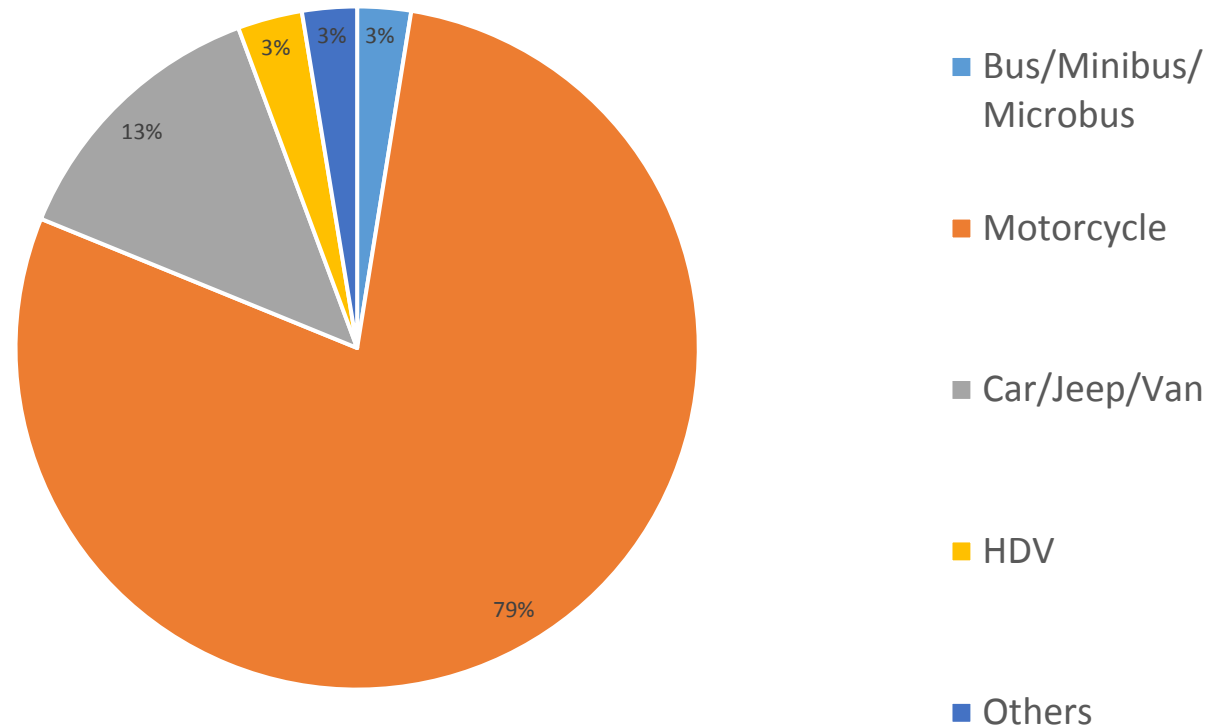
Exponential Growth - More than 3 millions by FY 2017/18

Trend of Vehicle Registration in Nepal



Source : DoTM, 2018

Share of Registered Vehicles, Bagmati Zone



- More than 64% of the LDVs registered in Nepal

Objective

Develop clean and efficient vehicle policies in developing appropriate policies to encourage more efficient vehicles

