

Transport Sector in Myanmar

By

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Myanmar

Mobile Sources in Myanmar

- Road Transportation

- Passenger Cars

- Light duty trucks

- Heavy duty trucks

- Buses

- Others

- Domestic Aviation

- Railways

- Navigation

- International Bunker Fuels are reported separately

Emission in Transport Sector in Year 2000 (Gg)

Category	CO ₂	CH ₄	N ₂ O
Road Transportation	1768.11	0.46	0.09
Domestic Aviation	91.53	1.94×10^{-3}	2.87×10^{-3}
Railways	187.46	NE	NE
Navigation	82.88	NE	NE

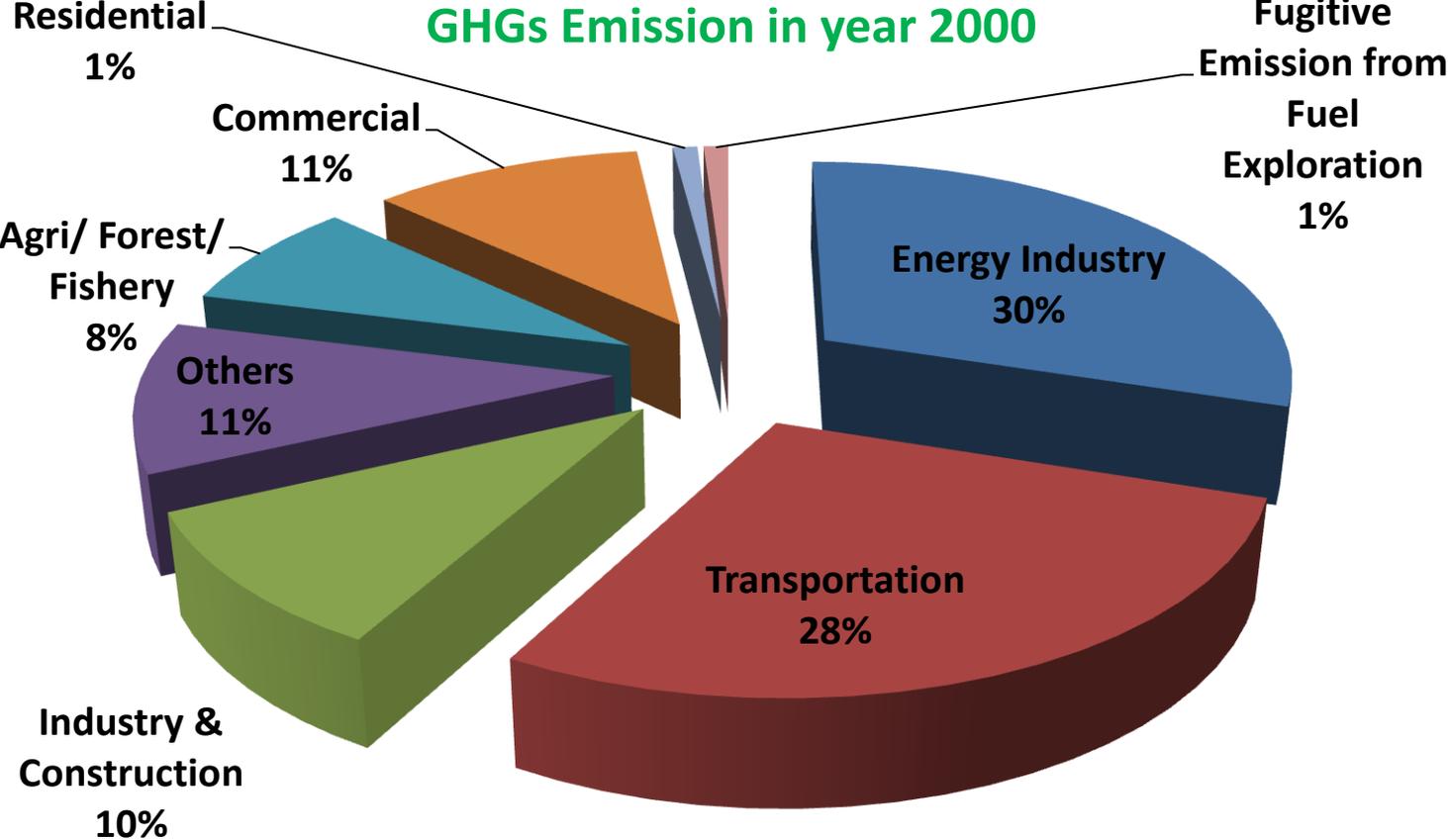
Fuel Consumption by Transport Sector (TJ)

