

# Women In Rail Malaysia Conference 2023 UNLOCKING THE BENEFITS OF THE KL-SG HSR PROJECT

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## **Agenda**



## WIR Conference Agenda

1 Context and Background
2 The Case For KL-SG HSR: Transport Considerations
3 The Case For KL-SG HSR: Economic Considerations
4 Public Private Partnership (PPP) in HSR

## Section 1 – Context and Background



#### **WIR Conference**

- 1. The Government of Malaysia (GOM) aims to improve intercity mobility with a view to generate socio-economic development through reduced journey time, safe and seamless travel, and enhanced accessibility to our second and third-tier cities.
- 2. With this aim in mind, the GOM intends to implement our first high speed rail line in the southern corridor of Peninsular Malaysia on a PPP basis.
- 3. MyHSR Corporation Sdn Bhd (MyHSR Corp), a company wholly owned by the Minister of Finance (Incorporated), has been tasked to initiate an RFI to solicit concept proposals from local and international industry players to assess their readiness and capabilities.
- 4. Innovative business models and supplementary revenue-stream ideas for a privately funded structure are welcomed.

## **Agenda**



## WIR Conference Agenda

1 Context and Background

The Case For KL-SG HSR: Transport Considerations

The Case For KL-SG HSR: Economic Considerations

Public Private Partnership (PPP) in HSR

Vehicle Population Surpasses Human Population in Malaysia



#### **Mobility & Market Demand**



Highway authority expects 2.3 million vehicles daily on major expressways during Raya

Several measures are in place to ease traffic flow and relieve congestion.

Bernama April 19, 2023 1:18 PM 2 minute read









## **Mobility and market demand:**

- Trips to grow 2.5 times by 2060
- Road congestion to severely worsen
- Future investment needed, especially on the road expansion, to cater to the demand



By Dawn Chan - June 9, 2022 @ 9:55pm



KUALA LUMPUR: The number of vehicles in the country has overtaken the human population, with an increase of at least a million vehicles annually since 2019.

Last year, there were 33.3 million registered vehicles nationwide versus the human population, which stood at 32.6 million, according to road safety expert Professor Dr Kulanthayan K.C. Mani of Universiti Putra Malaysia.

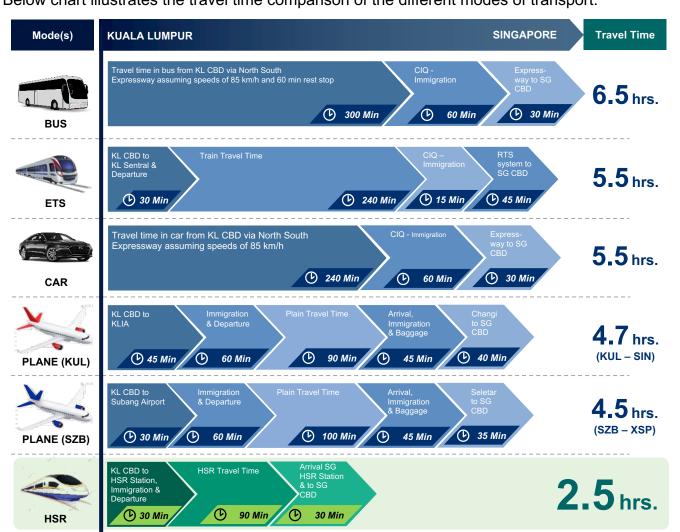
Of the 33.3 million registered vehicles, up to 47.3 % were cars; 46.6 % were motorcycles while 4.7 % were goods vehicles.

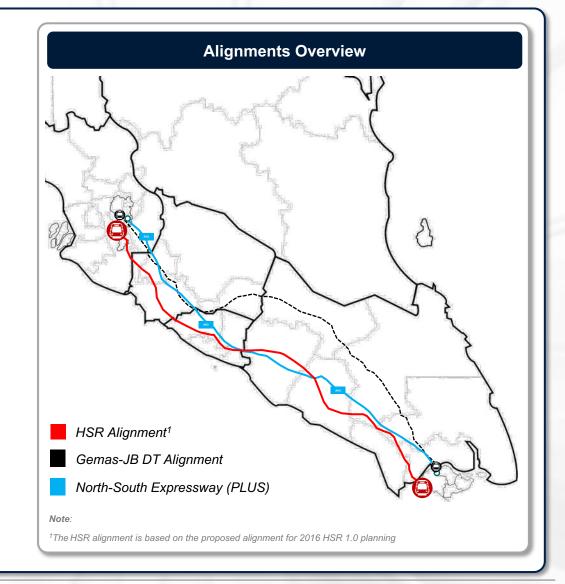
Faster and Seamless



## **Average Travel Time**

Below chart illustrates the travel time comparison of the different modes of transport:

