PROMOTING SUSTAINABLE CONSUMPTION
推廣可持續消費

The Council sees itself as having a strong mission to protect the environment through promoting sustainable consumption, encouraging the public to purchase and consume wisely so as not to compromise the environment of future generations. The Council's three-pronged strategy in this area involves a commitment to understanding and analysing consumer behaviour through periodic surveys; cultivating sustainable consumption mindsets through experiential learning programmes in schools (more on this in the "Empowering Consumers through Education" chapter); and helping consumers make greener consumption choices by embedding sustainability elements into the Council's product testing and survey work.

推動可持續消費從而保護環境，鼓勵公眾精明消費購物，以免犧牲後代的生存環境，是本會肩負的重任。本會採取的策略主要分三線，包括通過定期調查、全力了解及分析消費行為；在校園推行體驗式學習活動以培養可持續消費思維（在「以教育活動提升消費者自我保護能力」一章會有詳述）；在本會的產品測試及調查項目中納入可持續性的元素，以助消費者作出更環保的消費選擇。

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 energy saving LED light-bulbs that claimed to have a long lifespan. 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 magazines. Excerpts are as below:

Product Comparative Test on Appliances

Air-conditioners

The Council tested 14 models of window-type air conditioners with claimed cooling capacity of 5.0 to 5.3 kilowatts (kW), or in layman's terms, "2-horsepower". 12 were the fixed-capacity type and 2 were the inverter type.

推動可持續消費策略主線之一是透過產品測試，向消費者提供電器產品能源效益建議，例如佔本港家庭約 4 成耗電量的冷氣機等耐用「白色家電」又或是聲稱長壽的慳電 LED 燈泡等。針對產品能源效率、標籤準確性、經長期使用後的耐用表現等測試結果，已在《選擇》月刊中發表，節錄如下：

電器產品比較測試

冷氣機

本會測試了 14 款窗口式冷氣機，樣本的聲稱製冷量為 5.0 至 5.3 千瓦，俗稱「兩匹」，當中 12 款為定頻式，其餘 2 款屬於變頻式。

In relation to the Cooling Seasonal Performance Factor (CSPF), a ratio of annual total heat removal to total energy consumption, 1 model had a low CSPF value of 2.91. The CSPF of the rest of the fixed-capacity models was 3.0 to 3.1, compared to 4.12 to 4.17 for the inverter models. The difference between the 2 groups of air conditioners was a considerable 39%.

Another crucial performance factor for air-conditioners is their cooling capacity. The test found that the cooling capacity of the 14 models ranged from 4.94 kW to 5.25 kW. 12 of them performed lower than their claimed value by 0.9% to 3.2%.

Although the discrepancies were within the acceptable limit (10%) of the Code of Practice on Energy Labelling of Products and international practices, the Council stressed that manufacturers should continue to improve the accuracy of the labelling information.

All the tested models were marketed with Grade 1 label under the Mandatory Energy Efficiency Labelling but the test found that 13 models met the Grade 1 requirement, and the model with the lowest CSPF value met only the Grade 2 rating.

Consumers should also beware of the after-sales service, including the product warranty period, maintenance and repairs. The Council found that most models were covered by full warranty for 3 years or more, but the warranty period of 3 models was only 2 years. The warranty period for the air conditioner compressor for all models was 5 years or more, with 1 model offering a permanent warranty. However, upon expiry of the warranty, the annual renewal maintenance fee was between $400 and $870, a more than two times difference.

Air Circulator Fans

Many households shop around for air circulator fans to combat the hot summer heat. The Council tested 14 models of air circulator fans and only 4 of the 14 models passed all the safety test items. 7 models failed the safety tests on electrical insulation and protection against electric shock, construction, mechanical safety, and temperature rise, etc.

「製冷季節性表現系數」(CSPF) 是計算冷氣機全年排走總熱量和總耗電量的比率，最低 1 款樣本的 CSPF 值只有 2.91，其餘樣本的 CSPF 值以定頻式樣本較為遜色，介乎 3.0 至 3.1，而變頻式樣本則達 4.12 及 4.17，兩組機種的製冷數值相差可達 39%。

冷氣機的製冷能力是冷氣機另一個重要效能表現，測試結果顯示 14 款樣本量得的製冷量由 4.94 至 5.25 千瓦，當中 12 款的製冷量低於產品所聲稱約 0.9% 至 3.2%。

