

Australian Government

Carbon Neutral Program

Public Disclosure Summary



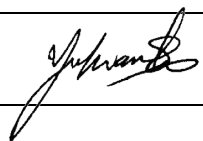
An Australian Government Initiative

COMPANY NAME: Zoos Victoria

REPORTING PERIOD: 2016-17

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:	31/10/2017
Kiam Yoong			
Senior Manager Environmental Sustainability			

Carbon neutral certification category	Organisation
Date of most recent external verification/audit	27/10/2016
Auditor	Ndevr Environmental
Auditor assurance statement link	http://www.zoo.org.au/about-us/vision-and-mission/environmental-sustainability/carbon-management



Australian Government

Department of the Environment and Energy

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1. Carbon neutral information

1A. 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 travel (air and taxi), 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.

1B. 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 and onsite generated electricity for buildings
3	Municipal solid waste
3	Staff air travel
3	Taxi 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

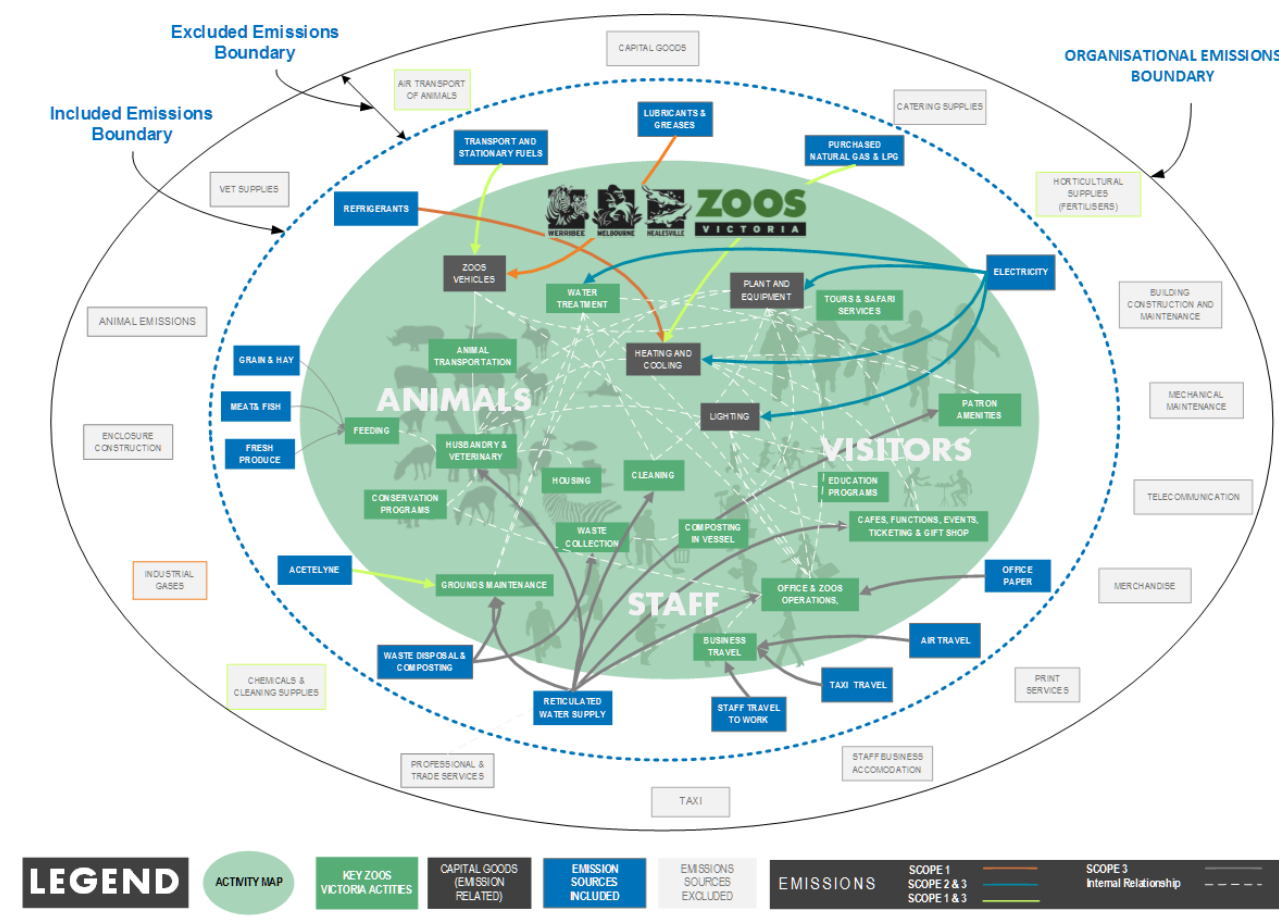
In line with the NCOS and Section 6.3 of the GHG protocol – Corporate Value Chain Accounting and Reporting Standard (*"Companies should follow the principles of relevance, completeness, accuracy, consistency, and transparency when deciding whether to exclude any activities from the scope 3 inventory"*), 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</p>

