

Philippines/ASEAN: Current Situation, Scenario and Measures

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Climate Change in ASEAN

- Southeast Asia's 563 million people are concentrated along coastlines measuring 173,251 kilometers long, leaving it exposed to rising sea levels
- Southeast Asia's heavy reliance on agriculture for livelihoods—the sector accounted for 43% of total employment in 2004 and contributed about 11% of GDP in 2006—make it vulnerable to droughts, floods, and tropical cyclones associated with warming
- High economic dependence on natural resources and forestry—as one of the world's biggest providers of forest products—also puts it at risk.
- Mean temperature increased at 0.1–0.3°C per decade between 1951 and 2000; rainfall trended downward during 1960–2000; and sea levels have risen 1–3 millimeters per year
- Heat waves, droughts, floods, and tropical cyclones have been more intense and frequent, causing extensive damage to property, assets, and human life.

Source: ADB, 2009. The Economics of Climate Change in Southeast Asia: A Regional Review

Climate Change in ASEAN

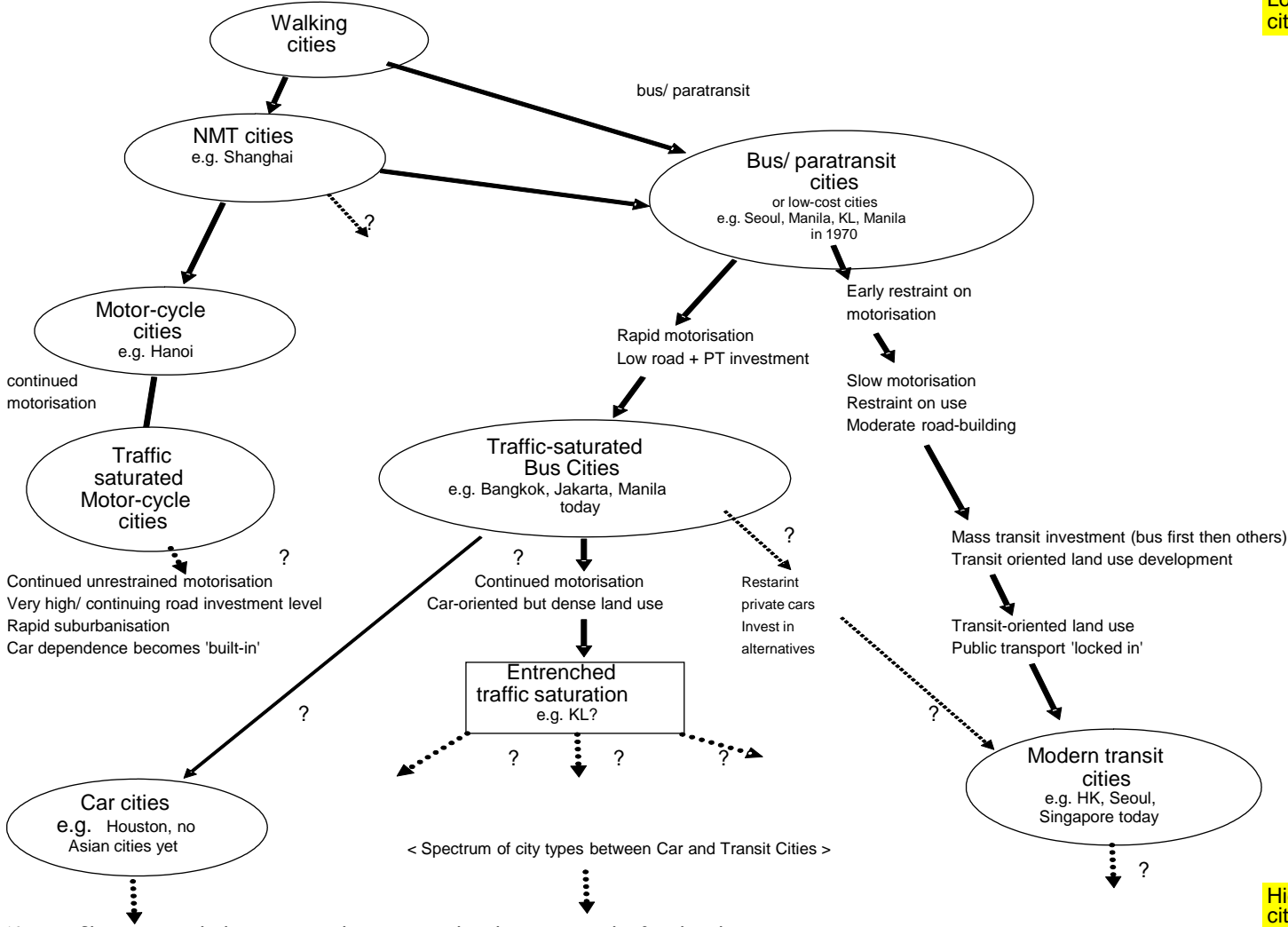
- **Projected impacts**

- Annual mean temperature is projected to rise 4.8°C on average by 2100 from 1990
- Mean sea level is projected to rise by 70 cm during the same period, following the global trend
- Indonesia, Thailand, and Viet Nam are expected to experience increasingly drier weather conditions in the next 2–3 decades
- Rice yield potential to decline by up to 50% on average by 2100 compared to 1990 in Indonesia, Philippines, Thailand, and Viet Nam
- Combined damaged to +6% of GDP every year by end of the century under BAU.

