

**For discussion
on 17 April 2012**

Legislative Council Panel on Development

Environmentally Friendly Linkage System for Kowloon East

PURPOSE

This paper seeks Members' initial views on an environmentally friendly linkage system (EFLS) to enhance the connectivity of Kowloon East in light of the findings of a feasibility study and views and suggestions received in the on-going public consultation exercise. Given the significant cost implications of this system, we consider it essential to discuss thoroughly with the public and intend to consult Members at every stage of the public engagement.

BACKGROUND

2. The form and alignments of the EFLS have evolved through a number of studies conducted over the past years. The approved Kai Tak Outline Zoning Plan (OZP) in November 2007, formulated through a two-year three-stage extensive public engagement exercise between 2004 and 2006 under the Kai Tak Planning Review Study, contains a reserve for a possible elevated rail-based environmentally friendly transport system as a long term transport mode subject to detailed design. This OZP alignment (shown at **Annex A**) is mainly confined within the Kai Tak Development (KTD) area to serve the new developments.

3. In December 2009, the Civil Engineering and Development Department commissioned a study to investigate feasible EFLS network alignments (the Study) based on assessments on engineering feasibility, traffic impact, land requirement, environmental impacts, operation viability, financial performance and economic return. The scope of the Study also covered

possible extension of the EFLS to the hinterland with a view to addressing the public aspiration for enhancement of connectivity and integration between Kai Tak and the hinterland.

4. In his 2011-12 Policy Address, the Chief Executive announced that we would adopt a visionary, co-ordinated and integrated approach to transform Kowloon East, comprising the KTD, Kwun Tong and Kowloon Bay, into an attractive core business district (CBD) to sustain Hong Kong's economic development. To facilitate the transformation of the former industrial areas into another key CBD, it is important that the infrastructure works and facilities should be well-designed and relate well to the broad development strategies of enhancing connectivity, branding the place with quality urban design and promoting diversity for the Kowloon East CBD. In drawing up the EFLS network alignments, the Study has considered the important role to be played by the EFLS in "Energizing Kowloon East", i.e. to enhance inter-district and intra-district connectivity of Kowloon East, and come up with an EFLS proposal to effectively cope with the development strategies for Kowloon East CBD. The Study findings are outlined in the ensuing paragraphs.

5. In December 2011, we briefed Members on the Government's new initiative on transforming Kowloon East into a CBD. We indicated that we would commence a two-stage public consultation exercise to solicit public views on the EFLS proposal and report the initial public views to the Panel on Development in early 2012. Details of the 2-stage public consultation which has commenced in February 2012 are outlined in **Annex B**.

FINDINGS OF THE STUDY

Alignment

6. To facilitate the transformation of Kowloon East, we envisage the EFLS linking the KTD, Kwun Tong and Kowloon Bay with the existing Mass Transit Railway (MTR) Kwun Tong Line and the future Shatin to Central Link (SCL). The Study suggests adopting an elevated monorail system as the EFLS and proposes a 9-kilometre 12-station line linking the MTR Kowloon Bay Station, through Wang Kwong Road to the KTD Station Square, where it can

interchange with the Kai Tak Station of the future SCL, and then all the way along the former runway before crossing the Kwun Tong Typhoon Shelter (KTTS) at the tip of the runway via the Kwun Tong Transportation Link (KTTL) and terminating at the MTR Kwun Tong Station (see the proposed alignment plan at **Annex C**).

7. The proposed alignment serves all major developments in the KTD including the Tourism Node, Runway Precinct, Metro Park, Multi-purpose Stadium Complex, developments at North Apron and hospitals at South Apron. It also runs through the two Action Areas, i.e. the Hoi Bun Road Redevelopment in Kowloon Bay (Action Area 1) and Kwun Tong Ferry Pier Waterfront Redevelopment in Kwun Tong (Action Area 2) proposed under “Energizing Kowloon East”. Besides, the alignment along the KTTL would provide a direct linkage between the KTD and Kwun Tong, generating synergy on developments in these two districts.