Type of Fuel	2000	2001	2002	2003	2004	2005
Gasoline	12,178.85	11,019.19	12,083.21	14,300.72	14,371.26	14,236.68
Jet Kerosene	1,293.09	1,293.09	1,293.09	1,293.09	1,293.09	1,293.09
Diesel Oil	16,277.95	15,219.07	21,208.23	19,295.85	19,148.88	17,379.87
Coal	27.86	113.52	56.24	160.99	136.74	0.06
Natural Gas	81.76	80.66	76.24	81.76	165.74	1,591.09
Total	29,859.51	27,725.53	34,717.01	35,132.41	35,115.71	34,500.79

Method for Estimating GHGs in Transport Sector

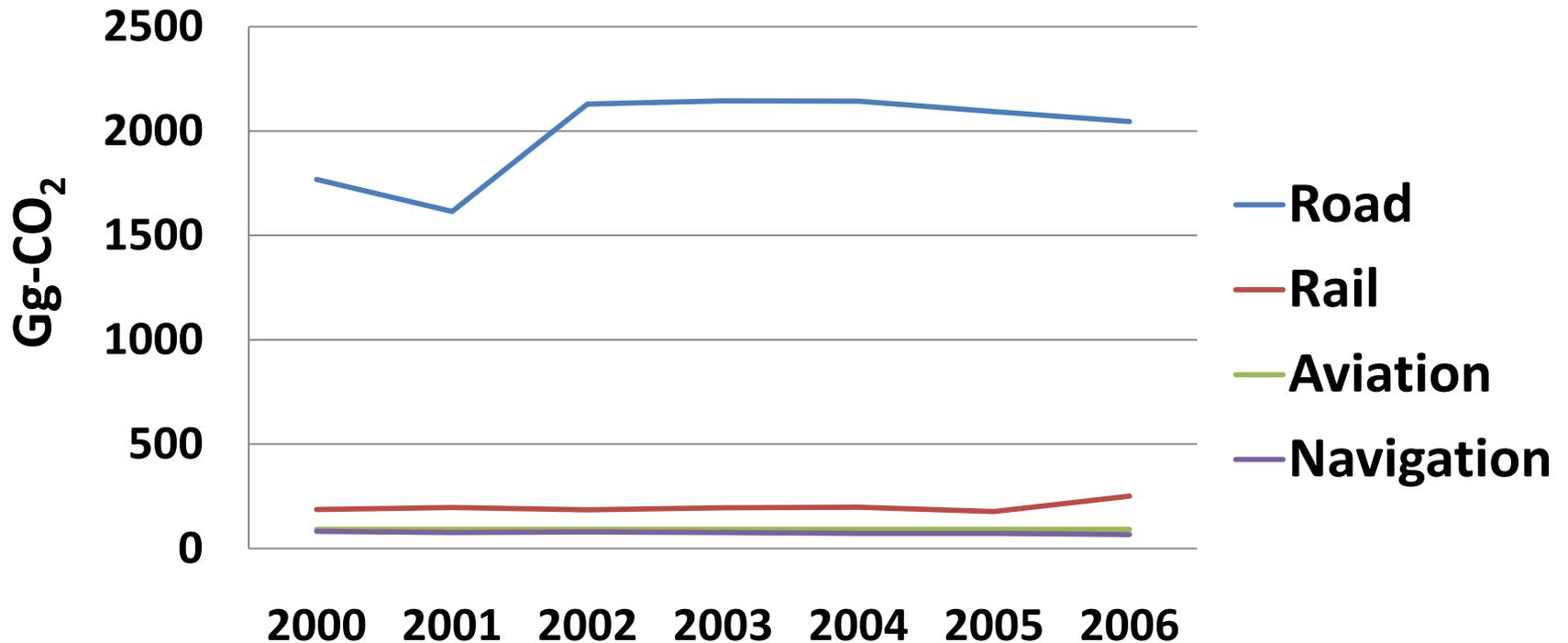
Category	CO ₂	CH ₄	N ₂ O
Road Transportation	Tier 1	Tier 2	Tier 2
Domestic Aviation	Tier 1	Tier 2	Tier 2
Railways	Tier 1	NE	NE
Navigation	Tier 1	NE	NE

