立法會 CB(1)748/16-17(01)號文件
LC Paper No. CB(1)748/16-17(01)

水務署
Water Supplies Department

工務計劃項目第363WF號
- 改善濾水廠消毒設施

PWP Item No. 363WF
- Upgrading of Disinfection Facilities in Water Treatment Works

背景 BACKGROUND (1)

現時食水處理過程及技術發展
Existing Drinking Water Treatment Process and Technological Advancement

- 本港沒有氯氣供應商，需從廣東省購入氯氣 (液態氯)
  Importation of liquid chlorine from Guangdong Province as no chlorine gas supplier in HK
- 運輸至本港各濾水廠貯存及使用
  Transport to water treatment works for storage & use
- 近年薄膜電解技術漸趨成熟，氯氣生產設施效能不斷提升，所需空間越來越少
  With advancement of membrane electrolysis technology, chlorine generation facilities are now more efficient and compact in design

背景 BACKGROUND (2)

現時液態氯系統 Existing Liquid Chlorine System

現時貯存於濾水廠的液態氯
Liquid chlorine storage in existing Water Treatment Works

1噸液態氯氣罐
1 tonne liquid chlorine drum

50公斤液態氯氣樽
50 kg liquid chlorine cylinder

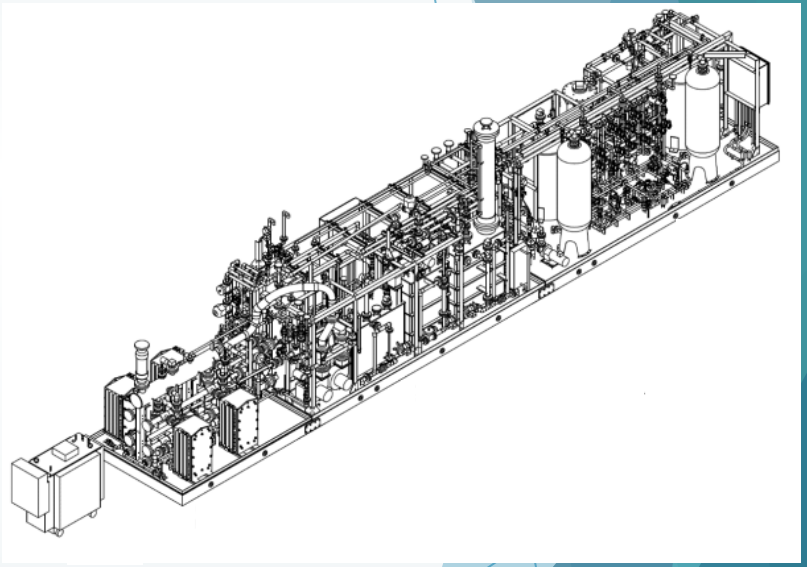
運輸車輛
Transportation vehicles

擬議設施 Proposed Facilities

- 按實際需求生產氯氣即時使用
  Chlorine gas is produced and used according to actual demand

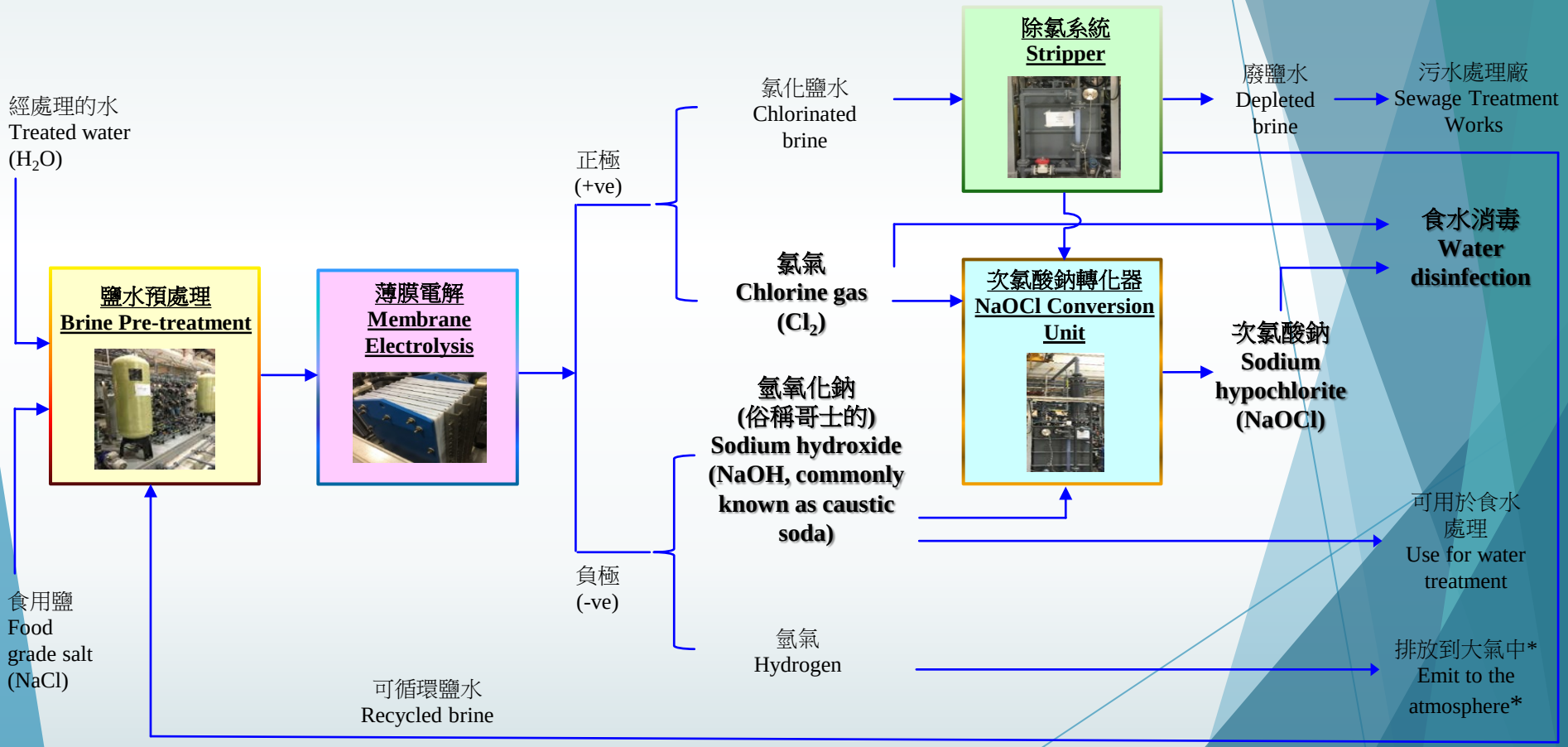
- 可免除運輸及貯存時液態氯洩漏風險，提升食水消毒作業的安全
  Eliminate risks of leakage of liquid chlorine during transportation & storage, and enhance safety in the operation of water disinfection

- 風險評估確認設施改善安全
  Risk assessment confirms improved safety



氯氣生產設施
Chlorine Generation Facility

氯氣生產流程圖 Flow Diagram of Chlorine Gas Generation



(*) 鼓風機稀釋至低於1% (Diluted by air blower to below 1% concentration)

推行詳情 Implementation Details

- 本港十一所大型濾水廠及大欖涌二號加氯站均適合安裝氯氣生產設施
  Chlorine generation facilities are suitable to be installed in 11 major water treatment works and Tai Lam Chung No. 2 Chlorination Station