8. The EFLS can connect to the MTR Kwun Tong Station either via Hoi Yuen Road or King Yip Street. The routing along Hoi Yuen Road provides a more direct linkage with the MTR Kwun Tong Station, however, one of the three traffic lanes will have to be closed to accommodate the EFLS and public transport diversion is necessary. The routing along King Yip Street has less traffic impact, but its connection with the MTR Kwun Tong Station will be circuitous.

9. The provision of a station is mainly determined based on the site topography and the forecast passenger demand thereat. The 12 stations proposed by the Study will capture patronages generated by major developments in Kowloon East currently not covered by the existing and planned MTR lines. The Study proposes a very simple EFLS alignment which offers a favourable condition for using monorail, which is aesthetically more appealing and has comparatively slimmer viaducts/supporting structures than other rail systems. In addition, the monorail system, being a unique landmark in Hong Kong, will enhance tourism appeal. The forecast daily patronage in 2031 is about 200,000.

10. The Study has explored the opportunities of enlarging the coverage of the EFLS to adjoining old developed districts, including To Kwa Wan, Kowloon City and San Po Kong. However, given the constraints such as noise

and visual implications on the residential areas, concerns about intrusion of privacy of the premises, financial burden due to relatively low patronages for some branch extensions and technical difficulties for incorporating branches to the monorail system, the Study suggests not extending the EFLS to To Kwa Wan, Kowloon City and San Po Kong. A brief summary of the extension alignments studied is appended at **Annex D**.

Train System

11. The proposed EFLS is a light capacity elevated rail line. The Study has examined various types of rail system applicable to the KTD, in particular, rubber-tyred Automatic People Mover (APM) and monorail. APM has the edge on monorail with its ability to maneuver corners with smaller turning radius, which help penetrating into congested hinterland areas as compared with monorail of similar passenger capacity. In addition, APM is more flexible and convenient for multi-line services design which involves track sharing at junctions. However, APM requires the construction of a slab structure for mounting its guideway, which would look more bulky than the beam girder guideway for monorail. Taking into account that monorail is aesthetically more appealing and the viaducts/supporting structures of monorail are slimmer, causing less visual impact and blockage to daylight/ventilation, the monorail system is recommended for use in this EFLS proposal. The monorail, in the form of a 2-car train, could operate with the headway at an interval of 2 minutes during peak hours. The fare structure for the EFLS is assumed to be comparable with that for the MTR.

Financial & Economic Returns

12. The EFLS proposal will incur substantial cost and the financial and economic returns are not satisfactory if treated as a transport infrastructure. The capital cost is broadly estimated to be \$12 billion (in 2010 prices). The anticipated revenue is unable to meet its capital cost as well as operating and maintenance expenses. We have broadly estimated that if both the capital cost and subsequent assets replacement expenses¹ are to be borne by the Government, the annual revenue could barely cover the running cost of the

¹ Assets replacement expenses include both electrical and mechanical and rolling stock replacement costs, which will be incurred every 15-20 years.

EFLS. Based on the quantifiable economic benefits², the economic internal rate of return³ of the EFLS proposal is estimated to be around +1%, which is lower than that of a typical transport infrastructure project, usually with a return of +4% or more.

13. However, the EFLS plays a very strategic role in the development of Kowloon East CBD and will bring about much non-quantifiable economic benefits. It will not only provide a good intra-district connection among Kwun Tong, Kowloon Bay and Kai Tak, through direct and convenient interchange connections with the nearby MTR Kowloon Bay Station and Kwun Tong Station as well as the Kai Tak Station of the future SCL, the EFLS will also facilitate inter-districts activities between the Kowloon East CBD and other business districts in Hong Kong in an effective manner. It will generate synergy for adjacent developments and should have a catalytic effect on the successful transformation of Kowloon East into another attractive CBD.

14. Taking the form of a monorail system, the EFLS will create a unique landmark in Hong Kong with high tourism appeal. It will facelift the image of Kowloon East CBD and will enhance the appeal of the KTD to tourists and local visitors. At an elevated level, passengers could enjoy the panoramic views of the Victoria Harbour, the beautiful landscape and those iconic developments in the KTD. In other words, it provides tourists/visitors with a great experience of travelling and sightseeing.

