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Kuala Lumpur - Singapore

High Speed Rail Project

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This note is written as a general guide only, in respect of the Kuala Lumpur – Singapore High Speed Rail Project as of January 2017. It is not intended to provide legal advice and should not be relied upon as a substitute for specific legal advice.

Introduction

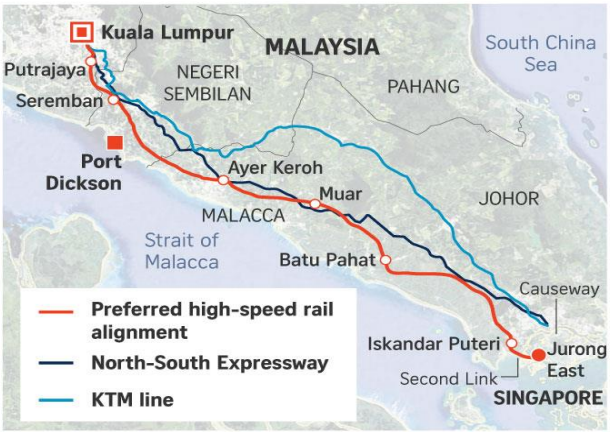
Background

*This note serves as an update to an earlier note dated August 2015 on the landmark Kuala Lumpur – Singapore High Speed Rail (the "**HSR**"). The attached schedules provide further insights on the rationale for the HSR and general structuring issues.*

The HSR

In 2013, Singapore and Malaysia formally announced plans to develop the HSR. At around 350km, the HSR will connect Jurong East in Singapore with Bandar Malaysia (Kuala Lumpur) in Malaysia with six stops along the way (Putrajaya, Seremban, Ayer Keroh, Muar, Batu Pahat and Iskandar Puteri). Services are intended to run at speeds of up to 320 km/h and are planned to run four times an hour, including a non-stop service from Bandar Malaysia to Singapore.

Proposed HSR line from Kuala Lumpur to Singapore



Source: *The Straits Times*, "Historic agreement for Singapore-Kuala Lumpur high-speed rail line signed; service targeted to start by Dec 31, 2026" retrieved 4 January 2017 – http://www.straitstimes.com/singapore/historic-agreement-for-singapore-kuala-lumpur-high-speed-rail-line-signed-service-targeted

Presently, the HSR is expected to be completed in 2026. Construction is estimated to take place in the period of 2018 to 2025, followed by testing and commissioning in 2026.

An agreement for the implementation of the HSR was signed by Singapore and Malaysia on 13 December 2016 ("**HSR Agreement**"). A joint committee will be set up to discuss and manage cross-border aspects of the HSR. Further, a Joint Development Partner will be appointed in early 2017 to advise on related technical and procurement issues, and assist with the preparation of the tender documents.

If successful, the HSR will be the first high speed railway in South East Asia.

The HSR and existing travel modes

Singapore and Malaysia are presently very well-connected by land, air and sea, and the HSR must be viewed as a complementary addition to the existing infrastructure as opposed to filling in a complete vacuum.

(a) Land – Singapore and Johor are connected by the causeway and the second link. Numerous public and private bus services use these routes and continue along the North-South Highway to Kuala Lumpur.

Singapore and Malaysia are also connected by a railway service operated by Malaysian Railway ("**KTM**"), and there are plans to construct a Rapid Transit System connecting Woodlands North (Singapore) and Johor Bahru Sentral (Malaysia) which will replace the above mentioned railway service.

(b) Air – There are full-service airlines and budget airlines plying the Kuala Lumpur – Singapore route.

(c) Sea – There are sea crossings between Singapore and Johor, as well as pleasure cruises between Singapore and various Malaysian ports.

Notwithstanding the existing plethora of options for travellers, the HSR offers an attractive transportation proposition, and is also a political, economic and social development tool. Please refer to Schedule 1 for further

details on the rationale for the construction of the HSR.

