



SUSTAINABLE TRANSPORTATION POLICY IN INDONESIA

Director of Transportation
Jakarta, May 15th 2016

Sustainable Transportation Concept and Approach

Why Transport Sector?

Outlook

National Action Plan for Greenhouse Gas

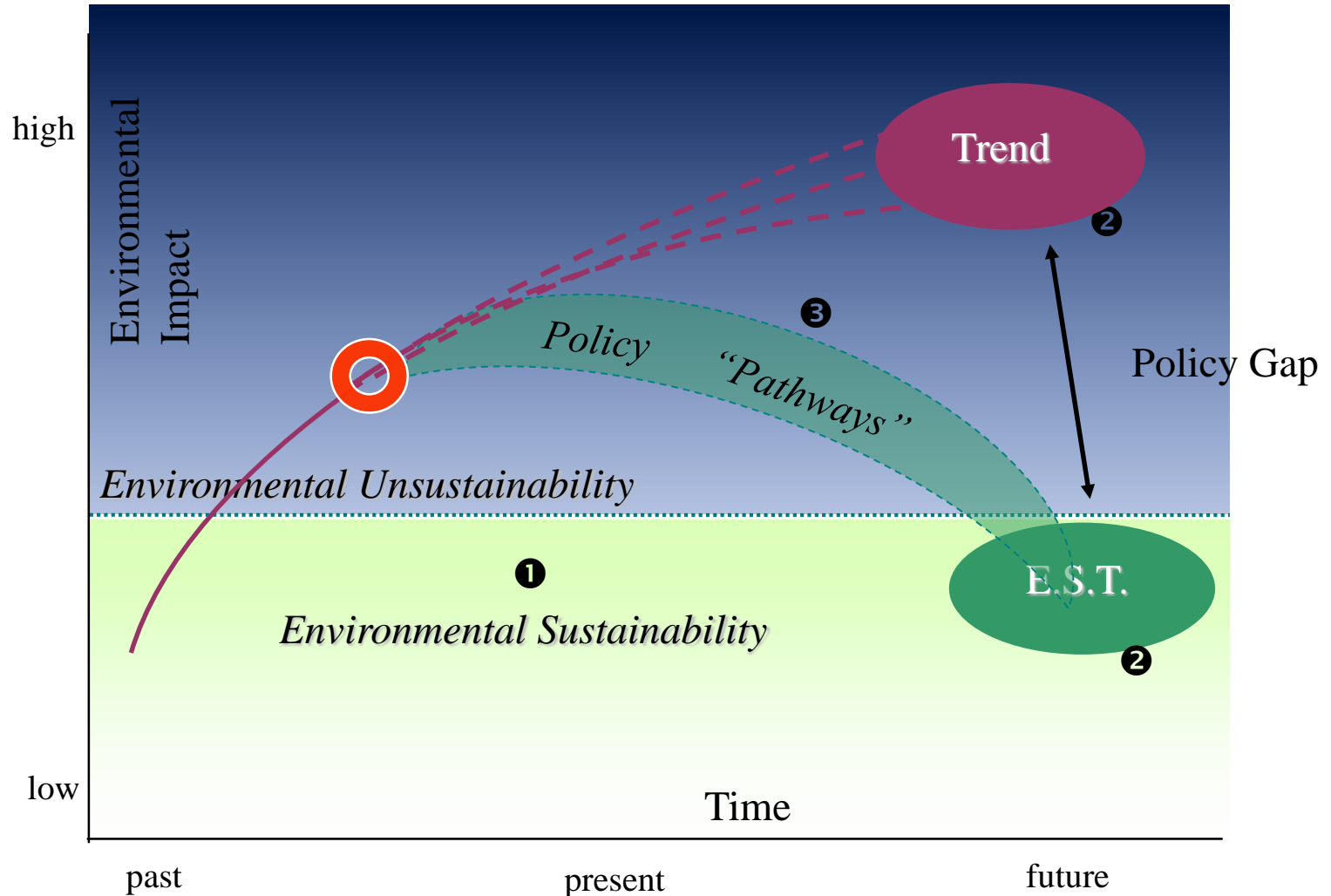
Mitigation Action in Transport Sector

Adaptation Action in Transport Sector

Sustainable Transportation Policies in Indonesia

The EST Concept and Approach

- The role for proactive policy



Source: Freidrich, GIZ

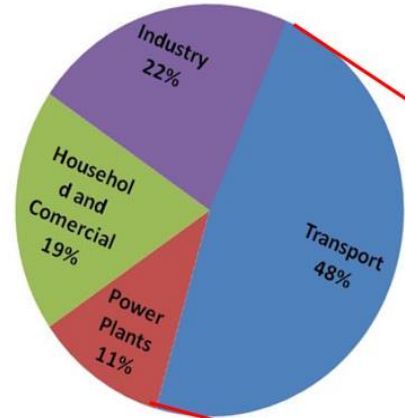
Why Transport Sector?

23% of total energy-related CO2 emissions from Transport Sector

Half of the emissions come from urban transport passengers and freight.

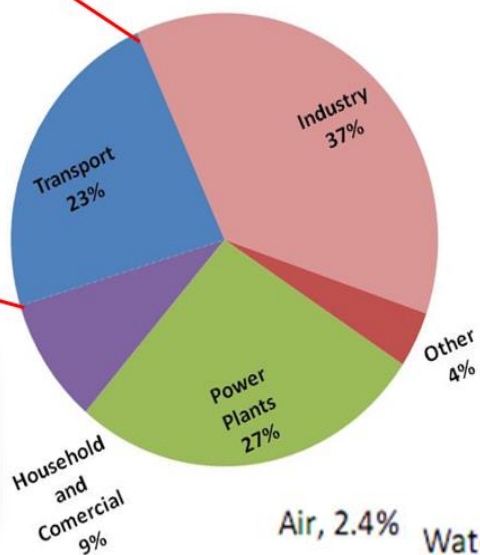
- Between 2000 and 2050, greenhouse gas emissions from the transport sector are projected to increase by 140%, with **90%** of the share in developing countries.
- Adequate transport-related activities to curb emissions could put cities on tracks towards a **50%** emission reduction by 2050 compared to business as usual

Source: COP 21

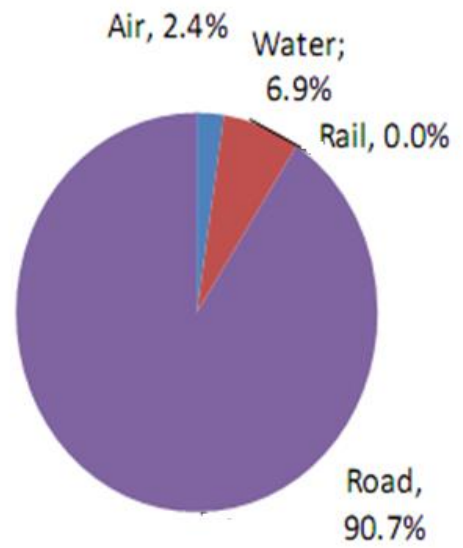


Outlook

CO2 Emission From Energy Sector 2005 (Million Ton)



