



# BC HYDRO 2014 CARBON NEUTRAL ACTION REPORT

SUBMITTED UNDER THE  
CARBON NEUTRAL GOVERNMENT REGULATION  
OF THE *GREENHOUSE GAS REDUCTION TARGETS ACT*



## BC HYDRO 2014 CARBON NEUTRAL ACTION REPORT

BC Hydro is pleased to present our 2014 Carbon Neutral Action Report. This report contains information on our 2014 emissions from corporate operations, offsets purchased, actions we have taken in 2014 to reduce our greenhouse gas (GHG) emissions and our plans to continue reducing emissions in 2015 and beyond.

### SUMMARY OF BC HYDRO'S GHG EMISSIONS AND OFFSETS FOR 2014

GHG emissions created in calendar year 2014	
Total emissions (tonnes CO <sub>2</sub> e <sup>1</sup> )	27,383
Total offsets (tonnes CO <sub>2</sub> e)	26,637
Adjustments to GHG emissions reported in previous years	
Total emissions (tonnes CO <sub>2</sub> e)	-81
Total offsets (tonnes CO <sub>2</sub> e)	0
Total Emissions for Offset for the 2014 Reporting Year	
Total offsets	26,637



Jessica McDonald, President & CEO

<sup>1</sup> Tonnes of carbon dioxide equivalent (CO<sub>2</sub>e) are a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

## OVERVIEW

BC Hydro is a Provincial Crown corporation and one of Canada's largest electric utilities, serving 95 per cent of B.C.'s population and delivering electricity safely and reliably at competitive rates to approximately 1.9 million customers. We operate an integrated system with 31 hydroelectric facilities and three thermal generating plants, totalling approximately 12,000 megawatts of installed generating capacity. Our customers benefit from our low-carbon electricity generation, with more than 93 per cent of electricity generated from clean or renewable resources. We deliver electricity to our customers through a network of nearly 77,000 kilometres of transmission and distribution lines and more than 300 substations. These activities are supported by a vehicle fleet of over 2,400 vehicles and over 200 buildings and facilities, which comprise the majority of our carbon neutral program emissions.

BC Hydro's vision is to power B.C. with clean, reliable electricity for generations. Our six strategic objectives are to safely keep the lights on, succeed through relationships, mind our footprint, foster economic development, maintain competitive rates and engage a safe and empowered team.

### MIND OUR FOOTPRINT

**Create a sustainable energy future in B.C. by carefully managing our impacts on the environment and fostering an energy efficiency and conservation culture.**

BC Hydro is committed to meeting the Clean Energy Act's objectives that at least 93 per cent of electricity generation in the province be from clean or renewable resources and that at least two-thirds of future demand growth be met through conservation by 2020.

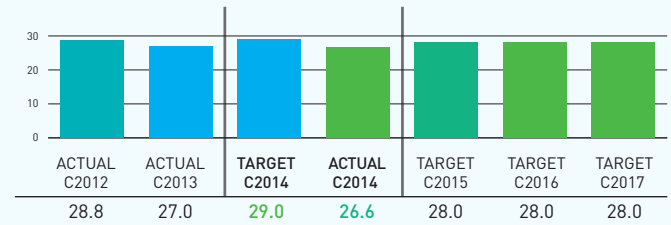
BC Hydro contributes to the Province's goal of achieving carbon neutrality in the public sector by taking steps to reduce GHG emissions from our buildings, vehicles and paper use and by purchasing offsets for our residual emissions. We have established targets for carbon neutral program emissions in our Service Plan (see Figure One) and publicly report on our performance against those targets in our Annual Report.

BC Hydro is also mindful of the effects that climate change may have on our assets and operations. We continue to collaborate and undertake research with the Pacific Climate Impacts Consortium on furthering our understanding of climate change in B.C. In 2014, we also completed an assessment of how electricity demand could change under different climate change scenarios.

