

FY19 Sustainability Data and Climate Change Disclosures

Transurban



For the year ended 30 June 2019



19



Contents

01

Introduction and assurance

- 01 Introduction
- 01 Sustainability data assurance
- 02 KPMG assurance statement

04

Sustainability data tables

- 04 Environmental data
- 13 Employee data

20

Climate change disclosures

- 20 Introduction
- 21 Task force on Climate-related Financial Disclosures roadmap
- 22 Scenario analysis and material risks

27

Global Reporting Initiative (GRI) annotated index



Reporting suite—all available at transurban.com/investor-centre

FY19 Sustainability Data and Climate Change Disclosures—this report

Information to supplement the Corporate Report including information related to our assessment and management of climate-related impacts.

FY19 Corporate Report

The holistic performance of Transurban in FY19 including our financial statements.

FY19 Results Presentation

Management presentation of financial and non-financial results including non-statutory analysis.

FY19 UN Sustainable Development Goals progress Report

Progress report on the nine UN SDGs that are particularly relevant to Transurban, including associated targets, performance during the year and summary of key initiatives implemented.

Corporate Governance Statement

Corporate Governance Statement in accordance with the ASX Council's Corporate Governance Principles and Recommendations (3rd Edition).

Tax Transparency Report

Overview of our corporate structure, approach to tax and tax position for FY18—available late August 2019.

Introduction and assurance

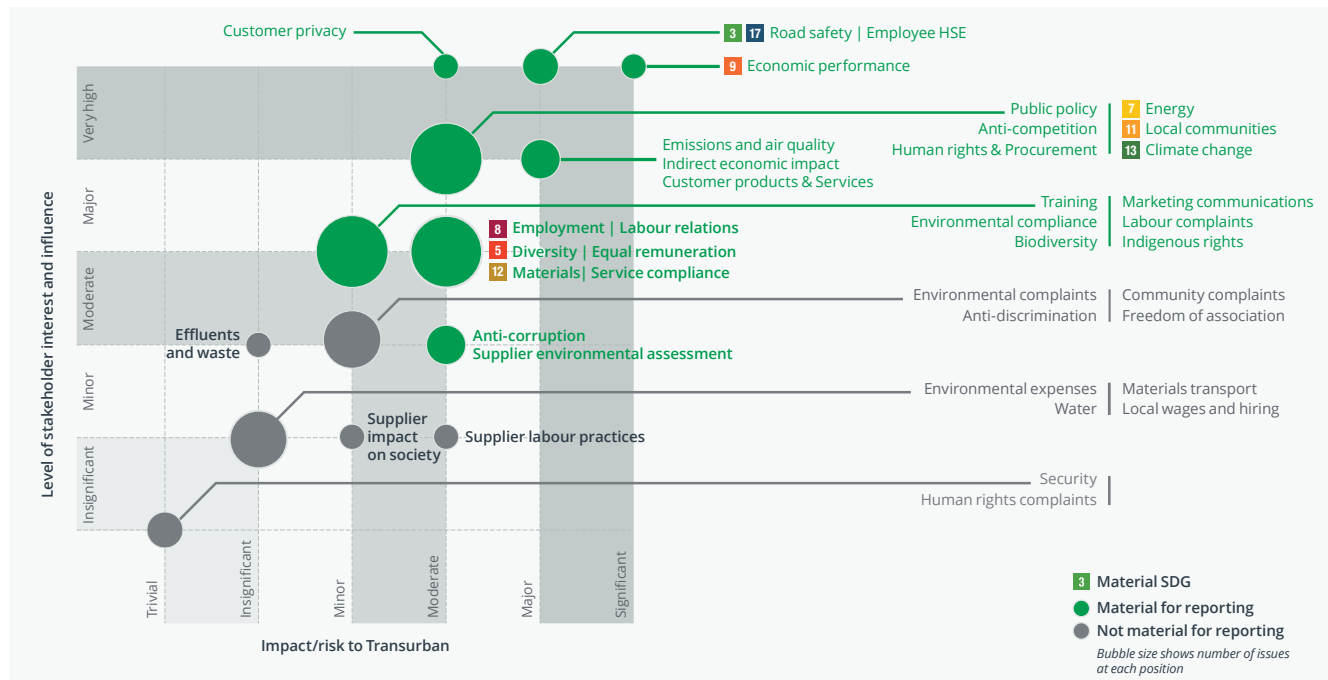
Introduction

Transurban has released an annual Sustainability Report since 2006, and past reports are available on our website. Transurban has taken a new approach to its annual reporting suite in FY19, combining information previously available in our annual and sustainability reports into a single reporting suite to provide a holistic view of the business.

