

Australian Government  
**Carbon Neutral Program**  
Public Disclosure Summary



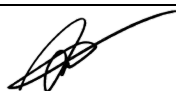
An Australian Government Initiative

## BioPak Pty Ltd

1 January 2018 – 31 December 2018

### Declaration

To the best of my knowledge, the information provided in this Public Disclosure Summary is true and correct and meets the requirements of the National Carbon Offset Standard Carbon Neutral Program.

Signature 	Date 23/08/2019
Name of Signatory Lea Maguero	
Position of Signatory Environment & Sustainability manager	

Carbon neutral certification category	Organisation and Product
Date of most recent external verification/audit	June 2019
Auditor	Ben Jenkins, GPP Audit
Auditor assurance statement link	

# 1. Carbon neutral information

## 1A. Introduction

BioPak is a supplier of a range of foodservice disposable items such as coffee cups, takeaway containers, plates and produce trays. BioPak is focused on replacing fossil fuel-based plastics used in food services wares by offering compostable alternatives made from rapidly renewable sustainably sourced materials.

Our products are designed for the circular economy: it starts with responsibly sourced materials, continues with environmentally certified manufacturing processes, and ends with nutrient-rich compost that can be used to regenerate soil, grow new plants and help fight climate change.

As a socially and environmentally responsible business, and a certified B Corporation, we are working together with industry bodies, local councils, waste collectors and the waste industry to ensure that our products can be composted.

This inventory has been prepared for the calendar year from 1 January 2018 to 31 December 2018.

The operational boundary has been defined based on an operational control test, in accordance with the principles of the GHG Protocol Corporate Accounting and Reporting Standard.

The methods used for collating data, performing calculations and presenting the carbon account are in accordance with the following standards:

- National Carbon Offset Standard for Organisations
- National Carbon Offset Standard for Products and Services
- The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
- The Greenhouse Gas Protocol: Product Life Cycle Accounting and Reporting Standard
- National Greenhouse and Energy Reporting (Measurement) Determination 2008
- ISO 14040:2006 Environmental Management – Life Cycle Assessment – Principles and Framework

Where possible, the calculation methodologies and emission factors used in this inventory are derived from the National Greenhouse Accounts (NGA) Factors in accordance with "Method 1" from the National Greenhouse and Energy Reporting (Measurement) Determination 2008.

The greenhouse gases considered within the inventory are those that are commonly reported under the Kyoto Protocol; carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and synthetic gases - hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>). These have been expressed as carbon dioxide equivalents (CO<sub>2</sub>-e) using relative global warming potentials (GWPs).

BioPak has been certified carbon neutral for its Australian business operations (organisation) and its entire product range (products).

The organisational carbon inventory is based on an operational control approach and includes an office in Sydney, NSW. The product footprint includes all products sold to customers in Australia.

For products, the approach taken was to categorise the BioPak product range into fifteen product categories based on the product type and material of construction. Total emissions for each of these categories were calculated and the emissions per product item estimated based on the total number of units sold. The approach was to measure emissions from cradle to gate (see boundary diagram below). The functional unit in the product LCA is a single item (i.e. one coffee cup, one food container etc.).

A hybrid LCA methodology is used. This combines direct activity data for sea and road freight and data from input-output analysis (based on \$ value of expenditure). BioPak's products are made in China and it is not feasible to obtain process data directly from manufacturers to allow for a conventional LCA to be conducted. Input-output analysis provides a complete assessment of all inputs in the manufacture and supply of BioPak's products to customers. To summarise the hybrid approach:

- The depth of the input-output analysis approach covers the entire upstream manufacturing and distribution supply chain. The input-output analysis applies an infinite supply chain to all upstream emissions so that no boundary needs to be set of up. The depth and breadth of this approach covers all supply chain (scope 3) inputs including materials and services in the manufacture of BioPak's products.
- The scope 3 emissions of products imported from China are estimated based on input-output emissions factors derived from industry sectors in the Chinese economy. Scope 3 emission factors for activities undertaken in Australia (this includes both organisational and product scope 3 emissions) are based on emission factors for the Australian economy. This approach ensures that emissions sources for imported products are accounted for correctly.

