

COMPANY NAME: Zoos Victoria

REPORTING PERIOD: 2014-15

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.

	20/10/2015
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Type of carbon neutral certification: Organisation

Verification

Date of most recent external verification/audit: 24/11/2014

Auditor: Matthew John Drum - Ndevr Environmental Pty Ltd

Auditor assurance statement link: <http://www.zoo.org.au/about-us/vision-and-mission/environmental-sustainability/carbon-management>

1. Carbon neutral information

Introduction

Zoos Victoria is a not-for-profit conservation organisation aimed at saving endangered wildlife from extinction. Zoos Victoria operates Healesville Sanctuary, Werribee Open Range Zoo and Melbourne Zoo. Combined these zoos see more than 2 million visitors each year and Zoos Victoria is dedicated to connecting these visitors to wildlife and providing them with actions they can take to help save species in the wild. Zoos Victoria sees first-hand the impact of climate change and other human-induced threats to wildlife and this has spurred the organisation to take great lengths to decrease its environmental footprint.

For the purposes of certification, Zoos Victoria defines its organisational boundary in accordance with NCOS. More specifically, Zoos Victoria adopts an operational control consolidation approach to defining its boundary definition. All corporate group members and facilities (Melbourne Zoo, Healesville Sanctuary and Werribee Open Range Zoo) are included in the boundary, including:

- i. the controlling corporation – Zoos Victoria
- ii. subsidiaries – that operate within the Zoos Victoria boundary and the zoo's resources

The Zoos Victoria emissions boundary definition includes all scope 1 & 2 emissions and scope 3 emissions from business air travel, staff travel to and from work, waste to landfill, energy supply, paper use, reticulated water and the supply of animal foods. Scope 3 emissions are included on the basis of materiality and measurability. The diagram below identifies key Zoos Victoria activities (applicable and measured at all sites), together with the breakdown of emission sources and the organizational boundary for emissions.

This inventory has been prepared based on the following standards:

- National Carbon offset Standard
- National Greenhouse & Energy Reporting Scheme
- ISO 14064.1:2006
- GHG Protocol: A Corporate Accounting and Reporting Standard
- GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard
- GHG Protocol: Technical Guidance for Calculating Scope 3 Emissions (Version 1.0)

Greenhouse gasses calculated in this inventory includes CO₂, CH₄, N₂O and HFCs. All greenhouse gas calculations are converted to tonnes CO₂-e using various emissions factors.

Emission sources within certification boundary

Quantified sources

The following emission sources have been included in Zoos Victoria's carbon inventory.

Scope	Emission source
1 and 3	Fuel for vehicles
1	Refrigerant losses from our air-conditioners, cooler and chillers/freezers
1 and 3	Natural gas consumption for buildings
1 and 3	LPG consumption for both building and transport
1	Composting on site
1 and 3	Acetylene consumption for building maintenance
1	Greases and lubricants for transport
2 and 3	Purchased electricity for buildings
3	Municipal solid waste
3	Staff air travel
3	Purchased office paper
3	Reticulated water supply (potable water)
3	Purchased food for animals
3	Employee travel to and from work

