

Environmental Report

The Government of British Columbia has adopted public policies intended to promote a low carbon economy. As a stewardship agency operating under a provincial regulation, Encorp has an opportunity to disclose the impacts of its stewardship activities. In addition to informing our stakeholders, our benchmarking of our green house gas emissions opens a window for improved efficiency and the potential to reduce energy consumption in the future. We believe there is a sound business case for these initiatives.

Reduction in greenhouse gas emissions from recycling

In 2009, Encorp collected and had over 96,600 tonnes of material recycled, an increase of 9,800 tonnes or 11% from last year. The energy saved through the recycling of materials collected by Encorp can be converted into tonnes of carbon dioxide equivalent (CO₂e) (the common measure of greenhouse gases (GHGs)), based on the US Environmental Protection Agency's (EPA) Waste Reduction Model. The model calculates net emission reductions based on the average distribution of fuels consumed along the entire lifecycle production process ⁱ.

In total, Encorp's activities in 2009 contributed to the reduction of about 138 thousand tonnes of CO₂ equivalent being released into the atmosphere, no change from the same period in 2008 ⁱⁱ.

Material	% Energy Savings from Use of Recycled Inputs for Manufacturing of Material	tonnes CO ₂ equivalent reduced
Aluminum	93%	79,724
Plastic	86%	21,551
Pouches/Bag-in-Box	53%	1,028
Glass	34%	26,526
Bi-Metal	82%	1,036
Polycoat	53%	7,679
Total		137,545

Greenhouse gas emissions associated with Encorp's stewardship activities

While recycling has an overall net benefit in terms of energy and emissions savings, the recycling process itself does require energy and thus has GHG emissions associated with it. While the EPA's Waste Reduction Model does factor in the typical energy use associated with recycling when estimating net savings, Encorp has committed to specifically estimating the GHG emissions associated with its stewardship activities. By doing so, we hope to identify ways in which we can minimize our carbon footprint.

Since Encorp is not a manufacturing company, the majority of our associated GHG emissions come as a result of transporting materials as well as heating and powering our network of facilities. Therefore, we define Encorp's GHG inventory boundary from the point that empty containers enter into the Encorp system at either a depot or retailer, to when the materials are delivered to the end processors for recycling into new products. Emissions were estimated using conversion factors and methodologies developed by the World Resource Institute's Greenhouse Gas Protocol.

Emissions Sources Exclusions

Emissions associated with heating and powering the Encorp head office are not included in the GHG inventory since the office is part of a shared lease facility for which heat and power is controlled centrally by the landlord.

Staff commuting to work in personal cars was excluded as this is considered to fall under the personal carbon footprint of the employee and Encorp has little control over where people choose to live. Staff commuting and travel on BC Ferries was also excluded as it is not quantifiable since BC Ferry does not have the GHG emissions of the ferry fleet available to the public.

Finally, emissions associated with the handling of materials outside of Encorp's core stewardship activities of deposit bearing beverage containers, such as milk cartons and electronics, were excluded since such activities fall out the scope of Encorp's core recycling stewardship activities for BC.



Environmental Report

Emissions Inventory Summary (tonnes CO2) 2009ⁱⁱⁱ

Type of Emission

Direct emissions are emissions from sources that are owned or controlled by Encorp

Employee travel - gas use 27

Indirect emissions occur as a consequence of the activities of Encorp, but are from sources not owned or controlled by Encorp. Inclusions are emissions from purchased electricity consumed by Encorp offices, depots, processors and transporters, as well as the transportation of the beverage containers by contracted transporters ^{iv}.

Offices (excluding head office)

Purchased electricity in leased buildings (excluding head office) 54

Employee domestic air travel 22

Depots

All purchased electricity in owned or leased buildings 880

All natural gas consumed in owned or leased buildings 6,820

Processors

All purchased electricity in owned or leased buildings 257

All purchased gas consumed in owned or leased buildings 50

2009

Transportation – depots to processors

Diesel fuel for transporters 3,688

Transportation – processors to end markets

Diesel fuel 1,507

Rail (based on metric tonne km) 388

Sea travel (based on metric tonne km) 1,125

Total Emissions all sources 14,818 tonnes

Restated Emissions for 2008 10,351 tonnes

Total CO2 Equivalent Reduced 137,545 tonnes

Note : the increase in emissions is due primarily to expanded sampling methodology and not due to increased use of carbon based fuels. We will continue to refine our calculation methods.

i US EPA, Waste Reduction Model, Version 10 (10/09); US EPA, Solid Waste Management and Greenhouse Gases (2002) [Exhibits 2-3 to 2-6] were used to calculate 2009 avoided emissions of CO2. In 2008, US EPA, Waste Reduction Model, Version 8 (5/06) was used.

ii US EPA, Waste Reduction Model, Version 8 (5/06); US EPA, Solid Waste Management and Greenhouse Gases (2002) [Exhibits 2-3 to 2-6] were used to calculate 2008 avoided emissions of CO2.

iii GHG Emissions from purchased electricity worksheet V 2.1. (Jun 2009) and GHG emissions from transport or mobile sources V 2.0 (Jun 2009) from the Greenhouse Gas Protocol Initiative were used to calculate emissions for 2009.

iv All indirect emissions except for Office use were calculated based on the sample data provided by selected Depots, Processors, and Transporters.



Environmental Report

Emissions Reduction Strategies

The overall increase in emissions in 2009 compared to 2008 was partly due to industrial activity from the increase in the weight of material recycled.

Finding an end market for polycoat containers in North America became challenging in the middle of 2008. We started shipping the material to Korea which contributed to the increase in the emissions of approximately 980 tonnes of CO₂.

To increase fuel efficiency and reduce our energy costs, we were able to find an end market for our glass containers closer to our interim processor in the Lower Mainland. Even though the total weight of collected glass containers increased, we reduced the total distance the containers travelled by almost 400,000 km. This resulted in a decrease in CO₂ emissions by 420 tonnes.

In addition, during 2008 and 2009 Encorp Pacific (Canada) tested the ORWAK compactor at two depot locations in the Lower Mainland. In 2010, 15 more compactors will be installed and used at 12 other depots to achieve the goal of reducing the frequency of pickups from the depots. We will continue optimizing our transportation network to potentially reduce the kilometers driven and loads we haul, thereby saving fuel and reducing emissions.