Figure One

### Carbon Neutral Program Emissions Targets

**CARBON NEUTRAL PROGRAM EMISSIONS (kt)**  
Carbon dioxide equivalent metric kilotonnes (*lower is better*)



## SUPPORT FOR ENERGY CONSERVATION IN THE PUBLIC SECTOR

BC Hydro supports energy conservation, and by extension carbon neutrality, within the public sector through a variety of Power Smart programs and initiatives. In 2014, BC Hydro helped fund 38 energy managers in public sector organizations including an Energy Manager for BC Hydro. The public sector is eligible to participate in a variety of BC Hydro's demand side management programs and initiatives that aim to address the diverse needs and barriers that prevent organizations from undertaking cost-effective opportunities to save energy. The suite of offers include, but are not limited to, financial incentives, resource assistance, and education to identify and implement energy efficiency projects that result in energy savings and help instill a conservation culture in the workplace.

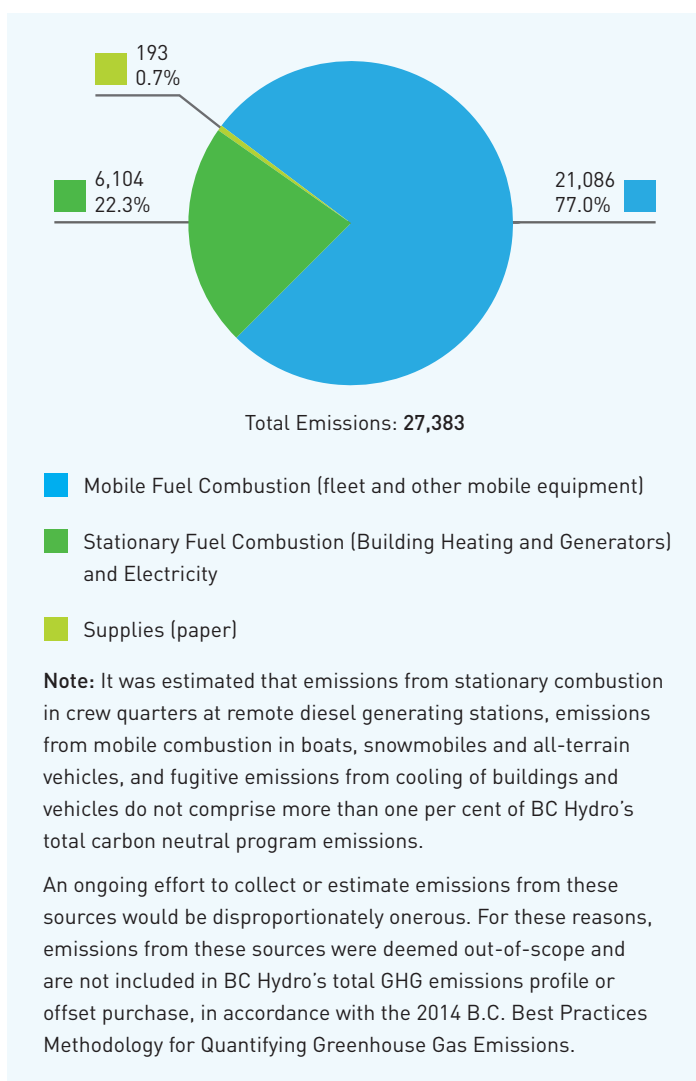


Energy Manager Dave Sands and Energy Specialist Poroshat Assadian, School District 43 (Coquitlam)

## 2014 GREENHOUSE GAS EMISSIONS

In 2014, BC Hydro emitted 27,383 tonnes of carbon dioxide equivalent (CO<sub>2</sub>e) from sources covered under the Carbon Neutral Government Regulation (see Figure Two). This represents a reduction of one per cent compared with 2013. Of the 2014 emissions, 77 per cent came from the vehicle fleet, 22 per cent from buildings (which includes energy use for heating, cooling, lighting and IT equipment), and one per cent from paper use.

**Figure Two**  
BC Hydro GHG Emissions by Source for the 2014 Calendar Year (tonnes CO<sub>2</sub>e)



As outlined in the regulation, some emissions must be reported but do not require offsets. For BC Hydro, emissions exempt from offsets are a result of the renewable fuel content in purchased diesel and gasoline and equalled 746 tonnes CO<sub>2</sub>e for 2014. Emissions requiring offsets totalled 26,637 tonnes CO<sub>2</sub>e for 2014.

## OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2014

BC Hydro has purchased 26,637 offsets from the provincial government to achieve carbon neutrality in 2014, as required by the *Greenhouse Gas Reduction Targets Act*.

## ACTIONS TAKEN TO REDUCE EMISSIONS

### BUILDINGS

BC Hydro has over 200 buildings in more than 60 municipalities across the province.



Whether building new facilities or renovating existing space, we work to reduce the environmental impact of our operations, conserve energy and support healthy work environments. In 2014, we took the following steps to reduce emissions:

- Completion of a new, energy-efficient office building in Prince George;
- New office buildings under construction in Campbell River and Nanaimo;
- Major renovations in progress at the Powertech building in Surrey and at the Revelstoke and Golden District Offices; and
- Installation of Direct Digital control systems at the Abbotsford, Coquitlam, North Vancouver, and Invermere District Offices and at the material management facility in Surrey.

BC Hydro takes advantage of the opportunity to perform energy efficiency upgrades and reduce resource consumption when renovating existing office space. We target a 30 per cent reduction in water and energy use when renovating office space. The standard amount of space per employee in office workstations in new or renovated buildings is 5.9 square metres, down from a range of 5.9 to 14 square metres in 2007. This is expected to result in considerable energy savings over time.

Our renovations to offices and work locations also incorporate environmentally friendly products and materials. In 2014, we completed renovations of 80,000 square feet of office space using carpets, workstations and chairs made with high levels of recycled content, and paint and furniture containing low volatile organic compounds. In 2014, BC Hydro partnered with Green Standards to minimize the amount of used office furniture that ends up as waste and maximize the benefit to the community. As a result, 64 tons were diverted from the landfill through recycling (78 per cent) and donations (22 per cent).

Efforts to enhance the efficiency of building operations continued in 2014. Our facilities management company, with whom we contract to manage the heating, cooling and ventilation systems in 41 of our largest buildings, exceeded its overall annual energy savings target of two per cent.

## VEHICLE FLEET

BC Hydro strives to avoid and minimize vehicle fleet emissions, while at the same time ensuring reliability and safety in the fleet, evaluating the integration of new vehicle technology, meeting the needs of vehicle operators, and minimizing rate impacts by choosing cost-effective vehicle options.



BC Hydro's vehicle fleet contains over 2,400 vehicles that are used daily throughout the province to support our operations and maintain a safe and reliable supply of electricity.

In 2014, BC Hydro continued an improved fleet asset planning process that included detailed analyses of each business group's vehicles. Each vehicle was evaluated for overall suitability, reliability, and fuel consumption. In 2015, this process will be repeated and used to create a forecast for required regular vehicle replacements in each business group.

We are improving fleet fuel efficiency by regularly replacing vehicles with newer, more efficient models and performing regular maintenance on all of our vehicles. We continue to acquire B5 biodiesel refuelling services at many of our sites.

In 2014, we also added one new electric car, increasing the number of electric and hybrid electric cars and trucks in our fleet to 144.

## PAPER

BC Hydro used eight per cent less office paper in 2014 than in 2013. In fact, since 2010 we have reduced our office paper consumption by 24 per cent. In 2014, almost 80 per cent of the office paper we purchased contained 100 per cent recycled content. We also continue to promote paperless billing to our customers,

with one third of customers now subscribed to paperless billing. BC Hydro had the ninth highest paperless adoption rate of all utilities in North America based on a 2014 survey.

## FUTURE ACTIONS TO REDUCE EMISSIONS

BC Hydro will continue to seek opportunities for energy reduction in existing buildings, with an emphasis on opportunities with shorter payback periods. We will continue to complete all floor transformation projects consistent with provincial energy efficiency guidance. Permanent new facilities will be completed consistent with Power Smart high-performance building standards. Energy conservation will be an input into all business decisions related to capital replacement.