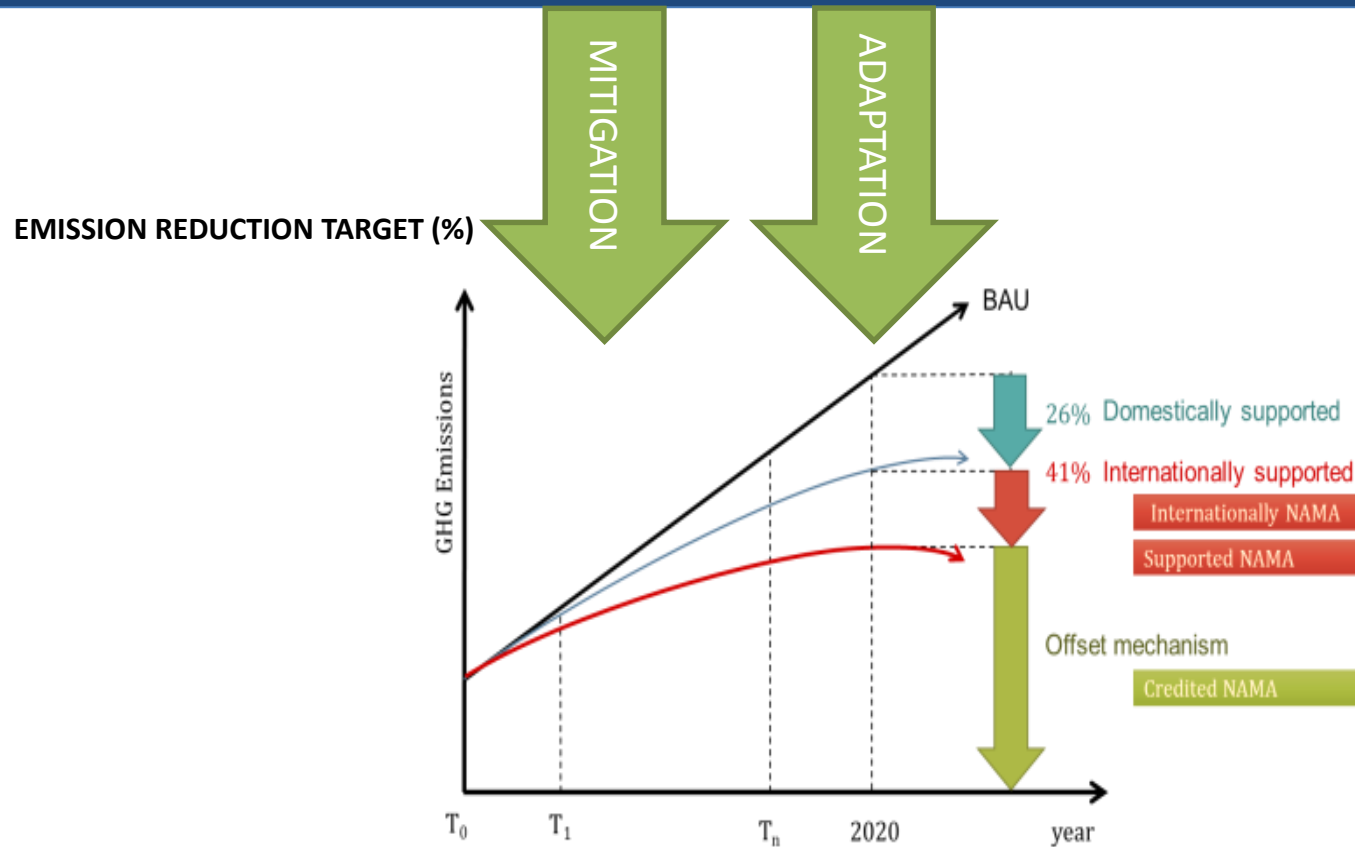
- Biggest Energy Consumption in Indonesian Primer Energy (in terms of fuel consumption) → 48 % in 2005
- CO2 emission from motor vehicle is 23% from total energy sector (2005)
- CO2 emission in 2010 → 67 Million Ton



- Distribution the use of fuel consumption in transport sector
- Road 90,7%
 - Sea 6,9%
 - Air 2,4%
 - Rail, less than 1%

Distribution the Use of Fuel Consumption in Transport Sector, 2005

National Action Plan for Greenhouse Gas reduction

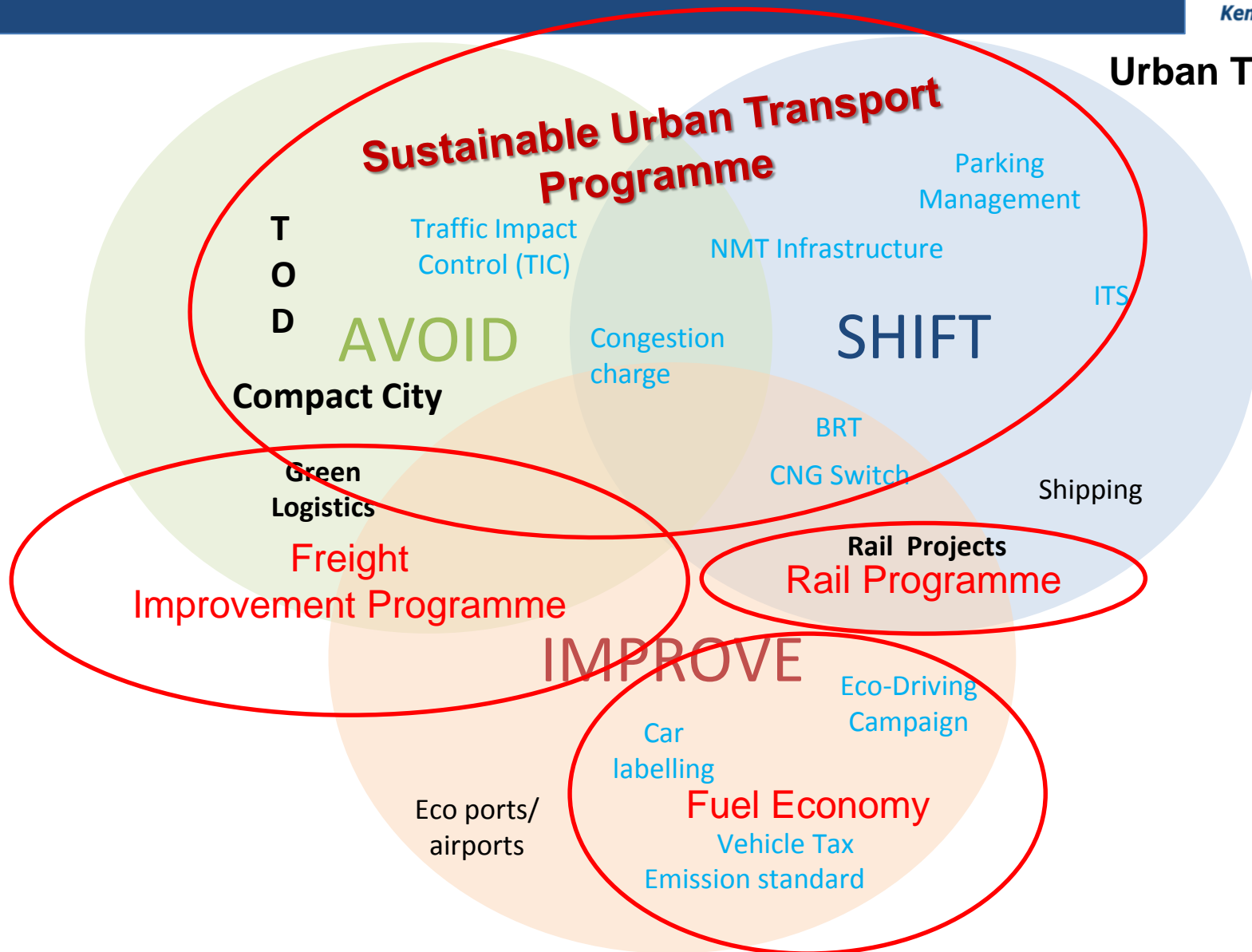


Resources: Bappenas, 2010

Indonesia is characterized by high levels of emissions of greenhouse gases, which puts the country among the highest emitting countries globally. At the same time, the country is highly vulnerable to the negative impacts of climate change itself, with more than 17.000 islands and an impressive length of shoreline highly susceptible to sea level rise. This situation calls for a serious response, which the government of Indonesia gave by committing itself to reduce GHG emission by 26% in 2020 from the BAU level with its own efforts and reaching 41% reduction if it secures international support.