Project structure

Key details of how the HSR will be structured have yet to be announced. However, some considerations are likely to come into play:

(a) Financing – The HSR's estimated cost is US$14 billion. Given that the development costs are high and the return on investment will be on a long term basis, some level of government funding may be necessary (even if financing is mostly privately sourced, which appears to be the case). Should there be any public funding involved, the issue then centers on the distribution of costs between the Singapore and Malaysia governments, with ownership of the rail tracks and rolling stock being a related consideration. Although the HSR is a bilateral project, most of the HSR will be situated in Malaysia (15km of the HSR in Singapore versus 335km of the HSR in Malaysia). It will be important for both governments to reach an equitable solution on this point.

(b) Construction – According to the HSR Agreement, MyHSR Corporation of Malaysia and the Land Transport Authority of Singapore will each be responsible for the development, construction and maintenance of the HSR-related infrastructure in their respective countries, and the lines in Singapore and Malaysia will be connected by a 25m above sea level bridge over the Straits of Johor. This suggests that each country may be appointing its own separate contractor to construct the line within its territorial boundaries. This approach may be considered more efficient from a project management basis, since each country will manage the construction within its soil, but interfacing will become a more pronounced issue.

(c) Operation – It appears that the construction and operation of the HSR will be undertaken by multiple parties. Separating construction from operation could allow for specialisation and greater transparency. However, it might also create interfacing difficulties and inefficiencies as multiple parties will be involved and each party is entitled to a different income source which might not always be commensurate with its investment costs. Responsibility will be more diffused than under a single-contractor model, and each contractor may be less incentivised to adopt a broad-based view of the project. It should also be noted that the Malaysian domestic HSR service will be operated separately from the express non-stop HSR service between Kuala Lumpur and Singapore, which will allow Malaysia to have complete autonomy over the domestic service and the ability to tailor it to meet local needs.

(d) Regulation – Presently, it appears that the HSR fares will be set by the private operators. The HSR fares are required to be benchmarked against air fares, but are not anticipated to be significantly regulated by either government. Customs, Immigration and Quarantine ("**CIQ**") facilities will be located at Bandar Malaysia, Iskandar Puteri and Singapore, and it is anticipated that passengers will only need to clear CIQ once as both countries will locate their CIQ facilities at the above areas. This may indicate that the ability to provide robust security measures will be a key consideration in the operations package tender.

Please refer to Schedule 2 for more details on structuring the HSR.

International interest

The HSR has generated a significant amount of international interest, with companies from China, France, Germany, Japan and South Korea expressing interest. A total of 98 submissions were received in response to the Request for Information exercise called in October 2015, the bulk of which were primarily European companies and consortia.

Time frame

The indicative schedule for the project is as follows:

Event	Year
Appointment of a Joint Development Partner	2017, 1Q
Award by MyHSR Corporation of a tender for reference design consultants for the Malaysian portion of the HSR	2017, 1Q
Acquisition of land for the Malaysian portion of the HSR	2017, 3Q
Issue of the tender for the systems package (namely the rolling stock and rail tracks)	2017, 4Q
Award of the tender for the systems package	2018, 4Q
Construction of the HSR	2018 - 2025
Issue of the tender for the international and domestic (Malaysian) operations packages	2023, 4Q
Testing and commissioning of the HSR Commencement of HSR operations	2026

Conclusion

The HSR currently occupies a Goldilocks sweet-spot, as it connects two major cities at an ideal distance of 350km that will bring substantial cost and time savings.

That being said, cross-border railway projects are complex and challenging, as clearly evinced by the lengthy period of time that both countries have been at the drawing board. This year, we anticipate more light to be shed on the project structure for potential tenderers to consider.

