MARCH 22, 2018

2017

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

OLYMPIC INDUSTRIES LIMITED
AMIN COURT, 6TH FLOOR
62-63 MOTIJHEEL C/A
DHAKA-1000
BANGLADESH

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INTRODUCTION

At Olympic, we believe that a good business must be sustainable. We are committed to ensuring that our planet stays healthy and plentiful. We believe we have a duty to ensure that our children will have a flourishing planet to live on for generations to come. In order to make this happen, we plan to reduce our impact on climate change by reducing waste and greenhouse gas emissions, increasing our use of renewable materials and energies, and mitigating climate change's impact on our communities. We are committed to sustainability for the long-run, and we welcome accountability for our actions.

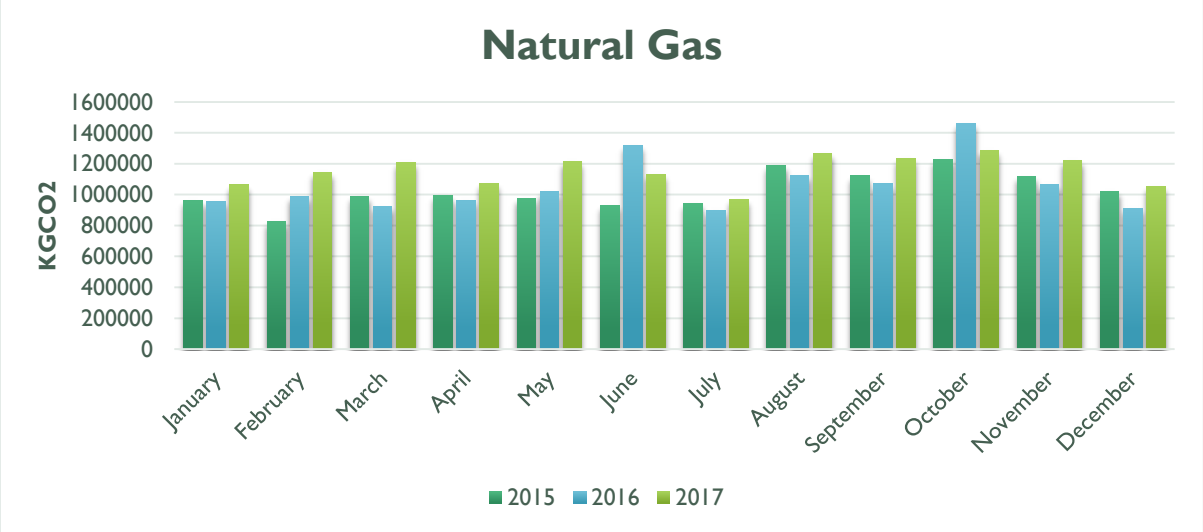
It is based on these values that last year we commissioned the Centre for Sustainable Development, University of Liberal Arts Bangladesh, to assess the company's greenhouse gas emissions and water usage for 2016, as well as recommend how to improve its impact. They produced an Environmental Impact Assessment (EIA), which is an important management tool for ensuring optimal use of natural resources for sustainable development.