Transportation & Climate Change

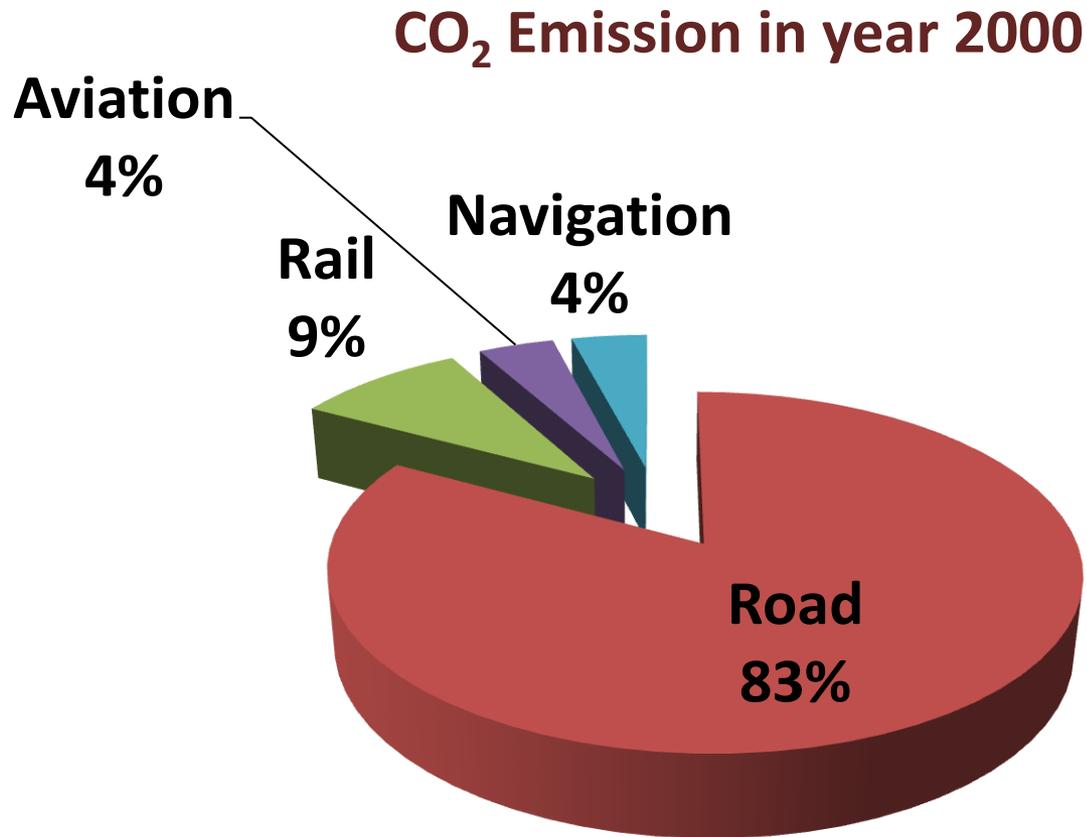


Emission Trend by Categories

CO₂ Emissions in Myanmar



CO₂ Emission Percent Share



Transport Sector Development

1. Promoting the quality of life of the people to achieve aim for the emergence of a peaceful, modern and developed nation.
2. Contribution to employment opportunities, increase personal income, greater social wealth and improved services.
3. Subregional cooperation in the transport sector that is the basic means for promoting economic linkages among the member countries to facilitates cross-border movements of goods and people

ISSUES

- Buses, Railway, circular trains and river ferries are the main public transport modes to satisfy transport need, but the growth of the motor vehicle population is the real issue
- Growing congestion and related pollution problems
- Difficulties to promote Non-Motorized Transport
- Inadequate capacity to enforce standards and regulations

Sustainable Development

Sustainability is a *relevant issue* for transport, because on one hand transport is connected to economic growth while at the same time it puts enormous pressure on the environment.

