

維護我們的環境 Sustaining Our Environment



由關燈和鼓勵無紙辦公室到向客戶推廣使用具能源和用水效益的器具，水務署繼續集中開拓凸顯能源和環境效益的創新技術。

WSD continues to focus on innovations that highlight energy and environmental efficiencies - from switching off lights and encouraging paperless offices to persuading customers to use energy and water efficient appliances.



實例 Living Example

應用可再生能源設計暨競技大賽再次為水務署員工提供平台，展示可再生能源的概念。屯門濾水廠的水力發電設施設計贏得最佳設計及示範大獎，這充分說明在提供安全穩定供水一事上，我們小心平衡供應、需求和可持續性三方面的決心。

The Hong Kong Technology and Renewable Energy Event once again provided a stage for WSD staff to showcase renewable energy concepts. A hydroelectric power plant at the Tuen Mun Water Treatment Works won the award for Best Design and Demonstration. The plant illustrates our determination to carefully balance supply, demand and sustainability when it comes to delivering safe and secure water supplies.

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維護我們的環境

Sustaining Our Environment

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用食水已被全球公認為一項基本人權。在任何國家或地區提供安全可靠食水的有關當局，都需要仔細平衡供水、用水及可持續性這三大要素。

在香港，我們以最佳運作模式為基準，藉此定期衡量我們配水網絡的運作狀況，確保以不危害環境的方式將食水輸送至社區，而這種方式剛好反映出我們在節約資源及可持續發展方面的政策。我們將繼續致力實踐下列目標：

- 嚴謹遵行各項環保規例；
- 善用電力、燃料及改善空氣排放，以滿足操作要求，並遵守《清新空氣約章》的承諾；
- 減少辦公室用品的消耗，並在食水處理過程中減少使用氯氣、石灰及明礬等化學品；
- 減少配水系統的漏水量；
- 減輕建築工程對環境所造成的影響；
- 減少濾水廠的排污量；
- 減少工場和化驗室固體、液體及化學廢物的數量；及
- 減少柴油機的廢氣及抽水站的噪音。

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lobally, water is recognised as a fundamental human right. Delivering safe and secure water in any country or region requires authorities to carefully balance the elements of supply, demand and sustainability.

In Hong Kong, we are constantly measuring the operational efficiency of our distribution network against best practice benchmarks, ensuring that water is channelled to the community in an environmentally safe manner that reflects our policies on conservation and sustainability. We continue to commit ourselves to achieving the following objectives:

- strictly enforce compliance with all environmental regulations ;
- optimise the use of electricity, fuel consumption and air emissions to meet the operational needs and the commitments under the Clean Air Charter;
- cut down the consumption of glossary items in office and the use of chemicals such as chlorine, lime and alum in water treatment;
- minimise water loss in the distribution system;
- minimise the environmental impact resulting from construction works;
- minimise the discharge of effluent from water treatment works;
- reduce the quantities of solid and liquid wastes, as well as chemical wastes, from workshops, laboratories and installations; and
- reduce diesel engine emissions and pumping station noise.

專注於能源

能源是供水服務的關鍵所在。在過去一年，我們一直專注於兩個方面的能源事項。其一是節約能源，其二是設計可實際應用於供水系統的可再生能源措施。

去年，我們的水務及濾水設施繼續達致全面節能目標。我們成功地將二零零八至零九報告年度的整體能源消耗降低了1.8%。我們採納的節能措施包括：密切監測用電情況、能源審核、根據設施狀況實施保養計劃、以及對濾水廠及水務設施實施積極更換計劃。

我們在辦公室及所有水務設施中廣泛採用節能設備。與此同時，我們在可供節約用水及提升輸水系統的設計和運作方面不斷探索新趨勢及技術。借助變速水泵、聯機監察及以電子方式監控配水網絡等新技術，令我們能夠以最合適的水壓供應食水，從而降低對能源的需求。

Focusing on Energy

Energy is critical to supply delivery. Over the past year we have concentrated on energy – in terms of both conservation and creating practical initiatives for renewable energy that can be applied to elements of our system.