- Fiscal policies
- Electric vehicles
- Vehicle Labelling Schemes

Obtain Vehicle Registration Data

Registration No.	Vehicle Type	Model	Production Year	Company	No. of cylinders	Capacity (c.c)	No. of Seats	Fuel Type	Vehicle Registration Date (B.S.)
Ba 14 Cha 34	Pick Up	Omni	2009	Mahindra and Mahindra	4	2523	2	Diesel	9/14/2072
Ba 14 Cha 35	Van		2010	Maruti Suzuki	3	796	8	Diesel	9/14/2072
Ba 14 Cha 36	Van	Ace Magic	2015	Tata Motors	2	702	8	Diesel	9/19/2072
Ba 14 Cha 37	Van	Ace Magic	2015	Tata Motors	2	702	8	Diesel	9/19/2072
Ba 14 Cha 38	Van	Ace Magic	2015	Tata Motors	2	702	8	Diesel	9/19/2072
Ba 14 Cha 39	Van	Ace Magic	2015	Tata Motors	2	702	8	Diesel	9/19/2072
Ba 14 Cha 40	Jeep	Sumo Gold GX	2015	Tata Motors	4	2956	9	Diesel	9/26/2072
Ba 14 Cha 41	Pickup	Hilux	2015	Toyota Motors	4	2755	5	Diesel	10/24/2072
Ba 14 Cha 42	Jeep	EcoSport	2015	Ford	4	1499	5	Petrol	9/17/2072
Ba 14 Cha 43	Jeep	EcoSport	2015	Ford	4	1499	5	Petrol	9/17/2072
Ba 14 Cha 44	Jeep	EcoSport	2015	Ford	4	1499	5	Petrol	9/17/2072
Ba 14 Cha 45	Jeep	EcoSport	2015	Ford	4	1499	5	Petrol	9/17/2072
Ba 14 Cha 46	Jeep	EcoSport	2015	Ford	4	1499	5	Petrol	9/17/2072
Ba 14 Cha 47	Jeep	EcoSport	2015	Ford	4	1499	5	Petrol	9/17/2072