		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 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>
Rental vehicle	3	<p>Rental vehicle 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>Insufficient data available to quantify rental vehicle during staff domestic and international travel.</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	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.
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 continuously looking towards printing services that provides carbon neutral and environmentally friendly print services.</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. However energy, water and waste management (Werribee and Melbourne only) from these services are included in our carbon inventory.</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>
Capital Goods	3	<p>Capital goods 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 has a Green procurement process to ensure the best possible environmental outcomes for capital goods procurement.</p>

1C. Diagram of the certification boundary



2. Emissions reduction measures

2A. Emissions over time

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Scope 1	1,117.94	1,125.70	1,096.147	1,056.15	1,051.12	1,130.32
Scope 2	8,191.14	8,359.98	8,545.51	8,773.88	8,592.54	8,257.96
Scope 3	5,604.77	5,245.07	5,161.41	4,730.28	5,139.63	4,959.26
Total (t CO₂-e)	14,913.84	14,730.76	14,803.09	14,560.32	14,783.29	14,306.46

Zoos Victoria has managed to curb and reduce its carbon emissions despite continuous 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 2016-17 we produced 248,200 kWh renewable electricity from solar PV projects which reduced our greenhouse gas emissions by 295.4 t CO₂-e.

2B. 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.
- Zero Waste to Landfill by 2019.
- 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.
- Green procurement processes considering life cycle impacts from services and products we use.

2C. Emissions reduction actions

Ongoing emissions reduction actions					
Year completed	Emission source	Reduction measures	Scope	Status	Reduction in reporting year t CO2-e
2010	Electricity	Solar PV (4kW) installation at Melbourne Zoo - Main Entrance -1	2 & 3	Inverter down/offline and not communicating	-
2012	Organic Waste Composting	Implemented large scale in-vessel composter at Melbourne Zoo	3	Ongoing	1,190.7
2013	Electricity	Solar PV (12.5kW) installation at Healesville Sanctuary - Australian Wildlife Health care	2 & 3	Ongoing	15.9
2014	Electricity	Solar PV (20.25kW) installation at Werribee Open Range Zoo - Safari Bus Station 1	2 & 3	Ongoing	35.6
2014	Electricity	Solar PV (55kW) installation at Melbourne Zoo - Corporate Office	2 & 3	Ongoing	83.3
2014	Electricity	Solar PV (13kW) installation at Melbourne Zoo - Baboons	2 & 3	Ongoing	20.2
2014	Electricity	Solar PV (13kW) installation at Melbourne Zoo - Elephant Cow Barn	2 & 3	Inverter down/offline and not communicating	-
2015	Electricity	Solar PV (11kW) installation at Melbourne Zoo - Main Entrance - 2	2 & 3	Ongoing	23.6

