

For information

**Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways**

**Hong Kong Section of
Guangzhou-Shenzhen-Hong Kong Express Rail Link**

Operational Viability

Introduction

This paper provides supplementary information on the operational viability of the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL).

Patronage Forecast

2. The XRL patronage forecast is based on the latest planning data and developments of both Hong Kong and the Mainland. It takes into consideration demographic and socio-economic data such as population, GDP, relevant highway and railway networks data and public transport data. The forecast patronage at various design years is set out below –

| | 2016 | 2021 | 2031 |
|------------------------------|-------------|-------------|-------------|
| Shuttle¹ | 84,000 | 100,800 | 134,700 |
| Long Haul² | 15,000 | 18,900 | 25,300 |
| Total | 99,000 | 119,700 | 160,000 |

¹ From West Kowloon to Shenzhen/Humen/Guangzhou

² From West Kowloon to cities beyond the Pearl River Delta

The fare sharing assumptions

3. The patronage forecast has assumed that the XRL fare would be competitive and comparable with that of boundary and through train services. The assumed fares and the current fare of competing transport modes are summarized below –

| Destination | XRL Assumed Fares (HK\$) | Trains (HK\$) | Buses (HK\$) |
|--------------------|-------------------------------------|--------------------------|-------------------------|
| Shenzhen | \$45-\$49 | \$34-\$41 | \$10-\$45 |
| Dongguan | \$131 (Humen) | \$145 | \$100 |
| Guangzhou | \$180 (Shibi) | \$190 – 210 | \$80 – \$100 |

4. The fare revenue is to be shared between the Mainland and Hong Kong operators of the XRL. We are in close co-operation with the Ministry of Railways and the Guangdong operator on the planning of the railway scheme. We have set up a joint working group with the Ministry of Railways to oversee the implementation of the XRL project, including the formulation of effective operating arrangements with a view to maximizing the benefits of the XRL to passengers, the railway operators and the regional economy. Our discussions with the Ministry of Railways and the Guangdong operator on the operating arrangements will continue.

5. For the purpose of revenue forecast of the Hong Kong section of the XRL, we have assumed a similar mileage-based mechanism used in the existing Through Train service for trips to Dongguan and Guangzhou. We have also made reference to the revenue contribution from the existing Hunghom-Lo Wu service for trips to Shenzhen. The revenue contribution to the Hong Kong section of the XRL is summarized below –

| Destination | XRL Assumed Fares (HK\$) | Revenue to the Hong Kong Section (HK\$) |
|--------------------|-------------------------------------|--|
| Shenzhen | \$45-\$49 | \$31 |
| Dongguan | \$131 (Humen) | \$45 |
| Guangzhou | \$180 (Shibi) | \$45 |

Operational Viability

6. Based on the above patronage forecast and the assumed revenue sharing, we have projected the fare contribution to the Hong Kong section of XRL at various design years. Apart from fare revenue, the operating revenue also includes non-fare income such as railway related commercial activities such as advertising and kiosks. The operating cost, including energy, maintenance, staff, sales and marketing, and other day to day running costs are estimated based on the relevant cost data of MTRCL. The projected operating revenue, operating cost, operating profit (in terms of EBITDA³) and operating margins at of the Hong Kong section of the XRL at various design year are summarized below –

| Figures in '\$B (MOD) | 2016 | 2021 | 2031 |
|--------------------------|-------------|-------------|-------------|
| Operating revenue | 1.118 | 2.063 | 3.606 |
| Operating cost | (0.733) | (0.880) | (1.418) |
| EBITDA | 0.385 | 1.183 | 2.188 |
| Operating margin | 34% | 57% | 61% |

7. EBITDA is a good and well accepted indicator of the operational performance of infrastructure projects like the XRL. It can show whether recurrent cash subsidy is necessary to keep the railway running. The projected positive EBITDA suggests that the operation of the XRL can be sustained without subsidy. In fact, with a comfortable projected operating margin, even if the patronage is lower than expected, it is unlikely that the operating revenue will drop below the operating cost

³ Earnings Before Interest, Tax, Depreciation and Amortization

and thus resulting in operating loss. We therefore consider that the Hong Kong section of the XRL is operationally viable.

8. There is recent news coverage that a high-speed rail system in another jurisdiction reported net losses and is now facing financial difficulty. We note that abovementioned high-speed rail system are generating good operating profit in the first two years of its operation. The operating margins stand at 30% and 56% in the two years respectively, which is in the same range as the projected operating margin of the Hong Kong section of the XRL indicated above. A major reason for reporting net losses is the burden to make huge interest payments arising from loans for financing the construction costs. The construction of the Hong Kong section of the XRL is proposed to be a public works project to be funded by the Capital Works Reserved Fund, not by loans. There is no need to incur huge interest expenses during the operation phase.

Implication on the fare of East Rail

9. The demand for cross-boundary transport services has increased rapidly over the last decade and is expected to continue to grow at 5.4% per annum between 2008 and 2016, and at 3.3% from 2016 to 2031. We expect that the XRL will take up a large portion of the growth potential of the cross-boundary segment of the East Rail but not its existing patronage. Hence, we do not think that the introduction of the XRL services will have any material impact on the operation of the domestic services of the East Rail. By 2016 after XRL commences operation, the daily patronage of Lo Wu/Lok Ma Chau Stations of the East Rail will still be higher than its patronage level in 2008 –

| Daily patronage | 2008 | 2016 | Growth p.a. |
|---------------------------------|----------------|----------------|--------------------|
| XRL | - | 99,000 | - |
| East Rail (Lo Wu/Lo Ma Chau) | 273,000 | 315,900 | +1.8% |
| Through Train | 9,000 | 5,200 | -6.6% ⁴ |
| Buses/coaches | 150,000 | 250,300 | +6.6% |
| Ferries | 26,000 | 27,600 | +0.7% |
| Total | 458,000 | 698,000 | +5.4% |

10. Current fares of the domestic railway lines, including those of the East Rail, are adjusted based on the existing formula of the Fare Adjustment Mechanism. In addition, the profit or loss of individual railway lines will not affect existing fares of the domestic railway lines.

Concession Agreement with MTRCL

11. The Government will fund the construction of the XRL and its ancillary infrastructures, and ultimately owns the railway. Under the current understanding, upon completion of the railway, the MTRCL would be granted a service concession for the operation. The Government will receive service concession payment accordingly, which is dependent on the fare prices, actual patronage and non-fare revenues after the XRL has come into operation, is estimated to be about \$28.1 billion (in MOD terms) for 50 years. Upon the end, expiry or termination of the service concession period, the MTRCL will have to return an operating railway to the Government. The residual value of the railway should be quite substantial.

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⁴ Whilst the estimated patronage of Through Train services decreases, it represents a limited portion to the overall patronage of the East Rail.