Ba 14 Cha 48	Car	Figo Aspire	2015	Ford	4	1196	5	Petrol	9/17/2072
Ba 14 Cha 49	Car	Figo Aspire	2015	Ford	4	1196	5	Petrol	9/17/2072

Structuring the data

Fuel Economy Data by Vehicle Make/Model

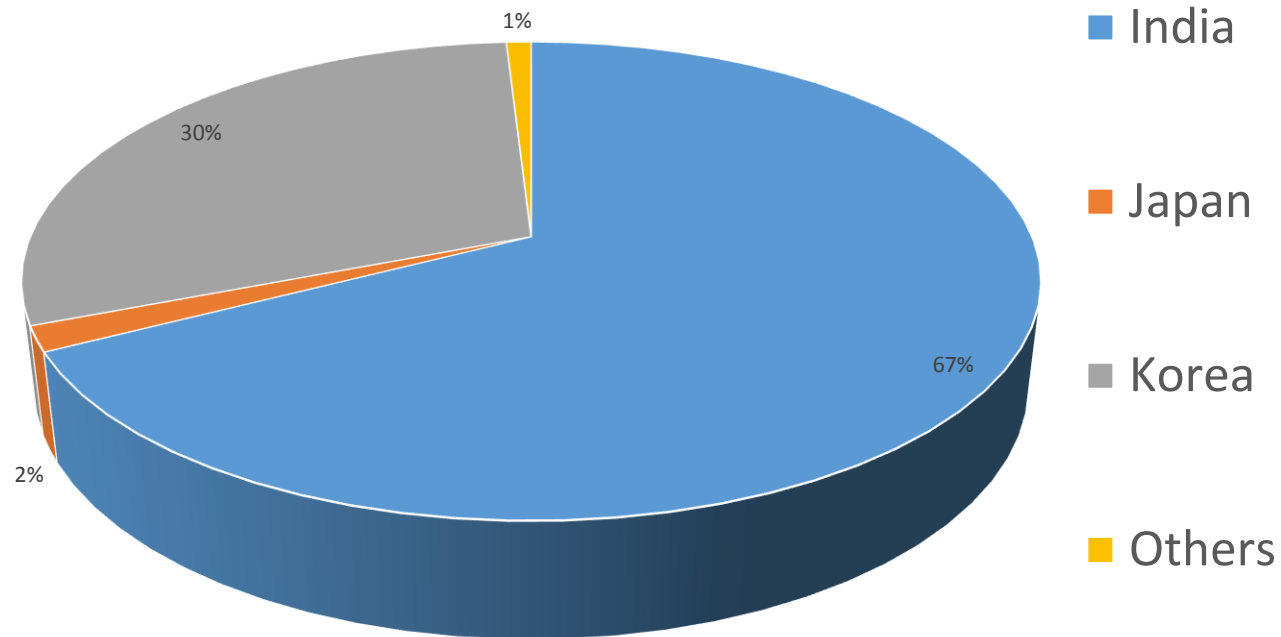
Vehicle Make	Vehicle Model	Vehicle Category / Market Segment	Year of Manufacture	No. of Cylinders	Fuel Type	Engine Capacity (CC)	Engine Power (kW)	Original Data		Fuel Economy on NEDC (l/100 km)	Emission gCo2/km
								Driving Cycle	Fuel Economy (l/100 km)		
DAIHATSU	Terios	Compact Off-road/SUV	2006-present	4	P	1495	77	NEDC		7.7	176.0
	Sirion	Hatchback	2008-2015	4	p	1298	68	NEDC		5.8	137.0
Ashok Leyland	Dost LS	PickUp	2014	3	D	1478	42.51	ARAI	17.6 kmpl		BS III
FIAT	Avventura 1.4 Active	SUV	2015	4	P	1368	89 bhp @ 6000 RPM	ARAI	14.4 kmpl		
	Avventura 1.4 Dynamic	SUV	2015	4	P	1368	89 bhp @ 6000 RPM	ARAI	14.4 kmpl		
	Avventura 1.3 Emotion	SUV	2015	4	D	1248	93 bhp @ 4000rpm	ARAI	20.5 kmpl		
	Punto Active	Hatchback	2011	4	P	1172	68 bhp @6000		13/16 kmpl(City/Highway)		
	Emotion	Hatchback	2011	4	P	1368	90 bhp @6000	12/15 kmpl			
General Motors	Chevrolet Aveo		2009-2012	4	P	1399	94 bhp @ 6200 rpm	ARAI	14.49 kmpl		
	Chevrolet Tavera	MUV	2008	4	D	2499	80PS @ 3900 rpm		10.9/14.6 kmpl (City/Highway)		

