



Indonesia Study:

# **Assessing Indonesia Global Commitment in Reducing GHG from Transport Sector**

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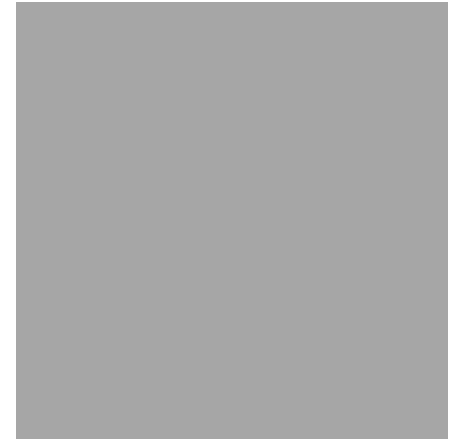
## Outline

- Indonesia **global commitment** in reducing GHG emission from transport sector
- Indonesia Transport **Challenges**: Paradox of high economic growth
- **Study LPA**: simulating national policy and visioning the future
- **Future policy change**: fundamental shift to more stringent policy with consistent practice





- Indonesia **global commitment** in reducing GHG emission from transport sector
  - Unilateral reducing GHG emission **26% from BAU scenario by 2020** or 41% with international support
  - Presidential Decree No 61 Year 2011 on National Action Plan on GHG Emission Reduction (**RAN GRK**)
  - Transport Ministerial Regulation No 201 Year 2013 on National Action Plan on GHG Emission Reduction in Transport Sector employing **AVOID – SHIFT – IMPROVE** approach
  - Recently received **USD 14 Million international support** from German and UK





# Indonesia Transport **Challenges:** Paradox of High Economic Growth

- Rapid **motorization** and vehicle **ownership**
- **Diminishing share** of public transport
- Urbanization coexist with **inefficiency**
- High consumption of **energy and fuel subsidy**

