



保持生態系統平衡，令環境翠綠宜人。
Sustaining a healthy ecosystem and
green environment.



環保報告

ENVIRONMENTAL REPORT

水是生命
之源
Water's
Life

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Aims and Achievements

為致力維持環境可持續發展，我們一直全力
確保生產食水的過程符合環保的要求，並以此



作為首要任務。

In keeping with our strong
commitment to environmental

sustainability, we place over-riding priority
on ensuring our water production process
is in harmony with our environment.

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環境優美的大潭篤水塘和大潭郊野公園。
Picturesque Tai Tam Tuk Reservoir and Tai Tam Country Park.

主要工作

本署的主要工作包括：

- 規劃和管理水資源及供水系統。
- 設計及推行水務設施工程。
- 操作和保養供水及配水系統。
- 控制供水水質。
- 提供客戶服務及執行水務法例。

環保目標

在滿足現有供水需求，而又無損應付未來需要的能力的前提下，本署致力以可持續及環保方式提供衛生清潔的最優質食水。

環保政策

為達致環保目標，我們會致力於：

- 防止污染
減低濾水廠及配水庫排出的污水

量、減少工場及化驗室的固體和液體廢物及化學廢物，以及減低柴油機等設備排放的廢氣和抽水站發出的噪音。

- 節約能源及資源

節省每單位產量所需的電力及燃料、節約用水、減低漏水量、避免製造辦公室廢物、減少在地盤使用木材，以及在情況許可下，降低在濾水過程中使用氯氣、石灰及明礬的劑量。

MAIN TASKS

The main tasks of the WSD include:

- Planning and managing water resources and supply systems.
- Designing and constructing waterworks projects.
- Operating and maintaining the supply and distribution systems.
- Controlling the quality of water supply.
- Providing customer services and enforcing waterworks legislation.

chemical waste from workshops and laboratories, reducing emissions from diesel engines and the like, and reducing noise from pumping stations.

■ MINIMIZATION OF ENERGY AND RESOURCES USE

Reduce the use of energy and resources through savings in electricity and fuel per unit of production, by the optimum use of water and cutting down on water loss through leakage, and by reducing office waste, as well as the use of timber in construction sites, and, where possible, by using less chemicals such as

chlorine, lime and alum in the water treatment process.

■ MINIMIZATION OF ENVIRONMENTAL IMPACT

Ensure, through strict WSD supervision, that construction work is properly carried out so that there is minimum disruption of the environment and proper handling of materials for disposal.

■ COMPLIANCE

Strictly enforce compliance with all environmental legislation and regulations, and take steps to remedy situations where there is non-compliance.

ENVIRONMENTAL GOAL

To meet the existing water demand without undermining the ability to cope with the future needs, WSD is committed to providing wholesome water of the highest quality in a sustainable and environmentally friendly manner.

ENVIRONMENTAL POLICY

In pursuit of its environmental goal, WSD will make all effort to:

- **POLLUTION PREVENTION**
Prevent pollution by reducing the discharge of effluent from water treatment works and service reservoirs, cutting down on solid and liquid waste, as well as



另一個風景宜人的水塘。
Another scenic impounding reservoir.

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為供水網絡進行水壓管理的先進流量調節式減壓閥。

Advanced flow-modulated pressure reducing valve for pressure management of water supply network.

- **盡量減少對環境造成影響**
通過本署嚴密監管，確保建造工程得以妥善進行，務求盡量減少對環境造成破壞，並適當處理須棄置的物料。
- **守法循規**
嚴格遵行一切有關環保的條例及規例，並採取措施糾正違規情況。
- **加強溝通**
與客戶、供應商和市民就我們的環保政策及表現多加溝通，並藉著適當培訓，提高員工的環保意識及知識。

管理架構

儘管未能為設立ISO 14001環境管理系統取得所需資源，我們仍日益關注環保事宜，通過設立有關機制，有系統地統籌各項服務市民的工作，俾能符合本署注重環保的做法和目標及有關法例。

新措施

以下是現正付諸實施或進行策劃的新措施：

- 找出更多切合環保的施工方法，以減少棄往堆填區的廢物，並與供應商合作，設法減少廢物。
- 採用更多循環再造產品，並在供應合約中實施符合環保的採購準則。
- 以更節省能源的水冷式空調系統取代氣冷式空調系統，從而減少工場、濾水廠及辦公大樓的能源消耗量。
- 加強供水網絡的水壓管理、持續監測及區域檢測工作，以減低漏水率。
- 加快更換及修復水管，以減少食水流失。
- 為海水供應系統採用變速水泵及直接供水模式，以改善其效能。年內，我們已完成有關的桌面研究。
- 安裝聯機功率錶及水泵效能測量儀，用以持續監察大型抽水站的用電效率。
- 在策劃興建新濾水廠時清楚列明須遵守的各項節省能源規定。
- 為固體廢物產量、環保開支及內部用水量制定量度及匯報制度。
- 進行調查，以衡量客戶對本署環保方面表現的看法。

■ COMMUNICATION

Communicate with customers, suppliers and the general public on our environmental policies and performance and raise staff's environmental awareness and knowledge through proper training.

