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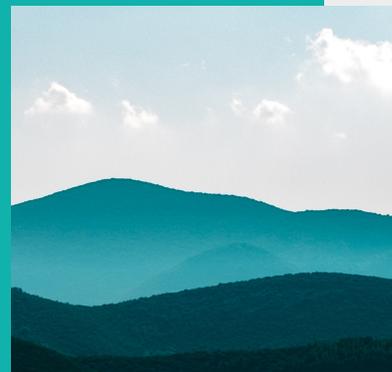
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# SECTOR-SPECIFIC EMISSION REDUCTION PLANS

## EXECUTIVE SUMMARY



This report was prepared for Climate Smart Businesses Inc.

03.23.2020.

# DISCLAIMER

This report was produced as part of the UBC Sustainability Scholars Program, a partnership between the University of British Columbia and various local governments and organizations in support of providing graduate students with opportunities to do applied research on projects that advance sustainability across the region.

This project was conducted under the mentorship of Climate Smart Businesses Inc. staff. The opinions and recommendations in this report and any errors are those of the author and do not necessarily reflect the views of Climate Smart Businesses Inc. or the University of British Columbia.

# ACKNOWLEDGEMENTS

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# 1.0 INTRODUCTION

## Sustainability Scholars Program

The University of British Columbia (UBC) started the Sustainability Scholars Program in 2010 (UBC, 2019a). The Sustainability Scholars Program partners with organizations looking for UBC graduate students to participate in a sustainability-related research project through a paid internship program (UBC, 2019b).

## Client & Project Description

Climate Smart Businesses Inc. (Climate Smart) is a social enterprise located in Vancouver, British Columbia. Climate Smart works with small to medium-sized enterprises (SMEs) across Canada to profitably track and reduce their carbon footprint (Climate Smart, 2018). Climate Smart became involved in the Sustainability Scholars Program to evaluate Climate Smart's current reduction resources using a sectoral approach, to identify gaps in current reduction resources, and to develop sector-specific emission reduction plans.



"99.7% of Canadian businesses are SMEs. Taken together, these companies contribute more than half of Canada's private-sector GDP."

(Climate Smart, 2018, Pg. 5)



# 2.0 BACKGROUND

Climate Smart uses an emission reduction plan to engage with clients and find opportunities to cut emissions and cut costs. This reduction plan breaks potential reduction strategies down by emission category (e.g. electricity, heat, transportation, waste, employee engagement etc.). Each emission category is subdivided even further. Within the electricity section, there are emission reduction strategies that address behaviour changes, small equipment changes, and capital equipment changes. For example, businesses can put up signage to help people remember to turn off lights and equipment, replace incandescent light bulbs with light-emitting diodes (LED), and purchase/ install energy-efficient office equipment (e.g. Energy Star appliances). Climate Smart provides clients with a variety of reduction strategies to consider for implementation.

Currently, Climate Smart utilizes a standardized emission reduction plan for all clients regardless of sector. Climate Smart recognizes that emission reduction strategies for one sector may not apply to all sectors. For example, purchasing the Loring Roaster is an emission reduction strategy for coffee roaster companies but this strategy does not apply to grocery stores or printing companies. Climate Smart seeks to strengthen sector-specific emission reduction strategies to better inform clients how to achieve deep emission reductions and save money while doing it.

The purpose of developing sector-specific emission reduction plans is to generate tailored reduction strategies for Climate Smart's clients. Sector-specific emission reduction plans will increase the likelihood of reduction strategies being implemented as well as lead to quantifiable emission reductions. These plans will be used for two different purposes. The first being a guidance tool for individual clients to enhance emission reduction efforts in the short, medium, and long-term. Secondly, to contribute to Climate Smart's data analysis process to further understand which businesses are using which reduction strategies and why in order to inform future reduction research, innovation, and engagement.



"Climate Smart has worked with 40+ host partners to engage close to 900 businesses— representing over 80,000 employees —to prepare for and participate in the low-carbon economy."

(Climate Smart, 2018, Pg. 4)



# 3.0 RESEARCH APPROACH

## Description of Research Approach

The Sector-Specific Emission Reduction Plan Sustainability Scholar's project used a 4-stage approach:

- The first stage focused on a review of Climate Smart's existing internal emission reduction resources. This included reviewing client folders, 200 Million Tonnes of Opportunity, the British Columbia Business Energy and Emissions Profile (BEEP) dashboard, as well as Climate Smart's SurveyGizmo qualitative data.
- The second stage included an environmental scan of sector-specific emission reduction strategies. At first, this included academic literature but transitioned to primarily focus on emission reduction strategies that have already reached the market and been adopted by alike businesses. Academic literature was not providing actionable reduction strategies for SMEs. Climate Smart believed it was important to focus on realistic reduction initiatives for SMEs in the Canadian context.
- The third stage of this project involved the creation of sector-specific emission reduction plans. These plans were built using the current general reduction plan that is provided to all Climate Smart clients but now has filters to find reduction strategies that have been tailored for specific sectors. For example, the Loring Roaster produces up to 80% less greenhouse gas emissions compared to a conventional coffee roaster (Balzac's Coffee Roasters, 2018). This strategy is tagged specifically to coffee roaster businesses. These reduction plans were created into individual spreadsheet tools for Climate Smart employees. Eventually, an amalgamated version of all the separated sector-specific emission reduction plans was developed.
- Lastly, new reduction strategies were presented to the client-advisor team beginning in January 2020 until the completion of the project in March 2020.

### 4-Stage Research Approach:



**STAGE 1**  
**Internal  
Research Review**



**STAGE 2**  
**External Research  
Review**



**STAGE 3**  
**Develop Sector-  
Specific  
Reduction Plans**



**STAGE 4**  
**Present Findings  
to the Client  
Advisor Team**

"Climate Smart has trained 1,600+ people through 135 cohorts. On average, businesses achieve an impressive 11% reduction in GHG emissions, and annual savings of \$27,000."

(Climate Smart, 2018, Pg. 4)



# 4.0 SUMMARY

## Project Milestones

The Sector-Specific Emission Reduction Plan Sustainability Scholar Project achieved the following milestones:

- Creation of a sector-specific emission reduction plan template (Appendix A)
- Development of 9 sector-specific emission reduction plans (Appendix B)
- Creation of a single amalgamated sector-specific emission reduction plan that reflects the 9 new reduction plans (Appendix C)
- Inclusion of 500+ new emission reduction strategies. 100 of these reduction strategies were gathered from Climate Smart's SurveyGizmo qualitative data.
- Completion of 10 presentations to Climate Smart's Client Advisor Team (Appendix D)

## Research Key Findings

Key findings from the sector-specific emission reduction plan research include:

- Climate Smart employees needed a tool that could be continually updated to reflect emerging and innovative reduction strategies across different sectors of the economy. The new emission reduction spreadsheet will act as a living document for the Client Advisor Team.
- There are emission "leaders" for every sector.
- Businesses are promoting their efforts to reduce emissions.
- Cutting emissions can also cut operation costs.
- Businesses are hungry for innovative emission reduction solutions to tackle their largest emission challenges.

"Small and medium-sized enterprises sometimes “fly under the radar” of policymakers, but these businesses can and must be key partners in Canada’s effort to meet its climate commitments and grow the clean economy."

(Climate Smart, 2018, Pg. 4)





# 5.0 NEXT STEPS



*Suggested next step for Climate Smart to consider:*

- The Client Advisor Team should continue to build out the amalgamated sector-specific emission reduction plan (i.e. add new reduction strategies, conduct research on sectors that have yet to be covered, and continually adjust the sector-specific reduction plan to fit the needs of Climate Smart employees and clients as needed).



# THANK YOU!



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# APPENDICES

## A

Industry Title	Emission Reduction Strategy	Reduction Category	Sales Force Category	Sector-specific	Relevancy	How Common is this?	Added By	Language Suggestions	Product Examples & Providers	Company Examples
	Make use of natural lighting as much as possible	Electricity	Electricity - Behaviour Change							
	Use standby settings on electronics	Electricity	Electricity - Behaviour Change							
	Set computers to power saving mode	Electricity	Electricity - Behaviour Change							
	Put up signage to help people remember to turn off lights and equipment	Electricity	Electricity - Behaviour Change							
	Regularly monitor your usage through your online account with your utility provider to identify inefficiencies (i.e. nights/weekends etc.)	Electricity	Electricity - Behaviour Change							
	Implement a policy that all non-office based equipment is turned off when not in use	Electricity	Electricity - Behaviour Change							
	Replace incandescent light bulbs with compact fluorescent lights (CFL)	Electricity	Electricity - Simple Equipment							
	Replace incandescent light bulbs with light-emitting diodes (LED)	Electricity	Electricity - Simple Equipment							
	Replace fluorescent tube lighting with LEDs	Electricity	Electricity - Simple Equipment							
	Replace older fluorescent lighting with high-efficiency models	Electricity	Electricity - Simple Equipment							
	Purchase/ install energy office equipment as old ones expire (fridges, copiers, etc.)	Electricity	Electricity - Capital Equipment							
	Replace desktop computers with laptops at their end of life	Electricity	Electricity - Capital Equipment							
	Install occupancy sensors in common areas	Electricity	Electricity - Simple Equipment							
	Use variable frequency drives (VFD) to improve efficiency	Electricity	Electricity - Capital Equipment							
	Ensure bay doors in warehouse and workshops are closed when not in use	Heat	Heat - Behaviour Change							
	Implement a regular maintenance program	Heat	Heat - Behaviour Change							
	Check settings on programmable thermostats (if installed) so that heat is turned down in the evenings and on the weekends	Heat	Heat - Behaviour Change							