Private modes dominate

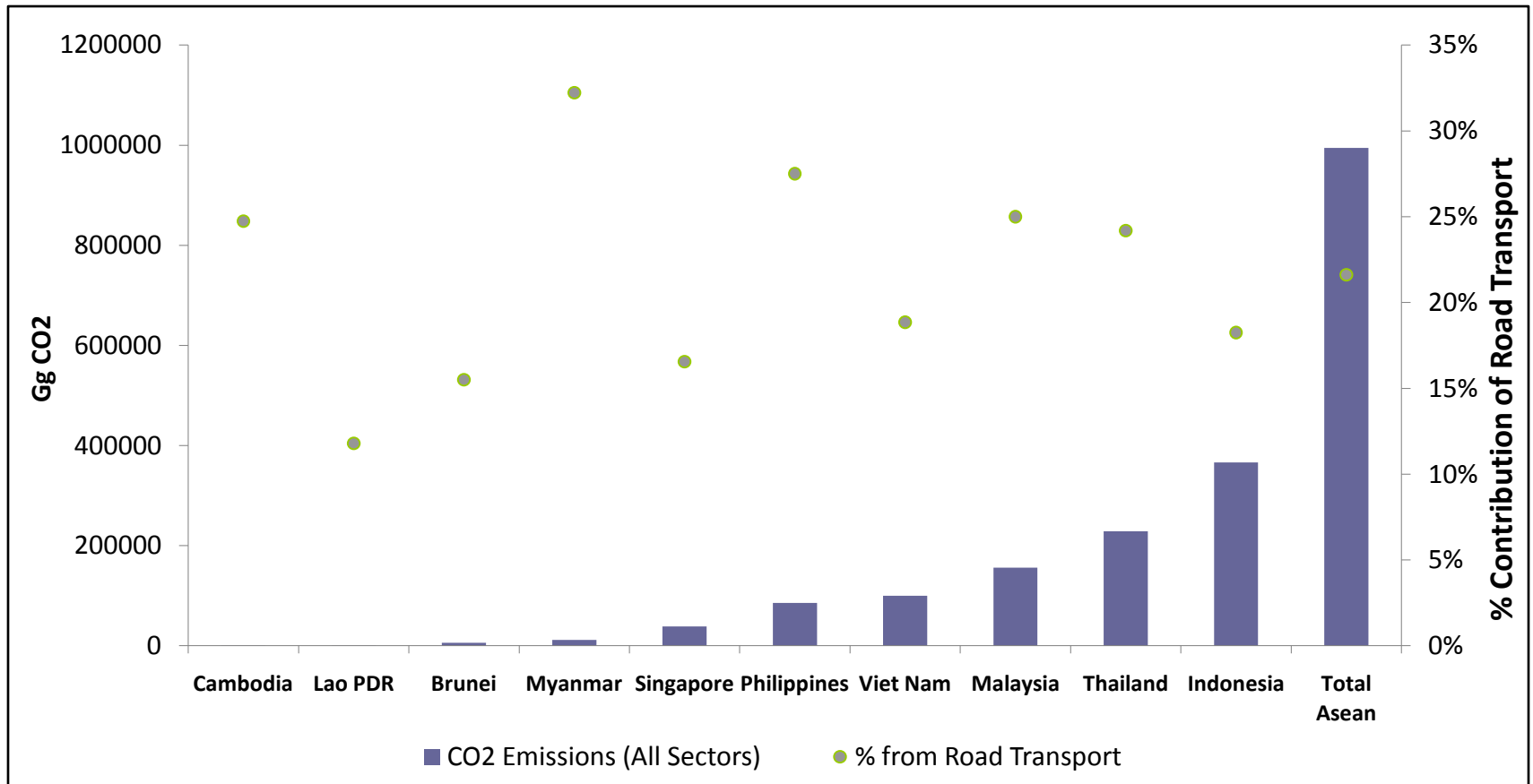
Public modes dominate

Low mobility cities



Note Shows intended or potential transport development paths for developing cities
Source: Barter, 2004
Key: ??? - empirical evidence to date unclear

Contribution of Road Transport to CO₂ Emissions in ASEAN Countries (2005)

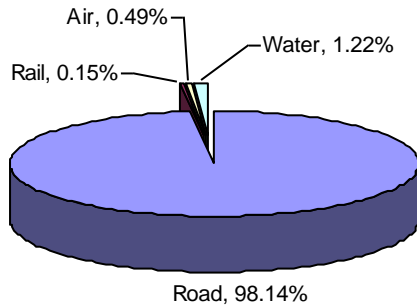


Source: Emissions Database for Global Atmospheric Research (EDGAR) <http://edgar.jrc.ec.europa.eu/>

