Innovation Strategy for Low-Carbon Green Growth in Korean Transport Sector

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MLTM
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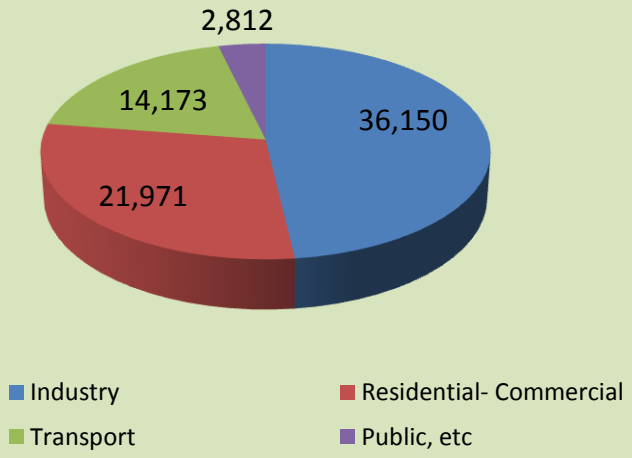
1. Energy use & GHG emission

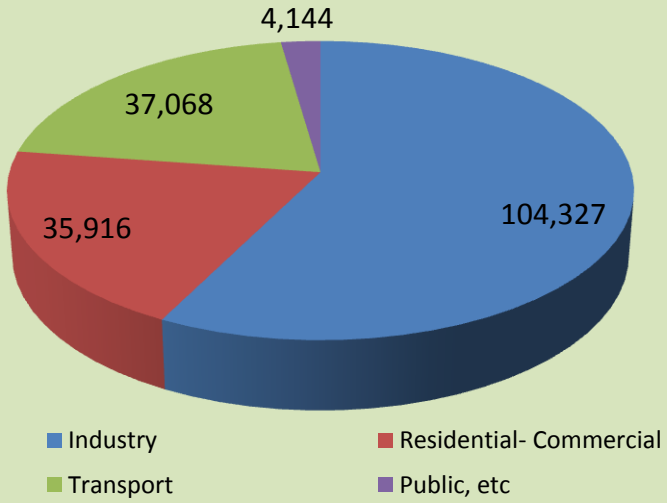
1. Energy use & GHG emission

Energy use in Korea

- **National energy consumption in Korea has increased 2.42 times from 1990 to 2007**
- **Energy use of transport sector has increased 2.6 times for the same period**