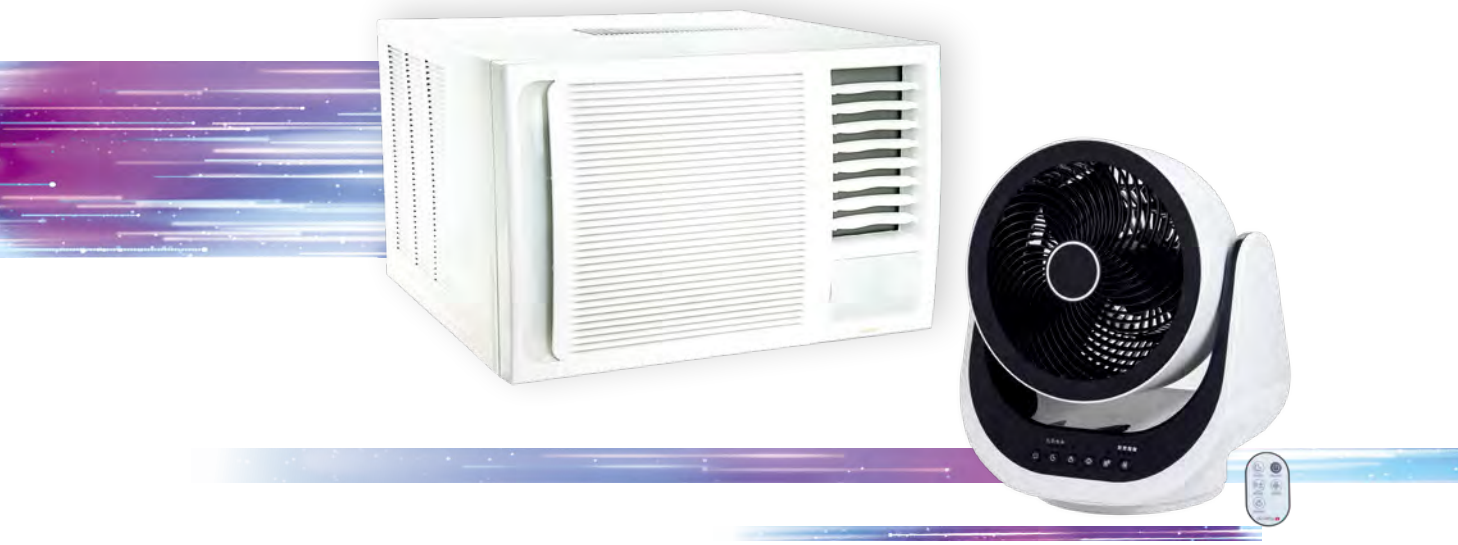
儘管樣本製冷量與聲稱所指的差別仍處於「產品能源標籤實務守則」及國際慣常做法所容許的可接受公差範圍 (10%) 內，但本會仍強調廠商應繼續提高產品資料的準確性。

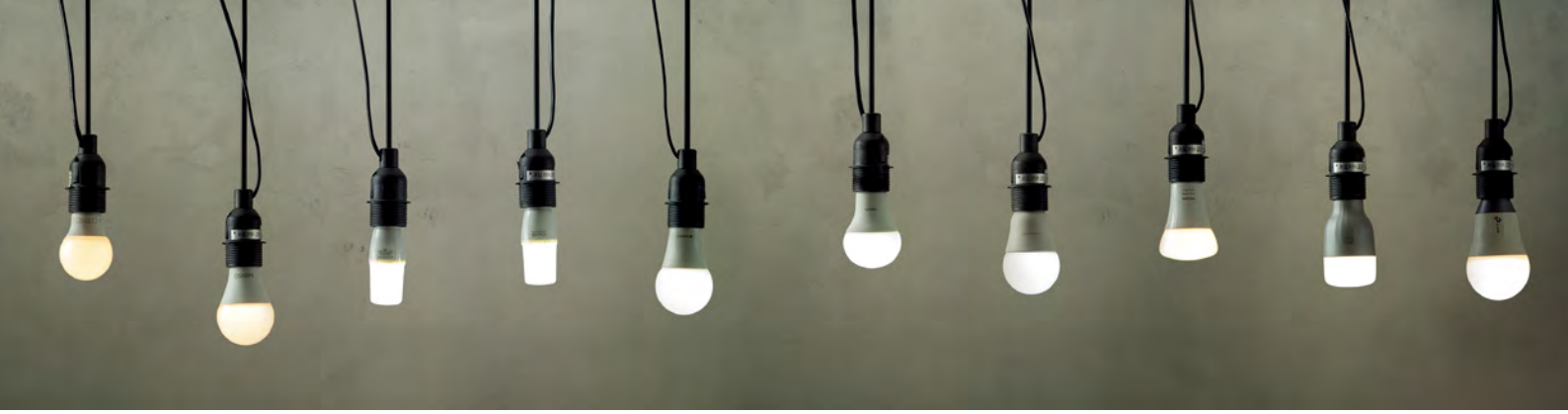
全部測試樣本的強制性能源效益標籤均標示為 1 級，但測試結果顯示，13 款符合 1 級要求，餘下 1 款 CSPF 值最低的樣本實際只達 2 級水平。