The Philippine Case

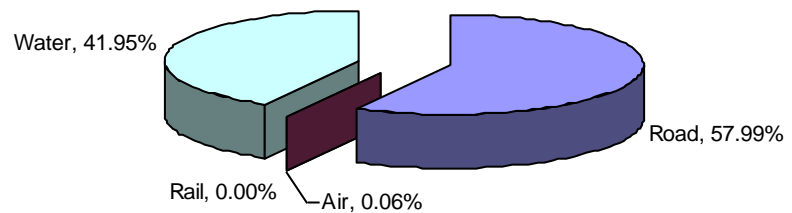
National Transport Modal Share

Passenger Traffic, 2006



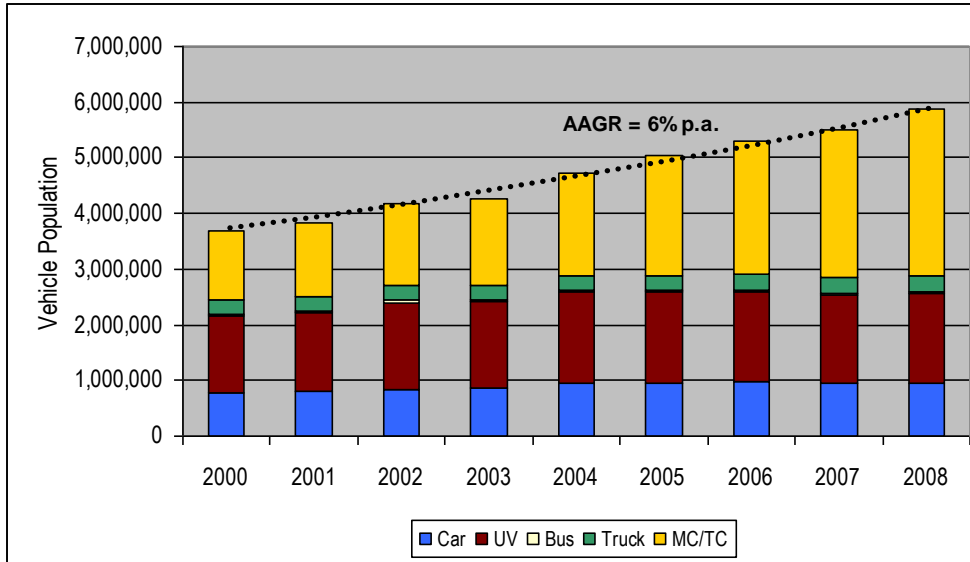
Dominance of Road Transport

Cargo Traffic, 2006

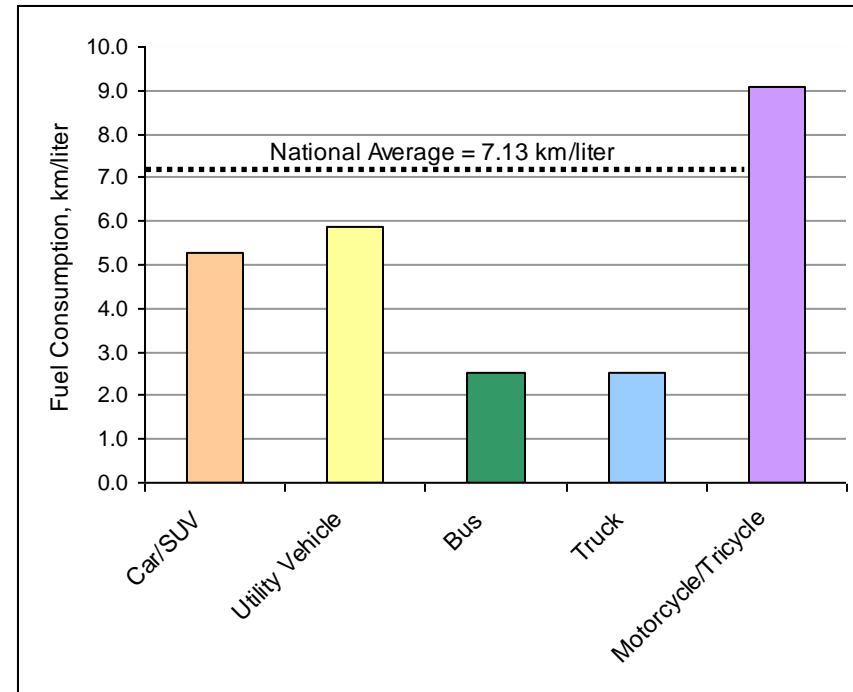


Source: AusAID National Transport Policy and Planning, Activity 1 Report, May 2008