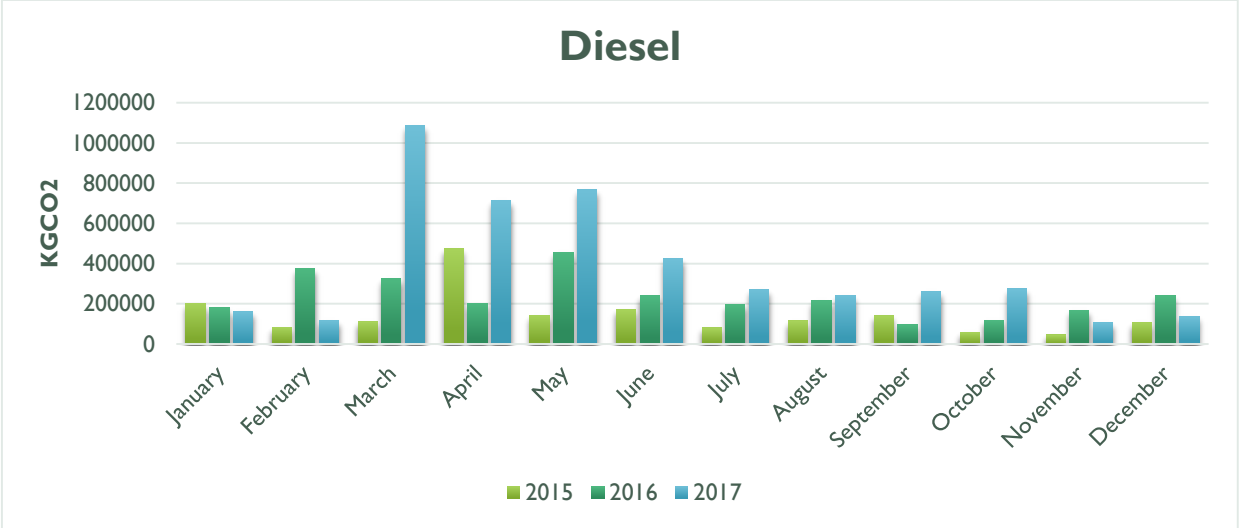
CSD also trained key factory personnel on calculating and tracking emissions in the future. Trained by the best and inspiring ourselves from CSD's report, we have compiled a report of our own. We commit to doing this every year to keep track of our emissions and to keep ourselves accountable for reducing our impact on the environment.

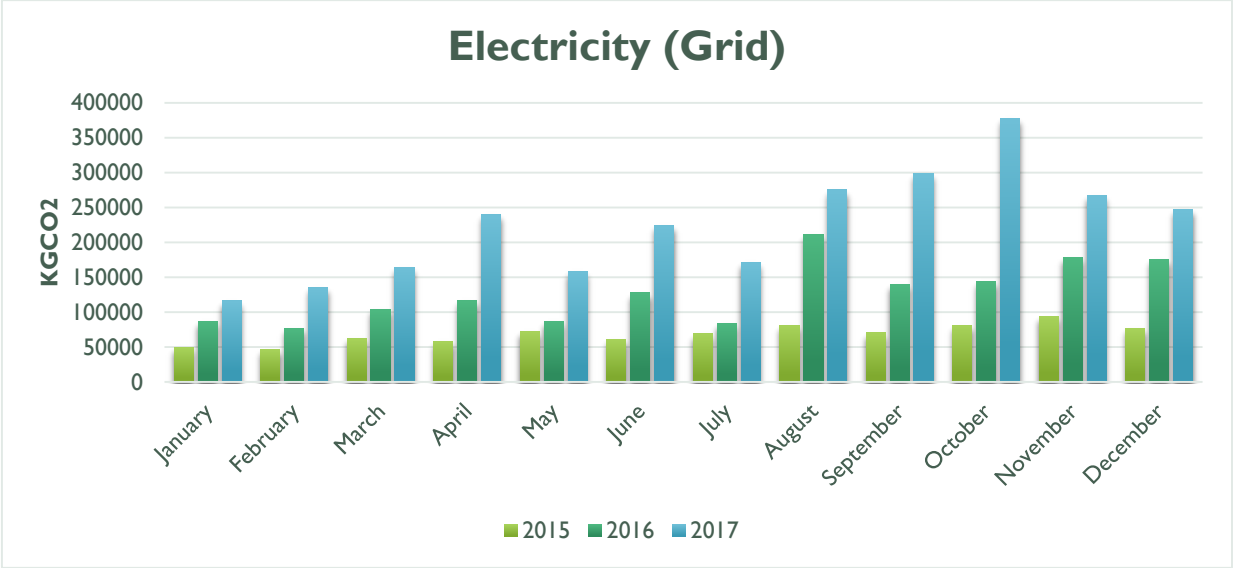
The following is our Environmental Impact Report for 2017. We have taken the liberty to add sections on waste, paper and ink.

