

Hemlock Printers

2012 Greenhouse Gas Report



Hemlock Printers Ltd. 2012 Greenhouse Gas Report

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Introduction

Hemlock Printers Ltd. is a highly focused, customer orientated organization offering complete printing services including offset and digital printing, electronic prepress, direct marketing, finishing services, and warehousing and fulfillment. They have been named "Most Environmentally Progressive Printing Company under 250 employees" by *PrintAction Magazine* for seven consecutive years.

Greenhouse Gas Protocol

- Developed by the World Resources Institute
- Most widely recognized standard for emissions reporting internationally
- www.ghgprotocol.org

Hemlock Printers Ltd. measured their Greenhouse Gas (GHG) inventory for the period January 1st 2012 – December 31st 2012 and was their second year measuring emissions with Climate Smart.

As a certified Climate Smart business, Hemlock printers Ltd. 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 www.ghgprotocol.org.

A letter from Climate Smart attesting to Hemlock Printer's completion of its GHG inventory and outlining the reduction strategies it will pursue is available upon request.

Organizational Boundaries

Hemlock Printers 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 greenhouse gas inventory.

In the Greenhouse Gas Protocol, organizations have to select the operational boundaries around the activities they will include in their inventory. The 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;

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

Scope 3: includes indirect GHG emissions that are a consequence of the reporting company's operations but occurs at sources owned by another company.

The Scope 3 emissions activities included were Business Travel (road, air and water), Staff Commuting, Transporting goods (road), Garbage and Paper Consumption.

Inventory Exclusions

Of the emissions applicable to the business of Hemlock Printers, no emissions sources have been excluded from this inventory. The designation of carbon neutrality applies to organizations offsetting inventoried emissions from Scopes 1 and 2. Any material Scope 3 emissions (over 5% of total emissions) produced within operational boundaries and subject to operational control are

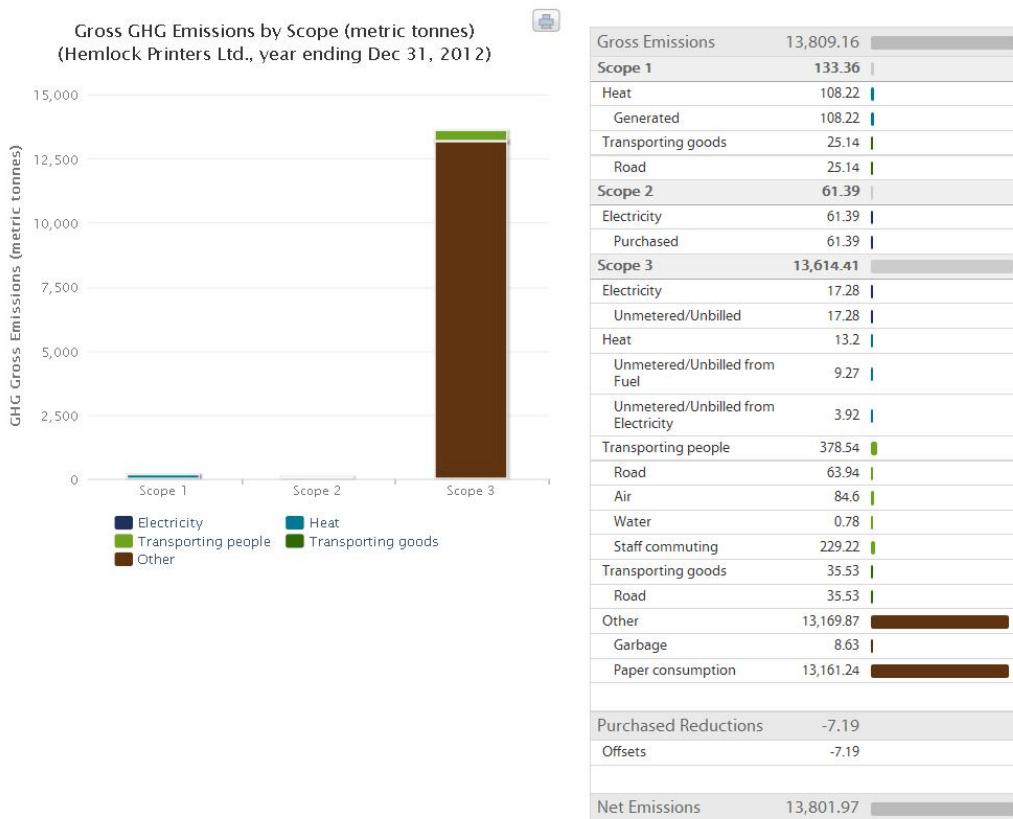
applied, as well as from other scope 3 emissions offset at Hemlock Printers' discretion. Commuting and printed paper for client projects are large scope 3 emission sources beyond operational control and have not been offset for this reason.