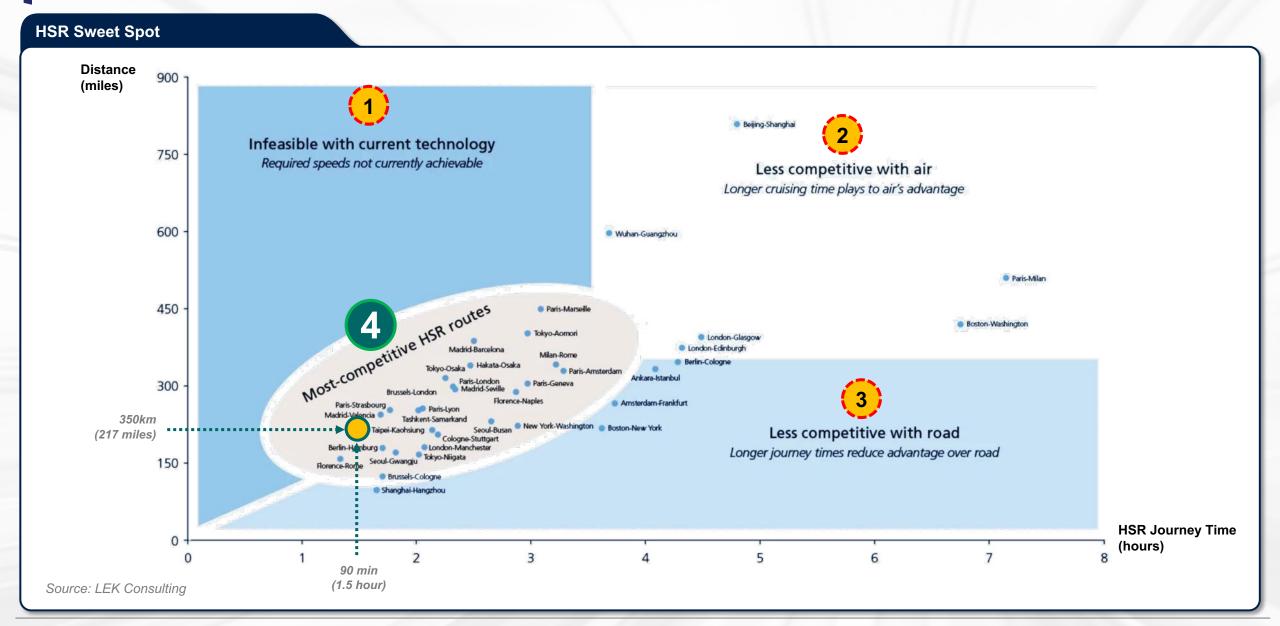




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KL-SG HSR sits right in the middle of the HSR sweet spot





Faster, Cheaper & More Convenient



## **HSR Sweet Spot**

## Faster than flying: the high-speed rail routes taking on the air industry

A recent analysis found that on certain routes across Asia and Europe, high-speed trains are faster, cheaper and more convenient than flying to the destination. From Beijing to Shanghai and London to Paris, where in the world do passengers prefer to take the train?

By Eva Grey









#### London – Paris – Brussels:

Trains from Brussels to London can slash three hours and 18 minutes off the total journey time compared to flying, while London to Paris saves one hour and 41 minutes.

#### Madrid – Barcelona:

In 2007, less than one year before the line's opening, Madrid–Barcelona was the busiest air route in Europe, according to Eurostat data.

Shortly after its inauguration, the HSR took more than half of the business travel market on the corridor.

#### Milan – Rome:

The journey between Milan and Rome is a busy corridor for tourists and commuters alike, served by the 320km/h Frecciarossa.

Leaving Rome's central station, the frequent Alta Velocità (AV) trains complete the journey to Milan in just under three hours – that's one hour less than flying from the capital.

#### Tokyo – Osaka:

With a capacity of 445,000 passengers per day, the trains own 85% of the market share over airlines. So for every 30,000 seats occupied on planes, 350,000 are taken on trains each day, according to JR Central's annual report.

**HSR's Low Carbon Footprint** 



#### Low Carbon Footprint

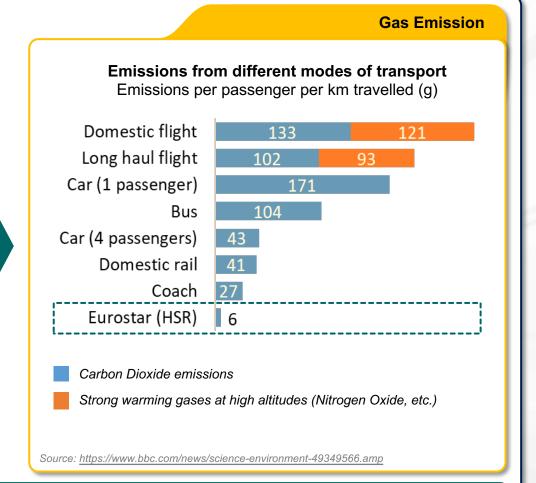
Source: International Energy Agency 2019

Below chart illustrates the comparison of carbon emission by different modes of transport:

#### The transport sector is one of the main contributors to carbon emission...

- The transport sector is the second biggest driver of carbon emissions in Malaysia after electricity and heat production, while the industrial sector is the third-largest contributor
- Carbon emissions from the transport sector represented 28.8% of total fossil fuel combustion in Malaysia, well above the global average of 24.5%
- Road transport has been identified as the largest carbon emitter among all transport subsectors





It is estimated that the KL-SG HSR project can reduce ~10 million tons of CO2e of GHG emission in the first 50 years of operation. This is in line government's aspiration to achieve net-zero GHG emissions by 2050

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Japan Shinkansen: Key Driver For The Economic Growth



## **Connectivity & Accessibility**

Japan suffered a severe economic downturn and social inequality following WWII:



Prior to 1960, Japan's economy was only one-twelfth of the USA's economy size and much smaller than other Western nations such as France, Britain, and Germany. Following vigorous economic policies/planning, its economy grew to be only one-fourth of the USA's economy in 1972 and subsequently about half of the USA's economy by the mid-80s. Japan also was the second biggest economy from 1972 until the late 2000s.



