JOIN UNESCAP - UIC SEMINAR FOR RAILWAY COSTING
BANGKOK 8 -11 December 2015
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BACKGROUND
NATIONAL RAILWAYS MASTERPLAN
NATIONAL RAILWAY PROGRAMS
URBAN RAILWAY DEVELOPMENTS
POTENTIAL PPP PROJECTS
TAC IMO AND PSO
CONCLUSIONS
A. BACKGROUND

• Country Profile
• Masterplan Of Economic Accelerations
• Logical Framework
• Distribution Of Main Commodities
INDONESIA

Population

- 2010's census: 237.5 million
- Population of some big cities: Jakarta 9.5 million, Surabaya 2.8 million, Bandung 2.4 million, Medan 2.1 million, Makassar 1.3 million, Denpasar 800 thousand

Area

- Total: 1.9 million km²
- Coastline 54.7 thousand km
- 17.5 thousand islands

Cities

- Capital City: Jakarta
- Some big cities: Surabaya, Bandung, Medan, Denpasar, Makassar

Language

- Official: Indonesia
- 580 languages and dialects across countries
VISION 2025

2010
GDP: USD 700 Billion
Income/capita USD 3,000

2025
GDP: ~USD 4.0 - 4.5 Trillion
Income/capita ~USD 14,250 - 15,500 (country with high income)

2045
GDP: ~USD 15.0 - 17.5 T
Income/capita ~USD 44,500 - 49,000

~ 12 largest

8 – 9 % per annum

5 – 6 % per annum

~ 8 largest
Main Strategy – Acceleration and Expansion of Indonesia Economic Development

1. Developing Indonesia Economic Corridor;
2. Strengthening national connectivity;
3. Strengthening human resources capacity, knowledge, natural science and technology.
1.4 Distribution of Main Economic Activities in Each Economic Corridors

- **Sumatera**
  - Palm Oil
  - Rubber
  - Coal
  - Shipping
  - Steel
  - Sunda Strait Area

- **Java**
  - Textiles
  - Food
  - Beverage
  - Transport Equipm.
  - ICT
  - Defense Equipm.
  - Shipping
  - Metrop Jakarta Area

- **Kalimantan**
  - Palm Oil
  - Timber
  - Oil & Gas
  - Steel
  - Bauxite
  - Coal

- **Sulawesi**
  - Foodcrops
  - Cocoa
  - Fisheries
  - Nickel
  - Oil & Gas

- **Bali - NT**
  - Tourism
  - Animal Husbandry
  - Fisheries
  - Gold
  - Oil And Gas

- **Papua – Maluku Islands**
  - Foodcrops
  - Fisheries
  - Copper
  - Nickel
  - Oil & Gas
2. National Railway Master Plan

- Railways Network
- National Railways in 2030
- Strategies
- Railways Infrastructure Development
ACCELERATIONS OF RAILWAY DEVELOPMENT PROGRAMS

- Trans Sumatera Railway Development
- Trans Kalimantan Railway
- Trans Sulawesi Railway Development
- Double Tracking South Java Line
- Trans Papua Railway Development

Jalur KA Existing
Jalur KA Rencana
1. Mix Traffic between freight and passenger train.
2. Gauge: 1067mm except in Nangroe Aceh Darussalam (1435).
4. The infrastructure areas in Java and Sumatera are divided into 13 areas.
5. Railway share: 7% for passenger and 0.06% for freight transport.