Our waterworks and treatment facilities continue to achieve across the board energy savings. We succeeded in reducing overall energy consumption by 1.8 per cent during 2008-09. Meanwhile, we took conservation measures including closely monitoring electricity use, energy audits, the adoption of condition-based maintenance schemes and the implementation of a proactive replacement programme for plant and installations.

Energy saving equipment is used extensively in office settings and throughout our waterworks facilities. At the same time we are exploring emerging trends and new practices aiming at conserving water and enhancing the design and operation of water transfer systems. New technology such as variable speed pumping, on-line monitoring and electronic controls of the distribution network allows us to deliver water supplies within desirable pressure ranges and thus reducing energy requirements.



北港濾水廠率先試用太陽跟蹤光生電壓系統，效果理想。
A prototype sun-tracking photovoltaic system firstly used in Pak Kong Water Treatment Works has proved successful.



本署憑著「屯門濾水廠水力發電設施」的概念設計，榮獲「最佳設計和示範獎」。概念預期於二零一一年得以實踐。

Our design of a hydropower plant at Tuen Mun Water Treatment Works won the best Design and Presentation Award. The concept is expected to be put into practice in 2011.



本署竭力愛護大自然，善用資源。

We work in close harmony with nature.

可再生能源措施

一如世界各地的公共事業機構，我們不斷探討運用可再生能源，以期透過可持續的模式運作我們的系統。我們打算在屯門濾水廠裝置的水力發電設施的設計，已將近完成，預期於二零一一年投產後，每年可貢獻1 500兆瓦時的電量。該設施的概念設計曾於「2008 可再生能源設計暨競技大賽」中公開展示，並在公開組比賽中贏得「最佳設計和示範獎」。我們相信，水力發電是可持續的能源，能夠把它應用於我們的供水系統中，將會是一項重大貢獻，而我們亦會繼續物色其他機會，引進具備成本效益的環保技術。

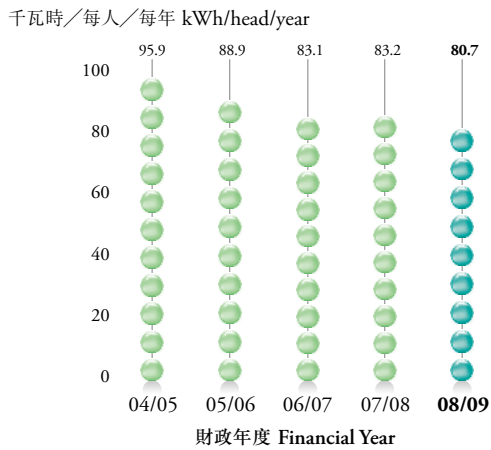
北港濾水廠的聯網光生電壓試驗系統的運作情況令人滿意，發電量每年超逾10 000千瓦時。我們現正在欣澳鹹水抽水站建造一個太陽能及風力混合發電機組。此外，我們亦配合政府的政策，在設計新水務設施時引入其他利用可再生能源的設施。

Renewable Energy Initiatives

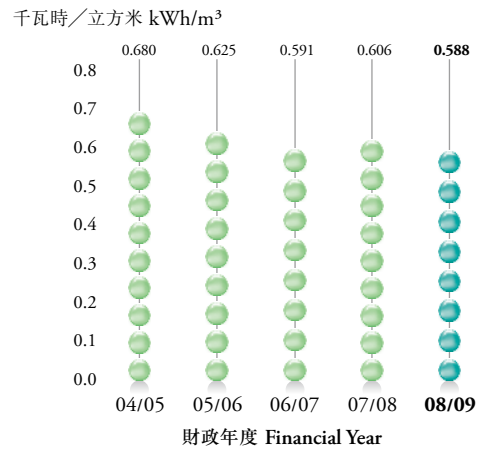
Like utility providers around the world, we are constantly looking at renewable energy sources to help keep our system running in a sustainable manner. The design of a hydropower plant at Tuen Mun Water Treatment Works is close to completion and the plant is expected to contribute 1 500 megawatt hour annually once it comes on stream in 2011. The plant's conceptual design was publicly exhibited during the 2008 Hong Kong Technology and Renewable Energy Event where it won the best Design and Presentation Award in the open team event. We believe that hydropower can make an important contribution as a sustainable energy source for our supply system and we will continue to look for other opportunities to introduce cost effective green technology.

