

Sydney Opera House Trust  
July 2018 - June 2019



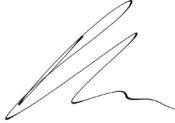
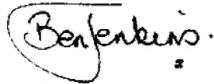
# Australian Government Carbon Neutral Program

## Public Disclosure Summary



## 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.

<b>Signature</b> 	<b>Date</b> 28/11/19
<b>Name of Signatory</b> Ian Cashen	
<b>Position of Signatory</b> Director, Building Safety and Security	
<b>Carbon Neutral certification category</b>	<b>Organisation</b>
<b>Date of most recent external verification/audit</b>	28/08/19
<b>Auditor</b>	Benjamin Jenkins Director - GPP Audit Pty Limited 
<b>Auditor assurance statement link</b>	<b>N/A</b>

## **1. Environmental Sustainability at Sydney Opera House**

The Sydney Opera House is a masterpiece that belongs to all Australians. It is the country's number one tourist destination and its busiest performing arts centre, welcoming more than 10.9 million visitors a year and hosting 2,000 performances attended by 1.45 million people. On its 40<sup>th</sup> Anniversary in 2013, the Opera House embarked upon a Decade of Renewal to prepare it for future generations of artists, audiences and visitors.

As the symbol of modern Australia, the Opera House is committed to leading by example and embedding environmental sustainability in everything it does. It is one of only a handful of UNESCO World Heritage-listed buildings internationally to achieve a 5 Star Green Star - Performance rating, setting a new standard for heritage buildings and encouraging the broad adoption of cleaner energy solutions.

## **2. Carbon Neutral**

This inventory has been prepared for the financial year from 1 July 2018 to 30 June 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. This includes all operations which are controlled by the Sydney Opera House Trust (SOHT).

The boundary excludes the transport of audience members, tenants and contractors to and from the Opera House precinct. Natural gas consumption by tenants within the precinct has also been excluded as this is separately metered.

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

- National Carbon Offset Standard (NCOS) for organisations
- The GHG Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
- 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 (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and synthetic gases - hydrofluorocarbons (HFCs). No perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>) or nitrogen trifluoride (NF<sub>3</sub>) were detected within the operational boundary. All emission sources have been expressed as carbon dioxide equivalents (CO<sub>2</sub>-e) using relative global warming potentials (GWPs).

## **Quantified sources**

The sources of carbon emissions within the operational boundary are:

- Transport fuels
- Refrigerants
- Electricity
- Electricity (base building)
- Employee commuting
- Business flights
- Telecommunications
- Water
- IT equipment
- Office paper
- Publications paper
- Stationery
- Cleaning services
- Food and catering
- Postage
- Hotel accommodation
- Advertising
- Taxis
- Hire cars
- Waste – landfill and recycling.