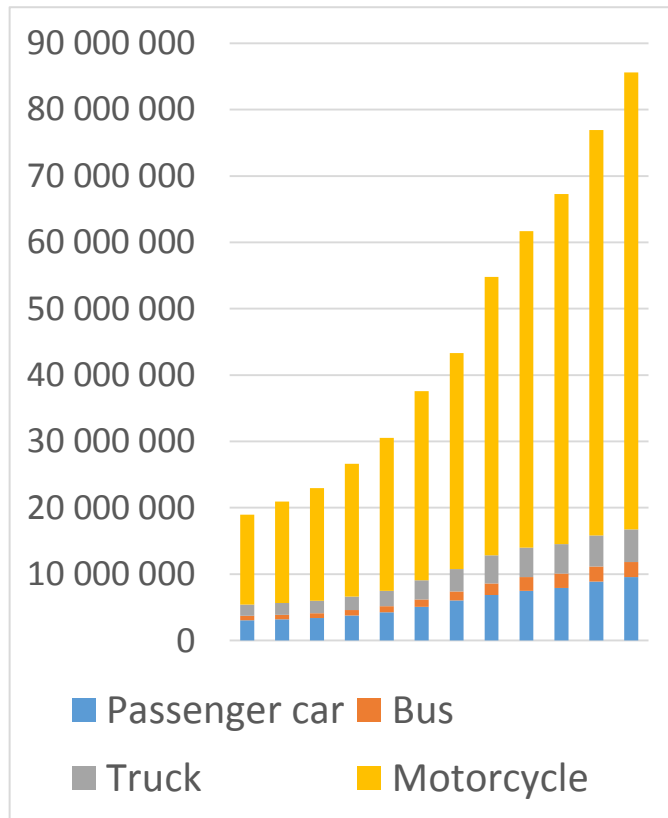




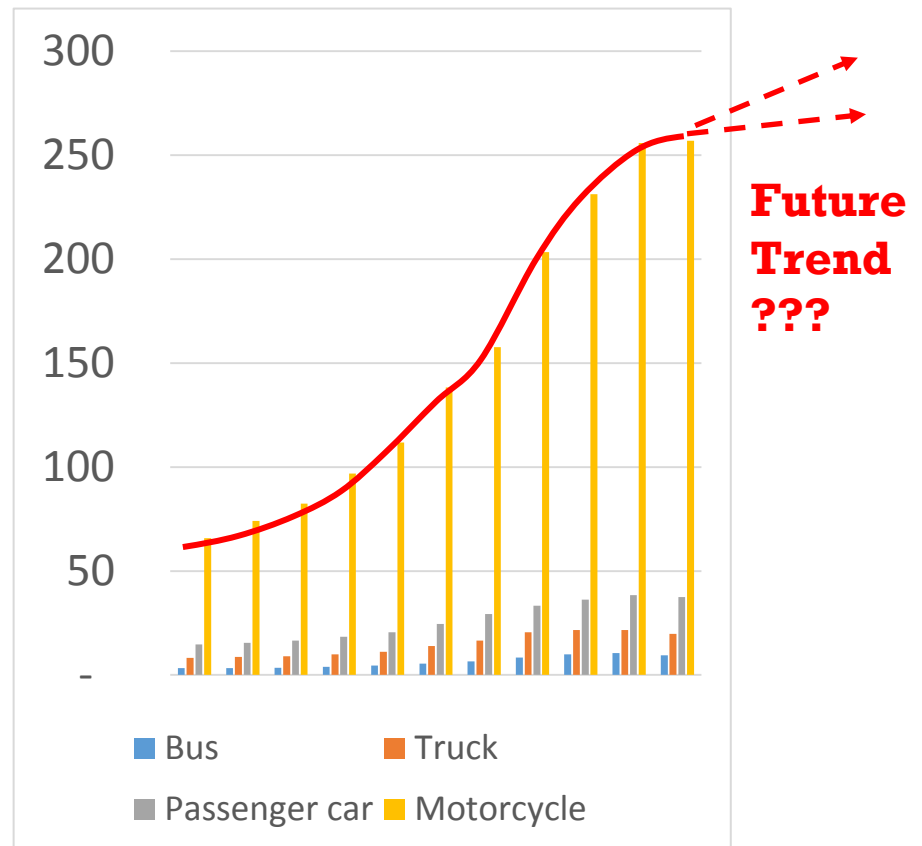
# Rapid Motorization and Vehicle Ownership