The pilot grid-connected photovoltaic system at Pak Kong Water Treatment Works is operating satisfactorily, generating more than 10 000 kilowatt hour of electricity each year. A solar-wind hybrid power generator is under construction at Sunny Bay Salt Water Pumping Station and, in line with Government policy, we have included other renewable energy facilities in the design of new installations.

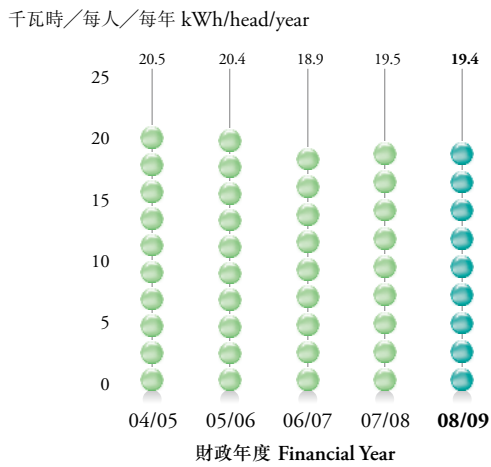
人均耗電量 (食水及原水)*
PER CAPITA ELECTRICITY CONSUMPTION
(FRESH WATER AND RAW WATER)*



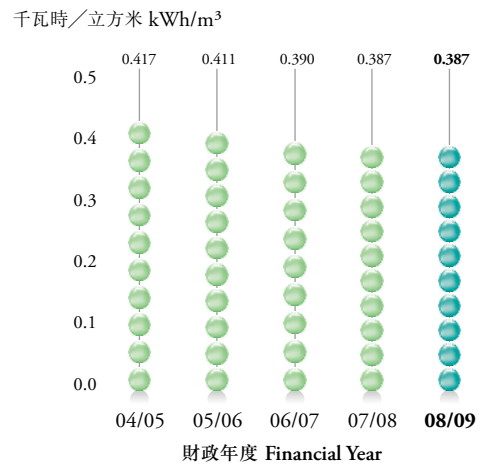
每單位耗電量 (食水及原水)*
UNIT ELECTRICITY CONSUMPTION
(FRESH WATER AND RAW WATER)*



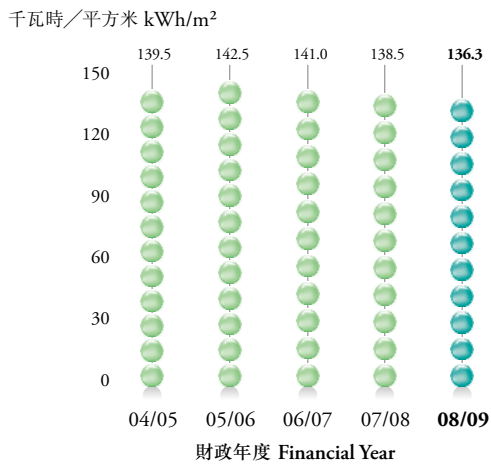
人均耗電量 (海水)*
PER CAPITA ELECTRICITY CONSUMPTION (SEA WATER)*



