Mills Office Productivity

Greenhouse Gas Emissions Report for the 2015 Fiscal Year

October 1st 2014 to September 30th 2015

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Introduction

Greenhouse Gas Protocol

1. Developed by the World Resources Institute
2. Most widely recognized standard for emissions reporting internationally
3. http://www.ghgprotocol.org/.

Mills Office Productivity ("Mills") is a B.C. based dealer of business supplies and educational products. At Mills, environmental leadership is a priority and a long-standing tradition. By working closely with their family of customers, employees and suppliers, the company brings to life a vision of environmental responsibility and care that encourages and supports sustainable practices in office productivity. Mills Social Responsibility Management Practices are based on the principle that businesses have an important role to play in addressing the social interests and sustainable development goals of their community.

Mills measured their baseline greenhouse gas (GHG) emissions inventory for the 2007 calendar year. In fiscal year 2012, due to significant operational changes they measured a new baseline inventory. Mills measured their fourth (since establishing this new baseline) annual GHG inventory for the 2015 fiscal year and recorded 524.94 tonnes of carbon dioxide equivalent (tCO_2e). Mills is Climate Smart certified for 2016.

As a Climate Smart Business member, Mills conducted its GHG emissions inventory according to the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, Revised Edition ("the GHG Protocol"). The GHG Protocol is an internationally recognized standard published by the World Resources Institute and the World Business Council on Sustainable Development. The GHG Protocol and related documents can be accessed at http://www.ghgprotocol.org/.

Organizational Boundaries

Mills used the operational control approach to determine its organization boundary and included in its inventory all operations over which it has operational control.

Inventory Boundaries

The Control approach was used to determine the organizational boundary for the inventory. In this approach, all of the business entities that the company had direct control over are to be included in the GHG inventory. Mills measured their GHG emission for the following locations:

- Mills Head Office and Warehouse – 1111 Clark Drive, Vancouver, BC
- Mills Additional Warehouse – Vancouver, BC
- Mills Print Shop – 1420 Frances Street, Vancouver, BC
- Penticton Office – 3 – 2025 Government Street, Penticton, BC
- Kamloops Office – 1006B Victoria Street, Kamloops, BC
- Imperial – Osoyoos, BC
- Halls – Trail, BC

According to the GHG Protocol, organizations have to select the operational boundaries around the activities they will include in their inventory. The GHG Protocol requires the inclusion of Scope 1 and 2 emissions, and suggests including Scope 3 emissions from activities relevant to an organization's business and goals, and for which reliable data can be obtained. Emissions scopes are defined as follows:

Scope 1: includes direct GHG emissions from sources that are owned or controlled by the reporting company or organization

For scope 1, natural gas for heating, and fuel consumed by company owned vehicles were included.

Scope 2: includes indirect GHG emissions from purchased electricity and purchased heat

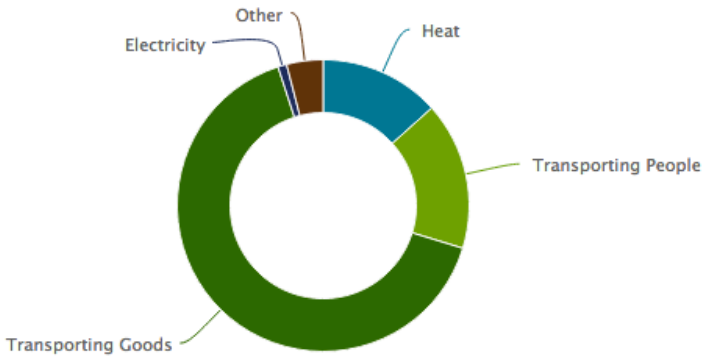
For scope 2, purchased electricity was included.

Scope 3: includes indirect GHG emissions that are consequences of the reporting company's operations but occur at sources owned by another company

For scope 3, unmetered/unbilled electricity and heat, staff commuting, garbage, and paper consumption were included.