Non-quantified sources

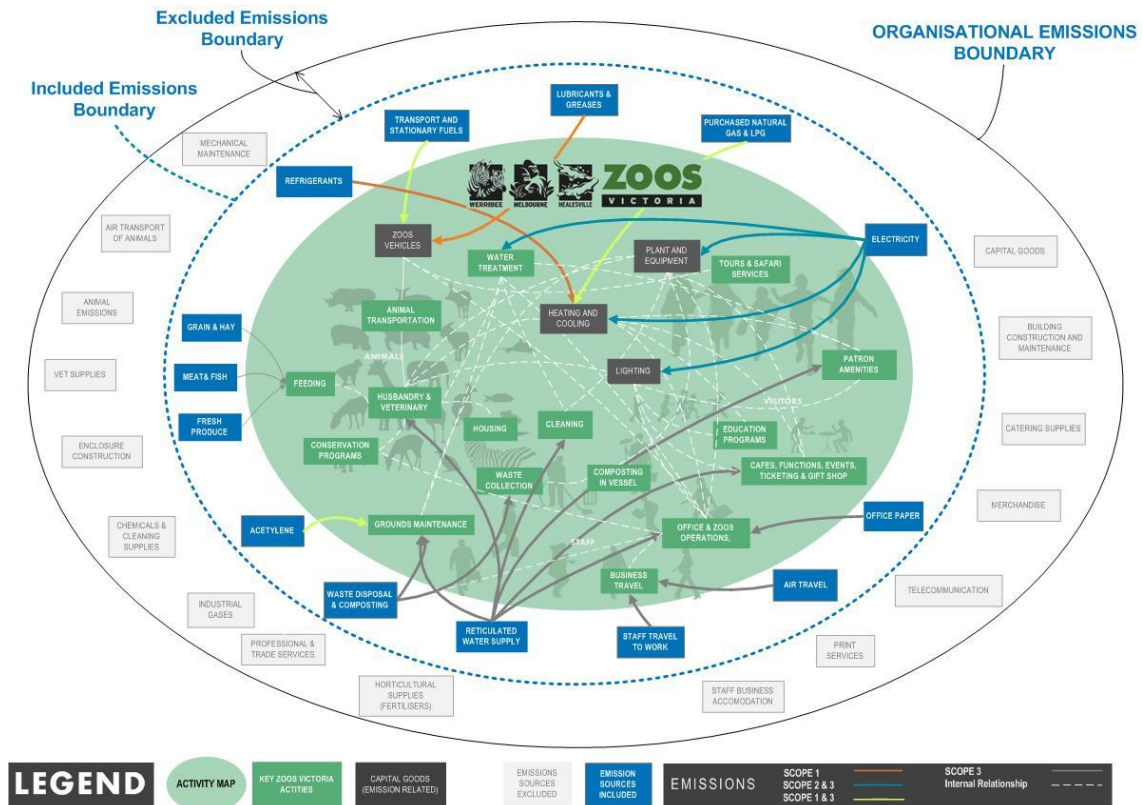
In line with the NCOS and Section 6.3 of the GHG protocol – Corporate Value Chain Accounting and Reporting Standard (“*Companies should follow the principles of relevance, completeness, accuracy, consistency, and transparency when deciding whether to exclude any activities from the scope 3 inventory*”), the following sources have not been quantified and not expected to materially affect the overall total emissions:

Emission source	Scope	Justification for exclusion & overall implications for footprint
Animal Travel	3	<p>Animal Travel (3rd party – eg flights, couriers etc.) has been excluded from Zoos Victoria’s emissions profile because it has not met the Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions, the size of the emission source and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Consistent with upstream transport and distribution requirement but immaterial and dependent on uncertain estimation of transport emission factors. There is also a very high uncertainty and lack of data in quantifying (both numbers and transport impacts) actual animal movement as transportation in animals can arise from a number of scenarios such as animal confiscations (holding and diverting), animal releases in the conservation field and rescues, animal exchanges with other institutions, quarantine facilities (holding and diverting), as well as</p>

		planned animal movement and imports.
Business accommodation	3	<p>Business accommodation has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions, the size of the emission source and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Found to be immaterial based on proxy input-output emission factors. Excluded on the basis of immateriality and difficulty in assessing actual accommodation data used and to accurately calculate emissions.</p>
Telecommunications	3	<p>Telecommunications has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions, the size of the emission source and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Found to be immaterial based on proxy input-output emission factors. Excluded on the basis of immateriality and high uncertainty with input-output calculation method.</p>
Chemicals and Cleaning Supplies	3	<p>Chemicals and Cleaning Supplies has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions, the size of the emission source and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Found to be immaterial based on proxy input-output emission factors. Excluded on the basis of immateriality and difficulty to accurately collect data with current accounting system (i.e. chemicals breakdown – type and actual use)</p>
Vet Supplies	3	<p>Vet Supplies has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Insufficient data available to quantify. This category includes pharmaceuticals and medical supplies.</p>
Animal Emissions	1	<p>Animal emission (from ruminants) is excluded based on high uncertainties in measurability as there are no emissions factors for our wide and varied range of wild animals. Using proxy emission factors, animal emissions are found to be immaterial. Animals in our care are non-productive animals and are kept in a wild state without domestication.</p>
Mechanical Maintenance	3	<p>Mechanical Maintenance has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Apart from greases and lubricants, mechanical maintenance data is difficult to obtain and contains a very wide range of small equipment to small amount of cleaners and paints. All fleet vehicles are serviced externally and only minor maintenance is done on site.</p>
Industrial Gasses	3	<p>Industrial Gasses has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions.</p> <p>Apart from Acetylene, the other gasses we use (eg oxygen) are not GHG emitting gasses.</p>

