

# PROMOTING SUSTAINABLE CONSUMPTION

## 推廣可持續消費



Encouraging the public to purchase and use products in an environmentally-friendly manner is critical to the sustainable development of Hong Kong, and indeed the planet at large; hence this is a key element of the Council's mission. In this regard, it is important to cultivate awareness of sustainable consumption from a young age. Despite the difficulties posed by the pandemic, the Council was able to maintain its education programme in 2020/21 by moving it online. This initiative forms the first of a three-pronged sustainable consumption strategy<sup>8</sup> pursued by the Council, the other two being the study of consumer behaviour through periodic surveys, and the embedding of sustainability elements into product testing. In this way, the Council can help consumers make greener consumption choices, especially in important areas such as domestic appliances.

為支持香港以至全球的可持續發展，本會其中一項重要使命為致力鼓勵大眾以環保的方式購買和使用產品。就此，本會深信從小培育對可持續消費的認識十分重要。儘管疫情增加了推行教育活動的難度，但本會以靈活應變方式，將 2020/21 學年的教育活動改為在網上舉行，讓相關項目得以順利完成。消費者教育是本會推廣可持續消費所採取的三線策略<sup>8</sup>之一；除此之外，本會亦透過定期調查研究消費者行為，以及將可持續元素納入產品測試，幫助消費者在購物，特別是家庭電器等重要範疇時，作出更環保的消費選擇。

### Product Comparative Tests on Appliances and Consumables

At the forefront of product testing, one pillar of the Council's three-pronged sustainable consumption approach is to advise consumers on energy efficient household electrical appliances: from durable whitegoods such as air-conditioners that attributed to almost 40% of household electricity consumption in Hong Kong, to different types of washing machines that vary in their energy and water saving performance. Details of the test results on areas such as energy efficiency, accuracy on labelling, durability after prolonged use, etc., have been released in issues of the CHOICE Magazine. The Council also investigated the warranty period of appliances and the ensuing costs for maintenance, which could affect consumers' incentive to repair their products and could contribute to sustainable consumption. Excerpts from CHOICE are as follows:

### 電器及消費品比較測試


本會以三管齊下的模式推動可持續消費，當中重要一環是透過進行產品測試，向消費者建議高能源效益的家庭電器產品，涵蓋多類產品，由耐用家庭電器，如佔家庭整體用電量近 4 成的冷氣機；至比較不同類型洗衣機的省電和慳水表現。詳細的測試結果包括能源效率、標籤準確度、產品耐用程度等，均刊載於《選擇》月刊。本會亦調查了電器產品的保養期內和隨後的維修費，這些資訊或會影響消費者維修家電的意欲，長遠而言為可持續消費帶來影響。以下節錄本年度《選擇》月刊刊載之報告：

<sup>8</sup> The Council's three-pronged approach to sustainable consumption includes examining changes in consumers' sustainable consumption behaviour through tracking studies, conducting educational programmes such as "Earth 2038", in addition to product testing and survey work.  
本會推廣可持續消費所採取的三線策略，包括研究消費者行為的追蹤調查、教育活動如「2038地球人計劃」，以及產品測試及調查。

## Disposable Batteries

Disposable batteries are common household items, yet their durability and electrolyte leakage problems often draw criticism from consumers. The Council tested 30 models of AA and AAA size disposable batteries, comprising 22 models of alkaline batteries and 8 models of zinc carbon batteries. The test items included service life, resistance of electrolyte leakage and heavy metal content.

The test results revealed the service life of alkaline batteries was generally much longer than that of zinc carbon batteries. Besides, the claimed “enhanced” version of alkaline batteries was not necessarily more durable than their “regular” version. The “enhanced” and “regular” versions of 1 AA and 1 AAA alkaline battery lasted for equal amounts of time when used in remote controls/radios and toys respectively.

According to the EU Directive, batteries should be marked with the chemical symbol “Pb” under the sign  if they contain more than 0.004% lead content. The test results showed that 6 models of zinc carbon batteries were found to contain a lead content exceeding the threshold for additional labelling under the EU Directive, but 3 of them did not carry the additional labelling.

Hong Kong currently has no regulatory limit for the heavy metal content in batteries and also lacks a proper recycling system for primary batteries. If the lead-containing batteries were disposed of improperly, it might harm the environment and eventually human health. The Council recommended the Government to establish heavy metal regulations and/or a recycling system on primary batteries that suits Hong Kong's needs.

