

GHG Emissions Report for Command Packaging

Assessment Period: 1st January 2017 – 31st December 2017



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Report prepared by: Graham Healy

Summary

Quality Management Solutions (“QMS”) has calculated Command Packaging’s annual GHG emissions based on a dataset provided by the company.

Command Packaging’s GHG Emissions were calculated at 4614.5 tCO₂e per annum.

Table 1 – GHG Emissions Summary (1 Jan 2017 – 31 Dec 2017)

Period of Calculation	Direct GHG Emissions	Indirect GHG Emissions	Total GHG Emissions
1 Jan 2017 – 31 Dec 2017	422.8	4191.7	4614.5

The chart below demonstrates the contribution of each element in the makeup of the total Greenhouse Gas emissions of the company’s operations.

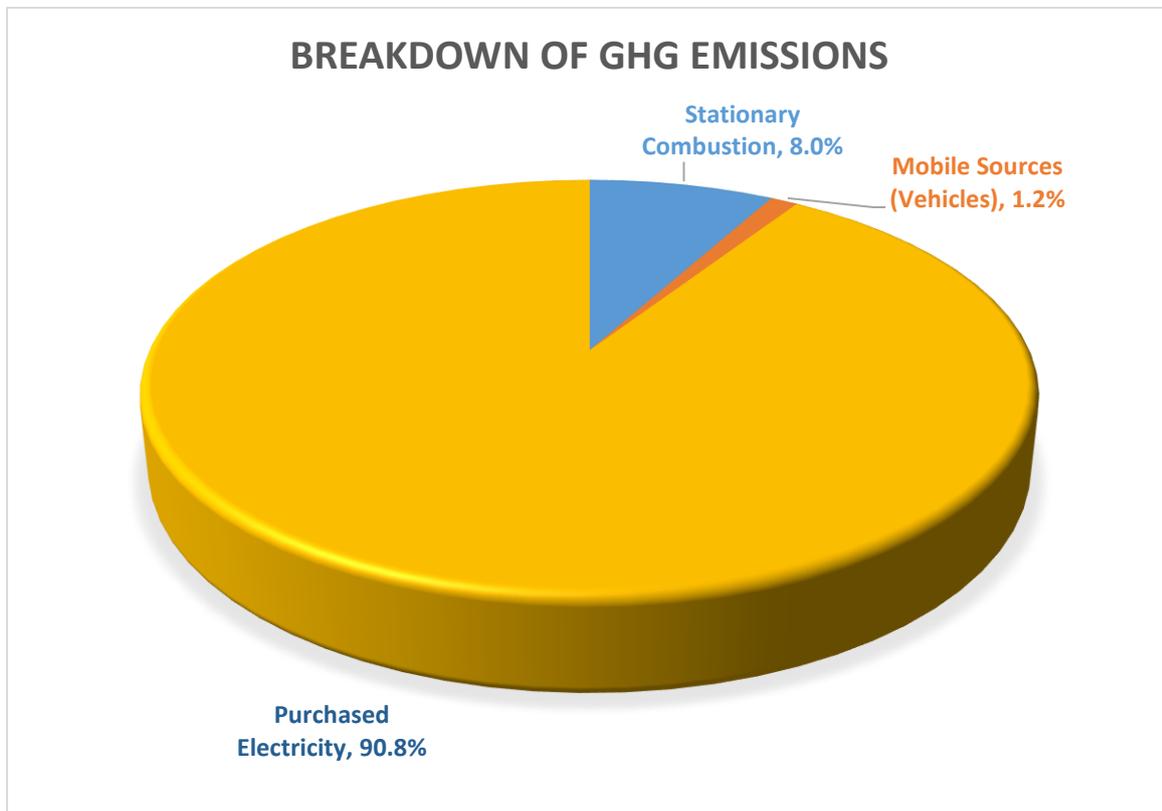


Figure 1 – Breakdown of GHG Emissions

1 Introduction

1.1 Scope of this work

QMS has assessed the greenhouse gas emissions from 1st January 2017 to 31st December 2017 resulting from Command Packaging's business activities. This information may be used for various different purposes, including the following:

- Managing GHG risks and identifying reduction opportunities;
- Public reporting and participation in voluntary GHG programs;
- Participating in mandatory reporting programs
- Participating in GHG markets;
- Recognition for early voluntary action.

1.2 What are Greenhouse Gas Emissions?

A **greenhouse gas** (sometimes abbreviated **GHG**) is a gas in an atmosphere that absorbs and emits radiation within the thermal infrared range. The most abundant greenhouse gases in Earth's atmosphere are:

- Water vapor (H₂O)
- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Ozone (O₃)
- Chlorofluorocarbons (CFCs)

A greenhouse gas emission is the total mass of a GHG removed from the atmosphere over a specified period of time.