## Uneven population distribution between saturated cities and non-core/rural areas

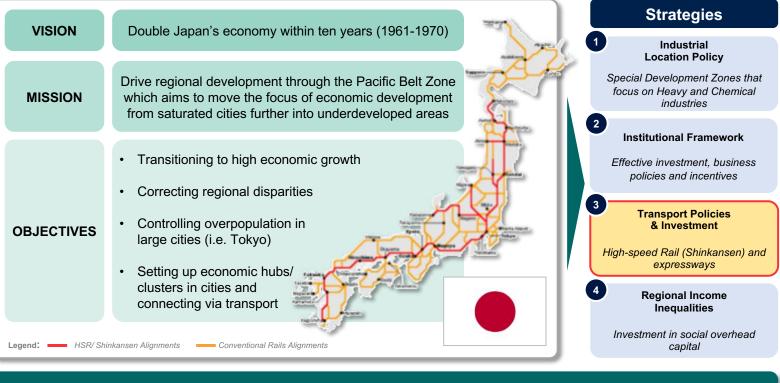
Most of the population were within the major cities that had caused a huge social gap between urban and rural area as opportunities were concentrated in big cities such as Tokyo, Osaka, Nagoya.



#### Imbalanced regional development

Economic activities were only concentrated within major cities that lead to low development/ opportunities for other region.

**Japan** in the 1960s has successfully undertaken economic reform termed **Income Doubling Plan (IDP)** targeting Social, Industrial Policy and Connectivity/Transport as primary focus areas. IDP has led its economy to double in size within less than 7 years.



• Japan's annual growth averaged more than 10% over the course of the Plan (original target was 7.2%), and the economy doubled in size in less than seven year

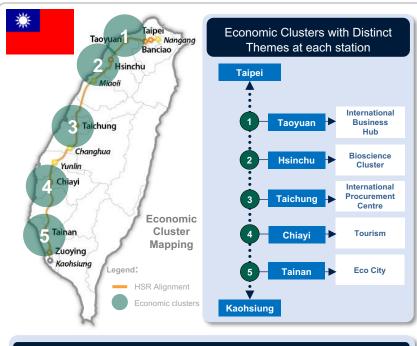
• GDP: US\$45b (1960), US\$90b (1965), US\$212b (1970)

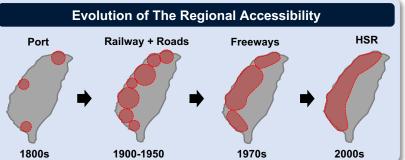
Taiwan HSR: National Economic Clusters



## **Integrated Economic Planning**

Taiwan HSR is Integrated with Special District Planning to Ensure Balanced Development.





The government plans the economic clusters according to the "Land and Spatial Development Strategy Plan" approved by the National Development Council in 1999.

#### Integrated Economic Development Plan was executed with 3 strategies



- Distinct development themes for 5 key station locations i.e. Business, Biotech, Tourism, Ecocity and Retail
- Special Planning District HSR development prioritized as key public projects



## State-led TOD

- Alignment of development plans around national cluster
- E.g. Taoyuan station development plans centered on International Airport – Taoyuan Aviation City Project to create a modern international business city



## Corporate Support

 Government support for biomed cluster – reduced corporate income tax for 5 years, 40-50% subsidies for R&D establishment/ personnel training, tariff-free machinery import

#### **Impacts**



**GDP Nominal** 

CAGR improved to 3% from 2%

>40%

Attracted USD 3.9 bil TOD Private Investments (first 5-7 years)



Improve Human Capital Mobility & Talent Pool Accessibility



Catalyze New Industries & Generate
High-Income Jobs

Annualized Average Trends in Pre And Post HSR Operation (Comparable Period):

#### Economy

GDP Per Capita

CAGR improved to 2.7% from 2%

35%



> 40%

**FDI** 

Annual FDI increased by 43%

#### **Productivity**

Urbanisation

1:

10%

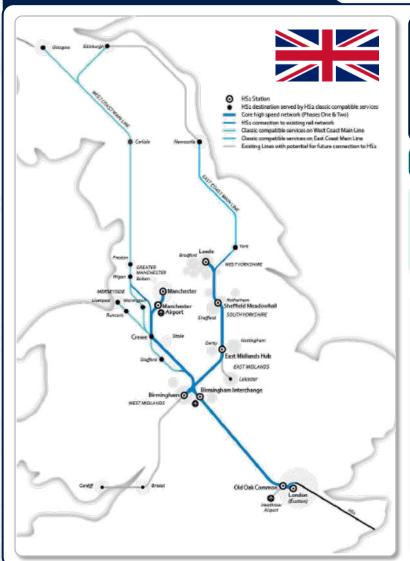
Increased by 30% per month

Rate improved by 11%

HS2 HSR: The Socioeconomic Case for HS2 - Capacity, Carbon and Connectivity



## **Integrated Growth Strategies**





- HS2 is expected to be **Europe's largest infrastructure project**.
- The new high-speed line will run between the North West and the South East, stopping at Manchester, Birmingham and London, with trains extending to Scotland and other destinations on the existing network. In total, over 400km of new high-speed line is planned across the country, over the span of a few phases.
- The construction of Phase 1 linking London to Birmingham is currently underway. Services are expected to start between 2029 - 2033.

