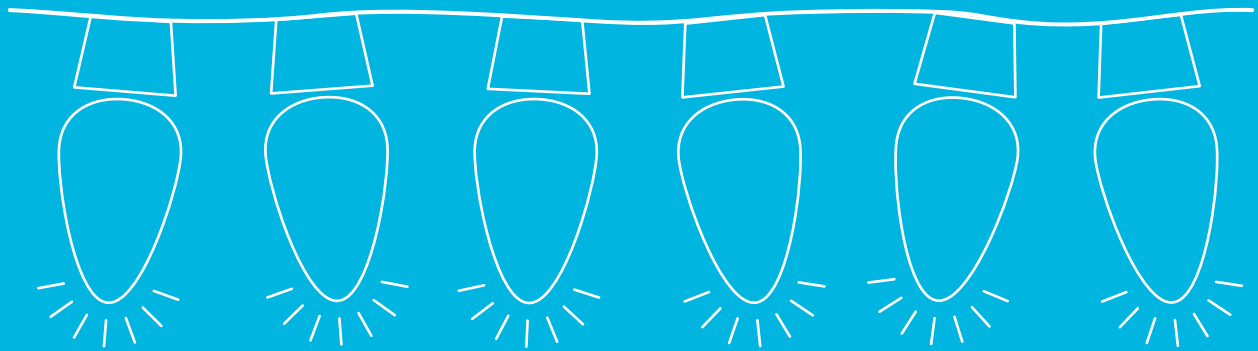


# From Grinch to Griswold:

Trend toward bigger holiday displays  
increasing electricity bills



**Report**

November 2018

BCH18-1237

 **BC Hydro**  
Power smart

More elaborate ‘Clark Griswold–like’ outdoor holiday displays with inflatable Santas and snowmen have caused overall holiday electricity usage to increase by about 15 per cent since 2012, adding to costs for many. These costs would have been even higher had it not been for the introduction of holiday LED lights in B.C., which significantly brought down electricity usage and British Columbians’ bills.

## Highlights

- Outdoor holiday displays are a big consumer of power; they account for nearly three per cent of the provincial electricity load during the holiday season.
- Holiday electricity usage would have been even greater had it not been for the introduction of LED holiday lights. Between 2009 and 2011, BC Hydro saw roughly a 40 per cent drop in outdoor holiday lighting load because of the mass adoption of LED holiday lights.
  - Overall outdoor holiday usage has increased by about 15 per cent since due to the growing number of bigger and more elaborate holiday displays.
- A survey<sup>1</sup> commissioned by BC Hydro found one in three British Columbians have a neighbour with a mega display. The survey also found these holiday fanatics are:
  - **Installing inflatable holiday decorations:** these decorations have become increasingly popular over the past decade, and add to costs because they are typically run 24/7 and use a lot more power than a strand of LED bulbs.
  - **Using lots of lights and electronic decorations:** four per cent said they install more than 750 lights each year, and this number can climb to over 100,000 lights for the biggest displays.
  - **Pushing the limits:** 15 per cent admit to blowing a breaker switch from overloading their lights and decorations.
- Using incandescent holiday lights to power elaborate displays is expensive. Clark Griswold’s infamous light display in the film *National Lampoon’s Christmas Vacation* would have cost him around \$4,700 during the holiday season using incandescent lights, compared to the \$54 it would have cost if it was lit by LEDs.
- The survey found 57 per cent of British Columbians put up outdoor holiday lights and also revealed four different levels of decorating enthusiasm:
  - **The Grinch (42 per cent):** no holiday lights, no added cost.
  - **The holiday minimalist (38 per cent):** three strands of lights.
  - **The holiday enthusiast (13 per cent):** eight strands of lights.
  - **The holiday fanatic—also known as ‘The Griswold’ (6 per cent):** at least 10 strands of lights, and often much more to light up the entire block.
- According to the survey, the average British Columbian puts up eight strands of lights, which would cost about \$40 over the holiday season if they used inefficient incandescent lights or just 50 cents if they opted for LEDs.

## Solutions: Be merry, bright and energy-efficient

- One-third of British Columbians are still using some inefficient incandescent holiday lights—increasing their costs and energy use.
  - BC Hydro recommends using energy-efficient LED holiday lights. They use up to 90 per cent less energy than traditional incandescent holiday lights and can last up to 10 times longer.
- BC Hydro also recommends:
  - Plugging holiday lights into timers to reduce electricity costs by only having lights on when needed.
  - Recycling incandescent holiday lights at any [Light Recycle](#) collection site.

