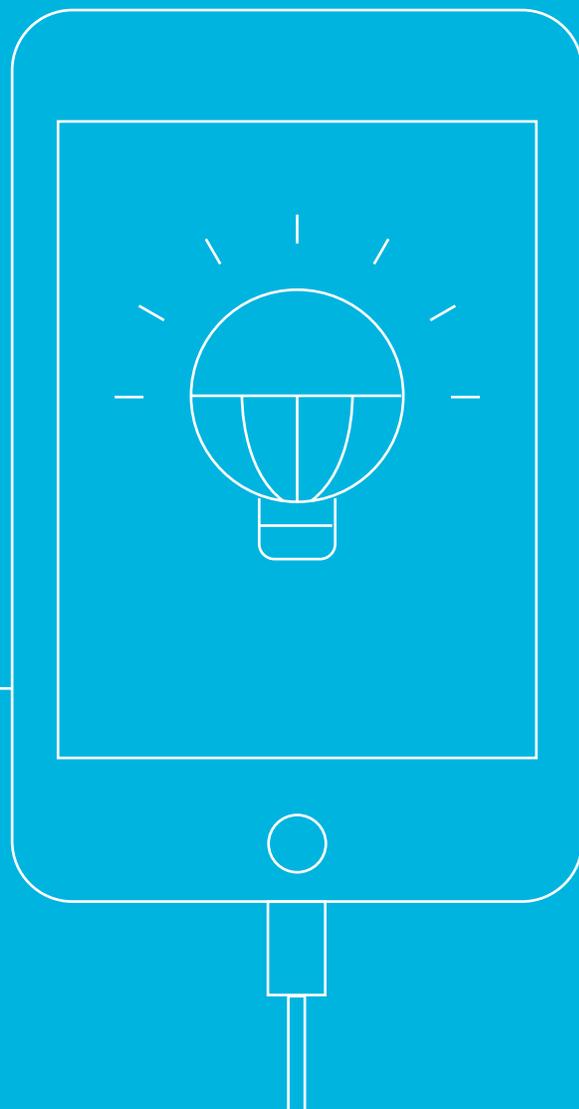


# Constantly connected:

B.C.'s obsession with personal electronics and how it's shifting household electricity use



**Report**

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 **BC Hydro**  
Power smart

The need to be ‘constantly connected’ to smartphones, tablets, laptops and other household (or personal) electronics has shifted how B.C. households are using electricity. And, this trend is only expected to continue with more British Columbians adopting new smart devices at home like smart lighting, speakers and thermostats.

## Highlights

- How B.C. households are using electricity has changed dramatically in recent decades. British Columbians are making the switch towards adopting a number of smaller, personal and internet-enabled devices to consume media, keep in touch with friends and family, and stream music and movies.
  - In fact, the average British Columbian spends nearly one-third (4.7 hours)<sup>1</sup> of their time awake on their phone.
- While none of these electronic devices consume a huge amount of electricity individually, all have become so common in households, that taken together, electricity used by electronics has increased by nearly 150%—from 7% to 17%—since the early 1990s.<sup>2</sup>
- A recent survey commissioned by BC Hydro<sup>3</sup> illustrates just how addicted British Columbians are to their smartphones and tablets.
  - Over a quarter of British Columbians aged 25 to 54 would rather give up seeing their spouse or partner for a day than give up their device for 24 hours. This figure jumps to one in three for those aged 55 to 64.
  - Two-thirds of British Columbians would be willing to go without their morning coffee for two days than their smartphone or tablet for the same timeframe.
  - One-fifth of adult British Columbians admit to sleeping with their smartphone in bed. This number significantly increases for those aged 18 to 24 with 70% sleeping with their smartphone.
  - Nearly one-third of British Columbians aged 18 to 24 would give up heating in their home on a cold winter day before giving up their smartphone.
  - Nearly one-fifth of British Columbians aged 25 to 34 would rather give up their salary for a day than their device for the same period.
- Smart home products are expected to continue to rise in popularity as British Columbians explore new ways to use their personal devices to manage their home’s electricity use. This includes internet-connected smart plugs, lighting, speakers and thermostats.
  - 77% of British Columbians surveyed have purchased at least one smart product in the past year or plan to purchase one in the next 12 months.

## Solutions

- To keep costs down, BC Hydro recommends:
  - Taking advantage of rebates: between October 1 and November 11 BC Hydro is offering rebates on energy-efficient lighting, appliances and smart products through its retail partners. More information can be found at [powersmart.ca](http://powersmart.ca).
  - Turning on a device’s power management settings: these settings are built into most new personal devices and can significantly improve battery life, limiting the amount of charging required.
  - Using a smart strip for older electronics: older devices still draw electricity when left plugged in, even when they are turned off. The best way to combat this – particularly for older home theatre equipment – is to use a ‘smart strip’ or advanced power bar.
- Tracking their electricity use with MyHydro: BC Hydro customers can track their electricity usage and make behavioural changes to reduce their consumption.