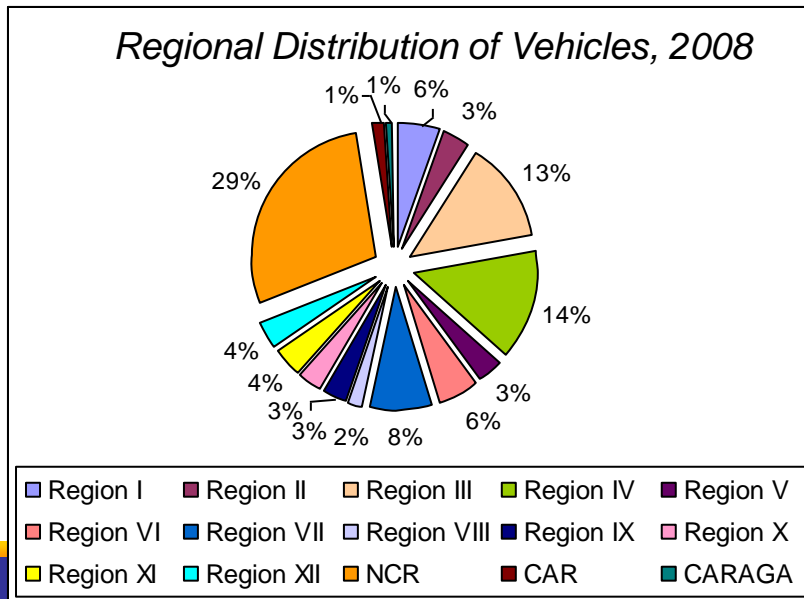
Road Transport Development



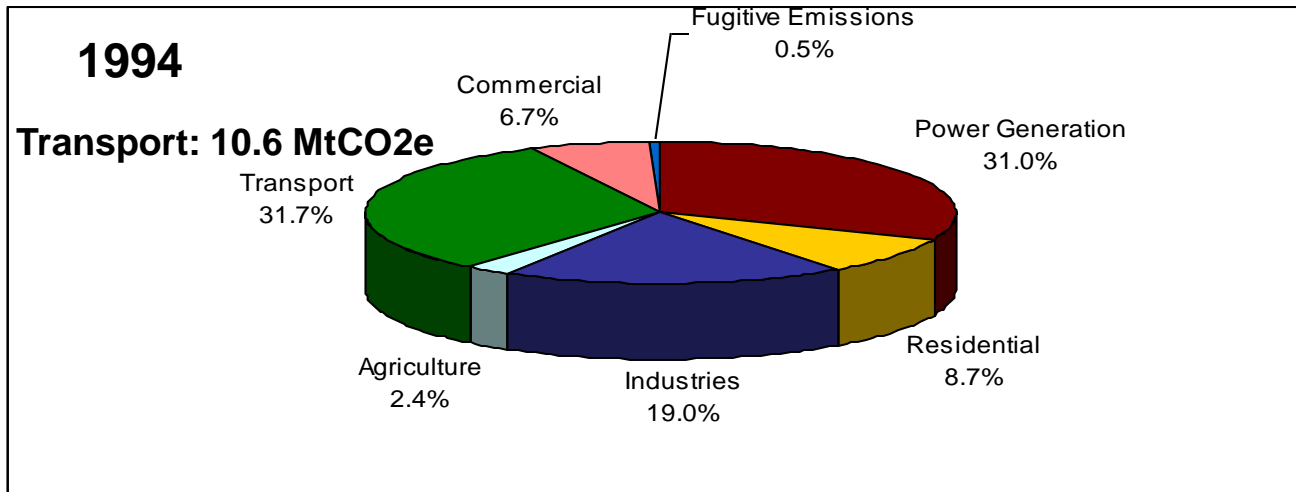
Source: Land Transportation Office



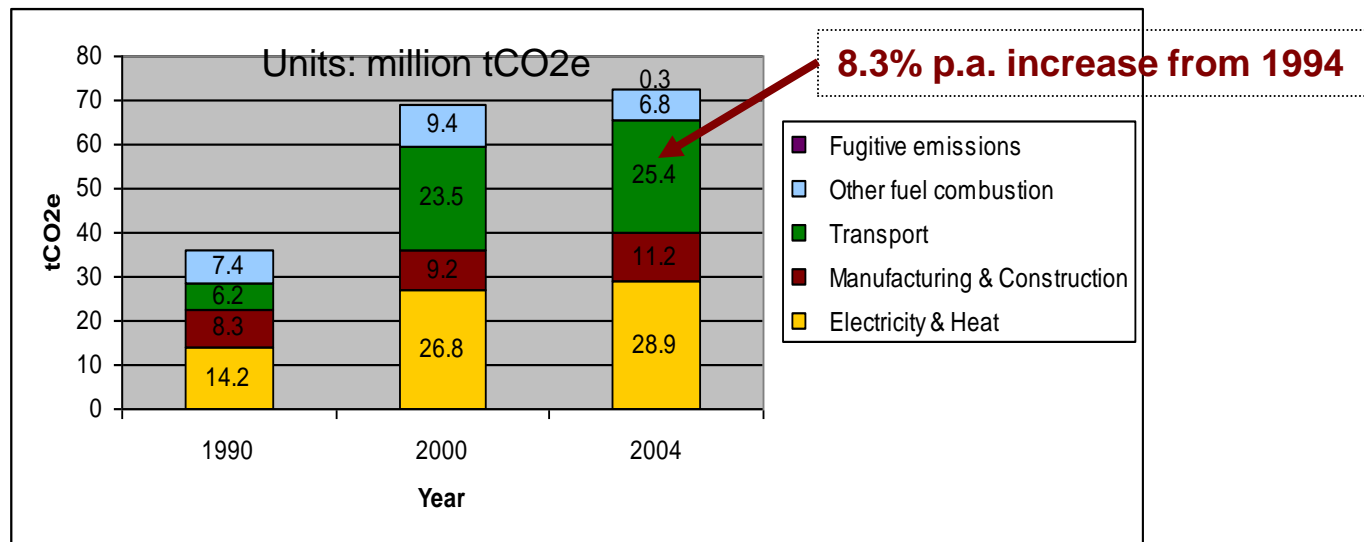
Source: Study estimates based on ALGAS methodology