Consistent with Transurban's past Sustainability Reports, which are available on our website, the non-financial topics included in this report are guided by a materiality assessment to determine the most appropriate issues for Transurban to report (Figure 1). We have used several processes to identify material issues for reporting including the GRI Standards, United Nations Sustainable Development Goals and stakeholder feedback.

The high priority issues for our business have consistently included economic performance, health and safety, local communities, ethical business practices and employee-related matters.

Figure 1: Materiality assessment



Sustainability data assurance

KPMG has provided limited assurance for some of our most material social and environmental indicators within the FY19 Corporate Reporting suite.

These include:

- Road Injury Crash Index
- Recordable Injury Frequency Rate
- Scope 1 GHG emissions (tCO₂e)
- Scope 2 GHG emissions (tCO₂e)
- Nitrogen oxides (NOx) emissions (tonnes)
- Customer vehicle GHG emissions (tCO₂e)
- Community investment (\$).

The KPMG limited assurance statement is presented on page 2.

KPMG assurance statement



Independent Limited Assurance Report to the Directors of Transurban Limited

Conclusion

Based on the evidence we obtained from the procedures performed, we are not aware of any material misstatements in the Information Subject to Assurance, which has been prepared by Transurban Limited in accordance with Management Criteria for the year ended 30 June 2019.

Information Subject to Assurance

The Information Subject to Assurance as presented in the Transurban FY19 Corporate Reporting Suite, comprising of the FY19 Corporate Report, FY19 Sustainability Data and Climate Change Disclosure Report and the FY19 UN Sustainable Development Goals Progress Report is identified below:

Information Subject to Assurance	Reported Value
Scope 1 greenhouse gas emissions (tCO2e)	4,050 tCO2e across all assets 3,540 tCO2e excluding M5 and M7
Scope 2 greenhouse gas emissions (tCO2e)	124,433 tCO2e across all assets ("location based") 119,709 tCO2e excluding M5 and M7 ("location based")
Customer travel emissions (tCO2e)	1,411,465 tCO2e across all assets 993,961 tCO2e excluding M5 and M7
Nitrogen Oxides (NOx) emissions (tonnes)	94t for CityLink 45t for Lane Cove Tunnel 10t for Cross City Tunnel
Road Injury Crash Index (RICI)	4.71 injury crashes per 100 million km travelled
Recordable Injury Frequency Rate (RIFR)	0.81 employee injuries per million hours 3.66 contractor injuries per million hours
Community investment (\$)	\$1.8 million



Criteria Used as the Basis of Reporting

The methodologies used by Transurban Limited management to measure the Information Subject to Assurance ("the criteria") are described in the FY19 Sustainability Data and Climate Change Disclosures Report.

Basis for Conclusion

We conducted our work in accordance with Australian Standard on Assurance Engagements ASAE 3000 (Standard). In accordance with the Standard we have:

- used our professional judgement to plan and perform the engagement to obtain limited assurance that we are not aware of any material misstatements in the Information Subject to Assurance, whether due to fraud or error;
- considered relevant internal controls when designing our assurance procedures, however we do not express a conclusion on their effectiveness; and
- ensured that the engagement team possess the appropriate knowledge, skills and professional competencies.

Summary of Procedures Performed

Our limited assurance conclusion is based on the evidence obtained from performing the following procedures:

- enquiries with relevant Transurban Limited personnel to understand the internal controls, governance structure and reporting process of the Information Subject to Assurance;
- reviews of relevant documentation including reporting frameworks and process documentation;
- analytical procedures over the Information Subject to Assurance;
- site visit to Melbourne CityLink office;
- agreeing a sample of data points from the Information Subject to Assurance back to source documentation;
- evaluating the appropriateness of the criteria with respect to the Information Subject to Assurance; and
- reviewed the Transurban FY19 Corporate Report, FY19 Sustainability Data and Climate Change Disclosures Report and the FY19 Sustainable Development Goals Progress Report in their entirety to ensure they are consistent with our overall knowledge of assurance engagement.

