



# Use Cases/Applications for the APS Tech Spec

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## BBA Plug & Process Load Team Website

### APS Publications:

- APS Technical Specification
- APS “How-To” Guide
- Utility rebates/incentives list

The screenshot shows the Better Buildings Alliance website. At the top, there is a navigation bar with the U.S. Department of Energy logo and the text 'Energy Efficiency & Renewable Energy'. To the right, it says 'EERE Home | Programs & Offices | Consumer Information'. Below this is the 'Better Buildings' logo with the tagline 'U.S. DEPARTMENT OF ENERGY' and the 'BETTER BUILDINGS ALLIANCE' text. There are social media icons for LinkedIn and Twitter. A main navigation menu includes 'Sectors', 'Activities', 'Events', 'About', and 'Join'. A breadcrumb trail reads 'HOME » TECHNOLOGY SOLUTIONS TEAMS » PLUG & PROCESS LOADS » PPL: SELECT APPROPRIATE CONTROL STRATEGIES'. The 'Activities' section is active, with a sub-menu for 'Technology Solutions Teams' containing: Lighting & Electrical, Space Conditioning, Plug & Process Loads (highlighted), Food Service, Refrigeration, Laboratories, Energy Management Information Systems, and Renewables Integration. Below this is 'Market Solutions Teams'. The main content area is titled 'Select appropriate control strategies for your plug and process loads' and contains a paragraph of text. Below this is a sub-section 'Select appropriate control strategies' with three bullet points: 'Flowchart for Selecting a Control Strategy for Plug and Process Loads (Graphic)', 'Selecting a Control Strategy for Plug and Process Loads (Report)', and 'Plug-Load Control and Behavioral Change Research in GSA Office Buildings (Technical report)'. Another sub-section 'Install and procure advanced power strips' has four bullet points: 'Technical Specifications for Advanced Power Strips (Version 1.0)', 'How To Use Advanced Power Strips in an Office Setting (Graphic)', 'Reducing Office Plug Loads through Simple and Inexpensive Advanced Power Strips (Conference Reports)', and 'Plug Load Control: Advanced Power Strips Decrease Energy Consumption (Case Study)'. The last two items in this list are highlighted with a blue box. At the bottom, there is a footer with links: Home | U.S. Department of Energy | Contacts | Web Site Policies | Security & Privacy | FOIA | No Fear Act | USA.gov.

*The APS Tech Spec has relevance to stakeholders across the commercial building market no matter the building type*

## Procurement Guide:

- Require vendor or procurement officer to comply with all aspects and whichever optional aspects appeal to the building owner or tenant

## Reference Guide:

- Use APS Tech Spec as a resource for specific APS aspects that apply to a particular scenario
- Incorporate into organization's own unique specification