Greenhouse Gas Emissions Summary

Figure 1: Total Emissions for Hemlock Printers Ltd. Operations, by Scope (Tonnes of CO₂e)

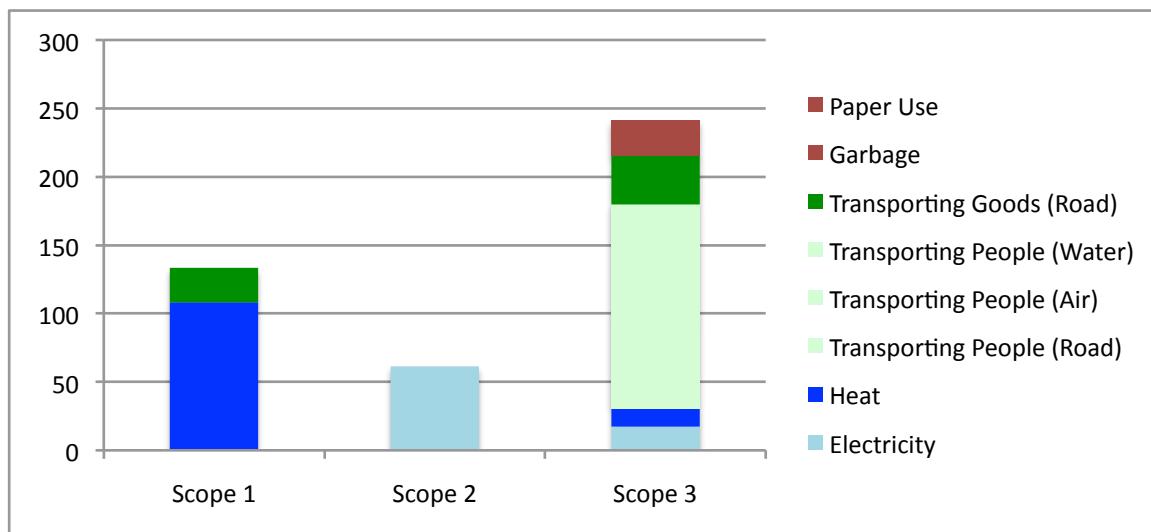
Includes Staff Commuting and Paper for Client Projects

Breakdown by scope (metric tonnes CO₂ equivalent)



Please Note: REC's were purchased from the Green-e reprint program and provided by [3Degrees](#).

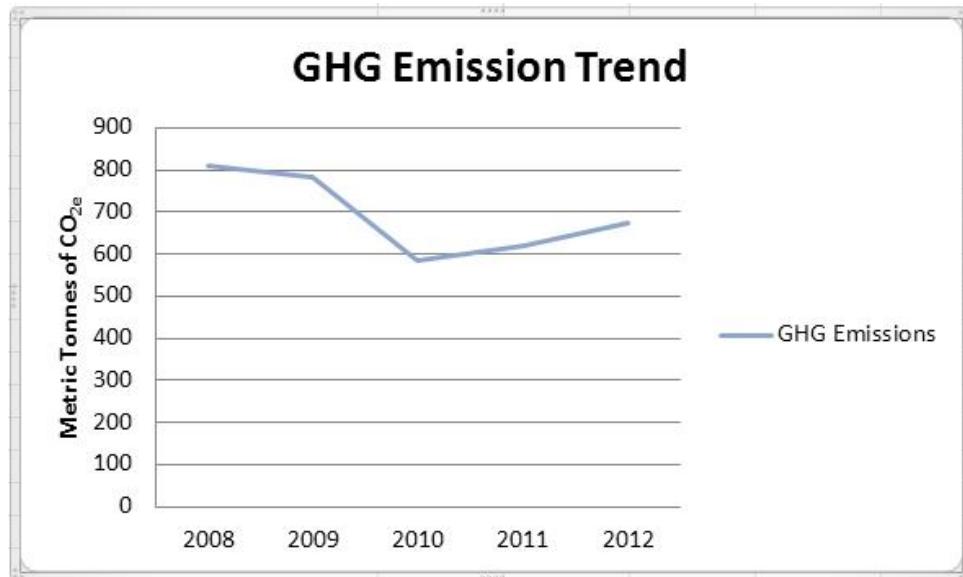
Figure 2: Total Emissions for Hemlock Printer's Ltd., NOT including staff commuting, paper printed for clients and shipping cartons. (Tonnes of CO₂e)