Current Transport Facilities

1	Number of Automobiles	418,691
2	Number of Motorcycles	1,880,986
3	Number of Steam Locomotives	37
4	Number of Diesel Electric Locomotive	247
5	Number of Diesel Hydraulic Locomotives	105
6	Number of Passenger Coaches	1,246
7	Number of Freight Wagon	3,427

Current Transport Infrastructure

Total road length	130,050 km
Paved road length	24,942 km
Total rail route length	5,585 km
Total International Airports	2
Total Domestic Airports	32
Total International Port	6

Marine transportation

**About 44%
of the total freight-ton
or
28% of the total
freight- ton-miles
were transported by the
inland water transport system
in 2002.**



Current Status of Yangon

Urban Transportation (Mainly depends on bus system)

- Bus Routes - 310 Nos
(15 Main Organizations)
- Bus Fleet - 6330 Nos
- Bus Trip/day - 30876 Trips
- Passenger/day - 3.14

Millions





Current Status in Yangon

Number of Parami Taxi in Yangon

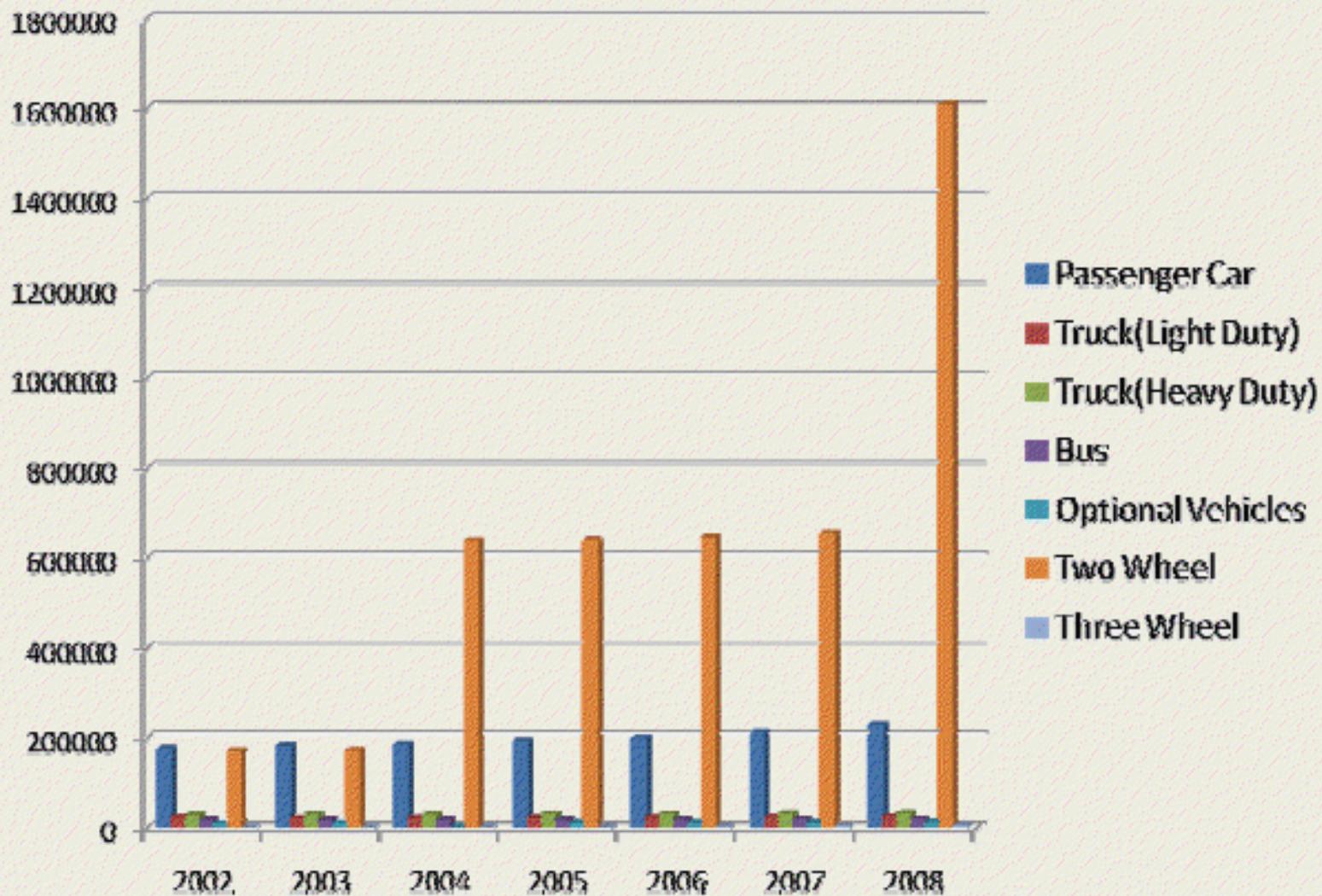
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Number of City Taxi in Yangon

