

Australian Government
Carbon Neutral Program
Public Disclosure Summary




BioPak Pty Ltd

1 January 2019 – 31 December 2019

Declaration

To the best of my knowledge, the information provided in this Public Disclosure Statement is true and correct and meets the requirements of the Climate Active Carbon Neutral Standard.

Signature 	Date 16/4/2020
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	



Australian Government
Department of Industry, Science,
Energy and Resources

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 2019 to 31 December 2019.

The operational boundary has been defined based on an operational control test, in accordance with the principles of the National Greenhouse and Energy Reporting Act 2007.

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

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 (CO₂), methane (CH₄), nitrous oxide (N₂O) and synthetic gases - hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃). These have been expressed as carbon dioxide equivalents (CO₂-e) using relative global warming potentials (GWPs).

BioPak has been certified carbon neutral for its Australian business operations (organisation) and its entire product range sold within Australia (carbon neutral products), New Zealand, Singapore and the UK.

The organisational carbon inventory is based on a financial and operational consolidation approach and includes its office in Sydney, NSW. The product footprint includes all products sold to customers in Australia, New Zealand, Singapore and the UK.

Considering the large variety of products sold to customers, it was not practical or cost effective to carry out separate Life Cycle Assessments (LCAs) for each type of product. 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). 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. Sea freight importing products into Australia, Singapore, New Zealand and the UK and internal road freight in these countries were calculated on a per km basis.

1B. Emission sources within certification boundary

Quantified sources

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

- Electricity (grid, carbon neutral 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

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-quantified sources

The following emissions sources have not been quantified in the product carbon inventory:

- Warehousing and distribution
Storage of products in warehouses in Australia as well as distribution to retailers has not been quantified. 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.
- 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.

Excluded sources

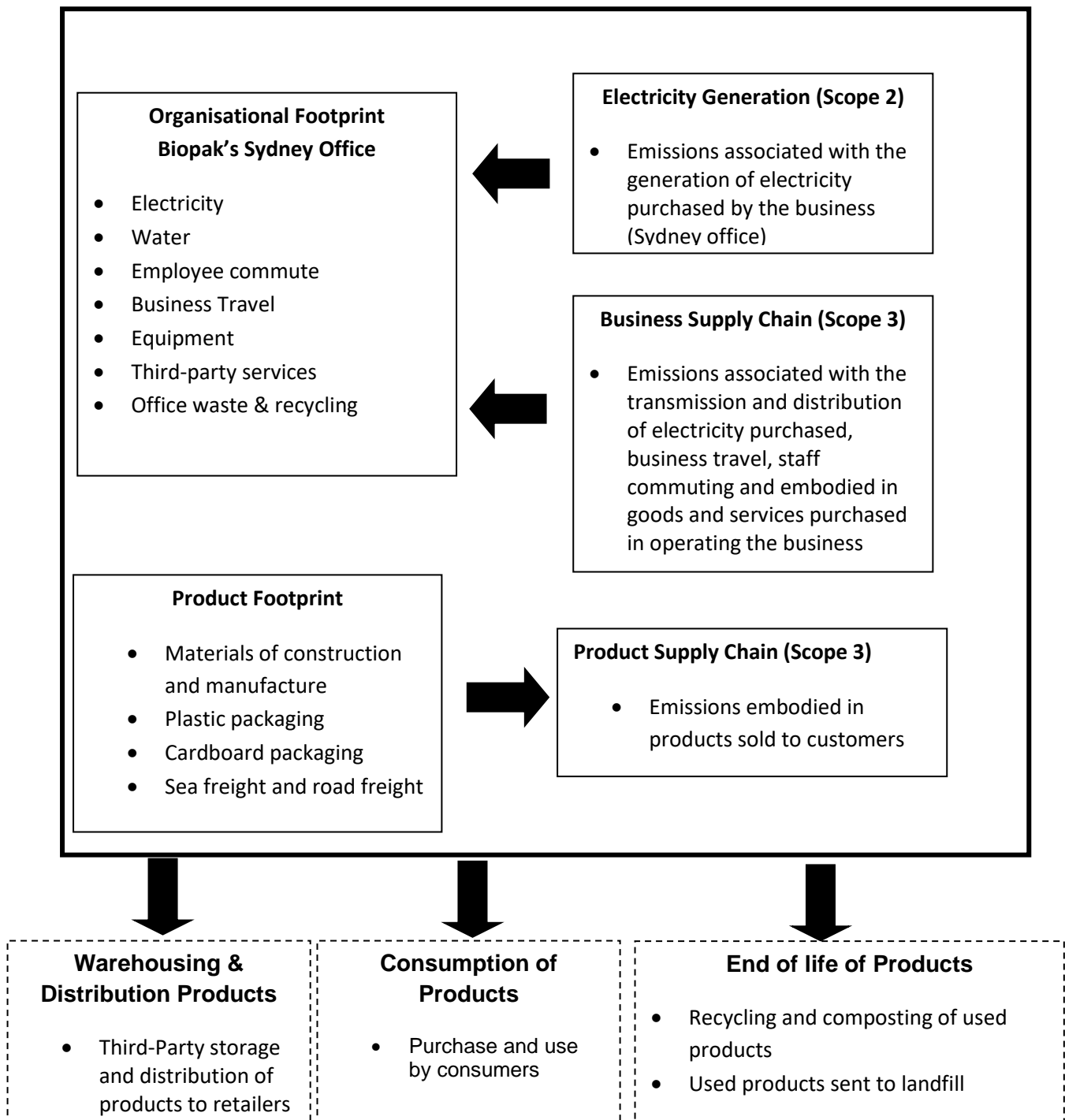
The following emission sources have been excluded in line with the provisions of the National Carbon Offset Standard for organisations and section 6.3 of the GHG Protocol. The impact of excluding these sources is not expected to materially affect the overall total emissions.

