



2017 PROVINCIAL GOVERNMENT CARBON NEUTRAL ACTION REPORT

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Ministry of Environment and
Climate Change Strategy
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Table of Contents

1. INTRODUCTION.....3

2. BUILDINGS5

3. VEHICLES9

4. OFFICE PAPER.....9

5. BUSINESS TRAVEL.....10

6. SUMMARY10

1. INTRODUCTION

This report fulfills the Provincial government’s reporting requirements under section 7 of the *Greenhouse Gas Reduction Targets Act* (the Act) for the 2017 calendar year where “Provincial government” represents a consolidation of provincial ministries and independent offices. This report provides an overview of the Provincial government’s:

- greenhouse gas (GHG) emissions from buildings, vehicles, office paper, and business travel;
- offsets retired in relation to those emissions to achieve carbon neutrality; and
- highlights of actions taken in 2017 to minimize emissions and plans to minimize future emissions.

Emissions Summary

Table 1

GHG Emissions Summary for Provincial government – 2010, 2016 & 2017 (Calendar Years)			
	2010	2016	2017
Total Emissions (tCO₂e)	82,988	61,498	64,161
Total Offsets Retired (tCO₂e)	81,749	60,801	63,388

Emissions from biogenic sources (e.g., combustion of renewable fuels) are offset exempt.

Figure 1

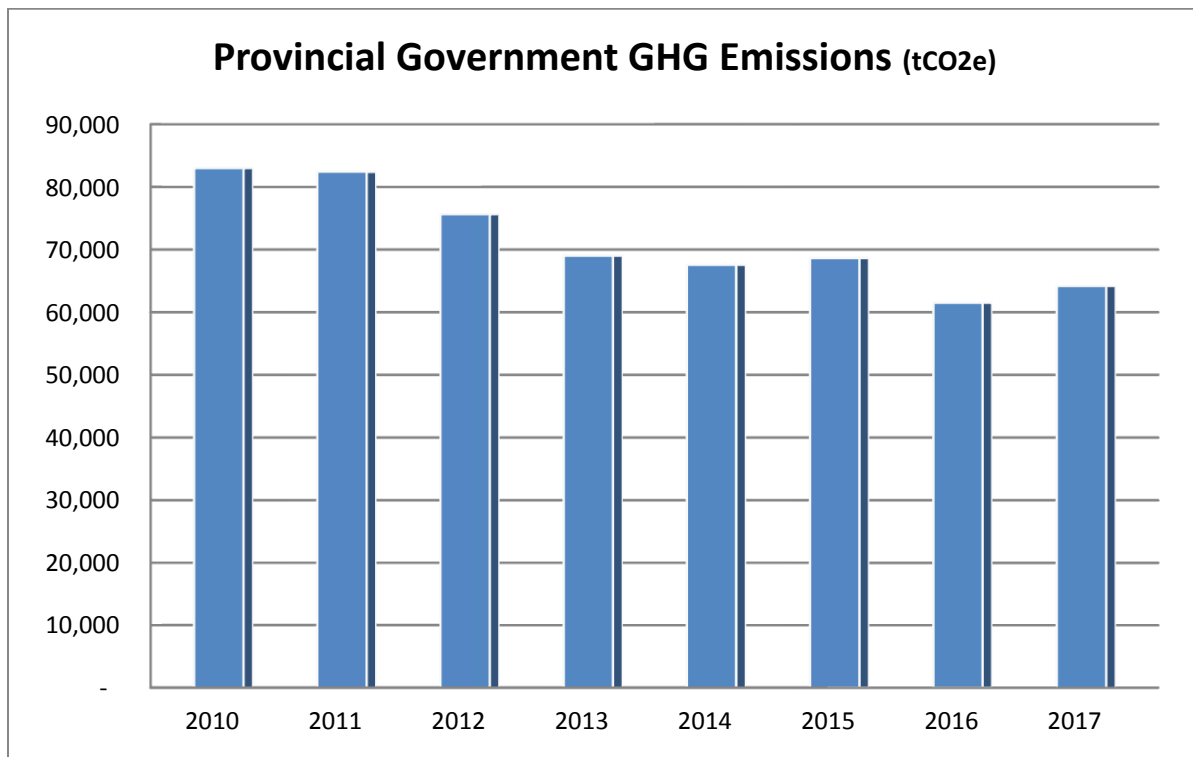
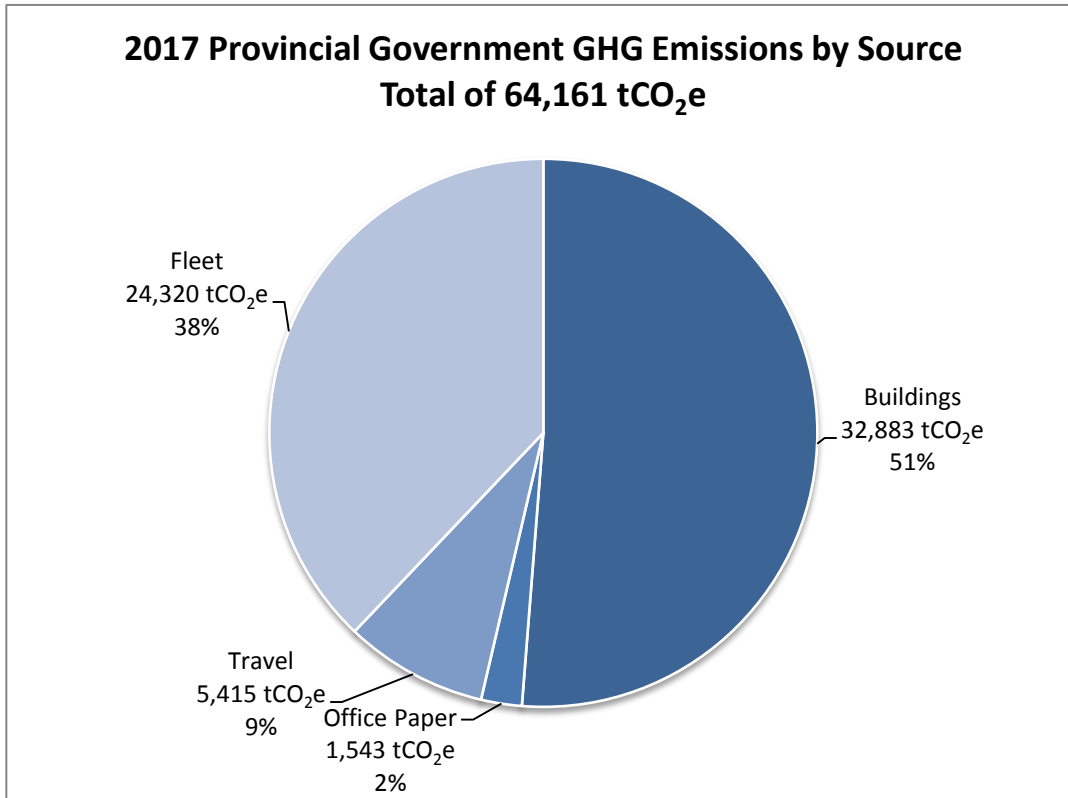