Mitigation Action in Transport Sector

Urban Transport



Mitigation Action in Transport Sector



AVOID / REDUCE

Reduce or avoid
demand for travel

- *Integration of transport and land-use planning*
- *Smart logistics concepts*



SHIFT

Shift to more
environmentally
friendly **modes**

- *Transport Demand Management*
- *Mode shift to Non-Motorized Transport*
- *Mode shift to Public Transport*



IMPROVE

Improve the **energy efficiency** of transport
vehicle technology

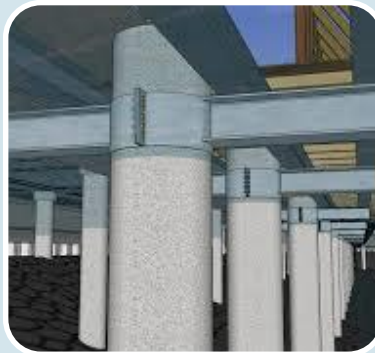
- *Low-friction lubricants*
- *Optimal tire pressure*
- *Low Rolling Resistance Tires*
- *Speed limits Eco-Driving (Raising Awareness)*
- *Shift to alternative fuels*

Adaptation Action in Transport Sector



**Bored Pile Foundation to
Protect slope**

Protection



Pile Foundation

Retrofitting



Bridge Design

Redesign



Rail track relocation

Relocation



Sustainable Transportation Policies in Indonesia



The Transformation Improvement of *Urban Transport Sustainability*

- Part of the Government National Midterm Development Planning
- Urban Public Transport is one of the National Key Result Area
- Quick Win with Great Impact
- Local government, Line Ministers and Central Governments meets under Musrenbangnas (National Development Trilateral Meeting)
- Designate Ownership for programme implementation, coordinated and monitored by Coordinating Ministry of Economic Affairs (CMEA)
- The very urgent programme implementation for equitable development accelerated under Presidential Decree.

Sustainable Transportation Policies in Indonesia



URBAN TRANSPORT

- Construction of rail-based rapid mass transit (MRT, kite loop line railway, LRT / Monorail / Tram).
- Urban rail development in 10 metropolitan cities: Batam, Medan, Palembang, Jakarta, Bandung, Semarang, Yogyakarta, Surabaya, Denpasar and Makassar.
- BRT development in 34 major cities.
- PSO provision of urban mass transportation.

- Enlarge ratio of urban roads minimum 10 percent of the area to the extent possible.
- Developing the capacity and quality of roads.
- Realignment of the National Road in the urban status.

- Increased access to public transportation with Transport Oriented Development (TOD).
- The provision of support facilities for transfer modes such as Park and Ride.

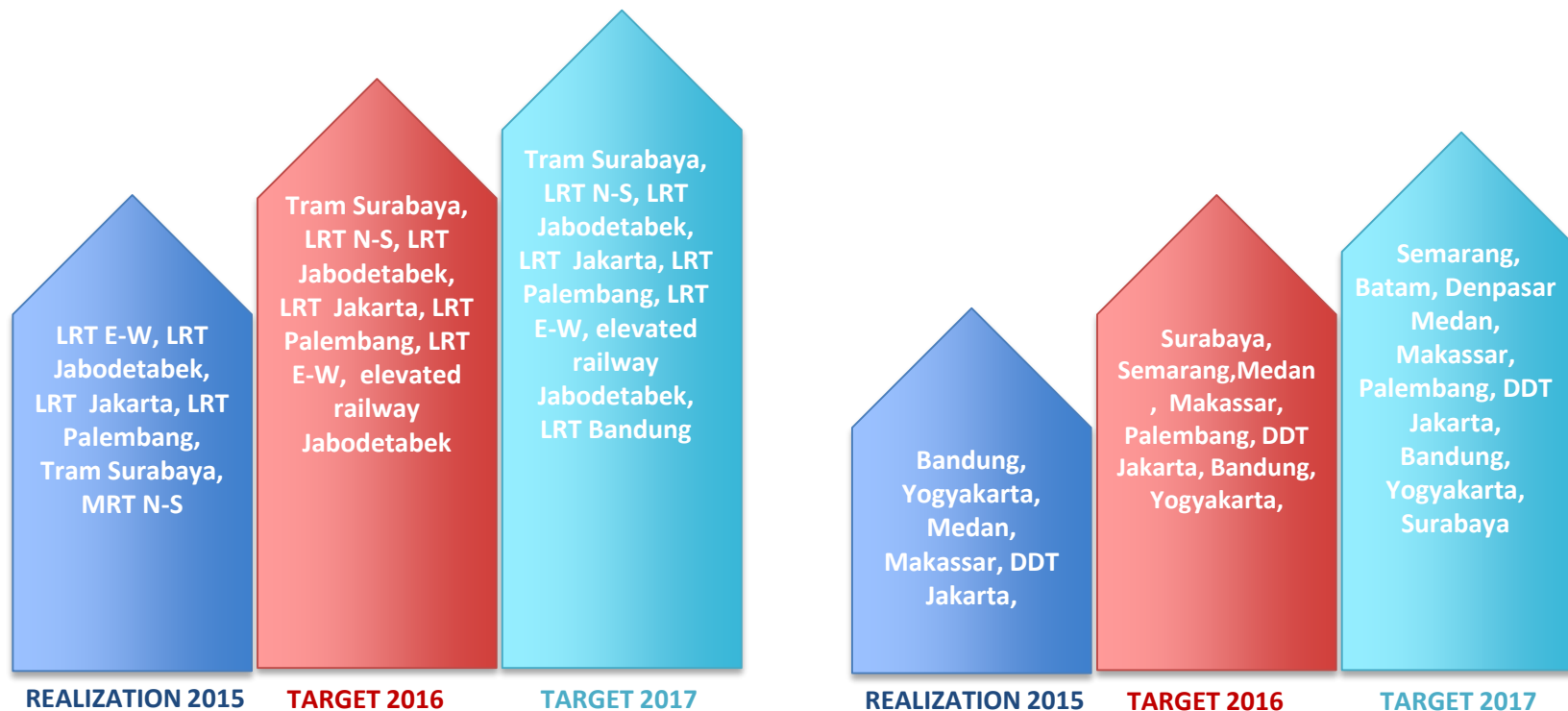
**Public transit systems,
bus and rail
orientation, with modal
transfer facility**

**Capacity,
Quality of City Road
Network that good**

**Transportation
management that
takes into account the
interaction of land use**

Sustainable Transportation Policies in Indonesia

URBAN TRANSPORT

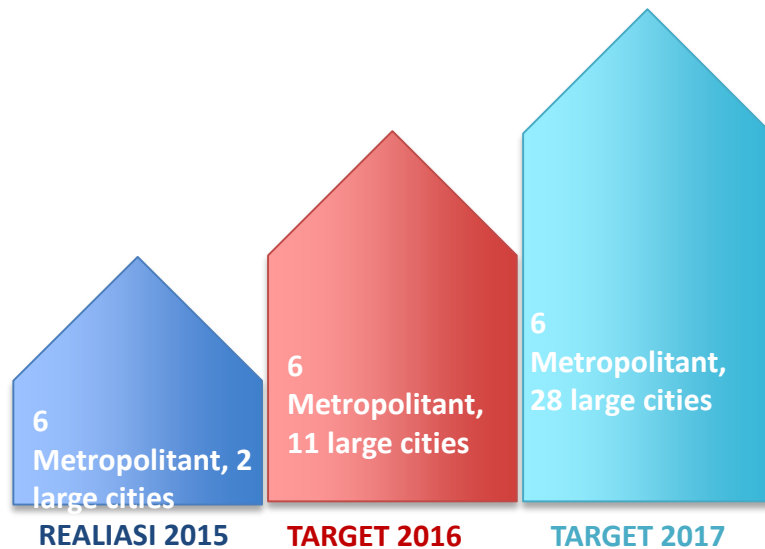


Construction of rail-based mass transit rapidly among others MRT in Greater Jakarta and Jabodetabek railway overpass circular line, as well as LRT / Monorail / Tram

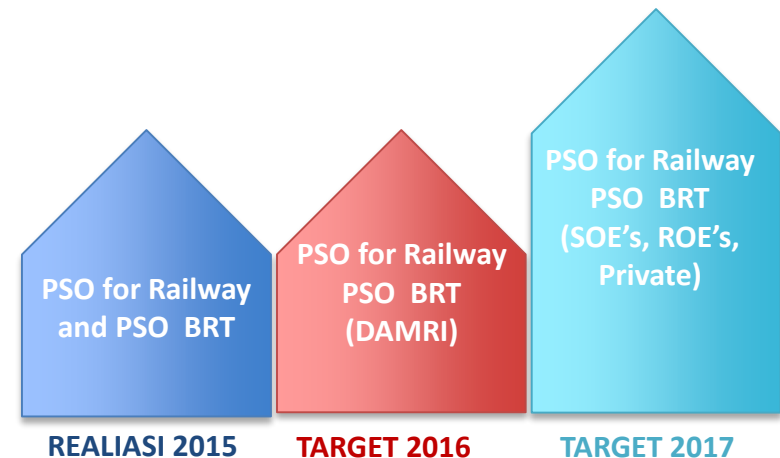
Urban rail development in 10 metropolitan cities: Batam, Medan, Palembang, Jakarta, Bandung, Semarang, Yogyakarta, Surabaya, Denpasar and Makassar.