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

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 changes of time

Table 1. Organisational Emissions Since Base Year*		
	Base Year: 2018 (tCO ₂ -e)	Current year: 2019 (tCO ₂ -e)
Scope 1	0	0
Scope 2	13.2	11.18
Scope 3	183.0	236.8
Total	196.2	248.0

Table 2. Product Emissions Since Base Year*		
	Base Year: 2018 (tCO ₂ -e)	Current year: 2019 (tCO ₂ -e)
Scope 3	33,994.8	51,823.4
Total	33,994.8	51,823.4

*Organisational and product emissions have increased in 2019 in line with increases in sales of our products. This has been driven by growing consumer demand for sustainable products and services.

2B. Emissions reduction strategy

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

We are continually exploring opportunities to reduce the environmental footprint of our organisation, in terms of energy savings, recycling initiatives, travel policies and office management.

We also strive to reduce the emissions associated with our supply chain, in various areas, such as manufacturing processes, freight, and products end of life.

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 purchasing Carbon Neutral electricity for our Sydney office
- Reduced emissions associated with flying and driving cars by replacing face to face meetings with video calls
- Scaled up our 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 3 shows a summary of emissions related to Biopak's business operations.

Table 3. Total Emissions Inventory (Organisation)		
Scope	Emission source	t CO₂-e
2	Purchased electricity – NSW	11.18
2 & 3	Carbon Neutral Electricity - Powershop	0
3	Purchased electricity – NSW	1.24
3	Electricity – Base Building	28.5
3	Water - NSW	0.13
3	Carbon Neutral Office paper	0.0
3	Employee Commuting	13.3
3	Business Flights	61.1
3	Cleaning Services	1.9
3	Advertising Services	109.3
3	Telecommunications	14.0
3	IT Equipment	1.5
3	Taxis	1.1
3	Domestic Hotel Accommodation	0.9
3	International Hotel Accommodation	0.7
3	Office Waste – Landfill	2.54
3	Waste - Recycling (Office paper)	0.6
Total Emissions		248.0