1.3 How are the Greenhouse Gas Emissions calculated?

The Greenhouse Gas Emissions appraisal is derived from a combination of client data collection and data computation by QMS. The data computation is based on the guidance provided in *The GHG Protocol Corporate Standard* as guidance.

The GHG Protocol Corporate Standard provides standards and guidance for companies and other types of organizations preparing a GHG emissions inventory. It covers the accounting and reporting of the six greenhouse gases covered by the Kyoto Protocol—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆).

QMS have calculated Command Packaging's emissions based on the current metrics provided in the latest revision of *The GHG Protocol Corporate Standard*, developed by World Resources Institute (WRI) and World Business Council on Sustainable Development (WBCSD) and have prepared a summary for Command Packaging included in this report. These metrics use GHG activity data multiplied by GHG emission factors.

$$\text{Activity Data} \times \text{Emission Factor} = \text{GHG emissions}$$

Figure 2 – GHG Emissions calculation method

QMS has selected this preferred method of calculation as a government recognised approach and uses data which is realistically available from the client, particularly when direct monitoring is either unavailable or prohibitively expensive.

QMS confirms that the methodology used to quantify the GHG emissions meets the following principles:

- a) The subject and its boundaries have been clearly identified and documented;
- b) The GHG emissions have been based on primary activity data unless the entity could not demonstrate that it was not practicable to do so, in which case an authoritative source of secondary data relevant to the subject was used;
- c) The methodology employed minimised uncertainty and yielded accurate, consistent and reproducible results;
- d) Emission factors used are relevant to the activity concerned and current at the time of quantification;
- e) Conversion of non-CO₂ greenhouse gases to CO₂e has been based upon the 100 year Global Warming Potential (GWP) figures published by the IPCC or national (Government) publication;
- f) All GHG emissions have been expressed as an absolute amount in tCO₂e.

2 Appraisal Boundaries and Summary of Data Supplied

A summary of the information submitted by Command Packaging and the boundaries set for the calculation are detailed below.

2.1 Organizational boundaries

There are two methods that can be used when defining the organizational boundary around the company when developing a GHG inventory.

- Equity Approach vs Control Approach

Under the **equity** share approach, a Partner accounts for GHG emissions from operations according to its share of equity (typically by percentage of ownership in the operation. The equity share approach makes sense for companies that have joint ventures or subsidiaries, where they may own a part or the whole of an organization, but not be able to direct any of their day-to-day operations.

Under the **control** approach, a Partner accounts for 100 percent of the GHG emissions from operations over which it has control. It does not account for GHG emissions from operations in which it owns an interest but has no control.

The control approach is the method to be used.

2.2 Operational boundaries

The GHG Protocol divides emissions into 3 Scopes.

Scope 1: Direct GHG emissions

Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment. Direct CO₂ emissions from the combustion of biomass shall not be included in scope 1 but reported separately.

GHG emissions not covered by the Kyoto Protocol, e.g. CFCs, NO_x, etc. shall not be included in Scope 1 but may be reported separately.

Scope 2: Electricity indirect GHG emissions

Scope 2 accounts for GHG emissions from the generation of purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.

Scope 3: Other indirect GHG emissions

Scope 3 is an optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

An outline of the three scopes is shown below in Figure 3.

