

May 2002

**CABLE TUNNELS FOR CLP POWER HONG KONG LTD**

**1. Contracts amount:** HK\$ 488 million

**2. Scope of contracts:** the project comprises two design and build contracts in which four cable tunnels are to be built:

	Kwai Chung Cable Tunnel	Tsz Wan Shan Cable Tunnel	Chi Ma Wan Cable Tunnel	Tuen Mun Cable Tunnel
Location	From CLP Power Kwai Chung Substation B to Wo Yi Hop Road	From Tsz Wan Shan Substation at Shatin Pass Road to Tsz Wan Shan Road	From Tai Long Wan to Pui O Wan	Crossing underneath Tuen Mun River
Length	1,070 m	650 m	3,200 m	190 m
Internal Diameter	4.0 m	3.2 m	3.0 m	3.2 m
Construction Method	Drill and blast. The tunnel will be excavated in both directions simultaneously at selected launching locations along the alignment	Pipe jacking using a mixed ground TBM	Excavated by hard rock TBM from Tai Long Wan to Pui O Wan	Pipe jacking using mixed ground TBM
Target Completion	Early 2005	Early 2005	Early 2005	End of 2004
Purpose of the tunnels	Environmental friendly oil free cables will be installed to replace ageing oil filled cables to improve the reliability of the power network in Kwai Chung and Tsuen Wan.	The tunnel is built to house 132kV cable circuits to supply new developments in South East Kowloon and replace ageing oil filled cables supplying San Po Kong and Kwun Tong areas.	The tunnel is built for accommodation of 132kV cable circuits emanating from Pui O substation to supply Cheung Chau. By installing new power cables through this tunnel, some of the old 33kV overhead lines can be retired and thus enhance the supply reliability to Cheung Chau.	A new substation will be commissioned in 2005 at San Shek Wan to reinforce the reliability of power supply to over 120,000 customers in the Tuen Mun area. The tunnel is required for connecting cables between the new substation and the load centres at the other side of the Tuen Mun River.

For all these tunnels, works also include all associated modifications in the substations, temporary works, shafts construction, M&E installation in tunnels and ventilation structures.

### **3. Pipe jacking :**

For the two pipe-jacked tunnels at Tsz Wan Shan and Tuen Mun River, excavation will be done using a mixed ground TBM. Hydraulic rams will be used to push up precast concrete pipe sections (3.2 m diameter, longest section up to 2.5 m) to line the cavity formed by the TBM from the drive shaft as the TBM moves forward.

These will be the largest tunnels (diameter) formed by pipe-jacking using TBM in Hong Kong.

**4. Site possession :** From 1st November, 2002 to 1st January, 2003

**5. Delivery :** All the cable tunnels are expected to be delivered within three years, the earliest after 912 days for the Tuen Mun tunnel. The overall project is expected to be completed within three years.

### **6. Project team :**

- Design and build contractor : Dragages (HK) Joint Venture [Joint venture between Dragages et Travaux Publics (HK) Ltd and Bouygues Travaux Publics S.A.]
- The Engineer (Employer's representative) : Atkins China Limited
- Structural designer : Arup and Mott Connell

### **7. CLP Power Hong Kong Ltd.**

CLP Power is the largest electric utility in Hong Kong serving the business and domestic communities in Kowloon and the New Territories, including Lantau and most of the other outlying islands. Operating a vertically integrated electricity generation, transmission and distribution business, CLP Power provides a highly reliable supply of electricity and excellent customer services to over two million customers in its supply area.

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