Greenhouse Gas Emissions Summary

Figure 1: Total Emissions for the 2015 Fiscal Year, by Type (Tonnes of CO_2e)

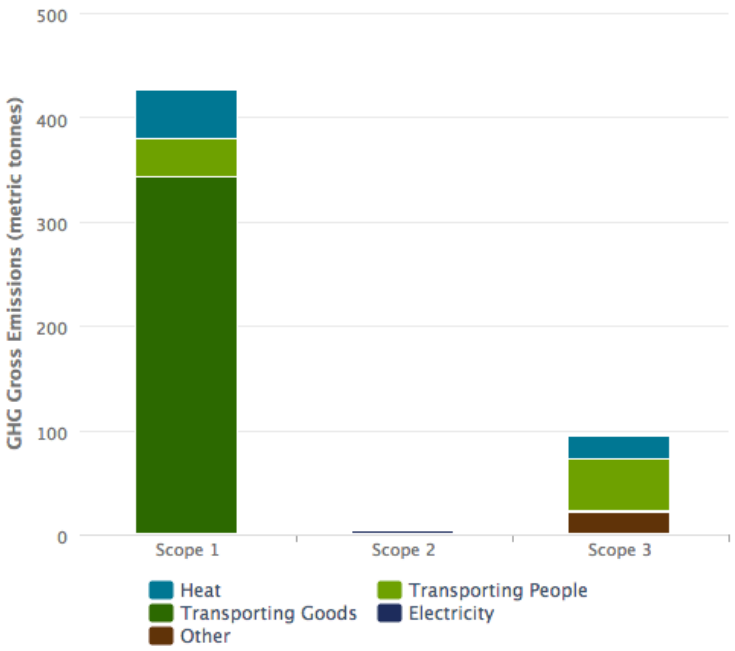


Gross Emissions	524.94
Electricity	5.11
Purchased	4.1
Unmetered/Unbilled	1
Heat	70.02
Generated	47.33
Unmetered/Unbilled from Fuel	22.69
Transporting People	86
Road	36.25
Staff Commuting	49.74
Transporting Goods	342.69
Road	342.69
Other	21.13
Garbage	20.19
Paper Consumption	0.94
Purchased Reductions	0
Offsets	0
RECs	0

Purchased Reductions	0

Net Emissions	524.94

Figure 2: Total Emissions for the 2015 Fiscal Year, by Scope (Tonnes of CO_2e)

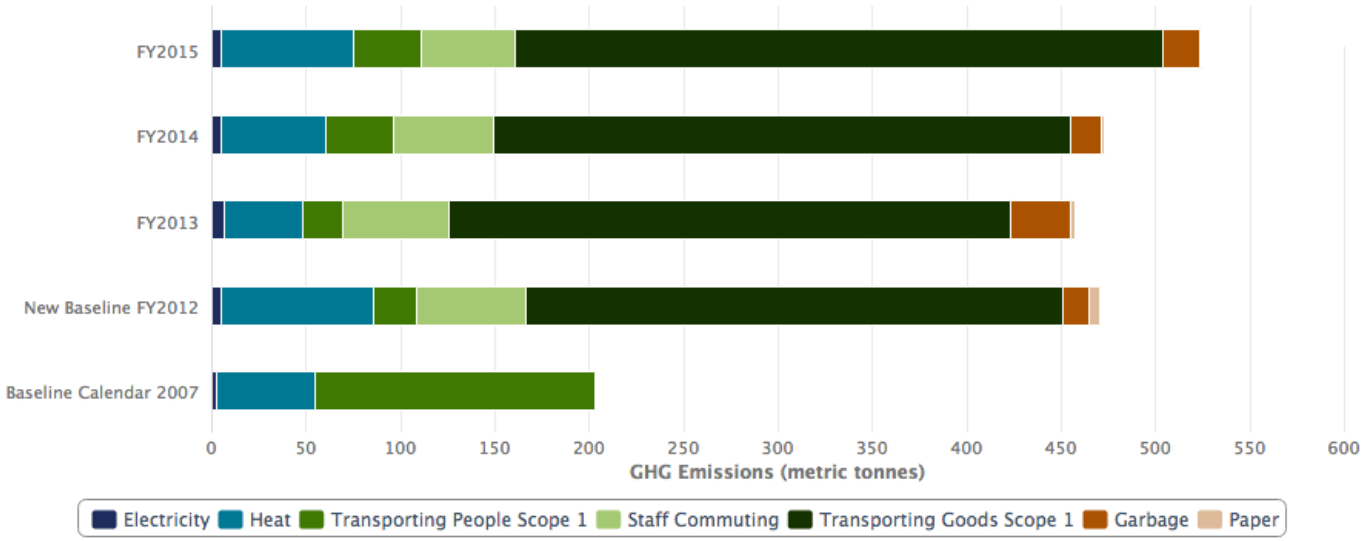


Gross Emissions	524.94
Scope 1	426.27
Heat	47.33
Generated	47.33
Transporting People	36.25
Road	36.25
Transporting Goods	342.69
Road	342.69
Scope 2	4.1
Electricity	4.1
Purchased	4.1
Scope 3	94.57
Electricity	1
Unmetered/Unbilled	1
Heat	22.69
Unmetered/Unbilled from Fuel	22.69
Transporting People	49.74
Staff Commuting	49.74
Other	21.13
Garbage	20.19
Paper Consumption	0.94