Horticulture Supplies	3	<p>Horticulture Supplies has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Horticulture supplies include small tools to small amounts of chemicals. Zoos Victoria practices Sustainable Landscaping/Management which minimises the use of chemicals. Quantification of GHG is not possible due to insufficient data from third party suppliers.</p>
Professional & Trade Services	3	<p>Professional & Trade Services has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Quantification of GHG is not possible due to insufficient data from third party suppliers.</p>
Print Services	3	<p>Print Services has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Quantification of GHG is not possible due to insufficient data from third party suppliers. However Zoos Victoria is looking towards new contract printing services that provides carbon neutral print services in the 2016.</p>
Building Construction	3	<p>Building Construction has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>While we use, upgrade and construct buildings and enclosures, construction is not part of our normal business and done through third party contractors. Also our buildings especially enclosures are unique in many ways tailored to the animal and visitor experience. As such, quantifying GHG emissions from the construction would be highly complex and difficult to accomplish.</p>
Catering Services	3	<p>Catering Services has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>Catering services are done through third party suppliers. Quantification of GHG is not possible due to insufficient data from third party supplier.</p>
Merchandise	3	<p>Merchandise has been excluded from Zoos Victoria's emissions profile because it has not met the above Scope 3 criteria: Relevance; where there is lack of influence on the scope 3 emission reductions and Accuracy; where there is high uncertainty and lack of quantifying data.</p> <p>The zoos' retail shops sell a very wide range of product lines from soft toys to craft items. Quantification of GHG is not possible due to insufficient data from third party suppliers.</p>

Diagram of certification boundary



2. Emissions reduction measures

Part A. Emissions over time

Table 1. Emissions since base year				
	2011-12	2012-13	2013-14	2014-15
Scope 1	1,117.94	1,125.70	1,096.147	1,056.15
Scope 2	8,191.14	8,359.98	8,545.51	8,773.88
Scope 3	5,604.77	5,245.07	5,161.41	4,730.28
Total (t CO2-e)	14,913.84	14,730.76	14,803.09	14,560.32

Zoos Victoria has managed to curb and reduce its carbon emissions despite growth in our visitor numbers, exhibits and programs we run. This is due to resource efficiency and renewable energy projects reducing our consumption of resources, reducing our waste to landfill and production of renewable energy on site. In 2014-15 we produced 151,329kWh of

electricity from solar PV projects which reduced our greenhouse gas emissions by 202.78 t CO₂-e.

Part B. Emissions reduction strategy

Zoos Victoria uses the ISO 14001; 2004 Environmental Management System (EMS) to manage its environmental performance and minimise environmental impacts. Zoos Victoria has an [Environmental Policy and Strategy](#) that assist in guiding the organisation towards its environmental goals which includes:

- World's most resource efficient zoo by 2019.
- Water consumption reduced by 20% by 2019.
- Paper consumption reduced by 35% by 2019.
- Best paper/FTE in an organisation in Australia.
- Investment in resource efficiency and renewable energy projects through our [Zoos Victoria Environmental Sustainability Prospectus](#).
- Developed the Guiding Principles for integrating Environmentally Sustainable Development (ESD) to minimise environmental impacts associated with new and re-developments

Part C. Emissions reduction actions

Below are emission reduction measures completed and planned by Zoos Victoria from 2011 onwards.
Note: Zoos Victoria formally began emissions reduction measures from 2008 after the implementation of its Environmental Sustainability Strategy and Policy.

Emissions reduction measures implemented by Zoos Victoria					
Year completed	Emission source	Reduction measure and calculation method	Scope	Status	Reduction t CO ₂ -e
2013	Electricity	Solar PV (12.5kW) installation at Healesville Sanctuary - direct meter reading	2	Ongoing	16.72
2014	Electricity	Solar PV (20.25kW) installation at Werribee Open Range Zoo - direct meter reading	2	Ongoing	32.06
2014	Electricity	Solar PV (102.25kW) installation at Melbourne Zoo - direct meter reading and estimation from one data logger.	2	Ongoing	103.65
2014	Diesel	Continue use of efficient bus fleet at Werribee Open Range Zoo	1 & 3	Ongoing	28.13
2015	Electricity	Solar PV (50.5kW) installation at Melbourne Zoo - direct meter reading and estimation from one data logger	2	Ongoing	16.27

2015	Waste to landfill	Operational efficiency of in-vessel composter at Melbourne Zoo	3	Ongoing	340.18
2015	Water	Water efficiency measures such as point source filtration, leak reduction etc.	3	Ongoing	68.38
Total emission reductions implemented in this reporting period					605.39

If the above projects were not implemented, Zoos Victoria's greenhouse gas emissions would have been 15,165.71 t CO₂-e.