- 小型濾水廠將使用次氯酸鈉作食水消毒劑
  Sodium hypochlorite solution will be used in small water treatment works for water disinfection

- 工程在濾水廠及加氯站範圍內進行
  Construction works will be carried out within the boundaries of water treatment works and chlorination station

- 期望工程在2017年第三季分階段展開，2020年第四季完成
  The project is scheduled to commence in Q3 2017 in stages for completion by Q4 2020

- 預計擬議工程所需費用為8億7,560萬元 (按付款當日價格計算)
  The estimated cost of the proposed works is $875.6 million in MOD prices

項目 Items	安全設施 – 風險比較 Safety Facilities – Risk Comparison	
	現時設施 **Existing Facilities**	新的氯氣生產設施 **New Chlorine Generation Facilities**
氯投放量 Chlorine dosage	投放量相若 – 每分鐘約 0.11 – 1.18 公斤 (由氯氣儲存罐/樽提供) Similar dosage – About 0.11 – 1.18 kg per min (supplied by liquid chlorine drums/cylinders)	**投放量相若 – 每分鐘約 0.11 – 1.18 公斤** **(現場生產)** **Similar dosage – About 0.11 – 1.18 kg per min** **(supplied by chlorine generation facilities)**
氯氣儲存量 Chlorine storage	約 9 – 160 噸 (90 天儲存量) About 9 – 160 tonnes (for 90-day consumption)	**不需要儲存液態氯** **No storage of chlorine**
運輸氯要求 Chlorine transportation requirement	大約每月兩次 About twice per month	**不需要運輸液態氯** **No transportation of chlorine**
總結 **Conclusion**	**現時設施風險可控制** **Existing risks are under control**	**風險較現時設施低** **Lower risks than the existing facilities** (環境保護署、消防處及勞工處均接受擬議計劃) (EPD, FSD & LD have accepted the proposed project)
運作及保養成本 (港幣/每噸氯氣) Operation and maintenance cost (HK$/tonne of chlorine)	**~ 26,500**	**~ 19,000***

* *與現時液態氯系統比較，氯氣生產設施的單位成本將降低**約30%***

*Compared with the existing liquid chlorine system, the unit production cost of chlorine generation facilities will be decreased **by about 30%***

謝謝
Thank You