<table>
<thead>
<tr>
<th>Railway Network</th>
<th>Operated</th>
<th>Not Operated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumatera</td>
<td>1,352 km</td>
<td>483 Km</td>
<td>1,835 Km</td>
</tr>
<tr>
<td>Jawa</td>
<td>3,464 km</td>
<td>2,860 Km</td>
<td>6,324 Km</td>
</tr>
</tbody>
</table>

Passenger: 5,249 million pass/year
Freight: 15,253 million ton/year

Passenger: 196,681 million pass/year
Freight: 3,896 million ton/year
2.2 National Railways in 2030

**Vision**

- Competitive, integrated, high-technology, synergize with industry, affordable, responsive to development

- Railway share 11-13% for passenger and 15-17% for freight transport

- 10,000 km of railway network, double-track, electrification of Java main lines

- Trans Sumatra railways network

- as backbone of mass transportation in cities/urban areas

- the operation of Argo Cahaya (High Speed Train/ HST) in Java

- railways as the backbone of freight transport in Kalimantan, Sulawesi, Papua

- integrated, secured, safe, comfortable, reliable, and affordable of services
Main Strategies

- Network services enhancement
- Safety and security enhancement
- Technology transfer and industrial development
- Human resources development
- Institutional development
- Investment and funding
Railway Infrastructure Development

- Modernization of the existing railway network
- Electrification of the main railway line
- The intercity railway link
- Developing the urban railways network for some major cities
- Construction of coal railway line
- Developing the access to airport and port
- High speed railway construction
3. National Railway Development Programs

- Trans Sumatera Railways
- Java Railway Development/Capacity Enhancement
- Trans Kalimantan Railway
- Trans Sulawesi Railway
- Trans Papua Railway
3.5 Sumatera Railway Network

Railway Network Development

- Developing intercity railways network: Aceh, Medan, Pekanbaru, Padang, Jambi, Bengkulu, Palembang, Bandar Lampung;
- Developing urban railways network: Medan, Pekanbaru, Padang, Palembang, Bandar Lampung and Batam;
- Developing access to airport: Kualanamu, Minangkabau, Sultan Mahmud Badarudin Dua and Hang Nadim;
- Developing access to port: Lhokseumawe, Belawan, Dumai, Tanjung Api-api, Dumai, Teluk Bayur and Panjang.
Total network development plan in 2015-2019 is 1,377 KM
Railway Network Development

- Optimization of existing railway network;
- Double tracking of North Java line, South Java line and other main lines;
- Electrification in the dense lines, including urban area;
- High speed train network connecting: Merak, Jakarta, Cirebon, Semarang, Surabaya until Banyuwangi;
- Urban railways network in Jabodetabek, Bandung, Yogya, Semarang, Surabaya and other cities;
- Port railways network: Tanjung Priok, Cirebon, Bojonegaro, Tanjung Mas and Tanjung Perak;
- Airport railway network: Soekarno-Hatta, Kertajati, Adi Sucipto, Ahmad Yani, Adi Sumarmo and Juanda.
Target in 2030:

- **Develop intercity railway network**: Banjarmasin-Balikpapan-Samarinda-Bontang-Tenggarong-Kotabangun, Banjarmasin-Palangkaraya, Pontianak-Mempawah-Singkawang;

- **Develop railway network from mining area to seaport**: Samarinda, Balikpapan and Banjarmasin;

Total network development plan in 2015-2019 is 1007 KM

- Pare–Pare – Mamuju (225 KM)
- Bitung – Gorontalo – Isimu (340 KM)
- Makassar – Pare–Pare (145 KM)
- Makassar – Bulukumba – Watampone (259 KM)

**KETERANGAN:**
- Prioritas 1 (2015-2019)
- Prioritas 2 (2020-2024)
- Prioritas 3 (2025-2030)
- Jalur KA Eksisting
TRANS PAPUA RAILWAY PROGRAM

- Development Railway Line and Intercity Railway Services Between Jayapura – Sarmi (202 Km) - Feasability Study on 2015
- Development Railway Line and Intercity Railway Services Between Sorong Manokwari Segmen 1 (200 Km) – Feasability Study on 2015
- Development Railway Line and Intercity Railway Services Between Teluk Bintuni Manokwari Segmen 1 (190 Km) Feasability Study on 2015
- Development Railway Line and Intercity Railway Services Between Nabire - Sarmi (250 Km)
- Development Railway Line and Intercity Railway Services Between Nabire - Manokwari (200 Km)
- Development Railway Line and Intercity Railway Services Between Nabire – Timika (185 Km)