Sustainable Transportation Policies in Indonesia

URBAN TRANSPORT

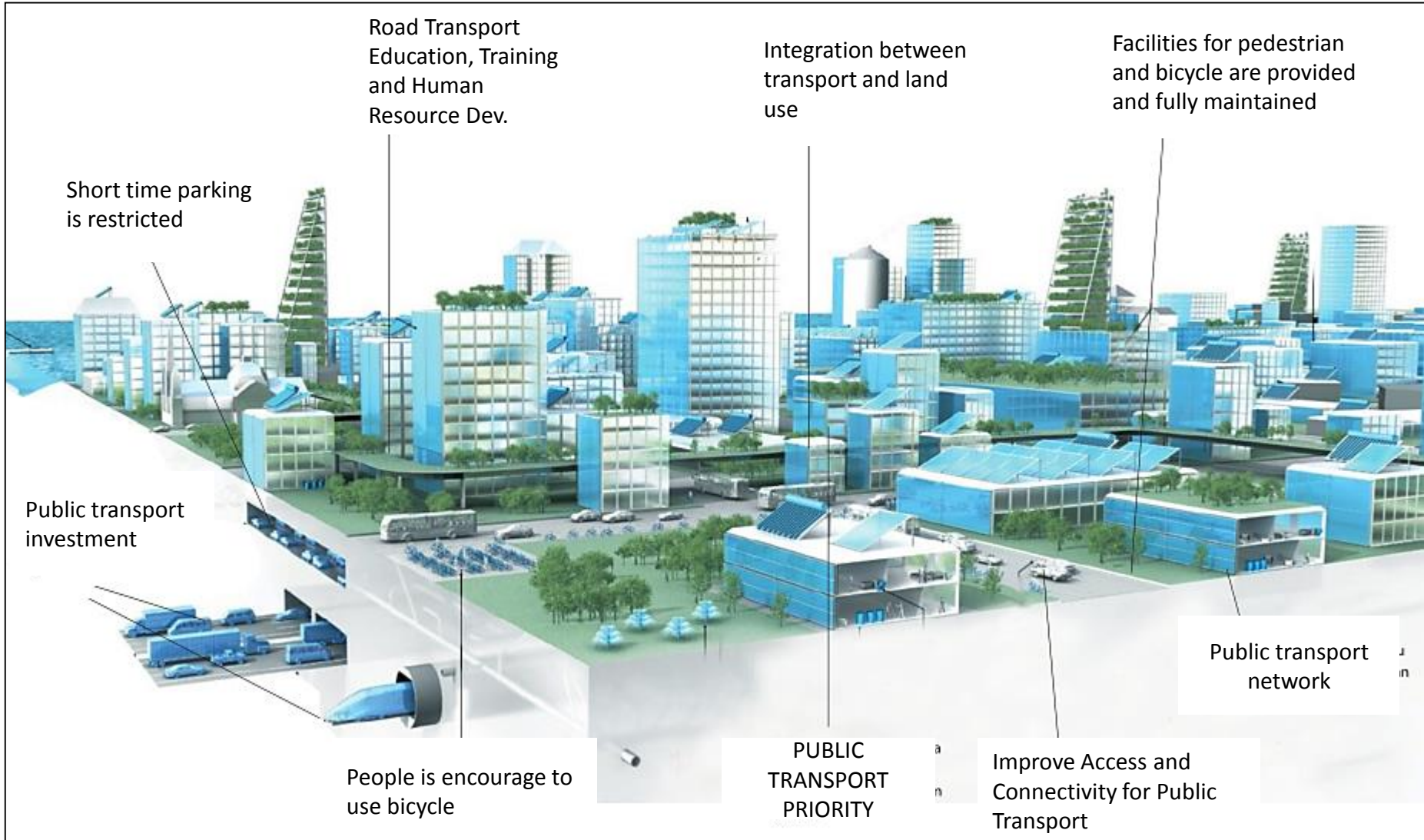


BRT development in 34 large cities include Medan, Pekanbaru, Batam, Padang, Palembang, Bandung, Jakarta, Bogor, Semarang, Yogyakarta, Solo, Pontianak, Samarinda, Balikpapan, Makassar, Gorontalo, and Ambon.



Provision of funding subsidy / PSO is directed to the implementation of urban mass transportation

Next Urban Transport- Land Use Interaction



The Needs of Urban Transport Infrastructures



Source: youcity.bombardier.com

- 1. *Bus Based Mass Transit (BRT) Infrastructures*
- 2. *Rail Based Mass Transit Infrastructures*
- 3. *Road Network Improvement*

MASS TRANSIT : INDONESIA EXPERIENCES



Palembang



Solo



Manado



Jakarta



JABODETABEK



Jogja-Solo



Medan Airport

Pre-BRT

BRT

COMMUTER RAIL Slide 17

Jabodetabek Approach – for Rail and Road Based Public Mass Transit

- **Debottleneck system capacity**
 - Increase number of operating BRT buses
 - Increase rail capacity by adding more coaches
- **Enhanced ‘Pull’ factor to draw passengers to public transport**
 - Construction of first MRT line (Lebak Bulus- Kota)
 - P & R at strategic rail stations
 - Revamp common ticketing to integrated ticketing
 - Utilising ITS for stringent performance monitoring
- **Relocate terminal facilities for inter-city express services**
 - Integrated Transport Terminals at fringe of city centre. i.e. Pulo Gebang Inter City Bus Terminal
- **Regulatory restructuring**
 - New transport authority, BPTJ.
- **Managing demand through “PUSH”**
 - Motor Cycle Ban at Road Sections
 - Prepare for Congestion charging implementation

Case of Urban Agglomeration: JABODETABEK

Jakarta, Bogor, Depok, Tangerang dan Bekasi

TRAVEL DEMAND

- Total Trip (Internal Jakarta) : 20.7 mill. trip/day

VEHICLES

- In 2009 total vehicles in Jakarta \pm 6,7 mill. unit
- Private Cars : 6.6jt (98,5%) & Public Transport: 91 thousand (1,5%)
- Average growth last 5 years: \pm 8.1 % per year (2004-2009)

MODAL SHARE

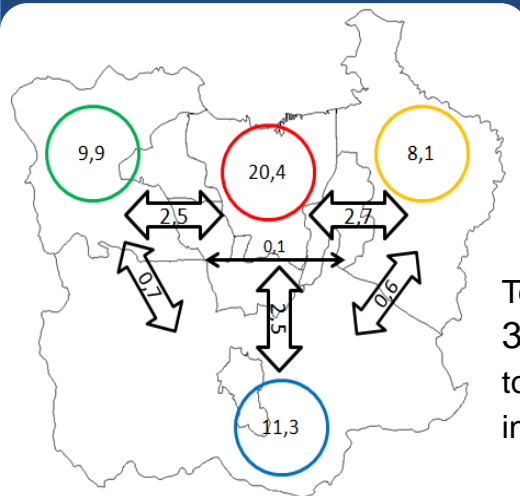
- Private Cars of 98,5%, serving 77% trips
- Public Transport of 1,5% serving 23% trips (of them: 3% by Commuter Rail)