## B

Industry Title	Emission Reduction Strategy	Reduction Category	Sales Force Category	Sector-specific	Relevancy	How Common is this?	Added By	Language Suggestions	Product Examples & Providers	Company Examples
Coffee Roasters/Coffee Shops	Install high-efficiency commercial cooking equipment.	Heat	Heat - Capital Equipment	Coffee Roasters	High	Leadership	Eliza	Replace commercial cooking equipment with commercial roasting equipment (e.g. decommission propane roaster for a heat recovery)	Loring Roaster Supplier: <a href="https://loring.com/roasters/s35-kestr">https://loring.com/roasters/s35-kestr</a> Supplier: <a href="https://loring.com/">https://loring.com/</a> Bellwether commercial coffee	Detour Coffee <a href="https://detourre.co.uk/">https://detourre.co.uk/</a> Bata's 4 <a href="https://www.t">https://www.t</a>
	Purchase heat recovery technology.	Heat	Heat - Capital Equipment	Coffee Roasters	High	Leadership	Eliza		<a href="https://coolenergy.com/how-it-works/">https://coolenergy.com/how-it-works/</a>	Portland Coff <a href="https://gailyo.com/land-roast">https://gailyo.com/land-roast</a> -self-throug
	Install air pollution control solutions.	Heat	Heat - Capital Equipment	Coffee Roasters	High	Excellence	Eliza		Air pollution control solutions such as thermal oxidizers prevent Volatile Organic Compounds (VOCs). Examples: regenerative thermal oxidizer, thermal oxidizer, or catalytic oxidizer. Supplier: <a href="https://www.optlink.com/coffee-roastng">https://www.optlink.com/coffee-roastng</a> <a href="https://www.munters.com/en/muntere/products/pollution-voc-control/zeolite-rotor-with-rp/">https://www.munters.com/en/muntere/products/pollution-voc-control/zeolite-rotor-with-rp/</a> .	Portland Coff <a href="https://gailyo.com/land-roast">https://gailyo.com/land-roast</a> -self-throug
	Expand recycling program to include burlap coffee bags.	Waste	Materials - Waste Diversion	Coffee Roasters	Low	Excellence	Eliza	<a href="https://www.coffeeasterafterburners.com/products.html">https://www.coffeeasterafterburners.com/products.html</a>		Portland Roa <a href="https://portlandustainability/">https://portlandustainability/</a>
	Implement a coffee bag return program.	Waste	Materials - Waste Diversion	Coffee Roasters	Low	Excellence	Eliza			Ethical Bean <a href="http://www.ethicalbean.com/">http://www.ethicalbean.com/</a>
	Sell coffee in recyclable K Cup pods	Waste	Materials - Waste Diversion	Coffee Roasters	High	Leadership	Tasnia			Van Houtte: <a href="https://www.vanhoutte.com/">https://www.vanhoutte.com/</a>
	Package coffee products in biodegradable bags.	Waste	Materials - Waste Diversion	Coffee Roasters	Low	Excellence	Eliza			Portland Roa <a href="https://www.portlandustainability.com/">https://www.portlandustainability.com/</a>
	Introduce financial penalties for purchasing disposable cups.	Waste	Materials - Waste Diversion	Coffee Roasters	Low	Best Practice	Eliza			Starbucks. <a href="https://globalassets.starbucks.com/assets/5064028EB31849FAB6C13D054497DE1F.pdf">https://globalassets.starbucks.com/assets/5064028EB31849FAB6C13D054497DE1F.pdf</a>
	Introduce financial incentives for using reusable cups.	Waste	Materials - Waste Diversion	Coffee Roasters	Low	Best Practice	Eliza			Starbucks. <a href="https://globalassets.starbucks.com/assets/5064028EB31849FAB6C13D054497DE1F.pdf">https://globalassets.starbucks.com/assets/5064028EB31849FAB6C13D054497DE1F.pdf</a>