Total network development plan in 2015-2019 is 390 KM
4. URBAN RAILWAY DEVELOPMENT
**URBAN TRANSPORT DEVELOPMENT**

**MRT DEVELOPMENT**:
- MRT Jakarta (Utara – Selatan dan Barat - Timur)
- Monorail dan Tram Surabaya
- Monorail Bandung

**URBAN RAILWAY DEVELOPMENT IN 9 CITIES**:
Medan, Palembang, Jakarta, Bandung, Semarang, Yogyakarta, Surabaya, Denpasar, dan Makasar.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pondok Jati – Manggarai</td>
<td>2015-2016</td>
</tr>
<tr>
<td>Rajawali – Kampung Bandan</td>
<td>2015-2016</td>
</tr>
<tr>
<td>Manggarai – Tanah Abang – Kampung Bandan</td>
<td>2015-2018</td>
</tr>
</tbody>
</table>

**BRT DEVELOPMENT IN 29 CITIES**

**BRT COMPONENT DEVELOPMENT**

<table>
<thead>
<tr>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Bus Lane Development</td>
</tr>
<tr>
<td>Bus Procurement</td>
</tr>
<tr>
<td>Halte Development</td>
</tr>
<tr>
<td>Control system Development / ATCS</td>
</tr>
<tr>
<td>Urban Transport Subsidize</td>
</tr>
</tbody>
</table>
Characteristics of Jabodetabek

1. Jakarta is the capital city and surrounded by 5 satellite cities, e.g. Bogor, Depok, Tangerang, and Bekasi (Jabodetabek).
2. The total population of people in Jabodetabek is 24.3 million in 6,580 km².
3. Density of population is 3,695 person/km².
Total trip in Jabodetabek by 2003 is 37.3 Million/day*
Increasing become 59 Million/day by the end 2010**

<table>
<thead>
<tr>
<th>Vehicles</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorcycle</td>
<td>62.9</td>
</tr>
<tr>
<td>Private Car</td>
<td>17.4</td>
</tr>
<tr>
<td><strong>Public transport</strong></td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: * JICA 2003; URDI 2011 **JAPTraTis, 2011; Directorate General of Land Transportation, Ministry of Transport, 2010
Project Location Map (MRT)

Balaraja-Cikarang (Phase 1 + Phase 2) : L=89.6km

Phase 2 (West Side) : L=34.3 km

Phase 1 : L=31.7km

Phase 2 (East) : L=23.6km

Stage 1: L=20.1 km

Stage 2: L=11.6 km

Target Year of N-S Line (Phase 1) : Y2018
Target Year of N-S Line (Phase 2) : Y2020
Target Year of E-W Line (Phase 1) : Y2020
Target Year of E-W Line (Phase 2) : Y2027

Location Map

LEGEND:
- E-W Line
- N-S Line
- Candidate Depot Location
- Existing Railway
- Candidate Stabling Yard Location
- Toll Road
- Provincial Boundary
- Bus Terminal
- Dev. Plan in Tata Ruang
4. POTENTIAL PROJECT FOR PPP SCHEME

• Railways Network
• National Railways in 2030
• Strategies
• Railways Infrastructure Development
The Express Line – PPP Project

Location: Banten and DKI Jakarta Province

The needs on Airport Railways:
• Traffic congestion and travel time unreliability are common experience for Toll Road users.
• Main road corridor is already saturated.
• Continuous increase in Airport demand.
• Road-based demand will grow as a result.
• Road capacity will struggle to accommodate future additional demand.