## Window-type Air Conditioners

According to the “Hong Kong Energy End-use Data 2020” report published by the Electrical and Mechanical Services Department (EMSD), air conditioning constituted 38% of the electricity consumption in the residential sector in 2018, making it the most power-consuming type of household “energy end-use”. Thus, the performance and energy efficiency of air conditioners are always consumers' key decision factors. The Council tested 15 models of window-type air conditioners with rated cooling capacities of 2.0 to 2.2 kilowatts (kW), commonly known as “3/4 horsepower”. It was the first time to cover models (2 models) using the more eco-friendly R32 refrigerant.


The test revealed that the measured cooling capacity of the test models varied from 2.01 to 2.23kW, of which the measured cooling capacity of 10 models were 0.1% to 2.2% lower than their respective rated cooling capacity. Even though the disparity remained within the acceptable tolerance range (10%) under the “Code of Practice on Energy Labelling of Products” and common international practice, there was still room for manufacturers to enhance the accuracy of such product information as the cooling capacity is the most essential product information for consumers.



## 用完即棄電池

用完即棄電池是居家常備用品之一，然而其耐用程度，以至電解液洩漏等問題常為消費者所詬病。本會測試了30款AA及AAA用完即棄電池，包括22款鹼性電池及8款碳性電池。測試項目涵蓋電池壽命、電解液的耐漏性及重金屬含量。

測試結果顯示，鹼性電池的壽命一般較碳性電池長，而聲稱為「加強版」的鹼性電池不一定較其「普通版」耐用。將「加強版」及「普通版」的1款AA和1款AAA鹼性電池分別置於遙控器/收音機及玩具中，量得的可用時間相若。

根據歐盟環保指令，電池的鉛含量若超過0.004%，便須於電池加上並標註代表鉛的化學符號。測試顯示6款碳性電池樣本的鉛含量超過該水平，惟其中3款沒有加上該環保標誌。

目前香港沒有法例規管用完即棄電池的重金屬含量，亦欠缺回收用完即棄電池的機制。如果含鉛電池棄置不當，可能會對環境及人體健康構成負面影響。本會建議相關政府部門對一次性電池的重金屬含量訂立規管及/或制訂適合本港的回收制度。

## 窗口式冷氣機

根據機電工程署（機電署）發布的《香港能源最終用途數據2020》報告顯示，在2018年住宅用電量中約有38%電力用作空氣調節用途，冷氣機成為了最耗電的家用電器。故此，冷氣機的製冷表現和能源效率是挑選產品的關鍵因素。本會測試了15款窗口式冷氣機，產品聲稱的製冷量為2.0至2.2千瓦，俗稱為「3/4匹」冷氣機，當中首次涵蓋2款採用較環保的R32雪種的機款。

各樣本量得的製冷量由2.01至2.23千瓦，當中10款低於產品所聲稱製冷量的0.1%至2.2%。儘管差別仍處於「產品能源標籤實務守則」及國際慣常做法所容許的可接受公差範圍（10%）內，但本會認為冷氣機的製冷量是關鍵的產品資訊，廠商仍有空間提升產品資料的準確性。

All tested models were rated as Energy Efficiency Grade 1 under the Mandatory Energy Efficiency Labelling Scheme (MEELS). Based on the test results, the cooling seasonal performance factor of the tested models ranged from 3.02 to 3.14, which were in compliance with the original Grade 1 criteria set by MEELS. However, the EMSD has recently upgraded the energy efficiency standard for window-type air conditioners. According to the new standard effective from 31 December 2020 with a 12-month grace period, the models, which were tested before the upgrade, would only be classified as Grade 4 under the new grading standard. The Council urged manufacturers to prepare for the new grading standard in order to maintain the competitiveness of products and to support environmental protection.

## Washing Machines

Based on the Council's consumer opinion survey on the durability and consumer satisfaction of home appliances published in 2019, washing machines/washer-dryers ranked as the most complained-about electrical appliance with the highest overall defective rate of 21%. The Council's latest test on washing machines covered 18 models of 3 different types, namely front-loading type (commonly referred to as "Big Eye"), top-loading impeller type (commonly known as "Japanese type"), and European top-loading type. The results revealed that no washer type could save electricity and water at the same time.

Despite all models being marketed with Grade 1 energy efficiency under MEELS, the test revealed that models of the same type recorded a large disparity in energy consumption. For instance, when using the "cotton clothing" operation mode, the energy consumed for washing each kilogram of clothing showed a discrepancy of nearly 60% among the front-loading models.