## **1B. Emission sources within certification boundary**

### **Quantified sources**

The following emission sources have been included in the organisational carbon inventory:

- Electricity (grid and base building emissions for the head office)
- Water use
- Office paper
- Employee commuting
- Business flights
- Hotel accommodation in Australia and overseas
- Taxis
- Cleaning services
- Advertising services
- Telephone and internet services
- IT equipment
- Waste to landfill

- Paper recycling

### Excluded sources

The following emission sources have been excluded in line with the provisions of the National Carbon Offset Standard for organisations and section 6.3 of the GHG Protocol. The impact of excluding these sources is not expected to materially affect the overall total emissions.

- Refrigeration gases in base building air conditioning and kitchen fridges
- Water use in base building chillers

The following emission sources have been included in the product carbon inventory:

- Materials of construction and manufacture
- Plastic packaging
- Cardboard packaging
- Sea freight and road freight

### Non-attributable sources

The following emissions sources have not been attributed to the product carbon inventory:

- **Warehousing and distribution**

Emissions related to storage of products in warehouses in Australia as well as distribution to retailers have not been estimated. BioPak uses contracted third-party logistics providers in all capital cities and emissions from these services are expected to be small and not material.

- **Use phase emissions**

BioPak does not have any control of how its products are used after they have been sold to retailers and then to consumers. BioPak products are used extensively around the country and it would not be feasible to collect data on these activities. In addition, the boundary approach for this assessment is cradle to gate.

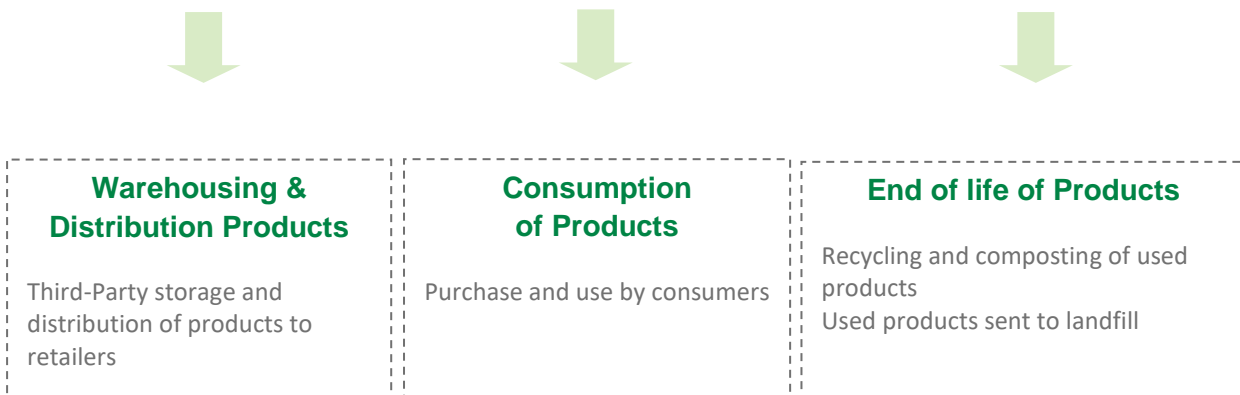
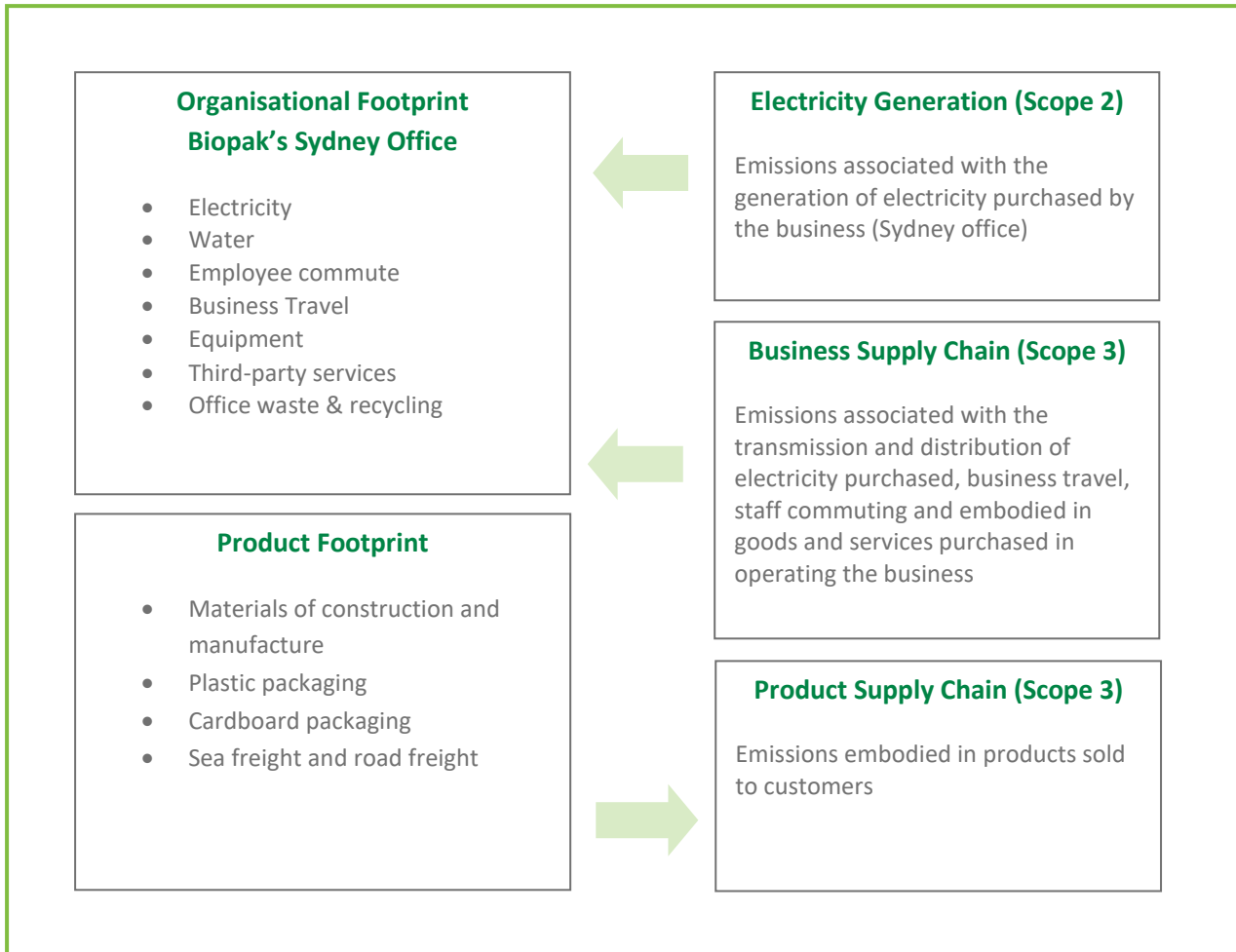
- **Recycling and waste to landfill**