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 4 below. Table 5 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 4. 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
PLA Cold Cups, Bowls & Lids	Polyacetic acid	Plastic products
PLA Cutlery	Polyacetic acid	Plastic products

Table 5. Product families and life cycle emissions

Product	Materials & production	Plastic Packaging	Cardboard Packaging	Road & Sea Freight	Total per Category	Per functional unit
	t CO ₂ -e	t CO ₂ -e	t CO ₂ -e	t CO ₂ -e	t CO ₂ -e	gCO ₂ -e/unit
BioBag	432.1	3.4	4.4	22.7	462.6	63.5
Napkins	1,457.6	179.8	228.4	162.5	2,028.3	5.3
Paper straws	936.8	53.2	67.6	28.8	1,086.5	9.6
Wood cutlery	1,804.1	73.2	93.0	87.7	2,058.0	13.3
Takeaway Containers	4,622.4	44.2	56.1	347.7	5,070.4	54.1
Plates, Bowls and Trays	4,223.9	42.9	54.5	354.7	4,675.9	51.4
PET Lids	1,607.0	32.4	41.2	82.0	1,762.7	25.6
Paperboard Boxes &	1,249.6	10.0	12.7	308.1	1,580.3	74.8
Produce Trays	2,783.6	23.8	30.3	315.0	3,152.7	62.3
Hot Cups	3,719.2	31.8	40.4	933.0	4,724.3	70.1
Polystyrene Lids	14,659.3	198.3	252.0	131.2	15,240.9	36.2
CPLA Lids	2,120.5	80.2	101.9	56.2	2,358.8	13.9
Reusable Coffee Cups	88.1	0.0	0.1	0.7	88.9	1,060.2
Cold Cups, Bowls & Lids	5,040.5	71.1	90.4	215.4	5,417.4	35.9
PLA Cutlery	1,700.7	36.0	45.8	85.2	1,867.7	24.5
Total Emissions	46,445.4	880.4	1,118.7	3,130.8	51,575.4	27.6

Table 6. Total Emissions for the Reporting Period	
Certification Category	Total Emissions (tCO ₂ -e)
Product	51,575.4
Organisational	248.0
Total	51,823.4

4. Carbon offsets

4A. Offsets summary

Table 6. 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	6658-330256570-330265117-VCU-034-APX-CN-1-1824-01012014-31122014-0	2014	8,548
Liucheng Biomass Power Generation Project	VCUs	VCS Registry	21/08/2019	6658-330266570-330275117-VCU-034-APX-CN-1-1824-01012014-31122014-0	2014	8,548
Liucheng Biomass Power Generation Project	VCUs	VCS Registry	5/11/2019	6657-330253160-330256569-VCU-034-APX-CN-1-1824-01012013-31122013-0	2014	3,410
Liucheng Biomass Power Generation Project	VCUs	VCS Registry	5/11/2019	6658-330276570-330287224-VCU-034-APX-CN-1-1824-01012014-31122014-0	2014	10,655
Liucheng Biomass Power Generation Project	VCUs	VCS Registry	5/11/2019	6658-330265183-330266569-VCU-034-APX-CN-1-1824-01012014-31122014-0	2014	1,387
Liucheng Biomass Power Generation Project	VCUs	VCS Registry	5/11/2019	6658-330275118-330276569-VCU-034-APX-CN-1-1824-01012014-31122014-0	2014	1,452
Liucheng Biomass Power Generation Project	VCUs	VCS Registry	15/04/2020	6658-330316923-330334746-VCS-VCU-997-VER-CN-1-1 https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&h=29597	2014	17,824
Total offsets cancelled						8,548

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
- 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 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), and produce a BioCup Art Series to promote artists whose work raises awareness and reconnects consumers with the environment.

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