MANAGEMENT FRAMEWORK

Although we have not been able to secure the necessary resources for the establishment of an ISO 14001 Environmental Management System (EMS), we have been reinforcing our environmental care by putting in place a framework to systematically co-ordinate the diverse activities of the services provided to the public in conformity with our environmentally friendly practices and goals as well as relevant legislation.

NEW INITIATIVES

The following new measures are either being put into effect or are being planned:

- Developing measurement and reporting systems for solid waste production, environmental expenditure and internal water use.
- Identifying more environmentally friendly methods to reduce landfill waste disposal and working with suppliers in an attempt to reduce waste.
- Using more recycled products and implementing environmental procurement criteria for supply contracts.
- Replacing air-cooled air conditioning systems with more energy-efficient water-cooled air conditioning systems to reduce the energy consumption of workshops, water treatment works and office buildings.
- Stepping up pressure management, continuous monitoring and district metering to reduce network leakage.
- Expediting mains replacement and rehabilitation to reduce leakage.
- Use of variable-speed pumps and direct feed mode in sea water supply system to improve efficiency. A desktop study was completed in the year.
- Installation of online power meters and pump efficiency meters for condition monitoring of major pumping stations.
- Specifying energy efficiency requirements in the construction of new water treatment works.
- Conducting surveys to gauge customer perception of our environmental performance.



採用無開掘式方法安裝水管。
Installing new pipes with trenchless method.

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目標及成績

我們現已採取一系列符合本署環保目標的措施：

政策

節約能源及資源

目標

提高供水運作的能源效益。

採取的措施

- ▶ 透過「能源管理委員會」推行節省能源的新措施，並監察現時推行措施的進度。
- ▶ 通過在內聯網上設置的「能源管理委員會」網頁，向員工推廣節約能源的意識。

水務署內聯網上的「能源管理委員會」網頁。
Homepage of the Energy Management
Committee on WSD Intranet.



- ▶ 對水務設施進行能源審核，以找出可提高能源效益之處。在屯門濾水廠及抽水站、大埔頭原水抽水站、上水濾水廠及抽水站、西澳原水抽水站、荃灣原水抽水站、牛潭尾濾水廠及沈雲山食水抽水站進行的詳細審核工作已經完成，建議的改善措施現正付諸實施。
- ▶ 密切監察抽水泵組的效率。年內，有310多個泵組接受測試，較去年增加了18%。
- ▶ 設定用電量的基線指標。
- ▶ 以節約能源的新型號抽水泵組取代效率欠佳的舊型號。4個抽水站的泵組已經更換，而另外28個抽水站現正進行換泵工作。
- ▶ 定期檢討設備更換計劃和重新編排推行計劃的時間表，務求盡量節省能源。
- ▶ 在新的海水抽水站使用更耐用的不銹鋼泵組，以提高泵水效率。現有的海水抽水站的泵組更換工作將分階段進行，至二零零六年全部完成。
- ▶ 使用電腦程式記錄和監察耗電量，以代替人手收集耗電數據。
- ▶ 根據基線指標按月監察主要水務設施的耗電量模式。
- ▶ 採用可提高能源效益的T8/T5型號螢光管和電子平穩器，取代傳統的螢光管裝置。
- ▶ 利用高地水庫過剩的原水代替海水沖廁，以省回抽取海水所用的能源。輸送原水往香港仔海水配水庫的安排，已由二零零三年二月起實施。

AIMS AND ACHIEVEMENTS

Some of the measures already taken in compliance with our environmental objectives:

Policy Minimization of Energy and Resources Use

Aim Improvement of energy efficiency of water supply operations.

- Measures Taken
- ▶ Taking forward new energy saving initiatives and monitoring progress of existing measures through the Energy Management Committee (EMC).
 - ▶ Promoting staff awareness on energy conservation through the EMC homepage on Intranet.
 - ▶ Conducting energy audits at waterworks installations to identify areas for improving energy efficiency. Detailed audits were completed and recommended improvement measures are being carried out at Tuen Mun Water Treatment Works and Pumping Station, Tai Po Tau Raw Water Pumping Stations, Sheung Shui Water Treatment Works and Pumping Station, Sai O Raw Water Pumping Station, Tsuen Wan Raw Water Pumping Station, Ngau Tam Mei Water Treatment Works and Shum Wan Shan Fresh Water Pumping Station.
 - ▶ Closely monitoring the efficiency of pumpsets. More than 310 pump tests were conducted - an increase of 18 per cent for the year.
 - ▶ Developing baseline targets for electricity consumption.
 - ▶ Replacing old and less efficient pumping plant by new and energy efficient models. Pumpsets in four pumping stations were replaced and work was being done at 28 other pumping stations.
 - ▶ Regular review and rescheduling of plant replacement programme to ensure highest possible energy savings.
 - ▶ Using more durable stainless steel pumpsets for new salt water pumping stations to increase pumping efficiency. The pumpset replacement of all existing salt water pumping stations will be completed in stages by 2006.
 - ▶ Putting in place a computer programme to capture and monitor electricity consumption to replace manual electricity consumption data collection.
 - ▶ Monthly monitoring of electricity consumption pattern of major waterworks installations against baseline targets.
 - ▶ Replacing the conventional fluorescent lighting fittings with energy efficient T8/T5 fluorescent tubes and electronic ballasts.
 - ▶ Use of surplus raw water at high-level storage reservoirs in place of sea water for flushing to save energy used in sea water pumping. Raw water supply to Aberdeen Salt Water Service Reservoirs commenced in February 2003.