Distance from the airport (km)

<table>
<thead>
<tr>
<th>Location</th>
<th>Distance (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport</td>
<td>0</td>
</tr>
<tr>
<td>Pluit</td>
<td>12.19</td>
</tr>
<tr>
<td>Tanah Abang</td>
<td>20.36</td>
</tr>
<tr>
<td>Dukuh Atas</td>
<td>23.34</td>
</tr>
<tr>
<td>Manggarai</td>
<td>26.53</td>
</tr>
<tr>
<td>Cawang</td>
<td>32.59</td>
</tr>
<tr>
<td>Halim</td>
<td>33.86</td>
</tr>
</tbody>
</table>

---

The Express Line – PPP Project

Location: Banten and DKI Jakarta Province

The needs on Airport Railways:
• Traffic congestion and travel time unreliability are common experience for Toll Road users.
• Main road corridor is already saturated.
• Continuous increase in Airport demand.
• Road-based demand will grow as a result.
• Road capacity will struggle to accommodate future additional demand.
Location: Palembang, Province of South Sumatera

Objective:
- Developing urban rail transportation;
- Rail track of monorail ±21 Km;
- Indicative project cost IDR 5 Trilion.

Current condition: Pre Feasibility Study for PPP scheme
Muara Enim – Tanjung Api-api Railway Project

Location: South Sumatra Province

Objective:
Developing rail network connecting Muara Enim to Tanjung Api-api.

Program:
1. Length of track : ± 265 km;
2. Route : Muara Enim – Simpang – Tanjung Api-API;
3. Plan Capacity Production: 20 Million ton/Year.
Muara Enim – Pulau Baai Railway Project

Location: South Sumatra Province and Bengkulu Province

Objective:
Developing rail network connecting Muara Enim to Pulau Baai.

Program:
1. Developing rail track ± 230 Km, double track (includes 13 km of tunnel);
2. Coal transport priority;
3. Desain capacity: 20 million Ton/year.
Bandung Monorail Project

Location: Bandung City, West Java

Purposes:
- Developing urban rail transportation;
- Koridor Babakan Siliwangi – Leuwi Panjang (North – South) ± 10 Km;
- Koridor Cimindi – Gedebage (West – East) ± 20 Km;

Current condition:
Pre Feasibility Study for PPP scheme
- Its Needed Railway Infrastructure for efficiency and effectively coal mining exploitation.
- Supporting Facility for coal loading point placed at Arar Port with barge capacity among 5500 MT

WEST PAPUA COAL RAILWAYS

PROGRAM:
1. Length of Track: ±820 Km
2. Cost Estimation: IDR 11 Billion
3. Design capacity: ± 22 Million Ton/year
IMO, TAC & PSO INDONESIAN RAILWAY IMPLEMENTATION
Infrastructures Maintenance is the activities undertaken to maintain the reliability of the railway infrastructure in order to remain operational feasibility (Indonesia Ministry Of Transportation Regulation No.67 Year 2012)

Infrastructure Operation is the activities undertaken to operate the railways (Indonesia Ministry Of Transportation Regulation No.67 Year 2012)
PSO – IMO – TAC MECHANISM

INFRASTRUCTURE OPERATOR

ROLLING STOCK OPERATOR

MINISTRY OF TRANSPORTATION

MINISTRY OF FINANCE

IM + IO

PSO Paid

PSO Proposed

PSO+IM+IO Agreement
 VIII. TAC FORMULA

1. Perhitungan TAC_{KA}

\[ TAC_{KA} = \left[ GT_{KA} \times \sum_{i=1}^{n} (KM_{KA} \times TAC_{DAOP/DI}) \right] \times F_p \]

- \( TAC_{KA} \) = Track Access Charge for 1 (one) Trip (Rp)
- \( GT_{KA} \) = Rolling Stock Passing Tonage with Load (GT)
- \( KM_{KA} \) = Trip Distance (KM)
- \( TAC_{DAOP/DI} \) = Track Access Charge Rates at Operation Area (Rp/GT-KM)
- \( F_p \) = Priority Factor
## X. EXAMPLE FOR PASSENGER RAILWAY

<table>
<thead>
<tr>
<th>Name Services</th>
<th>Routes</th>
<th>Trip Distance (Km)</th>
<th>GT (ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tawang Jaya</td>
<td>Pasar Senen</td>
<td>437</td>
<td>474</td>
</tr>
<tr>
<td></td>
<td>Semarang Poncol</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Operating Area (Daop 1, Daop 3, dan Daop 4):