<sup>1</sup> Online survey conducted by Ipsos Reid on behalf of BC Hydro of 800 British Columbians from November 14 to 19, 2018.

## Oh, holiday light

North Americans love to decorate for the holidays. In fact, a **2008 study** by the Centre for Global Developments found the U.S. uses more electricity to light displays during the holiday season than some developing nations use in a whole year.

A decade ago, BC Hydro estimates incandescent holiday lighting added an additional 400 megawatts to the province's nighttime power load between December 1 and January 15. By 2011, holiday lighting load had dropped by around 40 per cent as many British Columbians made the switch to energy-efficient LEDs, which are up to 90 per cent more efficient than incandescents. This reduction is equivalent to the electricity used by around 3.75 million Christmas trees decorated with 500 LED lights.

Even with the introduction of LED holiday lights, B.C.'s holiday lighting power load has continued to increase by around 15 per cent since 2012. This report will explore how a trend towards bigger and brighter holiday displays with more electronics, like inflatable Santas, is leading to this uptick, and impacting British Columbians' power bills.



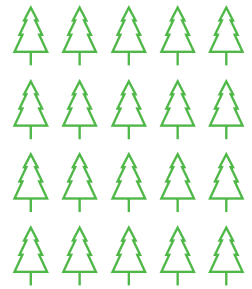
# 40%

holiday power load drop by switching to LEDs



# 3.75 million

Christmas trees decorated with 500 LEDs



## A holiday lighting revolution

The approximate 40 per cent reduction in holiday lighting power load that BC Hydro has seen in the province is largely attributed to British Columbians' adoption of energy-efficient LED holiday lights, which began in the early 2000s. Holiday LED lights were first brought to B.C. in 2002 when BC Hydro purchased 20,000 strands—which were not available for commercial purchase at the time—and provided them to local business associations to use to decorate public spaces during the 2002 holiday season.

The next year, BC Hydro connected its retail partners with holiday LED manufacturers and helped arrange for the introduction of the new lights to store shelves. It also provided rebates to customers that purchased the new technology. Over three holiday seasons, BC Hydro provided over 180,000 LED holiday lighting rebates to its customers. The electricity savings from British Columbians switching to LEDs is estimated to have been around 51 gigawatt hours each year—the equivalent of cooking over 63 million turkeys in an electric oven.

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## Soaring seasonal spirits

Even with the introduction of LED holiday lights, B.C.'s holiday lighting power load has continued to increase since 2012 by about 15 per cent due to a growing trend towards more elaborate holiday displays and 'B.C.'s Griswolds'. A recent survey commissioned by BC Hydro found that one in three British Columbians have a neighbour with one of these mega displays. It also revealed more than 75 per cent of British Columbians like seeing these in their neighbourhoods—with only two per cent (that might be relatives of Ebenezer Scrooge) calling them an 'eyesore on the neighbourhood'.

Inflatable holiday decorations have also grown in popularity in recent years. These decorations are simple to install—with limited set up and no ladders or tools required, which makes them an easy addition to a holiday display. The electricity used by these can vary from around 52 watts for a smaller four foot one, to around 85 watts for a 12 foot inflatable, and they are typically run 24 hours a days—adding up to \$50 each to British Columbians' electricity costs over the holidays.

The survey also showed four per cent of British Columbians install more than 750 lights each year, and this number can climb to over 100,000. Many may also be pushing the limits with their displays—with 15 per cent admitting to blowing a breaker switch due to overloading their holiday lights and decorations.

## B.C.'s holiday decorating personas

With elaborate holiday displays on the rise, it should not come as a surprise that the survey commissioned by BC Hydro found 57 per cent of British Columbians put up outdoor holiday lights or electronic decorations. That number jumps to nearly 80 per cent if there are kids in the household. The survey also found residents in the Northern region of the province are the most keen to show off their holiday spirit with 63 per cent of all households decorating with outdoor lights.

So how many British Columbians' are Grinches or Griswolds, and how do their decorating habits impact their electricity costs over the holiday season? Here's a breakdown based on their level of holiday enthusiasm:

### The holiday minimalist—38%

The British Columbian that does the bare minimum to decorate for the holidays—opts for one to five strands of lights hung along a banister on a balcony or around a tree outside. Survey results show around 38 per cent of British Columbians identify with this holiday decorating persona.