Structuring the data

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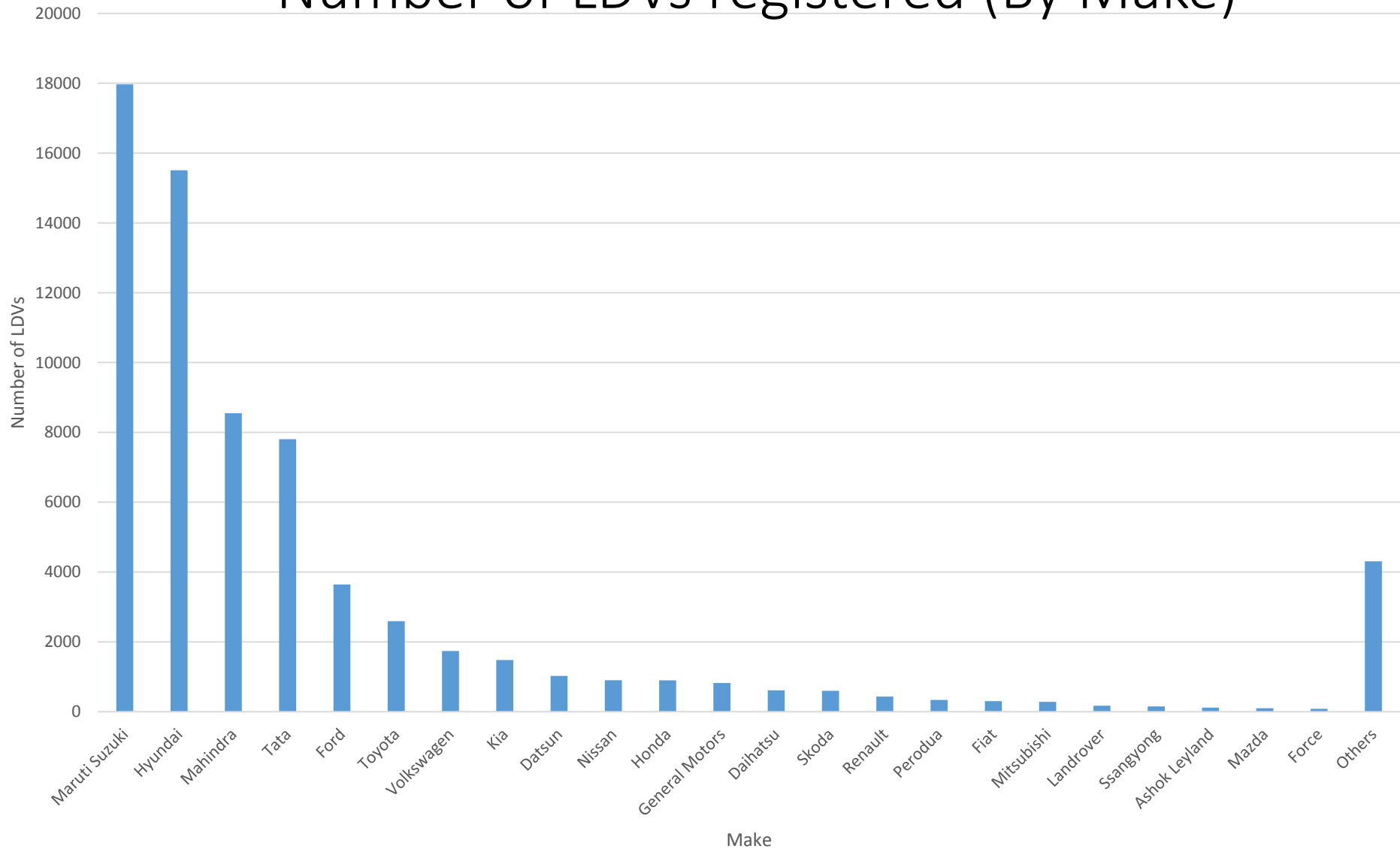
Vehicles Import in Nepal (By Countries)