Total : 75,106



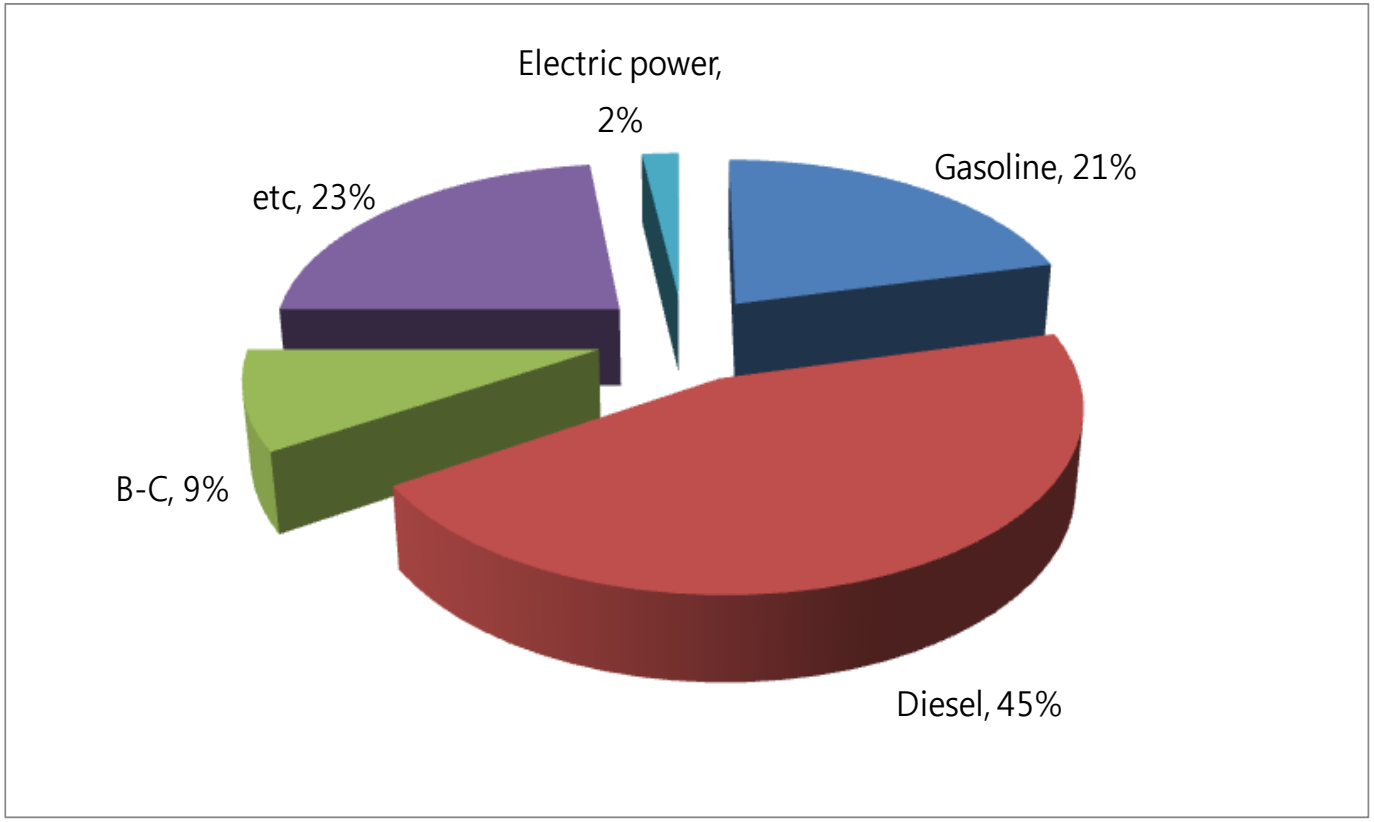
Total : 181,455

(Unit : thousand TOE, %)