2015	Electricity	Solar PV (24.5kW) installation at Melbourne Zoo - Bistro	2 & 3	Ongoing	26.5
2015	Electricity	Solar PV (15kW) installation with micro-inverters at Melbourne Zoo - Predators	2 & 3	Ongoing	23.5
2016	Electricity	Solar PV (20kW) installation at Werribee Open Range Zoo - Safari Bus Station 2	2 & 3	Ongoing	12.4
2017	Electricity	Solar PV (40kW) installation at Werribee Open Range Zoo - Administration	2 & 3	Ongoing	0.1
2017	Electricity	Solar PV (52kW) installation at Werribee Open Range Zoo - Bistro	2 & 3	Ongoing	30.1
2017	Electricity	Solar PV (24.96kW) installation at Werribee Open Range Zoo - Retail	2 & 3	Ongoing	12.5
2017	Electricity	Solar PV (22.88kW) installation at Werribee Open Range Zoo - Ranger Kids	2 & 3	Ongoing	11.7
Total emission reductions for this reporting period					1,486

If the above projects were not implemented, Zoos Victoria's greenhouse gas emissions would have been 15,791t CO₂-e.

Below are planned projects in 2017-18:

Expected Completion	Emission source	Reduction measures	Scope	Status	Expected Reduction per year t CO ₂ -e
2017	Electricity	Solar PV (89.7kW) installation at Healesville Sanctuary	2 & 3	Completed and grid connection in July 2017	155.8
2017	Electricity	Solar PV (35.695kW) installation at Melbourne Zoo - Wild Seas	2 & 3	Completed and grid connection in October 2017	62.0
2017	Electricity	Solar shade PV (38.94kW) installation at Melbourne Zoo - Wild Seas Life Support System	2 & 3	Completed and grid connection in October 2017	67.7
2018	Electricity	20kW Off-Grid Solar Forest trial at Werribee Open Range Zoo	2 & 3	Planned for March 2018 completion.	34.7
2018	Electricity	90kW solar PV - site to be determined.	2 & 3	Planning in November 2017 to be delivered in 2018.	34.7
Additional estimated emission reductions per year to be implemented by 2018					355

3. Emissions summary

Table 2. Emissions Summary		
Scope	Emission source	t CO ₂ -e
1	Petrol for vehicles	32.55
1	Diesel for vehicles	240.10
1	LPG for vehicles	1.80
1	Refrigerant losses	122.87
1	Natural gas usage for buildings	669.91
1	LPG usage for buildings	4.59
1	Composting on site	58.26
1	Acetylene	0.03
1	Greases and lubricants for transport	0.20
2	Total electricity for buildings	8,257.96
2 & 3	Onsite electricity generation (renewable energy)	-
3	Total electricity for buildings (fuel extraction, production & transport and transmission & distribution losses)	757.61
3	Natural gas usage for buildings (extraction, production & transport)	50.70
3	LPG usage for buildings (extraction, production & transport)	0.27
3	Petrol for vehicles (extraction, production & transport)	1.73
3	Diesel for vehicles (extraction, production & transport)	12.26
3	LPG for vehicles (extraction, production & transport)	0.11
3	Municipal solid waste	532.82
3	Air travel	97.50
3	Taxi	1.80
3	Purchased office paper	1.03
3	Reticulated water supply	387.49
3	Acetylene	0.00

3	Purchased animal food	2,160.04
3	Employee travel to and from work	914.81
Total Gross Emissions		14,306.46
GreenPower or retired LGCs		0
Total Net Emissions		14,306.46