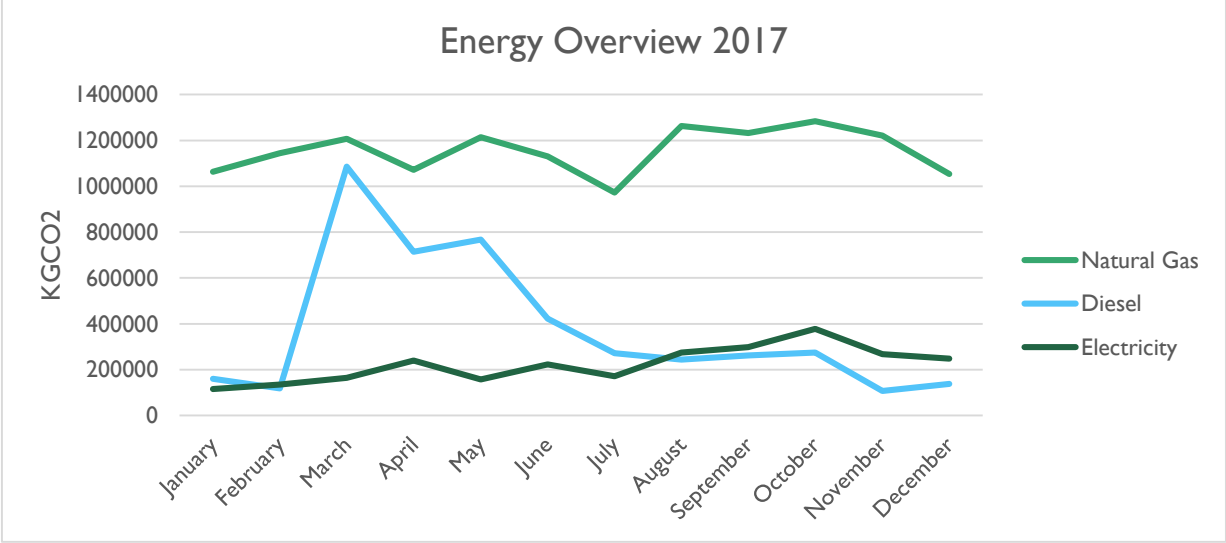
GREENHOUSE GAS EMISSIONS

EMISSIONS FROM ENERGY SOURCES

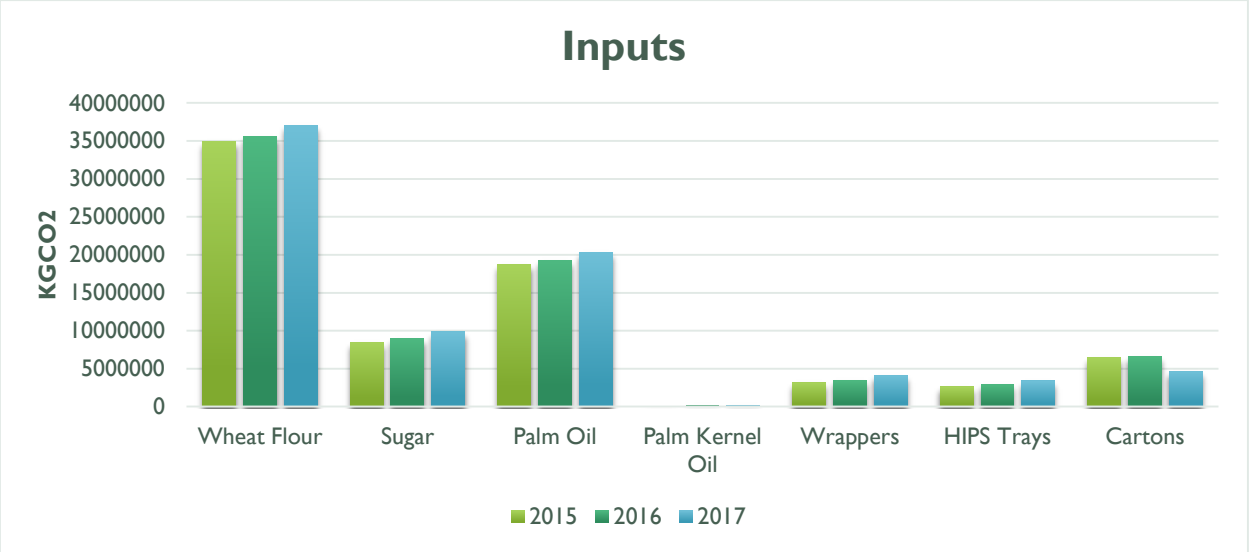



Diesel
KGCO2
1200000
1000000
800000
600000
400000
200000
0
January
February
March
April
May
June
July
August
September
October
November
December
2015
2016
2017


Electricity (Grid)
KGCO2
400000
350000
300000
250000
200000
150000
100000
50000
0
January
February
March
April
May
June
July
August
September
October
November
December
2015
2016
2017


Energy Overview 2017
KGCO2
1400000
1200000
1000000