#### Why HS2? The Socioeconomic Case For HS2



HS2 will add vital capacity to the rail network by taking long-distance trains off existing railway lines



HS2 playing a vital role in achieving the goal of Britain becoming **net zero carbon** by 2050



HS2 will be providing better connectivity that will act as a catalyst for the country's economic growth

#### Harnessing HS2 Full Economic Potential through Integrated Growth Strategies

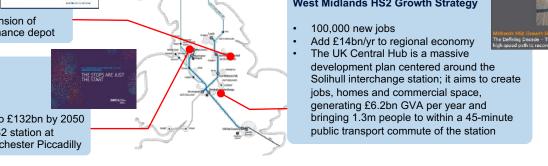
#### East Midlands HS2 Growth Strategy

- 74,000 new jobs
- Add £4bn/yr to regional economy
- Proposed new developments include expansion of regional airport, HS2 infrastructure maintenance depot

#### Greater Manchester HS2 Growth Strategy

- 96,000 new jobs
- Double the economic output of the region to £132bn by 2050
- Proposed new development around the HS2 station at Manchester Airport, redevelopment of Manchester Piccadilly

## West Midlands HS2 Growth Strategy



China's HSR: Unlocking China's Internal Economic Circulation



#### **Accelerating Economic Growth**



The "Five-Year Plan"
Series of China's Guide for Social and
Economic Development



HSR has been identified as one of the catalysts to unlock China's internal economic circulation

#### Goals:



Achieve economic acceleration and integration of Yangtze River Economic Belt

(e.g. Shanghai, Jiangsu, Zhejiang, Hubei, Hunan, Chongqing, Sichuan, Yunnan, and Guizhou)



Create **economic spillover** from wealthy area to other areas for equitable growth



Increase **global competitiveness** on logistic and supply chains through efficient talent mobility

#### **Impacts from HSR**

- Net benefits (30 years): ~\$378 Bn
- Annual ROI of 6.5%

Source: Paulson institute

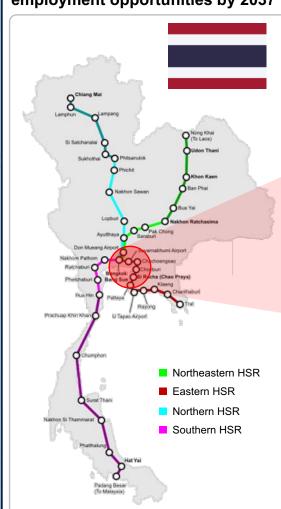
- Provides a fast, reliable and comfortable means of transporting large numbers of travelers in a densely populated country over long distances
- Stimulated the economy in the short term by creating construction jobs and helping drive during the economic downturn in 2008-2009
- Facilitates **cross-city economic integration** and promotes the growth of smaller cities by connecting them with larger cities
- Supports energy independence and environmental sustainability
- Fosters an indigenous HSR technology and components industry; Chinese train equipment manufacturers have quickly absorbed foreign technologies (such as Japan's Shinkansen systems), localized production processes, and begun competing with foreign suppliers in the export market

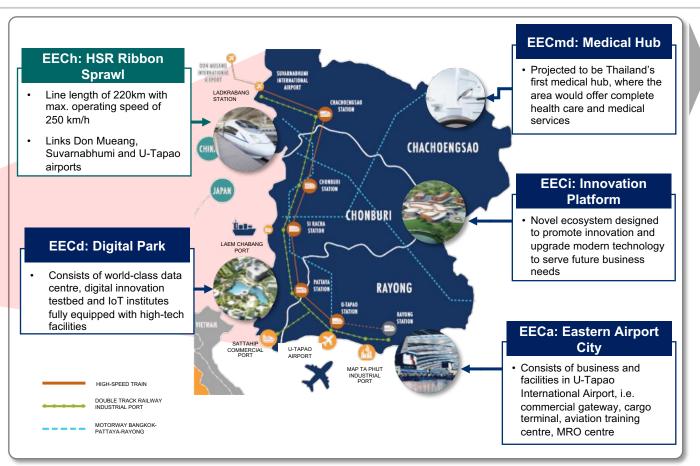
Thailand HSR: Eastern Economic Corridor (EEC)



#### **HSR as Economic Catalysts**

Thailand has developed the Eastern Economic Corridor (EEC) with HSR as one of its catalysts and will create RM 2.5 Tn incremental GDP impact and 1 Mn + employment opportunities by 2037





## EEC Investment goal: total 255 Bn

130 Bn in the first five years
+ additional 125 Bn in the next 5 years

## **Expected Benefits**

(over 20 years)



6.3% p.a. GDP growth in EEC: +1% over TH



2.5% p.a. employment growth rate



+11% foreign and 7% Thai tourist growth p.a.