Previous GHG Emission Estimates

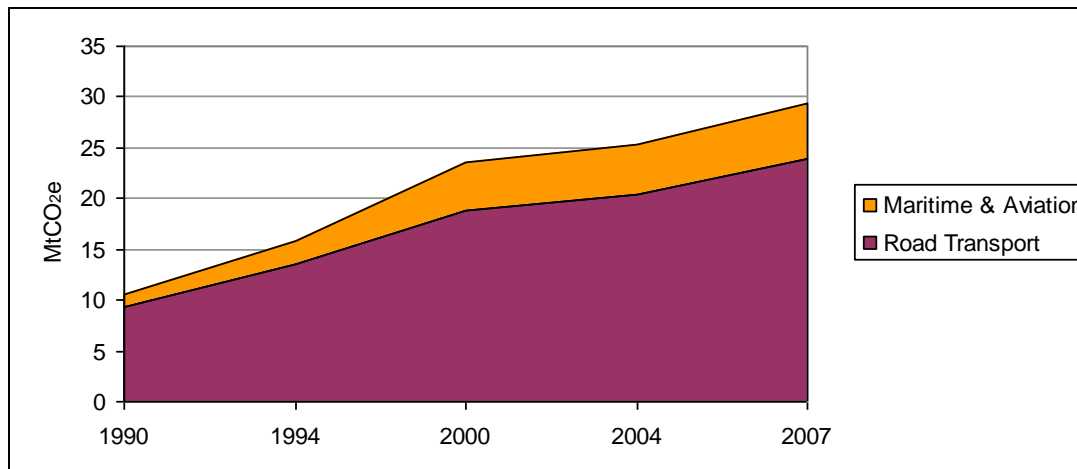
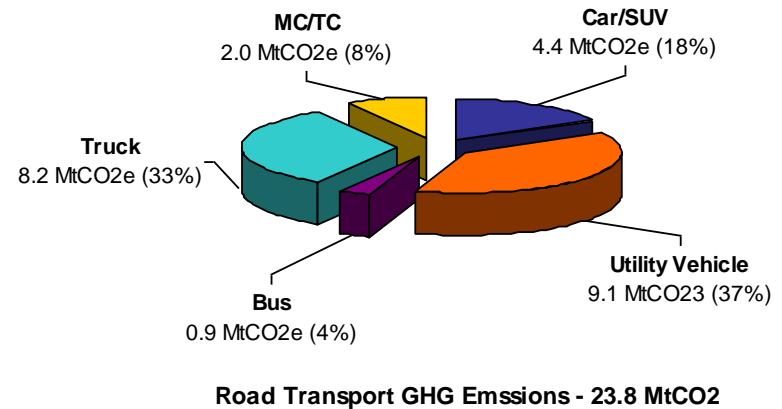
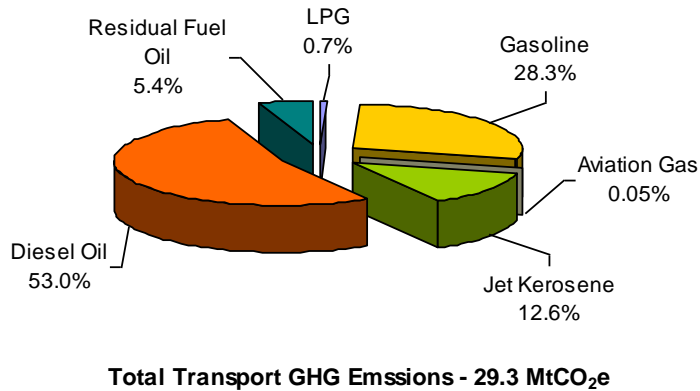


Source: *Philippines Initial National Commitment on Climate Change, 1999*



Source: *Climate Analysis Indicators Tool (CAIT), World Resources Institute, 2008*

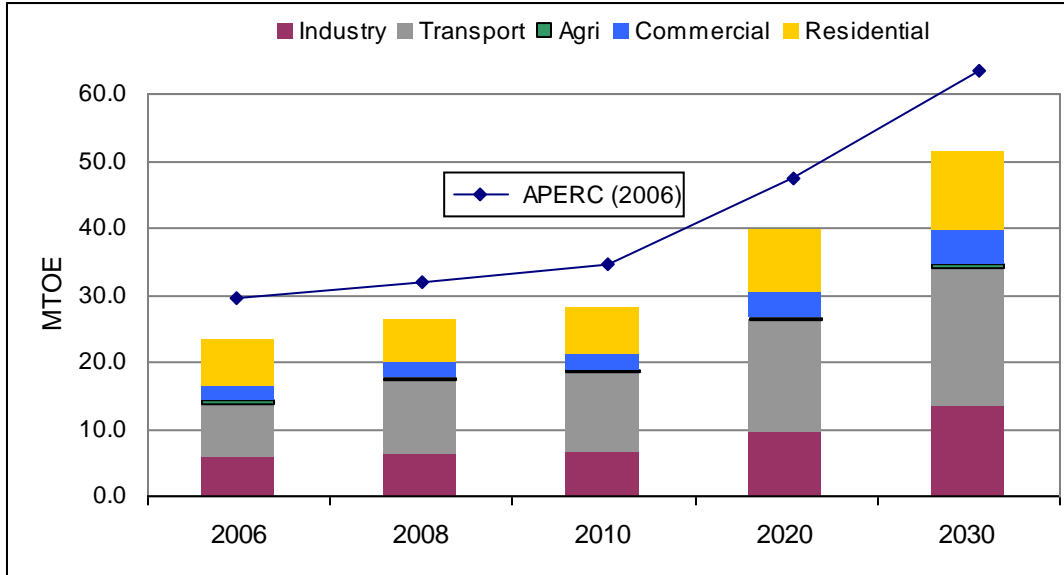
2007 GHG Emission Estimates



Source: Study estimates using 2006 IPCC Guidelines (reference and sector approaches)