Additional emissions reduction measures planned by Zoos Victoria					
	Electricity	20kW wind turbine at Werribee Open Range Zoo - estimated wind availability and turbine efficiency.	2	Planned in 2016	22.40
	Electricity	20kW Solar PV at Werribee Open Range Zoo	2	Planned in 2016	32.70
	Electricity	50kW Solar PV at Melbourne Zoo	3	Planned in 2016	81.76
	Electricity	50kW Solar PV at Werribee Open Range Zoo	4	Planned in 2016	81.76
Additional emission reductions to be implemented in 2016					218.62

3. Emissions summary

Table 2. Emissions Summary

Scope	Emission source	t CO ₂ -e ¹
1	Petrol for vehicles	36.74
1	Diesel for vehicles	171.13
1	LPG for vehicles	3.52
1	Refrigerant losses	81.07
1	Natural gas usage for buildings	718.62
1	LPG usage for buildings	1.77
1	Composting on site	43.13
1	Acetylene	0.02
1	Greases and lubricants for transport	0.16

¹ = Activity data x energy content factor (if applicable) x emission factor converted to tonnes CO₂-e

Scope	Emission source	t CO ₂ -e ¹
2	Total electricity for buildings	8,773.88
3	Total electricity for buildings (fuel extraction, production & transport and transmission & distribution losses)	1,115.32
3	Natural gas usage for buildings (extraction, production & transport)	54.60
3	LPG usage for buildings (extraction, production & transport)	0.15
3	Petrol for vehicles (extraction, production & transport)	2.91
3	Diesel for vehicles (extraction, production & transport)	12.99
3	LPG for vehicles (extraction, production & transport)	0.29
3	Municipal solid waste	602.36
3	Air travel	121.97
3	Purchased office paper	8.55
3	Reticulated water supply	420.28
3	Purchased animal food	1,655.30
3	Employee travel to and from work	735.54
3	Acetylene	0.00
	Net carbon footprint in tonnes CO ₂ -e	14560.32

4. Carbon offsets

Part A. Offsets summary

Table 3. Offsets Summary			
Offset type and registry	Year retired	Quantity	Serial numbers
Balance (surplus) offset from 2013-14 VCU Markit Registry	2014	296.15	2646-115117045-115123004-VCU-016-MER-AU-14-641-01072011-15042012-0
VCU Markit Registry	2015	4,380	1368-59586546-59590925-VCU-001-MER-KE-14-612-01012010-31122010-1
VCU APX Registry	2015	4,380	4129-175588745-175592684-VCU-006-MER-PE-14-844-01012009-31122012-0 & 4128-175587745-175588184-VCU-006-MER-PE-14-844-01012009-31122012-0
VCU Markit Registry	2015	5,840	2646-115145863-115151702-VCU-016-MER-AU-14-641-01072011-15042012-0
Total offsets retired		14,896.15	
Net emissions		14,560.32	
Total offsets held in surplus for future years:		335.83	

Part B. Offsets purchasing and retirement strategy

Our offset purchasing and retiring is done in arrears at the end of the reporting period. This is in line with our annual reporting on environmental indicators. Any leftover or excess retired offsets will be used in the following year's offset requirements to maintain certification.

Part C. Offset projects (Co-benefits)

As a leading zoo-based conservation organisation, we will purchase NCOS acceptable offsets that have co-benefits that promote habitat protection, biodiversity and with social benefits.

Project type	Name of Project and co-benefits	% of total offsets
VCU – Markit Registry	<p>Madre de Dios REDD project, Peru</p> <ul style="list-style-type: none"> • Direct employment of more than 400 people • Training and/or capacity building • Targeted benefits to vulnerable and/or marginalize groups • In-kind livelihood benefits • Protection of more than a dozen endangered species • Watershed protection • Climate change adaptation <p>This project has also achieved the Gold Level - Climate, Community and Biodiversity Standard (CCB).</p>	30%
VCU – Markit Registry	<p>The Kasigau Corridor REDD Project - Phase II The Community Ranches</p> <p>This project builds on Wildlife Works' first REDD project (Phase I, Rukinga Ranch) which has been protecting forests, flora and fauna since 2006. The aim of this new, larger project is to bring the benefits of direct carbon financing to surrounding communities, while simultaneously addressing alternative livelihoods and protecting vital flora and fauna. Human-wildlife conflict has been a problem in the past, as local agents are directly reliant on the environment as a means for subsistence. This Phase II project directly addresses such sources of conflict in a holistic, sustainable approach, and on a large scale.</p>	30%
VCU – Markit Registry	<p>Redd Forests Grouped Project: Protection of Tasmanian Native Forest</p> <p>The projects help to protect and restore Tasmania's valuable native forests, which provide a habitat for a number of endangered species including the wedge-tailed eagle, spotted quoll and the iconic Tasmanian devil. They have also created new employment opportunities in the forestry sector, and ecotourism opportunities through the enhancement of the landscape. Furthermore, the projects have provided income diversification and stabilisation for local landowners, thereby enabling them to set the land aside for conservation purposes only, and manage it in a way that encourages natural regeneration of the forest.</p>	40%