How the Standard Defines Limited Assurance and Material Misstatement

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Misstatements, including omissions, are considered material if, individually or in the aggregate, they could reasonably be expected to influence relevant decisions of the Directors of Transurban Limited.

KPMG assurance statement (continued)



Use of this Assurance Report

This report has been prepared for the Directors of Transurban Limited for the purpose of providing an assurance conclusion on the Information Subject to Assurance and may not be suitable for another purpose. We disclaim any assumption of responsibility for any reliance on this report, to any person other than the Directors of Transurban, or for any other purpose than that for which it was prepared.

Management's responsibility

Management are responsible for:

- determining that the criteria is appropriate to meet their needs and the needs of intended users;
- preparing and presenting the Information Subject to Assurance in accordance with the criteria; and
- establishing internal controls that enable the preparation and presentation of the Information Subject to Assurance that is free from material misstatement, whether due to fraud or error.

Our Responsibility

Our responsibility is to perform a limited assurance engagement in relation to the Information Subject to Assurance for the 30 June 2019, and to issue an assurance report that includes our conclusion.

Our Independence and Quality Control

We have complied with our independence and other relevant ethical requirements of the *Code of Ethics for Professional Accountants* issued by the Australian Professional and Ethical Standards Board, and complied with the applicable requirements of Australian Standard on Quality Control 1 to maintain a comprehensive system of quality control.

KPMG

7 August 2019
Sydney

Sustainability data tables

Environmental data

Transurban includes information in its Corporate Report about all assets and projects in which it holds an interest.

For the purpose of many organisation-wide environmental metrics and targets, we limit the scope of reporting to assets that were under Transurban's financial and operational control for the full 2018–19 Financial Year (FY19). This excludes construction projects which are under the control of major contractors, assets that were not under our operational control for the full year (eg M4), and assets in which Transurban has an equity interest but not direct management control or direct control of asset operations (M5 South West and Westlink M7).

FY19 figures are generally based on 9 months and 3 months of actual and extrapolated data respectively to provide the FY19 full year total. Separate to the Corporate Report, Transurban also completes environmental reporting for a number of regulatory requirements including the Australian National Greenhouse and Energy Reporting (NGER) Act, and environmental licence requirements on individual assets.

The A25 in Montreal was acquired by Transurban in late FY18 and is being include in environmental data for the first time in FY19. As the asset is still being integrated into Transurban systems, some environmental data for A25 were not available and have been estimated based on asset characteristics and similar assets for which data are available. This comprises an immaterial (<1%) proportion of Transurban's overall environmental data. WestConnex in Sydney was acquired by a Transurban-led consortium during FY19 individual assets and will be included in environmental data from FY20 onwards as they become operational.

Table 1—Projects and assets included in Corporate Report

Transurban has interests in 17 toll roads and a number of development projects. Roads and construction projects active during FY19 are shown below by location.

Many key environmental metrics and targets are focused on assets over which Transurban has direct operational control and the greatest ability to drive improvement.

	Roads in FY19	Construction projects
Victoria	CityLink	West Gate Tunnel Project
New South Wales	Hills M2 Lane Cove Tunnel Eastern Distributor Cross City Tunnel M4* M5 South West* Westlink M7*	NorthConnex WestConnex
Queensland	Gateway Motorway Logan Motorway Go Between Bridge Legacy Way AirportlinkM7 Clem7	Gateway Upgrade North Logan Enhancement Project
USA	95 Express Lanes 495 Express Lanes	395 Express Lanes Fredericksburg Extension
Canada	A25	

* M4 not reported in FY19 environment data due to partial year ownership. M5 South West and Westlink M7 reported individually, but excluded from some totals and targets.

Abbreviations M2: Hills M2, LCT: Lane Cove Tunnel, ED: Eastern Distributor, CCT: Cross City Tunnel, M5 West: M5 South West and M7: Westlink M7.