**Shift from motorcycle to car due to increasing income**

Growth of Vehicle number 2000-2011



Motor Vehicle Ownership 2000-2011

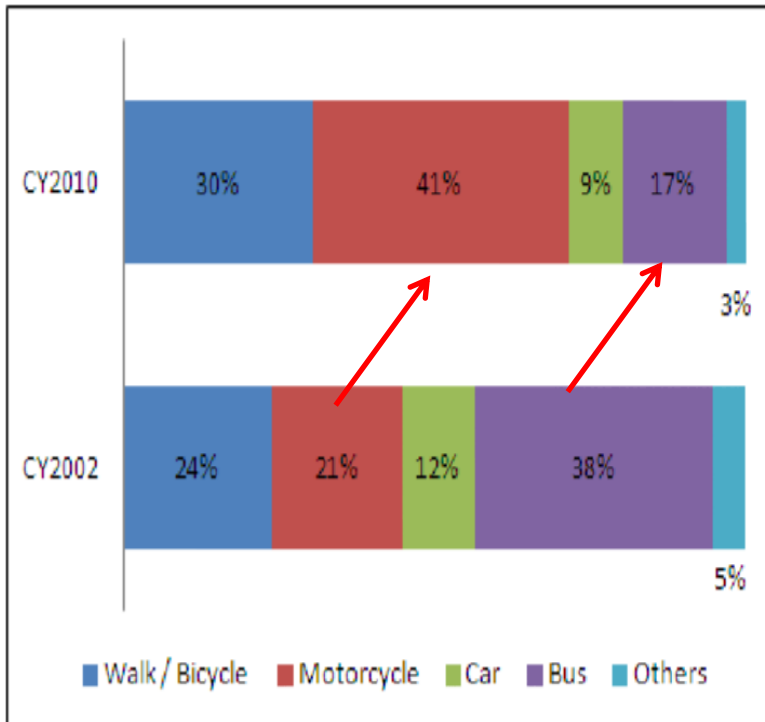


Source: Indonesian Central Statistic Agency, 2013

# + Diminishing Public Transport Share

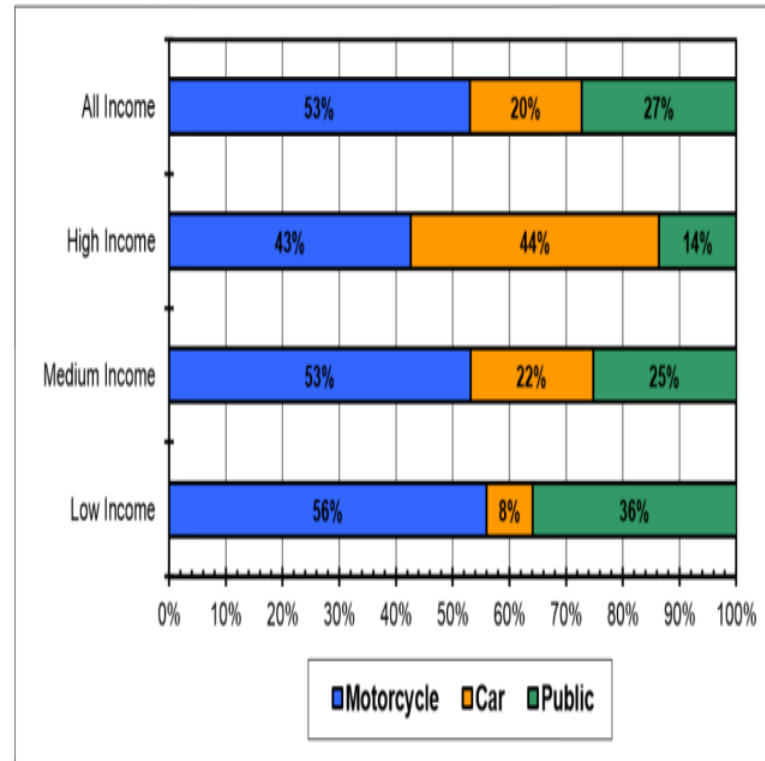
Dilapidating Public transport share and stigmatized as mode just for poor