<table>
<thead>
<tr>
<th>DAOP</th>
<th>Axle Load</th>
<th>Acces (km)</th>
<th>IMO per DAOP (Rp)</th>
<th>GTKm per DAOP (Million Rupiah)</th>
<th>TAC Fares per DAOP (Rp/Ton-km)</th>
<th>TAC Tawang JAYA (Rp) (6)=(1)<em>(2)</em>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daop 1</td>
<td>474</td>
<td>78</td>
<td>423,957,149,473</td>
<td>3,149,590,00</td>
<td>13</td>
<td>497,643</td>
</tr>
<tr>
<td>Daop 3</td>
<td>474</td>
<td>205</td>
<td>97,176,848,948</td>
<td>542,518,00</td>
<td>17,91</td>
<td>1,740,315</td>
</tr>
<tr>
<td>Daop 4</td>
<td>474</td>
<td>150</td>
<td>115,225,058,343</td>
<td>875,885,00</td>
<td>13,16</td>
<td>935,676</td>
</tr>
</tbody>
</table>

**TAC KA Tawang Jaya / Trip**

**TAC KA Tawang Jaya / trip Based PP 11/2015 (Fp=0,75)**

3.173.634

2.380.225
## COAL RAILWAY IMPLEMENTATION

<table>
<thead>
<tr>
<th>Name Services</th>
<th>Routes</th>
<th>Trip Distance (Km)</th>
<th>GT (ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babaranjang.</td>
<td>Tanjung Enim Baru</td>
<td>406</td>
<td>485</td>
</tr>
</tbody>
</table>

**Division Operating Area (Divre III):**

<table>
<thead>
<tr>
<th>(0)</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAOP</td>
<td>Axle Load</td>
<td>Acces (km)</td>
<td>IMO per DAOP (Rp)</td>
<td>GTKm per DAOP (Million Rupiah)</td>
<td>TAC Fares per DAOP (Rp/Ton-km)</td>
<td>TAC Tawang JAYA (Rp)</td>
</tr>
<tr>
<td>DIVRE III</td>
<td>2.846</td>
<td>406</td>
<td>309.230.209.758</td>
<td>20.634,30</td>
<td>15</td>
<td>(6)=(1)<em>(2)</em>(5)</td>
</tr>
</tbody>
</table>

TAC KA BABARANJANG / Trip: 17.320.585

TAC KA BABARANJANG / Trip Fp= 0,75): 12.990.439
CONCLUSION
CONCLUSION

a. Railway with some advantages in its operation will have a beneficial influence in the form of strengthening connectivity and distribution process.

b. National Railways Masterplan covers the planning and program of railways development to reach the target of railways operation on 2030 (11 %– 13% of passenger market and 15% - 17% of freight market).

c. We are still improving and simplifying policy, legal and regulatory framework covering mechanism and licensing procedure to support public and private initiatives in railways sector.

d. With many potential projects in Indonesia, private participation is widely-open in railways industry in form of implementing public railways or special purposed railways.

e. We need more intensive cooperation with UIC, UNESCAP and the Member States especially in technology transfer, human resource development (training, seminars etc) and investment possibilities on potential ppp projects.
THANK YOU
Recommended Financial Scheme (Jakarta-Bandung-Gedebeage)

DBL with low interest fund is the most appropriate for the HSR project.
- **Highest FIRR among 3 schemes**: 18.60% in case of STEP loan (0.2% interest)
- **No shortage of fund**: positive cash flow since operation
- **One SPC (Project Company) from Design till O/M**: good quality with reasonable price & consistency of technical specification
- **STEP Loan**: 1) Fund with low interest (0.2%) sustains SPC (project company).
  2) New technology of HSR satisfies at least 30% procurement from Japan (tunnel, underground railway, operation system, consulting services, and so on)