產品保用期以及維修檢查等售後服務同樣值得消費者多加留意。本會發現大部分樣本均提供 3 年或以上的全機保用期，但有 3 款的保用期只有 2 年。至於冷氣機內壓縮機的保用期，全部樣本都有 5 年或以上的保用期，當中有 1 款更提供永久保用。然而，當保用期完結，每年續保的費用則由 $400 至 $870，相差逾 1 倍。

循環扇

要驅走暑熱，不少家庭會購置循環扇。本會測試了 14 款循環扇，發現當中只有 4 款通過所有安全測試項目。有 7 款未能通過絕緣及防觸電保護、結構、機械安全性及溫升等安全測試項目。





In respect of energy efficiency, for every watt of energy consumed, the airflow rates of all tested models varied from 0.2 to 0.7 cubic meters/minute, a difference of 67%. For instance, one model with a relatively low airflow rate (8.6 cubic meters/minute) was found to be the most energy efficient, and it was found to have the least power input (12 watts); when the model was run for 10 hours, the energy consumption was only about 0.1 unit of electricity. But for another model with similar airflow rate (8.5 cubic meters/minute), the power input was up to 34.7 watts; operating the model for 10 hours consumed some 0.3 electricity unit, or 3 times of the former. The test also revealed that consumers should compare the energy consumption of air circulators with similar airflow rate in order to optimise energy efficiency and support sustainable consumption.

On the other hand, all models were allowed to run for 1,600 hours (assuming 10 hours per day for 160 days) to test their durability. One model began to show an irregular auto-oscillation motion after running just for 420 hours, though it completed the test. Consumers who need to keep their air circulators on for a prolonged period should consider energy efficiency, airflow performance and durability that best suit their need.

LED Light Bulbs

The Council and Electrical and Mechanical Services Department (EMSD) conducted a joint-test to evaluate the safety, performance and photobiological safety of 10 home-use LED light bulbs with rated input power of 6-11 watt, comprising 7 classic and 3 colour-tunable LED light bulbs.

Consumers usually choose the light bulbs based on their luminous flux, luminous efficacy and lifespan. The luminous efficacy of the tested models was calculated based on their lumen output per watt of power, which largely determined the energy efficiency of LED light bulbs. It was found that the luminous efficacy of 7 classic LED light bulb models varied from 92lm/W to 117lm/W, but that of the 2 colour-tunable LED light bulbs varied significantly with different light colours.

In general, luminous flux of LED light bulbs would be reduced after using for a certain period of time. In the 6,000-hour ignition test, 2 models maintained their initial luminous flux after completion of the ignition test, while the others dropped by 1.1% to 6.2%. The luminous flux of 2 models dropped by more than 5%. When comparing this test results with the previous test in 2015, the performance of the samples in 6,000 hours lumen maintenance was generally improved. All models did not pose any photobiological hazard but 8 models were found to fall short of safety instructions.

能源效率方面，各樣本每瓦特能量可產生介乎 0.2 至 0.7 立方米 / 分鐘的送風量，相差約有 67%。當中 1 款送風量較低（8.6 立方米 / 分鐘）的樣本能源效率最佳，而且量得的輸入功率最低（12 瓦特），即使使用 10 小時亦只消耗約 0.1 度電；但另 1 款送風量相若的樣本（8.5 立方米 / 分鐘），其量得的輸入功率達 34.7 瓦特，而使用 10 小時則消耗約 0.3 度電，為前者的 3 倍。測試反映即使送風量相若，消費者仍須比較循環扇的耗電量，以促進能源效益及支持可持續消費。

另一方面，以各樣本運行 1,600 小時（假設開機 160 天，每天 10 小時）以評估其耐用程度。1 款樣本在運行約 420 小時後開始出現自動搖擺動作不暢順的情況，但仍能完成測試。需要長時間使用循環扇的消費者，應要同時考慮其能源效率，送風表現和耐用性，以選擇最適合的型號。

LED 燈泡

本會與機電工程署合作測試市面上 10 款家用 LED 燈泡的安全程度、效能及光生物學安全等方面表現。樣本的額定功率由 6 至 11 瓦特不等，包括 7 款普通燈泡和 3 款智能燈泡。

消費者在選購燈泡時，一般會參考燈泡的輸出光度、光效和壽命。LED 燈泡的光效是由每瓦特電力可產生多少光量計算所得，亦決定燈泡的節能表現。測試發現 7 款普通燈泡量得的光效由 92 至 117 流明 / 瓦特不等。此外，2 款智能燈泡在不同燈光顏色下光效差異頗大。

一般情況下，LED 燈泡在使用若干時間後，光度會逐漸減弱。本會的試驗中將 LED 燈泡燃點 6,000 小時後，2 款樣本仍能維持最初的光度，其餘樣本的光度跌幅由 1.1% 至 6.2%，其中 2 款樣本的跌幅超過 5%。相對本會 2015 年 LED 燈泡的測試結果，是次試驗樣本在 6,000 小時光度抗跌能力普遍有改善。所有樣本都不會造成光生物危害，但 8 款樣本的安全指示略有不足。

Durability and Consumer Satisfaction of Home Appliances

If problems were soon found in a newly purchased electrical appliance, it could imply that a brand is poor in product quality and workmanship, causing early disposal of the appliance.