800000
600000
400000
200000
0
January
February
March
April
May
June
July
August
September
October
November
December
Natural Gas
Diesel
Electricity

EMISSIONS FROM INPUTS



EMISSIONS BY SCOPE

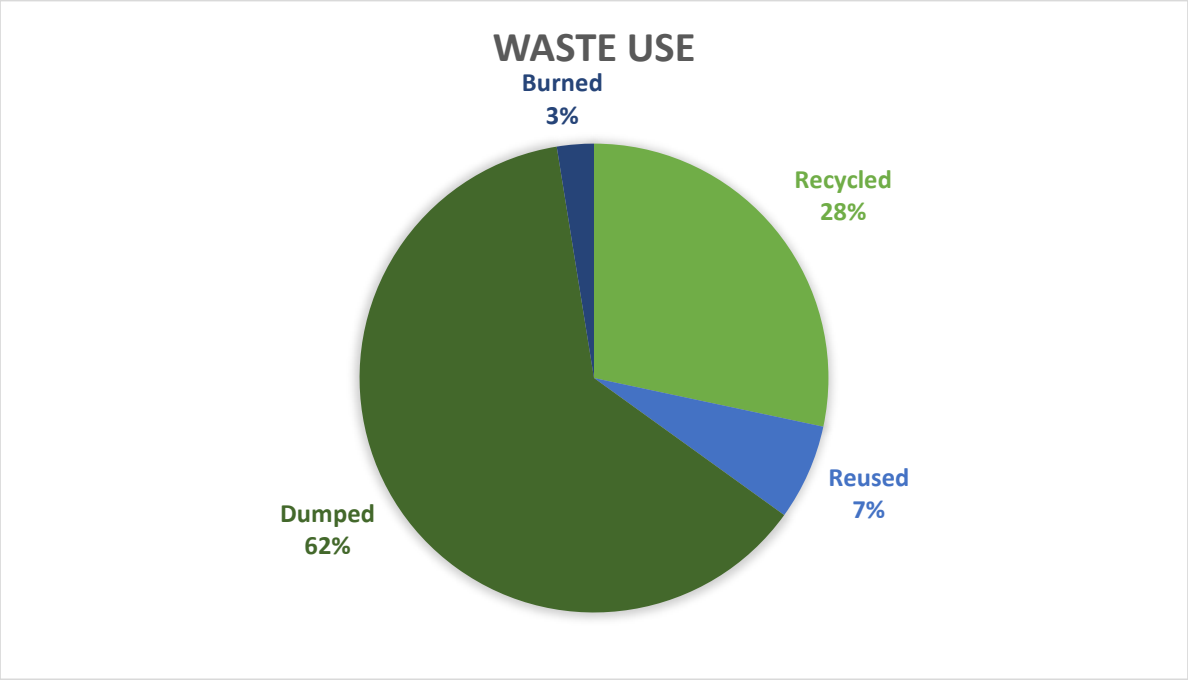
	2017	2016	2015 (baseline)
Scope 1	18,416,778	15,503,097	14,027,576
Scope 2	2,673,613	1,530,517	824,032
Scope 3	79,424,296	77,094,815	74,366,493
Total Gross Emissions (KGCO2)	100,514,687	94,128,428	89,218,101
Total Gross Emissions (MTCO2)	100,515	94,128	89,218
Production : Emissions Ratio	1.19	1.19	1.19