GHG emissions

Table 2—GHG emissions total

		FY17*	FY18*	FY19*	Notes
Total Scope 1 & 2 & 3	tCO ₂ e	148,516	144,110	738,120	
Total Scope 1 & 2	tCO ₂ e	120,529	120,837	120,617	Scope 1 & 2 emissions are the main focus of Transurban's monitoring and targets.
Scope 1	tCO ₂ e	2,746	3,697	3,540	
Scope 2 ("market-based")	tCO ₂ e	117,783	117,139	117,077	Scope 2: GHG Protocol 'market-based' Scope 2 emissions include purchase of GreenPower-accredited Large-scale Generation Certificates (LGCs) which fund renewable electricity and reduce net Scope 2 emissions compared with 'location-based' state grid electricity averages. In previous Transurban Sustainability Reports, only the 'location-based' figure was reported.
(GreenPower emissions savings)	tCO ₂ e	2,745	2,708	2,632	
Scope 2 ("location-based")	tCO ₂ e	120,528	119,848	119,709	
Scope 3	tCO ₂ e	27,986	23,274	617,503	Scope 3: In FY19 Transurban extended the boundary of its Scope 3 emissions reporting to include 'Purchased goods and services' (supply chain for existing assets and corporate functions) and 'Capital Goods' (major project construction). The increase in total emissions from FY18 is solely due to extending our reporting boundary to include this new category. Scope 3 emissions are expected to fluctuate significantly year-on-year with variation in construction activities.
Purchased goods and services	tCO ₂ e	NR	NR	186,296	
Capital goods (major projects)	tCO ₂ e	NR	NR	410,680	
Upstream fuel and energy related activities	tCO ₂ e	19,289	17,798	16,196	
Waste	tCO ₂ e	4,889	1,668	1,769	
Business travel	tCO ₂ e	3,808	3,808	2,562	
Customer travel emissions	tCO ₂ e	1,372,482 [#]	993,268	993,961	

* Total excluding M5 and M7, which are indirectly managed and not included in the scope of many of Transurban's environmental targets.

In FY18 Transurban updated the method used for customer vehicle emissions to a more accurate source reflecting more recent vehicle fuel efficiency research. The decrease from FY17 to FY18 is an improvement in calculation method and does not reflect any significant real-world changes.

Table 3—GHG emissions by asset

FY19 GHG emissions		CityLink	M2	LCT	ED	CCT	M5 West*	M7*	Gateway Motorway	Logan Motorway	Go Between Bridge	Clem7	Legacy Way	Airportlink M7	495 Express Lanes	95 Express Lanes	A25	Offices	Total	Total*
Total Scope 1 & 2 & 3	tCO ₂ e	28,124	3,667	17,642	6,278	10,753	1,665	4,581	3,334	2,596	105	11,446	12,915	35,053	2,393	1,152	99	602,563	744,366	738,120
Total Scope 1 & 2	tCO ₂ e	25,480	3,203	15,458	5,518	9,407	1,310	3,924	2,735	2,134	91	9,820	11,064	30,133	1,969	863	94	2,649	125,851	120,617
Scope 1	tCO ₂ e	580	325	81	101	48	131	379	289	229	5	178	173	82	832	354	93	169	4,050	3,540
Scope 2	tCO ₂ e	24,900	2,878	15,377	5,417	9,359	1,179	3,545	2,446	1,905	86	9,642	10,891	30,051	1,136	509	1	2,480	121,801	117,077
Scope 3	tCO ₂ e	2,645	464	2,184	760	1,346	355	657	599	462	14	1,626	1,851	4,920	424	289	5	599,914	618,515	617,503
Customer travel emissions	tCO ₂ e	203,094	136,452	18,688	35,312	6,128	168,935	248,569	225,998	226,553	489	11,686	6,950	20,834	25,670	59,474	16,634	NA	1,411,465	993,961

Scope 1 (Fuel usage) is primarily by operations and maintenance contractors on each asset. Transurban collects fuel data from its largest contractors that represent the majority of hours worked and fuel used on each asset, and extrapolates this data to account for any smaller or short term contractors where fuel data collection is impractical. This is consistent with standard estimation guidance for the National Greenhouse and Energy Reporting Act (NGER).

* Total excluding M5 West and M7, which are indirectly managed and not included in the scope of many of Transurban's environmental targets.