<table>
<thead>
<tr>
<th></th>
<th>BOT (with Availability Fee)</th>
<th>Concession (with Government Support)</th>
<th>DBL (1.4% interest)</th>
<th>DBL (0.2% interest)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRR</td>
<td>8.57 %</td>
<td>8.58 %</td>
<td>15.75 %</td>
<td>18.60 %</td>
</tr>
<tr>
<td>LLCR</td>
<td>1.12</td>
<td>1.48</td>
<td>4.58</td>
<td>4.92</td>
</tr>
<tr>
<td>DSCR min.</td>
<td>1.00</td>
<td>1.00</td>
<td>1.14</td>
<td>1.41</td>
</tr>
<tr>
<td>Equity-IRR</td>
<td>8.66%</td>
<td>14.16%</td>
<td>34.02%</td>
<td>37.43%</td>
</tr>
<tr>
<td>Year to be Profitable</td>
<td>Annual: 16th year Accumulated: 25th year</td>
<td>Annual: 13th year Accumulated: 15th year</td>
<td>Annual: 1st year Accumulated: 1st year</td>
<td>Annual: 1st year Accumulated: 1st year</td>
</tr>
</tbody>
</table>

SPC: Special Purpose Company, STEP: Special Terms for Economic Partnership,
FIRR: Financial Internal Rate of Return, LLCR: Loan Life Coverage Ratio, DSCR: Debt Service Coverage Ratio
## RECOMMENDATION/CONCLUSION

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendation/Conclusion</th>
</tr>
</thead>
</table>
| Route           | **Jakarta - Bandung - Gedebage**  
as the first phase of Jakarta – Bandung – Cirebon - Surabaya HSR.                                                                 |
| Technology      | Japanese HSR (*Shinkansen*) because of its safety and reliability                                                                                      |
| Finance         | DBL with STEP Loan  
0.2% Interest Rate, 40 years repay with grace period of 10 years  
At least 30% procurement from Japan                                                                 |
| Benefit for GOI | Initial investment to be repaid by SPC (Project Company) will have significant effect on economic growth in Indonesia.                                    |

1) Construction stage: involvement of many industries in Indonesia  
2) O/M stage: industrial innovation, increase in business opportunity

## Next Step for Realization

1. FS Study under PPP Scheme  
2. Preparation of Presidential Decrees  
3. Formulation of BUMN
PPP Projects for Public Railways
### Scheme: PPP Project

**Scope of Project:**

- to perform the Engineering Design;
- to construct civil works for rail infrastructure (rail track, electricity, signaling, train station, power station, depot and workshop);
- to procure rolling stock;
- to provide substantial private finance for the initial costs;
- to operate and maintain the infrastructure and rolling stock during a concession period (max 30 years at first);
- to collect fare revenue and other possible income based on the PPP contract.
# SHIA Railways - Project Specification

<table>
<thead>
<tr>
<th>NO</th>
<th>ITEM</th>
<th>SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alignment</td>
<td>Bandara Soetta-Pluit-Tanah Abang-Dukuh Atas-Manggarai-Cawang-Halim Perdanakusumah</td>
</tr>
<tr>
<td>2</td>
<td>Length of track</td>
<td>± 34 Km (Elevated) and ± 3 Km (underground at SHIA area)</td>
</tr>
<tr>
<td>3</td>
<td>Gauge</td>
<td>Standard gauge 1435 mm</td>
</tr>
<tr>
<td>4</td>
<td>trains</td>
<td>Electric Multiple Unit (EMU) – 6 or 8 coaches configuration</td>
</tr>
<tr>
<td>5</td>
<td>Power Supply</td>
<td>25 kV/AC preferred, with Overhead Catenary</td>
</tr>
<tr>
<td>6</td>
<td>Max Speed</td>
<td>150 Km/h (Design Speed ± 100 Km/h)</td>
</tr>
<tr>
<td>7</td>
<td>Travel time</td>
<td>± 27-30 mins</td>
</tr>
<tr>
<td>8</td>
<td>Headway</td>
<td>± 15 mins</td>
</tr>
<tr>
<td>9</td>
<td>Depot</td>
<td>± 10 Ha (in Halim)</td>
</tr>
<tr>
<td>10</td>
<td>The operation</td>
<td>The proposed airport railway is planned as a fully dedicated and highly confirmed train schedule</td>
</tr>
</tbody>
</table>
SHIA Railways - Project Financing Scheme