15. We have made references to overseas examples of revitalization of old areas with infrastructure investments to improve connectivity. The relevant findings on New Transit Yurikamome in Japan, Palm Jumeirah Monorail in Dubai and London Docklands Light Railway in the United Kingdom are summarized in **Annex E**. The overseas experience demonstrates that accessibility is a major factor in promoting development of a new area, similar to the KTD, and stimulating revitalization of an old area, similar to Kwun Tong and Kowloon Bay.

2 The quantifiable economic benefits accrued to a transport infrastructure is generally measured in terms of time saving to commuters, operating cost savings for operators and cost saving due to accident reduction, amongst which time saving to commuters is usually the most significant parameter.

3 The economic internal rate of return is the net rate of return of the project calculated by subtracting the construction and operation costs during construction and the subsequent 50 years of operation from the economic benefits.

Implementation Programme

16. The implementation of the EFLS is largely dependent on the development pace of some major infrastructure/developments in the KTD, for example, the SCL and the landscape deck along the former runway. Should public consensus on the EFLS be established, we anticipate that the tentative commissioning date of the EFLS would be around 2023. We will however make every endeavor to implement the project as soon as possible.

Implications of Kwun Tong Transportation Link

17. The KTTL is an integral part of the EFLS. To achieve a more direct connection between Kai Tak and Kwun Tong, the KTTL, which will accommodate an EFLS cum pedestrian (and possibly cycle track), is recommended. The Study suggests to span this bridge link across the entrance of the KTTS, passing over the Kwun Tong Bypass and then sloping down to join the Kwun Tong Station, with a vertical clearance of 21 metres (m) above the sea level.

18. The suggested vertical clearance will impose a height restriction on vessels using the KTTS, and render it not possible for some high-mast dumb steel lighters to use the KTTS. According to the Marine Department's records, about 100 high-mast dumb steel lighters took refuge in the KTTS during the passage of typhoons in the past few years. Given that the KTTS has comparatively larger shelter area and is more conveniently located, it is frequently used by working vessels (including dumb steel lighters, river-trade vessels etc.) operating in Hong Kong. Any proposed restriction, which will prohibit dumb steel lighters and other types of vessels from using the KTTS, will have an impact on the port operation and efficiency as well as the cargo operation industry. To avoid causing adverse impact on the port operation and to safeguard the vessels' safety during inclement weather, we need to discuss with the affected industry to further explore effective, safe, feasible and acceptable alternative measures which can give the local fleet the needed shelter at time of typhoons. Accommodating the EFLS aside, if we could reduce the area of KTTS or limit the operation of the typhoon shelter (opening the waters for shelter during inclement weather), this will open up opportunity for co-use of the KTTS by other water sports/marina activities, an aspiration

expressed to us by some sports associations, subject to improvement in the water quality.

19. However, if the use of the KTTS by existing types of vessels is to be maintained, the KTTL has to be elevated to provide a vertical clearance of about 40 to 50 m with a long swirl approach ramp. This will encroach upon Action Area 2, therefore depriving the redevelopment opportunity of the Action Area. Such a bridge link will become a mammoth structure, which is visually intrusive. The sharp turning radius of the approach ramp will also impose technical constraint on the operation of the EFLS. Apart from the above, the extremely windy environment at height will render the bridge not suitable for pedestrians and cyclists.

Other Options of Road-based Green Public Transport

20. The Study has also reviewed the use of road-based green public transport as an alternative of the proposed EFLS. Nowadays, there are various choices of green transport vehicles in the market worldwide. The latest green transport vehicles already in use in Hong Kong include ultra-low-sulphur diesel bus (Euro V Standard) and liquefied petroleum gas (LPG) mini-bus. Though the battery-electric bus, supercapacitor bus and hybrid bus are yet to be proven suitable for use in Hong Kong, the Government has planned to subsidize the franchised bus companies to conduct pilot schemes on these types of buses in order to ascertain their suitability for use in Hong Kong. The choice of an appropriate type would much depend on the feasibility of the technology and the outcomes of the pilot schemes. A brief description of the aforesaid green transport vehicles is enclosed at **Annex F**.