## C

	Use recycled boxes for shipping and deliveries.	Waste	Materials - Waste Diversion	All Sectors	Low	Excellence	Eliza	<a href="https://www.ecoenvironmental.com/shop/bboxes/corrugated-boxes/">https://www.ecoenvironmental.com/shop/bboxes/corrugated-boxes/</a> <a href="https://boxpackaging.com/boxes/">https://boxpackaging.com/boxes/</a> <a href="https://www.gbco.com/contact/">https://www.gbco.com/contact/</a>	Portland Roasting Coffee: <a href="https://www.portlandoregon.gov/sustainability/work/office/458827">https://www.portlandoregon.gov/sustainability/work/office/458827</a>	
	Package coffee products in biodegradable bags.	Waste	Materials - Waste Diversion	Coffee Roasters	Low	Excellence	Eliza		Portland Roasting Coffee: <a href="https://www.portlandoregon.gov/sustainability/work/office/458827">https://www.portlandoregon.gov/sustainability/work/office/458827</a>	
	Request all suppliers to minimize their packaging.	Waste	Materials - Waste Diversion	All Sectors	Low	Best Practice				
	Introduce financial penalties for purchasing disposable cups.	Waste	Materials - Waste Diversion	Coffee Roasters	Low	Best Practice	Eliza		Starbucks. <a href="https://globalassets.starbucks.com/assets/5064028EB31849FAB6C13D054497DE1F.pdf">https://globalassets.starbucks.com/assets/5064028EB31849FAB6C13D054497DE1F.pdf</a>	E.g. 5-cent disposable cup fee.
	Introduce financial incentives for using reusable cups.	Waste	Materials - Waste Diversion	Coffee Roasters	Low	Best Practice	Eliza		Starbucks. <a href="https://globalassets.starbucks.com/assets/5064028EB31849FAB6C13D054497DE1F.pdf">https://globalassets.starbucks.com/assets/5064028EB31849FAB6C13D054497DE1F.pdf</a>	E.g. 25-cent reusable cup incentive. In the UK, Starbucks saw an increase (2.2% to 8.4%) in reusable cup usage for hot drinks sold in retail stores.
	Donate manufacturing off-outs.	Waste	Materials - Waste Diversion	Manufacturing Companies	Medium	Excellence	Eliza		Albon Fisheries Limited. <a href="https://200million.ca/">https://200million.ca/</a>	Off-out refers to waste product generated from the manufacturing process. E.g. "Albon Fisheries Limited donates off-outs from seafood production to local crab boats as bait and to local farmers as fertilizer. This reduction strategy has diverted approximately 3,000 kg of waste from the landfill and reduced emissions by more than 4 tonnes of CO2e." (200 Million Tonnes of Opportunity, 2018)
	Donate, sell, or convert used cooking oil and kitchen grease.	Waste	Materials - Waste Diversion	Hospitality&Tourism	Low	Best Practice	Eliza		Fairmont Jasper Park Lodge.	"The Fairmont Jasper Park Lodge supplies used kitchen oil to power a local farm's bio-diesel equipment. Roughly 60 to 100 gallons of kitchen oil is donated each week."
	Use key cards made from recycled plastic.	Waste	Materials - Waste Diversion	Hospitality&Tourism	Low	Excellence	Eliza		Coast Hotels. <a href="https://www.coasthotels.com/about-coast/refreshingly-green/">https://www.coasthotels.com/about-coast/refreshingly-green/</a>	Coast Hotels uses key cards made from 70% recycled plastic.
	Establish external partnerships to donate non-food and food products.	Waste	Materials - Waste Diversion	All Sectors	High	Excellence	Eliza		Amazon. <a href="https://www.amazon.com/eb">https://www.amazon.com/eb</a>	Amazon has a variety of external partnerships to donate non-food and food products (if available). E.g. Feeding America, Good360, Kind Direct, Innature, Dons Solidaires, and multiple food banks. (Amazon, 2020).

## Coffee Roasters

Climate Smart Industry Summary

### Industry Description

- Coffee roasters primarily work out of large warehouse spaces where they manage a process that turns 'green' (unroasted) coffee beans into roasted coffee beans that they package and sell to businesses/customers.
- Largely manufacturing-based companies but some businesses also own cafes.

### Main Emission Sources

- Transportation emissions throughout the supply chain.
- Start computing.
- Electricity/natural gas used for coffee roasting equipment.
- Heating the warehouse.

1

2

3

### Climate Smart Clients

- Self Sprig Coffee
- Counter Culture Coffee
- Ethical Bean
- Van Houtte Coffee Services

### New Reduction Strategies - Electricity

- Install plastic curtains to reduce heat loss when warehouse doors are open.
- Purchase electric warehouse equipment.

### New Reduction Strategies - Heat

- Install on-site renewable energy solutions to power/heat the roastery plant.
- Install high-efficiency commercial coffee roasting equipment.
- Install air pollution control solutions.
- Purchase heat recovery technology.

4

5

6

### New Reduction Strategies - Waste

- Expand recycling program to include burp coffee bags.
- Implement a coffee bag return program.
- Sell coffee in recyclable K-Cup pods.
- Use recycled boxes for shipping and deliveries.
- Package coffee products in biodegradable.