1. Energy use & GHG emission

Source of energy in transport sector

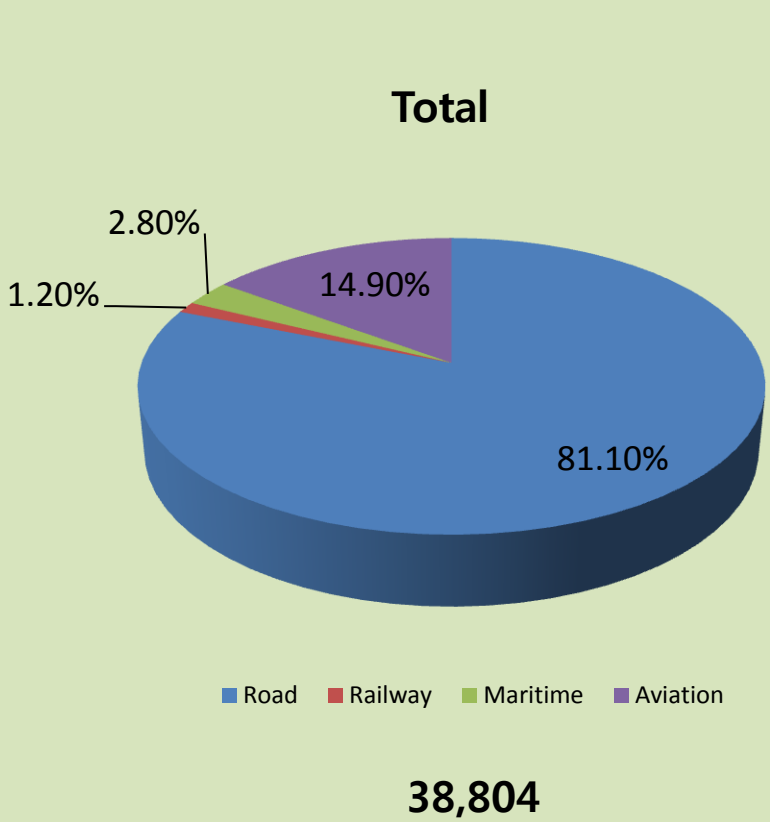
- **Oil represents more than 80%**

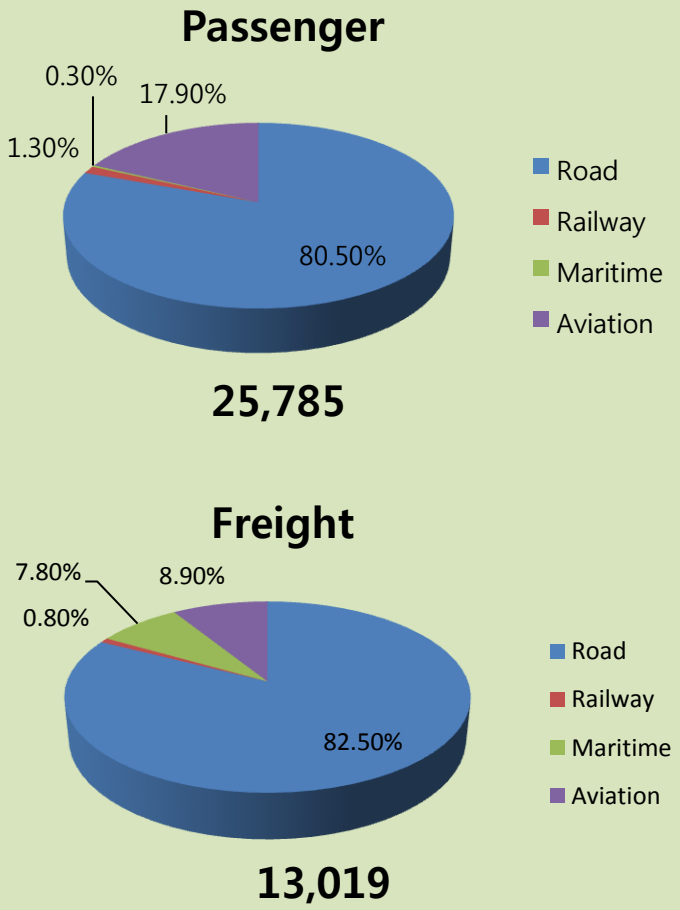


1. Energy use & GHG emission

Energy use in transport sector of Korea

- **Transport sector consumed 39 million TOE of energy in 2008**
- **Road accounted for 81.1% of energy use in transport sector in 2008**





1. Energy use & GHG emission

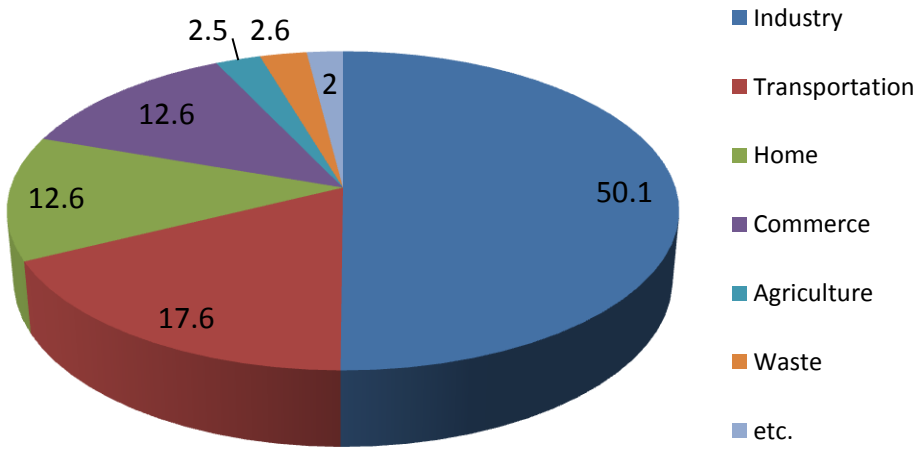
GHG emission of Korea

• **Total GHG emission of Korea stood at 588 million tCO_2 in 2008**

(Unit : thousand tCO_2 , %)

	Total	Industry	Transport ation	Home	Commerce	Agriculture	Waste	Etc.
Amount	588,011	294,467	103,255	74,209	74,309	14,516	15,358	11,897
Rate	100	50.1	17.6	12.6	12.6	2.5	2.6	2.0

Source : National Institute of Environmental Research

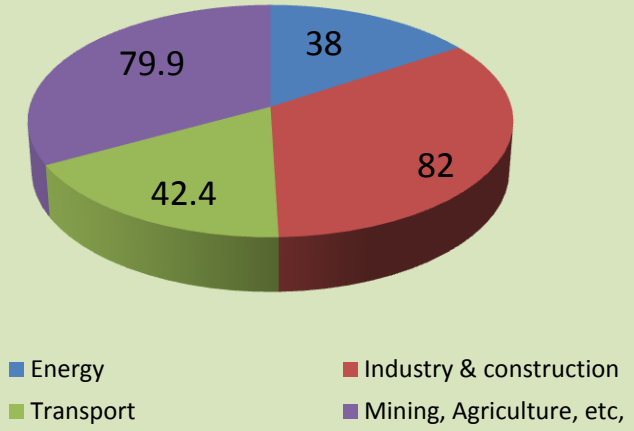


1. Energy use & GHG emission

GHG emissions from transport sector

- **GHG emission from transport sector reached 98 million tCO_2 eq. in 2007**
- **Among others, 20% of GHG emissions comes from fuel combustion**

