2018 ANNUAL REPORT

5 ENVIRONMENTAL IMPACT

Detailed report on the reduction in greenhouse gas emissions, energy savings, and CO_2 equivalent reduced from recycling.

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

ENVIRONMENTAL IMPACT

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 2018, Encorp recycled 95,966 metric tonnes of used beverage containers. The energy saved through the recycling of these materials has been converted into tonnes of carbon dioxide equivalent (CO_2e) 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 21).

In total, Encorp's activities in 2018 contributed to the reduction of about 102.6 thousand tonnes of CO_2 equivalent being released into the atmosphere, compared to 103.8 thousand tonnes in 2017. The decrease in reduction is primarily due to the change in material mix of material recycled.

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 those 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 be less accurate.

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 kWhs 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 20.

We attribute the reduction in emissions from all sources to changes in the mix of material collected and, therefore end market distribution.

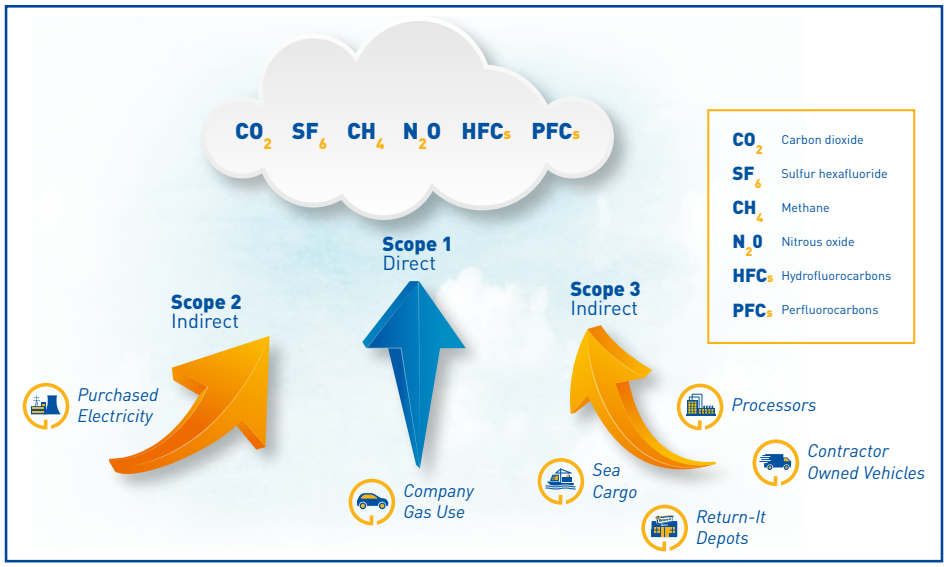
Encorp Pacific (Canada)
100 – 4259 Canada Way, Burnaby, BC V5G 4Y2
Tel: 1-800-330-9767 www.return-it.ca

5.1 ENVIRONMENTAL REPORT

EMISSIONS INVENTORY SUMMARY

Type of Emission	2018 (tonnes CO_2)	2017 (tonnes CO_2)
Direct emissions are emissions from sources that are owned or controlled by Encorp		
Employee travel – gas use	9	10
Indirect emissions 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]		
Offices (excluding head office)		
Purchased electricity / Gas in leased buildings	4	4
Employee domestic air travel / ferry travel	12	17
Depots – all purchased electricity / gas consumed in owned or leased buildings	237	232
Processors – all purchased electricity / gas consumed in owned or leased buildings	60	46
Transportation – depots to processors (diesel fuel)		
Trucks	3,600	3,617
Transportation – processors to end markets (diesel fuel)		
Trucks	2,358	2,276
Sea Cargo (based on metric tonne km)	2,682	2,884
Total Emissions from all sources	**8,962**	**9,086**

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



ENVIRONMENTAL IMPACT

5.2 CONTAINER RECYCLING END FATE REPORT

All containers collected by Encorp in 2018 were shipped to recyclers for further processing into new material in accordance with Section 8 of the Recycling Regulation.

Material Type	Fate of Material (2018)	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.	35.1%	80.6%	93%	5,202	52,447
Plastic 	Plastic containers were sold to end markets in British Columbia and shipped to their two separate facilities in 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.	38.9%	75.8%	86%	10,719	12,659
Glass 	Glass containers were processed in British Columbia and shipped to a manufacturing plant that produces fiberglass 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.	16.9%	90.4%	34%	77,520	26,954
Polycoat 	Polycoat containers collected were sold to ICF International and shipped to manufacturing plants in South Korea, Thailand and Japan for materials recovery and production of tissue paper from the recovered fibre.	8.0%	67.5%	53%	1,797	9,510
Pouches 	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 a manufacturing company in South Korea for production into composite decking.	0.5%	25.4%	53%	9	11
Bag-In-Box 	Cardboard from the outer layer of the box was recycled by local processors.	0.3%	49.1%	53%	469	554
Bi-Metal 	Other metal containers including Bi-Metal were sold to scrap metal dealers in BC for metal recovery.	0.3%	80.9%	82%	250	511
2018 TOTAL		**100%**	**87.0%**		**95,966**	**102,646**
2017 TOTAL			**84.1%**		**93,828**	**103,810**

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