BioPak encourages its customers to set up systems to recycle and compost its products after use. BioPak does not have any control of the extent to which its customers recycle, compost or send its products to landfill. In addition, the boundary approach for this assessment is cradle to gate.

## 1C. Diagram of the certification boundary

The boundary for the organisational and product LCA is “cradle to gate”. This includes all BioPak’s business activities, running its Sydney office, manufacture of products in China and freight of these products to Australia. Activities associated with the warehousing and distribution of products to retailers, use of products by consumers and end of life are outside the LCA boundary.

## LCA Boundary – Organisational and Product Cradle to Gate



## 2. Emissions reduction measures

### 2A. Emissions reduction strategy

BioPak's objective is to achieve carbon neutrality for its products and its entities, especially as the company grows.

Our emission reduction strategy in the next five years will start with an analysis of our organisational and product footprint, to identify the activities and product ranges that emit the most CO<sub>2</sub>. We will then look at stopping, reducing or changing these activities where possible. In the case of products, we will look at replacement options where alternatives exist.

We will also keep exploring opportunities to reduce the environmental footprint of our organisation, in terms of energy savings, recycling initiatives, travel policies and office management. We have moved to a new office in August 2019, and we will ensure it is fitted with energy efficient lighting and appliances. Five types of waste are already being segregated for optimum recycling, including food scraps, that are sent to a composting facility in Wollongong, NSW. We have engaged with other tenants in the building and hope that, in the future, we will be able to add their food waste to our organics collection service. Our new office also features a board room fitted with improved audio and video conference equipment, to support our formal travel policy aimed at reducing air travel. We expect to be able to replace a number of trips to Europe or Asia by video conferencing. This is an important improvement as our parent company is located in Sweden.

Although at this stage we cannot quantify the emission reduction associated with these initiatives, we expect to implement these changes and see positive results in the next twelve months.

We will also work on reducing the emissions associated with various areas of our supply chain, such as manufacturing processes, freight, and products end of life. We have already engaged with our suppliers and will keep encouraging them to improve their own footprint. We require our suppliers to get certified to ISO14001, as a first step. The certification process ensures that certain systems and mindsets are in place. In addition, we will also encourage energy efficiency projects such as placing solar panels on factory rooves.