Purchased Reductions	0

Net Emissions	524.94

Figure 3: Total Emissions from the 2011 Baseline Year to the 2015 Fiscal Year, by Type (Tonnes of CO_2e)



Emissions by Type (metric tonnes CO2)	Baseline Calendar 2007	New Baseline FY2012	FY2013	FY2014	FY2015
Electricity	2.42	5.15	6.72	5.32	5.11
Heat	52.76	80.47	41.94	55.71	70.02
Transporting People Scope 1	147.98	23.44	21.26	35.14	36.25
Staff Commuting	0.00	57.79	56.29	53.25	49.74
Transporting Goods Scope 1	0.00	284.12	296.99	305.57	342.69
Garbage	0.00	14.25	32.04	16.38	20.19
Paper	0.00	5.46	2.32	1.50	0.94
Total	**203.16**	**470.68**	**457.56**	**472.87**	**524.94**

Figure 4: Total Emissions from the 2007 Baseline Year to the 2015 Fiscal Year, by Location (tCO_2e)

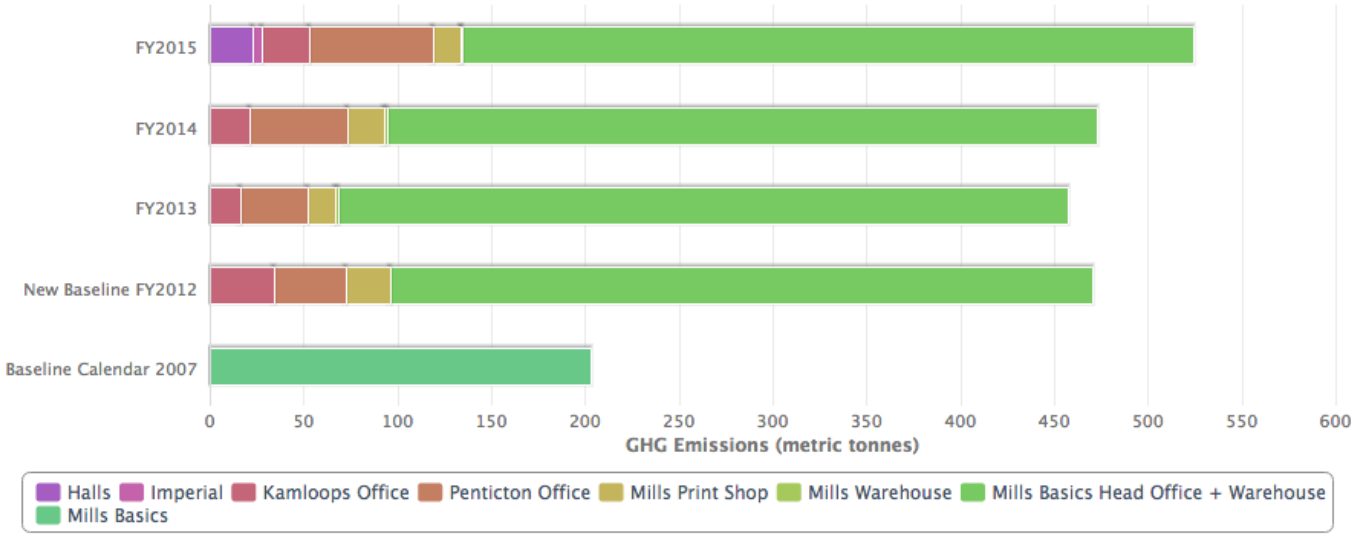


Figure 5: Emissions per FTE from the 2007 Baseline Year to the 2015 Fiscal Year (tonnes of CO_2e/FTE)