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- ▶ 更改配水庫的預設控制水位，以增加非高峰用電時間的泵水量。年內，3個配水庫的改造工程已經完成，另外5個配水庫的工程亦會在二零零三年十二月完竣。
- ▶ 為員工提供節約能源方面的培訓和指示，以及就水務設施能源效益的監察發出指引。
- ▶ 舉辦「能源效益和環保設計工程計劃」及「節約能源最佳表現分區」比賽，使員工對這方面更加關注。
- ▶ 研製電腦程式，幫助操作人員為抽水站擬備水泵運作組合編排。
- ▶ 在內聯網上提供設備的即時及以往運作數據，從而可加快蒐集和分析設備的運作及耗電數據。年內，兩個分區的聯網工作已告完成。
- ▶ 定期檢討水泵運作組合編排，以減少耗電量。

目標

減少因網絡滲漏而流失食水以節約能源，並減少濾水過程所產生的固體廢物。

採取的措施

- ▶ 在分配網絡實施主動測漏及水壓管理計劃，因而使每日的食水和海水流失量分別減少18萬及2.7萬立方米。
- ▶ 採取措施盡量縮短隔離及維修爆裂水管所需的時間。
- ▶ 推行龐大的水管更換及修復計劃。
- ▶ 舉辦內部到場處理水管滲漏和爆裂事故比賽，以及消防龍頭和水管滲漏舉報比賽。



利用最先進的地下水管探測儀找尋水管的準確位置，為供水網絡進行主動監測。

Using advanced pipe locator for active leakage detection.

目標

在濾水廠及其他操作範疇節約用水。

採取的措施

- ▶ 把清洗濾水池的反沖水循環再用。
- ▶ 鼓勵員工節約用水。

- ▶ Changing the level control settings of service reservoirs to increase off-peak pumping. Modification work for three service reservoirs was completed in the year and work on five more service reservoirs will be completed in December 2003.
- ▶ Providing staff with necessary training and instructions on energy management and guidelines on monitoring energy efficiency of installations.
- ▶ Promotion of staff interest by holding competitions on "Energy Efficient and Environmentally Friendly Design Projects" and "Best Performance Region in Energy Savings".
- ▶ Developing computer programmes to help operational staff to prepare pump scheduling tables for pumping stations.
- ▶ Speeding up the collection and analysis of data on plant operations and electricity consumption by providing an easy access to the online and historical plant operations data through Intranet. The work on two Regions was completed in the year.
- ▶ Conducting regular pump scheduling reviews to reduce electricity consumption.

Aim Reduction of water loss through network leakage to cut energy consumption and reduce production of solid waste resulting from water treatment.

- Measures Taken**
- ▶ Implementing proactive leak detection and pressure management programme in the distribution network. This stopped daily loss of 0.18 million cubic metres of fresh water and 27 000 cubic metres of sea water.
 - ▶ Implementing measures to minimize the isolation and repair time for mains bursts.
 - ▶ Implementation of a massive mains replacement and rehabilitation programme.
 - ▶ Holding internal competitions on attending leak repairs and mains bursts as well as reporting leaking fire hydrants and mains.

Aim Reduction of water consumption in water treatment and other areas of our operations.

- Measures Taken**
- ▶ Recycling backwash water after filter cleaning.
 - ▶ Encouraging water conservation among staff.

透過洗池水均衡池，將濾水廠內清洗濾水池的反沖水循環再用。
Washwater balance tank for recycling of filter backwash water in water treatment works.



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目標 通過調節需求及提供其他水源，鼓勵珍惜食水。

- 採取的措施**
- ▶ 規定每戶安裝獨立水錶，並利用訂價策略提倡節約用水。
 - ▶ 使用海水沖廁。
 - ▶ 提倡使用低沖水量的沖廁水箱和雙沖式水箱。

目標 減少用紙及避免浪費紙張。

- 採取的措施**
- ▶ 盡量以用過紙張空白的一面列印便箋及外來的傳真，並減少印存副本。
 - ▶ 加快採用「客戶服務及發單系統」、「地理信息系統」等資訊科技，藉此減省需要耗用紙張的程序或把有關程序自動化。以電郵和電子存檔方式處理客戶申請及查詢的「電子文件管理系統」，可望於二零零三年十二月投入服務。
 - ▶ 採用普通紙傳真機及雙面影印機。
 - ▶ 雙面列印招標文件及報告。
 - ▶ 採用可接收電郵的傳真機。
 - ▶ 利用新的電腦軟件在單一頁A4紙上列印多頁文件。
 - ▶ 利用個人數碼助理進行外勤工作。
 - ▶ 以傳閱方式分發部門通訊，代替每人派發一份的做法，以減少用紙。
 - ▶ 減少印製通訊、單張、服務承諾等宣傳資料。