ROAD NETWORK

- Road Length: 7,650 km
- Road Area: 40.1 km² (6,2% of total area of Jakarta)
- Growth of Road Length: \pm 0.01% per year

CONGESTION COST

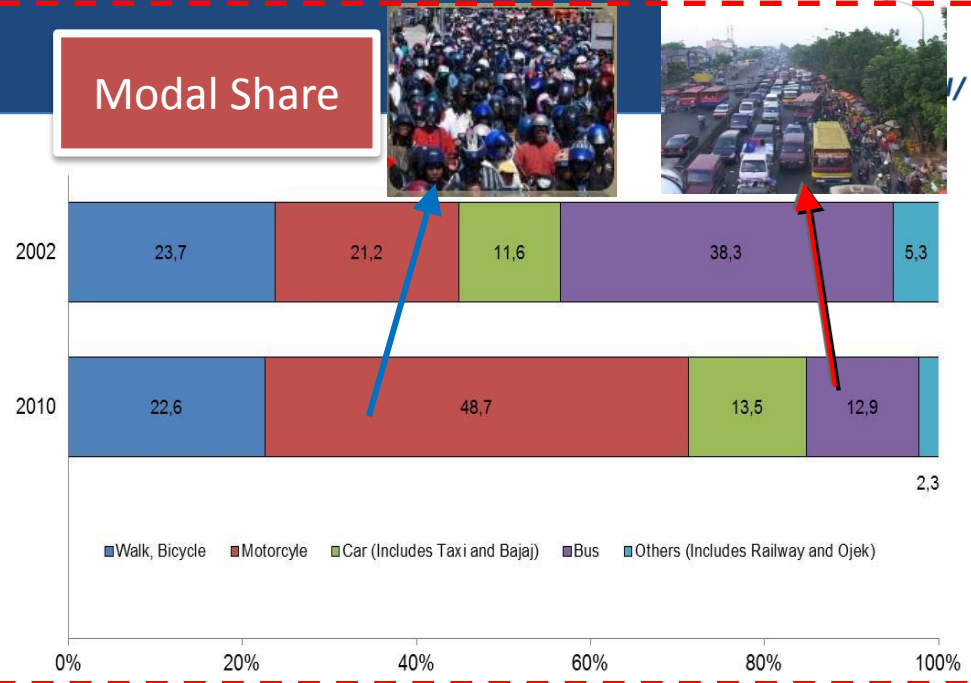
- Operational Cost of Congestion: Rp. 17.2 Tril/ year
- Fuel Inefficiencies: Rp. 10 Trilyun /year



Total trips in 2003 about 37,3 mill./day* to become 59 mill./ day in 2010**

Source : * JICA 2003; URDI 2011 **JAPTraTis, 2011; MoT, 2010

Modal Share



Problems:

- Public Transports have not optimal to accommodate passengers Bodetabek to Jakarta.
- The lack of quality of service and security of urban mass transit, especially the capital region.
- Provision of means of mass transport railway has not been matched with adequate infrastructure.
- Passing of urban public transport in Bodetabek not yet fully integrated.

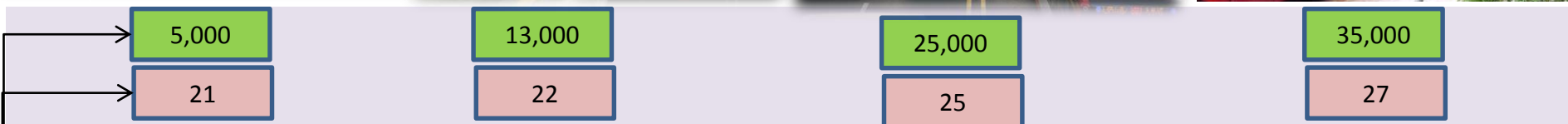
Solution : Jakarta Macro Transportation Planning



- Development of Bulk Transport (MRT, LRT, BRT)
- Traffic restrictions (ERP, parking, etc.)
- Capacity Building Network (ITS, road widening, Fly Over, etc.)



Roadmap to Full BRT

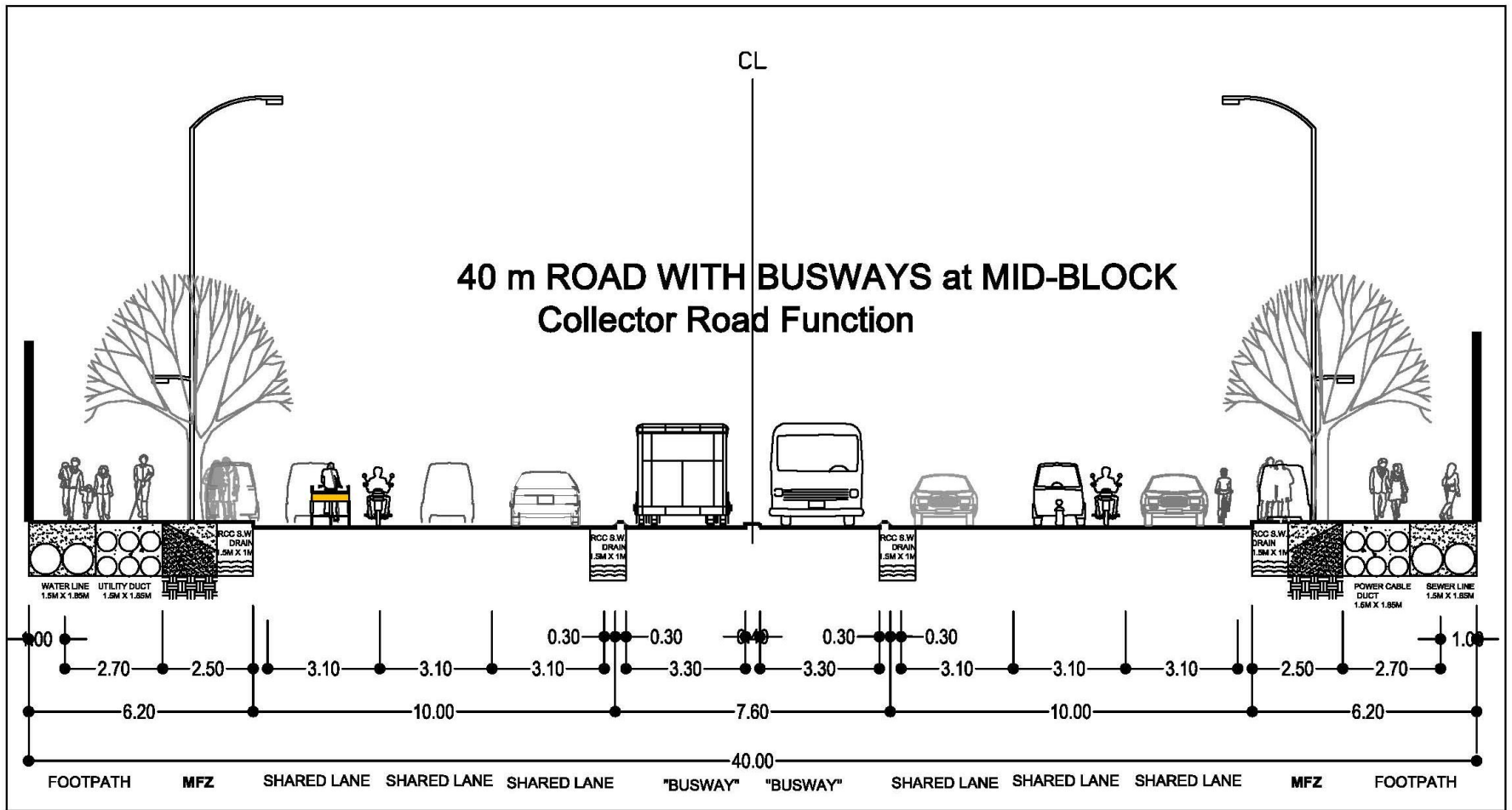


— CAPACITY (PAX/HR/DIR.)
— SPEED (KM/HR)