Scope	Activity
Scope 1	Gas consumed in the generator to produce onsite electricity
	Oil consumed in the generator produce onsite electricity
	Gas consumed in the oven / boiler
Scope 2	Electricity consumed from the Bangladesh National Grid
Scope 3	Input of flour
	Input of sugar

Input of palm oil
Input of palm kernel oil
Input of wrapping for packaging
Input of high impact polystyrene (HIPS) tray
Input of cardboard cartons for packaging

WASTE

We do our best to dispose of the waste at our factories responsibly. We are constantly looking for ways to recycle, reuse or repurpose. The graph below shows that our efforts have borne fruit: 35% of our waste has another life after Olympic.



In addition, we are committed to keeping waste at a minimum. We have built systems within each production line to ensure exactly that. As a result, for each kilogram of production, only 20 grams of waste are produced (2%).

PAPER & INK

In 2017, we used approximately 1,174,000 pages of paper and the corresponding amount of printing ink. We have chosen to disclose this for the first time in this report as an incentive to reduce it for next year.

METHODOLOGY

MEASURING AND REPORTING APPROACH

This report follows the approach used by the UK Department of Energy and Climate Change[1] which is based upon the Green House Gas (GHG) Protocol developed by the World Resources Institute (WRI) and World Business Council on Sustainable Development (WBCSD).

In addition to this approach, the report also takes ISO 14001 into consideration, which is used by small and large organisations across the world to reduce their environmental impact. It is an excellent framework to help implement an environmental management system (EMS) which helps organisations reduce their impact while still achieving growth. The requirement to achieve ISO 14001 have been a secondary factor in the design and scope of this report.

For a more intricate level of detail where necessary, this report follows the paradigm defined by the British Standards Institute (BSI) Publicly Available Specification 2050:2008 or PAS2050, which allows for the calculation of supply chain GHG emissions. These include those associated with processes not controlled by the company itself, and can be measured at either a company level or the level of an individual product.

ORGANISATIONAL BOUNDARY

Olympic does not only produce biscuits; it produces a variety of products which are distributed through an extensive supply chain. This poses issues to quantifying emissions in a report such as this, and is beyond local capacity.

Therefore, this report expressly deals with the emissions related to the production of biscuits at the Madanpur and Lolati factory sites in Bangladesh. The defined boundaries of what is included and the reasons behind this will be expanded on in the following sections. It is based upon the recommendations defined by the GHG protocol guidelines, in line with the most widely used international standard of reporting.

OPERATIONAL SCOPE

To identify which activities are responsible for GHG emissions being released into the atmosphere, this report uses the most common approach: GHG Protocol's 'Scope' framework which consists of three groups[2].

[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69282/pb13309-ghg-guidance-0909011.pdf
[2] WRI / WBCSD The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

SCOPE 1

Direct Emissions: Activities owned or controlled by the organisation that release emissions straight into the atmosphere. Examples of these include emissions created by the combustion process from boilers or generators, vehicle emissions, or emissions from chemical production.