Change of Mode Share, Jabodetabek 2002 - 2010



Source: JUTPI, 2010

Mode Share by Income 2010

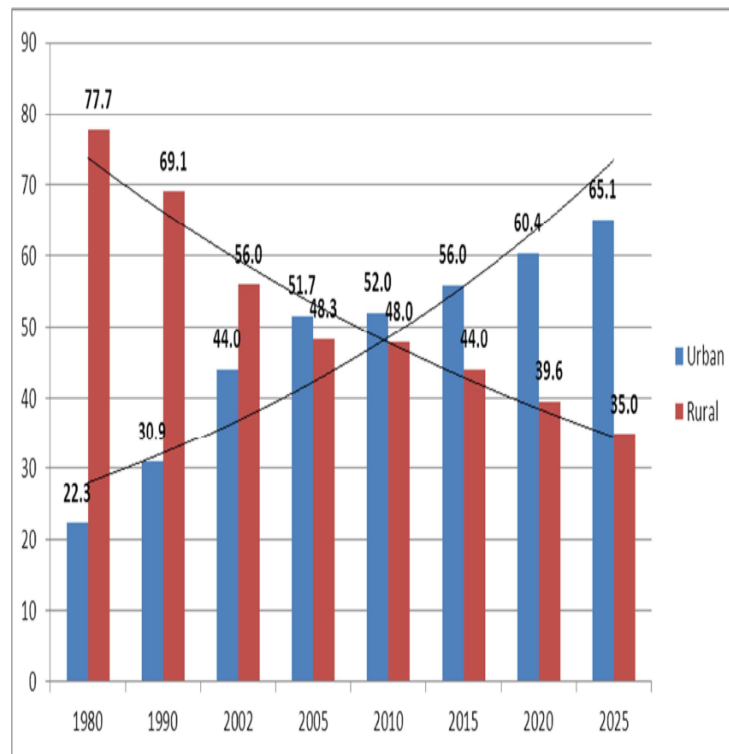


Source: JAPTrapis 2011



# Coexistence of Urbanization and Urban Inefficiency

Urban and Rural Population Trend in Indonesia



Source: Bappenas, BPS, United Nations Population Fund (UNFPA), *Population statistics 2005*.

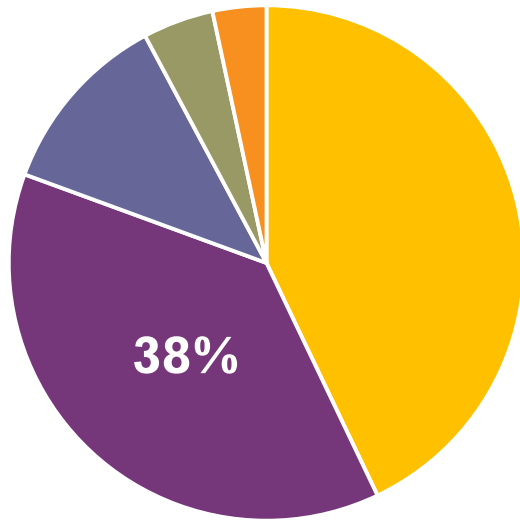
City	Km/h	City	Km/h
Bandung	14.3	Surabaya	21
Bogor	15.32	Medan	23.4
Depok	21.4	Makassar	24.06
Bekasi	21.86	Semarang	27
Tangerang	22	Palembang	28.54
Bodetabek	20.12	Metro City	24.8





# High consumption of energy and fuel subsidy

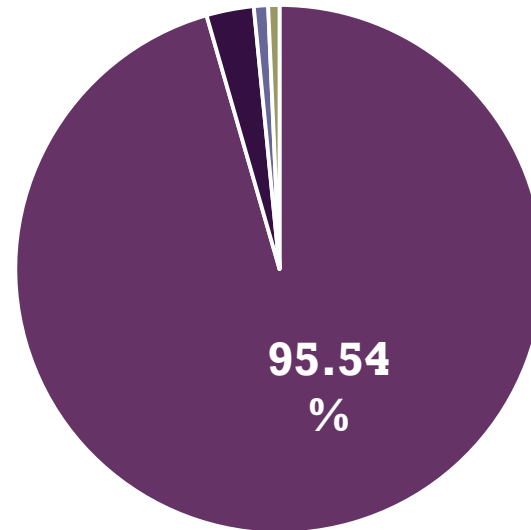
Fuel Consumption by Sector, 2011



- Industry
- Household
- Other
- Transportation
- Comercial

Source: MEMR, 2012

Subsidized Fuel Consumption by Sector 2010



- Land Transport
- Water Transport
- SME
- Fishery

Source:: Reforminer, 2010



- **Study LPA** simulating national action plan and visioning future policy
  - Development Policy: RPJMN, MP3E
  - Mitigation Action Plan: RAN/RAD GRK
  - Visioning future policy



