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# 減少 Reducing

# 備用狀態 耗能

Standby  
Power Consumption



機電工程署  
EMSD



## 什麼是備用狀態能耗？

備用狀態能耗是當電器不在執行它們的主要功能下的能量消耗，即連接電源而處於準備運作的狀態。例如：以遙遠控制器關閉電視機後，電視機仍會持續消耗微量的電力以維持控制功能。備用狀態能耗的單位是瓦特(W)。

## 備用狀態下消耗了多少能量？為何備用狀態能耗這麼重要？

不同電器在備用狀態下的耗電量不盡相同。假定每件電器在備用狀態下的耗電量為1瓦特，以及假設一般家庭約有10至20件備用狀態電器\*，則關掉所有備用狀態電器可令家庭總耗電量減少達3%。

\* 這類電器包括：寬頻數據機；Wi-Fi路由器；室內無線電話；電腦；電腦顯示屏；列印機；流動電話、平板電腦、手提電腦、外置電池的充電器；電視；影碟機；數碼錄影機；電子遊戲機；收音機；電風扇；電動牙刷，以及電動鬚刨。

## What is standby power?

Standby power is the electricity consumed by an appliance when it is not performing its primary functions, but plugged in to a power source and ready to be used. For example: a television continues to draw a little power to maintain the control function after the user switches it off with the remote control device. Standby power is expressed in watts (W).

## How much energy is consumed in standby mode? Why is it so important?

The electricity consumption of different electric appliances in standby mode varies. Assuming that the standby electricity consumption for an appliance is 1 Watt and a family normally has about 10 to 20 electrical appliances\* in standby mode, switching off all such standby appliances may reduce household electricity consumption by up to 3%.

\* The appliances include broadband modem; Wi-Fi router; cordless telephone; computer; computer monitor; printer; charger for mobile phone, tablet, notebook and backup battery pack; television; video player; digital video recorder; video game console; radio; electric fan; electric toothbrush and electric shaver.

## 怎樣辨識具有 備用狀態耗能的產品

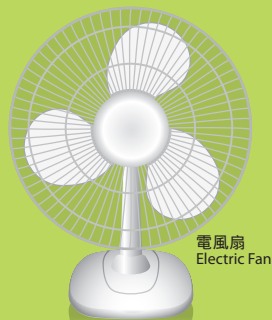
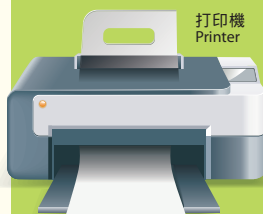
辨識備用狀態耗能的產品最佳方法是使用電錶（功率錶）。但在日常生活中，我們也可從產品一些特徵，來辨別電器產品是否具有備用狀態耗能：

- 附有遙控裝置，例如：電視、錄影機、電風扇、音響設備等。
- 附有連續的電子顯示，例如：洗衣機、微波焗爐、錄影機、音響設備等。
- 附有外置供電裝置如變壓器等，例如：移動電話充電器、手提電腦等。
- 附有可再充電電池裝置，例如：室內無線電話、電池充電器等。此等產品在電池充電完畢後仍消耗一定電力。

## How to identify products with standby power consumption

The best way to ascertain if a product consumes standby power is to measure it with a watt-meter. However, here are a few clues to help identify products with standby power:

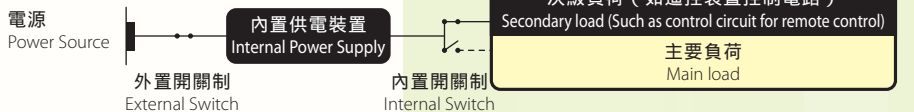
- With remote control. For example, TVs, VCRs, electric fans, and audio equipment.
- With continuous digital display. For example, washing machines, microwave ovens, VCRs and audio equipment.
- With external power supply such as transformer. For example, mobile phone chargers, laptops.
- With rechargeable battery and charging device. For example, cordless telephones, battery charger. These products continue to use standby power even after the battery is fully charged.



## 備用狀態能耗怎樣溜走

## How Standby Power Creeps Away

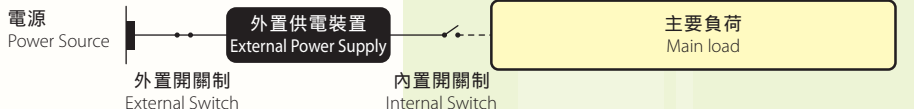
圖一：電器裝置附有遙控裝置或連續的電子顯示  
Diagram 1: Appliance with Remote Control Circuit or continuous digital display



雖然電器裝置經「電能管理」自動或被遙遠控制器關上內部主要負荷的功能，然而，次級負荷（即遙控裝置或連續的電子顯示）仍須要耗用電能以維持在備用狀態下自動或遙控的功能運作。

Even the main load circuit of the appliance is switched off via the remote control device or internal control, standby power is still required to maintain the function of the secondary load, such as remote control circuit or continuous digital display circuit.