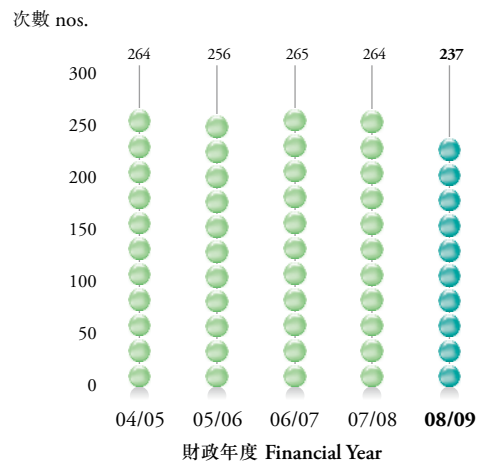
每單位耗電量 (海水)
UNIT ELECTRICITY CONSUMPTION (SEA WATER)



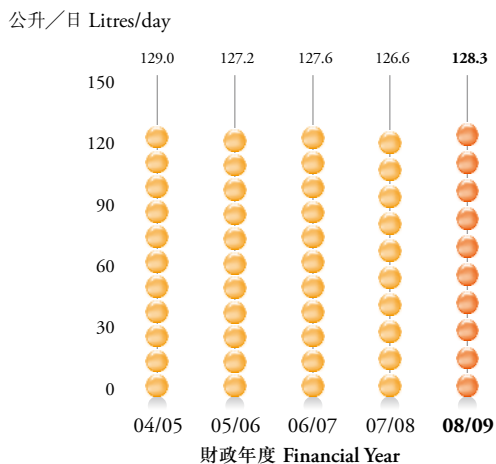
辦公室每單位樓面面積的耗電量
OFFICE ELECTRICITY CONSUMPTION PER UNIT FLOOR SPACE



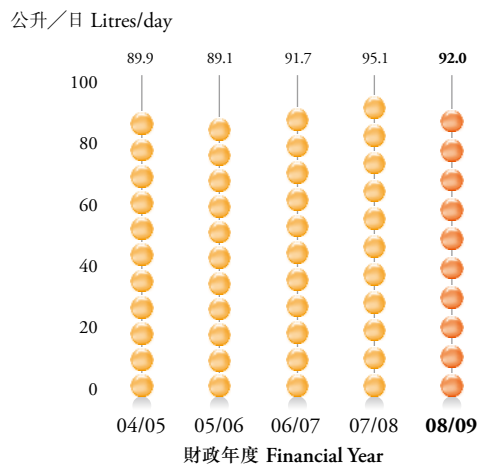
水泵測試次數
NO. OF PUMP TESTS



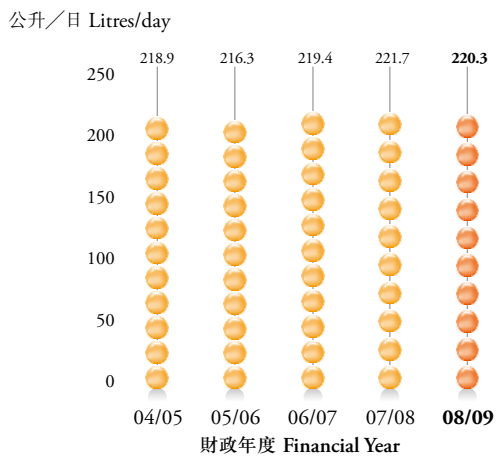
人均住宅食水耗用量*
PER CAPITA DOMESTIC FRESH WATER CONSUMPTION*



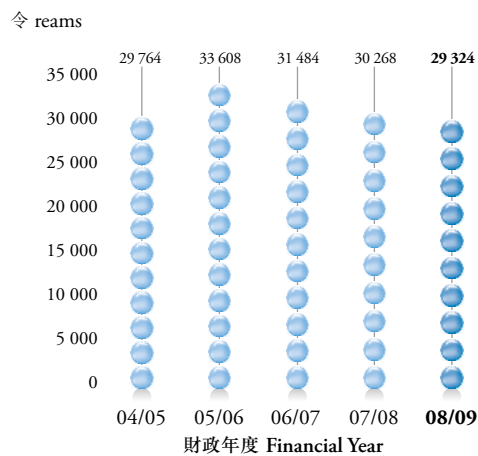
人均沖廁水耗用量 (食水及海水)*
PER CAPITA FLUSHING WATER CONSUMPTION
(FRESH WATER & SEA WATER)*