Tonnes of CO ₂ e	
Scope 1	133.36
Heat	108.22
Transporting Goods (Road)	25.14
Scope 2	61.39
Electricity	61.39
Scope 3	240.86
Heat	13.20
Electricity	17.28
Transporting People (Road)	63.94
Transporting People (Air)	84.60
Transporting People (Water)	0.78
Transporting Goods (Road)	35.53
Garbage	8.63
Paper Use	16.90
Gross Emissions	435.60
Offset Purchases	7.90
Net Emissions	427.70

Year-Over-Year Reduction Snapshot

This snapshot includes Scope 1, 2 and 3 emissions less paper printed for clients and boxes used to ship to clients. It represents a 17% reduction since 2008.



Carbon Offset Purchases

Hemlock Printers chose to achieve carbon neutrality for calendar year 2012 by purchasing offsets equal to 435 tonnes (not including staff commuting, paper printed for clients and boxes used to ship to clients). Hemlock purchases local, high quality, additional, real and verified carbon credits from Offsetters that are retired publicly on the Markit registry.

Hemlock Printers' operational carbon neutrality designation requires purchasing credits sufficient to balance the emissions inventoried in scopes 1 and 2 and those in the material and controllable parts of scope 3; according to the principles of the World Resources Institute Greenhouse Gas Protocol.

Offsetters invests funds received from Hemlock Printers and other clients into renewable energy and energy efficiency installations that reduce greenhouse gas emissions and that would not take place without its financial involvement and development assistance. For more information about Offsetters please visit www.offsetters.ca.

Zero Carbon Neutral Printing Program

Zero is a project developed by Hemlock Printers' in partnership with Offsetters. The lifecycle of paper from forest, to mill, to transport and disposal/recycling emits CO₂ emissions at every stage. By purchasing offsets, clients are able to invest in renewable energy and clean technology projects that would otherwise not be developed.

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In the 2012 calendar year, 1,295 metric tonnes of carbon offsets were purchased by Hemlock clients. This is a 10% CO2 offset reduction in the Paper Printed for Clients category.

Methodology

This inventory was conducted using the emissions factors from the Climate Smart web-based greenhouse gas 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 World Resources Institute, the US Environmental Protection Agency, the US Department of Energy, the Intergovernmental Panel on Climate Change and National Resources Canada. Climate Smart reviews its emission factors annually to update them based on refined industry methodology and changing electricity grids. Climate Smart's emission factor updates are also reviewed annually by the Pembina Institute. Further details on Climate Smart's emission factors, their sources, and methodology for updating them are available upon request to info@climatesmartbusiness.com.

Main Plant:

Heat Use (Scope 1, Generated)

The total gigajoules used over the inventory period were taken from the natural gas utility bills and entered as a total annual consumption value.

Electricity Use (Scope 2, Purchased)

Kilowatt-hour usage data was taken from BC Hydro utility bills and entered as a total annual consumption value.

Taxis and Reimbursed Staff Mileage (Scope 3, Road)

The total kilometers travelled over the inventory period were estimated by taking a four-month sample and extrapolating this data to the entire inventory period.

Business Flights (Scope 3, Air)

Each flight taken during the inventory period was recorded based on location and the round-trip distance.

BC Ferries Travel (Scope 3, Water)

The total number of one-way trips taken on a BC ferry route was recorded.