Based on the tariff of \$1.2 per unit of electricity, the estimated annual electricity tariff for doing 260 loads of laundry a year using the "cotton clothing" operation mode showed a staggering thirteen-fold difference between the tested models. The top-loading impeller models consumed the least energy with the estimated electricity tariff ranging from \$20 to \$47 per year, but that of the front-loading models ranged from \$134 to \$281, and the European top-loading models were billed from \$135 to \$209. In view of this, the Council recommended the EMSD to further raise the energy efficiency grading standard of washing machines so as to encourage traders to introduce products with higher energy efficiency.

Besides, although the top-loading impeller models consumed the least electricity, they consumed more water compared with other types of washing machines, while front-loading and European top-loading models on average saved about 50% and 55% more water than top-loading impeller washers.

全部樣本的能源效益標籤均標示為1級。若按測試結果計算，各樣本的製冷季節性表現系數介乎3.02至3.14，符合現行「強制性能源效益標籤計劃」的1級評級標準。然而，機電署已提高窗口式冷氣機的能源效益標準，於2020年底生效，並於12個月寬限期後全面實施。倘若參考這個新的評級標準，是次於標準修訂前測試的樣本僅獲4級。本會敦促廠商為新標準作好準備，以保持產品的競爭力並支持環保。

## 洗衣機

按本會2019年公布有關電器耐用程度及消費者滿意度的調查報告顯示，消費者認為洗衣機/洗衣乾衣機是最不耐用的電器，其整體毛病率亦屬最高，達21%。本會測試了18款洗衣機，包括前置式（俗稱「大眼雞」）、頂揭葉輪式（俗稱「日本式」）（下稱葉輪式），以及歐洲頂揭式3類型號。測試發現各樣本難以同時達致既「慳電」又「慳水」。

雖然所有樣本的能源標籤均標示為1級，不過測試卻發現即使同類別樣本間的耗電量亦甚為懸殊。例如以「棉質衣物」模式操作，同屬1級的前置式樣本清洗每公斤衣物的耗電量，最多可相差近6成。

按樣本以「棉質衣物」模式操作量得的耗電量計算，假設每度電\$1.2，每年開機洗衣260次，樣本間每年所需電費差距可高達13倍。當中以葉輪式樣本的耗電量最少，每年電費由\$20至\$47；前置式樣本每年所需電費由\$134至\$281；而歐洲頂揭式樣本則由\$135至\$209不等。由於樣本間衍生的電費差距大，本會建議機電署進一步提高洗衣機的能源標籤評級標準，以鼓勵供應商引進更高能源效益的產品。

另一方面，儘管葉輪式樣本整體耗電量較低，但卻是3類洗衣機樣本中耗水量最多，前置式及歐洲頂揭式樣本則平均較葉輪式樣本「慳水」約5成及5成半。



## Gas Water Heaters

The Council, in collaboration with the EMSD, tested 20 models of domestic gas water heaters, including 11 towngas models with claimed hot water production capacities of 10 to 16.8 litres per minute (for 25°C temperature increase), and 9 LPG models with claimed hot water production capacities of 10 to 13 litres per minute. The 20 models had huge disparities in terms of their retail price, with the appliance plus basic installation fee ranging from \$3,500 to \$10,060.

The test results showed that all models complied with the thermal efficiency requirements of the EMSD's Voluntary Energy Efficiency Labelling Scheme (not lower than 82%), but considerable disparity existed amongst the tested models. The thermal efficiency of 11 towngas water heater models ranged from 84.8% to 93.3% while that for the 9 LPG water heater models ranged from 87.1% to 92.3%. The higher the thermal efficiency value, the higher the energy efficiency and the more energy-saving it would be.

Based on this result, for the towngas category, the model with the highest thermal efficiency could save around 6% more energy than another model with the same declared hot water production capacity but lower thermal efficiency; while for LPG water heater models, the energy consumption could vary by over 5%.

The Council supported the EMSD to include gas water heaters in MEELS instead of the current voluntary participation, and recommended to replace recognition-type labels with grading-type labels to encourage traders to introduce more energy-efficient products.

## Warranty and Maintenance for Electrical Appliances

Across the various tests on home appliances, the Council found the short product warranty period, high annual warranty fee and maintenance charges to be common pain points for customers. For instance, the annual warranty renewal fee for air conditioners ranged from \$420 to \$870 after the warranty period, a difference of more than onefold. The model which cost the most to renew only had a warranty period of 2 years, with the renewal fee (\$870) equal to 27% of the price of a new product, greatly deterring consumers from renewing the warranty. As for washing machines, all the tested models offered only 2 to 3 years of "full warranty".

The Council called on manufacturers and traders to provide a longer product warranty period, lower renewal fees and more affordable maintenance services. This could encourage consumers to repair the product and extend its lifespan, in turn supporting sustainable consumption.