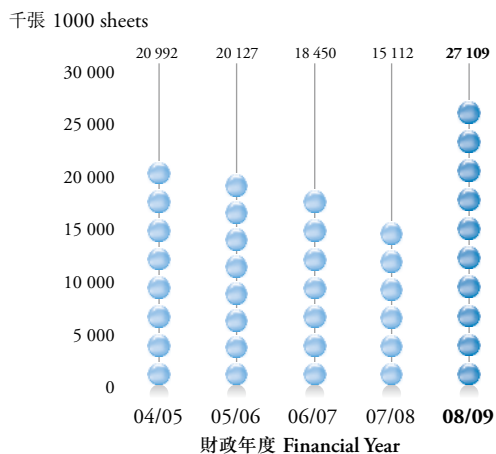
總人均耗水量 (住宅及沖廁)*
TOTAL PER CAPITA CONSUMPTION (DOMESTIC & FLUSHING)*



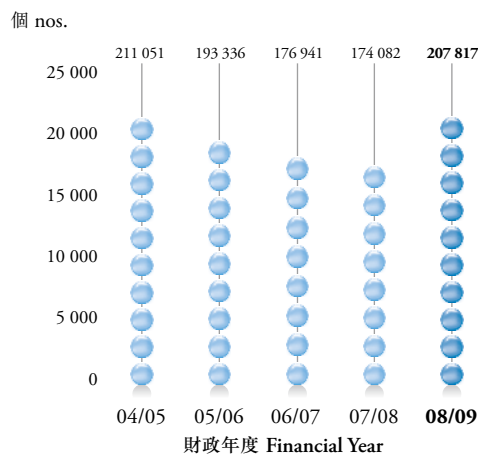
耗紙量+
PAPER CONSUMPTION+



通用表格及部門表格的用量+
GF AND DEPARTMENTAL FORMS CONSUMPTION+



信封用量+
ENVELOPES CONSUMPTION+



全方位承諾

我們充分了解到，在維持空氣質素及減少溫室氣體排放方面，我們肩負起地區以至全球性的責任。節約能源及運用可再生能源的承諾，是本署長期策略中重要的一環。與此同時，我們會繼續保持高度警覺性，以期消除在日常運作中直接排放廢氣的潛在源頭。我們會在切實可行的範圍內，使用替代設計、材料或工作流程，盡量減低對環境造成的影響。對於使用含有揮發性有機化合物的材料及化學品，我們會進行嚴密監察。去年，我們耗用這些材料的數量已減少了6%。透過使用液化石油氣代替柴油，我們的運輸車隊亦減少了每行駛一公里所排出的廢氣。

本署在內部亦致力培育愛護環境的文化及意識。這種文化已在我們日常業務的所有層面上反映出來，包括在辦公室以電子方式進行溝通及編撰文件，以及在濾水廠中加裝壓濾機，將濾水所產生的廢物製成泥餅才棄置。

公眾教育

在香港，每人每日平均耗用約220公升的水，但透過一系列簡單而不影響生活的個人節水措施，以一個四人家庭的用水量作基準，可將這個數量減少達44%。

Commitment at all Levels

We recognise that we have both regional and global responsibilities in maintaining air quality and mitigating green house gas emissions. Our commitment to energy conservation and utilising renewable energy options is an important aspect of our long term strategy. At the same time, we remain vigilant in eliminating potential sources of direct emissions that may arise from our daily operations. Environmental impacts are minimised by using alternative designs, materials or work processes where practical. The use of materials and chemicals containing volatile organic compounds is closely monitored and during the past year we reduced our consumption of these materials by 6 per cent. By replacing diesel fuel with LPG, our transport fleet also reduced emissions for every kilometre of travel.