Staff Travel (Scope 3, Staff Commuting)

The total kilometers travelled by employees was broken down by the mode of travel (biking, small car, heavy truck, etc.) and entered, so as to record the different fuel efficiencies of the vehicles used.

5-ton Courier Truck (Scope 1, Road)

The total diesel consumption of the 5-ton truck was measured and recorded.

Couriers and Hauling (Scope 3, Road)

The total kilometers travelled over the inventory period was estimated for Couriers, BFI Waste Hauling, Tri Arrow Waste Solvent Hauling (Delta) and Executive Mat Hauling (Calgary), with each estimation entered separately

Waste (Scope 3, Garbage)

The total weight of garbage produced over the inventory period was calculated by consulting BFI disposal tickets for the 2011 calendar year. Please note this is the first year Hemlock calculated waste methane off-gas emissions.

Non-client Printing (Scope 3, Paper Consumption)

Paper consumption for non-client printing jobs was broken down by type (PCW 100% recycled, PCW 0% recycled, PCW Holiday Wrap 10% recycled and Cartons/Boxes [for shipping product]).

Warehouse:

Heat Use (Scope 1, Generated)

The total gigajoules used over the inventory period were taken from the natural gas utility bills and entered as a total annual consumption value.

Electricity Use (Scope 2, Purchased)

Kilowatt-hour usage data was taken from BC Hydro utility bills and entered as a total annual consumption value.

Subcontracted Bindery and Die Cutting:

Heat Use (Scope 1, Generated)

The total gigajoules used over the inventory period were taken from the natural gas utility bills and entered as a total annual consumption value.

Electricity Use (Scope 2, Purchased)

Kilowatt-hour usage data was taken from BC Hydro utility bills and entered as a total annual consumption value.

Printed Paper for Clients:

Client Printing Jobs (Scope 3, Paper Consumption)

Paper production for clients was tracked by weight, and the Environmental Paper Network online calculator was used to identify the total weight of GHG emissions, which were entered into the Climate Smart Tool.

Satellite Offices:

Heat Use (Scope 1, Generated)

The total gigajoules used over the inventory period were taken from the square footage of each location (San Francisco and Seattle) and entered as a total annual consumption value.

Electricity Use (Scope 2, Purchased)

Kilowatt-hour usage data was taken from the square footage of each location (San Francisco and Seattle) and entered as a total annual consumption value.

Air Travel (Scope 3, Air Travel)

Air travel was previously grouped into the Main Plant activity. This is the first year it has been separated and entered based on number and location of trips.

Emissions Reduction Plan

The GHG emissions reduction strategies selected for implementation are listed below. They include a reduction strategy for a wide range of sources. The strategies pursued are as follows:

1. Identifying and implementing electrical reduction strategies to include idle manufacturing plant equipment, administrative electrical equipment such as computers, copiers and printers and lighting throughout the building.
2. Investigating opportunities to reduce courier emissions with services like UPS's current carbon neutral shipping program.
4. Expanding and investigating the depth of Hemlock's Zero program to include delivery of final products and other unique substrates not currently in the program.

Purchased Reductions

Offsets:

Hemlock Printers Ltd. is a member of the Fortis Green Leader program, which provides them with 10% of their total natural gas usage from renewable sources. This constitutes an offset of 11.40 Tonnes of CO₂e.

RECs:

Hemlock Printers Ltd. purchases all electricity for locations "Main Plant" and "Warehouse" through Renewable Energy Credits (RECs). This constitutes a purchase of 2,455.43 MWh worth of RECs, and is supplied by 3Degrees through the Green-e reprint certification program.

Conclusion

The emissions profile for Hemlock Printers Ltd. is consistent with the internationally recognized "GHG protocol" followed by Climate Smart. They measured their emissions for the 2012 calendar year, and recorded a finalized baseline inventory of 13806.15 Tonnes of CO₂e. Their reduction strategies addressed a wide range of activities, including the purchase of carbon offsets, and RECs. This greenhouse gas inventory and accompanying reduction plan was compiled using the best practices in carbon accounting, and demonstrates the continued commitment that Hemlock Printers Ltd. has to environmental stewardship and corporate social responsibility.



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