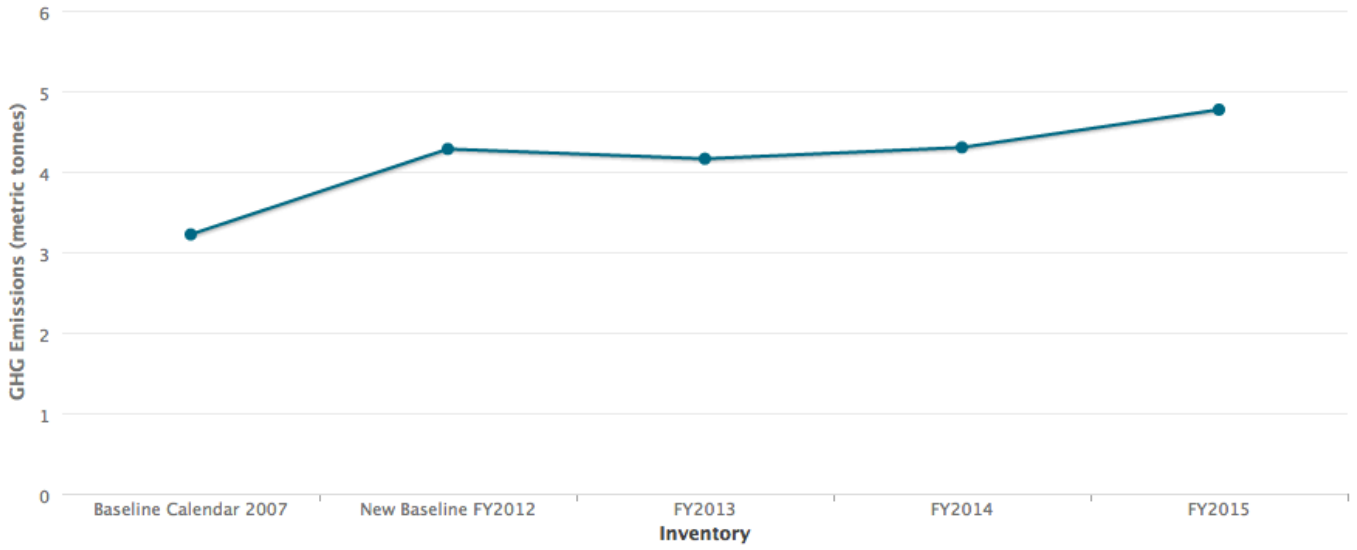


Figure 6: Emissions per FTE from the 2007 Baseline Year to the 2015 Fiscal Year (tonnes of CO_2e/FTE)