- Three strands of standard size holiday lights (75 C9 bulbs) on for six hours a day over six weeks (December 1 to January 15) cost:
  - Incandescents (525 watts): \$14.10
  - LEDs (6 watts): \$0.18



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### The holiday enthusiast—13%

This British Columbian likes to get in the holiday spirit, but does not want to go over the top—opting for six to 10 strands of lights strategically placed for maximum visual impact. Survey results show around 13 per cent of British Columbians go this route with their holiday decorating.

- Eight strands of standard holiday lights (200 C9 bulbs) on for six hours a day over six weeks cost:
  - Incandescents: \$37.56
  - LEDs: \$0.42



## The holiday fanatic AKA: The Griswold—6%

‘Clark Griswold of B.C.’ is the name and ensuring they have the most elaborately decorated house on the block is the game. For this British Columbian—which is about six per cent of B.C.’s holiday decorators — the holiday season is their time to shine. And shine they do with hundreds of strands of lights, a blow-up Santa (or two?) and even a light-up sleigh with reindeer on the roof.

If they were to emulate Clark Griswold’s light display from the 1989 movie [National Lampoon’s Christmas Vacation](#), what would it cost them?

○ 1,000 strands of standard holiday lights (25,000 C9 bulbs) on for six hours a day over six weeks cost:

- Incandescents: \$4,696
- LEDs: \$53.70

Unfortunately, LED holiday lights were not an option for Mr. Griswold to use at the time, which means his display would have been fully lit by incandescent lights and would have used around 18,900 kilowatt hours during the month of December. This is more than 20 times the 900 kilowatts hours of electricity the average B.C. household uses in an entire month.



## The Grinch—42%

Of course, there is always the Grinch-like approach of installing no outdoor holiday lights that around 42 per cent of British Columbians take, which does not add to their electricity costs—but where is the fun in that?



## B.C.'s Griswolds

Unlike Griswold's neighbours that detested his display of holiday cheer (albeit this is likely because they were blinded by it nightly), about 75 per cent of those surveyed for BC Hydro said they like elaborately decorated homes during the holiday season—with close to two-thirds saying they admire the effort their neighbourhood Griswold puts in to showing off their holiday spirit.

More than half of those surveyed said they will be visiting a holiday light display in their community this year—like the home at [4697 Chalet Place in North Vancouver](#) that decorates with over 100,000 lights. The display not only awes passerby's nightly, it has also raised over \$46,000 and donated over 550 bags of groceries to local charities since it started in 2010.

## Holiday holdouts

When holiday LEDs were introduced in retailers, British Columbians were excited about the new technology, so much so that comparisons were even made to Cabbage Patch Kids dolls, which were highly sought after when they first came out but very difficult to get. While many went out and purchased the new technology right away, evidence suggests that not everyone has made the switch. The survey commissioned by BC Hydro found more than 30 per cent of British Columbians with outdoor holiday displays still use some old incandescent holiday lights. This indicates that many are only replacing the old strands with new strands when the old bulbs burn out—despite the fact that they can save enough in their electricity costs to cover the cost of purchasing new LED lights in one season.

When they were first introduced in the market, LEDs did have a higher purchase price than incandescents, but they also offered significant savings because they use up to 90 per cent less electricity and last ten times longer. In addition, they are more durable, with no filaments or glass bulbs to break, and since they do not generate heat like incandescents do, they are not a fire hazard and safer to use on Christmas trees, wreaths and garlands.

The price of LEDs has decreased significantly as the technology has improved. The first generation of LED holiday lights gave off a light that was a much bluer-tone than the pure white of incandescents, which was not ideal for many. Today a strand of holiday LEDs can be purchased for around \$10 and they are available in a variety of styles, sizes and colours.

## Solutions: Keep electricity costs down and holiday spirits up

For those British Columbians that are still hanging on to old incandescent lights, in the spirit of saving energy (and money), it may be time to let them go and make the full switch to LEDs. LEDs come in a wide variety of colours, shapes and sizes to suit all holiday decorating tastes—from minimalist to Griswold. Plus, there are types that resemble the traditional old-style bulb, but with the energy efficiency of today.