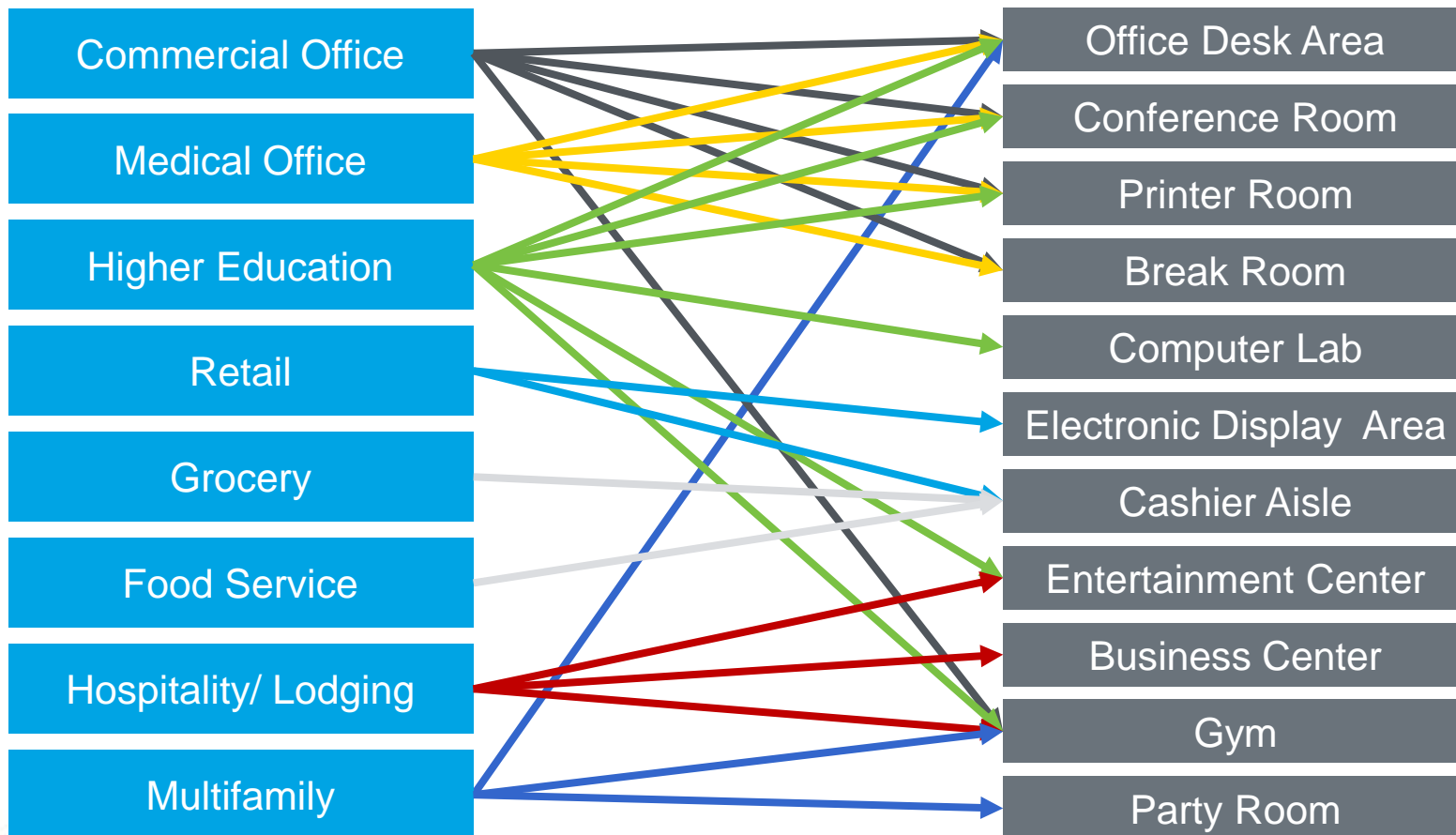
Stakeholder	APS Tech Spec Relevance
Tenant/ Occupant	Acquiring APSs for personal devices and workspaces
Owner/ Manager/ Facilities Engineer/ Procurement Officer	Acquiring APSs for devices and equipment in a commercial building or portfolio of buildings
APS Manufacturer/ Vendor	Encouraging manufacturers to meet spec requirements, and vendors or clients to purchase products that meet spec for commercial building spaces
Utility/ Energy Efficiency Organization	Enabling utilities to create incentive programs for APSs

# Example Commercial Building Spaces that can use APSs

*It's not just Commercial Office Spaces that can benefit from APSs!*

## *Building Types*

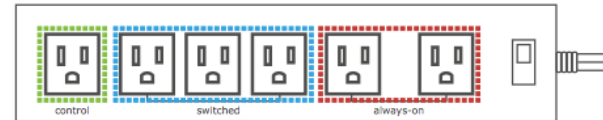
## *Example Spaces*



*Uncertain how to use an APS? Building owners, facility engineers, and tenants can follow this easy guide for set-up and use of an APS at an office desk*

## ADVANCED POWER STRIPS (APS)

### HOW TO USE IN AN OFFICE SETTING



Each APS has three outlet types for equipment with various electricity needs:



#### Primary Outlet

COMPUTER/LAPTOP

The primary outlet acts as the “control,” or “master,” outlet because it turns off the power to secondary outlets when the device connected to it is turned off. The primary outlet typically powers your computer’s central processing unit because most other devices connected to the power strip at an office desk depend on your computer for their functionality. For example, you need to turn on your computer to use your monitor and to print documents.



#### Secondary Outlet

MONITOR, PRINTER, DESK LAMP

The secondary outlets act as the “controlled” outlets and typically power peripheral devices, such as your computer monitor(s), desk lamp, and printer. When the device connected to the primary outlet is turned off, the power will automatically be shut off to the device connected to the secondary outlets. For example, turning off your computer automatically shuts off the power to your monitor or printer. The amount of energy you save with an advanced power strip depends on the energy usage of the devices connected to the secondary outlets.




#### Always-On Outlet

LANDLINE PHONE, FAX, MINI FRIDGE


The always-on outlets are not controlled by the primary outlet. Important office desk devices, such as landline phones and fax machines, that are plugged into the always-on outlet will receive constant power regardless of the primary outlet device.

Learn more about plug and process loads: [www4.eere.energy.gov/alliance/activities/technology-solutions-teams/plug-process-loads](http://www4.eere.energy.gov/alliance/activities/technology-solutions-teams/plug-process-loads).