Internally, the Department fosters a culture of environmental care and awareness. This culture is reflected in our day-to-day business at all levels from electronic communications and documentation in offices through to the introduction of filter presses in water treatment plant to convert treatment waste into sludge cakes before disposal.

Public Education

In Hong Kong, the average person uses some 220 litres of water each day. A series of simple, non-disruptive personal conservation measures can cut this amount by up to 44 per cent based on the consumption of a four-member household.

* 根據二零零六年中期人口統計所得人口基準，二零零一年中至二零零六年中的人口數據已經修訂。經修訂數據已納入更多有關人口變化的估計數字，而這些估計數字在編製先前人口數據時尚未能提供。因此，二零零一年以來人均耗水量數字及所服務的人口均已經修訂。

+ 零八/零九年度通用表格及部門表格的耗用量增加主要由於下列因素所致：

- (i) 約4 000組為機構於零七/零八年度延遲送遞的表格，因此相應增加了零八/零九年度的數字；及
- (ii) 由於表格設計有所更改，客戶服務科在零八/零九年度多訂購約4 000組水費單。

* Based on the population benchmark from the results of the 2006 Population By-census, the population figures from mid-2001 to mid-2006 have been revised. The revision has incorporated more estimates of population changes that were not yet available at the time when the previous population figures were prepared. Consequently, the per capita consumption figures and population served as from 2001 onwards have been revised as well.

+ The increase in GF and Departmental Forms Consumption in 08/09 was mainly due to:

- (i) Approx. 4 000 units are rolled over delivery from 07/08 by agency, which correspondingly jacked up the 08/09 figure; and
- (ii) Customer Services Branch ordered approx. 4 000 units of water bills more in 08/09 because of changes in the form design.

公眾教育是我們積極推行節約用水活動的重要元素。我們的目標是鼓勵人們細想他們用水的方式及原因，從而在扭開水龍頭前意識到需要節約用水。推廣活動現時是政府全面水資源管理策略中不可缺少的部分，旨在向業主及發展商、並經由學校向兒童及其父母傳達節約用水的訊息。「一點一滴，彌足珍貴」這個口號，鼓勵人們不論是透過使用花灑淋浴，或是立即修理滴漏的水龍頭等各個方式，節約用水。我們務求令社會各階層的人都時刻留意他們的用水方式及節約用水方法，從而建立起「節約成自然」的用水文化。舉辦開放日及參觀濾水廠活動均會引起社會人士對節約用水的莫大興趣，有助增強公眾的節約用水意識。

此外，我們亦鼓勵業主及發展商定期檢查及維修水管以防滲漏，以及使用獲評定為具備用水效益的家居器具。我們更換及修復全港老化水管的計劃，對降低水管滲漏或爆裂所造成的漏水比率亦有重大貢獻。

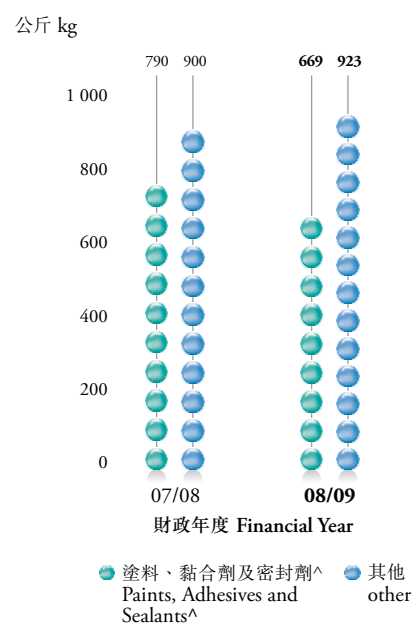
Public education is a key factor in our proactive conservation campaigns. Our aim is to encourage people to think about how and why they use water and to consider conservation whenever they turn a tap on. Promotional activities are now an integral aspect of the Government's Total Water Management Strategy, directing water conservation messages to home owners and developers and into schools to children and on to their parents. The message: 'Every drop is precious' is designed to encourage water saving through measures that range from shorter showers to fixing dripping taps quickly. Our aim is to create a culture where people are mindful of how they use water and how they can conserve it at all levels of society. Conservation becomes second nature. Open days and educational visits to water treatment works draw broader community interest and help raise awareness.