# + Possible Impact of RPJMN 2010-2014

## Policies

## Possible effects

- 
- |   |   |        |   |
|---|---|--------|---|
| 1 | Economic growth 6.3 – 6.8% p.a  | -      | Increase of transport demand and activity   |
| 2 | Development of <b>urban public services infrastructure</b> .                                  | -      | Increase urbanization, mobility demand, efficiency, and reduce urban transport pollution                                |
| 3 | Development of <b>19,370 km of road</b> , inter-mode and inter-island infrastructure          | -      | Increase connectivity, demand for based transportation, inter-island people and goods transportation, and sea transport |
| 4 | Enhancement <b>transportation system and network</b> in Jakarta, Bandung, Surabaya, and Medan | -<br>- | More efficient urban transport system<br>Increase in urban mobility   |
| 5 | Implementation of <b>National Multimode Transportation System</b>                             | -<br>- | Increase of transport efficiency<br>Reduce transport fuel consumption   |
| 6 | Urban <b>electric railway</b> transportation development                                      | -<br>- | Increase in urban public transport trips<br>More efficient commuting trips  |
| 7 | <b>Energy savings and alternative fuel</b>  | -<br>- | Demand for energy efficiency vehicle<br>Decrease oil fuel consumption and increase alternative fuel utilization         |



# Possible impact of MP3EI 2010-2050

No	Policies	Possible effects
1	Promoting <b>road infrastructure construction</b>	- Increase private vehicle population and demand, and increase road based freight
2	Revitalization of passenger and freight <b>sea and river based transportation</b>	- Increase demand and volume of water based transportation
3	Increasing and betterment of <b>air transportation</b>	- Increase air transportation demand and volume
4	Development of <b>rail transportation</b>	- Increase rail based demand and volume
5	Reduction of <b>cost for logistic system</b>	- Increase freight transport integration and efficiency



# Possible Impact of RAN/RAD GRK

No	Policies	Effects
1	Development and implementation of ITS	- Better travel plan and fuel efficiency,
2	Traffic Impact Control	- Reduce congestion and emission
3	Congestion Charging and Road Pricing	- Reduce private car usage, congestion, and fuel consumption
4	Revitalization of public transport system	- Increase of public transport share and reduce private vehicle travel
5	Development of BRT system	- Increase mode share of BRT, and fuel efficiency
6	Development of NMT	- Better NMT share and fuel efficiency
7	Electrification of railway system	- Increase rail passenger and shift from private vehicle
8	Emission standardization, labeling and emission based tax and	- Reduce fuel consumption and emission
9	CNG converter kits	- Reduce fuel consumption and CO2 emission
10	Eco driving and speed limitation	- Reduce fuel consumption and vehicle emission



# Improved RAN GRK Scenario

## Business as Usual - BAU

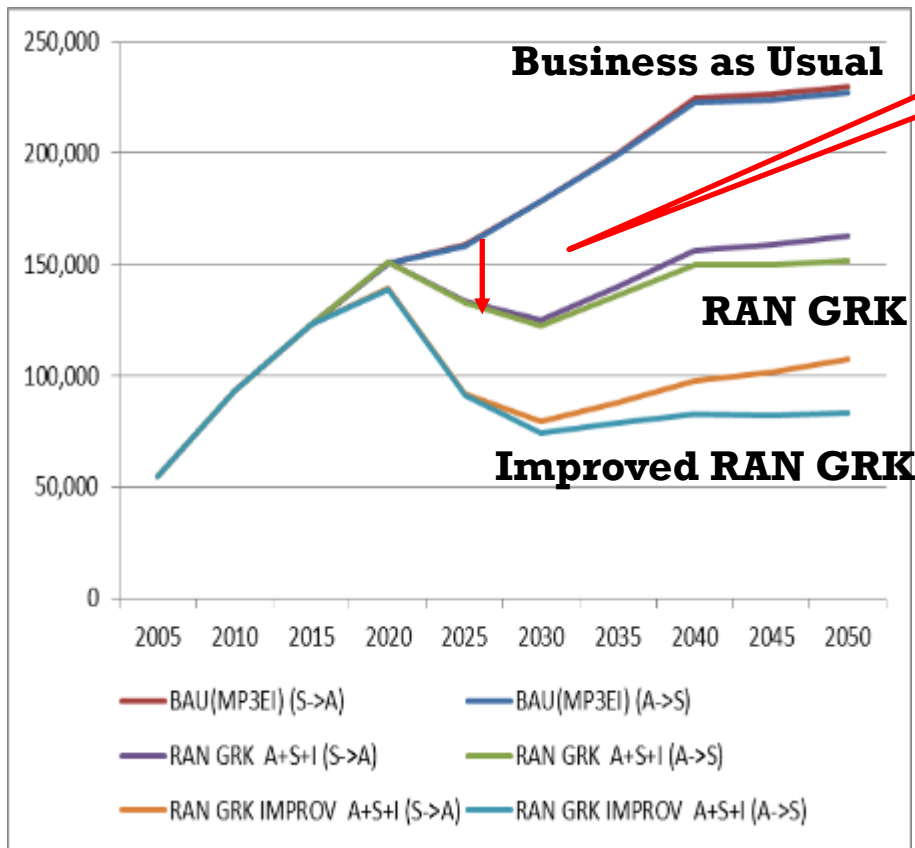
- Respecting current policy taken by the government
- Predicting impact of current development and economic policy: RPJMN, MP3EI
- Elaborate scenario for current policies
- Considering dynamic in policy implementation