目標 減少其他辦公室廢物。

- 採取的措施**
- ▶ 推行「綜合物料及工作記錄管理系統」，減少編印報告及單據。
 - ▶ 採用可節省成本及環保的文儀用品，例如可循環再用的上色劑筒、原芯筆，以及可再次使用的信封及散頁文件夾等。
 - ▶ 多加收集廢紙以供循環再造，並購買更為耐用的物品。

Aim Promotion of efficient water use through demand management and providing alternative sources.

- Measures Taken**
- ▶ Adoption of individual metering and a pricing strategy to promote conservation.
 - ▶ Use of sea water for flushing.
 - ▶ Promotion of use of low-flow flushing cistern and dual-flushing toilet.

Aim Reduction of paper consumption and wastage.

- Measures Taken**
- ▶ Making the most of used papers for memos and incoming faxes and cutting down on photocopying.
 - ▶ Eliminating or automating paper-based procedures by making greater use of information technology such as Customer Care and Billing System (CCBS), Geographical Information System (GIS), etc. The Electronic Document Management System (EDMS) making use of e-mails and electronic filing to handle customer applications and enquiries will be commissioned in December 2003.
 - ▶ Use of plain paper fax machines and double-side photocopiers.
 - ▶ Printing on both sides of paper for tender documents and reports.
 - ▶ Use of fax machine capable of receiving e-mail.
 - ▶ Printing of multi-page documents on one A4 sheet by making use of a new computer software.
 - ▶ Making use of Personal Digital Assistant (PDA) for field work.
 - ▶ Reducing paper use by circulation of internal newsletter instead of distribution of personal copies.
 - ▶ Reduction in printing of promotional materials such as newsletters, leaflets, performance pledge, etc.

Aim Reduction of other office waste.

- Measures Taken**
- ▶ Implementing the Integrated Materials and Job Record Management System (IMJ RMS) to reduce printing of reports and vouchers.
 - ▶ Use of cost-saving and environmentally friendly stationery products such as recyclable toner cartridges, clutch pencils, and reusable envelopes and loose minute jackets.
 - ▶ Collecting more waste paper for recycling and purchasing more durable products.

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政策

防止污染及盡量減少對環境造成影響

目標

減少因排放污水、油污及固體廢物對環境所造成的影響。

採取的措施

- ▶ 為全部現有及新建的濾水廠設置污泥處理及脫水設施，以便把濾出的廢物製成污泥餅，送往適當的堆填區棄置。
- ▶ 適度調校化學品的投放量，盡量減少濾水時所產生的固體廢物。
- ▶ 以流動濾水裝置先行過濾清洗配水庫的污水，然後才排入排水系統。
- ▶ 採用氣體或真空斷路器，盡量減少烴油消耗和維修期間所產生的廢油。



濾水廠內的污泥濃縮池，經濃縮後的污泥會被送往壓濾機進行最後脫水程序。
Sludge thickening tank in water treatment works for thickening the sludge before final dewatering by filter press.

目標

盡量減少供水運作、建造及維修工程等對環境造成的影響。

採取的措施

- ▶ 規定承建商把建築和拆卸廢物棄置於認可堆填區，並嚴格遵守有關排放廢氣及發出噪音的法例。
- ▶ 以電力泵取代柴油驅動泵，並盡量減少現有柴油驅動泵的操作時間；以FM 200取代哈龍滅火系統。
- ▶ 在海水抽水站以電解海水產氯代替瓶裝氯。

目標

保護集水區免受污染。

採取的措施

- ▶ 執行《水務設施條例》，嚴禁污水排進集水區。
- ▶ 管制集水區的發展項目，以防止污染。
- ▶ 聯同其他相關政府部門密切監察集水區的活動及水質。

Policy Pollution Prevention and Minimization of Environmental Impact

Aim Reduction of environmental impact arising from discharge of effluent, oil and solid waste.

- Measures Taken**
- ▶ Providing sludge treatment and dewatering facilities in all existing and new water treatment works to convert treatment waste into sludge cakes for disposal to appropriate landfill sites.
 - ▶ Optimizing dosages of chemicals to reduce solid waste from water treatment.
 - ▶ Using a mobile treatment unit to treat effluent arising from cleaning of service reservoirs before discharging into the drainage system.
 - ▶ Use of gas and vacuum circuit breakers to reduce the consumption of hydrocarbon oil and generation of waste oil during maintenance.



將濾出的廢物製成泥餅的壓濾機。
Filter press for converting treatment waste into sludge cakes.

Aim Minimization of environmental impact associated with water supply operations, construction and maintenance works, etc.