Figure 2



While total Provincial government emissions were 22.7% lower in 2017 relative to its 2010 baseline, its emissions increased by 4.3% compared to 2016. Notwithstanding the recent year-over-year increase in emissions, Provincial government emissions have been trending downward since the 2010 baseline year, with 2017 still consistent with that trend (refer to Figure 1).

2017 Building emissions were more than 35% lower than 2010, but 3.3% higher compared to 2016. The increase in 2017 relative to 2016 was due, in part, to 2017’s colder than average winter, which increased the 2017 energy demand for space heating in buildings. This was consistent with the observed year-over-year increase in Heating Degree Days (a measure of the demand for energy to heat a building).

2017 Vehicle emissions were higher in 2017 compared to both 2010 (22%) and 2016 (19%) levels. Warm and dry conditions during the summer of 2017 contributed to a more intense fire-fighting season and a significant increase in consumption of fleet fuels in support of wildfire suppression, enforcement and investigation, as reported by the ministries responsible; the Ministry of Forests, Lands, Natural Resource Operations & Rural Development and the Ministry of Environment & Climate Change Strategy which account for over half of the Provincial government’s fleet emissions.

2017 Office Paper and Business Travel emissions were both lower in 2017 compared to 2010 levels; with office paper 19% lower than 2010 and business travel, 52% lower. And relative to 2016, business travel emissions were down 30% while emissions from office paper use up 4%.

2. BUILDINGS

The Ministry of Citizens' Services (CITZ) is responsible for providing a range of services that support the management of Provincial government buildings, vehicles, information technology and procurement. The following is a summary of the work undertaken by CITZ during 2017 to reduce building related GHG emissions.

The energy use and associated GHGs from the buildings within its portfolio is a key area of focus in the CITZ Service Plan as well as a significant aspect of its Environmental Management System (EMS). CITZ's efforts to reduce building related energy use and emissions fall into four categories:

- Behavioural Change-Management Actions
- Operations and Maintenance Actions
- Programming Actions
- Infrastructure Actions

1. Behavioural Change-Management Actions

Several behavior-change campaigns were delivered in 2017 to encourage the Provincial government's 26,000 public service staff to reduce energy use within the building stock of roughly 1,600 owned and leased buildings. The following are some of the key initiatives that were undertaken in 2017.