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<sup>1</sup> BC Hydro residential end use survey 2017

<sup>2</sup> Natural Resources Canada Canadian Energy Use and Trends

<sup>3</sup> Survey conducted by Vancouver-based NRG Research Group in August 2018 from a sample size of 400 B.C. residents aged 18-plus years of age

## A shift in B.C. households' electricity use

Small appliances – including all household electronics, like T.V.s, computers, stereos and small kitchen appliances like coffee makers – now account for 17% of the average British Columbian's overall household electricity use – this is up from 7% in the early 1990s—a nearly 150% increase.

The proportion of electricity use attributed to small appliances and electronics has steadily increased year-after-year as more electronics and small appliances are added to the home while lighting and larger appliances, like refrigerators and clothes washers, continue to become more energy-efficient.

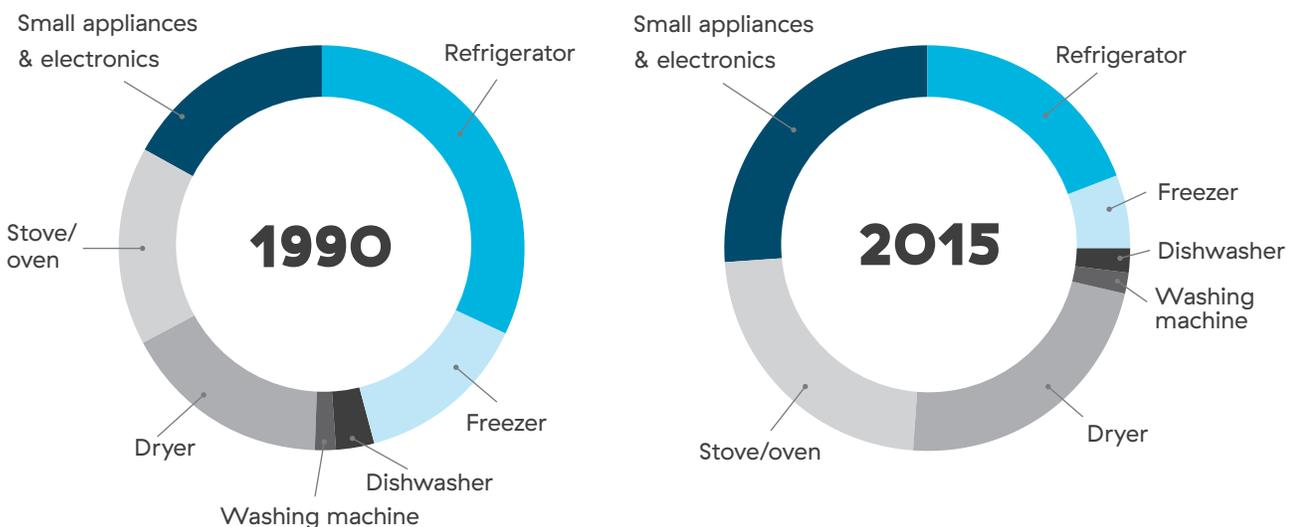
- For example, an average refrigerator from the 1990s used around 1,500 kilowatt hours of electricity a year, compared to a new ENERGY STAR® model today that uses approximately 380 kilowatt hours a year. These larger appliances made up around 40% of a household's total electricity use in the 1990s, compared to around 20% in 2015.

While smaller electronic devices like laptops, tablets and smartphones do not consume huge amounts of electricity individually (15 to 20 watts each when plugged in), when combined together – along with the peripheral devices that consumers use with them – they are the reason there has been a dramatic shift in how British Columbians are using electricity.

- The number of T.V.s in B.C. households has remained relatively steady in recent years at almost 2 per household, with 95% of B.C. homes having at least one television. However, what has changed is the rise of additional devices – like a wireless router – used with new 'smart' models, which has increased by around 20% since 2010.
- Set-top boxes – used to watch high definition T.V., record shows and movies – have also gained popularity, with 76% of B.C. households having at least one unit. This is up from 55% in 2010.
- The percentage of B.C. homes with a DVD or Blue Ray player has decreased by around 23% in recent years as the popularity streaming services, like Netflix and Apple T.V. has grown tremendously.

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### BRITISH COLUMBIANS' APPLIANCE AND ELECTRONIC ENERGY USAGE 1990 VS. 2015



Source: Natural Resources Canada Energy Use Data Base

## Palm power: a hand-held device revolution

Rewind to 2007. Amy Winehouse wins the Grammy for best new artist, the medical drama Grey’s Anatomy is one of the most popular shows on T.V. and Spider Man 3 is the number one grossing movie at the box office. It is also the year Apple introduced its first iPhone. For the first time, consumers can listen to Amy, watch a trailer for Spider Man 3 on YouTube, and text message their friends about what Dr. Meredith Grey and Dr. McDreamy are up to all from the same device, all at the palm of their hand.