- Measures Taken**
- ▶ Requiring contractors to dispose of construction and demolition waste at approved landfill sites and to comply strictly with air and noise emissions legislation.
 - ▶ Replacing diesel-driven pumpsets with electric pumpsets and minimizing running time of existing diesel-driven pumpsets and replacing fire fighting systems of halon with FM 200.
 - ▶ Replacement of gas chlorination plant by electrochlorinators at salt water pumping stations.

Aim Protection of water gathering grounds from pollution.

- Measures Taken**
- ▶ Enforcement of the Waterworks Ordinance prohibiting polluting discharges in water gathering grounds.
 - ▶ Controlling developments in water gathering grounds to prevent pollution.
 - ▶ Monitoring closely the activities and water quality in water gathering grounds in conjunction with other relevant government departments.

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政策

守法循規

目標

達致全面遵行環保法例的目標。

採取的措施

- ▶ 根據《空氣污染管制條例》的規定，更換及棄掉石棉水泥管。
- ▶ 監察承建商進行的建造及維修保養工程，確保完全符合噪音及空氣污染管制規例。
- ▶ 由濾水廠和清洗配水庫後所排出的污水全經處理，才排入排水系統。
- ▶ 妥善棄置化學廢物和變壓器油等。
- ▶ 就所有大型基本工程項目進行環境影響評估，減低與其有關的任何負面影響。
- ▶ 制定全面的應急程序及應變計劃，以應付危急情況，例如洩漏氯氣及主要系統出現故障。

政策

加強溝通

目標

加強市民珍惜用水及保護環境的意識。

採取的措施

- ▶ 透過網頁及海報宣傳節約用水措施。
- ▶ 舉辦濾水廠開放日，並為學校、教育機構及青年中心安排濾水廠參觀活動。
- ▶ 在屋邨及其他住宅區舉行巡迴展覽。
- ▶ 於香港環保節等受歡迎的活動中，擺設攤位及陳列以珍惜用水為題的展品。
- ▶ 在中學舉辦講座並陳列展品。
- ▶ 在網頁上公布環保報告。
- ▶ 於海報、單張、水費單及網頁上加進「節約用水」口號。



一位年幼參觀者投入參與本署設於香港環保節2002的攤位遊戲。

A young visitor enjoying the fun at the WSD's game booth at the Hong Kong Environmental Protection Festival 2002.

Policy**Compliance****Aim**

Achievement of full compliance with environmental legislation.

Measures Taken

- ▶ Replacement and disposal of asbestos cement pipes in accordance with the Air Pollution Control Ordinance.
- ▶ Monitoring construction and maintenance works by contractors to ensure full compliance with the regulations on noise and air pollution.
- ▶ Processing all effluent from water treatment works and service reservoir cleaning before discharge into the drainage system.
- ▶ Proper disposal of chemical wastes, transformer oil, etc.
- ▶ Conducting Environmental Impact Assessment of all major capital projects and reducing any negative impact associated with projects.
- ▶ Developing comprehensive emergency procedures and contingency plans to manage emergencies like leakage of chlorine and failure of major systems.

Policy**Communication****Aim**

Raising public awareness of water conservation and environmental protection.

Measures Taken

- ▶ Promotion of water conservation measures on homepage and posters.
- ▶ Holding open days and organizing tours to water treatment works for schools, educational institutions and youth centres.
- ▶ Holding roving exhibitions at housing estates and other populated areas.
- ▶ Setting up game booths and displaying exhibits relating to water conservation in popular events such as Hong Kong Environmental Protection Festival.
- ▶ Giving talks and showing exhibits in secondary schools.
- ▶ Putting Environmental Report on homepage.
- ▶ Putting 'Save Water' slogan in posters, leaflets, water bills and homepage.



市民對濾水廠開放日所展出的水錶模型很感興趣。
Visitors showing interest in a water meter model on display during a water treatment works open day.

環保報告 ENVIRONMENTAL REPORT

能源消耗

作為全港最大的電力用戶之一，我們非常著重善用能源。本署的「能源管理委員會」審慎監察能源效益事宜，並審議和實行各項節省能源的措施，包括進行能源審核、定期監察供水系統的運作效率及耗電量、妥善編排供水設備運作、更換陳舊的設備，以及有效地泵送原水。

然而，隨着用水量上升和新供水設施落成啟用，耗電量亦增至7.18億千瓦特，微升了3.8%。本署主要耗電於濾水廠及抽水站的操作上，耗電量視乎輸水量、平均抽水壓力、集水量及總貯水量而定。

在過去幾年，供應食水所用的人均耗電量及每單位耗電量一直下降。由於二零零三年三月嚴重急性呼吸系統綜合症爆發造成用水量激增，年內，這兩方面都有所增加。在一九九八至二零零一年，供應海水所用的每單位耗電量有上升趨勢，但隨著本署的海水抽水系統採用更耐用的物料，每單位耗電量在二零零二年開始下降。

為了密切監察泵水效率，我們測試了310多個抽水泵組。同時，我們已就新管理措施進行可行性研究及試驗；這些新措施包括以原水補充海水沖廁、實施水泵運作組合編排以增加非高峰用電時間的泵水量，以及把固速水泵更換為變速水泵以增加泵水效率。

關於能源消耗的一些統計數字詳列如下：

ENERGY CONSUMPTION

As a major consumer of electricity in Hong Kong, we have been placing great emphasis on efficient use of energy. Our energy efficiency is carefully monitored by an Energy Management Committee which considers and takes forward energy saving measures that include energy auditing, regular monitoring of systems performance and electricity consumption, optimizing plant operation schedules, replacement of old plants and reduction in pumping raw water.