SAIL Award

In 2017, CITZ continued to deliver the Sustainability Action Innovation and Leadership (SAIL) Award. The SAIL Award recognizes employees who take time and show leadership in advancing sustainability within Provincial government operations.

Sustainability Associates

The Sustainability Associates program was developed in 2017 and is being piloted during the 2018 calendar year. This pilot is testing the Sustainability Associates model as an alternate and potentially effective model of supporting and enabling building occupants to set baselines, develop energy and waste conservation targets, and to meet those targets.

2. Operations and Maintenance Actions

Since November 2014, a centralized team of BGIS-WSI¹ technical experts in automated building controls known as the DDC Unit, has been reviewing building operations and implementing optimization measures as appropriate. The DDC Unit calibrates building systems and works with field staff to bring the building systems to their optimal performance, which resulted in annual energy savings of approximately 9,000 GJ in 26 buildings during 2017.

In fiscal 2017-18, almost twenty building re-commissioning projects were released for implementation. These projects built on the success of similar efforts in 23 other buildings during 2015/16, where low-cost/no-cost measures were implemented to optimize building operations, and more significant potential energy efficiency infrastructure investment opportunities were identified.

¹ BGIS-WSI is the facility management service provider contracted by the Real Property Division within CITZ to operate and maintain government's building portfolio and deliver projects under a comprehensive Master Service Agreement.

Finally, continual improvement in energy performance is inherently built into CITZ's facility management service contracts and forms part of the Performance Management Framework that governs these service contracts. Under this governance model, service providers have maintained a strong focus on energy management and have been successful at achieving established performance outcomes. Each year the CITZ and BGIS-WSI identify key strategic actions for an Energy Management and Conservation Strategy, with the objective of reducing energy consumption and associated GHGs. A few key strategies implemented in 2017 involved enhancing the knowledge of building operators and advancing the adoption of best practices within operations teams and conducting level I energy audits in at least five leased buildings. Moreover, quarterly energy dashboard meetings with facility management service providers continue to reveal new opportunities through networking discussions and encouragement.

3. Programming Actions

Leading Workplace Strategies (LWS) is a cross-government initiative led by CITZ as endorsed by the Deputy Ministers' Committee on Technology and Transformation since July 2011. LWS refers to government's coordinated corporate approach to support and promote mobile and flexible work styles by integrating technology, culture and space in innovative ways. It includes mobility-based options such as free-address (shared) work space, collaboration spaces, and telework as part of the suite of options. The LWS initiative has enabled thousands of employees to work in more flexible and collaborative ways, taking advantage of mobile technology and incidentally reduce overall commute and travel for work. LWS is now seen as the default approach for workspaces to support mobility and flexibility as per "Where Ideas Work: A Corporate Plan for the BC Public Service, 2016."

Since the LWS initiative was launched, projects have now been completed for 11 different ministries or organizations across the province, in 26 LWS projects, and in 18 different buildings:

- Over 44,000 m² of office space has been upgraded while reducing the Provincial government portfolio by over 29,000 m².
- Over \$9.1M in building occupancy costs are now saved annually with a total of over \$26.8M of cumulative savings achieved by the end of 2017.
- 471 tonnes of GHG emissions will be reduced each year, with over 1,483 tonnes of CO₂e reduced to date.
- 3,468 employees are working in a leading workplace, of which 41% of employees are working in a mobile workstyle using IT, wireless and remote access services.
- 16 more LWS projects are currently underway throughout BC.

Four LWS projects were completed during 2017 including projects for (1) Government Communications & Public Engagement at 617 Government St. in Victoria; (2) Service BC at 4000 Seymour Place in Victoria; (3) the Queen's Printer at 563 Superior St. in Victoria; and (4) the ministries of Environment & Climate Change Strategy and Children & Family Development who recently moved into Capital Park - the redeveloped site behind the legislative buildings in Victoria – where over 700 staff are now working within LWS space implemented across all floors.

LWS Process Changes in the Future:

The LWS team is planning to introduce carbon impact into the decision-making process for space planning opportunities. Moreover, the ratio of work points per employee has shifted for new LWS projects from 1:1 to 1:1.2 which will lead to additional space reductions. This new ratio has been fully adopted for application to all new LWS projects.