Source: Trade and Export Promotion Center, 2018

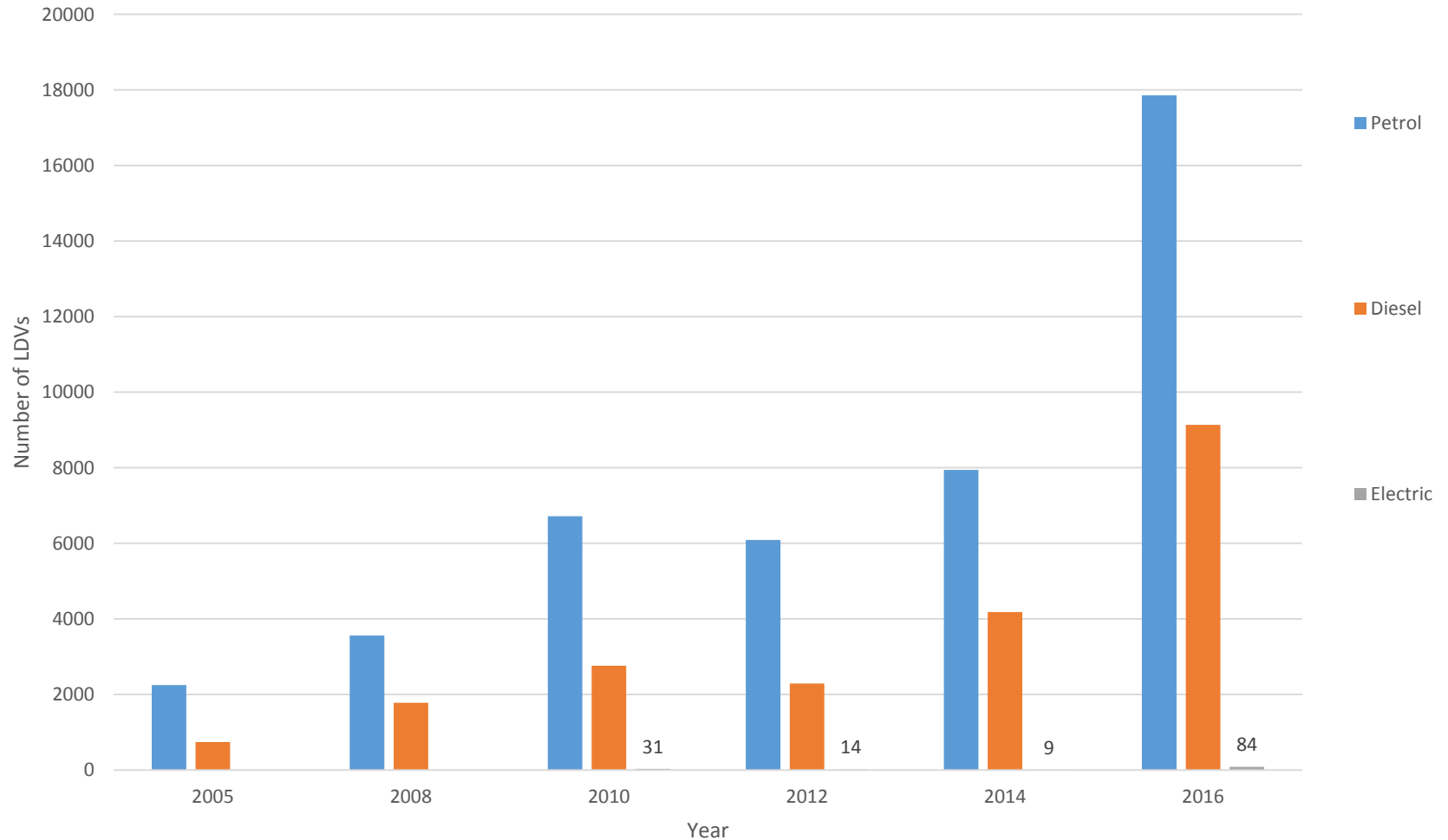
Preliminary Results

Number of LDVs registered (By Make)