However, due mainly to an increase in water consumption, and the commissioning of new installations, electricity consumption rose slightly by 3.8 per cent to 718 million kilowatt hours (kwh). Electricity consumption arising largely from the operations of water treatment works and pumping stations depends on the amount of water delivered, average pumping head, yield from rainfall and the amount of water storage.

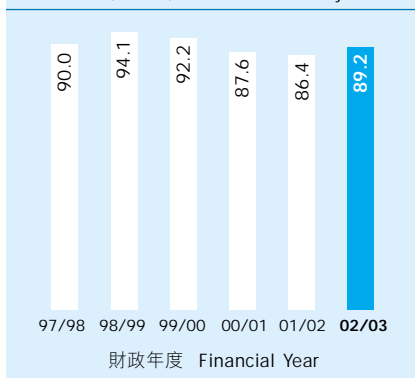
Last few years have seen a decline in per capita and unit electricity consumption for fresh water supply. The increase in both in the past year has been due to a surge in consumption from March 2003 as a result of the SARS outbreak. The rise in the unit electricity consumption for sea water supply from 1998 to 2001 was, however, reversed in 2002 due to the use of more durable materials in our sea water pumping system.

More than 310 pump tests were conducted for close monitoring of the pumping efficiency. Meanwhile, feasibility studies and trial runs have been carried out on new energy management methods including use of raw water to supplement sea water for flushing, implementation of pump scheduling to increase off-peak pumping, replacement of fixed-speed pumps with variable-speed pumps to increase efficiency.

Some statistical details of energy consumption:

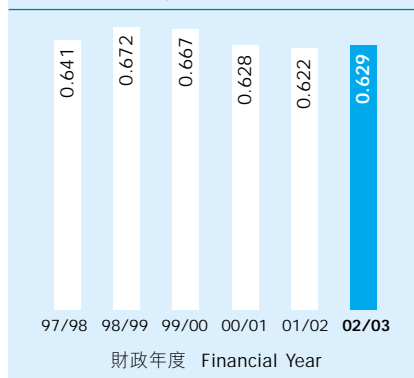
人均耗電量 (食水及原水) Per Capita Electricity Consumption (Fresh Water and Raw Water)

千瓦時／每人／每年 kwh/head/year



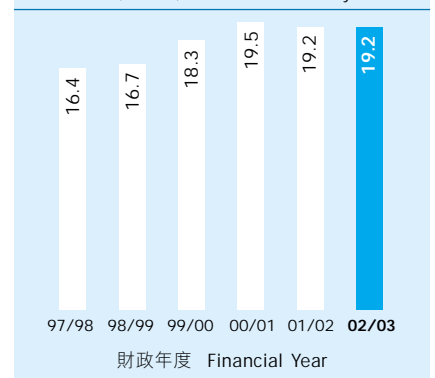
每單位耗電量 (食水及原水) Unit Electricity Consumption (Fresh Water and Raw Water)

千瓦時／立方米 kwh/m³



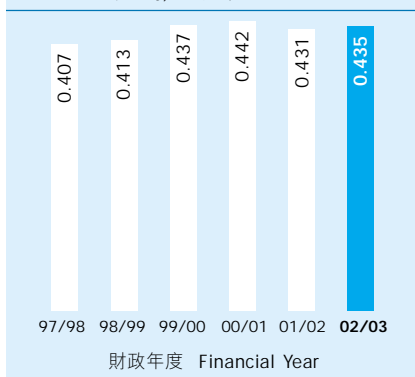
人均耗電量 (海水) Per Capita Electricity Consumption (Sea Water)

千瓦時／每人／每年 kwh/head/year



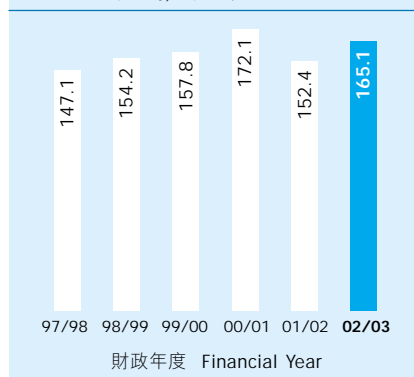
每單位耗電量 (海水) Unit Electricity Consumption (Sea Water)

千瓦時／立方米 kwh/m³



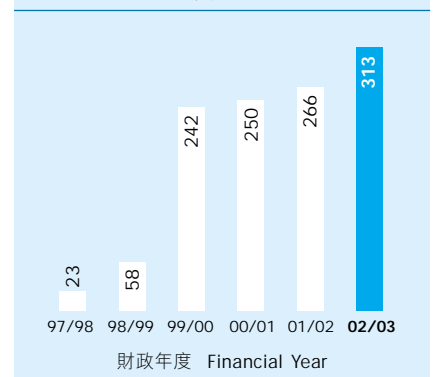
辦公室每單位樓面面積的耗電量 Office Electricity Consumption Per Unit Floor Space

