

## COUNTRY PRESENTATION (BHUTAN)

Fifth Regional Environmentally Sustainable Transport (EST) Forum (23-25  
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# Brief Country Background

## Location of Bhutan

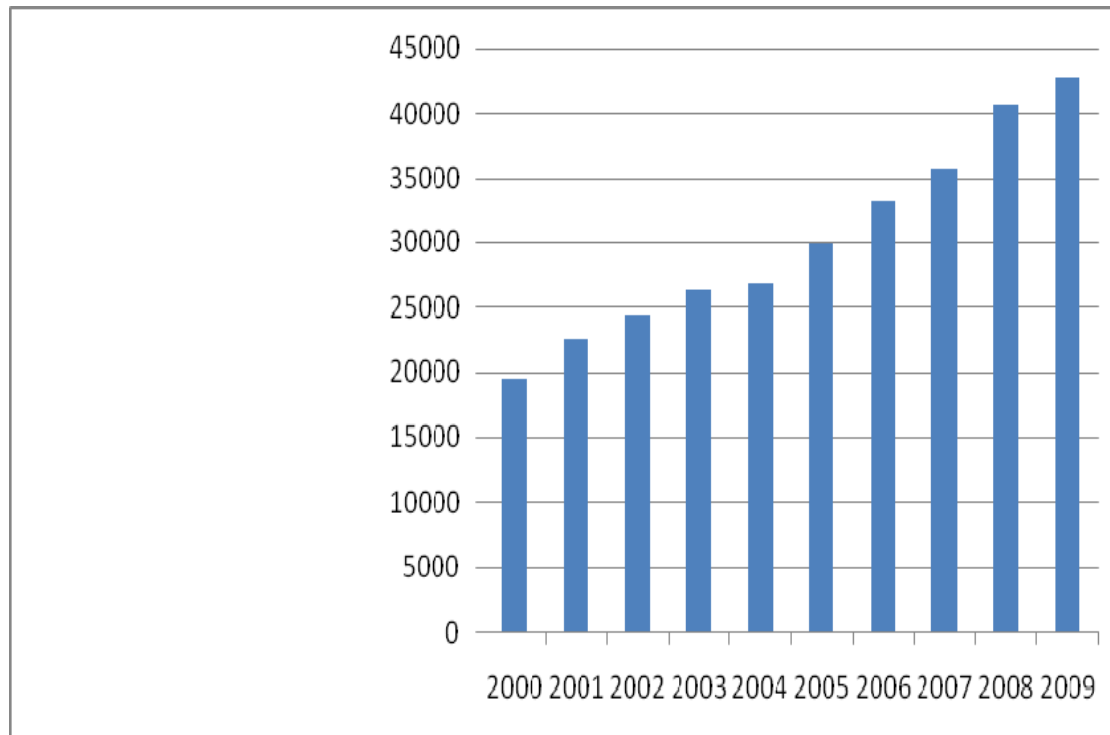


- **Area:** 38394 sq kms
- **Population:** 683407
- **Currency:** Ngultrum
- **GDP at current price:** 54,149.9 million Ngultrum (2008)
- **GDP real growth :** 5 %
- **Language:** Dzongkha
- **Seasons:** Four Seasons
- **Transport System:** Land and Air Transport
- **Road Length (Highway, District , Feeder, Farm):** 5363 Kms

**Source:** Statistical Year Book (2009), NSB

## Vehicle Growth Trend (2000-2009)

Year	Number of Vehicles
2000	19463
2001	22504
2002	24430
2003	26353
2004	26760
2005	29914
2006	33241
2007	35703
2008	40659
2009	42687



**2010 till April 30 : 47413**

**Source: Road Safety and Transport Authority, Ministry of Information and Communications**

# **Progress made in the realization of environmentally sustainable transport (EST) By Bhutan**

## **1) Policy**

### **(i) Development Philosophy of Gross National Happiness**

- Conservation of the environment is one of the four pillars.