### New Reduction Strategies - Water

- Become a tap refill station.

### New Reduction Strategies - Employee Engagement

- Provide incentives to employees who commute using low-carbon alternatives.

## Construction Companies

Climate Smart Industry Summary

### Industry Description

- Most emissions come from construction sites which often rely on generators, fuel-based equipment and vehicles to transport materials and people to the build site.

### Main Emission Sources

- Waste
- Electricity
- Transportation

1

2

3

### Climate Smart Clients

- PCL
- Clark Builders
- Chandos Construction
- Gateway Properties
- Graham
- PW franchised construction
- Quadrat

### New Reduction Strategies - Electricity

- Replace fluorescent lighting at construction sites with high-efficiency models.
- Purchase a solar power or electric power/hybrid power generator.
- Purchase or rent an emissions-free excavator.
- Purchase or rent an electric forklifts & pallet jacks.
- Purchase or rent diesel-alternative machinery (e.g. hybrid, hydrogen, and/or electric).
- Purchase an electric wheel dumper.
- Purchase an electric track dumper.
- Purchase emission-free soil and asphalt compaction equipment.

### New Reduction Strategies - Transportation

- Retrofit equipment with after exhaust pollution control systems.

4

5

6

### New Reduction Strategies - Waste

- Buy plastic water bottles used on construction sites.
- Develop a site-specific construction waste management plan.
- Ask material suppliers if they offer take back programs.
- Purchase materials with recycled content and/or reclaimed materials.
- Re-use existing materials or structures at construction sites.
- Expand recycling program to include concrete.
- Expand recycling program to include wood.
- Expand recycling program to include common sources of construction waste.
- If applicable, expand recycling program to include a separate system for used concrete.
- Establish a multi-stream recycling/waste separation program.
- Re-use construction waste materials where possible.
- Design construction materials off-site/for a Building.

### New Reduction Strategies - Employee Engagement

- Hire or designate a Sustainable Construction Advisor (SCAs).

### GHG Target Setting

- World Green Building Council: By 2030, all new buildings, infrastructure and renovations will have at least 40% less embodied carbon and 50% less operational carbon reduction and all new buildings must be net zero operational carbon. By 2050, new buildings, infrastructure and renovations will have net zero embodied carbon, and all buildings, including existing buildings, must be net zero operational carbon.
- Skanska UK: carbon neutral by 2040 across project portfolio.
- Quadrat (CS Business): 80% carbon reduction by 2050.
- Chandos (CS Business): 15% waste reduction and 80% emissions reduction by 2025, 50% waste reduction and 80% emissions reduction by 2035.
- Clark Builders (CS Business): 25% reduction target by 2025 (1% from baseline), 45% reduction target by 2035 (1% from baseline).
- Other Building Companies: 2025 emissions from 50% of

# Grocery Stores

## Climate Smart Industry Summary

1

### Industry Description

- Grocery stores or retail stores that primarily sell food products

"A release of just one kg of R-22 – a commonly used refrigerant in the food sector – is equivalent to a release of 1,750 kg of carbon dioxide. This is equivalent to the emissions generated from burning four tonnes of coal." (Climate Smart, 2014, Pg. 17)



2

### Main Emission Sources

- Third Party Shipping (i.e. shipping goods to the store)
- Electricity (especially for refrigeration units)
- Heat



3

### Climate Smart Clients

- Sainsbury's Health Food Store
- Earth's General Store
- Italian Centre Shop
- Corixa Natural Food Co-op



4

### New Reduction Strategies - Electricity

- Install timer-controlled thermostats on in-store air conditioning units.
- Install night covers on open refrigerated display cases.
- Fit bridges with doors.
- Install shelf edge technology.
- Install voltage optimization technology.
- Install solar powered store signs.
- Install motion-sensor lighting within coolers and fridges.



5

### New Reduction Strategies - Heat

- Install 99% heat control boxes to freeze store cases.



6

### New Reduction Strategies - Transportation

- Share transportation emission reduction strategies with third party shipping providers.
- Ask third party shipping providers to measure and report their GHG emissions.
- Offer to fund the collection of GHG emissions data from third party shipping providers.
- Train third party shipping providers how to collect GHG emission data.
- Leverage environmental certifications to third party shipping providers (e.g. Climate Smart).
- Establish requirements for third party shipping.



### New Reduction Strategies - Waste

- Perform a quarterly/annual waste audit.
- Sell, donate, re-arrange or otherwise dispose of a discard bin.
- Equip or recycle programs to reduce shipping pallets.
- Expand recycling programs to include pharmaceutical products.
- Mark down short-dated food products.
- Reduce over-packaged food products.
- Donate unsold food products.
- Implement a 'No Food Waste to Landfill' strategy.
- Place reusable bags inside pack/cover bags at the checkout.
- Remove disposable bags from the checkout.
- Implement a disposable bag fee.
- Create designated parking spots for customers who bring reusable.