**50%+ investment** in targeted industries



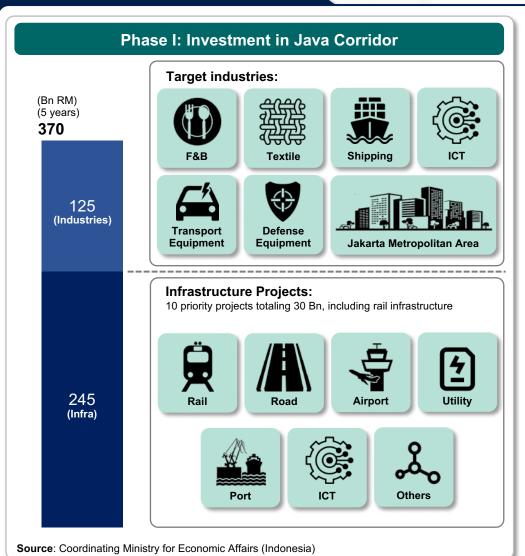
90% high-quality employment with skills matching the needs

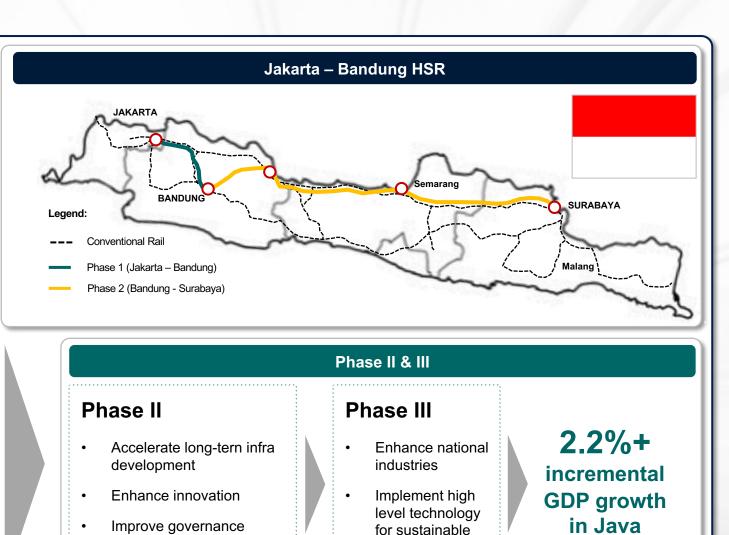
Note: Focus Sectors - Next-Generation Automotive - Intelligent Electronics - Advanced Agriculture & Biotechnology - Food for the Future - High-Value & Medical Tourism - Automation & Robotics - Aviation & Logistics - Defence - Medical & Comprehensive Healthcare - Biofuel & Biochemical - Education & HR Development

Jakarta-Bandung HSR: Economic Center Connecting Line



## **Accelerating Sustainable Growth**





development

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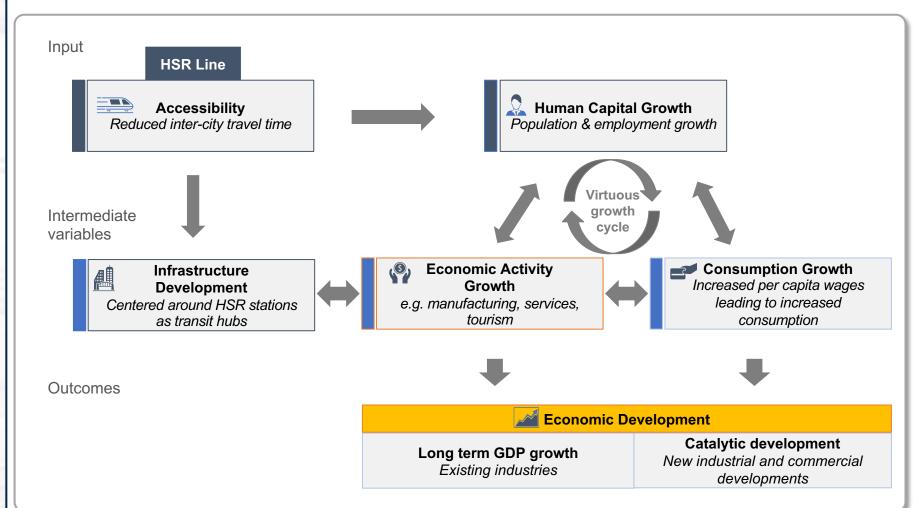
**Encouragement of industry** 

HSR promotes catalytic economic and human capital growth in cities



#### **Transport Investment**

Transport investment is a major instrument in promoting catalytic economic and human capital growth in cities:



## **Key Messages**

- HSR promotes connectivity and increases accessibility along the corridor
- This enables agglomeration effects from human capital movement
- Resulting in a virtuous growth cycle of infrastructure, human capital, consumption, and economic activity growth
- Long-term result of GDP growth and catalytic development (formation of new industries)

Strategic rationale for HSR



## **HSR Redefine The Economy**

HSR has the potential to pave the way to redefine the economy into a hi-tech, innovation-driven hub.