We also encourage home owners and developers to regularly inspect and maintain plumbing to prevent water leaks and to use household appliances that are graded as water-efficient. Our programme of replacing and rehabilitating aging water mains across the territory is also a major contributor to the diminishing rate of water loss due to leaks or main bursts.



位於金山郊野公園的九龍水塘主壩始建於一九零一年。
Located in Kam Shan Country Park, Kowloon Reservoir Main Dam was built in 1901.

室內工作所需揮發性有機化合物耗用量 VOC CONSUMPTION FOR IN-HOUSE WORK



[^] 黏合劑及密封劑耗用量於二零零七／零八年度並無量度，而於二零零八／零九年度則為43公斤。

[^] Adhesives and sealants were not measured in 2007/08, 43kg in 2008/09

公用集調車輛資料

INFORMATION ON POOL TRANSPORT

	公務用車數量： No of Government Vehicles in Operation:		總燃料耗用量 (公升) Total Fuel Consumption (Litres)		總車程 (公里) Total mileage (km)	
	07/08	08/09	07/08	08/09	07/08	08/09
柴油 Diesel	22	23	50 118	46 906	215 033	201 252
汽油 Petroleum	216	227	592 347	599 890	3 185 123	3 225 682
液化石油氣 LPG	6	6	30 309	30 965	91 310	93 286

廢氣排放

EMISSIONS

(以公噸計) (Figures in Tonnes)	二氧化碳 CO ₂		二氧化硫 SO ₂		氮氧化物 NO _x		可吸入懸浮粒子 RSP	
	07/08	08/09	07/08	08/09	07/08	08/09	07/08	08/09
直接廢氣排放 Direct Emissions								
公務用車 (柴油) Vehicle fleet (Diesel)	131	123	-	-	1	1	-	-
公務用車 (汽油) Vehicle fleet (Petrol)	1 398	1 416	-	-	1	1	-	-
公務用車 (液化石油氣) Vehicle fleet (LPG)	51	52	-	-	-	-	-	-
間接廢氣排放 Indirect Emissions								
耗用電 (九龍及新界) Electricity Consumed (Kowloon and New Territories)	355 725	330 023	644	443	560	440	28	23
耗用電 (港島) Electricity (Hong Kong Island)	55 126	55 834	154	160	87	88	3	4
總量 Total	412 431	387 448	798	603	649	530	31	27

保護我們的文物

我們保護資源的文化已擴展至保護歷史供水設施。在過去的一個半世紀，這些供水設施對於本港的發展實在功不可沒。本港的引水道及水塘網絡可追溯至十九世紀六十年代，當時在港島的薄扶林及大潭已開始動工興建首批水塘及綜合供水系統。全港有超過40座此類早期設施（包括有關輸水道、橋樑及抽水站）將於短期內被列為法定古蹟。為了肯定它們在香港史冊中的地位，我們將編製一本小冊子，以供對香港這一段多姿多采的歷史感興趣的本地居民及遊客取閱。

Protecting our Heritage

Our culture of conservation extends to the preservation of historic water supply facilities that have played an integral role in the development of Hong Kong over the last one and a half centuries. The city's network of catchwaters and reservoirs dates back to the 1860s when construction began on the first of a series of reservoirs and complex supply systems in the Pok Fu Lam and Tai Tam areas on Hong Kong Island. More than 40 of these early facilities across the territory, including the associated aqueducts, bridges and pumping stations, will be declared monuments in the near future. To recognise their place in the city's annals, a booklet will be made available to local residents and visitors with an interest in this aspect of Hong Kong's colourful history.