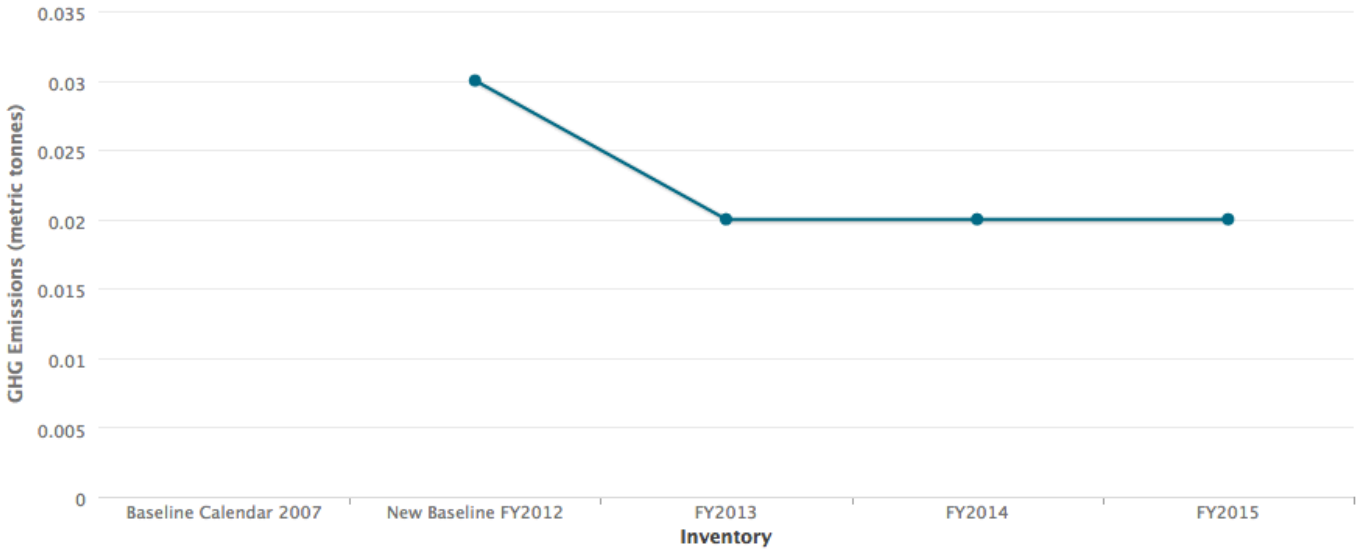
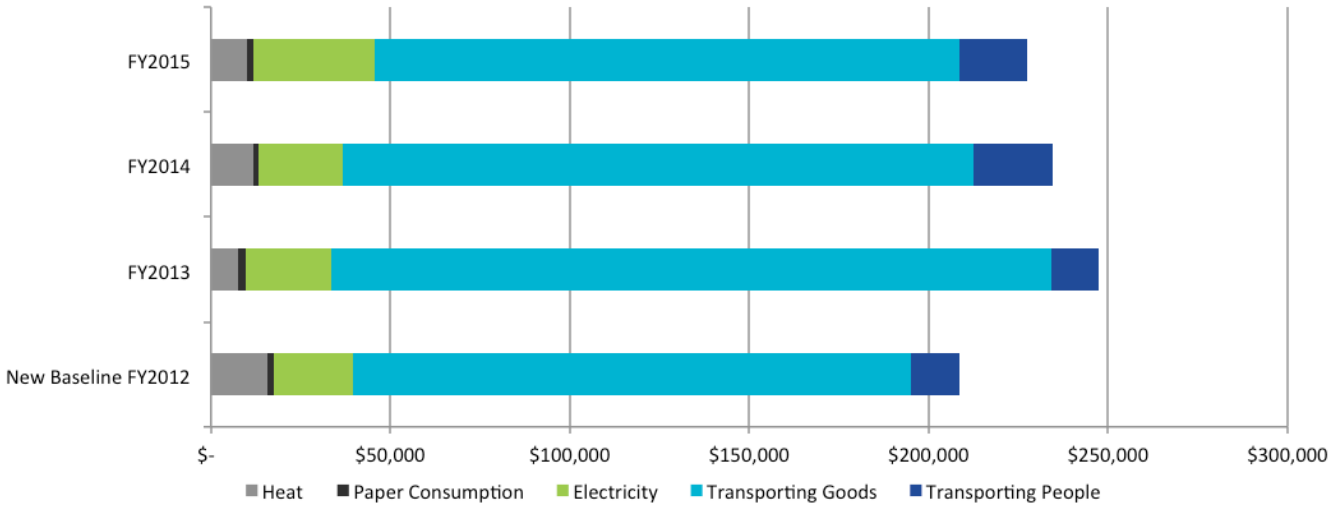


Figure 7: Annual Costs by Emission Source from the 2012 New Baseline year to the 2015 Fiscal Year ($)



Methodology

This inventory was conducted using the emissions factors from the Climate Smart web-based GHG management tool. The Climate Smart GHG management tool was designed for adherence to the GHG Protocol.

Climate Smart's emission factors come from a variety of sources, such as the Natural Resources Institute, the US Environmental Protection Agency, the US Department of Energy, the Intergovernmental Panel on Climate Change and Natural Resources Canada. Climate Smart reviews its emission factors annually to update them based on refined industry methodology and changing electricity grids. Further details on Climate Smart's emission factors, their sources, and methodology for updating them are available upon request to info@climatesmartbusiness.com.

Electricity Use > Purchased

For all the locations, except for the small storage warehouse, the total kilowatt-hours consumed were entered.

The electricity consumed at the small storage warehouse was included in rent. Therefore, the square footage of the warehouse was entered to estimate emissions based on provincial averages.

Heat Use > Generated

For all the locations, except for the Halls and small storage warehouse, the total Giga-Joules of natural gas consumed were entered.

The square footage of the Halls location was entered to estimate emissions based on provincial averages.

The small storage warehouse did not use any heat.

Transporting people > Vehicles you own> Road

The total liters of gasoline and propane consumed by company owned vehicles used primarily to transport people were entered.

Transporting people > Vehicles owned by others > Staff Commuting

The total annual kilometers travelled to and from work by staff members were entered by transportation mode.