## Drive Regional Competitiveness To Attract High-Value Investments

- Linking to KL-SG will connect Malaysia into a catchment of RM268.5b of total output impact
- Compete against Thailand and Indonesia which are already constructing HSR to continue attracting FDI



## Accelerate Equitable Economic Growth

- Promote inclusive state development and close the growing income gap between Southern states
- Catalyze growth along the HSR corridor, up to RM19 Tn wider economic Impacts



## Improve Human Capital Mobility & Talent Pool Accessibility

- Attract talent from across the country into HSR corridor through improved accessibility
- HSR catalyzed development can potentially add 1%+ of state GDP growth



## Generate High-Income Jobs & Enhance Standard of Living

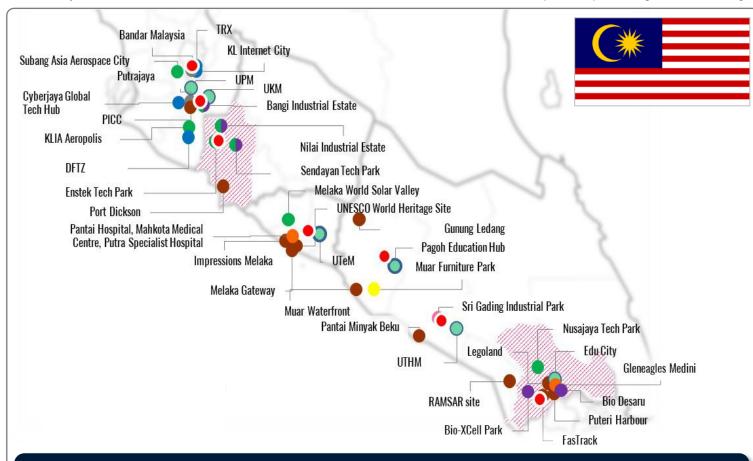
- Potential to create > 700k direct, indirect and induced jobs
- Improve quality of life through up to 50% reduction in travel time and accidents
- Drive sustainability through reduction of ~10 million tons of COe of GHG emission in the first 50 years of operation

Unlocking the Untapped Growth Potential (Southern Corridor)



## **Untapped Potential**

For Malaysia to maximise benefits from the KL-SG HSR, our corridor development planning shall leverage the strong base of existing assets available.



We already have a good base of stand-alone assets across the Southern HSR Corridor

## **Highlights of Available Assets**



#### ~52 MSC Status Assets

(e.g. Retail & Business Centers and Financial Institutions) within 20km radius

## ~36 Industrial parks



focusing on aerospace, automotive, bioeconomy, pharmaceuticals, semiconductor, green technology, food electronics, chemical products

## ~117 tourist key sites and assets



including attractions, accommodation and retail

**104 incentives** are available across the 7 growth areas



Great Economic Opportunities Throughout The HSR Corridor



#### **Maximizing KL-SG HSR Potential**

The KL-SG HSR Socio-Economic Development Plan ("SEDP")

The HSR SEDP is critical to maximize the economic benefit for the country arising from the HSR project, and to ensure that the benefits occur early and deliver equitable benefits to local communities

It provides potential for land monetization to fund the HSR infrastructure investment, reducing the future national debt burden

A new approach taking a holistic view of development across all destinations will maximize the benefit and ensure a positive and sustainable outcome for all





Through HSR Socio-Economic Development Plan, Malaysia will be well positioned to accelerate ecosystem development and move towards high value economy

## Maximizing The HSR Corridor Potential



#### **Maximizing KL-SG HSR Potential**

The KL-SG HSR project presents an exceptional investment opportunity, with the potential to unlock robust economic prospects along the corridor

This strategic venture will not only expedite planned developments but also generate substantial job opportunities, contributing significantly to Malaysia's post-COVID recovery and reform

The private sector can play a pivotal role in shaping the nation's future by being part of this transformative project, poised to yield substantial returns while fostering sustainable growth and development

**Creating Impact In Each City Along The HSR Corridor TOD** 

**Urban Growth & Economic Development** 

**Enhancing Connectivity & Mobility** 

Value Creation & Land Utilization

#### MULTI-MODAL

Convergence of multiple public transportation options that promote accessibility & limit use of personal cars

#### MIXED-USE Mix of retail,

Mix of retail, residential, & commercial/ office evelopments as well as public facilities

#### CONNECTED

Buildings are INTENSITY restrain and cyclendly surroundings that are safe, sessible, & weather-

HIGH

#### DIVERSE

options within and surrounding the TOD catering for diverse demographic & social segment needs