## 氣體熱水爐

本會與機電署合作測試了20款家用氣體熱水爐，包括11款煤氣爐，樣本聲稱的熱水流量（以溫升25°C計）介乎每分鐘10至16.8升；以及9款石油氣爐，聲稱熱水流量（以溫升25°C計）介乎每分鐘10至13升。20款樣本的售價十分懸殊，爐具連基本安裝費用介乎\$3,500至\$10,060不等。

測試結果顯示，全部樣本均達到機電署現行自願性能源效益標籤計劃的熱效率要求（不少於82%）。不過樣本間的能源效率表現差異頗大，11款煤氣爐樣本的熱效率介乎84.8%至93.3%，而9款石油氣爐樣本的熱效率則介乎87.1%至92.3%。樣本量度得的熱效率數值愈高，代表能源效率愈高，相對愈節能。



若以此結果推算，熱效率最高的煤氣爐樣本，較另一款相同聲稱熱水流量的煤氣爐樣本，可節省約6%的能源；至於石油氣爐方面，樣本間的能源消耗可相差逾5%。

本會支持機電署將氣體熱水爐納入強制性能源效益標籤計劃，取代目前以自願性質參與，並且建議以「級別式」標籤取代「確認式」標籤，以鼓勵供應商引進更高能源效益的產品。

## 電器產品的保養及維修

本會發現不同類型的家庭電器產品普遍有保用期短、續保年費及維修費高昂等消費者痛點。以冷氣機的續保費用為例，每年續保的費用由\$420至\$870，相差可逾1倍。其中續保年費最高的樣本，只有2年保用期，其續保費用（\$870）相等於新機價格的27%，自然影響消費者續保的意欲。至於洗衣機，樣本亦只提供2至3年的新機全機保用期。

本會呼籲廠商及代理商盡量為產品提供較長的保用期、較相宜的續保年費及維修費等，以鼓勵消費者維修產品以延長其壽命，共同推動可持續消費。

## Public Education on Sustainable Consumption

### World Consumer Rights Day

The Council took an active role in promoting the theme of World Consumer Rights Day 2021 (15 March 2021) — **“Tackling Plastic Pollution”**. To raise public awareness on the pressing issue of plastic waste and the 7Rs (rethink, refuse, reduce, reuse, recycle, repair and replace), the Council produced a short video for its social media channels and published an article and editorial piece in the March 2021 issue of CHOICE Magazine. A contribution piece highlighting ways the Government, businesses and the public could tackle plastic pollution was published in the *South China Morning Post*.



<https://www.youtube.com/watch?v=ng9UjsjdVVI>

### Education for Young Consumers

Sustainable consumption habits should be nurtured from a young age. To this end, the Council has continued to run the *“Earth 2038’s Learning Journey of Sustainable Consumption”* in the 2020/21 school year, inspiring primary school students to reflect on their consumption habits and to put the 7Rs into action.

In addition, the Council jointly organises the annual Consumer Culture Study Award (CCSA) with the Education Bureau. Since the 2017/18 school year, a new thematic award category *“Innovative Design for Sustainable Consumption”* has been introduced to encourage students to explore initiatives in fostering a sustainable consumption environment.

Details of the programme and award are covered in the chapter *“Empowering Consumers Through Education”*.

## 可持續消費的公眾教育

### 國際消費者權益日

本會積極參與推動 2021 年國際消費者權益日 (2021 年 3 月 15 日)，回應「應對塑膠污染」(Tackling Plastic Pollution) 的年度主題，特別製作短片於社交平台發布，並於 2021 年 3 月號的《選擇》月刊刊載專題文章及編者的話，旨在喚起社會各界正視塑膠污染問題，以及如何在日常生活中實踐 7R (反思 rethink、拒絕 refuse、減少 reduce、重用 reuse、回收 recycle、維修 repair 和取代 replace)。此外，本會亦於《南華早報》發表投稿文章，建議政府、商界及消費者三方應對塑膠污染的各種方法。

### 青少年消費者教育活動

可持續消費的習慣須從小培養，為此，本會繼續於 2020/21 學年透過「2038 地球人計劃之可持續消費旅程」，推展可持續消費教育，啟發小學生反思自己的消費習慣，並將 7R 付諸實行。

此外，本會與教育局合辦的年度旗艦教育活動 — 消費文化考察報告獎 (「報告獎」)，亦自 2017/18 學年起增設「可持續消費創意設計」主題獎，鼓勵中學生就促進可持續的消費環境發掘創新設計。

本年報「以教育活動提升消費者自我保護能力」一章詳載有關計劃及「報告獎」內容。