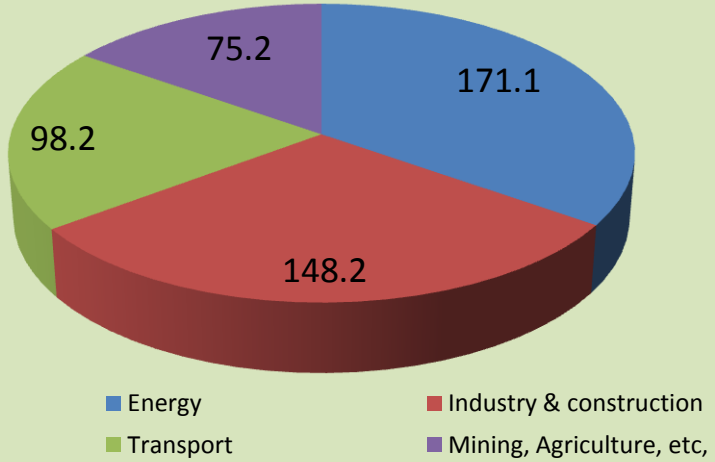
'1990



Total : 247.7

(Unit : million tCO_2 eq. %)

'2005



Total : 498.6

1. Energy use & GHG emission

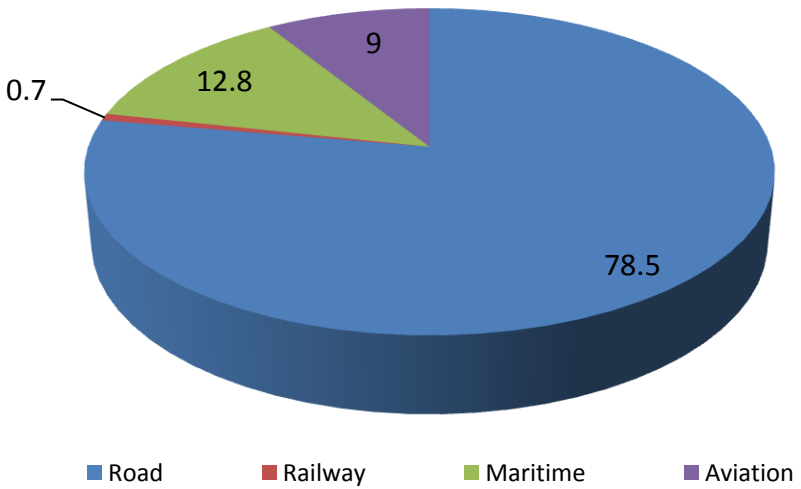
GHG emission from Road

• **Road is responsible for 78% of GHG emissions from transport sector**

(Unit : million tCO_2 eq. %)

	Road	Railway	Maritime	Aviation	Total
Amount	78.5	0.7	12.8	9.0	101.0

Source : KTDB, KOTI



1. Energy use & GHG

Future trends

- **The number of vehicles will have continuously grown to about 22 million in 2019**
- **Passenger travel demand will increase 1.5times in 2019 than the 2004 level**
- **Freight transport demand will increase 2.1 times in 2019 than the 2004 level**

		2001	2004	2009	2014	2019
Vehicle owership		12,914	14,934	18,213	20,510	**21,900**
DEMAND	**Domestic passenger (million passenger-km/year)**	228,09	236,491	285,264	324,196	**363,555**
	Domestic freight (million ton-km/year)	137,977	137,701	176,321	228,280	**286,257**
	International passenger (million passenger-km/year)	77,072	90,146	122,744	155,969	**198,232**
	International freight (million ton-km/year)	4,739,548	6,217,164	7,570,019	8,227,154	**9,515,464**

Source : National Transport Network study, KOTI, 2007

2. Strategy

2. Strategy

Government's Pledge for Green Growth

- **Commemorative speech on the 60th anniversary of national foundation day**
  - New national vision: 'Low-Carbon, Green Growth'
  - Sustainable growth which helps reduce greenhouse gas emission
  - Virtuous development circle