## **Progress made in the realization of environmentally sustainable transport (EST) By Bhutan**

### **(ii) Transport Policy**

- Protect environment and promote the use of energy efficient and less polluting vehicles
- Provide choice of passenger and freight transport
  - a) Explore, plan and develop alternative modes of passenger and freight transport such as railways and ropeways;
  - b) Explore and implement water transport

## **Progress made in the realization of environmentally sustainable transport (EST) By Bhutan**

### **(iii) Economic Development Policy (2010)**

- Promotion of clean, safe and reliable mass transportation in all Dzongkhags (Districts)
- Explore the establishment of rope ways or cable car network in ecologically sensitive areas, remote areas and to tourist destinations to minimize the impact from road construction.
- Development of land ports and railway links including supporting facilities such as customs, immigration, quarantine etc. at the land ports.
- Public Private Partnership model for transport shall be encouraged.

## **Progress made in the realization of environmentally sustainable transport (EST)**

### **Significant advancements and achievements in EST areas**

- Expansion of Urban Transport Services in Thimphu and introduction of City Bus service in Phuentsholing (2010)
  - 12 toyota coaster buses inducted in the fleet of city bus services in Thimphu
  - 2 buses introduced as city bus in Phuentsholing since 2009
- Improvement of Footpaths in major cities/towns (2009-2010).
- Walking and cycling encouraged in the country.
- Feasibility study on introduction of Railway services in the border towns completed for Hasimara, India to Phuentsholing Link.

# Progress made in the realization of environmentally sustainable transport (EST)

## Developments in passenger transport service



*Toyota Coaster buses plying as passenger transport bus*

- Award of Passenger Transport Service routes have been liberalized (March 2010)
- Majority of the Indian made Eicher Buses have been replaced by Japanese Toyota Coaster buses thereby improving quality and comfort of services



# Initiatives and measures on GHG emission reduction from transport sector

Emission Standards were established since 2004 and revised in July 2007.

## ***Vehicular Emission Standards, 2004***

Vehicle Type	Measuring System	Maximum Permissible Limit (%)	Unit
Diesel Vehicle	Bosch	80	Hertz Smoke Unit
Gasoline/Petrol Vehicle	Normal	5	Volume CO

# Initiatives and measures on GHG emission reduction from transport sector

## Revised Vehicular Emission Standards (July 2007)

Vehicle Type	CO% (Vol)	HSU(%)	Test	Type Approval
<b>Petrol</b>				
Vehicles registered before 1.1.2005	4.5	-	Idle	Euro II or above
Vehicles registered on or after 1.1.2005	4.0	-	Idle	Euro II or above
<b>Diesel</b>				
Vehicles registered before 1.1.2005	-	75	Free acceleration SAE J1667	Euro II or above
Vehicles registered on or after 1.1.2005	-	70	Free acceleration SAE J1667	Euro II or above

# **Initiatives and measures on GHG emission reduction from transport sector**

- Promotion and Introduction of Electric/Battery Operated Cars
  - Three numbers of battery operated cars being run on trial basis to encourage people to opt for eco-friendly transport
- Procurement of emission testing equipment to monitor and regulate motor emissions
  - Six numbers of emission testing equipment procured for monitoring of vehicular emissions.

# Progress made in the realization of environmentally sustainable transport (EST)



- Students trained in Traffic Rules and Regulations



- Walk for Health and the environment

# Awareness and training



Women drivers feeling the comfort and joy of riding in Public Transport Bus during the awareness training course conducted by the Road Safety and Transport Authority in 2009

# Part III: Future Strategies and Policies



Electric Trolley Bus



Mono Rail

## 1. Surface Transport Development Plan - 2007

### Transport Energy issues

Recommended:

- Electric Trolley Bus/Monorail system for city public transport system for Thimphu
- Intercity diesel buses on blends of Bio-diesel and diesel
- Blend of Bio-diesel and diesel for private passenger and commercial vehicles running on diesel
- Blend of ethanol and petrol for private passenger and commercial vehicles running on petrol.

## Future Strategies and Policies contd...

- Transport Vision Plan 2040 in the Pipeline (study to be conducted by ADB scheduled to commence from August 2010)
- Tenth Five Year Plans and Programmes
  - Expansion of Urban Transport services
  - Feasibility study on eco-friendly modes of transport and alternative modes of transport such as rope ways and water ways.
  - Intelligent Transport Systems

**THANK YOU!**