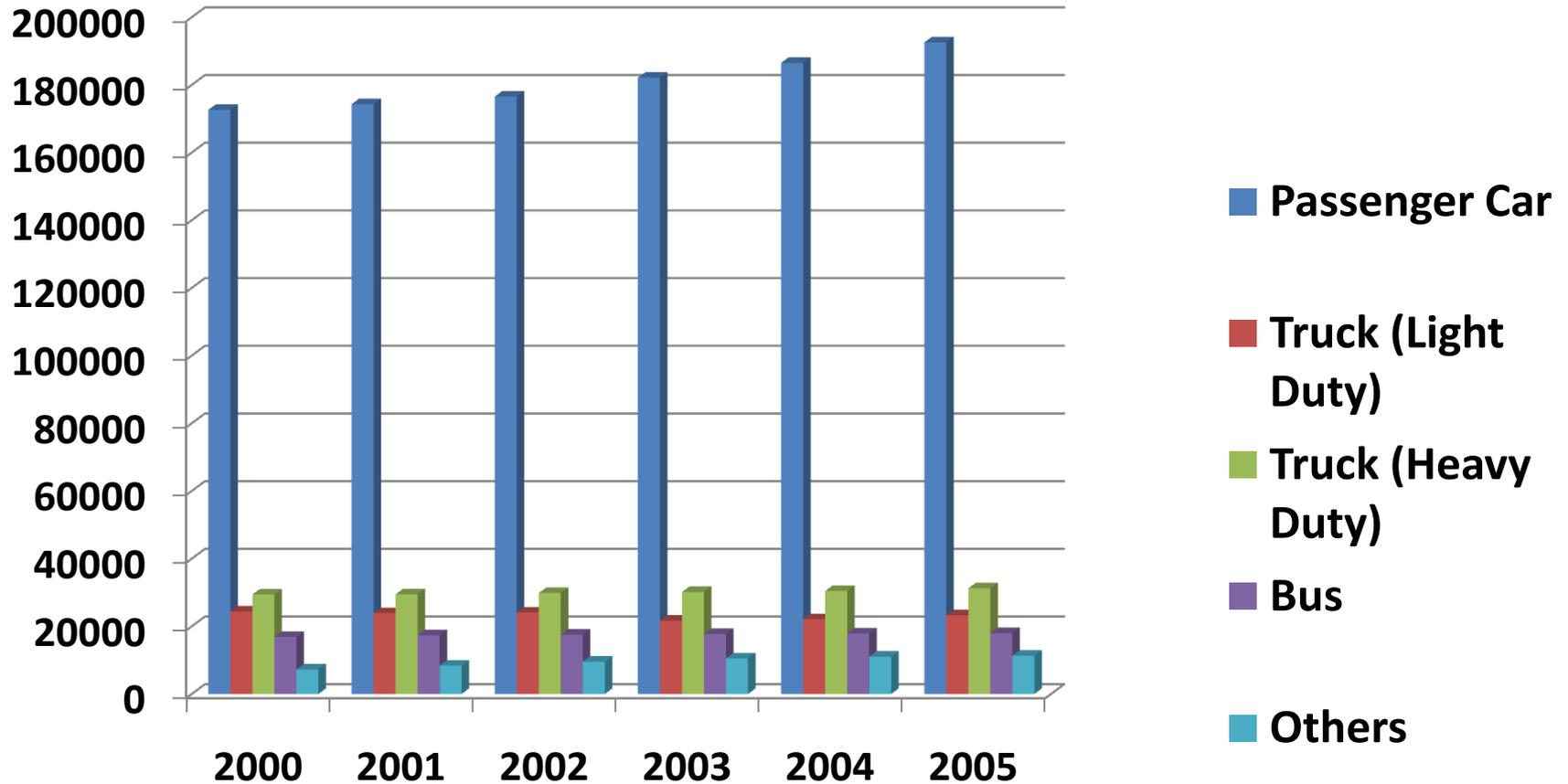
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Growth of the Number of Vehicles in Myanmar (2002 – 2008)



Vehicles Number Ratio in Myanmar



Current Status in Yangon

Existing situation of Circular Rail (2008)



- Myanmar Railways runs 21 sets of train
- Total 200 trips are running every day, carrying about 130,000 passengers per day.
- Carrying about 48 million passengers per year.