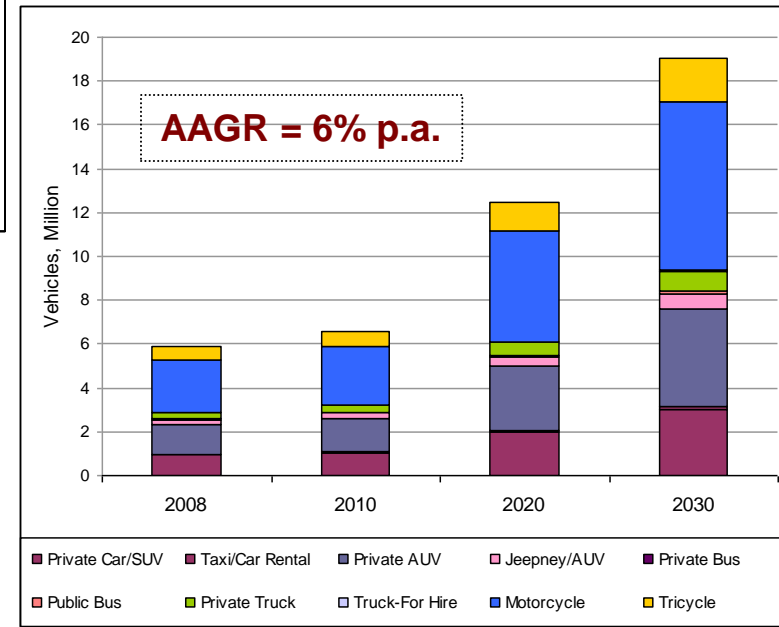
Forecasting Assumptions

DOE Final Energy Demand Forecasts, 2010 to 2030



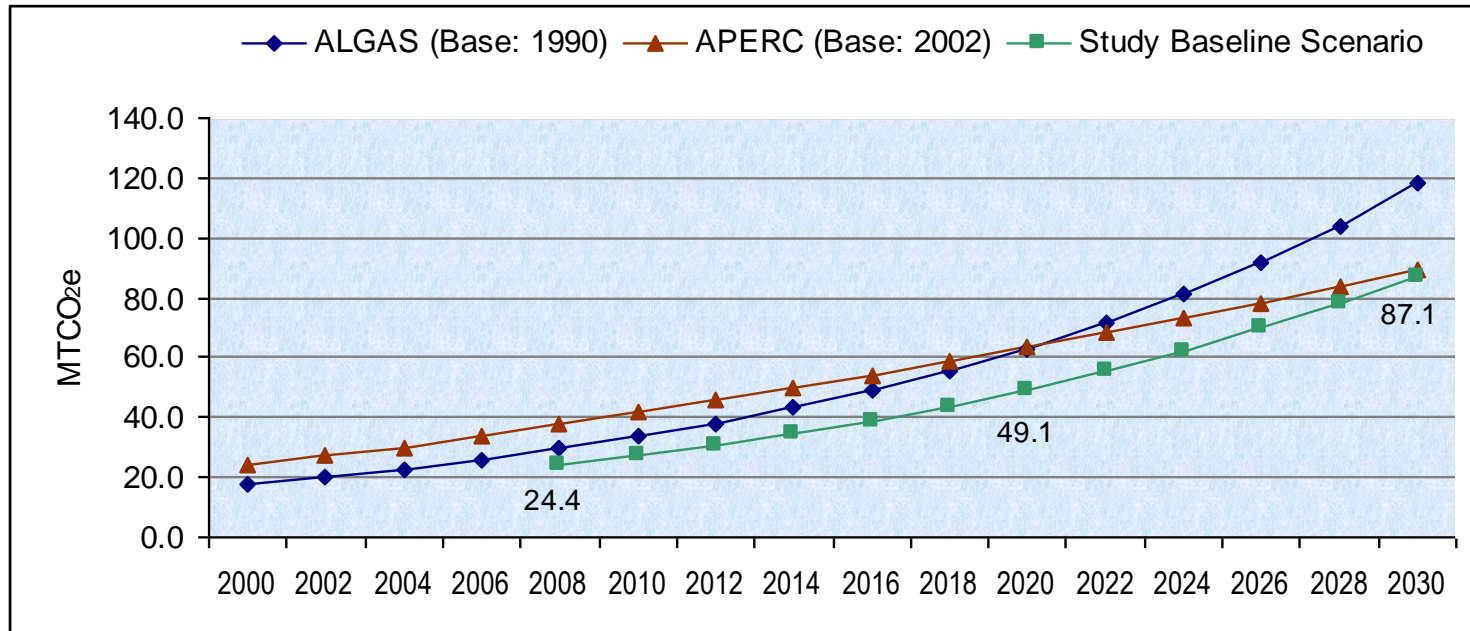
Sources: PEP 2008-2030 and APERC Analysis (2006)