4. Carbon offsets

4A. Offsets summary

Table 3. Offsets Summary			
Offset type and registry	Year retired	Quantity	Serial numbers and notes
VCU from Improved Forest Management - Markit registry	2017	5,800	3229-145750613-145756412-VCU-016-MER-AU-14-587-01032012-28022013-0
VCU from Reduced Emissions from Deforestation and Degradation - Markit registry	2017	4,400	3167-143904743-143909142-VCU-016-MER-ID-14-674-01012013-30062013-0
VCU from Reduced Emissions from Deforestation and Degradation - APX registry	2017	4,400	1368-59610416-59614815-VCU-001-MER-KE-14-612-01012010-31122010-1
Total Offsets retired in 2017		14,600	
Banked offset from previous year - VCU from Reduced Emissions from Deforestation and Degradation - APX registry	2016	251	4490-188002835-188007244-VCU-006-APX-ZW-14-902-01012014-30062014-1 – Note: these 251 tonnes were banked from the offsets (4,410 tonnes) retired in for the 2015-16 period.
Total offset units retired for offsetting		14,851	
Net emissions after offsetting		0	
Total offsets banked for use future years:		544	Banked from 3167-143904743-143909142-VCU-016-MER-ID-14-674-01012013-30062013-0

4B. 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 surplus retired offsets will be used in the following year's offset requirements to maintain certification.

4C. 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 together with high social benefits.

Project type/Standards	Name of Project and co-benefits	% of total offsets used of this reporting period
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Improved Forest Management. Verified Carbon Standard	<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>	37%
Reduced Emission from Deforestation and Degradation. Verified Carbon Standard and Climate, Community and Biodiversity Standard – Gold Level.	<p>The Kasigau Corridor REDD Project - Phase II The Community Ranches - Kenya</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>	31%
Reduced Emission from Deforestation and Degradation. Verified Carbon Standard and Climate, Community and Biodiversity Standard – Triple Gold Level.	<p>Rimba Raya Biodiversity Project</p> <p>The project aims to protect and preserve 64,977ha of tropical lowland peat swamp forests, home of the endangered Borneo Orangutan, and other RED listed species. These forests are one of the most highly endangered ecosystems in the world. The Rimba Raya project also provides alternative income streams through capacity building, investments in micro-finance, programs that provide basic necessities and access to a conservation model that does not put the developing world's need for economic growth at odds with the desire to protect this fragile ecosystem.</p>	31%
Reduced Emission from Deforestation and Degradation. Verified Carbon Standard and Climate, Community and Biodiversity Standard – Gold Level.	<p>Kariba REDD+ project, Zimbabwe</p> <p>This is a world's largest forest conservation project covering 785,000 hectares of forest. The project area is an important wildlife area with populations of elephants, lions, impalas, hippos and crocodiles along with a wide variety of birds. Threatened species include the critically endangered Black Rhino, endangered African Wild Dog and vulnerable species such as the Cheetah, Lion, Hippo, Elephant, Southern Ground Hornbill, Lappet-faced Vulture, and White-headed Vulture. The project area also serves as a wildlife corridor between national parks such as Mana Pools, Matsadona and Chizarira national parks. Social benefits include education programs on farming techniques to increase productivity and nutritional value of crops, and support to develop sustainable businesses that align with conservation goals. Funds from the project is also invested in infrastructure to support social needs. They include renovation of schools, subsidising of school fees and</p>	2%

	dedicating a health and education fund to benefit the poorest members of the community.	
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5. Use of trade mark

Table 4. Trade mark register	
Where used	Logo type
Zoos Victoria – Environmental Sustainability Investment Prospectus 2014-19	Certified Organisation
Zoos Victoria Annual Reports	Certified Organisation
Zoo News	Certified Organisation
Community Conservation Master Plan	Certified Organisation
Web Site	Certified Organisation
Plague on an exhibit at Melbourne Zoo	Certified Organisation

6. Have you done more?

Zoos Victoria have a certified Environmental Management System (EMS) in place to ensure continuous improvement in environmental performance and management. This EMS is certified to the ISO14001;2004 standard and will be transitioned to the new standard ISO14001;2015 by 2018. This will ensure further improvements for our environmental management together with performance taking into account life-cycle impacts from our operations and products and/or services we procure.

Zoos Victoria has also embarked on a continuous improvement program incorporating LEAN. This program aims to reduce waste and improve performance of the organisation.

We are also continuously improving on our data collection. This year we have reviewed our animal food procurement and added other food groups into this Scope 3 emissions source.