To maximize British Columbians' energy efficiency this holiday season, BC Hydro also recommends:

- Using timers: plugging holiday lights and electronic decorations into timers is a convenient way to have them automatically turn on when it gets dark, and turn off overnight when no one is around to admire them.
- Calculating costs: BC Hydro's [online cost calculator](#) allows British Columbians to see how much their holiday light display will add to their electricity bill, and compare the cost of using LEDs versus incandescent bulbs.
- Tracking electricity use: the winter season's colder temperatures and shorter days mean lights are on longer and the heat is turned up higher—leading to higher electricity costs. Adding to that, the holidays can often bring more guests to the home and more cooking. BC Hydro recommends its customers use its [online electricity tracking tools](#) to stay on top of their electricity use during the holiday season.
- Signing up for an [equal payment plan](#) to spread the cost of higher winter bills over the entire year.
- Recycling incandescent holiday lights: take any old incandescent holiday lights still lying around the garage or crawlspace to any Light Recycle location in B.C. so they can be recycled. For a list of collection sites, visit [lightrecycle.ca](http://lightrecycle.ca).



## Avoid holiday hazards

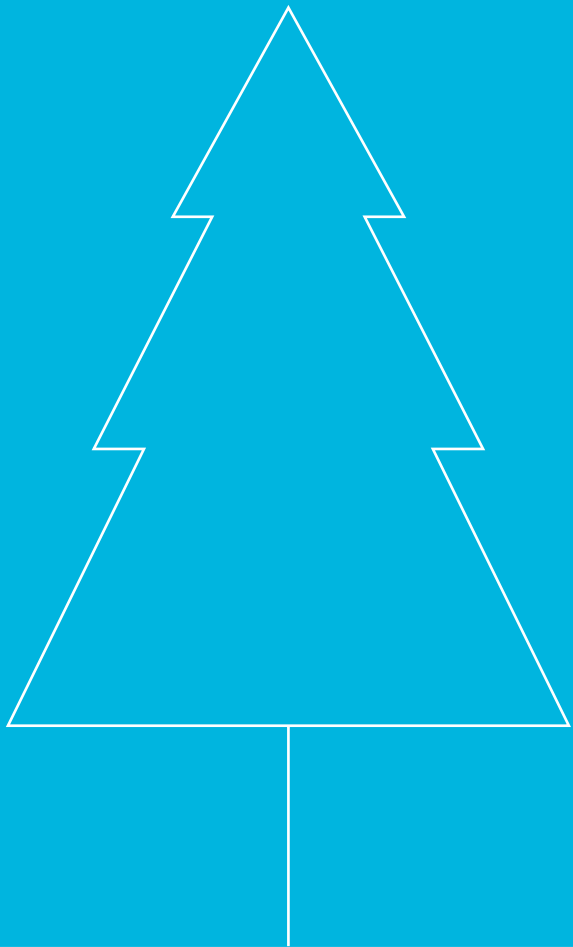
The survey conducted for BC Hydro found 15 per cent of British Columbians have blown a breaker switch after overloading their holiday lights and decorations holiday lights and decorations.

When it comes to holiday lighting, LEDs are not only the more energy-efficient (and cost effective) option, they are also the safer choice. Incandescent bulbs give off a lot of heat, which makes them a fire hazard. In fact, less than 10 per cent of the power used by an incandescent bulb goes to creating light; the rest goes to creating heat.

While it can be tempting to decorate around a front door or small tree outside with a strand of indoor mini lights left over from indoor decorating, putting outdoor bulbs indoors or vice versa can be a safety hazard. Always check the box of lights and ensure they are being used for their intended purpose.

BC Hydro also recommends following these electrical safety tips this holiday season:

- Stay three metres away from power lines when putting up decorations outdoors.
- Use a fiberglass or aluminum ladder when hanging lights outdoors and check it for defects before using.
- Inspect electrical decorations for damage before use—cracked or damaged sockets or bare wires can cause an electrical shock or start a fire.
- Protect cords from damage—avoid them being pinched by furniture, placed under rugs or near a heat source and do not overload electrical outlets.
- Never connect more than three strands of incandescent lights – this can not only blow a fuse, but is also a fire risk.
- Turn off and unplug all decorations before going to sleep or leaving the house (or use a timer so they turn off automatically).
- Mashed potatoes on the stove or apple pie in the oven? Stay in the kitchen while they are cooking. Unattended cooking equipment is a leading cause of house fires.
- Use battery-operated candles rather than the real thing.



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