Projected Vehicle Population: Baseline Scenario



Source: Study estimates

Baseline GHG Emission Forecasts



Source: Study estimates, ALGAS, and APERC Analysis (2006)

Potential Abatement Policies

Mitigation Options

- **Vehicle Efficiency**

- Road maintenance and improvement
- Traffic management measures
- Vehicle inspection and maintenance system
- Improved driving practices and driver education and awareness campaign
- Efficiency improvements in conventional gasoline and diesel motorcycles, cars, utility vehicles, buses and trucks
- Vehicle economy standards

- **Low Carbon Fuels**

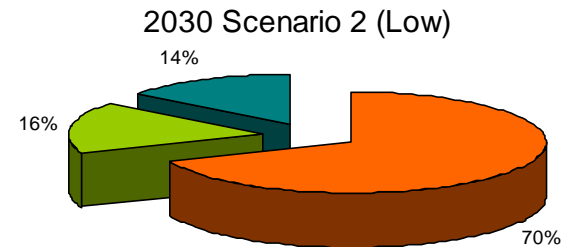
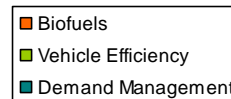
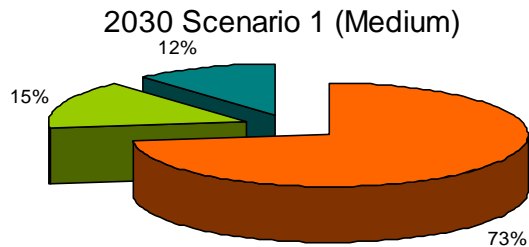
- **Vehicle demand reduction**

- **Promotion of mass transit systems**

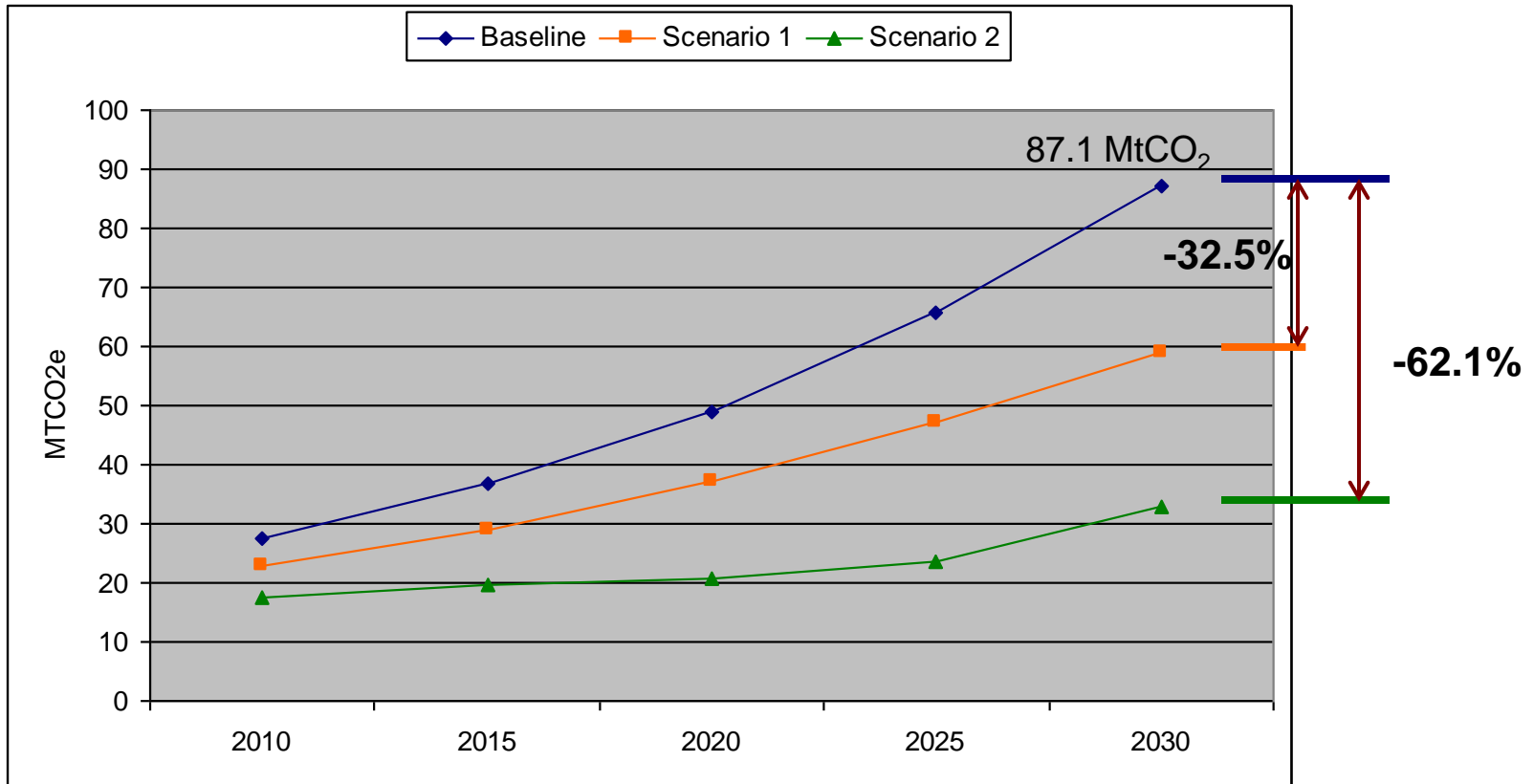
- **Promotion of non-motorized transport**