Energy consumption

Table 4—Energy consumption total

		FY17*	FY18*	FY19*
Total energy consumption	GJ	556,568	568,370	568,155
Direct—Fuel	GJ	39,483	53,412	51,142
Natural gas	GJ	780	871	938
Petrol	GJ	7,957	17,406	16,625
Diesel	GJ	30,742	34,972	33,566
LPG	GJ	4	163	12
Indirect—Electricity	GJ	517,085	514,958	517,013
Grid electricity	GJ	504,850	502,766	505,011
GreenPower	GJ	11,762	11,747	11,555
Solar	GJ	473	445	447

* Total excluding M5 and M7, which are indirectly managed and not included in the scope of many of Transurban's environmental targets.

Table 5—Energy consumption by asset

FY19 Energy		CityLink	M2	LCT	ED	CCT	M5 West*	M7*	Gateway Motorway	Logan Motorway	Go Betwen Bridge	Clem7	Legacy Way	Airportlink M7	495 Express Lanes	95 Express Lanes	A25	Offices	Total	Total*
Total energy consumption	GJ	92,254	17,244	77,866	25,394	44,386	7,297	20,947	15,122	11,837	454	45,919	51,470	136,394	23,326	10,225	3,989	12,274	596,399	568,155
Direct—Fuel	GJ	8,480	4,607	1,153	1,440	674	1,910	5,382	4,116	3,266	68	2,531	2,463	1,163	12,194	5,240	1,333	2,416	58,434	51,142
Natural gas	GJ	891	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	938	938
Petrol	GJ	360	49	12	57	0	1,349	148	457	352	0	116	97	46	9,494	5,240	300	46	18,123	16,625
Diesel	GJ	7,228	4,558	1,141	1,382	674	560	5,234	3,659	2,914	68	2,415	2,364	1,117	2,690	0	1,033	2,322	39,361	33,566
LPG	GJ	0	0	0	0	0	0	0	0	0	0	0	2	1	10	0	0	0	12	12
Indirect—Electricity	GJ	83,775	12,637	76,713	23,954	43,712	5,387	15,565	11,007	8,571	386	43,388	49,007	135,231	11,133	4,985	2,656	9,858	537,965	517,013
Grid	GJ	83,775	12,637	67,507	23,781	41,089	5,176	15,565	11,007	8,571	386	43,388	49,007	135,231	11,133	4,985	2,656	9,858	525,751	505,011
GreenPower	GJ	0	0	9,206	0	2,350	0	0	0	0	0	0	0	0	0	0	0	0	11,555	11,555
Solar	GJ	0	0	0	174	273	212	0	0	0	0	0	0	0	0	0	0	0	659	447

* Total excluding M5 and M7, which are indirectly managed and not included in the scope of many of Transurban's environmental targets.

Fuel usage is primarily by operations and maintenance contractors on each asset. Transurban collects fuel data from its largest contractors and extrapolates this data to account for any smaller or short term contractors where fuel data collection is impractical.

Significant air emissions

Table 6—Air emissions by asset

		FY17	FY18	FY19	Annual regulatory limit
CityLink					
NOx (oxides of nitrogen)	tonnes	110	106	94	1,416
CO (carbon monoxide)	tonnes	136	136	125	5,274
PM ₁₀ (fine particles ≤10 microns)	tonnes	6	6	6	61
PM _{2.5} (fine particles ≤2.5 microns)	tonnes	4	4	4	51
Lane Cove Tunnel					
NOx (oxides of nitrogen)	tonnes	43	50	45	229
CO (carbon monoxide)	tonnes	71	79	74	1,530
PM ₁₀ (fine particles ≤10 microns)	tonnes	2	2	2	14
VOC (volatile organic compounds)	tonnes	42	43	42	153
Cross City Tunnel					
NOx (oxides of nitrogen)	tonnes	9	11	10	123
CO (carbon monoxide)	tonnes	25	28	25	781
PM ₁₀ (fine particles ≤10 microns)	tonnes	0.4	0.4	0.4	7
VOC (volatile organic compounds)	tonnes	2	3	3	78

Transurban's tunnel assets are monitored for air pollutant concentration within tunnels and at external points to ensure that air quality is maintained within safe conditions as defined by our operating licences. Monitoring and reporting requirements vary for different assets and states according to these operating requirements.