Our select rail experience

Some of our select experience in the high speed rail sector include:

- **Sojitz Corporation** on the construction contracts and arrangements relating to the Western Dedicated Freight Corridor freight railway linking Delhi and Mumbai
- On three different schemes for the **Channel Tunnel High Speed Rail Link**:
  - Scheme 1: the British Railways Board on its original proposed joint venture with two leading private sector developers/ contractors to jointly build, own and operate a high capacity link between London and the Channel Tunnel
  - Scheme 2: a major international developer and engineering group as shareholder in and contractor to the development company awarded the franchise for the rail link
  - Scheme 3: the restructuring of the arrangements for Scheme 2
- **RFF** and the **French Government** on the tendering of the Tours-Bordeaux high speed rail concession project (LGV SEA) (€7.8bn))
- The **UK Department for Transport** (the "DfT") on the £7bn Intercity Express Programme for the procurement of high speed railway stock and an associated infrastructure upgrade
- A **member** of the joint venture appointed to construct part of the Taiwan High Speed Rail
- The **general contractor consortium** on the procurement and delivery of two lots of the ICE (high speed railway) track from Cologne – Frankfurt
- A **bidding consortium** in connection with the procurement of the Perpignan Figueres HSL concession (€1.1bn)
- The **shareholders** on the restructuring of the €1.32bn high speed rail link from Amsterdam to the Belgian border
- On the acquisition of the **Arlanda High Speed Rail** project in Sweden
- The **Hong Kong MTRC** in relation to numerous projects, including developing the contractual structure and contract documents for the construction of the rail link to Hong Kong Airport
- **PT Sarana Multi Infrastruktur (Persero)** on its feasibility arrangements for the Soekarno Hatta International Airport to Manggarai Rail Link PPP project in Jakarta
- **Asian Development Bank** on the development of a rail-based mass rapid transit system in Bangalore, India
- **Energy Resources Rail LLC** as project sponsors on all aspects of the Ukhaa Khudag-Gashuun Sukhait railway project in Mongolia including the railway construction packages
- The **Hong Kong MTRC** on the development of their forms of contract for the Hong Kong Quarry Bay Relief Line and Tseung Kwan O Relief Extension projects and project issues during implementation

Schedule 1

Rationale for the HSR

To understand the rationale for the construction of the HSR, the HSR must firstly be viewed against a larger political, economic and social background, secondly against current demand, and thirdly against the other existing transportation options.

The HSR and its political, economic and social context

Political perspective

Singapore and Malaysia have historically been closely related, and the HSR is seen as a symbol of strengthened diplomatic ties. The Leaders' Retreat is an annual platform between the two countries' Prime Ministers that has traditionally yielded major bilateral agreements, and the HSR was first announced at the 2013 Leaders' Retreat with the HSR Agreement being signed at the 2016 Leaders' Retreat.

From a broader ASEAN perspective, the ASEAN member states have repeatedly affirm their desire to move towards greater regional integration and connectivity. For example, there are plans to establish an ASEAN Economic Community that would allow for free movement of goods, services and labour. The HSR could prove to be a showpiece of this wider ASEAN goal.

Economic perspective

The HSR would make day trips between Kuala Lumpur and Singapore even more convenient, be it for business or leisure, and thus act as a catalyst for economic growth.

For the Malaysian government in particular, the HSR is a key piece of the Economic Transformation Programme that targets to raise the GNI per capita to at least US$15,000 by 2020. The Malaysian railway stations will be strategically located at areas which have been targeted by the government for economic development. For example, Seremban is currently already a major satellite city for Kuala Lumpur and is positioned to be a technology hub. The Malaysia government anticipates that the transformational effects will filter down into each of these regions and their peripheries.

Social perspective

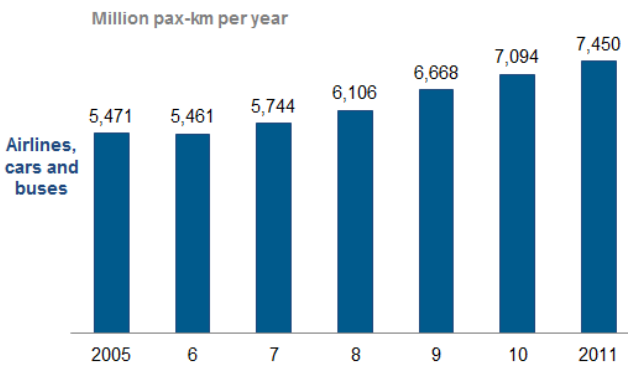
The HSR is an important infrastructure project that would improve connectivity and accessibility for people living near the stations.