GHG Emissions Reduction Potential

Scenario	2010	2015	2020	2025	2030
Scenario 1 (Medium)					
Biofuels	0.83	3.11	6.61	12.13	20.59
Vehicle Efficiency	1.29	1.83	2.45	3.28	4.37
Demand Management	2.46	2.63	2.79	2.99	3.26
Total	4.59	7.58	11.85	18.40	28.23
Scenario 2 (Low)					
Biofuels	0.83	6.86	16.66	28.02	37.48
Vehicle Efficiency	2.77	3.70	4.95	6.62	8.82
Demand Management	6.17	6.54	6.86	7.27	7.82
Total	9.77	17.11	28.46	41.91	54.12



Low-Carbon Scenarios

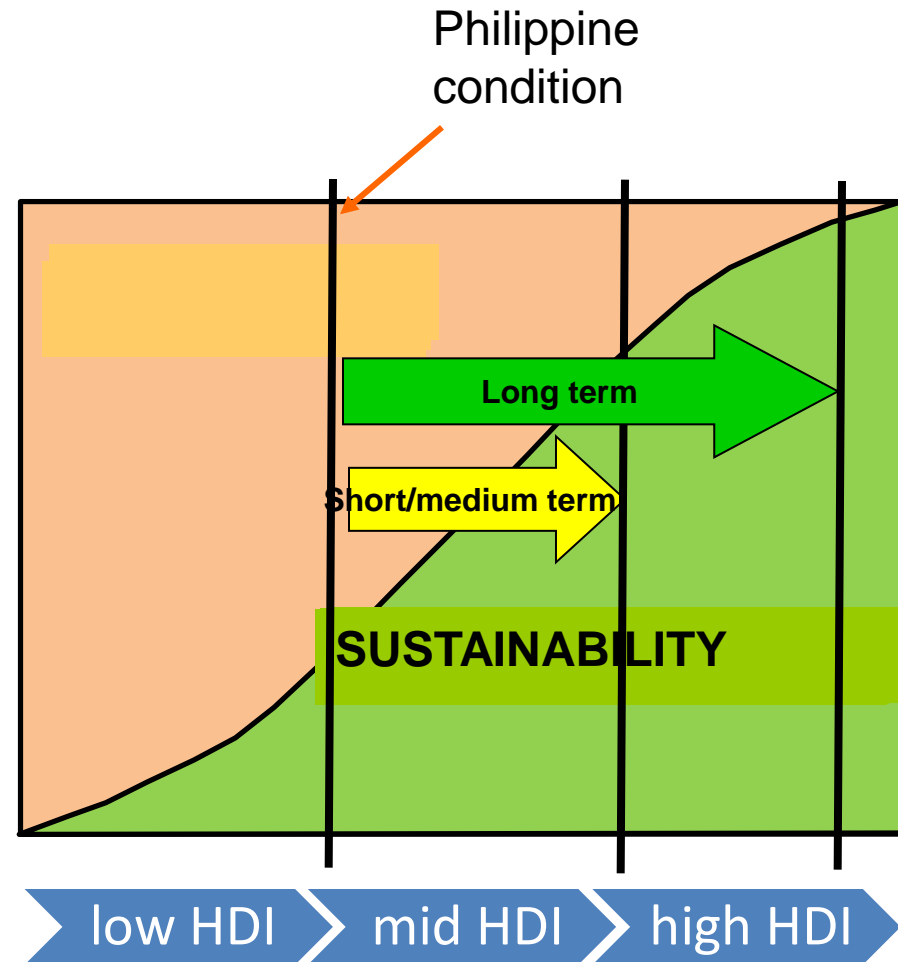


Transport Sector Interventions and Cost-Effectiveness

Transport Sector Options	Potential Total Cumulative Mitigation (MtCO _{2e})	Cost (\$/tCO _{2e})
Biofuels	363.3	30.8
Road maintenance/improvement	53.3	172.0
Motor vehicle inspection	52.1	7.7
Light vehicle technologies	5.8	103.5
Four-stroke tricycles	4.2	153.7
Congestion pricing	26.8	3.7
Public transport improvement	29.9	3.3
BRT systems (100 km)	97.3	5.1
LRT/MRT lines (46 km)	3.6	772.3
Total	636.2	40.1

The Challenge for EST in Developing Countries

- Policies/strategies for the short and medium term: address fiscal survival while raising awareness of the need for environmentally sustainable transport
- Technology Transfer
- Institutional Capacity



A satellite view of Earth showing the Middle East, Africa, and parts of Europe and Asia. The image is a high-resolution satellite photograph of the Earth, showing the Middle East, Africa, and parts of Europe and Asia. The colors are vibrant, with deep blues for the oceans, greens and browns for the landmasses, and white for the clouds. The text "Thank you for your kind attention." is overlaid in the center in a bold, yellow font.

Thank you for your kind attention.