NREL is a national laboratory of the U.S. Department of Energy,  
Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

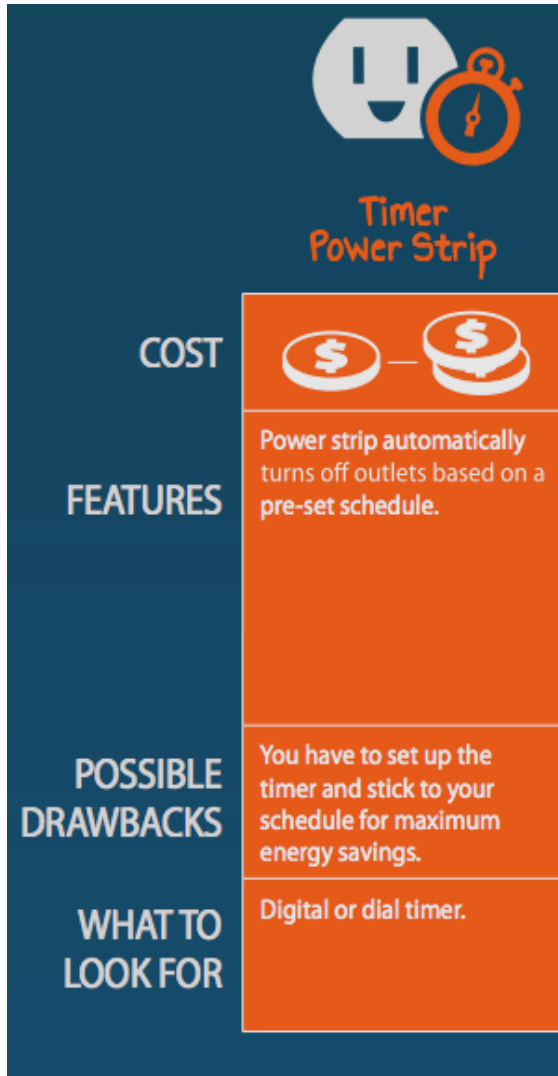


Master-Controlled Power Strip

COST	
FEATURES	When a primary device (such as a computer or TV) is turned off by the user, the power strip automatically turns off the controlled outlets where the peripheral devices (such as the printer or game console) are plugged in.
POSSIBLE DRAWBACKS	It can be tricky to select which appliance should be your "master" device.
WHAT TO LOOK FOR	One outlet is labeled as the "master."

Master-Controlled power strips turn peripheral devices off when a primary device is turned off by the user.

- **Office Desk Area/Computer Lab:** Desktop/Laptop connected to Control/Master outlet. Monitors/lamps/phone charger connected to "Switched" outlet.
- **Hotel Room Entertainment Centers:** TVs connected to Master outlet. DVD players, speakers, etc., connected to Switched outlet. Exceptions include cable boxes or other always-on devices.
- **Multifamily Room Entertainment Centers:** TVs connected to Master outlet. DVD players, Xbox, speakers, lamps, etc. connected to Switched outlet. Exceptions include cable boxes or other always-on devices.



The infographic is set against a dark blue background. At the top, it features a white smiley face icon and an orange stopwatch icon, with the text "Timer Power Strip" in orange below them. The main content is organized into four horizontal orange boxes, each with a white label on the left. The first box, labeled "COST", contains two white dollar sign icons. The second box, labeled "FEATURES", contains the text "Power strip automatically turns off outlets based on a pre-set schedule." The third box, labeled "POSSIBLE DRAWBACKS", contains the text "You have to set up the timer and stick to your schedule for maximum energy savings." The fourth box, labeled "WHAT TO LOOK FOR", contains the text "Digital or dial timer."

**Timer Power Strip**

**COST**

**FEATURES**


**POSSIBLE DRAWBACKS**

**WHAT TO LOOK FOR**


## Timer power strips automatically turn off outlets based on a pre-set schedule.

- **Conference Rooms:** Projectors, monitors, speakers, etc. Optional motion sensors can be used to turn equipment on or off if meetings end early or if unplanned meetings occur.
- **Break Rooms:** Toaster, microwave, coffee maker, or any other powered kitchen device.
- **Printer Rooms:** Printers, copiers, fax machines, laminators, pencil sharpeners, hole punchers, etc.
- **Electronic Display Area:** TV displays, computer/cellphone try-out stations, cosmetic lights/mirror stations, jewelry light stations, etc.
- **Cashier Aisles:** Cash registers, conveyor belts, aisle lights, etc.
- **Gyms in Hotel or Multifamily Spaces:** Workout equipment such as treadmills and elliptical machines, TVs, sound systems, etc.
- **Multifamily Game Room/ Party Room:** TVs, speakers, other plug-in equipment.