Transporting goods > Vehicles you own > Road

The total liters of gasoline, diesel and propane consumed by company owned vehicles used primarily to transport goods were entered.

Other > Garbage

The total kilograms of landfilled waste were entered.

Other > Paper

The paper type, paper bond weight, number of reams used, and post-consumer recycled content were entered.

Exclusions

Third party shipping was not included in this inventory because it was determined that this emission source was relatively insignificant compared to Mills' other emissions, and the data was not readily available. This inventory does still adhere to the GHG Protocol.

Emissions Reduction Plan

The following list outlines the emission reduction strategies that Mills has either already implemented, or is planning to implement going forward:

Electricity			
	Already implemented.	To be implemented in upcoming year.	To be implemented within 5 years.
Implement a policy that all equipment and lighting is turned off when not in use (including computers, copiers, fax machines etc.).	☒	☐	☐
Put up signage to help people remember to turn off lights and equipment.	☐	☒	☐
Use standby settings on electronics.	☒	☐	☐
Make use of natural lighting as much as possible.	☒	☐	☐
Undergo a Business Energy Assessment (BEA) / lighting assessment.	☐	☒	☐
Install occupancy sensors in common areas.	☒	☐	☐
Apply for BC Hydro Self-Serve Incentive Program.	☐	☒	☐

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Electricity (con't)			
	Already implemented.	To be implemented in upcoming year.	To be implemented within 5 years.
Replace incandescent light bulbs with compact fluorescent (CFL) or LED light bulbs.	☐	☒	☐
Replace desktop computers with laptops at their end of life.	☐	☐	☒
Replace older fluorescent lighting with high-efficiency ballasts and/or tubes (i.e. T-8 or T-5).	☐	☒	☐
Purchase / install energy efficient office equipment (fridges, copiers, etc.).	☐	☐	☒
Launch energy awareness week.	☐	☒	☐
Waste			
Implement a compost program.	☒	☐	☐
Bring is waste diversions company (i.e. Recycling Alternative or Urban Impact) to help expand recycling program to include soft plastics, wood, metals etc.	☒	☐	☐
Contact West Coast Plastics Recycling to help with odd plastics (i.e. Styrofoam) recycling.	☒	☐	☐
Re-use scrap paper.	☒	☐	☐
Request all suppliers to minimize their packaging.	☐	☒	☐
Review Waste Management - Look to see if hauler can provide better data, or whether switching haulers would be a good idea.	☐	☒	☐
Provide training to staff on waste diversion.	☐	☒	☐
Conduct a waste audit and look for ways to increase diversion rate.	☐	☐	☒

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Heat			
	Already implemented.	To be implemented in upcoming year.	To be implemented within 5 years.
Implement a regular maintenance program.	☐	☒	☐
Install programmable thermostats.	☒	☐	☐
Substitute electric heat in the place of natural gas when possible – for example by installing space heaters at staff desks and turning down the thermostats.	☒	☐	☐
Check settings on programmable thermostats (if installed) so that heat is turned down in the evenings and on weekends.	☒	☐	☐
Conduct a boiler efficiency assessment.	☐	☒	☐
Install window shades.	☒	☐	☐
Install faucet aerators (sinks, shower heads, spray valves).	☐	☐	☒
Install solar hot water system.	☐	☐	☒
Insulate piping.	☐	☐	☒
Insulate hot water tank(s).	☐	☐	☒
Install high-efficiency boiler.	☐	☐	☒
Install high-efficiency hot water tank.	☐	☐	☒
Install high- efficiency commercial cooking equipment.	☐	☐	☒
Paper			
Set default printing to double sided.	☒	☐	☐
Purchase paper with recycled content.	☒	☐	☐
Purchase wheat-straw paper.	☐	☒	☐
Put-up signage to increase staff “paper awareness”.	☐	☒	☐
Provide paperless invoicing.	☒	☐	☐
Employ fax to email service (i.e. efax.ca)	☒	☐	☐
Limit the use of hand-outs during office meetings. Use white board or projector to write out agendas.	☒	☐	☐
Track and report on office paper use.	☒	☐	☐