Pros and Cons

21. Road-based green transport vehicles will offer an advantage of lower capital cost and running cost and higher flexibility for route planning, but will occupy road space thus adding pressure to the already busy road network in the hinterland. The KTD, formerly being an airport with limited access points, is inherited with limited opportunities for significant road widening and improvements to junctions with adjoining districts. Besides, the road-based green transport vehicles are considered inferior to the rail-based EFLS in terms of carrying capacity, tourism appeal, safe, reliable and convenient intra-district

connectivity, synergy for developments and ability to enhance the visionary image of Kowloon East CBD. Having said that, given the cost and other implications associated with an elevated monorail, we remain open-minded and intend to engage the public more exhaustively in order to gauge their views on whether the road-based green transport modes should be adopted in place of the EFLS.

Interim Arrangement

22. Given that the population intake and transport demand in the KTD will start from 2013 upon completion of the cruise terminal building and the first berth and public housing development at the North Apron, some form of road-based green public transport services have to be provided. Should there be consensus for implementing the EFLS, such services could then be rationalized upon the commissioning of the EFLS to provide reasonable alternatives to the travellers.

INITIAL PUBLIC VIEWS AND RESPONSES

23. We consulted Kwun Tong District Council (DC) on 2 February 2012, Housing and Infrastructure Committee of Kowloon City DC on 16 February 2012, the Local Vessels Advisory Committee (LVAC) on 22 February 2012, the Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission on 12 March 2012, Wong Tai Sin DC on 13 March 2012 and the Transport Policy Committee of the Chartered Institute of Logistics and Transport on 23 March 2012.

24. District views collated were in general supportive to the EFLS proposal in the form of monorail on the ground that it would bring economic benefits to the area and regenerate Kowloon East into another CBD and they urged for the system's early implementation. There are also comments and debates on the alignment and the proposed vertical clearance of the KTTL, in particular the impact of the consequential restriction on high mast vessels in accessing the KTTS and alternative uses of KTTS. To address the concerns of the trade on the affected vessels, we have agreed to commission a survey and a study in mid 2012 to explore feasible and agreeable alternative measures. The key views collected and our initial responses are summarized in **Annex G**.

WAY FORWARD

25. We will continue the Stage 1 public consultation exercise, including organization of two public engagement workshops in May/June 2012 and meeting with concern/focus groups and interested professional institutions to listen to their views. Under the Stage 2 public consultation, which will commence in the fourth quarter of 2012, views collected at the Stage 1 public consultation will be analyzed and reported to relevant stakeholders with a view to arriving at a consensus reflecting the majority of public views on the way forward for EFLS. We will commence the survey and study mentioned in paragraph 24 in mid 2012 to explore feasible and agreeable measures for the affected vessels for completion in end 2012.

ADVICE SOUGHT

26. Members are invited to comment on the above Study findings. We will consult the Panel on Development again, tentatively in early 2013 during the Stage 2 public consultation process, to report the public views collected in Stage 1 public consultation.

Development Bureau
April 2012

2-STAGE PUBLIC CONSULTATION PLAN

We have commissioned a two-stage public consultation exercise to solicit public views on the implementation of EFLS as well as the use of road-based green transport vehicles. Details of the 2-stage public consultation are outlined below:-

| Stage 1 Public Consultation : Understanding Concerns and Visions | |
|---|--|
| Actual Date | Parties consulted |
| 2 February 2012 | Kwun Tong District Council |
| 16 February 2012 | Kowloon City District Council |
| 13 March 2012 | Wong Tai Sin District Council |
| 22 February 2012 | Local Vessels Advisory Committee |
| 12 March 2012 | Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission |
| 23 March 2012 | Transport Policy Committee of the Chartered Institute of Logistics and Transport |
| Tentative Schedule | Parties to be consulted |
| 17 April 2012 | Legislative Council Panel on Development |
| Q2 2012 | Concern/focus groups and interested professional institutions |
| May/June 2012 | Public engagement workshops |

| Stage 2 Public Consultation : Building Consensus on a Preferred Option | |
|---|--|
| Tentative Schedule | Parties to be consulted |
| Q4 2012 to Q1 2013 | Views collected at the Stage 1 public consultation will be analyzed and reported to relevant stakeholders and Town Planning Board, with a view to arriving at a consensus reflecting the majority of public views on the way forward for EFLS. |

2. The KTD website and the newsletter "Kai Tak On the Move" have also been deployed for community outreach to disseminate the study findings and to collect comments from the public.