Air Quality Management (AQM) in Myanmar

- ▶ In terms of AQM in Myanmar, NCEA carried out the surveys on the measurement of air quality in Yangon in collaboration with Yangon City Development Committee (YCDC) and Department of Medical Research (DMR) in April 2007 and January 2008 respectively.
- ▶ Site 1 - Commercial site (Traders Hotel)
- ▶ Site 2 - Residential site (IBC)
- ▶ Site 3 - Surrounding site near to industrial zone (Forest Department Head Quarter)

Air Quality survey results in Mandalay

Site	TSP (ug/m ³)	PM10 (ug/m ³)	SO ₂ (ug/m ³)	NO ₂ (ug/m ³)
1	495.87	112.49	0.86	32.13
2	213.08	61.67	0.98	17.80
3	350.57	131.54	1.50	19.14

Site 1 = Commercial Area
(Zay Cho Market)

Site 2 = Residential Area
(Office of MCDC)

Site 3 = Industrial Area
(Mandalay industrial zone)



Clean & Green City

Cleaner fuel

- Road Transport Administration Department has been equipped inspection devices to respond automobile source air pollution.
- Using CNG in place of petrol and diesel (short term) and bio-fuel (long term)
- Number of vehicles (December 2008)

Gasoline	Diesel	CNG	LPG	Total
1763594	209070	21653	41	1994358

List of CNG Station

No.	Location	No of Station
1	Chauk	1
2	Yanan Gyaung	2
3	Yangon	39
4	Paleik	1
5	Mandalay	1
Total		44



- The Government is encouraging the use of CNG for City transportation & commercial vehicles

CNG Vehicles/ Fuel Switching

Number of Vehicles running in Yangon Division in the year 2011

Sr. No	Type of Vehicles	Type of Fuel			Total
		Gasoline	Diesel	CNG	
1	Cars+Taxis	79,000	62,500	-	141,500
2	Light Truck	1,400	12,300	-	13,700
3	Heavy Truck	130	9,900	-	10,030
4	Bus	950	4,400	-	5,350
5	Others	260	10,425	-	10,685
6	Two wheelers	50,541	-	-	50,541
7	Three Wheelers	145	-	-	145
8	NGV	-	-	27,470	27,470
	Total	132,426	99,525	27,470	259,421

*** CNG vehicles account for 10.6% of total vehicles used in Yangon Division

Promotion of Modal Shift **Road to Railway**

Road Transportation



Railway



Promotion of Modal Shift Road to Railway

- To Create Low Carbon Society
- To reduce Traffic Congestion due to container truck



Electric Vehicle/ Clean Alternative



Types of inspection for emission control

1. Annual inspection (renewal registration) & initial inspection
2. Surprise check inspection
3. Patron inspection

System of inspection for emission control

1. Visual inspection
2. Theoretical inspection
3. Inspection with equipment

Enforcing Activities for extreme smoking vehicles

- 1st phase - give warning notice and force to maintain the exhaust system of vehicle
- 2nd phase - withdraw the issued vehicle registration certificate and vehicle inspection certificate
- 3rd Phase - take punishment



Key Issues and Challenges

Key Issues Identified in National Plan

- Target Group ➤ Motorcyclists
Pedestrian
Slow Moving Vehicle
(non- motorized vehicle)
- Target behavior ➤ 90% of motor cycle
helmets nationwide
70% wearing of seatbelts
nationwide

Non-motorized transport

- Bicycles and trishaws are used in the suburbs of Yangon and other major Cities
- Bicycles are widely used in Mandalay
- NMV are used in all country sides (except hilly regions)
- NMV are limited to CBD of Cities during day time