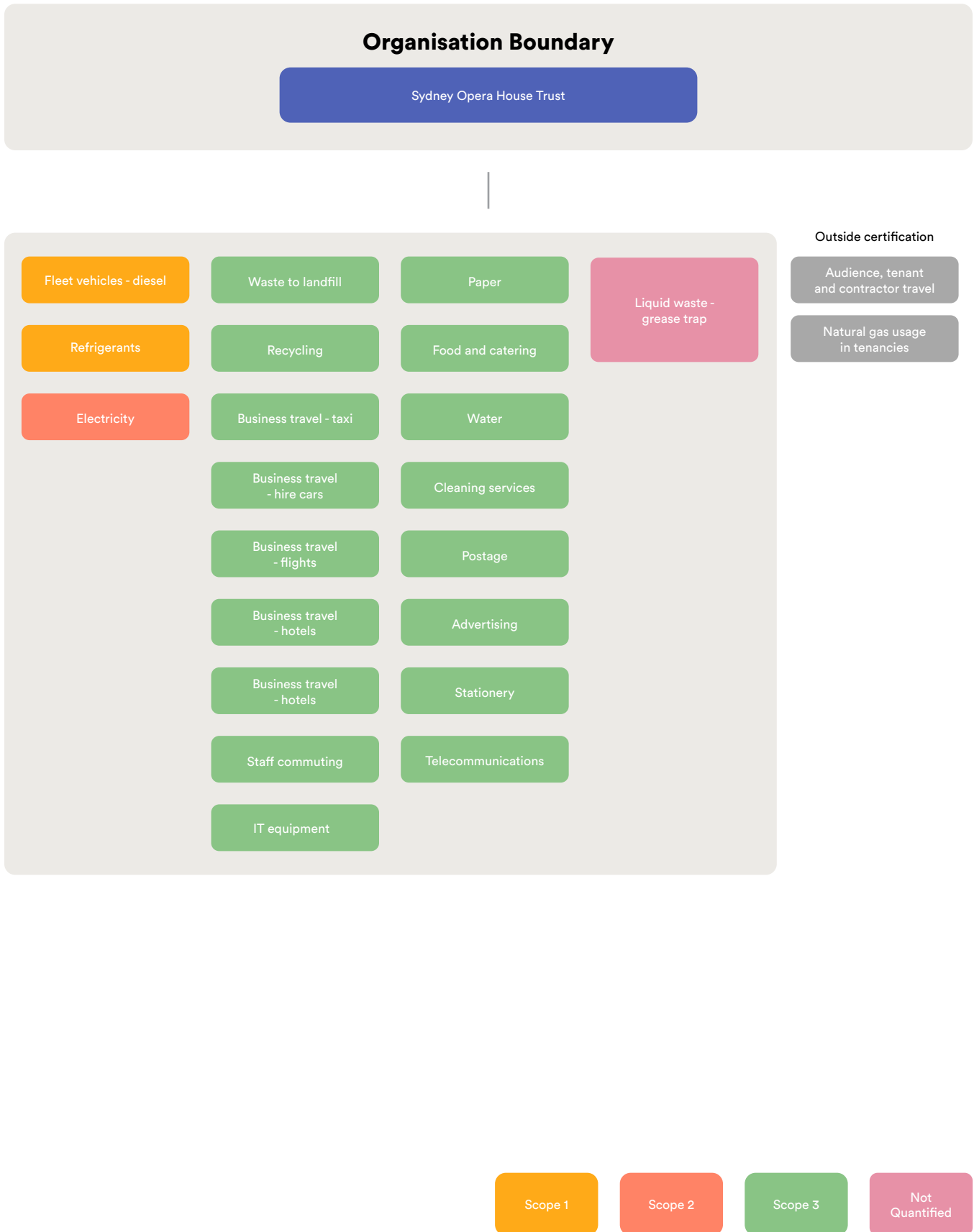
## **Non-quantified sources**

- Liquid waste disposal from grease traps

## **Outside of scope**

- Audience, tenant and contractor travel to and from the Opera House precinct
- Tenant natural gas consumption

## 2A. Diagram of the certification boundary



### **3. Emissions reduction measures**

<b>Table 1. Emissions since base year</b>		
	<b>Base Year 2017/2018</b>	<b>Year 1: 2018/2019w</b>
Scope 1	272.7	270.9
Scope 2	13,144.2	13,063.8
Scope 3	4,180.7	4,136.5
<b>Total</b>	<b>17,597.6</b>	<b>17,471.2</b>

#### **Emissions reduction strategy**

The Opera House's [Environmental Action Plan \(2020-2023\)](#) sets an objective to maintain Climate Active certification and develop a pathway to be climate positive by the Opera House's 50th anniversary in 2023. In 2017, a strategy was developed to provide a pathway for the organisation to achieve Carbon Neutrality in accordance with the NCOS standard.

The strategy demonstrated that electricity (Scope 1 & 2) is responsible for over 80% of the Opera House's emissions. Scope 2 - purchased electricity - was identified as the largest source, and therefore provided the greatest opportunity for decarbonisation, making it the primary focus of the emissions reduction strategy.

This was supported by implementation of a best practice waste management program in 2016, to increase recycling rates and diversion of total waste to landfill towards the Opera House's goal of recycling 85% of its operational waste by 2023.

### **3A. Emissions reduction actions**

The major contributor to emissions reduction has been investment into reduction of electricity use. The Opera House has reduced its CO<sub>2</sub> emissions related to energy use by 16% through initiatives including:

- Implementation of the Honeywell Building Management Control System (BMCS) to more effectively monitor energy use, water, climate control and create efficiencies in building operation (2017).
- Replacement of aging chiller units connected to the Opera House's original seawater cooling system to optimise the heating and cooling of the building (2017).
- Implementation of a new waste management program which introduced new recycling streams, allowing the Opera House to increase its operational waste recycling rates from 25% to almost 60% (2016).
- Award-winning Concert Hall lighting upgrade which replaced incandescent bulbs with custom LED lights to achieve a 75% reduction in the venue's electricity consumption (2014).
- Replacement of 1,900 back-of-house fluorescent lights to LED (2011).