環保連接系統的建議走線圖
Proposed EFLS Alignment Plan

SUMMARY OF ASSESSMENTS ON THE POTENTIAL EXTENSIONS OF EFLS TO TO KWA WAN, KOWLOON CITY AND SAN PO KONG

Potential Extensions of EFLS

The EFLS Study has explored the opportunities of enlarging the coverage of the EFLS to adjoining old developed districts, including To Kwa Wan, Kowloon City and San Po Kong. The potential extensions which have been assessed are shown in **Enclosure 1** and outlined in the ensuing paragraphs.

To Kwa Wan

2. To Kwa Wan Road, except a short section between Sung Wong Toi Road and Ma Tau Kok Road, is a dual 3-lane carriageway. The central median of the carriageway could be slightly widened to accommodate the supporting structure of the EFLS. Therefore, To Kwa Wan Road was considered to be the most possible route for an EFLS branch extension towards To Kwa Wan. This branch extension would terminate near the junction of To Kwa Wan Road / Chi Kiang Street, where the passengers could interchange with the Ma Tau Wai Station of the future SCL.

Kowloon City (via San Po Kong)

3. The route through Sze Mei Street, Choi Hung Road, Lok Sin Road and ending at Carpenter Road was considered to be the most possible route for an EFLS branch extension towards Kowloon City/San Po Kong. To overcome the narrow width of Sze Mei Street, the EFLS structure could be located within the vacant open space adjacent to Rhythm Garden to minimize any impact on road traffic. Choi Hung Road is a dual 2-lane carriageway and its central median could be slightly widened to accommodate the supporting structure of the EFLS. In choosing a possible alignment through the existing roads in Kowloon City which are quite narrow, competing use of road space with vehicular traffic has been avoided as far as possible. Taking into account that Lok Sin Road is a single-2 lane carriageway and there are a lot of on-street parking spaces at Carpenter Road, the supporting structure of the EFLS could only be located within the footways of these roads and hence sacrificing the effective width of footpaths for pedestrian.

Assessments of Potential Extensions

4. The Study does not recommend extending the EFLS to the concerned districts on the considerations outlined in paragraphs 5 to 10 below.

Planned Land Use

5. The proposed EFLS is envisaged to support the broad strategies for development of another attractive premier core business district (CBD) and to act as a catalyst to speeding up redevelopment. In reviewing the coverage and alignment, it is essential to examine the planning intention of each district to assess whether it could bring in added value.

6. The relocation of our manufacturing base to the Mainland in the 1980's has left a huge stock of industrial buildings in Kowloon Bay and Kwun Tong industrial areas, i.e. Kowloon East, not being fully utilised. Since the rezoning of more than 60 hectares of industrial land in Kowloon Bay and Kwun Tong to "Other Specified Use" annotated "Business" in 2001, some private developers, with good market sense, have taken the first-mover initiatives to develop high grade office buildings and retail centres in Kowloon East. About 1.4 million square metres (m²) of office space has been completed since then. It is anticipated that the commercial developments in the Kai Tak Development (KTD), Kowloon Bay and Kwun Tong will altogether provide an additional 4 million m² of office space in the next 20 years. We are envisaging a major office cluster being formed in Kowloon East and therefore extending the EFLS from the KTD to Kowloon Bay and Kwun Tong is well justified.

7. Most of the land in Kowloon City and To Kwa Wan has been developed for residential use, either private or public housing developments. There are still some industrial buildings located at the eastern part of the district, i.e. in the vicinity of Yuk Yat Street, Chi Kiang Street, Sheung Heung Road and To Kwa Wan Road, which co-exist with the residential premises thereat. However, these industrial sites were rezoned in 2008 for residential use, demonstrating that the planning intention in To Kwa Wan/Kowloon City is towards residential type of development. Therefore, from planning perspective, it does not match with the initiative of developing another CBD. Having said that, should the commercial development potential of these districts be increased in the future, we would consider investigating the feasibility of extending the EFLS into these districts to better cope with the development need.