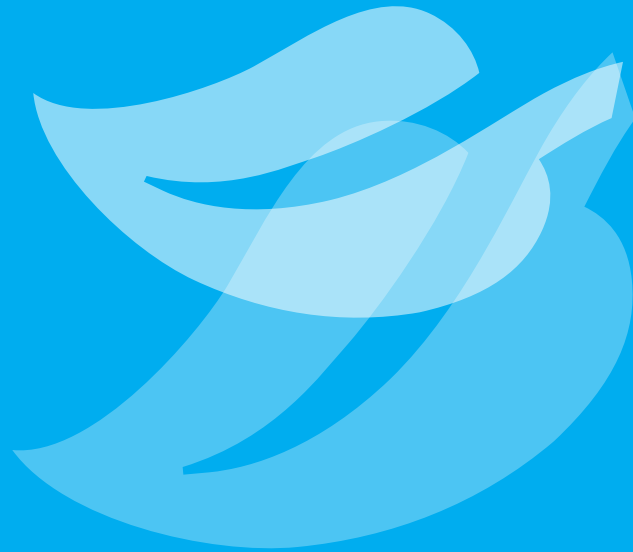
A key focus is to right-size our vehicle fleet by replacing larger vehicles with smaller models wherever possible, while still meeting the needs of vehicle end users. We work closely with vehicle end users to determine the appropriate engine type and vehicle size for each application.

Newer vehicle technologies, including hybrid and electric vehicles, will be incorporated as part of the regular vehicle replacement cycle as appropriate, depending on suitable replacement spots, annual capital budgets, vehicle pricing and availability.

BC Hydro's new Prince George District Office was designed to meet an aggressive energy use intensity target. Some of the notable features of the new building include:

- High insulation building envelope and air-to-air heat recovery to reduce ventilation heating and cooling requirements,
- In slab and ceiling-mounted radiant heating system, supported by a high-efficiency hot water system, to reduce energy consumption, and
- Sub-metering to track and diagnose system operating and maintenance issues affecting energy use.





More information on BC Hydro's triple-bottom line performance measures and initiatives can be found as part of BC Hydro's Service Plan and Annual Report.

[bchydro.com](http://bchydro.com)

# 2014 Carbon Neutral Action Report (CNAR)

## - Part 2 ACTIONS

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### Organization Name

BC Hydro

### Actions Taken to Reduce Emissions

#### 1) Stationary Fuel Combustion, Electricity (Buildings): Indicate which actions were taken in 2014:

Performed energy retrofits on existing buildings

Yes

Built or are building new LEED Gold or other "Green" buildings.

Yes

Undertook an evaluation of overall building energy use.

No

Please list any other actions taken to reduce emissions from Buildings:

Whether building new facilities or renovating existing space, we work to reduce the environmental impact of our operations, conserve energy and support healthy work environments. In 2014, we took the following steps to reduce emissions:

- \* Completion of a new, energy-efficient office building in Prince George;
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Efforts to enhance the efficiency of building operations continued in 2014. Our facilities management company, with whom we contract to manage the heating, cooling and ventilation systems in 41 of our largest buildings, exceeded its overall annual energy savings target of two per cent.

## **2) Mobile Fleet Combustion (Fleet and other vehicles): Indicate which actions were taken in 2014:**

Do you have a fleet?

Yes

Replaced existing vehicles with more fuel efficient vehicles (gas/diesel)

Yes

Replaced existing vehicles with hybrid or electric vehicles

Yes

Reduced the overall number of fleet vehicles

No



Took steps to drive less than last year

Yes

Please list any other actions taken to reduce emission from fleet:

BC Hydro strives to avoid and minimize vehicle fleet emissions, while at the same time ensuring reliability and safety in the fleet, evaluating the integration of new vehicle technology, meeting the needs of vehicle operators, and minimizing rate impacts by choosing cost-effective vehicle options.

In 2014, BC Hydro continued an improved fleet asset planning process that included detailed analyses of each business group's vehicles. Each vehicle was evaluated for overall suitability, reliability, and fuel consumption. In 2015, this process will be repeated and used to create a forecast for required regular vehicle replacements in each business group.

We are improving fleet fuel efficiency by regularly replacing vehicles with newer, more efficient models and performing regular maintenance on all of our vehicles. We continue to acquire B5 biodiesel refuelling services at many of our sites.