SCOPE 2

Energy Indirect: Emissions being released into the atmosphere associated with your consumption of purchased electricity, heat steam and cooling. These are indirect emissions that are a consequence of your organisations activities which occur at sources you do not on or control.

SCOPE 3

Other Indirect: Emissions that are a consequence of your actions, which occur at sources which you do not own or control and which are not classed as Scope 2 emissions. Examples of these are business travel by means not controlled by your organisation, waste disposal or purchased materials or fuels.

Under the GHG Protocol, all organisational footprints must include scope 1 and 2 emissions. There is more flexibility when choosing which scope 3 emissions to measure and report, and it is important to tailor these to reflect the environmental and commercial goals of the report. Here follows a table that in simple terms shows the selected contributing factors to the emissions from both factories, and the scope category that they fall under.

Scope	Activity
Scope 1	Gas consumed in the generator to produce onsite electricity
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	Input of sugar
	Input of palm oil
	Input of palm kernel oil
	Input of wrapping for packaging
	Input of high impact polystyrene (HIPS) tray
	Input of cardboard cartons for packaging

In addition to the factors included, it is important to outline the factors that were not included within the study and the reasons behind their omission. What follow are the significant omissions, and a detailing of the reasons.

WATER TREATMENT

Although there is a significant amount of water used in the processes related to the production at the factories, the emissions produced are already covered by other factors. The water bought up from the ground is pulled by pumps from the water table, these are run by the electricity either produced by the generator or by electricity drawn straight from the grid and these are reflected in the emissions shown coming from each different energy source. This is the same as any energy used to pump water around the factory complex, or any related process. This is also the case for the water used in the production of ingredients for the factory processes; this is reflected in the scope 3 emissions for each input.

INGREDIENTS / FACTORY INPUTS

There are a large number of ingredients that go into the biscuit production process which are used in a relatively small quantity. These micro inputs have not been included as items that have less than 1% of an impact on the overall calculation are automatically omitted to ensure that the overall figure is not distorted by and watered down by minor factors.

These ingredients include Lecithin, Malt, Liquid Glucose, Milk Powder (SMP), Sodium Bicarbonate, Ammonia Bicarbonate, Citric Acid, Malic Acid, Sodium Lactic Acid, Whey Powder, Dextrose, Starch, Ethyl Vanillin, Dry Gluten, Calcium Bicarbonate, Coconut Power, Salt, Cocoa Powder, Titanium Dioxide, Cake Gel, and Egg.

TRANSPORTATION

The process of bringing in raw ingredients and distributing the finished product at Olympic is completed by external organisations and therefore are being placed outside of the scope of this report. A separate environmental report of the wider impact of this network is more fitting, or one that is included within the carbon footprint of the distribution companies themselves. There are a number of vehicles that are used by the Olympic organisation for transportation between factories for example but they are also being omitted as their use is partly or wholly engaged through other departments of the organisation which this report does not reflect.

WASTE DISPOSAL

In balance to the inputs, there is very little outputted waste at the factories. Waste disposal also falls in to scope 3 which is a category that is defined by a flexible approach and an objective balancing of whether it is useful to include. Due to the small amount of waste produced, the lack of robust data on composition, and the fact that it is processed by an external organisation, it is being omitted.

ON-SITE OFFICE MATERIALS

On the two factory sites there is a small complex of office buildings present. Included in these are housed management staff, which have inputs of office materials. Due to some

rudimentary calculations using the International Life Cycle Database (ILCD)[3] it has been shown to be less than the 1% boundary requirement for inclusion. Additionally there are other similar office segments of the organisation and the division of what should be included is not clear enough to produce a fair figure so it has been omitted.

SOLAR PANELS

Present on the roofs of both of the factory complexes are a small array of solar panels which are connected to the lighting systems of the respective factories. The arrays are less that 4KW in size, and produce at maximum approximately 3400 KWH per year in an average case scenario. The electricity input alone from the grid is over 1,000,000 KWH which means that the effect of the solar panels on the emissions is less than 1% and therefore they have been omitted, this is not even taking into account the electricity generated onsite. If the panels were connected to the system as a whole, and fed into the complex's main loop, as does the generator, then we would reconsider and include as part of the calculation.

