

2019 ANNUAL REPORT

ENVIRONMENTAL IMPACT

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Detailed report on the reduction in greenhouse gas emissions, energy savings, and CO₂ equivalent reduced from recycling.

End Fate report for aluminum, plastic, glass, polycoat and other materials.



5.1 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 compiles applicable data, analyzes and reports on the impacts of its stewardship activities.

In 2019, Encorp recycled 93,763 metric tonnes of used beverage containers. The energy saved through the recycling of these materials has been converted into tonnes of carbon dioxide equivalent (CO₂e) the common measure of greenhouse gases (GHGs), based on the US Environmental Protection Agency's Waste Reduction Model (WARM). The avoided emissions published in this report were calculated using the WARM version 13 [06/14] [Refer to End Fate table on page 23].

In total, Encorp's activities in 2019 contributed to the reduction of about 104.8 thousand tonnes of CO₂ equivalent being released into the atmosphere, compared to 102.6 thousand tonnes in 2018. The higher CO₂ reduction is primarily attributed to the increase in the volume of aluminum containers that contributes to higher emission savings by recycling.

While recycling has an overall net benefit in terms of energy and emissions savings, the recycling process itself requires energy and thus has GHG emissions associated with it. When estimating net savings Encorp calculates the GHG emissions specifically associated with its stewardship activities.

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, right through to when the materials are delivered to the end processors for recycling into new products.

Greenhouse gas emissions (GHGs) are estimated using conversion factors and methodologies developed by the World Resource Institute's Greenhouse Gas Protocol {WRIGGP}. The collection, transportation and processing services provided to Encorp are done through third party independent contractors and the emissions produced by these activities are classified as Indirect Scope 3 GHG emissions in accordance with the WRIGGP. As there is limited data available for Scope 3 emissions, we accept that our information may not be as complete.

Emission calculations from electricity purchased were based on data gathered from a number of depots and processors in each region of the province. Results were used to estimate the energy use per metric tonne of material collected, then extrapolated to the total weight of used beverage containers collected in the province.

The estimated energy consumption in Kw Hs was then converted into the carbon dioxide emissions using the calculators offered by the WRIGGP. For estimated emissions inventory refer to the table on page 23.

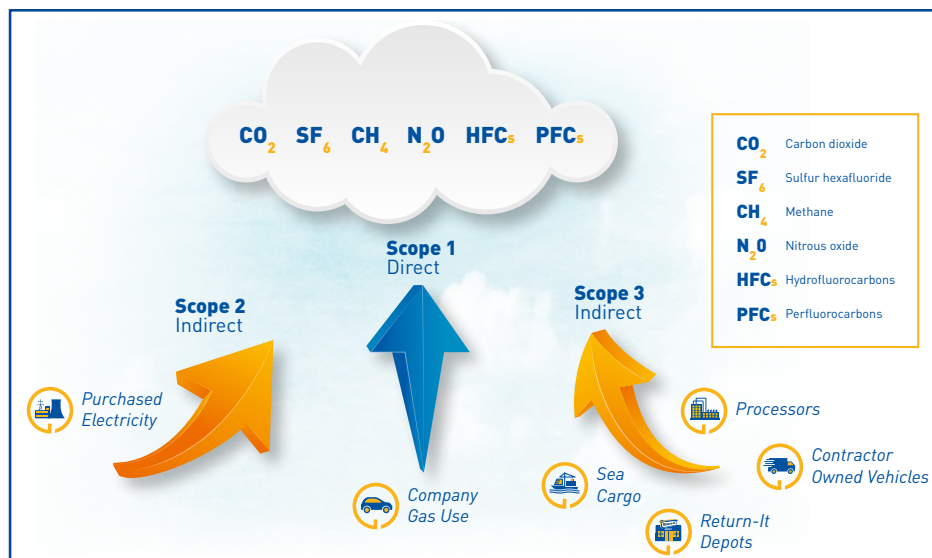
We report the reduction in emissions from all sources further to the change in the mix of material collected and, therefore, end markets.