Special lane for non-motorized vehicles

Reducing Traffic Congestion

Strand Road Extension Project

Length - 4.69 miles

Type Concrete pavement

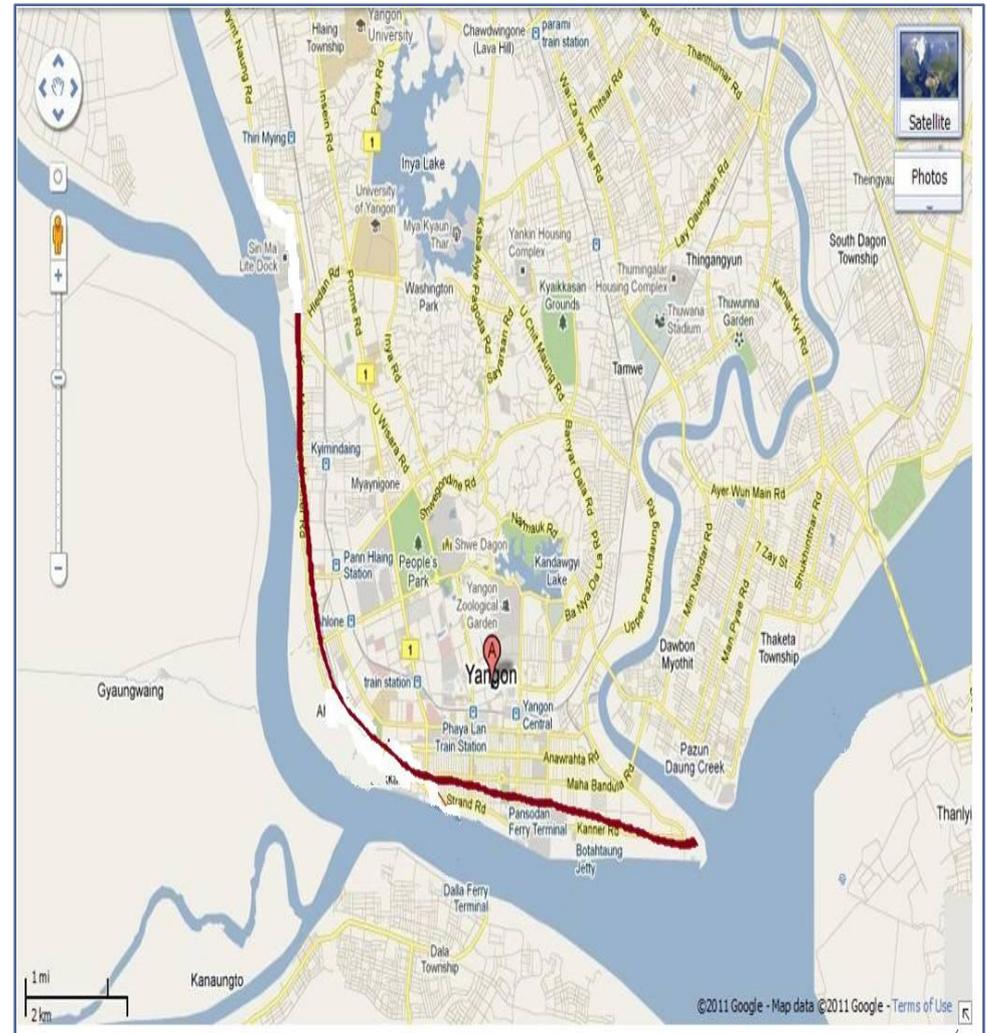
Road Way Width - 48 ft

Maximum vehicle

Load - 100 tons

Average daily traffic - 1100 nos
(both direction)

Design life - 20 years



Environmental Actions in the Transport Sector to be Implemented

- Highlighting environmental awareness in Policies of Ministries concerned
- Promotion of public awareness and environmental education for environmental improvement in transport sector
- Improvement of Infrastructures related to transport sectors

Environmental Actions in the Transport Sector to be Implemented

- Collection of data and sharing information related to environmental improvement in transport sector
- Subsidization for environmental improvement in transport sector
- To encourage the use of public transport and induce the use of rail transport modes

Environmental Actions in the Transport Sector to be Implemented

- To encourage utilizing alternative fuel for automobiles
- To upgrade vehicle inspection system
- To initiate environmentally friendly driving

Environmental Actions in the Transport Sector to be Implemented

- To adopt appropriate measures in marine and air transport
- Monitoring air quality of large cities
- Monitoring noise pollution and vibration at urban areas

THANK YOU FOR YOUR ATTENTION