DEFINED CONVERSION FACTORS (KG/CO2)

For each factor used in the emissions calculation below is the conversion factor used from the respective unit to KGCO2e. This a useful simplification tool for producing figures in the selected unit which are accurate and directly represent the different inputs into the organisation, and subsequently their individual emissions. The conversion factors come from different sources, those originating from external sources are marked in the footnotes.

Where possible, the figures have been taken using data from Bangladesh. In all cases, the data sources were crosschecked with other relevant sources to ensure consistency.

Here is a list of the conversion factors, and where suitable the brief workings are shown to define the output.

NATURAL GAS

53.12 KGC02 per 1000 cubic feet of Natural Gas[4]

53.12 x 35.315 = 1875.9328/ 1000 = 1.8759 = 1.88

Conversion Factor = 1.88

OIL

11.79 KGC02 per Gallon of Residual Heating Fuel[5]

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[3] http://eplca.jrc.ec.europa.eu/
[4] https://www.eia.gov/environment/emissions/co2_vol_mass.cfm
[5] https://www.eia.gov/environment/emissions/co2_vol_mass.cfm - Residual Heating Oil

1 Gallon = 3.79 Litres

11.79 x 3.79 = 44.6841

Conversion Factor = 44.68

ELECTRICITY

0.63714323 KGC02 / KWH[6] = 0.64 KGC02 / KWH

Conversion Factor = 0.64

FACTORY INPUTS

1 KG of Wheat Flour – 0.6864 KGC02e[7]

Conversion Factor = 0.69

1 KG of Sugar = 0.54 KGC02e

Conversion Factor = 0.54

Palm Oil 1.67kgc02[8] / KG Palm oil

Conversion Factor = 1.67

Palm Kernel Oil – 678.73 KGC02 / 1000KG Palm Kernel Oil[9]

Conversion factor = 0.68

(Figure taken from mill close to port without carbon capture facility being used)

Wrappers – Linear low Density Polyethylene (LLDPE) – 1.89KGC02 / 1 KG Wrappers[10]

Conversion factor = 1.89

High Impact Polystyrene (HIPS) Tray – 3.46 KGC02 / 1 KG HIPS[11]

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[6] https://ecometrica.com/assets/Electricity-specific-emission-factors-for-grid-electricity.pdf - 2011
[7] http://www.revagrois.ro/PDF/2011-2/paper/pagini_38-41_Moudry.pdf
[8] http://www.sensorproject.net/sensorwp/wp-content/uploads/2016/09/SEnSOR-science-for-policy-paper-RSPO-GHG-calculator-August-16.pdf
[9] http://jopr.mpob.gov.my/wp-content/uploads/2013/09/joprv24dec2012-Vijaya1.pdf
[10] http://www.plasticseurope.org/Documents/Document/20100312112214-FINAL_LLDPE_270409-20081215-019-EN-v1.pdf
[11] http://www.plasticseurope.org/Documents/Document/20100312112214-FINAL_POLYSTYRENE_GPPS_111209-20090428-003-EN-v1.pdf

Conversion Factor = 3.46

CARTONS

Average weight calculated by average (mean) weight of sample selection of boxes.

490KGC02 / 1000kg Cardboard[12]

Conversion factor = 0.49

BASE YEAR

The establishing of a base year is an important aspect of the reporting process. It defines a starting point from which the development of a robust and organisationally specific report can be produced. It enables a clear and direct comparison to other reporting periods, and it maintains a meaningful and consistent evaluation of emissions over time. For the purpose of this report, 2015 was selected as the baseline, as determined by ULAB in the 2016 Environmental Impact Assessment Report.

[12] https://emissionfactors.com/factor/126747/