

SCPW



THE LED SWITCH

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SUMMIT COMMUNITY POWER WORKS www.scpw.org

1 WELCOME!

Thank you for picking up this guide. You're already way ahead of your neighbors and friends☺

Our goal at Summit Community Power Works (www.scpw.org) is to help you:

- Save money
- Be more comfortable in your home
- Spend less time and personal energy on home maintenance
- Improve indoor air quality and the health of your home

This guide takes you through the LED Switch, the first of our four Switches. You can find the Control Switch, the Comfort Switch, and the Power Switch at SCPW.org. Each switch will help reduce your home's total energy use. For the best outcome, I'd recommend working through them in order, but this is your journey feel free to jump around!

2 LEARN YOUR LIGHTS

Welcome to your first Switch! When we talk about lighting, what are we talking about?

2.1 INCANDESCENT LIGHT BULBS

Incandescent bulbs, or Edison bulbs, are the light bulbs you are probably most familiar with. They convert just 5% of the energy they consume into light and typically last 1,000 hours, or 1/30th the life of an LED light bulb.





2.2 FLUORESCENT LIGHT BULBS OR TUBES

Fluorescent bulbs are common in office buildings, garages, and maybe some of your home light fixtures. Fluorescent light bulbs last about 10,000 hours, 1/3rd the life of a LED, and require ballasts, an additional point of failure. Make sure you recycle these, they contain mercury.



2.2.1 Compact Fluorescent Light Bulbs of CFLs

CFLs have been the go-to energy-efficient bulb for the past few years. These bulbs have improved a lot AND CFLs last about 10,000 hours, 1/3rd the life of a LED. Again, make sure you recycle these, they contain mercury.



2.3 HALOGEN LIGHT BULBS

Halogen bulbs are common in outdoor lighting, art lighting, and some custom applications. These bulbs generate bright, white light and tend to consume more energy than incandescent bulbs. Halogen bulbs last 2,250 – 3,500 hours, about 1/10th the life of a LED light bulb.



2.4 LED LIGHT BULBS

LED light bulbs, or light emitting diodes, are the most efficient light bulb. There are LED replacements bulbs for nearly every other type of bulb. LEDs use 80% less energy, turn on instantly, last 10-22 years, and can be color matched for any lighting environment.



3 WHY LEDs?

Good question. Here are the facts:

- LEDs are the most efficient, they use 80% less energy than traditional bulbs
- LEDs last a long time, 10-22 years
- LEDs have the same, or better quality, of light
- LEDs are a good deal, an even better deal with utility incentives

- Each LED bulb will save an average of \$134 to \$242 over the life of the bulb

Lighting technology has come a long way since Thomas Edison brought the incandescent light bulb to the mass market in 1878 (we know, we know, there is A LOT more to this story). We've seen a huge number of bulb shapes, colors, and applications move into the hardware store, nearly every bulb has an LED replacement. This variety helps make your home unique and also makes it an overwhelming task to think of replacing every, single, light bulb... We're going to take you from replacing your first light bulb to having your whole home lit by long-lasting LEDs.

Switching to LEDs will save you money (15% - 35% of your monthly electricity bill), trips to the hardware store, and trips up-and-down the ladder. **Let's get started!**

4 LET'S START: HOW TO CHANGE A LIGHT BULB

We're going to change our first bulb today. This is exciting☺

If you're feeling really ambitious, you can tackle you whole home, just page ahead to "Whole Home" but we recommend you start here.

To keep things simple, we're just going to replace the 60W equivalent bulbs you use the most. Here is what your typical 60W incandescent and 60W CFL equivalent look like:



As we know, a 60W incandescent bulb lasts 1,000 hours, converts just 5% of the energy they use for light. A 60W equivalent CFL uses just 13W (78% more efficient!). Unfortunately, they do not last very long (1/3rd the life of an LED), are not 'instant on,' and contain mercury (please recycle!).