Transurban's Victorian and New South Wales tunnels have monitored limits on the total air pollutant load (in tonnes) emitted from tunnel ventilation each year. Total annual loads are reported in table 6.

Transurban's Queensland tunnels (Clem7, Legacy Way, AirportlinkM7) are monitored for in-tunnel and ambient air concentration throughout the year and data are published throughout the year. They are not annual load limits that can be reported alongside figures above.

In New South Wales, the Hills M2 and Eastern Distributor assets feature shorter enclosed sections that do not require the same extent of air quality management as longer tunnels. In-tunnel air quality is monitored against air quality goals but not required by regulations to be publicly reported.

Water usage

Table 7—Water use total

		FY17*	FY18*	FY19*
Potable water	m ³	72,053	97,409	102,394
Recycled	m ³	172,705	162,542	158,699
Total water usage	m³	244,758	259,951	261,093

* Total excluding M5 and M7, which are indirectly managed and not included in the scope of many of Transurban's environmental targets

Table 8—Water use by asset

FY19 water		CityLink	M2	LCT	ED	CCT	M5 South*	M7*	Gateway Motorway	Logan Motorway	Go Between Bridge	Clem7	Legacy Way	Airportlink M7	495 Express Lanes	95 Express Lanes	A25	Offices	Total	Total*
Potable water	m ³	51,763	424	197	751	1,356	2,997	3,225	88	1,545	0	20,057	4,063	19,537	192	284	75	2,061	108,616	102,394
Recycled	m ³	158,699	0	0	0	0	13	77	0	0	0	0	0	0	0	0	0	0	158,790	158,699
Total water usage	m³	210,462	424	197	751	1,356	3,011	3,303	88	1,545	0	20,057	4,063	19,537	192	284	75	2,061	267,407	261,093

* Total excluding M5 and M7, which are indirectly managed and not included in the scope of many of Transurban's environmental targets

Estimates are used for water usage on some assets based on historical figures and Transurban-wide averages.

CityLink recycled water includes groundwater that drains into the tunnel, is treated and reinjected into the aquifer to maintain appropriate conditions. Potable water was previously required for this re-injection before Transurban developed groundwater treatment and recycling systems in 2003, significantly reducing potable water consumption.

Groundwater

Table 9—Groundwater monitoring data by asset

		FY17	FY18	FY19
CityLink				
Total water withdrawal, of which	m ³	254,623	237,851	223,264
Groundwater from tunnels	m ³	199,462	176,907	171,727
Total potable water use, of which	m ³	55,161	60,944	51,537
Deluge testing in tunnels	m ³	554	300	300
Groundwater recharge*	m ³	5,028	4,671	9,649
Shallow recharge	m ³	42,260	49,658	35,273
Irrigation	m ³	7,319	6,315	6,315
Volume of water recycled/reused	m ³	172,585	162,532	158,699
Percentage of water recycled/reused	m ³	87%	68%	71%
Water discharge by destination				
Total water discharge	m ³	205,614	196,813	198,575
Groundwater recharge	m ³	174,935	179,423	181,377
Groundwater discharge to Yarra River	m ³	26,877	14,375	13,028
Discharge to sewer	m ³	3,802	3,016	4,170
Lane Cove Tunnel				
Total water withdrawal, of which	m ³	55,742	42,341	32,706
Groundwater from tunnels	m ³	55,150	41,800	32,509
Total potable water use	m ³	592	541	197
Water discharge by destination				
Total water discharge	m ³	55,150	41,800	32,509
Groundwater discharge	m ³	55,150	41,800	32,509
Cross City Tunnel				
Total water withdrawal, of which	m ³	135,013	130,558	130,558
Groundwater from tunnels	m ³	132,307	129,202	129,202
Total potable water use	m ³	2,706	1,356	1,356
Water discharge by destination				
Total water discharge	m ³	132,307	129,202	129,202
Groundwater discharge	m ³	131,285	127,801	127,801
Discharge to sewer	m ³	1,022	1,401	1,401