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Transportation			
	Already implemented.	To be implemented in upcoming year.	To be implemented within 5 years.
Promote public transit by providing (discoursed) transit passes to employees.	☐	☒	☐
Promote carpooling to work by installing a ride share board.	☐	☒	☐
Provide a guaranteed ride home for staff that commute by modes other than personal vehicles.	☐	☒	☐
Look at joining a car co-op or purchasing a high efficiency company vehicle for daytime meetings and staff errands.	☐	☒	☐
Undergo TravelSmart assessment and implement recommendations.	☒	☒	☐
Provide bicycle parking.	☐	☒	☐
Provide change room (and showers).	☐	☐	☒
Allow employees to work from home.	☒	☐	☐
Replace older vehicles with newer more efficient models (i.e. hybrids, turbo diesel, etc.).	☒	☒	☐
Assess whether size of vehicles are appropriate for their use (can larger trucks be replaced with cars in some cases)?	☐	☐	☒
Implement regular vehicle maintenance program.	☐	☒	☐
Purchase biodiesel for diesel vehicles.	☒	☒	☐
Contact E3 for fleet assessment.	☐	☒	☐
Reduce travel through the use of teleconferencing / videoconferencing.	☒	☐	☐
Implement route optimization strategy.	☒	☐	☐
Install route optimization software, including GPS a nd engine idling monitoring.	☐	☒	☐
Reinforce anti-idling policy across all locaitons.	☐	☒	☐
Transport good with a “green” shipping company (i. e. by bike, or high efficiency vehicle).	☒	☐	☐
Source from local / regional suppliers whenever possible.	☒	☐	☐
Provide green driver training to delivery staff in partnership with Recycling Alternative.	☐	☒	☐
Convert delivery vehicle to propane.	☐	☒	☐

Building Envelope			
	Already implemented.	To be implemented in upcoming year.	To be implemented within 5 years.
Install new / upgrade building insulation.	☐	☐	☒
Assess condition of weather stripping and install new as needed.	☐	☐	☒
Install energy efficient windows.	☐	☐	☒
Staff Engagement			
Organize an employee green team to help develop and coordinate sustainability strategies.	☐	☒	☐
Regularly report to staff on sustainability strategies and progress.	☐	☒	☐
Install a green board to communicate sustainability policies.	☐	☒	☐
Develop and include sustainability policy in operations and or employee manual.	☒	☐	☐
Carbon Offsets/ Renewable Energy Credits			
Purchase carbon offsets.	☐	☒	☐
Purchase renewable energy credits.	☒	☐	☐
Install new/ upgrade building insulation.	☐	☐	☒
Assess condition of weather stripping and install new as needed.	☐	☐	☒
Install energy efficient windows.	☐	☐	☒

Analysis

Mills measured their first inventory in 2007. Since then, they have measured four additional inventories with Climate Smart (2012, 2013, 2014, and 2015 fiscal years). The 2007 inventory year is not being compared due to lack of comparability with the following inventory years.

Emissions in the 2015 fiscal year rose by 54.26 tCO_2e (a 12% increase) compared with their 2012 baseline year (see figure 3) Emissions intensity, measured in GHG emissions per FTE, also increased by 11% compared with their 2012 baseline year (see figure 5), however, emission per $1,000 revenue dollars dropped by 27% (see figure 6).

Compared with their 2012 baseline year, Mills experienced reductions in emissions from electricity, heat, staff commuting, and paper consumption. More specifically, the following changes were observed (from greatest to least absolute change):

Changes in Emissions Compared with the 2012 Baseline Fiscal Year

Emissions Source	*Absolute Change (tCO_2e)*	*% Change*	*Justifications & Additional Notes*
Transporting Goods Scope 1 - Company Owned vehicles - Road	58.57 ↑	21% ↑	While Mills experienced a 52% increase in revenue, they only experienced a 21% in fuel emission from goods transportation. Likely due to fuel switching of delivery vehicles.
Transporting People Scope 1 - Company Owned vehicles - Road	12.81 ↑	55% ↑	Tracks with the 52% growth in revenue.
Heat	10.45 ↓	13% ↓	Likely due to efforts to reduce natural gas consumption within buildings.
Staff Commuting	8.05 ↓	14% ↓	Likely due to efforts to encourage low-carbon staff commuting options.
Garbage	5.94 ↑	42% ↑	Likely due to business growth.
Paper Consumption	4.52 ↓	83% ↓	Likely due to increased efforts to reduce office paper use.
Electricity	0.04 ↓	1% ↓	Likely due to changes in emission factors.
Overall Emissions	**54.26 ↑**	**12% ↑**	

As can be seen in figure 4, the head office has always been the largest emission generator for Mills' overall emissions. In FY2015 the head office generated 74% of company-wide emissions. Most of Mills' GHG emissions come from transporting goods (65% in FY2015), which is also their biggest source of cost (see figure 7).