Environmental Impacts

8. The above EFLS alignments will penetrate through the residential areas in To Kwa Wan, Kowloon City and San Po Kong. Inevitably, noise and visual impacts arising from the EFLS on the surrounding areas would be the environmental implications that need to be considered carefully. The EFLS will run along a dedicated guideway, which is supported by piers to be located at the central median of carriageways or at footpaths. As the existing roads in the hinterland are usually narrow, the EFLS structure could be only a few metres away from the adjacent residential buildings. Taking To Kwa Wan Road as an example, the separations between the EFLS structure and the adjacent residential building façades will be in a range of only about 3m to 8m. Therefore, the noise implication would be a difficult task to overcome without massive structure of noise enclosure. Apart from the noise nuisance, the EFLS structure will have visual impact as well as adverse effect on street quality, e.g. blocking daylight and ventilation, in particular when the alignments run along narrow roads. The visual impact will be even worse if semi-enclosure/enclosure is erected on the elevated viaducts to mitigate the noise impact.

9. As mentioned above, the EFLS guideway will be in close proximity to residential buildings. The local residents of the premises at track level may also raise concerns about intrusion of privacy.









Financial Implication

10. As revealed from the Study, the forecast patronages for the EFLS branch extensions to To Kwa Wan and Kowloon City/San Po Kong are relatively low, contributing only about 10% increase in the ridership. However, construction of these two extensions will incur an additional cost of about \$4.2 billion, which will increase the financial burden of, not only the project capital cost but also the operating and maintenance expenses of the EFLS in the operation stage.

九龍城及新蒲崗
可能伸延路段
possible extension
to Kowloon City
and San Po Kong

土瓜灣可能伸延
路段
Possible extension
to To Kwa Wan

圖例 LEGEND :

-  研究界線
STUDY BOUNDARY
-  現有港鐵路線 + 已規劃的延線
EXISTING MTR LINE + PLANNED EXTENDED LINE
-  已規劃的沙田至中環線
PLANNED SHATIN TO CENTRAL LINK
-  啓德發展區
KAI TAK DEVELOPMENT AREA
-  建議環保連接系統
PROPOSED EFLS ALIGNMENT
-  環保連接系統車站
EFLS STATION
-  港鐵與環保連接系統的交匯站
MTR STATION INTERCHANGE WITH EFLS
-  環保連接系統車廠
EFLS DEPOT

已評估的環保連接系統可能伸延路段
Assessed Possible Extensions of EFLS



OVERSEAS EXAMPLES OF REVITALIZATION OF OLD AREAS / DEVELOPMENT OF NEW AREA WITH INFRASTRUCTURE INVESTMENTS

Provision of good connectivity is vital to the development of a new area as well as revitalization of old districts. There are many overseas examples putting much emphasis on infrastructure investments to improve connectivity in order to support their developments. Our case studies on New Transit Yurikamome in Japan, Palm Jumeirah Monorail in Dubai and London Docklands Light Railway in the United Kingdom are summarized below:

(a) New Transit Yurikamome, Japan

New Transit Yurikamome is an elevated and fully automated rubber-tyred Automatic People Mover system, planned as a major transport link connecting Tokyo to a new development area at Toyosu with target employment of 110 000 and population of 60 000. This transit line was planned to promote developments of the Tokyo waterfront sub-centre and along the line. It was opened in 1995 and attracted developments and activities in the waterfront, including the Tokyo International Exhibition Centre, hotel, restaurants, shopping centres, game centres, large amusement facilities etc. Many tourists prefer to take the New Transit Yurikamome instead of other modes of transport to enjoy the panoramic views of the landscape, the Rainbow Bridge and the Tokyo waterfront area at an elevated level.

The transit line has attracted 1.8 times more sightseers and visitors to attend events or amusement facilities in the area than originally forecasted. Among the passengers, there are as many as 20% riding on Yurikamome for pleasure. It helps reducing the number of car trips and is a more environmentally friendly linkage system.