#### Legend Bandar Malaysia Manufacturing Healthcare, Tourism, Logistics and Aviation Malaysia Vision Valley 2.0 Transportation, Consumer/Industrial Electronics manufacturing, aerospace High Technology Manufacturing, Wellness Digital & Technology electronics manufacturing, medical electronics Tourism, Skill-Based Education & Research, Education Specialized Services, Aerospace and Maritime and manufacturing Port Airport Putrajaya / Cyberjaya t Medical Centre ICT Services. Global Business Services, Smart Mobility, Smart Port Klang Healthcare and Digital Creative Port Klang Northern Johor Special Economic Zone KLIA Aeropolis Education and Furniture Air Cargo and Logistics, Aerospace and Aviation, MICE and Leisure Enstek Port Dickson Central Johor Regional Foodtech Pagoh Education Batu Berendam FT. Hub Melaka Gateway Melaka Economic Zone Food Processing, Food Technology and New growth area Tourism, Food, Logistics and Transportation, E&E and Chemicals Muar Furniture Park Muar Por UTHM Iskandar Malaysia Electrical & Electronics, Petroleum and Oleo Chemical, Food & Agro-Processing, Logistics. Tourism, Creative, Healthcare, Education and Financial and Business Process Tanjung Pelepas Port SEREMBAN BANDAR NORTHERN CENTRAL SOUTHERN PUTRAJAYA/ MELAKA JURONG MALAYSIA **JOHOR JOHOR JOHOR CYBERJAYA**

12 mins

16 mins

22 mins

10 mins

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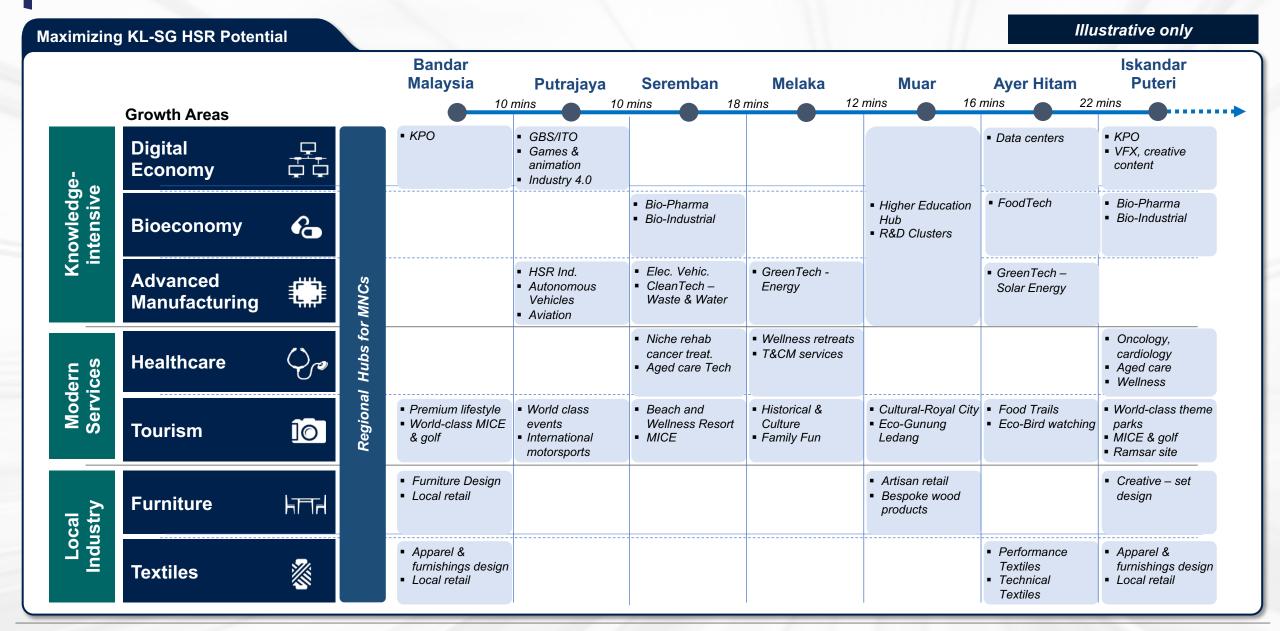
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18 mins

10 mins

Maximizing The HSR Corridor Potential





Key to Successful HSR Development



#### **Success Factors**

Successful HSRs have federal and state governments which work in concert to ensure catalyzed development



National cluster development plan

Clear view on specializations along HSR corridor to avoid overlap between neighboring states



**State-led TOD development** 

Transit-oriented
development (TOD) master
plan centering on the
stations as hubs



Corporate sector investments & policy support

Encourage urban development alongside rail construction and drive further agglomeration

## **Agenda**



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1 Context and Background

The Case For KL-SG HSR: Transport Considerations

The Case For KL-SG HSR: Economic Considerations

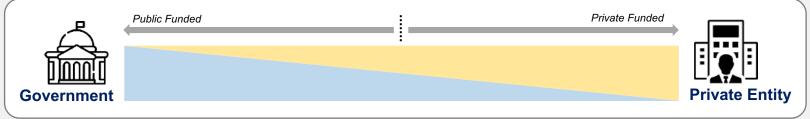
Public Private Partnership (PPP) in HSR

## **Section 4 – Private Public Partnership ("PPP")**

Overview of PPP and PFI



#### **Overview**



- Public-private partnership (PPP) is a broad term that refers to a collaboration between the public and private sector for the delivery of public infrastructure and services.
- PPPs can take on various forms, one of which is private finance initiatives (PFIs).
- A PFI is a long-term contract between government and a private party in which the private sector takes on a significant portion of the funding risk, project/infrastructure delivery as well as assumes the risks associated with them.