Introduction

- **Presidential Committee on Green Growth**
  - Coordinator of interests between relevant Ministries
  - Execution of the Framework Act for Low-Carbon Green Growth
  - Setting up the national target : 30 % reduction of GHG emission in 2020 based on BAU

2. Strategy

Strategy for mitigation of GHG in Transport sector

Vision

Building Sustainable Low Carbon Green Transport system

Target

33~37% Reduction of GHG emission in 2020 based on BAU in transport sector

- 20~24% reduction based on 2005 GHG emissions-

Strategy

- **Transport Demand Management**
- **Development of Low-carbon transport infrastructure & technology**
- **Modal shift to Low carbon transport & logistics**
- **Encouraging human-powered transport**

2. Strategy

Modal shift to Low-carbon Transport & Logistics

- **Better connection and transfer**
  - Transit Centre Improvement
  - Connecting railways to/from seaports, airports, and industrial complex

- **Modal shift target by 2012**
  - passengers: 55% (public transport)
  - freights: 8%→15% (railway) 18%→ 22% (coastal shipping)
    : Providing subsidies for freight transporters to encourage the use of railway

2. Strategy

Transport Demand Management

- **Reinforcement of transport demand management**
  - Congestion charge
  - Restriction on total traffic volumes
  - Reduction in parking areas

- **Monitoring system of greenhouse gas emission**
  - To provide feedback on GHG reduction measures
  - Designation of a special treatment zone

2. Strategy

Development of Low-carbon Transport Infrastructure

- **Railway Improvement**
  - Expansion of railway network
    : Increasing total extension of High-speed railway: 238km to 363km by 2012
  - Increase of cruise speed and frequency
    : Alignment improvement to accommodate 200-230 km/h speed
  - Electrification of railways
  - Introduction of Light Rail Transits

- **Bus Improvement**
  - More application of Bus Rapid Transit
    : less than 8 stops along routes
  - Interoperability of transport card
    : 'One Card All Pass'

2. Strategy

Development of Low-carbon Transport Technology

- **Four types of environmentally-friendly cars**
  - Hybrid cars: getting cheaper but environmentally-friendly by half
  - Bio-fuel cars: some side-effects
  - Electric vehicles: low mileage and long recharging time
  - Hydrogen cars: needs more time to application

- **Government's role**
  - To give affirmative signals to a market to foster new business
  - To set safety standards for hybrid, electric, and hydrogen cars
  - Amendment of laws to promote alternative cars
  - Promotion of new transport modes including PRT

2. Strategy

Green Car distribution Policy of MOE, Korea

- For Green Car distribution, Financial support policy has been implemented since the 2000 year like subsidy and tax deduction.

- Natural Gas Vehicles (NGVs) have been introduced since 2000
- Hybrid Vehicles (Proto type) have been distributed to public bodies with supports from the government since 2005
  - July of 2009, LPG Hybrid vehicles are produced
- Clean Diesel Vehicles (CDV) have been distributed since 2005
- Plan to Supply EV for public bodies under distribution policy of MOE from 2011

Type	Results						
	Total	~2004	2005	2006	2007	2008	2009
Total	23,893	6,212	2,886	3,768	4,437	6,590	14,466
HEV	2,458	50	312	368	656	1,072	6,312
CDV	1,928	-	7	35	489	1,397	2,921
CNG	19,507	6,162	2,567	3,365	3,292	4,121	3,792

2. Strategy

Encouraging Human-powered Transport(1)

- **Pre-requisite for promotion of public transport use**
- **Substitution for car use**
  - 44% travels less than 5km by car in Seoul (cycling is competitive)
  - 11% travels less than 1km by car in Seoul (walking is competitive)

- **Measures for pedestrians**
  - More designation of Pedestrian Priority Zone
    : travel speed limit (30km/h)
    : traffic calming measures
    : parking is prohibited except designated areas
  - Nationwide walking environment survey
  - 'Day of Pedestrians'

2. Strategy

Encouraging Human-powered Transport(2)

- **Measures for bicyclists**
  - Extension of bicycle network as 3,114km by 2018
  - 'Road Diet' to secure bicycle space on the roads
  - Bicycle rack within trains and buses
  - Promotion of 'public bike' or 'bike-sharing'

- **Integration of land use and transport**
  - High density development near KTX (high-speed railway)stations
    : To reduce the number of unnecessary car trips
    : To shorten travel distance
    : Better environments for walking and cycling
  - Promotion of Public Transport Only Zone

Thank you!

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