The Council collected feedbacks from 1,421 families through telephone interviews to evaluate the durability and level of consumer satisfaction of 5 types of commonly used home appliances – televisions, washers, refrigerators, air conditioners and dehumidifiers.

It was found that washers/washer-dryers were regarded as the least durable, followed by air conditioners while dehumidifiers of different brands were reported to have the lowest overall average defective rate.

Washers/washer-dryers were also found to have the highest defective rate, with an overall average of 21%, followed by air conditioners at 18%, TV sets at 15%, refrigerators at 11% and dehumidifiers at 10%.

Consumer satisfaction was highly correlated to low defective rate, reflecting the importance of good product quality. Conversely, whether or not consumers buy the same brand again might not necessarily related to the product's durability, revealing that durability was not the sole determining factor for consumers.

The decision to replace or dispose of home appliances might not be related to product damage or defects. For instance, 41% of the respondents indicated that they replaced a new air conditioner even though the existing one was still functioning. It might be due to a high repair and maintenance cost as the average cost for each repair was $1,471, which was the highest among the 5 types of home appliances.

To facilitate the practice of sustainable consumption, the Council urged manufacturers to provide home appliances of good quality and durability, and to lower the repair and maintenance cost. Consumers should exercise rational consumption to consider repairing the appliances, and to replace them only when they could not be repaired.

Where Have All the Tested Products Gone?

The products used for testing by the Council were put to further use with a number of items donated to environmental protection organisations, charity groups and non-profit organisations for further consumption and recycling. During the year, a total of 623 items, including electrical appliances, household consumables, health products, infant products, skin care products as well as food and beverages, were donated to 7 recipient organisations.

The recipient organisations were: Action Care, ALBA Integrated Waste Solutions (Hong Kong) Ltd, Eastern Community Green Station, Hong Kong Council on Smoking and Health, Hong Kong Women Development Association Limited, Shatin Women's Association and Yang Memorial Methodist Social Service.

家電產品耐用程度及滿意度

新添置的電器產品若使用不久就發生故障或損壞，多少反映該品牌的產品質素及工藝欠妥善，令該電器產品被逼提早報廢。

本會以電話訪問收集了 1,421 個家庭的意見，評估 5 類最普遍大型家電（電視機、洗衣機、雪櫃、冷氣機及抽濕機）的耐用程度以及消費者對各個品牌的滿意度。

調查顯示，洗衣機 / 洗衣乾衣機最不耐用，其次是冷氣機；而不同品牌抽濕機平均出現毛病的比率相對較低。

洗衣機 / 洗衣乾衣機出現毛病的比率最高，平均為 21%；其次的冷氣機平均毛病率亦達 18%；電視機為 15%；雪櫃為 11%；至於抽濕機的毛病率平均只有 10%。

消費者對電器產品的整體滿意度，往往與毛病率高低掛勾，反映產品質素優良的重要性。相反，消費者在考慮會否再度選購同一品牌的產品時，與產品的耐用程度未必有必然關係，反映此因素並非消費者作決定的唯一考慮。

消費者更換或丟棄家電產品，不一定是因為產品出現損壞或故障。例如有 41% 的受訪者表示會在冷氣機仍能運作下更換新機，可能與冷氣機的維修費用高昂有關，平均每次達 $1,471，而冷氣機的維修費用為 5 類電器中最高。

本會呼籲生產商提供品質良好及耐用的家電產品，並調低維修費用，共建可持續消費的環境；同時提醒消費者理性消費，更換電器產品前應先考慮維修，直至無法維修時才更換。

產品測試完畢後的去向

部分經消委會測試的產品會捐贈予環保組織、慈善團體及非牟利機構使用及回收。年內，本會共捐贈 623 件物品至 7 間機構，當中包括電器、家庭消耗品、健康產品、嬰兒用品、護膚產品及食品飲料。

受惠機構如下：關愛動員、歐綠保綜合環保（香港）有限公司、綠在東區、香港吸煙與健康委員會、香港婦聯有限公司、沙田婦女會及循道衛理楊震社會服務處。