PROJECT COST (estimated)
1. Civil Works : USD 1,005 Million
2. Stations, Traffic Management and Utility Diversion : USD 444 Million

TOTAL : USD 2,039 Million

POTENTIAL GOVERNMENT SUPPORT AND GOVERNMENT GUARANTEE

- Land acquisition
- Viability Gap Funding
- Patronage guarantee
- Patronage risk mitigation
- Sharing of selected other risks

*) the amount of VGF is still being evaluated

*) potential government guarantee will be analysed in detail by the Indonesia Infrastructure Guarantee Fund (IIGF)/ PT. Penjaminan Infrastruktur Indonesia (Persero)

Projected two-way patronage in 2020 is around 40,000 passengers a day
Special Purposed Railways
Muara Enim – Srengsem Special Purposed Railways

Location: South Sumatra Province and Lampung Province (National Railways)

Objective:
Developing rail network connecting Muara Enim (South Sumatra Province) to Srengsem (Lampung Province).

Scheme: **Special Purposed Railways** by PT. Bukit Asam Transpacific Railways (BATR)

Program:
1. Length track: ± 300Km
2. Design capacity: 20 Million Ton/Year
CONCLUSION
a. Railway with some advantages in its operation will have a beneficial influence in the form of strengthening connectivity and distribution process.

b. National Railways Masterplan covers the planning and program of railways development to reach the target of railways operation on 2030 (11 %– 13% of passenger market and 15% - 17% of freight market).

c. We are still improving and simplifying policy, legal and regulatory framework covering mechanism and licensing procedure to support public and private initiatives in railways sector.

d. With many potential projects in Indonesia, private participation is widely-open in railways industry in form of implementing public railways or special purposed railways.
HIGH SPEED RAILWAY PROJECT
THE PROPOSED ROUTES

Note:
1. Initial Cost includes civil works, all facilities, stations, rolling stocks and land acquisition.
2. FIRR based on BOT scheme
3. The proposed fare from Jakarta – Bandung: IDR 200,000,-
4. Average Speed: 200 KPH
## RECOMMENDATION/CONCLUSION

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendation/Conclusion</th>
</tr>
</thead>
</table>
| Route              | Jakarta – Bandung – Gedebage  
As the first phase of Jakarta – Bandung – Cirebon – Surabaya HSR                                                                                      |
| Benefit for GOI    | Initial investment to be repaid by SPC (Project Company) will have significant effect on economic growth in Indonesia                                      |
|                    | 1) Construction stage: involvement of many industries in Indonesia  
2) O/M stage: Industrial innovation, increase in business opportunity                                                  |

### Next step for Realization

1. FS study under PPP Scheme  
2. Preparation of Presidential Decree  
3. Formulation of BUMN

Source: Pre-FS on Jakarta-Bandung High Speed Railway (HSR) in Indonesia, Nov 2012
THE ALTERNATIVES FOR FINANCIAL SCHEME

Initial Cost

Civil Works: 57%
Facility: 32%

BOT

Construction Period

Private (Loan)

Public (Availability Fee)
*50% of Civil Works and Facility (equivalent to 44.5% of Initial Cost)

Operation Period

Private (Equity)

Concession

Construction Period

Public (Government Support)
*50% of Civil Works and Facility (equivalent to 44.5% of Initial Cost)

Private (Loan)

Private (Equity)

DBL

Construction Period

Public
*100% of Civil Works and Facility

Operation Period

Private (Tariff)

*Facility includes Depot Machinery, Power Line, Communication Line, Network System, Operational Safety Equipment, Train Track, and Substation

Private: 100% of Initial Cost
Government: Availability Fee (44.5%) for 15 years of operation

Private: 55.5% of Initial Cost
Government: 44.5% at construction stage

Private: 11% and repay of Government Portion as tariff for 30 years
Government: 89%

BOT: (Build-Operate-Transfer), DBL: (Design-Build-Lease)
# THE ALTERNATIVES FOR FINANCIAL SCHEME (Contd..)