This work is planned to happen over a longer period of time (2-5 years).

Finally, we will keep expanding our Compost Service over the next 5 years, to divert our customers' compostable packaging and food scraps from landfill. Avoided methane emissions from landfill will participate in reducing the footprint associated with the end of life of our products.

### 2C. Emissions reduction actions

In the current reporting period, BioPak has completed the following actions to reduce its organisation and product related carbon emissions:

- Started composting organic waste in our Sydney Office
- Implemented internal travel policies that aim to reduce emissions associated with flying and driving cars
- Phased out products that have a higher environmental footprint compared to more sustainable alternatives (polyethylene coated coffee cups)
- Started work on a national compost service to allow customers to compost their packaging, along with their food scraps.

BioPak has also avoided emissions from purchasing certified carbon neutral office paper.

### 3. Emissions summary

Table 1 shows a summary of emissions related to Biopak's business operations.

Table 1. Total Emissions Inventory (Organisation)		
Scope	Emission source	t CO <sub>2</sub> -e
2	Purchased electricity – NSW	13.2
3	Purchased electricity – NSW	1.6
3	Electricity – Base Building	28.5
3	Water - NSW	0.1
3	Carbon Neutral Office paper	0.0
3	Employee Commuting	13.3
3	Business Flights	50.4
3	Cleaning Services	1.4
3	Advertising Services	67.8
3	Telecommunications	10.2
3	IT Equipment	1.0
3	Taxis	0.8
3	Domestic Hotel Accommodation	0.7
3	International Hotel Accommodation	0.7
3	Office Waste – Landfill	5.1
3	Waste - Recycling (Office paper)	1.2
<b>Total Emissions</b>		<b>196.2</b>

The BioPak range of products includes a wide variety of separate elements which are grouped together to form a specific line of food packaging offering. These are broadly categorised as:

- Single Wall Hot Cups
- Double Wall Hot Cups
- Cold Cups
- Takeaway containers
- Plates, Bowls & Trays
- Straws
- Cutlery
- Napkins
- Bags
- Produce Trays
- Reusable coffee cups

To allow for a material-based analysis of the components for this range, these broad categories have been separated into product “families” which share similar material compositions and production processes. These families and their material constituents and production processes (as allocated through input-output models) are provided in table 2 below. Table 3 shows the associated emissions for each product category by life cycle stage. In the input-output model, the product categories are allocated to an industry sector.

The emission factor for each industry sector covers all the inputs that go into manufacturing the product types listed. This includes materials of construction, energy use such as electricity, production processes and transport of raw materials and finished products. The input-output emissions factor applies to the full supply chain for each type of product category.



**Table 2. Product families, material components and industry sector allocation**

Product	Materials	Input Output Industry Sector
BioBag	Starch	Other food products
Napkins	Paper & Cardboard	Paper & paperboard products
Paper straws	Paper & Cardboard	Paper & paperboard products
Wood cutlery	Birchwood	Sawmill & fibreboard products
BioCane Takeaway Containers	Bagasse & Bamboo	Products of wood & bamboo
BioCane Plates, Bowls and Trays	Bagasse & Bamboo	Products of wood & bamboo
PET Lids	PET & Plastic	Plastic products
Paperboard Boxes & Trays	Paper & Cardboard	Paper & paperboard products
BioCane Produce Trays	Bagasse & Bamboo	Products of wood & bamboo
Single and Double Wall Hot Cups	Paper & Cardboard, Polyacetic acid	Paper & paperboard products, Plastic products
Polystyrene Lids	Polystyrene	Plastic products
CPLA Lids	Polyacetic acid	Plastic products
Reusable Coffee Cups	Silicon, Polyacetic acid	Non-metal minerals, Plastic products
PLA Cold Cups, Bowls & Lids	Polyacetic acid	Plastic products
PLA Cutlery	Polyacetic acid	Plastic products