Most 60W equivalent LEDs are $\approx 84\%$ more efficient than incandescent. These bulbs put out great color (2,700K), are 'instant on' and rated to last 22 years!

Take a quick inventory, think of the lights in your house that you use the most. Most common lights are:

- Kitchen
- Bathroom
- Living room
- Bedroom
- Porch light

Pro-tip: I usually include the lights that we always forget to turn-off, like closets and front porch.

Six to ten bulbs is a pretty good start. We recommend replacing your bulbs with one of these favorites:

We recommend replacing your bulbs with one of these favorites:

- **Top Rated 60W Bulb:** Walmart Great Value LED Light Bulb 10W (60W Equivalent) Omni (E26) Dimmable, Soft White (\$3.82/bulb, at the time of publishing)
- **Runner Up:** GE LED 11-Watt General Purpose Use Bulb (2 pack) Soft White Dimmable 800 Lumens 60 W Replacement Long Life Low Energy A19 Bulbs (\$5.49/bulb, at the time of publishing)

No matter what brand you prefer, we recommend 60W equivalents that are Soft White or 2,700K.

4.1 WHERE TO BUY

We love supporting our local hardware stores and if you're looking for the best prices, we recommend a big-box store (e.g. Lowe's, Home Depot, Costco, and Walmart) or the



online equivalent (e.g. Amazon). Depending on local incentives you're likely to spend \$2.17 to \$7.00 per bulb.

Over the life of these bulbs, **each bulb will save you an average of \$134 to \$242 dollars.** How did we get that number? One LED has the equivalent life of 42 incandescent bulbs and is 84% more efficient. Beyond simple cost savings, how many trips to the store, or up the ladder is that? Even better, it's going to be a long time before you need to change those bulbs! **Those ten bulbs you changed just saved you \$1,340 to \$2,420.** Take a minute to give yourself a pat on the back!

5 RETIRING 'USEFUL' BULBS

SCPW is a firm believer that we all want to 'do the right thing,' For some of us, that means waiting to make the LED Switch until a bulb has come to the end of its useful life. We call this "waiting for the burn out." Waiting for the burn out is financially and mentally expensive. The sooner you replace your bulbs, the sooner you can start saving money, wasting trips to the store, pulling out the ladder, or spending valuable free-time on maintaining +100-year old technology!

Here is how to manage your old bulbs:

- Incandescent
 - In the trash, unfortunately... (we haven't seen a recycling program, let us know if you find one!)
 - Use as a fundraiser: Summit Community Power Works has held our Watt Shot fundraiser and you can too.
 - Collect incandescent bulbs
 - Participants pay to shoot at them at the gun range for \$1 a bulb – **safety first!**
 - Use the proceeds to fund the purchase of LED bulbs for low income families
- CFLs
 - Recycle – check out our website (www.scpw.org) for the organizations we've found
 - Donate – check out our website (www.scpw.org) for the organizations we've found
- Fluorescent
 - Recycle – check out our website (www.scpw.org) for the organizations we've found
- Halogen
 - In the trash, unfortunately... (we haven't seen a recycling program, let us know if you find one!)



6 WHOLE HOME UPGRADE

So you're ready to tackle your whole house? Nice!

Your first step is a lighting audit, which is basically a shopping list. SCPW made a handy [home audit checklist](https://www.dropbox.com/s/rkqgjpf7cwyafk/SCPW_OneSheet03.pdf?dl=0) (https://www.dropbox.com/s/rkqgjpf7cwyafk/SCPW_OneSheet03.pdf?dl=0).

Simply start in one room and make your way through the inside and outside of your home. Take note of special bulbs, higher wattages (40W, 60W, 75W, 100W, etc.), and dimmable bulbs.