In 2014, we also added one new electric car, increasing the number of electric and hybrid electric cars and trucks in our fleet to 144.

### **3) Supplies (Paper): Indicate which actions were taken in 2014:**

Used less paper than previous year

Yes

Used only 100% recycled paper

No

Used some recycled paper

Yes

Used alternate source paper (Bamboo, hemp, etc.)

No

Please list any other actions taken to reduce emissions from paper use:

BC Hydro used eight per cent less office paper in 2014 than in 2013. In fact, since 2010 we have reduced our office paper consumption by 24 per cent. In 2014, almost 80 per cent of the office paper we purchased contained 100 per cent recycled content.

We also continue to promote paperless billing to our customers, with one third of customers now subscribed to paperless billing. BC Hydro had the ninth highest paperless adoption rate of all utilities in North America based on a 2014 survey.

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### **Actions Taken to Reduce Emissions - continued**

Explain how you plan to continue minimizing emissions in 2015 and future years:

BC Hydro will continue to seek opportunities for energy reduction in existing buildings, with an emphasis on opportunities with shorter payback periods. We will continue to complete all floor transformation projects consistent with provincial energy efficiency guidance. Permanent new facilities will be completed consistent with Power Smart high-performance building standards. Energy conservation will be an input into all business decisions related to capital replacement.

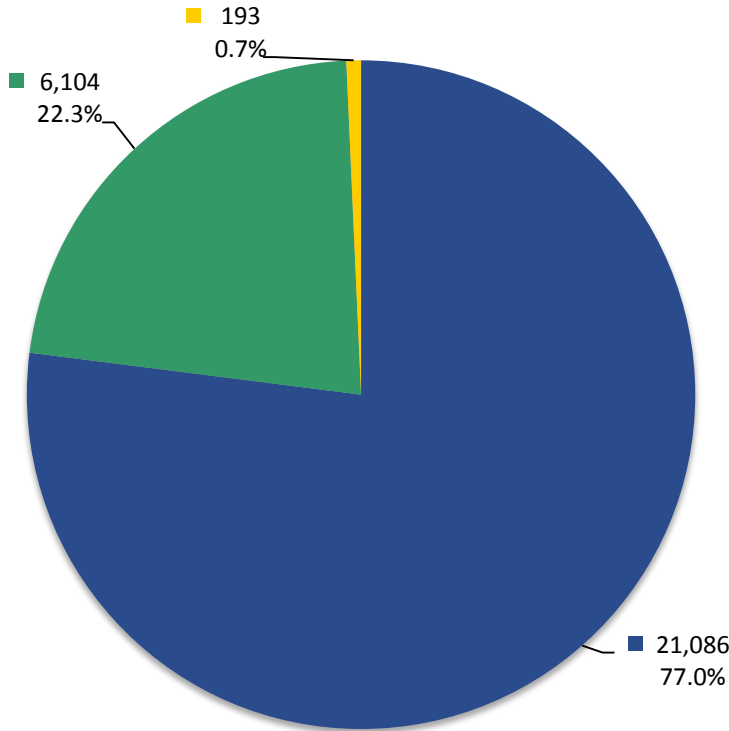
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Newer vehicle technologies, including hybrid and electric vehicles, will be incorporated as part of the regular vehicle replacement cycle as appropriate, depending on suitable replacement spots, annual capital budgets, vehicle pricing and availability.

If you wish to list any other "sustainability actions" outside of buildings, fleet, paper and travel check "yes". This reporting is optional.

No

**BC Hydro  
Greenhouse Gas Emissions by Source  
for the 2014 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 27,383**

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)

**Offsets Applied to Become Carbon Neutral in 2014 (Generated June 22, 2015 12:42 PM)**

Total offsets required: **26,637**. Total offset investment: **\$665,925**. Emissions which do not require offsets: **746** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

\*\* Under the *Carbon Neutral Government Regulation of the Greenhouse Gas Reduction Targets Act*, all emissions from the sources listed above must be reported. As outlined in the regulation, some emissions do not require offsets.