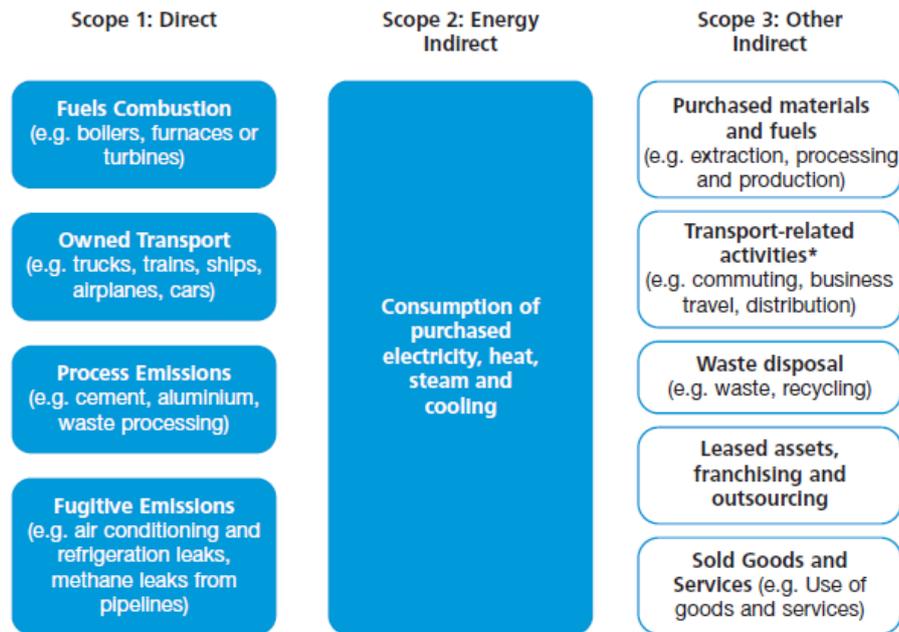


Figure 3 – GHG scopes

It has been decided that the most appropriate emissions to report on for Command Packaging are those covered by **Scope 1** and **Scope 2**. The indirect GHG sources that are outside the assessment boundary have been excluded from quantification because quantification of its contribution to the GHG emissions is not technically feasible or cost effective.

2.3 Quantification of GHG emissions and removals

Within its organizational boundaries, Command Packaging have quantified and documented GHG emissions and removals by completing, as applicable, the following steps:

- identification of GHG sources and sinks;
- selection of quantification methodology;
- selection and collection of GHG activity data;
- selection or development of GHG emission or removal factors;
- calculation of GHG emissions and removals

The organization may exclude from quantification direct or indirect GHG sources or sinks whose contribution to GHG emissions or removals is not material or whose quantification would not be technically feasible or cost effective.

The organization shall explain why certain GHG sources or sinks are excluded from quantification.

Greenhouse gas removals

Within the calculation of Command Packaging’s carbon footprint, there are no business processes resulting in the reduction of greenhouse gases from the atmosphere to be deducted from the calculation.

3 Greenhouse Gas Emissions Results

3.1 Summary of results

The total carbon footprint for Command Packaging for the period ending 31st December 2017 was 4614.5 tCO₂e. The following table provides a summary of results for Command Packaging's carbon footprint calculation by scope.

Period of Calculation	Direct GHG Emissions	Indirect GHG Emissions	Total GHG Emissions
1 Jan 2017 – 31 Dec 2017	422.8	4191.8	4614.5

Table 2 - Results of Command Packaging's GHG assessment by scope

The Calculator uses U.S. or Canadian-specific emission factors.

3.2 Emissions Summary

Company Information

Command Packaging:

Company Address:

Inventory Reporting Period:

Name of Preparer:

Command Packaging
3840 E 26 th Street Vernon CA 90058 USA
1 Jan 2017 – 31 Dec 2017
Alfredo Valenzuela

Summary of Company Emissions

Direct Emissions

Stationary Combustion	368.3
Mobile Sources	54.5
Refrigeration / AC Equipment Use	0
Fire Suppression	0
Purchased Gases	0
Waste Gases	0

Indirect Emissions

Purchased and Consumed Electricity	4191.7
Purchased and Consumed Steam	0

Total Company Emissions

Total GHG Emissions	4614.5
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Note: All results in CO₂-e (metric tons)

NOTES

Refrigeration and AC - FC, PFC, CO₂, and SF₆ refrigerants from facilities and vehicles are required to be included in the GHG inventory. Ozone depleting substances, such as CFCs and HCFCs, are regulated internationally and are typically excluded from a GHG inventory or reported as a memo item.

Fire Suppression - HFC, PFC and CO₂ fire suppressants are required to be included in the GHG inventory. Other fire suppressants such as Halon compounds, HCFCs, aqueous solutions, or inert gases are typically excluded from a GHG inventory.

Purchased Gases - Any use and release of the six major greenhouse gases (CO₂, CH₄, N₂O, PFCs, HFCs, and SF₆) is required to be included in the GHG inventory. Ozone depleting substances, such as CFCs and HCFCs, are regulated internationally and are typically excluded from a GHG inventory or reported as a memo item.

Updated Guidance - Updated Guidance takes effect as of January 20, 2015, applying to activities and data going forward in 2015. Inventories covering 2014 do not need to conform to the new Guidance as they reflect activity and data from before the Guidance was issued.

Abbreviations

- CFC - Chlorofluorocarbon
- CH₄ - Methane
- CO₂ - Carbon Dioxide
- CO₂e - Carbon Dioxide Equivalent
- GHG - Greenhouse Gas
- GWP – Global Warming Potential
- HFC - Hydrofluorocarbon
- IPCC – Intergovernmental Panel on Climate Change
- ISO - International Standards Organisation
- km - Kilometres
- kWh - Kilowatt Hours
- N₂O – Nitrous Oxide
- PFC - Perfluorocarbons
- SF₆ - Sulfur hexafluoride
- WRI - World Resources Institute
- WBCSD - World Business Council on Sustainable Development