5.1 ENVIRONMENTAL REPORT

EMISSIONS INVENTORY SUMMARY





Type of Emission	2019 (tonnes CO ₂)	2018
<u>Direct emissions</u> are emissions from sources that are owned or controlled by Encorp		
Employee travel – gas use	6	9
<u>Indirect emissions</u> occur as a consequence of Encorp’s activities, but are from sources not owned or controlled by Encorp. Included are emissions from purchased electricity consumed by Encorp’s offices, depots, processors and transporters. ⁱ		
<u>Offices</u> (excluding head office)		
Purchased electricity / Gas in leased buildings	5	4
Employee domestic air travel / ferry travel	10	12
<u>Depots</u> – all purchased electricity / gas consumed in owned or leased buildings	228	237
<u>Processors</u> – all purchased electricity / gas consumed in owned or leased buildings	57	60
<u>Transportation</u> – depots to processors (diesel fuel)	3,596	3,600
<u>Transportation</u> – processors to end markets (diesel fuel)	1,924	2,358
Sea Cargo (based on metric tonne km)	2,407	2,682
Total Emissions from all sources	8,233	8,962

ⁱ All indirect emissions except for office use were calculated based on the sample data provided by selected depots, processors, and transporters.






5.2 CONTAINER RECYCLING END FATE REPORT

All containers collected by Encorp in 2019 were shipped to recyclers for further processing into new material in accordance with Section 8 of the Recycling Regulation.

Material Type	Fate of Material (2019)	Containers Sold (% of total)	Recovery % (by weight)	Energy savings	Weight diverted from landfill (mt)	Tonnes CO ₂ reduced
Aluminum 	Aluminum cans collected were sold and shipped to a re-melt facility in the USA and turned back into sheet stock for new cans.	37.40%	80.80%	93%	5,547	55,914
Plastic 	Plastic containers were sold to Merlin Plastics and shipped to their two separate facilities BC and AB to be cleaned and pelletized to become new raw material for manufacturers of various plastic products including new containers, strapping material and fibres.	37.90%	76.80%	86%	10,594	12,511
Glass 	Glass containers were processed in British Columbia and shipped to manufacturing plant that produces fibreglass insulation in Alberta; a facility that produces new glass bottles in Seattle, USA; a facility that manufactures sandblasting materials in Quesnel, BC; and municipal sites that use crushed glass as construction aggregates.	15.90%	91.00%	34%	75,172	26,138
Polycoat 	Polycoat containers collected were sold to ICF International and shipped to manufacturing plants in South Korea, Thailand and Japan for material recovery and production of tissue paper from the recovered fibre. Encorp also shipped polycoat containers to a second supplier, Continuous Material Recovery, in 2019. Continuous Material Recovery receives drink box containers at their facility in Des Moines, Iowa where they produce building boards which are used as an alternative to traditional wallboards, roofing, floor underlayment, ceiling tiles and structured insulated panel.	7.50%	67.80%	53%	1,729	9,154

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Material Type	Fate of Material (2019)	Containers Sold (% of total)	Recovery % (by weight)	Energy savings	Weight diverted from landfill (mt)	Tonnes CO ₂ reduced
 <p>Pouches</p>	In 2017 stand up pouches made of layers of plastic and aluminum foil as well as the laminated plastic bags used inside bag-in-a-box containers were shipped to ICF International. They are in the process of conducting tests to determine the viability of using them within a thermal process to make a lumber product which can be used in the manufacture of furniture, ceiling tiles and wallboard. More recently Encorp has found (in 2018) a viable end market through TerraCycle in New Jersey who is using this material to make various products such as; composite decking, buckets, storage totes, non-food grade container & trays.	0.70%	26.30%	53%	13	15
 <p>Bag-In-Box</p>	The plastic bladders inside the Bag-In-Box containers are shipped to TerraCycle in New Jersey for using it for making products such as; composite decking, buckets, storage totes, non-food grade container & trays. Cardboard from the outer layer of the box was recycled by local processors.	0.30%	52.10%	53%	486	574
 <p>Bi-Metal</p>	Other metal containers including Bi-Metal were sold to scrap metal dealers in BC for metal recovery.	0.30%	81.30%	82%	222	453
2019 TOTAL		100%	87.60%		93,763	104,759
2018 TOTAL			87.00%		95,966	102,646