### New Reduction Strategies - Waste

- Add storage within/outside of store to rental customers to reduce excessive bags as much as possible.
- Provide food bags and plastic wrap with materials that are easier to recycle.
- Remove dryclean bags to recyclable PET plastic bags.
- Switch bakery plastic containers to plant-based plastic containers.
- Offer bins in bulk when possible.
- Monitor cardboard delivered from inbound shipping.
- Conduct waste diversion audits.
- Allow customers to bring their own reusable containers to reduce single-use packaging.
- Provide reusable return materials at curbside along areas.



# Distributor Companies

## Climate Smart Industry Summary

1

### Industry Description

- Large freight and parcel solutions providers that operate in a warehouse facility with office building space adjacent to it.
- Delivery packages usually do not go in a straight line as most companies run a hub and spoke system.



2

### Main Emission Sources

- Electricity
- Heating
- Transportation (i.e. delivery fleet)



3

### Climate Smart Clients

- FedEx
- Paraceler
- UPS
- Canada Post



4

### New Reduction Strategies - Electricity

- Install a low power primary conveyor belt.
- Purchase hydrogen fuel cell forklifts.
- Use a large-scale cloud service provider instead of an on-premises data center.



5

### New Reduction Strategies - Heat

- Install a de-stratification fan at the distribution warehouse.
- Capture heat through a district heating system.



6

### New Reduction Strategies - Transportation

- Purchase electric assisted bicycles.
- Install EcoRaps (perforated mudflaps) to all heavy duty vehicles.
- Install automated manual transmissions to the delivery fleet.
- Install Geotab technology to the delivery fleet.
- Utilize Tractor Software to track and reward employee driving habits.
- Deploy double-deck trailers.
- Equip delivery fleet with automatic tire inflation systems.



### New Reduction Strategies - Paper

- Eliminate and/or reduce carbon paper.
- Implement carbon neutral envelopes.
- Allow customers to upload their shipment documentation online.
- Increase recycled content in shipping packaging.



### New Reduction Strategies - Waste

- Reduce the size of available shipping packaging.
- Identify products that can be shipped in their own packaging.
- Add a recyclable paper padded mailer.
- Partner with Give Back Box.
- Establish external partnerships to donate non-food and food products.
- Use recycled kraft paper for packing filler instead of plastic fillers.
- Use 'eco-friendly' packing peanut solution eg.



# Manufacturing Companies

Climate Smart Industry Summary

1

## Industry Description

- Businesses that produce goods in large quantities
- Wholesale suppliers



2

## Main Emission Sources

- Heat
- Third-party shipping
- Company vehicles
- Electricity
- Refrigeration



3

## Climate Smart Clients

- Lurupads
- Nature's Path
- Factors Group
- Triforum Creek
- Ardene
- Archery
- Leaf Coast Naturals



4

## New Reduction Strategies - Electricity

- Check temperatures and times set on air conditioning units
- Limit the amount of time that production lines are "down" for cleaning and change-over.
- Replace aging compressors with a high-efficiency model.
- Retrofit air compressor and motors with a variable speed drive (VSD).
- Replace lightly loaded oversized motors with smaller higher efficiency motors.
- Install/upgrade predictive maintenance software to indicate in advance when machinery maintenance is required.



5

## New Reduction Strategies - Heat

- Regularly inspect boiler(s) for leaks.
- Strategize the warehouse by different temperature zones.
- Install self-closing doors at the warehouse.
- Insulate frequently used doors.
- Service boiler(s) annually.
- Implement a "dry-layup" procedure for the warehouse boiler.
- Install new steam lines to the boiler.
- Fit hot water tanks with a lid.
- Repair and insulate windows.



6

## New Reduction Strategies - Transportation

- Replace yard/warehouse vehicles with gulf carbonfuel electric vehicles



## New Reduction Strategies - Waste

- Install cardboard baling machine at the warehouse.
- Expand recycling program to include wooden pallets & pallet wrap.
- Downsize manufacturing off-cuts.
- Ensure waste pick-ups are made for full loads only.
- Minimize the use of virgin materials



## New Reduction Strategies - Water

- Wash equipment in cold water.



# Office-based Businesses

Climate Smart Industry Summary

1

## Industry Description

- Office-based businesses often limit boundaries to their office operations.
- These firms oversee construction work done by other businesses but will sometimes have company owned heavy equipment.