## 4. Emissions summary

Table 2. Emissions Summary		
Scope	Emission source	t CO <sub>2</sub> -e
1	Transport fuels - Post 2004 Diesel oil	3.1
1	Refrigerant	267.9
2	Electricity	13,073.1
3	Electricity	1,571.9
3	Employee commuting	522.3
3	Business flights	249.5
3	Publication paper – recycled	42.3
3	Water	37.2
3	Domestic hotel accommodation	13.6
3	International hotel accommodation	4.8
3	Telecommunications	44.4
3	IT equipment	116.5
3	Stationery	15.6
3	Cleaning services	488.6
3	Food and catering	32.8
3	Postage	109.6
3	Advertising	54.1
3	Taxis	25
3	Hire cars	12.4
3	Waste - landfill	596.9
3	Waste - recycling	147.3
<b>Total Gross Emissions</b>		<b>17,481.5</b>
GreenPower or retired LGCs		-10.3
<b>Total Net Emissions</b>		<b>17,471.2</b>



## 5. Carbon offsets

### 5A. Offsets summary

Table 3. Offsets Summary						
Projects supported by offset purchase	Eligible offset units	Registry	Cancellation date	Serial numbers (with hyperlink to registry transaction record)	Vintage	Quantity
Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited	VCUs	APX	7 Oct 2019	<a href="#">7142-374187312-374190576-VCU-034-APX-IN-1-1465-01042018-31122018-0</a>	2018	3,265
Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited	VCUs	APX	7 Oct 2019	<a href="#">7058-367666799-367668042-VCU-034-APX-IN-1-1465-01042018-31122018-0</a>	2018	1,244
Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited	VCUs	APX	7 Oct 2019	<a href="#">7058-367668043-367676033-VCU-034-APX-IN-1-1465-01042018-31122018-0</a>	2018	7,991
Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited	VCUs	APX	23 Oct 2019	<a href="#">7142-374191105-374192620-VCU-034-APX-N-1-1465-01042018-31122018-0</a>	2018	1,516
Swiss Carbon Assets Account CP2 Project 3532	CER	Swiss Carbon Asset	9 Oct 2019	16496772 - 16499271	N/A	2,500
ERF Project EOP100772	ACCU	ERF	18 Oct 2019	3,782,815,725 - 3,782,816,680	2018/ 2019	956
Total offsets cancelled						17,472
Total offsets banked for use future years: (if any)						0

### 5B. Offsets purchasing and retirement strategy

Offsets are purchased and retired in arrears at the end of the reporting period. Any remaining offsets will be used in the following year's in order to maintain certification.

## **5C. Offset projects (Co-benefits)**

### **Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited, India**

In line with the Company's vision of eradicating hunger, poverty and malnutrition, promoting preventive health care and sanitation and making available safe drinking water, the project has provided health care services to around 600 people across 4 villages, apart from conducting ANC/PNC (Ante-natal/post-natal care) programme for pregnant women, benefitting 60 women.

The project also led to the construction of sanitary facilities/toilet in a government school benefitting around 200 students. A bore well along with submersible pump and 1 water storage tank is established in a school with 500 meter water pipeline and 2 water tanks in girl's hostel. A water filter has also been donated to a police station for drinking water benefitting around 1050 people as well.

### **Eco Australia**

The Opera House purchased 2,500 tonnes of offsets from SouthPole through dual credit product - EcoAustralia. EcoAustralia combines Victorian biodiversity conservation with international emissions reduction. For example every 1 tCO<sub>2</sub>-e offset with EcoAustralia, an additional 1.5 m<sup>2</sup> of biodiversity is permanently protected in Victoria. For example, 1000 tCO<sub>2</sub>-e offset with EcoAustralia protects an additional 1,500 m<sup>2</sup> of biodiversity in Australia.

### **Greenfleet**

The Opera House purchased an additional 933 biodiversity offsets.

Greenfleet revegetation projects are located in areas that are in need of native, biodiverse forests. The native forests take carbon from the atmosphere to restore and protect our climate, but they also do much more. Greenfleet plants a variety of native trees in permanent forests that help to reduce salinity and soil erosion, provide essential habitat for native wildlife, and provide much needed resilience in our precious landscape.

### **Aboriginal Carbon Fund Limited**

The ACCU's were generated from Merepah Station, Cape York, Queensland using the savannah burning method and there are associated environmental, social and cultural core benefits.