		FY17	FY18	FY19
Clem7				
Total water withdrawal, of which	m ³	42,181	62,635	58,835
Groundwater from tunnels	m ³	41,111	47,619	38,779
Total potable water use	m ³	1,070	15,016	20,057
Water discharge by destination				
Total water discharge	m ³	41,111	47,619	38,779
Groundwater discharge	m ³	41,111	47,619	38,779
Legacy Way				
Total water withdrawal, of which	m ³	86,593	94,638	77,563
Groundwater from tunnels	m ³	84,556	86,473	73,500
Total potable water use	m ³	2,037	8,165	4,063
Water discharge by destination				
Total water discharge	m ³	84,556	86,473	73,500
Groundwater discharge	m ³	84,556	86,473	73,500
AirportlinkM7				
Total water withdrawal, of which	m ³		240,888	254,357
Groundwater from tunnels	m ³		234,973	234,820
Total potable water use	m ³		5,915	19,537
Water discharge by destination				
Total water discharge	m ³		234,973	234,820
Groundwater discharge	m ³		234,973	234,820

Groundwater totals are natural drainage into road tunnels. Most of this water is treated and either re-injected to aquifers or discharged to drains and waterways.

Waste and recycling

Table 10—Waste data total

		FY17*	FY18*	FY19*
Total waste by disposal method:	tonnes	4,715	1,649	20,869
Landfill	tonnes	2,222	1,390	1,550
Recycled	tonnes	2,493	260	19,319

* Total excluding M5 and M7, which are indirectly managed and not included in the scope of many of Transurban's environmental targets

Table 11—Waste data by asset

FY19 water		CityLink	M2	LCT	ED	CCT	M5 West*	M7*	Gateway Motorway	Logan Motorway	Go Between Bridge	Clem7	Legacy Way	Airportlink M7	495 Express Lanes	95 Express Lanes	A25	Offices	Total	Total*
Total waste by disposal method:	tonnes	239	144	48	86	238	187	179	19,159	128	0	55	72	32	291	219	81	77	21,235	20,869
Landfill	tonnes	239	80	41	78	114	170	171	155	117	0	42	60	27	275	206	76	38	1,892	1,550
Recycled	tonnes	0	63	7	8	124	16	7	19,003	11	0	12	12	5	17	13	5	39	19,343	19,319

* Total excluding M5 and M7, which are indirectly managed and not included in the scope of many of Transurban's environmental targets

Waste sources on assets may include a wide variety of activities throughout the year from Transurban, operations and maintenance contractors, and subcontractors. In some cases full data from all sources are not available and are estimated.

Gateway Motorway was re-surfaced in FY19 resulting in almost 19,000 tonnes of asphalt being recycled. Excluding this infrequent item, waste quantities were of similar magnitude to recent years.

Waste totals fluctuate significantly each year depending on maintenance cycles on individual assets. Some waste-generating activities only occur every few years or decade, such as road surface re-sheeting and asphalt recycling.

Table 12—E-tag disposal management

E-tag disposal management	FY17	FY18	FY19
e-TAGs issued	837,281	813,291	717,971
e-TAGs recycled	215,174	201,128	165,832

e-TAGs that are returned by customers and found to not be working are returned to our supplier for proper disposal. The tags are dismantled into their separate components and are recycled or disposed of as appropriate.

The FY19 figure is based on 11 months of data with one month extrapolated as at the time of report preparation.

Data methodology

Transurban GHG emissions

Transurban uses 'The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard' to define our Scope 1, Scope 2 and Scope 3 GHG emissions. Several sources provide GHG emissions factors and calculation methods:

- Scope 1 and 2 emissions are calculated based on the Australian National Greenhouse and Energy Reporting Act (NGER). US electricity emissions are calculated using factors from the Environmental Protection Agency's eGRID. Canadian electricity emissions are calculated using factors from the Canadian national greenhouse gas inventory.
- Scope 3 emissions from waste, fuel and electricity supply networks are calculated using the Australian Government National Greenhouse Accounts (NGA) Factors.
- Scope 3 emissions from business air travel are calculated using factors from UK DEFRA guidelines recommended by the GHG Protocol.
- Scope 3 emissions from Transurban's supply chain ("Purchased goods and services") are estimated based on procurement spend, and Environmentally Extended Input-Output (EEIO) GHG emissions factors per dollar spent on different supply chain sectors. This method is consistent with guidelines from the GHG Protocol.
- Scope 3 emissions from Transurban's major projects ("Capital Goods") are estimated based on major project spending each year, and GHG inventories provided by major projects as part of the Infrastructure Sustainability (IS) Rating Tool. GHG emissions reported include fuel and electricity consumed during major project construction, as well as the embodied emissions of raw materials used (eg concrete, asphalt, steel etc.)