## Improve RAN GRK

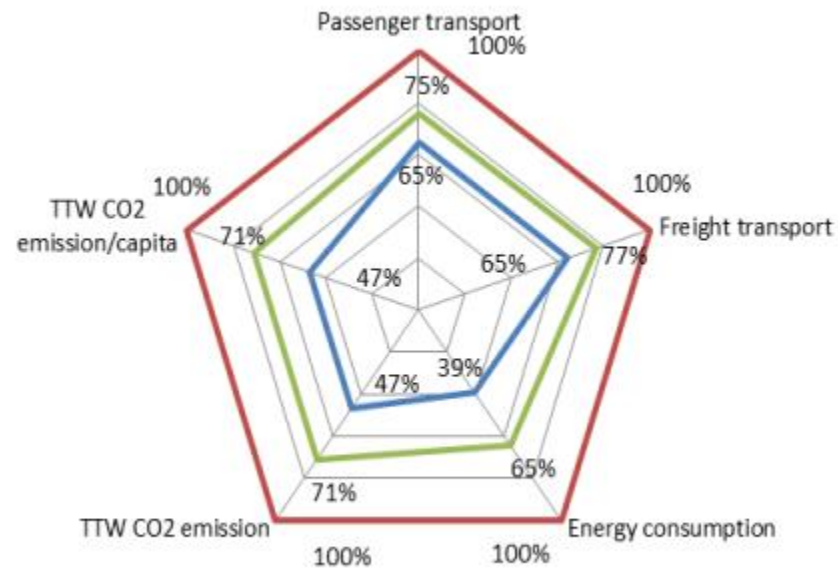
- Additional policy beyond RAN GRK
- Introduction of more AVOID policy options
- Advance vehicle technology
- Fuel pricing and alternative fuels
- Road pricing and behavioral change



# TESTING OF SCENARIO TOTAL EMISSION (Ton eCO<sub>2</sub>/per year)



16% by 2025



## CO- BENEFITS









## Co – Benefit from policy improvement

- Transport policies devised GHG mitigation, transport **efficiency**, system **competitiveness** and **energy** consumption.
- Policy improvement will create co-benefit in energy consumption (61% reduction) **congestion** relieve (35%).
- Transport competitiveness, energy efficiency and GHG emission reduction **will help Indonesia to achieve global commitment** as well as improving the economic and local environmental condition





## Visioning Future Policy

- **Significant improvement is needed** to achieve national commitment and meet global target
- Introduction of **various “avoid” policies**: promotion of TOD, higher fuel pricing,
- Shift to more **advance vehicle technology** and **cleaner fuel** options
- **Push policy** for transport behavioral changes: set the right price for fuel, and road pricing.
- **Capacity** building to **manage and safe guard** consistent policy implementation





Combination of transport **competitiveness**, energy **efficiency** and GHG **emission reduction** will help the Indonesian government in **achieving global** climate change **commitment** as well as **improving the economic** and local **environmental** condition