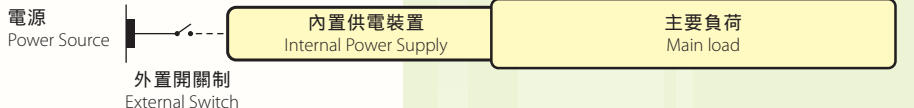
圖二：電器產品附有外掛供電裝置  
Diagram 2: Appliance with External Power Supply



雖然電器裝置主要負荷已經關掉，然而外置供電裝置並未關掉，仍維持在備用狀態下消耗電能。

Even the main load device of the appliance is switched off, the external power supply unit of the appliance is still consuming the standby power.

圖三：電器裝置在停用狀態  
Diagram 3: Appliance in OFF mode



在停用狀態下，電器裝置完全與電源脫離。

In off mode, the appliance is disconnected from the power source.

## 智能插座

智能插座是一種減少備用狀態耗能的簡易產品。它包含一個主插座及數個從員插座。當由主插座提供電源的主設備裝置被關掉或轉為備用/休眠狀態<sup>^</sup>時，便會自動切斷從員插座電源而關掉所有外圍設備裝置（參照表一）。從而阻止外圍設備裝置因停留在備用狀態而浪費能源。

<sup>^</sup> 在備用/休眠狀態下，主電器或主設備裝置仍消耗微量電能。

## Intelligent Power Bar

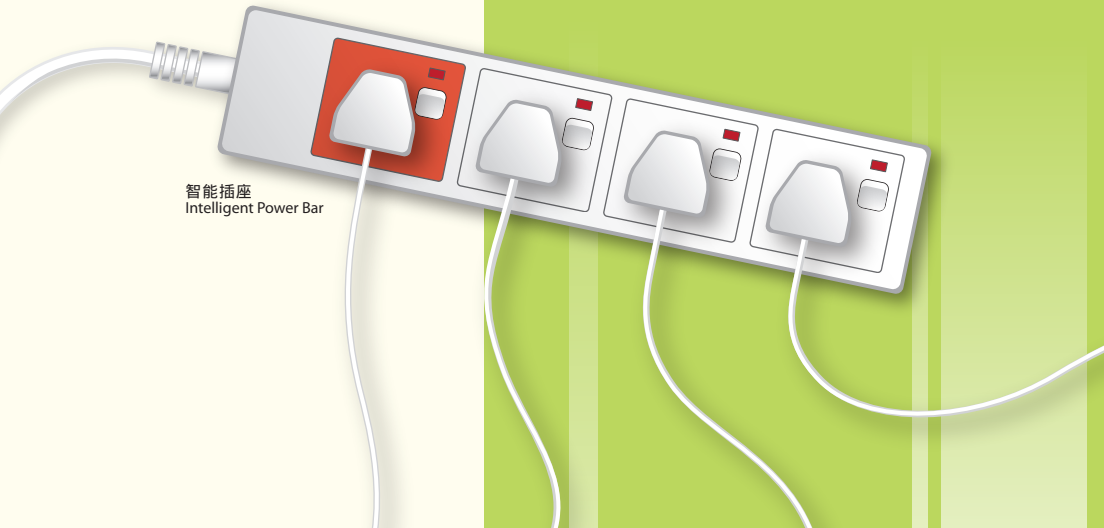
Intelligent power bar is a convenient device to reduce Standby Power usage. It consists of a Master socket and several Slave sockets. When the main device which is plugged into the master socket switches off or changes to standby or hibernate mode<sup>^</sup>, it automatically switches off all the peripheral devices (see Table 1) which are plugged into the slave sockets. Thus it prevents the peripheral devices left on standby from wasting energy.

<sup>^</sup> The main appliances/devices still consume small amount of electricity at standby or hibernate mode.

表一：主設備裝置及外圍設備裝置  
Table 1 : Main device and Peripheral devices

主設備裝置 Main device	外圍設備裝置 Peripheral devices
電視 Television	藍光/數碼影碟機、錄影機、音響設備，電子遊戲機等。 Blu-ray/DVD player, VCR, audio equipment, video game console, etc.
座 電腦/手提電腦 Desktop Computer / Laptop	打印機，顯示屏，掃描器，寬頻數據機，揚聲器等。 Printer, Monitor, Scanner, Broadband modem, Speaker, etc.