**Activity Monitor Power Strip**

<b>COST</b>	
<b>FEATURES</b>	Power strip looks for signs of activity in the room, and turns off outlets if none is detected.
<b>POSSIBLE DRAWBACKS</b>	Motion sensors don't always work perfectly.
<b>WHAT TO LOOK FOR</b>	Motion sensor or an infrared "eye" that detects remote control use around the TV or stereo.

Activity monitor power strips turn equipment on or off in response to motion detected in a room.



- **Office Desk**
  - Commercial Office, Medical Office, Higher Ed Research Office, Multifamily Leasing Office
- **Conference Rooms:** Projectors, monitors, speakers, etc.
- **Break Rooms:** Non-critical appliances
- **Hotel Business Centers:** Computer monitors, printers, etc.
- **Game Room/ Party Room Multifamily:** TVs, speakers, other plug-in equipment.



	 Remote Switch Power Strip
COST	 Power strip can be turned off by the user via a remote switch.
FEATURES	
POSSIBLE DRAWBACKS	To save any energy, you have to remember to turn off the power strip each time.
WHAT TO LOOK FOR	A tethered switch or a remote switch.

Remote switch power strips enable users to easily turn off a power strip via a remote switch.

- **Office Desk Areas:** Computers, monitors, task lamps, printers, miscellaneous plug-in office equipment.
- **Computer Lab:** Computers, monitors, task lamps, printers, etc.
- **Hotel Room Entertainment Centers:** TVs, speakers, other plug-in equipment.
- **Electronic Display Area:** TV displays, computer/cellphone try-out stations, cosmetic lights/mirror stations, jewelry light stations, etc.
- **Cashier Aisles:** Cash registers, conveyor belts, aisle lights, etc.
- **Game Room/ Party Room Multifamily:** TVs, speakers, other plug-in equipment.

 Masterless Power Strip	
COST	
FEATURES	When all of the controlled devices are turned off, the power strip turns off power to those outlets completely, eliminating all of the vampire loads.
POSSIBLE DRAWBACKS	Turning off one high-powered appliance could turn off the entire power strip.
WHAT TO LOOK FOR	No "master" outlet. Description may include "automatic switching" or "power detection."

Masterless power strips turn off power to outlets completely when the controlled devices are turned off, eliminating vampire loads.

- **Office Desk Area:** Computers, monitors, task lamps, printers, miscellaneous plug-in office equipment.
- **Electronic Display Area:** TV displays, computer/cellphone try-out stations, cosmetic lights/mirror stations, jewelry light stations, etc.
- **Cashier Aisles:** Cash registers, conveyor belts, aisle lights, etc.
- **Conference Rooms:** Projectors, monitors, speakers, etc.

*Not sure they're worth the cost?  
Check if your local utility has an  
incentive available to reduce the  
up-front cost of the APSs*

Take Action	
Activities	Selected Resources
Assess and reduce plug and process loads in your building	
Select appropriate control strategies for your plug and process loads	S
Incorporate efficient plug and process load solutions into building designs	F S C R
Discover utility incentives and purchase advanced power strips	
Institutionalize policies and procedures for plug and process load reduction	

## Discover utility incentives and purchase advanced power strips

The Better Buildings Alliance aims to develop and deploy innovative, cost-effective energy-saving solutions and resources that lead to better technologies, more profitable businesses, and better buildings across the United States. The Plug and Process Load (PPL) Solutions Team is focused on reducing energy consumption associated with electronic, computer, and other devices that are plugged into standard wall outlets and power strips. Combined, these devices consume about one-third of primary energy in U.S. commercial buildings.

Advanced power strips (APSs) are one way of controlling the energy consumption of PPLs. APSs look just like ordinary power strips, except that they have built-in features designed to reduce the amount of energy used by many electronic devices and help save money on your electricity bill. Incentive programs are available for purchasing APSs in commercial properties. The following resource provides a summary of these incentive programs. This resource will be updated periodically to ensure accurate and current information about each incentive program. For more information about APSs, visit the [PPL Team website](#).

### Utility Incentives for Purchasing Advanced Power Strips

Incentive Sponsor	State	Utility/ State/City Incentive	Rebate/ Incentive Amount	Limit	Fund	Application	Termination Date	Type of Incentive
<a href="#">Pacific Gas and Electric Company</a>	CA	Utility	\$15	NA	NA	Residential, Commercial	12/31/13	Incentive
<a href="#">Ameren Illinois</a>	IL	Utility	\$10	NA	Less than \$250K	NA	5/31/2014	Rebate
<a href="#">Act On Energy</a>	IL	State	\$10	6	NA	Residential	May 31, 2014 or until funding expires.	Rebate
<a href="#">Indiana Michigan Power</a>	IN	Utility	\$15	No limit	NA	Residential	2012	Rebate

# Thank you!

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

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