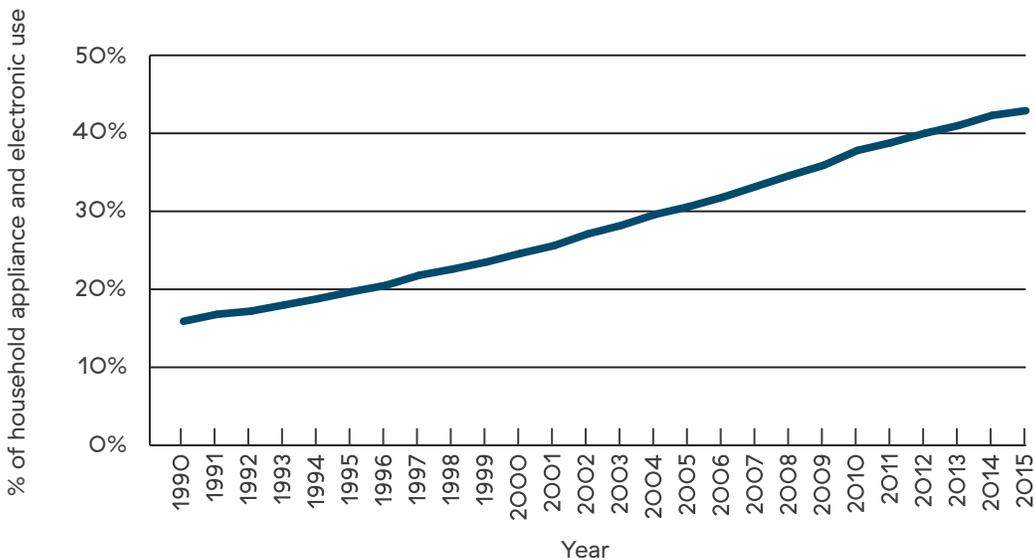
The introduction of the iPhone was one of the catalysts for the shift in how the public consumes media. For the first time, one device could be a portable telephone, computer and a music player, sparking a shift towards less reliance on multiple larger devices. As more features were added to smartphones and applications were introduced, that downward trend only became more significant.

BC Hydro data shows a shift in BC Hydro customers adding portable electronics to their homes in 2010 with the mass adoption of laptop computers and the introduction of tablet computing.

- Between 2010 and 2012, the number of B.C. households with laptops increased by more than 43%, overtaking the number of households with desktop computers for the first time.
- The introduction of the Apple iPad in 2010, brought about another shift, which is correlated by BC Hydro data that shows between 2010 and 2017, the number of B.C. households with tablets increased by more than 200%.
- BC Hydro data shows that 77% of BC Hydro customers currently own a smartphone – with the highest concentration being in the Lower Mainland, where 82% of residents own one, compared to 70% in the Southern Interior and Vancouver Island and 69% in the North.

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### USE OF PERSONAL ELECTRONIC DEVICES IN B.C. HOUSEHOLDS



Source: Natural Resources Canada Energy Use Data Base

## Kickin' it and streaming

In addition to the individual personal devices themselves, the new ways British Columbians consume media is also contributing to a shift in household electricity use. The rising popularity of internet-connected devices used for media streaming plays a significant role. This is attributed to these devices continuing to pull a significant amount of electricity even when turned off to allow for pre-set recordings and automatic updates.

- 93% of BC Hydro customers have internet access – with 86% via a wireless network.
- 76% of households have at least one set-top box used to record T.V. shows and movies.
- 25% also have some type of dedicated media streaming device, such as Apple T.V.
- 29% have a game console. This increases to 53% in households with children under 12 and to 59% for those with young adults aged 13 to 24.

Research done by BC Hydro shows, on average, its customers are spending nearly one-third (or 4.7 hours) of their waking hours on their smartphone each day. This adds up to almost 33 hours a week or 132 hours each month. comScore data shows Canadian adults spend 681 minutes a week – or 11.35 hours – watching online videos, 3.5 hours of this is on Netflix and 6.5 hours a day on the internet.

The convenience and portability of personal devices may have also led to the rise in the concurrent use of different devices.

- Over 71% of BC Hydro customers admit to using multiple devices at one time. For example, scrolling through social media on a smartphone while watching T.V. through a set-top box, or checking email on a laptop while watching a movie.

## British Columbians love their smartphones more than their spouse

A survey conducted for BC Hydro of over 400 British Columbians show just how addicted British Columbians are to their smartphones and tablets – and what they are willing to give up to stay connected to them.