智能插座  
Intelligent Power Bar



# 減少備用狀態能耗小貼士

## 辦公室守則

### 1 確立公司節能政策

- 確立節能政策和措施，顯示公司管理層對節能的支持。
- 購買具備「低備用狀態能耗」及有能源標籤的產品。
- 購買有自動轉至低能耗和省電模式的產品。
- 將主設備裝置和外圍設備裝置，接駁至設有開關控制的多孔電源插座或智能插座。
- 透過訓練和溝通，建立內務管理守則，例如指派員工作定期的工作間巡察，並進行節能經驗交流和討論等；使員工明白和承諾執行省電措施。

### 2 設備的設定與員工訓練

- 使員工了解辦公室設備的省電設定。
- 要求供應商預設省電設定和訓練員工怎樣有效操作設備。

### 3 使用辦公室設備

#### 甲) 辦公時間內

- 離開工作崗位稍長時間，例如開會或午膳，利用電腦的「電源管理」功能使系統進入待命或休眠狀態及把屏幕和打印機等的電源關掉。

# Tips for reducing standby power

## Office Practices

### 1 Establish company wide energy efficiency policy

- Establish an Energy Efficiency Policy and Measures to indicate top management' s commitment.
- Purchase electrical appliances with "low standby power" and ENERGY LABEL.
- Purchase equipment with automatic low power mode or energy saving mode.
- Plug the main device and peripheral devices to switchable multi-socket power bars or intelligent power bars.
- Get staff to understand and commit to good energy saving practices by providing continuous training and communication; setting up of housekeeping practices such as assigning designated officers to inspect workplace; and having discussion sessions for identifying areas of improvement, etc.

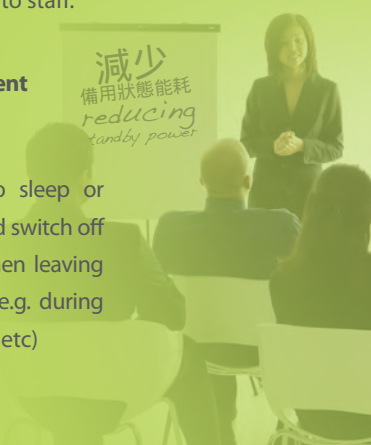
### 2 Equipment setting and staff training

- Inform staff of the power management features of office equipment.
- Ask supplier to pre-set power management features and provide training to staff.

### 3 Use of office equipment

#### A) During office hours

- Switch computers to sleep or hibernation mode and switch off monitors, printers when leaving office for long time (e.g. during meetings, lunchtime, etc)





## 乙) 離開辦公室前

- 關掉電腦和與之連接的外圍設備裝置，如電腦顯示屏和打印機等，的電源。
- 關掉所有辦公室設備的電源。
- 安排最遲離開辦公室的員工檢查並關掉不需要的空調、照明和辦公室設備的電源。
- 儘量減少在辦公時間以外仍保持運作的設備數量，例如把多部傳真機的運作轉至單一部傳真機；把電腦伺服器必須保持運作的功能集中，從而減少運作中伺服器的數量。
- 在適當情況下，利用「七天時間掣」有助解決共用辦公室設備的能源管理。

## 家居守則

- 購買具備「低備用狀態能耗」及有能源標籤的產品。
- 使用後立即關掉使用率相對低的電器產品及設備的電源。
- 電腦和打印機使用完畢後立刻關掉電源。
- 在長時間旅行前，應把電器產品的電源截斷，包括把插蘇拔掉。



## B) When leaving office

- Switch off the power sources to computers and the connected peripheral devices, such as monitors and printers, etc.
- Switch off the power sources to individual equipment at the power outlets.
- Arrange the last-man-out to check and switch off the power source to all AC, lighting and those office equipment that are not in use.
- Keep the number of switched on equipment that has to perform its primary function during non-office hours to a minimal, such as forward all fax lines to one fax machine, group computer servers and switch off non-essential servers.
- Where applicable, use a 7-day timer to help in energy management for shared office equipment

## Home Practices

- Purchase electrical appliances with “low standby power” and ENERGY LABEL.
- Switch off the power source to those appliances and devices with low usage rate immediately after used.
- Switch off the power source to the computer and printer when not in use.
- When leaving home for a long vacation, switch off or even unplug the electrical appliances from the power sources.

減少備用狀態能耗的最佳和簡單方法是：

**使用完畢後，**

**將電器產品和設備關掉或拔離插座**

**與電源隔離。**

The best and simple way to Reduce the Standby Power Consumption is :

**Switch off or Plug off appliances and devices**

**from power source**

**after use.**

本小冊子可從以下網址下載

This booklet can be downloaded from this link

[http://www.emsd.gov.hk/filemanager/en/content\\_718/Reducing\\_Standby\\_Power\\_Consumption.pdf](http://www.emsd.gov.hk/filemanager/en/content_718/Reducing_Standby_Power_Consumption.pdf)

機電工程署

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