For Singapore, the HSR also forms part of a larger urban development plan to develop regional centres outside of the central business district. For many years, land-scarce Singapore has faced transportation and congestion issues in the central areas and the government is trying to resolve this issue by dispersing human traffic. As such, the Singapore HSR terminus will be located in Jurong East – once a traditionally industrial area with residential pockets, that is being developed into and revitalised as a mixed-use self-contained urban district (the Jurong Lake District).

The HSR and current demand

The demand for Kuala Lumpur-Singapore trips appears to be high. The Kuala Lumpur-Singapore route has seen strong growth in passenger-km of travel, with the total travel market growing from 5.47 million passenger-km in 2005 to 7.45 million passenger-km in 2011.

Base transport demand in HSR corridor (only relevant routes)



Source: Malaysian Land Public Transport Commission, "Projects – High Speed Rail", retrieved 22 July 2015 – http://www.spad.gov.my/projects/high-speed-rail

Present demand also exceeds the capacity of the existing infrastructure. For instance, demand for the use of the causeway, one of the two bridges connecting Johor Bahru and Singapore, exceeds capacity by 33%. The market for Kuala Lumpur-Singapore trips is expected to continue growing at a comparable rate to the GDP growth of Malaysia and Singapore, at an average of 3 to 5%. In the long run, as the market matures, the growth rate might slow down. Nevertheless, average growth is still expected to hover around 3.2% from 2011 to 2060, with a market of 251 million passenger trips by 2060.

Hence, it appears that the HSR would add another option to meet increasing demand.

The HSR and its competitive edge

Ticket sales are partially dependent on the HSR's advantages vis-à-vis its competitors, especially in terms of price and time. The HSR's closest competitors appear to be budget airlines and buses.

Presently, single-trip tickets for the HSR are anticipated to cost around US$57-US$64. This is roughly the same price range for a single-trip flight on a budget airline, but is possibly a more comfortable ride and a faster one (when the boarding and security checks are factored in). Budget airlines would nevertheless retain an advantage in respect of transit passengers as the HSR termini are located far from their respective airports.

Buses have a price advantage over the HSR, and have the flexibility to pick up and drop off customers at a greater variety of locations. However, they are significantly slower than the HSR.

Estimated travel time and cost for a single-way trip between Kuala Lumpur and Singapore

Mode of transport	Estimated time (excluding customs clearance)	Estimated time (including customs clearance)	Estimated cost (US$)
KTM railway	400 mins	430 mins	9 – 34
Bus	240 mins	270 mins	18 – 36
Plane	60 mins	170 mins	Budget airlines: 57 – 64 Full-service airlines: 178
HSR	90 mins	120 mins	57 – 64

Schedule 2

Structuring the HSR

Costs

High speed rail projects are complex and expensive. The 3 main construction cost components are as follows:

(a) Planning costs such as feasibility studies, typically a sunk cost, usually account for 5 to 10% of the total investment.

(b) Infrastructure building costs, including terrain preparation and platform building. This component varies widely across projects depending on the characteristics of the terrain, but typically accounts for between 10 to 25% of the total investment. If there are technical issues and geographic obstacles, this amount may easily double (up to 40 to 50%) for bridges and tunnels.

(c) Superstructure costs usually make up the rest of the infrastructure costs and consist of all rail-specific elements.

Construction costs aside, as the HSR will likely be a green field project, land acquisition costs for the construction of the stations and the tracks could significantly increase the investment. Land acquisition is especially expensive if the HSR runs into densely concentrated downtown areas (which will almost certainly be the case at the Singapore side of the tracks).

At present, it is clear that land for both termini will need to be acquired. Singapore has chosen to situate its terminus on land which is currently occupied by the Jurong Country Club and the Raffles Country Club, while Malaysia's choice of terminus location is a plot of land in Sungei Besi that was previously occupied by the Royal Malaysian Air Force. With respect to other portions of the HSR line, plans are presently for parts of the HSR to be built on elevated platforms and underground so as to work around land constraints and avoid land disputes. In particular, the Singapore portion of the line is anticipated to be mostly underground.