## **Examples of HSR PPP approaches around the world:**

	<b>France</b> Tours – Bordeaux HSR	<b>Thailand</b> EEC (3 Airports HSR)	<b>UK</b> HS1 (London – Channel Tunnel)	<b>Indonesia</b> Jakarta – Bandung HSR	<b>Taiwan</b> THSR (Taipei – Kaoshiong)
FUNDING BY PRIVATE SECTORS	>50%	>50%	>70%	>70%	>70%
Civil	Private	Private	Private	Private/SOE	Private
Systems	Private	Private	Private	Private/SOE	Private
O&M Infra	Private	Private	Private	Private/SOE	Private
Rolling stock	Government	Private	Private	Private/SOE	Private
O&M Services	Government	Private	Private	Private/SOE	Private
Land	Government	Government	Government	Government	Government

<sup>\*</sup> The examples illustrated here show the setup of the respective HSR projects at inception; these may have evolved over time to the current setup

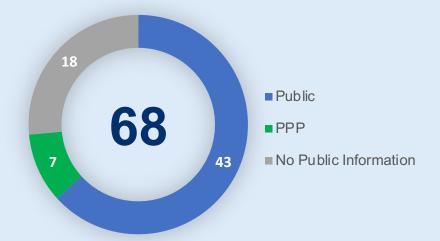
## **Section 4 – Private Public Partnership ("PPP")**

Commercial Structures and Key Success Factors



#### **PPP In HSR**

Most HSR developments are fully public-led with seven (7) developed under the Public-Private Partnership approach:



Commercial structures adopted by different HSR developments

- Of the seven (7) PPP projects, five (5) are in operation
- Existing private funding for PPP ranges between 12% and 79% based on publicly available data
- Malaysia aims to develop the KL-SG HSR project without government funding and guarantee.

## Lessons Learned/ Key Success Factors for a successful PPP/ PFI

- Optimize the allocation of risk between public and private sectors
- Reliable estimation of ridership and revenue to support operating cost and debt services
- Reasonable concession period to manage debt obligation and tenure
- Efficient and effective operations and maintenance
- Early integration and collaboration of economic corridor planning to amplify HSR benefits and growth potentials

<sup>\*</sup> The examples illustrated here show the setup of the respective HSR projects at inception; these may have evolved over time to the current setup

## **Section 4 – Request For Information Exercise**

Approach For The KL-SG HSR Concept Proposal RFI Exercise



#### **Overview**

The entire process be divided into two main steps as follows:



## Concept Proposal (RFI) (Non - Binding)

- · Assess readiness and capabilities of industry players
- · Assess business model and funding structure ideas
- Generate interest for fully private funding structures



- Shortlisted consortia to advance to Step 2
- Refinement of outstanding ideas into the Detailed Proposal step



## Detailed Proposal (RFP)

(Binding)



 Shortlisted consortia to conduct a detailed feasibility study for incorporation into final proposal



**Outcome** 

- Selection of Preferred Bidder
- Reasonably smooth path to contract negotiations, financial close, and implementation
- · Framework for G2G negotiations with SG

**Exercise Outcomes** 

The exercise will enable the GOM to make an informed decision in the best interest of the country and the people, achieving development goals

## **Section 4 – Request For Information Exercise**

General Project Description & Concept Proposal Components



#### **Overview**

Element(s)	Requirements		
Route	Kuala Lumpur to Singapore  (or within Southern Corridor of Malaysia with connecting option to Singapore)		
Design Speed	350km/h or any speed that meets the International Union of Railways (UIC) definition of HSR		
Concessional Structure	Design-Finance-Build-Operate-Transfer (DFBOT)		
GOM Funding/ Guarantee	No  The Concept proposal is to be developed without funding or guarantee from the GOM. However, participants have the flexibility to propose and justify any financial support they may need from the GOM		

The concept proposal should address the following areas:

## (01)

## **Vision and Strategy**

- Clear vision for the HSR project, including goals and objectives
- Strategic plan outlining key strategies
- Potential social, economic, and environmental impacts of the HSR project
- Alignment with national and regional development plans
- Strategies and proposals related to technology transfer/Industrial Collaboration Program (ICP), localisation and the involvement of Bumiputra/local contractors

## 02

#### Technical

## 03 Project Cost

#### 04 Commercial

## (

#### 05 Consortium Structure

- Proposed route plan, including track alignment, station and maintenance facility locations
- Rolling stock, signaling system, and technical specifications
- Project timeline
- Maintenance and operational plans

- Project cost breakdown, including capital (civil, land acquisition, system, rolling stock) and operating expenses
- Proposed funding sources and financial structure
- Risk assessment and mitigation measures

- Business model and revenue streams
- Ridership demand and pricing strategy
- Proposed concession structure and period
- Risk allocation and sharing mechanisms with GOM
- Legal and regulatory support from GOM

- Proposed consortium structure and roles
- Financial strengths
- Overview of consortium experience and expertise
- Project credentials
- Management and governance structure
- Proposed structure for the operations and maintenance



# THANK YOU

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