千瓦時／平方米 kwh/m²

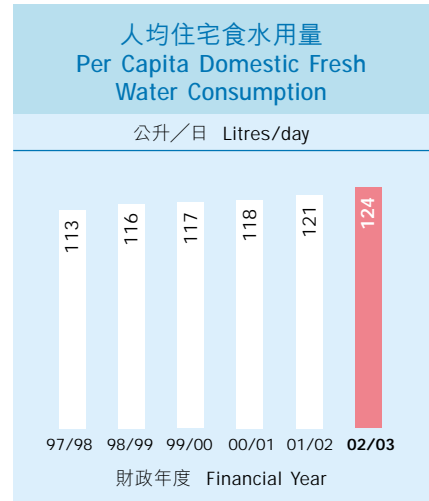
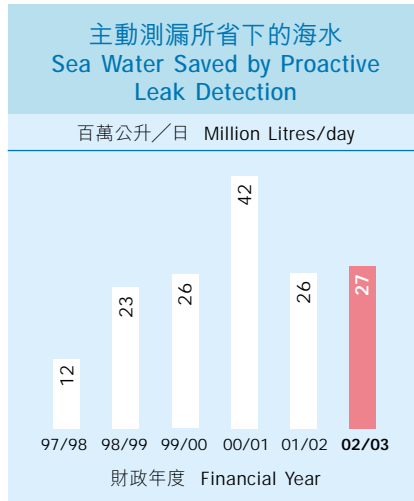
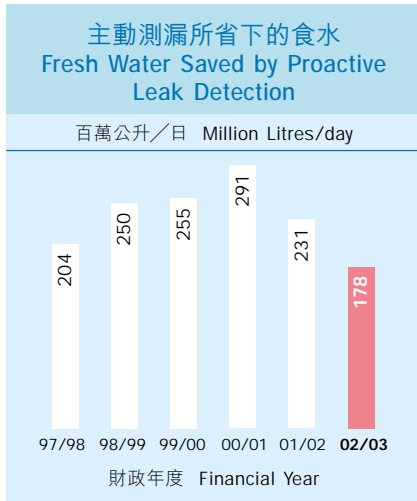


水泵測試次數 No. Of Pump Tests

次數 Nos.



環保報告
ENVIRONMENTAL REPORT



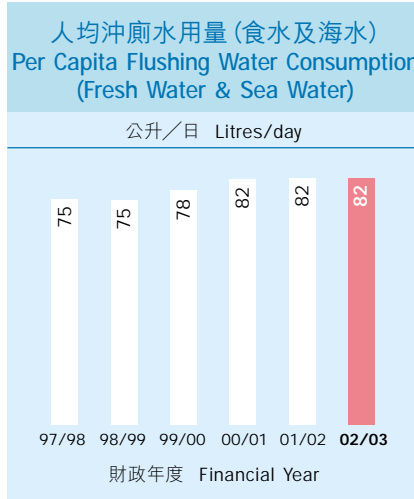
節約用水

由於我們努力節約用水，以致在市民生活水準日漸提高及水費獲大幅補貼等因素影響下，每日的人均用水量在過去幾年僅輕微上升。然而，二零零三年年初綜合症爆發，引致用水量驟增，人均住宅食水用量因而略為上升，至於人均沖廁水用量，則維持不變。

本署的持續測漏計劃在減低用水漏失方面，取得良好進展。我們在海水供應網絡增設聲音數據記錄儀，使海水經水管流失的情況得以減少。此外，鑑於水壓管理已證實可有效減少供水網絡的滲漏，我們現準備把水壓管理計劃推展至一些大型供水區。為持續監察供水網絡以減少用水流失，我們正把更多測漏區轉為區域檢測區，並在檢測區內增設GSM數據記錄儀。

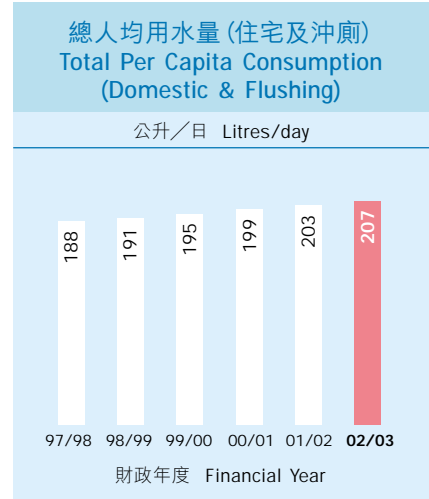
EFFICIENCY OF WATER USE

As a direct result of conservation efforts, the per capita daily consumption of water had increased at only a modest pace in the past few years. This had been achieved against