**Table 3. Product families and life cycle emissions**

Product	Materials & production	Plastic Packaging	Cardboard Packaging	Road & Sea Freight	Total per Category	Per functional unit
	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	gCO <sub>2</sub> -e/unit
BioBag	237.8	1.9	2.4	9.4	251.4	52.2
Napkins	980.2	104.4	133.9	83.4	1,301.9	4.9
Paper straws	859.6	28.3	36.2	15.0	939.1	12.9
Wood cutlery	819.3	31.5	40.3	33.8	924.9	11.4
Takeaway Containers	3,241.0	24.8	31.8	203.9	3,501.5	54.9
Plates, Bowls and Trays	2,788.5	24.9	31.9	191.8	3,037.1	47.5
PET Lids	816.6	6.2	8.0	51.5	882.3	55.1
Paperboard Boxes & Trays	466.2	12.3	15.7	162.1	656.3	20.8
Produce Trays	966.1	6.3	8.1	76.0	1,056.5	65.4
Hot Cups	12,583.8	142.2	182.3	697.6	13,605.9	37.2
Polystyrene Lids	1,983.0	64.4	82.5	118.7	2,248.6	13.6
CPLA Lids	918.9	15.5	19.9	24.2	978.5	24.5
Reusable Coffee Cups	107.0	0.0	0.0	1.8	108.9	1,303.5
Cold Cups, Bowls & Lids	2,915.6	37.8	48.4	103.1	3,104.9	32.0
PLA Cutlery	1,279.1	24.4	31.3	62.0	1,396.9	22.2
<b>Total Emissions</b>	<b>30,962.8</b>	<b>524.9</b>	<b>672.9</b>	<b>1,834.2</b>	<b>33,994.8</b>	<b>25.2*</b>

\* Average combined emissions intensity of all products

Table 4. Total Emissions for the Reporting Period	
Certification Category	Total Emissions (tCO <sub>2</sub> -e)
Product	33,994.8
Organisational	196.2
Total	34,190.0

## 4. Carbon offsets

### 4A. Offsets summary

Table 5. Offsets Summary						
Projects supported by offset purchase	Eligible offset units	Registry	Cancellation date	Serial numbers (including hyperlink to registry transaction record)	Vintage	Quantity
Liucheng Biomass Power Generation Project	VCUs	VCS Registry	27/06/2019	<a href="#">6658-330256570-330265117-VCU-034-APX-CN-1-1824-01012014-31122014-0</a>	2014	8,548
<b>Total offsets cancelled</b>						<b>8,548</b>

Note: the total offsets retired are for the first quarter of the 2019 calendar year. The amount has been derived by dividing the annual total for 2018 by four.

### 4B. Offsets purchasing and retirement strategy

Offsets will be purchased and retired quarterly based on the total for the previous year divided by four. At the end of the annual reporting period a reconciliation will be done. Additional offsets will then be purchased and retired if there is a shortfall between quarterly retirements and total annual emissions for the reporting period. Any excess offsets that have been retired will be banked and used future quarters.

### 4C. Offset projects (Co-benefits)

#### Additional Offsets Purchased

In addition to the above, Biopak has purchased 100 biodiverse carbon offsets from Greenfleet.

Greenfleet is a leading environmental not-for-profit organisation which plants native trees to restore forests and offset carbon emissions on behalf of its supporters. Since 1997, Greenfleet has planted more than 9.2 million native trees across 500 biodiverse forests in Australia and New Zealand.

As they grow, Greenfleet's native forests capture carbon pollution from the atmosphere, reduce salinity and soil erosion, restore vital habitat for native wildlife, conserve biodiversity and generate resilience to climate change in the landscape.

Native wildlife supported by Greenfleet's forests includes Koalas, Brush-tailed Phascogales and the Glossy Black Cockatoo.

The Greenfleet carbon offsets purchased by Biopak will contribute to future local native reforestation projects such as: Witzend, NSW - this 2019 planting site is home to a population of Koalas and will be protected by the private landowner and Greenfleet for 135 years.

Greenfleet carbon offset donations are allocated to native reforestation projects via a whole-of-portfolio approach and projects vary year to year.

More information about Greenfleet and our projects can be found at:

[www.greenfleet.org.au](http://www.greenfleet.org.au)

[http://www.greenfleet.com.au/Portals/0/AnnualReview/Greenfleet\\_2018\\_Impact-Report.pdf](http://www.greenfleet.com.au/Portals/0/AnnualReview/Greenfleet_2018_Impact-Report.pdf)

## **5. Additional sustainability actions**

BioPak has been a certified B-Corp since 2017. B Corporations are businesses that are legally required to consider the impact of their decisions on their workers, customers, community, and environment. Certified B Corporations have met the highest standards of verified performance and transparency.

We donate 1% of our profits to environmental restoration initiatives with Rainforest Rescue (Australia) and Forest & Bird (New Zealand).

We also donate our time, energy and products to community programs in conjunction with our charity partners.

We also produce a BioCup Art Series to promote artists whose work raises awareness and reconnects consumers with the environment.