Moving forward, Mills would like to minimize their emissions by continuing to focus on a broad range of strategies with particular attention paid to transportation. This includes partnering with other Climate Smart businesses to take part in Natural Resource Canada SmartDriver Training, reinforcing their anti-idling policies as well as continuing to adopt propane powered fleet vehicles.

Conclusion

The emissions inventory for Mills is consistent with the internationally recognized "GHG protocol" followed by Climate Smart. Mills measured their emissions for the 2015 fiscal year and recorded a finalized inventory of 524.94 tonnes of CO_2e. This greenhouse gas inventory and accompanying reduction plan were compiled using best practices in carbon accounting, and demonstrate the continued commitment that Mills has to environmental stewardship and corporate social responsibility.

About Climate Smart

Climate Smart is a Vancouver-based social enterprise that offers a comprehensive, small-group-based training program, certification and tools for small/medium enterprises (SMEs) to measure and **profitably reduce their energy, transport**, and **waste-related costs** and greenhouse gas (GHG) emissions.

In 2010, Climate Smart launched the first municipally supported climate change program designed specifically for the local SME business community. Other key partners are **Port Metro Vancouver, Vancouver Airport Authority, Vancouver Economic Commission** and **Richmond's Economic Development Department.**

Climate Smart builds capacity within businesses by training key staff to develop strategies for ongoing reductions in emissions and associated costs from energy, fuel and waste that create economic as well as environmental benefits. Climate Smart emphasizes the business case for GHG reduction: **operational efficiencies, cost savings,** and **competitive advantage**.

Climate Smart's training and **innovative data services** are designed to link business-sector actions to carbon emission reduction targets, while simultaneously addressing economic development and green economy goals. Climate Smart has built out extensive datasets, **case studies** and **analysis for community-emission modeling** – utilized by both partners and businesses to benchmark their progress amongst emission and cost-saving goals.

Case studies from a sampling of 40 Climate Smart businesses show a total **annual cost savings of $1 million**. Case studies with GHG and cost reductions: https://climatesmartbusiness.com/case-studies/

Key Sectors & Climate Smart Certified Businesses

Climate Smart works across a range of industry sectors, including:

- Construction & Real Estate
- Manufacturing
- Food & Beverage Processing
- IT and Tech
- Transportation related (terminals, marinas, distributors)
- Retail
- Professional Services (legal, accounting, engineering)

Climate Smart At A Glance

Climate Smart is a Vancouver-based social enterprise, providing expertise in small- and medium-sized enterprise (SME) training, software, tools, and certification to profitably reduce GHG emissions generated by business operations. Climate Smart builds capacity within businesses by training key staff to develop strategies for ongoing reductions in emissions and associated costs from energy, fuel and waste that create economic as well as environmental benefits.
Climate Smart emphasizes the business case for GHG reduction: operational efficiencies, cost savings, and competitive advantage.

Climate Smart's training and innovative data services are designed to link business-sector actions to carbon emission reduction targets, while simultaneously addressing economic development and green economy goals. Climate Smart has built out extensive datasets (gathered from client businesses since 2008), case studies and analysis for community-emission modeling – utilized by both partners and businesses to benchmark their progress against emission and cost-saving goals. For detail on methodology, see Appendix B.

In 2010, Climate Smart launched the first municipally supported climate change program designed specifically for the local SME business community. Other key partners include: Vancity, Vancouver Airport Authority, Vancouver Economic Commission, Port Metro Vancouver, and CGA-BC.

775+
Climate Smart certified businesses to date (trained or in training)

1,258,132+
Total emissions measured by Climate Smart to date, in tonnes (t) CO_2e

14%
Average reduction achieved after 3 years of Climate Smart certification

$397
Projected cost savings to a business, per tonne CO_2e reduced

Example Climate Smart businesses include: **Aggressive Tube Bending, Van Houtte Coffee Services, Albion Fisheries, Frogbox, Concert Properties, Electronic Arts, Pacific Blue Cross, Purdys Chocolatier. River Market, Securiguard, Tinhorn Creek Vineyards, Continental Roofing, the PNE, 505-Junk, APEGBC, Treen Safety, Easy Park, Cypress Mountain and many more!**