Technology

As part of the CITZ's provision of information technology infrastructure services, 72% of all servers have been consolidated into two data centres. During 2017, 20 regional network centres were also closed in various communities across the province including Chilliwack, Victoria (3 RNCs), Alexis Creek, Bella Coola, Creston, Fernie, Ganges, Gold River, Grand Forks, Kelowna, McBride, Mission, Revelstoke, Salmon Arm, Sparwood, Stewart, Thahsis, and Vanderhoof.

In additional, CITZ Hosting Services department continues to reduce power usage (58 kva) and carbon emissions (27 tonnes) by lowering cooling demands.

4. Infrastructure Actions

Using a pairwise evaluation methodology in its capital planning processes, priority is given to building infrastructure investments that meet a range of government imperatives (e.g. health and life safety, client programming, building integrity) and that may result in a reduction of energy use and associated GHGs. This methodology defines and weights criteria to evaluate capital projects and to apply those criteria consistently, thereby creating a defensible capital investment program. This methodology was implemented to reduce subjectivity and increase transparency in the prioritization process, and produce an approach that is scalable to a large number of projects across a diverse portfolio of owned assets. The methodology also includes stakeholder engagement and a technical review resulting in a prioritized list of requirements for owned assets.

Overall, in fiscal 2017-18, approximately 35 energy-impacting building retrofit projects were initiated, valued at approximately \$8.5 million. These projects range from HVAC upgrades (almost 45% of the investment budget), to lighting upgrades (30%) and building envelope renewals (25%) and controls that all together will produce an estimated 10,500 GJ of energy savings per year in the upcoming years. It's important to note, that although the projects noted above may have an energy impact, the decision to invest in those projects is not generally driven by energy or GHG reduction. Therefore, the investment is primarily directed toward building system renewal that may have a secondary somewhat 'coincidental' reduction in energy use. The reduction in aggregated energy use associated with those projects tends therefore to be low relative to the size of investment dollars.

Additionally, in 2017, CITZ approved more than 20 ASHRAE Level II energy studies in some of the most energy-intensive buildings of the portfolio. Those audits will be conducted in 2018 and will inform focused investment decisions required to achieve the CITZ 3% emissions reduction target (noted below). Finally, more than 120 buildings were approved for "Green Assessments" that will be added to the facility condition assessments that are routinely conducted in owned facilities by CITZ contractor, VFA. The additional analysis will be generally conducted on owned buildings that are more than 1500 square meters in size, and will support dedicated investment decisions that will lead to higher environmental performance.

Ongoing Emissions Reduction Planning

To achieve the provincial reduction target of 80% by 2050 relative to 2007, CITZ has established incremental reduction targets of: 3% per year until 2030; 4% per year till 2040 and 5% per year up to 2050.

These targets will be accomplished over time through activities in the aforementioned areas of: (1) behavioural change, (2) optimized operations, (3) client programming, and (4) infrastructure investments. Activities undertaken will reflect available resources, technological and administrative advancements, and priorities. As well, activities are and will continue to be required of facility management service providers under contractual obligations.

Building Emissions Highlights from other Ministries

- Ministries have reduced their building emissions largely through behavioural actions , including:
 - Encouraged employees to turn off lights and shut blinds through the use of signage and behavioural campaigns;
 - Ministry of Advanced Education, Skills and Training (AEST) promoted a ‘Get up and Go’ Challenge to encourage staff to take the stairs in lieu of the elevator;
 - The Ministry of Transportation and Infrastructure (TRAN) headquarters staff is participating in the BC Sustainability Associates Program to develop energy, waste and conservation targets for their building and strive to meet those targets; and
 - The Ministry of Agriculture’s Abbotsford Agricultural Centre continues to implement its energy audit recommendations by converting fluorescent lights to more energy efficient LED lights and purchasing a new highly efficient generator.
- Ministries continue to move towards Leading Workplace Strategies (LWS) in order to reduce the physical office space requirements, including:
 - The Ministry of Social Development & Poverty Reduction consolidated seven offices into three during 2017, and in 2018 will convert their office in Prince George to LWS;
 - The Ministry of Environment & Climate Change Strategy consolidated the majority of its staff from two Victoria office locations into one at the newly built Capital Park building which is LWS and designed to achieve LEED Platinum certification reflecting high levels of energy ,water efficiency, and daylight usage;
 - The BC Public Service Agency allows 85% of its staff to telework resulting in decreased office space requirements;
 - The Ministry of Municipal Affairs & Housing initiated LWS renovations at their Victoria office in 2017 and will be completed by 2018;
 - The Ministry of Children & Family Development implemented LWS consolidating seven locations in Kelowna, and two Victoria locations; and
 - The Ministry of Finance has adopted LWS and alternate work strategies within existing office space to accommodate the ministry’s staffing growth and organizational changes.