British Columbians do not like to be too far away from their smartphone – even when they are sleeping:

- Nearly one-fifth of those surveyed admitted to regularly sleeping with their smartphone in the bed with them.
- This habit is most prevalent amongst those aged 18 to 24, with 70% admitting to sleeping with their smartphone in bed.
- With their phones so close by, it is not surprising that the first thing more than 50% of British Columbians do upon waking up is check their phone.
  - Again, at almost 80%, this was most common amongst those between the ages of 18 to 24.

And, once they are up, their morning coffee seems to be less important than having their smartphone:

- Over two-thirds of British Columbians said they would give up their morning java for two days before giving up their smartphone for the same amount of time.
- And once they make it to work, nearly one-fifth of British Columbians aged 25 to 34 said they would rather work for free for a day than give up their smartphone for 24 hours.

When asked if they would be willing to give up seeing their spouse or partner for a day instead of their smartphone:

- One-third of British Columbians between 55 and 64 said they would have no problem making that trade.

With their partner or spouse out of the picture for a day and their phone in bed with them, British Columbians may also be feeling a bit chilly:

- More than a quarter of those in the Lower Mainland said they would give up the heating in their home on a cold winter day before giving up their smartphone or tablet.

## Smart T.V.s, smart speakers – where does it stop?

Smart T.V.s first became available for purchase about a decade ago, and have continued to gain popularity ever since. At 34%, the smart T.V. – which allows users to stream their favourite shows on Netflix and watch YouTube – has the highest level of adoption.

Smart speakers came next. They were introduced to the market in 2014, with the launch of Amazon Echo, followed closely by Google Home in 2016. These products present British Columbians with the next wave of convenience to manage their electricity use with just the sound of their voice – no more having to get out a warm bed to turn off the hallway light or switch off the T.V. that was left on in the basement.

Smart plugs started to gain momentum a few years ago. A smart plug is an easy-to-install, low-cost introduction into ‘smart home’ technology. It wirelessly connects to an app on a smartphone or tablet and gives the user the control to turn on and off the light or device that is plugged into it.

Other popular smart home products are smart light bulbs and smart light switches. Both of these connect wirelessly to a smartphone or tablet app, and allow the user to turn the light on and off and control the brightness and hue.

Smart products – including T.V.s, speakers, plugs, lighting, thermostats and appliances are becoming more popular:

- Close to 50% of those surveyed for BC Hydro say they are interested in purchasing a smart home product within the next year.

With British Columbians already spending so much time on their smartphones, tablets and laptops – smart home products present a new way to pair their devices together and manage their household electricity use from one place.

- Those that have purchased a smart product or are looking to purchase one soon have said they are motivated by the potential to reduce their home energy costs and are willing to put more effort and money towards reducing their usage – and their bill.
  - 56% said they were interested in purchasing a smart light switch and 47% said they were interested in purchasing a smart speaker.

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## What are British Columbians willing to give up before their smartphone?



**65%**

would give up coffee for 2 days



**35%**

of 55 to 64 year olds would give up their spouse/partner for 2 days



**18%**

of those aged 25 to 34 would work a day for free

## Siri, I need help reducing my electricity use

One of the simplest ways to cut down on the electricity use of personal devices and small electronics is to take advantage of the power management settings built into most new, smartphones, tablets, laptops and game consoles. BC Hydro also recommends turning off a game console or set-top box through the device menu to cut down on standby power if the device is not going to be used for a couple of days. When streaming movies or T.V. shows, consider using a device other than a game console as these use 40% more electricity compared to other streaming devices, such as a smart T.V.

While modern smartphone and laptop chargers have close to no 'standby power', older devices do tend to still draw electricity when left plugged in, even when they are turned off. The best way to combat this – particularly for older home theatre equipment – is to use a 'smart strip' or advanced power bar.

Unlike a conventional power bar that needs to be manually switched off to eliminate power, a smart strip automatically switches off power to devices when they are not in use. This is done by plugging in a primary device – in most cases a T.V. – to the 'control' or 'master' outlet and then the other components, such as speakers to the 'peripheral' outlets. When the primary device is turned off, the smart strip will sense the change in the current and will automatically shut off the other devices plugged into the peripheral outlets.

## Energy saving assistance? BC Hydro can help with that

During the month of October, BC Hydro is offering rebates and deals on select energy-efficient products – including smart plugs – through its retail partners. This includes up to \$100 off select ENERGY STAR refrigerators, clothes washers and dryers and 15% off select ENERGY STAR LED bulbs. Full details and lists of eligible products can be found at [powersmart.ca](http://powersmart.ca).

BC Hydro customers with an online MyHydro account can view their hourly, daily or weekly electricity use and compare the data over time to see how their household's electricity use has changed and how new electronics or appliances may have contributed to their changing electricity use patterns.