Guangzhou BRT phase I <ul style="list-style-type: none"> • 25,000 pphpd • 25 km/hr 	Beijing BRT <ul style="list-style-type: none"> • 7,500 pphpd • 21 km/hr 	Seoul BRT <ul style="list-style-type: none"> • 12,500 pphpd • 17 km/hr 	Brisbane busway <ul style="list-style-type: none"> • 10,000 pphpd • 19 km/hr 	TransMilenio <ul style="list-style-type: none"> • 35,000+ pphpd • 25 km/hr
TransJakarta Busway <ul style="list-style-type: none"> • 5,000 pphpd • 21 km/hr 	Curitiba BRT <ul style="list-style-type: none"> • 13,000 pphpd • 22 km/hr 	Sao Paulo BRT <ul style="list-style-type: none"> • 15,000 pphpd • 16 km/hr 	Hangzhou BRT <ul style="list-style-type: none"> • 1,500 pphpd • 23 km/hr 	Kunming bus lanes <ul style="list-style-type: none"> • 8,000 pphpd • 19 km/hr

(ITDP, 2010)

Cross Section for Typical BRT



Ketidakseimbangan Sistem Transportasi di 6 Kawasan Aglomerasi

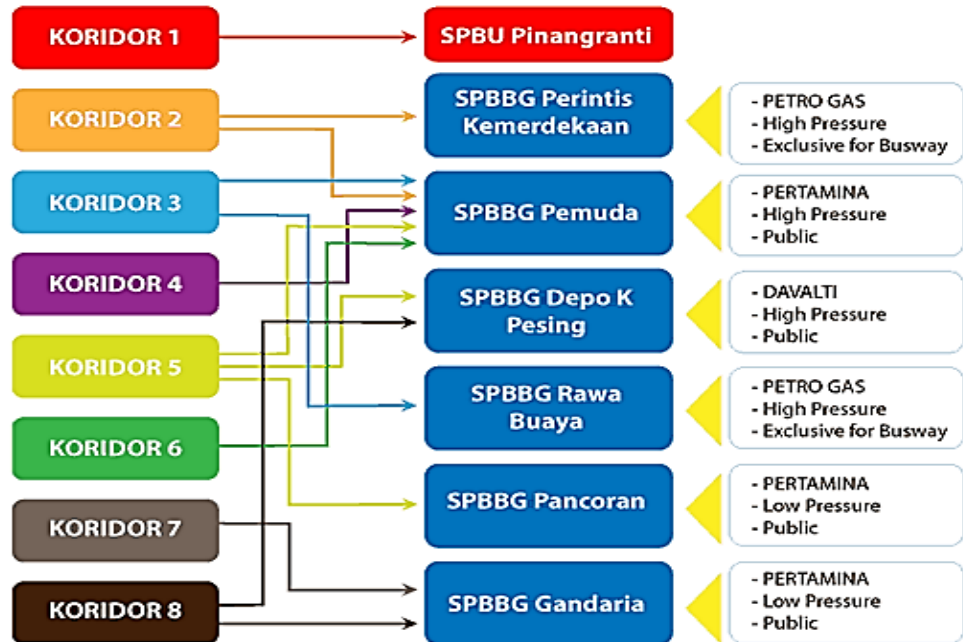
BRT- *Trans Jakarta*

Championship

- FIRST BRT in Southeast Asia
- Vision: *"The fast public transportation system to help reduce rush hour traffic"*
- 150 mill.pax in 2012 increased 32% compare to 2010
- Subsidy \$0,21 per pass-ticket
- Longest BRT corridor in the world (12 corridor, 184 km length)



STASIUN PENGISIAN BAHAN BAKAR GAS



Problem of BRT Services (YLKI, 2008):

- Inconvenient Air Conditioner (19,7%)
- Broken Handrail (18,7%)
- No info on bus shelter (18,5%)
- Damaged seat (17,0%)
- No fire extinguisher (13,4%)
- No glass breaking tool (5,2%)
- Bus light not lit (3,1%)
- No safety box (18,5%)

Target 2015-2019:

- Role of public transport → 30%.

Policy Direction:

- Develop 15 BRT corridors including elevated busway at 3 latest corridors
- Improve role of feeder supported by ITS dan ticketing system

Financial Plan:

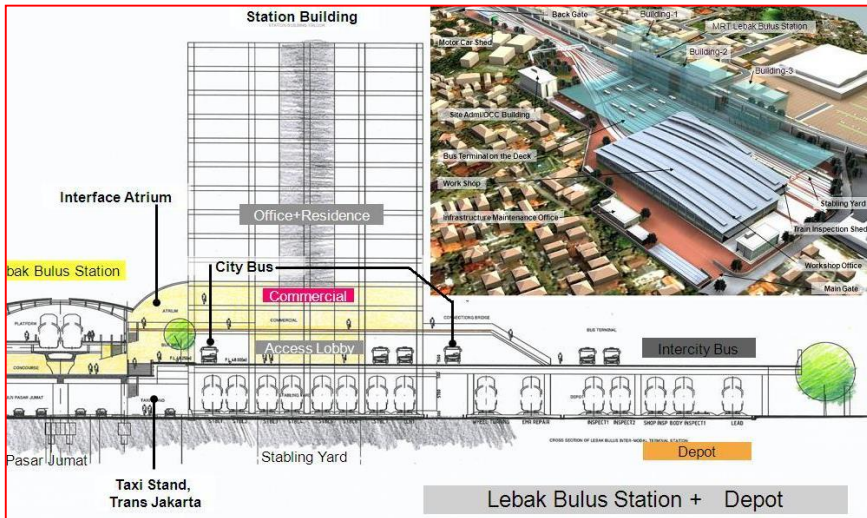
- Purchasing a new BRT buses and the articulated in total of 300 unit and elevated busway construction of Rp.750 milyar (buses) and Rp. 2.5 trillion (construction)

2017

Jakarta MRT

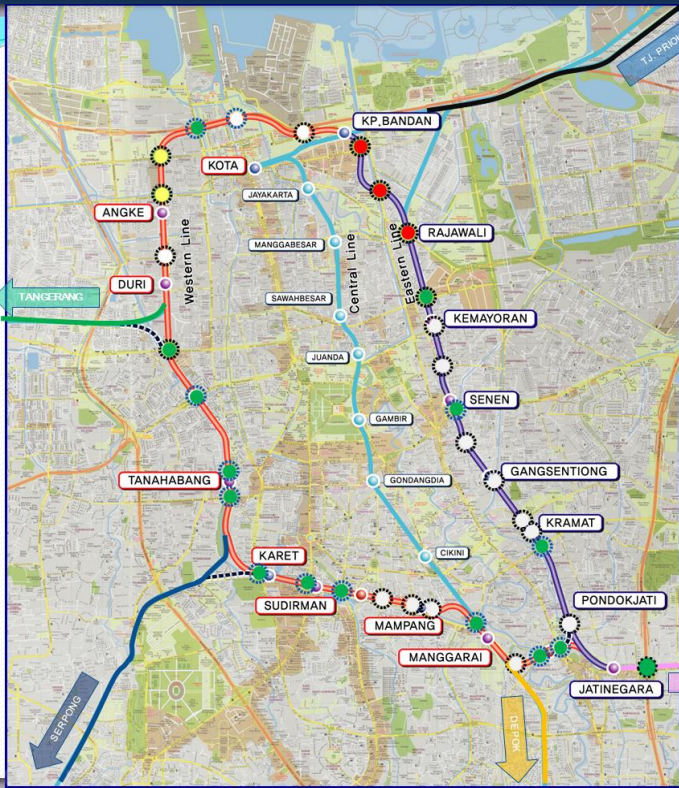
Jakarta MRT- Target:

- Cater: 173,000 pax per day in first operation
- Reduce travel time to 28 min (from Lebak Bulus o Bundaran HI)
- Reduce CO2 emission and fuel consumption to 30,000 ton in 2020
- Create 48,000 employment during 5 years construction period
- Reduce accident and improve socio-economy