(b) Palm Jumeirah Monorail, Dubai

Palm Jumeirah Monorail on the Palm Jumeirah Island in Dubai was opened in May 2009 and is the first monorail in the Middle East. It is operated at about 10m above ground level, at which visitors can enjoy the panoramic views of the Island. As it provides fast and easy access along the trunk of the Island, visitors/residents can have very convenient transport services between the key areas on the Island including resorts, water sports area, shopping malls, restaurants, cafes and residential towers. This helps reducing the number of car trips and generating less pollutants

to the environment.

(c) London Docklands Light Railway, United Kingdom

London Docklands covers an area of about 2 000 hectares at East London. The problems facing Docklands before revitalization were its weak connection with the rest of London and inadequate local infrastructure support. Public transport was only limited to bus services. A new transport connection system was therefore introduced to promote regeneration of the area.

With the opening of the Docklands Light Railway in 1987 to improve the accessibility between the Docklands and the Central London, it stimulated developments in the Docklands, which provided about 1 million square metres of high quality office spaces. Subsequent upgrading and the extension of the underground Jubilee Line to the Millennium Dome with a stop at Canary Wharf in Docklands attracted new and prestige developments. Canary Wharf is perhaps one of the best-known successful regeneration projects. This project has turned the derelict docklands area into an employment hub for East London with a working population increased from about 25,000 in 1999 to about 95,000 in 2011.

BRIEF INFORMATION ON VARIOUS ROAD-BASED GREEN PUBLIC TRANSPORT OPTIONS

Euro V Standard Diesel Bus

1. Euro V Standard diesel bus is the latest model in use in Hong Kong.



Liquefied Petroleum Gas Mini-bus

2. Liquefied petroleum gas (LPG) is used as the vehicle fuel, producing significantly less particulates and carbon dioxide, but fuel consumption is higher than either petrol or diesel.



Hybrid Bus

3. Hybrid buses are powered from dual sources comprising a combination of battery-electric power and a conventional internal combustion engine usually diesel-powered. Such vehicles become favourable due to their lower exhaust emissions and better fuel economy.



Battery-electric Bus

4. Battery-electric buses are powered by internal battery which must be recharged for continuous movement. The development of lithium batteries in the last decade enables the battery electric vehicles to operate up to 300 km.



Supercapacitor Bus

5. A supercapacitor bus is an electric-charged vehicle, equipped with electrochemical capacitor to store the energy, which can be charged at depot or at bus-stops during boarding/alighting. Along the bus route, an overhead catenary system is provided at each of the bus-stops. The electricity receiver mounted on the bus top would be elevated to contact the catenary for a super-fast charging during boarding/alighting for about 30 seconds, which is adequate for travelling 1km.



INITIAL PUBLIC VIEWS AND RESPONSES

| INITIAL PUBLIC VIEWS | INITIAL RESPONSES |
|---|---|
| I. Alignment and Train System | |
| <ul style="list-style-type: none"> • All consulted parties are in general supportive to the proposed EFLS except LVAC who has reservation on KTTL. • The Kowloon City District Council (DC) passed a motion on 16 February 2012 requesting the EFLS be extended to To Kwa Wan and Hung Hom. • A member of the Kwun Tong DC suggested to extend the EFLS to Lei Yue Mun. • The Wong Tai Sin DC suggested to extend the EFLS to San Po Kong where there is potential for transformation of the existing industrial buildings to commercial/business use. • On choice of EFLS alignment at Kwun Tong, the Kwun Tong DC supported Hoi Yuen Road whilst residents of Laguna City preferred King Yip Street. • Some DC members raised concerns on the possible noise impact of the EFLS to neighbouring residential areas such as Richland Garden. • Members of the LVAC did not support the alignment along the | <ul style="list-style-type: none"> • Extensions to adjoining districts such as To Kwa Wan and San Po Kong have been considered. However, penetration of EFLS into these developed residential areas will have noise and visual implications and concerns about intrusion of privacy of the premises at track level. In addition, there are technical difficulties to be overcome if branches are to be provided with a monorail system. • EFLS is one of the development strategies for Kowloon East CBD, which is not in line with the planning intention of the land use, mainly residential, in To Kwa Wan and Hung Hom. Should the commercial development potential of these districts be increased in the future, we will consider further investigation. • KTTL is an integral part of EFLS. It provides direct linkage between the runway tip and Kwun Tong district and brings synergy on developments. The reserved KTTL alignment on the Kai Tak approved OZP represents public consensus through a 3-stage public engagement exercise carried out |