<table>
<thead>
<tr>
<th></th>
<th>BOT With Availability Fee</th>
<th>Concession With Government Support</th>
<th>DBL (1,4 % interest)</th>
<th>DBL (0,2 % interest)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRR</strong></td>
<td>8,57 %</td>
<td>8,58 %</td>
<td>15,75 %</td>
<td>18,60 %</td>
</tr>
<tr>
<td><strong>LLCR</strong></td>
<td>1,12</td>
<td>1,48</td>
<td>4,58</td>
<td>4,92</td>
</tr>
<tr>
<td><strong>Min. DSCR</strong></td>
<td>1,00</td>
<td>1,00</td>
<td>1,14</td>
<td>1,41</td>
</tr>
<tr>
<td><strong>Equity-IRR</strong></td>
<td>8,66%</td>
<td>14,16%</td>
<td>34,02%</td>
<td>37,43%</td>
</tr>
<tr>
<td>First year of annual profit</td>
<td>Year 16</td>
<td>Year 13</td>
<td>Year 1</td>
<td>Year 1</td>
</tr>
<tr>
<td>First year of Cumulative Profit</td>
<td>Year 25</td>
<td>Year 15</td>
<td>Year 1</td>
<td>Year 1</td>
</tr>
</tbody>
</table>

**STEP:** Special Terms for Economic Partnership, **FIRR:** Financial Internal Rate of Return, **LLCR:** Loan Life Coverage Ratio, **DSCR:** Debt Service Coverage Ratio
## PROJECT ANALYSIS

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendation/Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route</td>
<td><strong>Jakarta - Bandung - Gedebage</strong>&lt;br&gt;as the first phase of Jakarta – Bandung – Cirebon - Surabaya HSR.</td>
</tr>
<tr>
<td>Cost</td>
<td>approx IDR 57 trillion or Yen 496 billion</td>
</tr>
<tr>
<td>Finance</td>
<td>DBL (Design – Build – Leasing)&lt;br&gt;Highest FIRR and EIRR&lt;br&gt;Private financing 11%, and Government financing 89% (plus land acquisition).&lt;br&gt;Government portion will be repaid during 30 years lease period.</td>
</tr>
<tr>
<td>Benefit for GOI</td>
<td>Significant effect on economic growth in Indonesia.</td>
</tr>
<tr>
<td></td>
<td>1) Construction stage:  involvement of many industries in Indonesia</td>
</tr>
<tr>
<td></td>
<td>2) O/M stage:  industrial innovation, increase in business opportunity</td>
</tr>
</tbody>
</table>

### Next Step for Realization
1. Further Analysis (i.e FS Study)
2. Preparation of Supporting Regulations
3. Formulation of Project Structure
SOUTHERN JAVA RAILWAY LINES
JAVA SOUTH LINE DOUBLE TRACKING

- Single Track
- Double Track

- Partial double track construction from 2011 to 2014;
- Cost estimation: Rp 4.3 T

- Desain at 2011;
- Review Design;
- Land Acquisition (start from 2012);
- Construction (start from 2012);
- Cost: Rp 4.5 T

- Desain Track, Bridge and Signal System (2011 - 2012);
- AMDAL and Land Acquisition (2013);
- Construction (start from 2014);
- Cost estimation: Rp 1.8 T

- Desain Track, Bridge and Signal System (2011 - 2012);
- AMDAL and Land Acquisition (2013);
- Construction (start from 2014);
- Cost estimation: Rp 5 T

Operation Target by 2017
PROJECT SCOPE

• Double Track Southern Railway Lines Development Project by JICA loan IP.548 and GOI (Government of Indonesia) until 2016.

• Overhead Wiring System Procurement and Installation between Yogyakarta – Solo on Stage I along 120 km and 10 substations building.

• Electrification Signalling Procurement and Installation Solo – Yogyakarta 2012 until 2014 (11 train station).