JAKARTAMRT

2018- Elevated Railway Loopline



- Lintas Kota - Kampung Bandan - Tanjung Priok
- Lintas Duri – Tangerang
- Lintas Manggarai - Pasar Minggu - Depok
- Lintas Jatinegara – Cakung
- Lintas Kota - Rajawali - Senen – Jatinegara
- Lintas Manggarai - Kota (Elevated Rail Road)
- Lintas Jatinegara - Tanah Abang - Duri – Kota
- Lintas Tanah Abang - Serpong

Keterangan Perlintasan pada Loop Line :

- Perlintasan tak sebidang
- Perlintasan Sebidang
- Perlintasan sebidang diusulkan FO 2011
- Sedang dibangun FO

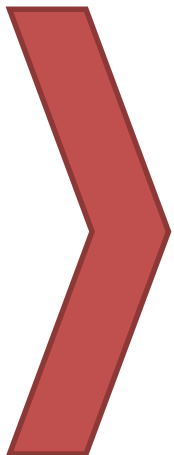


Next Step

1. Acceleration of decision making for implementation of construction of elevated loopline.
2. Revision of Perpres 83/2011 coordination with Govt of Jakarta Province and related stakeholder.
3. Reported the progress to Vice President.

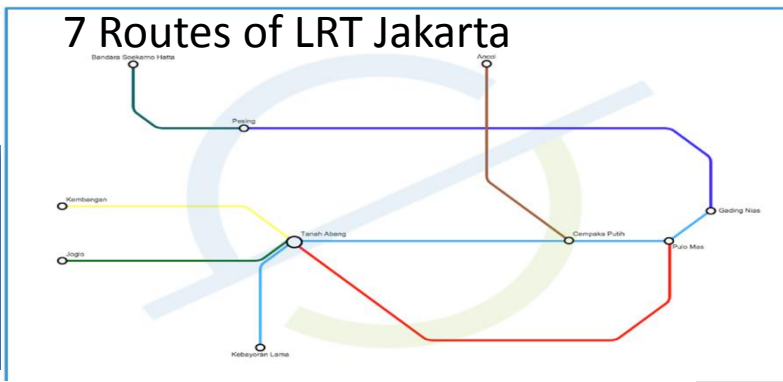
Problems

- F/S and DED due to end of 2013 but not yet finished.
- Financial budget in 2014 is suspended due to revision of Presidential Decree (Perpres) No. 83/2011
- UKP4 ask MoT to revise Perpres 83/2011
- Status: Draft Revision of Perpres 83/2011 was submitted to Sec. Cabinet on February 2014.

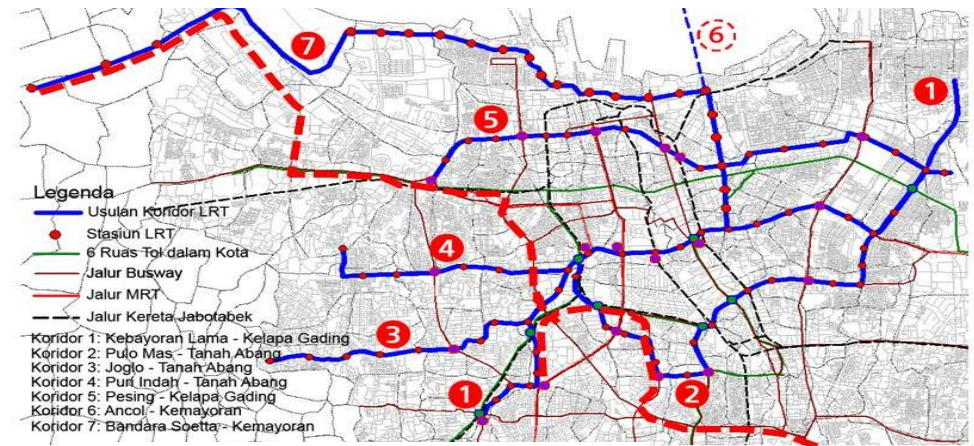


LRT JAKARTA

LRT is planned to be built in Jakarta in 2015, LRT is to increase the capacity and coverage of existing mass transit.



LRT DKI JAKARTA NETWORK PLAN



- Legenda**
- Usulan koridor LRT
 - Stasiun LRT
 - 6 Ruas Tol dalam Kota
 - Jalur Busway
 - Jalur MRT
 - Jalur Kereta Jabotabek
- Koridor 1: Kebayoran Lama - Kelapa Gading
 Koridor 2: Pulo Mas - Tanah Abang
 Koridor 3: Joglo - Tanah Abang
 Koridor 4: Puri Indah - Tanah Abang
 Koridor 5: Pesisir - Kelapa Gading
 Koridor 6: Ancol - Kemayoran
 Koridor 7: Bandara Soetta - Kemayoran

--- LRT Networks by Adhi Construction

Capacity:
220.000
 Passanger/day

LRT CORRIDOR

■ Kebayoran Lama-Kelapa Gading	: 21,6 Km
■ Tanah Abang-Pulo Mas	: 17,6 Km
■ Joglo-Tanah Abang	: 11 Km
■ Puri Kembangan-Tanah Abang	: 9,3 Km
■ Pesisir-Kelapa Gading	: 20,7 Km
■ Extension Pesisir-Bandara Soekarno-Hatta	: 18,5 Km
■ Cempaka Putih-Ancol	: 10 Km

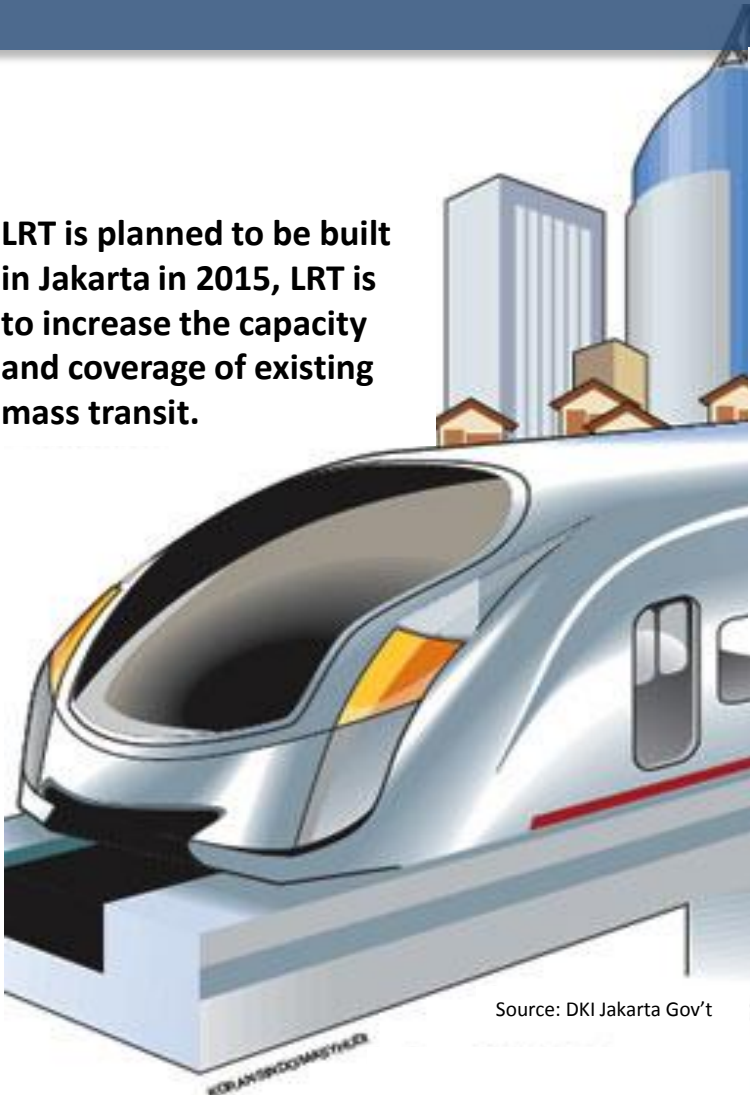
Begin:
2015

Satu koridor LRT:
 Rp
7,5
 triliun

Construction:
 Elevated

Integration:
 Integrated with commuterline, BRT, MRT&CBD

Source: DKI Jakarta Gov't



2019- Jakarta MONOREL (Blue Line & Green Line)