| INITIAL PUBLIC VIEWS | INITIAL RESPONSES |
|---|---|
| <p>KTTL and suggested termination of the EFLS at the runway tip or re-routing it via the Taxiway Bridge to avoid impact on the use of the KTTS.</p> <ul style="list-style-type: none"> • There were requests for convenient interchanges between EFLS and the existing Kowloon Bay and Kwun Tong MTR stations and the planned Kai Tak station of the future SCL. | <p>in 2004 to 2006.</p> <ul style="list-style-type: none"> • Convenient interchange arrangement between EFLS and adjacent MTR stations will be investigated in the next stage of works. |
| II. KTTL and KTTS | |
| <ul style="list-style-type: none"> • Members of the DCs and the Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission were in general supportive to the implementation of the KTTL to achieve a more direct connection between the KTD and Kwun Tong together with the provision of pedestrian and cycle track. • DC members generally support the KTTL to be built at a vertical clearance of around 21m above sea level. • KTDC also passed a motion on 2 February 2012 requesting change of use of the KTTS to a water sports centre. • The LVAC members raised objection to the suggested vertical clearance of 21 m and reiterated the importance of | <ul style="list-style-type: none"> • To address the concern of the LVAC, we have committed to commission a survey and a study to explore feasible and agreeable alternative measures for the trade if there is a restricted use of the KTTS. Both the survey and the study are targeted to start in mid 2012 for completion in end 2012. The construction of the KTTL is unlikely to commence before 2018 and we will work closely with the trade for an acceptable arrangement before taking forward the project. • As for the suggested movable/openable bridge for the KTTL, the Study reveals that openable pedestrian and vehicle bridges are common overseas but there is no example for monorail elsewhere in the world. |

| INITIAL PUBLIC VIEWS | INITIAL RESPONSES |
|---|--|
| <p>keeping the KTTS for safe operation of cargo lighters and port operation efficiency. They remarked any reduction in capacity of typhoon shelter within the Victoria Harbour would affect Hong Kong's competitiveness on ports development and concerned about no alternative shelter spaces for vessels affected by the height limit to be imposed at the KTTS.</p> <ul style="list-style-type: none"> • To overcome the height limit problem, some members of the DCs and the Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission suggested movable/openable bridge form for the KTTL or replacement by using water taxis or electric bus. • Some members of the Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission queried the need of KTTL and also alerted special attention to the requirements of the Protection of the Harbour Ordinance (PHO). • Comments received from a private company on the height restriction of 21m vertical clearance which will preclude the use of the area as a private marina for 30-metre plus private pleasure yacht with high mast. | <ul style="list-style-type: none"> • Water taxis, with limited capacity, cannot replace KTTL and provide convenient connection with Kwun Tong Town Centre and electric bus in the long term will have impact on road traffic of the old districts. • The requirements of PHO will certainly be addressed at a later stage. The proposed EFLS can fulfil EPD's requirements on noise level. • Whether KTTS should be used as a private pleasure yacht is subject to public deliberation and consensus. |

| INITIAL PUBLIC VIEWS | INITIAL RESPONSES |
|---|---|
| III. Implementation Programme | |
| <ul style="list-style-type: none">Some DC members urged the Government to expedite completion of the EFLS before the initial target date of 2023 in order to bring early economic benefits for the districts. To speed up the programme, consideration should be given to implement the EFLS in phases. | <ul style="list-style-type: none">The tentative commissioning year of 2023 is estimated based upon the development programme of KTD projects. We would endeavour advancing the programme and possible staging of implementation once we have got public consensus to go ahead with the project. |