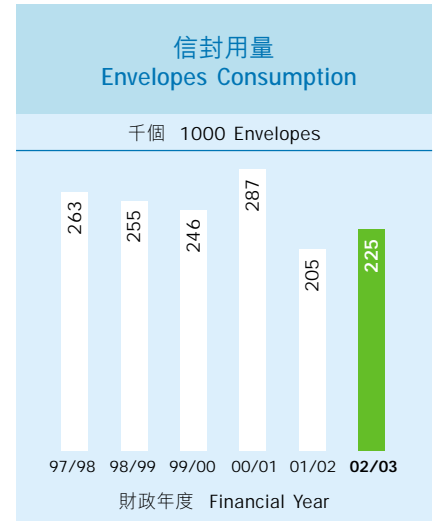
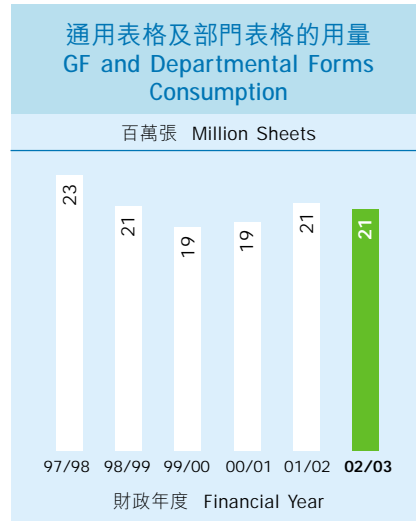
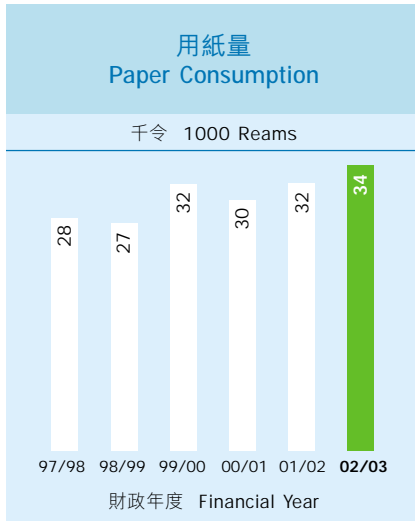


a backdrop of a rise in living standard and highly subsidized water charges. Due to a surge in water consumption as a result of SARS outbreak in early 2003, the pace of the per capita domestic fresh water consumption increased slightly. There was no change in the per capita use for flushing.

There has been encouraging progress in reducing water loss through our continuing leak detection programme. Loss of sea water from mains leakage



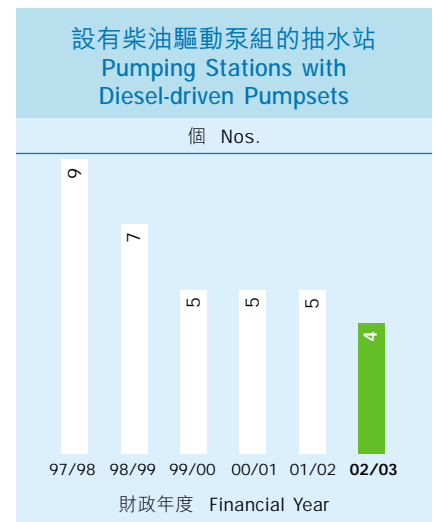
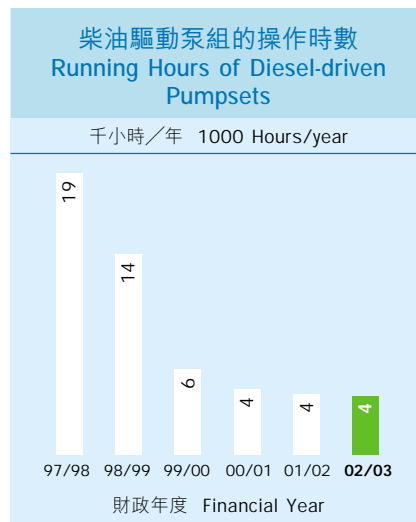
has been cut down with the deployment of additional noise loggers in the sea water supply network. As pressure management has proved effective in reducing network leakage, a plan is underway to extend it to major supply zones. For continuous monitoring of supply network to reduce water loss, more waste detection areas (WDAs) are being converted to district metering areas (DMAs) and additional GSM data loggers have been installed in DMAs.



減少廢物

年內，整體耗紙量及信封用量輕微上升，而表格的用量則下降。本署耗用的循環再造和環保產品以辦公室消耗品居多，用量稍為增加。我們約收集得46噸用過的紙張，以供循環再造。

我們繼續進行以電力操作泵組取代柴油驅動泵組的工程，餘下的4個柴油泵抽水站當中，有3個計劃在二零零三至二零零七年間更換泵組。



WASTE REDUCTION

There was a slight rise in overall consumption of paper and use of envelopes but a decrease in the use of forms. The consumption of recycled and green products, mostly office consumables, increased marginally and about 46 tonnes of used paper was collected for recycling.

Work continues on replacement of diesel-driven pumpsets with electrically-operated ones. Three of the remaining four diesel pumping stations are due for replacement in 2003 to 2007.