Source of funds

Financing for high-speed rail projects may come from a range of sources, including public funds, state-owned enterprises and private investors.

Full public financing

Full public financing requires the government to finance the total investment. The government uses funds from either tax revenue or public sector borrowing such as bonds. Public financing may be direct, or combined with funds from national railway companies. A major concern with public financing is the burden of public debt. Further, the government might need to take on the role of long term developer and owner of the project.

In the case of the HSR, we do not anticipate the project to be fully financed by the public sector, given the potential huge costs involved.

*Public-private partnership ("**PPP**")*

In order to combat increasing public debt, some projects have adopted PPP financing arrangements.

From a government perspective, a PPP arrangement should ideally be structured such that the government need not incur any borrowing. Rather, the borrowing is incurred by the private sector vehicle implementing the project. Accordingly, the government may benefit from new railway infrastructure in an "off-the-balance sheet" manner.

In practice, however, many PPPs come with significant government guarantees or financing, due to project risks such as high upfront sunk costs, as well as long and difficult construction phases.

Finally, it should be noted that public financing and private financing are not necessarily mutually exclusive. It may be possible for parts of the project to be fully financed while others are based on a PPP arrangement. For example, for the HSR, construction of the infrastructure could be publicly financed while the operations could be contracted out on a PPP basis.

It appears that the HSR will be open to private sector participation with possible local content requirements. Private sector participation will bring with it ownership considerations of the track, stations and rolling stock.

Capital servicing

The income stream from a railway project can be used to repay the upfront capital. Typical income streams of a railway project include revenue from retail, advertising, property development, tolls and fees. It is necessary to identify how much of the capital cost can realistically be financed through usage-generated revenue, and how much must be financed through other sources of income.

The most significant income stream is likely to be from the ticket fares collected by the rail operator. This will depend on the ridership of the railway. As such, high-speed railways should only be built if justified by strong demand.

Given the strong existing demand for the Kuala Lumpur – Singapore route and the competitive edge of the HSR over other transportation options, this should not principally be an issue for the HSR although feasibility studies should still be undertaken to obtain more detailed forecasts.

Project structure considerations

Financing for the HSR cannot be considered in isolation. Instead, the project and its financing should be structured in tandem to maximise cost-efficiency and to ensure reliable returns.

Build profitable route first

In the case of the HSR, the non-stop express service between Kuala Lumpur and Singapore is probably the most profitable route as it connects two large metropolises. Ensuring that the most profitable route is the first one up and running might make financing for subsequent parts easier. Prioritisation of the non-stop express service between Kuala Lumpur and Singapore would mean establishing the termini first. Although the service will travel through areas where other stations will eventually be constructed, such stations could be built at a later stage.

Different financing models for different sections

Increasingly, governments look to applying different financing models to different sections of the project. Decisions are made based on socio-economic factors for each section of the network, as well as estimated returns.

Mix-and-match of financing models should be done carefully, however, and not without thorough financial appraisal and feasibility study of the project.

Time costs

Structuring and negotiating PPP arrangements can take far longer than government financing. If there is great urgency for the new infrastructure, the government might need to fall back on simpler financing models. In the case of the HSR, we do not see pressing time constraints given the availability of other transport options. The various political commitments made by both governments in respect of a 2026 deadline should be noted, although such deadline is reportedly considered as being "tight".

Project risks

The HSR is a complex and challenging project, given the number of risks involved including:

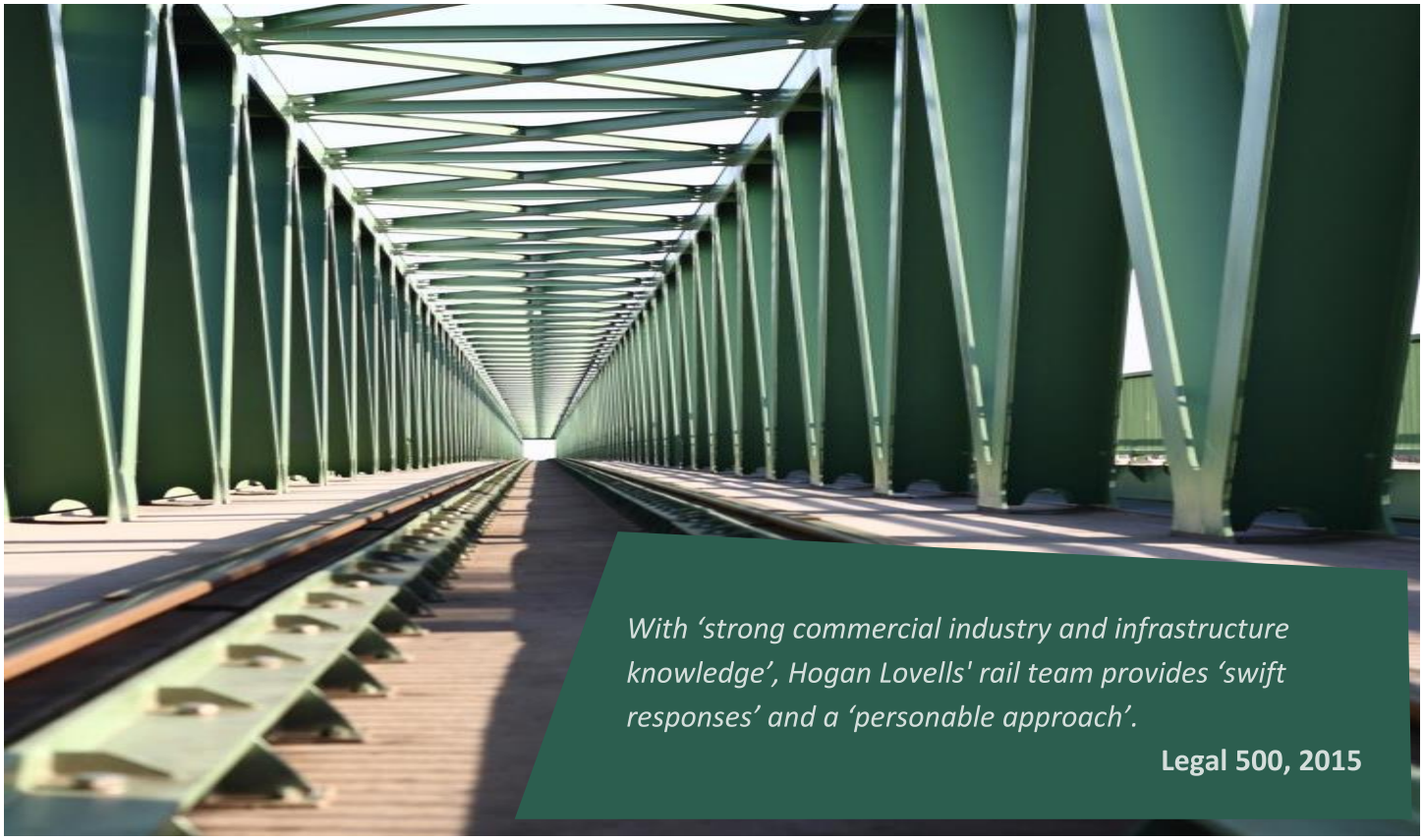
(a) Delay – apart from the usual delay risks, the HSR is a bilateral project and coordination time may result in further delays. For example, there is likely to be a large number of third party consents required from both governments.

(b) Demand/revenue – given the high development costs, the HSR would probably need a decade or so to turn profitable. Within this period, demand/revenue may fall below projections. For example, competing

modes of travel might be subsequently introduced or enhanced, or overall demand for the Kuala Lumpur – Singapore route may fall, and the various modes of travel may cannibalise one another.

(c) Project limitations – while there are potential revenue sources such as retail and advertising, it is likely that most of the revenue will have to come from ticket fares. Also, unlike a bus or airline company which can change routes or deploy its vehicles on other routes, it is not as straightforward to change the railway route or to deploy the rolling stock elsewhere should the HSR be less profitable than expected.

(d) Compliance – the operator may face compliance costs and regulatory restrictions in its management of the HSR (e.g. fare adjustment).



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