Pro-tip: This is a great way to keep a kid busy. You might have to check their work☺

6.1 BATCHING

At the end of your lighting audit, you might be surprised by how many light bulbs you have. In general, 60W equivalent are going to be the cheapest replacements with the quickest payback. If you'd like to install your bulbs in phases we recommend batching your install using one of the following strategies:

- By room, starting with the room you use the most
 - For example: 1) kitchen, 2) living room, 3) bathroom, 4) bedroom
- By bulb type
 - For example: 1) 60W equivalent, 2) recessed lighting, 3) globes, 4) exterior, 5) unique/custom
- By the tools you need:
 - For example: 1) no tools, 2) ladder, 3) light bulb changer

6.2 WHERE TO BUY

Again, we love supporting our local hardware stores and if you're looking for the best prices, we recommend a big-box store (e.g. Lowes, Home Depot, Costco, and Walmart) or the online equivalent (e.g. Amazon).

We recommend the following bulbs:

- **60W Replacement**
 - **Top Rated 60W Bulb:** [Walmart Great Value LED Light Bulb 10W \(60W Equivalent\) Omni \(E26\) Dimmable, Soft White](#) (\$3.82/bulb, at the time of publishing)
 - **Runner Up:** [GE LED 11-Watt General Purpose Use Bulb \(2 pack\) Soft White Dimmable 800 Lumens 60 W Replacement Long Life Low Energy A19 Bulbs](#) (\$5.49/bulb, at the time of publishing)
- **75W & 100W Replacements:**
 - **75W:** [Cree 75W Equivalent Soft White \(2700K\) A19 LED Light Bulb](#) (\$15.95/bulb, at the time of publishing)



- **100W:** Cree 100W Equivalent Soft White A21 LED Light Bulb (\$19.97/bulb, at the time of publishing)
- **40W Globe Replacement:** Feit G25/DM/5K/LEDG2 40W Equivalent LED Dimmable G25 Globe, 5000K (\$11.78/bulb, at the time of publishing)
- **Can Replacement:** TORCHSTAR 18W 6inch LED Retrofit Recessed Lighting Fixture, ENERGY STAR Certified 18W (120W Equivalent) LED Ceiling Light, UL-classified Dimmable LED Retrofit Downlight kit - 5000K Daylight (\$18.83/fixture, at the time of publishing)
- **Floodlight Replacement:** Cree BBR30-06527FLF-12DE26-3U100 Cree 65W Equivalent Soft White (2700K) BR30 LED Flood Light Bulb, (2 pack) (\$9.64/bulb, at the time of publishing)
- **Candelabra:** LE@ 5W Dimmable C37 E12 LED Bulbs, LED Torpedo, 40W Incandescent Bulbs Equivalent, UL Listed, Candelabra Bulbs, 350lm, 120° Beam Angle, Warm White, 2700K, LED Candle Bulbs, LED Light Bulbs, Pack of 10 Units (\$4.59/bulb, at the time of publishing)

Some of the recessed bulbs, globes, and custom bulbs might seem pricey. Remember, you aren't replacing one bulb when you buy an LED; you are replacing this bulb for the next 12-22 years! You are investing in fewer trips to the store, fewer trips up the ladder, and the hassle of thinking about and replacing these bulbs. **The payback is there, so take the plunge!**

6.3 SPECIAL LIGHTS & LIGHTING

Most of us have at least a few "special" lights. Maybe it's a funny bookshelf, desk light, or overhead light. Maybe it's a fixture you're especially proud of. The good news is that there is a huge number of options, just check out: [1000Bulbs.com](https://www.1000bulbs.com) (<https://www.1000bulbs.com/category/led-light-bulbs/>)

We have trouble making recommendations for all of the special bulbs, but if you find a favorite, let us know! (info@scpw.org)

Finally, some people place a huge value on the quality of light they have, the technology involved in lighting rooms, or have spaces that require special lighting like art, collections, or hobby spaces. If you can't find what you need with a few internet searches, we recommend you reach out to SCPW at info@scpw.org for more!