3. VEHICLES

The Provincial government continues to explore options to bring zero-emission vehicles into the fleet where feasible. In 2017, several Ministries introduced electric vehicles into their fleet, in addition to purchasing hybrid vehicles, where appropriate. In addition, all staff have access to DriveSmart BC and Idle Reduction Guidelines to strengthen driving behaviours that reduce fuel consumption of both their work and personal vehicles.

Ministries' Fleet Vehicle Highlights

- Ministries have replaced some of their fleet vehicles with more efficient models including new hybrid or electric vehicles.
 - The Ministry of Forest, Lands, Natural Resource Operations & Rural Development purchased eight hybrid vehicles in 2017, bringing the total number of hybrids to 30 plus one electric vehicle. In addition, the ministry retired 117 older gasoline powered trucks from its fleet during 2017;
 - The Ministry of Transportation & Infrastructure added the first electric vehicle to its fleet in 2017. It also included zero emission vehicles within its *Fleet Use Policy* to increase the number of zero emission vehicles in the fleet over time and ensure all vehicles are used optimally;
 - The Ministry of Municipal Affairs & Housing replaced three gasoline powered vehicles with electrics. In addition, two charging stations were installed for electric public works vehicles during 2017. A feasibility study was completed to install a photovoltaic array (power generating unit) to supply the electricity consumed by new the electrics.
- Ministries' plans for continued fleet emission reductions include:
 - Continuing in 2018, the Ministry of Transportation & Infrastructure will pursue more electric vehicles and charging infrastructure for its fleet at regional offices;
 - The Ministry of Social Development & Poverty Reduction will replace 16 vehicles in their fleet with more efficient models during 2018; and
 - The Ministry of Municipal Affairs & Housing will study the feasibility of purchasing an electric garbage truck to replace the existing truck on the ministry-managed University Endowment Lands as well as install 2 more electric vehicle charging stations.

4. OFFICE PAPER

The Provincial government continues to employ Managed Print Services (MPS) to reduce its consumption of office paper and associated emissions, through:

- Replacement of printers and multifunction devices with MPS devices (MPS equipment is not only more energy efficiency, it also makes use of use “on-demand printing” through a print job which helps reduce the paper consumption associated with “orphaned print jobs”);
- Enabling double-sided printing as the default on all printing devices; and
- Expanding the use of electronic and digital means of communication and records storage.

- Ministries continue to reduce paper consumption through a variety of actions:
 - Switching to paperless billing (Energy, Mines & Petroleum Resources; and Social Development & Poverty Reduction);
 - The Ministry of Finance has several fully paperless branches;
 - The StudentAidBC program of the Ministry of Advanced Education, Skills & Training has switched to providing financial assistance applications online for students. In 2017 only 20 student financial assistance applications were printed. StudentAidBC staff will continue to explore methods in 2018 to reduce paper from their operations; and
 - The Ministry of Children & Family Development is planning to invest \$70,000 to digitize documents in an effort to reduce paper and physical storage requirements for the Child Care program.

5. BUSINESS TRAVEL

The Provincial government's GHG emissions from business travel decreased by over 2,000 tCO₂e in 2017 compared to 2016. Ministries continue to take a variety of actions to reduce their business travel emissions, including:

- Use of travel policies where decisions to travel are based on a clear business case using the most efficient modes of transportation; and
- Providing encouragement and support for the use of tele- and video-conferencing as well as online/virtual meetings where in-person meetings are not necessary.

6. SUMMARY

The Provincial government's GHG emissions increased by 4.3% from 2016 to 2017. This is largely the result of increases in both fleet and building related emissions. Weather was likely an important factor in both cases. Warm and dry conditions during the summer of 2017 contributed to a more intense fire-fighting season and hence, a significant increase in consumption of fleet fuels in support of wildfire suppression, enforcement and investigation. On the other hand, colder winter weather during 2017 also led to increased use of fuels for space heating in buildings, thereby, increasing related emissions.

Notwithstanding the recent year-over-year increase in emissions, Provincial government emissions have been trending downward since the 2010 baseline year, with 2017 still consistent with that trend at 22.7% below 2010 levels.

The Provincial government continues to take a range of actions to reduce the emissions it generates in the course of delivering public services through its use of buildings, vehicles, office paper and business travel. The Ministry of Citizens' Services makes a major contribution to this effort given its role in supporting the management of Provincial government buildings, vehicles, information technology and procurement. However, other ministries and offices also make important contributions through actions that both complement and reinforce those of Citizens' Services.