2

## Main Emission Sources

- Electricity
- Heat
- Staff Commuting
- Business Travel



3

## Climate Smart Clients

- SYLVIS
- McEManney
- DIALOG
- Space2Place
- Lidstone



4

## New Reduction Strategies - Electricity

- Reduce the brightness level of computer monitors
- Turn off all electronics at the end of the day
- Ask IT to run backups during work hours to allow computers to be powered down at the end of the day
- If the building is not owned by the company, suggest equipment & lighting upgrades to the building owners.
- If the building is owned by the company, install renewable energy generation.



5

## New Reduction Strategies - Heat

- If the building is not owned by the company, suggest simple & capital equipment upgrades to the building owners.
- Install personal computer control sun shades.
- If the building is owned by the company, install a green roof and/or install a heat source ground pump.
- Consider moving operations to a LEED-certified building.



6

## New Reduction Strategies - Transportation

- If air travel is unavoidable, take actions to reduce GHG impact of each trip
- Consolidate business travel
- Reduce the number of people travelling for work-related events
- Allow employees to work remotely
- Implement a sustainable travel policy
- Implement a bike sharing program
- If road travel is unavoidable, select fuel efficient rental vehicles or use a provider that offers carbon offsets



## New Reduction Strategies - Paper

- Assess whether the number of printers is appropriate for their business' use



## New Reduction Strategies - Waste

- Expand recycling program to include printer toners
- Re-distribute food waste from office-based events
- Purchase reclaimed or reused office furniture
- Sell or donate unwanted furniture
- Hire a professional composting & recycling service
- Implement a bottle water ban for all meetings
- Purchase reusable coffee pods



# Port Businesses

## Climate Smart Industry Summary

1

### Industry Description

- Primary purpose is to move goods on behalf of others.
- Many reduction strategies for transport companies and distribution companies also apply to port businesses.



2

### Main Emission Sources

- Transportation
- Electricity



3

### Climate Smart Clients

- Musket Transport
- GCT (Global Container Terminals)
- Alliance Grain
- Squamish Terminals
- NuPlane Terminals



4

### New Reduction Strategies - Electricity

- Purchase high-efficiency outdoor lighting
- Install a building management system
- Use a supervisory control and data acquisition (SCADA) system for site equipment
- Purchase high-efficiency electric equipment



5

### New Reduction Strategies - Transportation

- Install an Electronic Logging Device (ELD)
- Install Start-Stop technology to shutdown engines while not in use
- Implement automated electric railcar positioning equipment
- Utilize a Virtual Truck Reservation System (VTRS)
- Install gas exhaust scrubbers on vessels
- Replace on-site pick-up trucks with utility vehicles
- Purchase low-emission vehicles
- Install a variable speed drive (VSD)



6

### New Reduction Strategies - Water

- Add timers on drip irrigation systems



### Memberships/Associations/Accreditations

- Become Green Marine Certified
- Join environmental networks/associations



### Finance

- Create low-carbon awards for port businesses



# Printing Companies

## Climate Smart Industry Summary

1

### Industry Description

"Printing manufacturing comprises of establishments primarily engaged in printing and providing related support activities. Firms in the printing industry produce a variety of goods including: newspapers; books; labels; business cards; stationery; business forms; and other products. Related support activities are comprised primarily of services such as: data imaging; plate making services; book repairing; and book binding."

(Government of Canada, 2017, Pg. 1)


2

### Main Emission Sources

- Paper
- Electricity
- Heat



3

### Climate Smart Clients

- Colortec
- Image Group
- MET Fine Printers
- Mitchell Press



4

### New Reduction Strategies - Electricity

- Purchase a Heidelberg press machine
- Replace conventional offset presses with UV printing technology
- Install a press chiller
- Purchase an energy-efficient LED UV digital press



5

### New Reduction Strategies - Heat

- Install a metal wall structure to cover the printing press
- Replace gas powered dryer for an electric dryer



6

### New Reduction Strategies - Transportation

- Switch to an in-house ink mixing machine



### New Reduction Strategies - Waste

- Expand recycling program to include leftover ink, printing blankets, and press blankets
- Reuse printing blankets
- Downcycle and recycle leftover printing



### New Reduction Strategies - Paper

- Track paper use associated with each client
- Offer 100% post-consumer waste paper
- Offer clients an option to offset their carbon footprint
- Purchase FSC certified post-consumer



# Hospitality & Tourism

## Climate Smart Industry Summary

1

### Industry Description

\*Hospitality encompasses many types of businesses, most of them leisure services. The businesses are:

- Food and beverage - Restaurants, bars, stores
- Tourism - Parks, historical sites, tours
- Hotels - Rental condos, bed and breakfasts
- Entertainment - Sports, gambling, concerts, museums, etc.