Project Feasibility Issues

- Travel Demand
- Routes
- Investment & Operational Cost

Public - Private Partnership Issues

- Govt. Role
- Sunk Cost
- Private Role
- Non-farebox Revenue

Project Sustainability Issues

- Compensation mechanism
- Icon for Monorail in Indonesia



Supporting Mass Transit Development



Park and Ride
Case: Bogor



Parking Meter
Case: Bandung



Transit Oriented Development
Case: Bogor



Modal Integration Facilities
Case: Palembang

Large Cities Approach – for Rail and Road Based Public Mass Transit

- **Debottleneck system capacity**
 - Increase number of operating BRT buses
- **Enhanced ‘Pull’ factor to draw passengers to public transport**
 - Construction of LRT lines in Palembang
 - Revamp common ticketing to integrated ticketing
 - Utilising ATCS (Area Traffic Control System) for stringent performance monitoring
- **Managing inter city terminal**
 - Type “A” terminal at cities, handed over to central government
- **Regulatory restructuring**
 - Inter agencies transportation forum
- **Managing demand through “PUSH”**
 - Car Free Days
- **Urban Transport Financing**
 - Specially Allocated Fund for Transportation and Road Safety

Sustainable Transport Implementation in Cities

1 NMT Facilities in Nyi Raja Permas , Bogor (2012)

- Pendanaan fisik oleh Kemenhub (Dit. BSTP) >>> Perencanaan oleh DLLAJ Kota Bogor >>> Supervisi oleh GIZ –Sutip >>> Pembangunan dikawal oleh komunitas pejalan kaki (KPKB) Kota Bogor



1

2 BRT Integration Facilities in Palembang (2012)

- Pendanaan oleh Kemenhub (Dit. BSTP) >>> Supervisi oleh GIZ >>> Pembangunan dikawal Pemkot Palembang



2

3 Water Transport- BRT Integration Facilities, Palembang (2012)

- Pendanaan oleh Kemenhub (Dit. BSTP) >>> Supervisi oleh GIZ >>> Pembangunan dikawal Pemkot Palembang



3

4 Pedestrian Facilities, Bogor (2012)

- Pendanaan oleh Binamarga >>> Review oleh GIZ >>> Pembangunan dikawal Pemkot Bogor



5

5 Smart Parking System, Bogor (2013), Parking Meter, Jakarta (2015)

- Pendanaan oleh Pemkot Bogor >>> Investor Swasta SPS Hungaria



6

6 Bike Sharing, Bandung (2011)

- Sponsor IKATAN ALUMNI ITB & Inisiatif masyarakat

Urban Transport at A Glance

Existing

Future

Existing

Future



Angkot



Monorail



Angkot



Trans Sarbagita
Development



Trans Metro



Trans Metro
Development



Trans Sarbagita



NMT Improvement



Parking



Park and Ride



Bena Toll



Park and Ride



Bike Lane



NMT Improvement



Pedestrian Facility



Tourist Ship

METRO BANDUNG RAYA

SARBAGITA

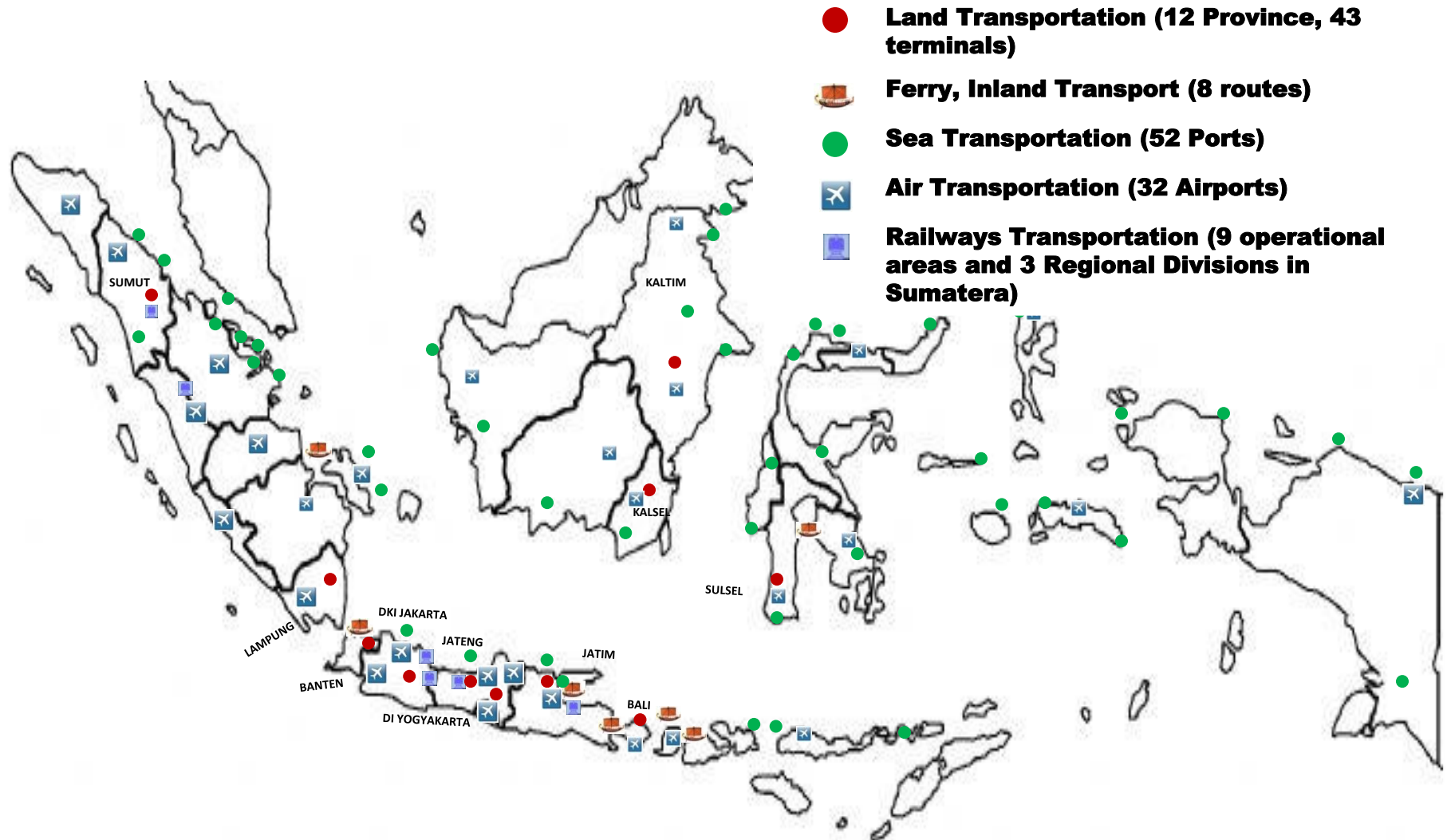
National Transport System Implementation Meeting & Guidelines



A forum to exchange experiences between the regions in the implementation of urban transport policy

**Sustainable Urban Mobility in
Indonesia (Guideline and
Visual 3D)**

Integrated Monitoring System Peak Seasons (Iedul Fitri)



Source: Traffics in Idul Fitri 2014 / 1435H

Assistance/Grant that includes:



Technical and analytical support in developing transport policies and planning (short, medium or long term);



Technical Assistance on Preparation/ FS/ DED/ Masterplan in transport projects;



Assistance on transport projects construction, particularly in sustainable transportation area.



THANK YOU



CONTACT PERSON

Bambang Prihartono
Director of Transportation,
Ministry of National Development Planning/BAPPENAS
Email: bambang@bappenas.go.id