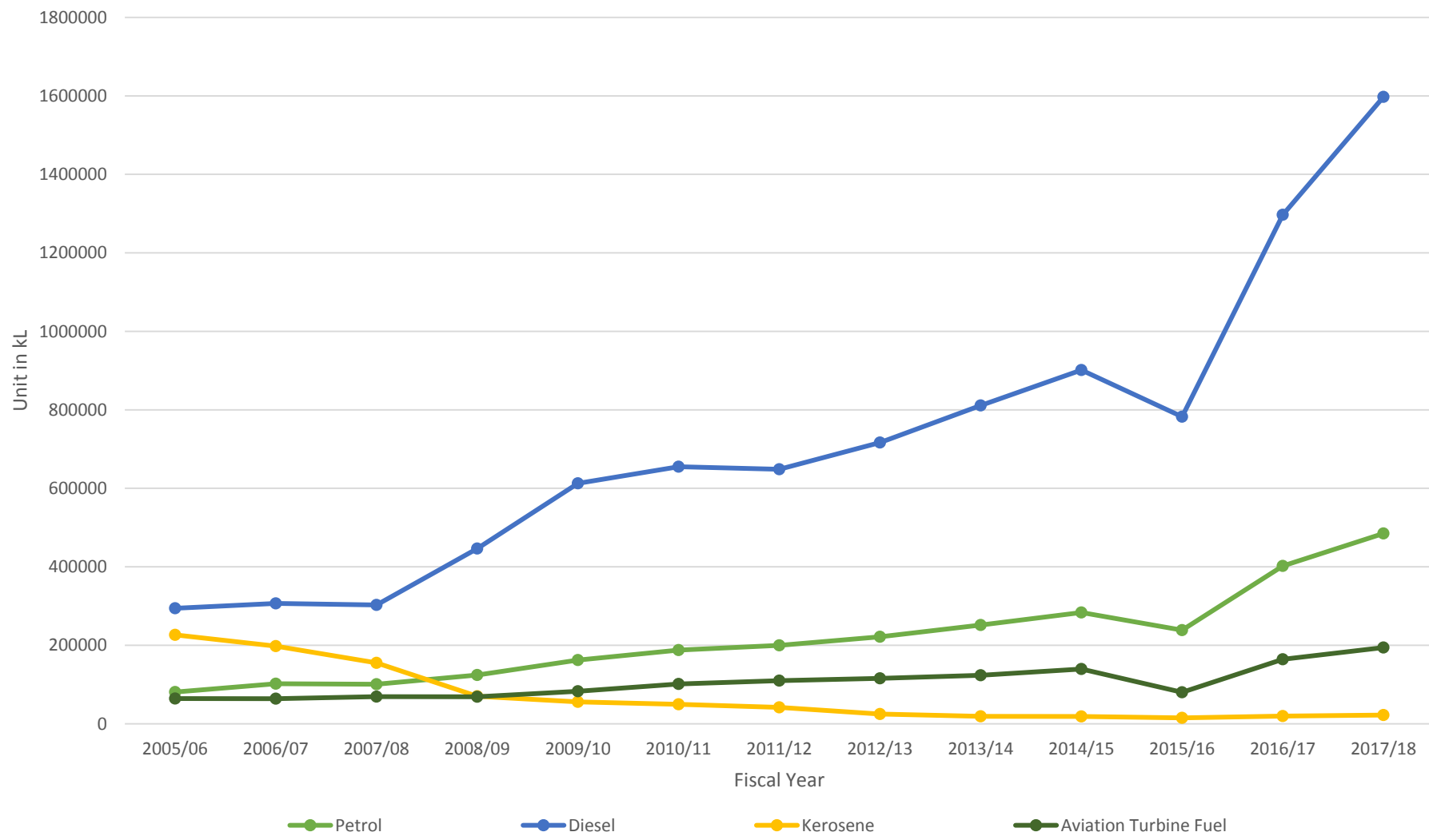


Preliminary Results

Number of LDVs registered (By Fuel Type)



Sales of Petroleum Products (FY 2005/06 - 2017/18)



Next Step: Data-Based Decision Making

Establish the baseline fuel economy

Assessment of Clean and Efficient Vehicle Policy in Nepal

Develop Appropriate Fiscal Policies for Nepal

Develop Auto Fuel Economy Labelling Schemes for Nepal

Policies and Regulations

- **National Transport Policy,**
- **Environment Friendly Vehicle and Transport Policy**
 - 20% of total vehicle will be environment friendly by 2020, at least 10 charging station will be established around the ring road
- **Nationally Determined Contribution (NDC)**
 - NDC Target 10: By 2050, Nepal will decrease its dependency on fossils in the transport sector by 50% through effective mass public transport means while promoting energy efficient and electrical vehicles
- **50 paisa pollution tax per liter of petrol and diesel from 2007**
- **National Vehicle Mass Emission Standard (2012)- Euro 3**
- **Fuel standard- Euro 4 or BS IV**
- **Vehicle Fitness Testing Centre**
 - **Green stickers (Vehicle Emission Testing system for in-use vehicles)**

Policies and Regulations

In Drafts

- **National Sustainable Transport Strategy 2015-2040**
- **National Pollution Control Strategy and Action Plan**
- **National Low Carbon Economic Development Strategy**
- **Air Quality Management Action Plan for Kathmandu Valley, 2017**
 - Promote Zero Emission and Cleaner Vehicles through minimum possible duties on zero emission vehicles, economic incentives for hybrid vehicles and developing bus terminals with charging system to encourage zero emission public transport buses by 2020
- **National Action Plan for Electric Mobility, 2018**
 - Establishing a Unit for Electric Mobility
 - Launching a National Program for Electric Mobility
 - Establishing and capitalizing a National Financing Vehicle

Major Challenges

- ☐ Inadequate baseline information and lack of data sharing mechanism
- ☐ Inadequate knowledge and technical challenges
- ☐ Weak institutional capacity
- ☐ Effective implementation of existing plans and policies

Thank You

prabha@cen.org.np