2

### Main Emission Sources

- Electricity
- Heat
- Transportation

3

### Climate Smart Clients

- Deep Cove Kayak
- West Coast Sightseeing
- Ocean Wise
- The Listel
- Bluewater Adventures

4

### New Reduction Strategies - Electricity

- When the hotel is not at capacity, selectively book sections of the hotel to allow the remaining empty sections to be closed down.
- Create a linen program for guests to opt-out of daily sheet changes and a linen reuse program.
- Replace coffee/espresso machines with a new unit that is equipped with a sleep mode.
- Replace roof exhaust fan and old kitchen equipment with high-efficiency units.
- Replace laundry equipment with high-efficiency units.
- Replace refrigeration systems with high-efficiency units.
- Change exterior neon signs to LED signs.
- Remind guests to turn off lights when not in their room.

5

### New Reduction Strategies - Heat

- Power down the stove/gas ranges during non-peak hours.
- Capture heat from the stove/gas or the dishwasher to pre-heat hot water for other uses.
- Add a dimmer switch for the gas heaters on patios and provide blankets to guests sitting on the patio.
- Install a high-efficiency direct heater on board vessels.
- Install a heat-recovery system.
- Install a biomass wood pellet boiler for pool heating.
- Install a solar hot water heater.

6

### New Reduction Strategies - Transportation

- Conduct surveys where possible to reduce the number of flights and water taxis to travel destinations.
- Encourage car-pooling and car-sharing to increase fuel efficiency.
- Provide low-carbon transportation options and incentives for guests.

1

### New Reduction Strategies - Paper

- Use e-marketing tools such as social media platforms and webpages rather than paper brochures.
- Switch to 100% recycled bathroom and facial

2

### New Reduction Strategies - Waste

- Eliminate bottled water and replace it with an Energy Star water cooler for guests and staff.
- Eliminate the use of plastic straws.
- Include multi-stream bins in each room (e.g. organic bin, garbage bin, plastic bin, and paper bin).
- Participate in a bulk ordering program.

3

### SurveyGizmo Data

## Climate Smart Reduction Summary

1

### SurveyGizmo Data Discoveries

- Mentioning of GHG savings & cost savings
- Vague comments that were not reduction strategies
- Strategies that are already captured in the existing reduction plan
- Goal setting
- Justifications for not pursuing a reduction strategy

2

### SurveyGizmo Data Discoveries

- Memberships/associations/accreditations
- Miscellaneous notes
- A lot of repetition in the waste category
- Some strategies are very niche
- Reference to next steps
- Several sustainable purchasing policies

3

### New Reduction Strategies - Electricity

- Disconnect vending machine lights.
- Install solar covered exterior lighting.
- Use energy-efficient power bars.
- Install light-tubes to make use of natural lighting.
- Use USB-based headphones
- Replace company-owned computers with energy-efficient models.
- Apply for a utilities emission reduction program (e.g. BC Hydro's Self-Serve Incentive Program).
- Conduct an electrical metering audit.

4

### New Reduction Strategies - Electricity

- Buy a power meter plug to monitor power consumption and electricity cost of appliances.
- Develop a Preventative Maintenance Plan/Program (PM/P).
- Install a meter reading device.
- Install a Building Automation System (BAS).
- Install fuses on transformers.
- Install a Daylight Harvesting System.
- Install a Capacitor Bank system.

5

### New Reduction Strategies - Electricity

- Develop an energy efficiency policy.
- Discourage electrical charging during peak load hours.
- Establish reduction targets for electricity consumption.
- Use power bars to reduce the phantom load of electronics such as computers.
- Share energy consumption levels with employees.
- Install solar panels to the rooftops of company vehicles.
- Conduct a Compressed Air Audit.
- Close window blinds at the end of each day.
- Regularly replace furnace filters.

6

### New Reduction Strategies - Heat

- Develop a Standard Operating Procedures Guide.
- Install heat reduction film on windows.
- Use draft stops for doors and windows.
- Conduct regular HVAC maintenance programs.
- Turn down the heat and turn off the heat when possible.
- Frequently review HVAC settings.
- Turn down boiler temperature setpoint.

1

### New Reduction Strategies - Transportation

- Ditch onsite vehicle inspections for bicycle or foot led inspections.
- Purchase covers for company vehicles to reduce engine idling to defrost vehicle windshields.
- Provide a free shuttle bus for staff/guests.
- Create an office carpool sign-up sheet.
- Purchase electric scooters for employees to

2

### New Reduction Strategies - Transportation

- Provide transit passes for work-related travels.
- Send employees quarterly or monthly email updates about how many km have been driven/CO2 emissions produced for work-related business.
- Implement parking fees for customers and employees to encourage the use of public

3