Customer travel emissions

GHG emissions from customer vehicles on our assets are calculated based on total distances travelled, vehicle type, average speed, and fuel efficiency models from the software program COPERT Australia.

Transurban's traffic and tolling systems record information such as vehicle class and entry and exit points of vehicles. Supplementary information on some assets includes vehicle origin-destination studies, independent travel time studies, and assumptions based on the physical dimensions of assets.

These data are used to calculate the total Vehicle Kilometres Travelled (VKT) on each asset for the year. Vehicle type is from Transurban tolling data. Travel speeds are based on GPS data from external provider TomTom to determine average travel speeds on Transurban assets.

Transurban calculates resulting emissions using vehicle GHG emission factors that are sensitive to vehicle type, fuel and travel speed, sourced from the software program COPERT Australia which is based on vehicle emissions testing research for a range of vehicle types and conditions. Vehicle fuel efficiency is based on assuming average vehicles travelling on Transurban roads. Conservative emissions estimates are made by using fuel efficiency data for vehicle manufacturing standards that have been in place for over 10 years. Actual GHG emissions may vary due to actual vehicle type, age, driving style and other factors that are impractical to estimate.

When not available in actual data, some assumptions regarding vehicle and fuel type are estimated based on the Australian Bureau of Statistics (ABS) Motor Vehicle Census 2018.

Environmental data estimates

Transurban has previously provided detailed environmental data in a separate Sustainability Report, released in October of each year. Environmental data include some estimations of incomplete data—typically for the final 1-3 months of FY19.

Estimation methods used were included in the scope of external assurance by KPMG of key metrics. It is not expected that these estimates will materially affect environmental data totals. Where estimation has been used, written commentary about Transurban performance trends allows for the uncertainty in this estimation. If an annual trend in environmental performance is within the margin of error for estimation used, it will not be used as the basis for any significant statements of performance.

FY19 environmental data will be fully finalised shortly after the publication of the Corporate Report. If finalised figures vary materially from FY19 preliminary totals, a correction and statement will be made in the following year's Corporate Report. Additional data may become available after the report has been publicly released. Transurban revises its data internally to replace past estimates with this additional data where possible for long term monitoring. For public consistency, data from previous years is shown as the originally published figures and not updated unless this materially changes.

Community investment

Community investment figures include cash sponsorships, grants, donations, student scholarships and work programs. The figure reported is considered a conservative total. Figures do not include spending on community-related conferences, memberships and other associations that overlap with other ordinary business activities. Figures do not include community facilities or outcomes provided as part of road construction projects. Figures represents cash investment only and do not include additional in-kind value contributed by Transurban through volunteering time, asset utilisation for community events, and community program overheads. All amounts are reported in Australian dollars unless otherwise stated. The community investment total reported for FY19 includes a portion of community spending that was forecast but not yet paid at the time of report drafting. This estimated portion was included in the scope of external assurance by KPMG.

Transurban's FY19 community investment of \$1.8M is reported on p15 of our Sustainable Development Goals Progress Report.

Recordable Injury Frequency Rate (RIFR) definition

"Recordable injuries" include Lost Time Injury (work-related injury or illness resulting in a person losing one or more full shifts from work after the date of injury) as well as Medical Treatment Injury (work-related incident requiring medical treatment other than first aid). The Recordable Injury Frequency Rate (RIFR) is the number of recordable injuries per million hours worked. These are monitored separately for employees and contractors. For contractors, RIFR includes the total number of hours worked by Transurban contractors and sub-contractors on our operational and project sites. Injuries and hours are counted when a contractor meets the following definitions: An individual, company or other legal entity that carries out work or performs a service subject to a contract for service. Includes subcontractors (a consultant is considered a contractor for HSE purposes).

Transurban provides commentary on our FY19 Employee RIFR of 0.81 recordable injuries per million work hours on p33 of our Corporate Report, and Contractor RIFR of 3.66 recordable injuries per million work hours on p42 of our Corporate Report.

Road Injury Crash Index (RICI) definition

A serious road injury crash is where any number of persons need treatment for a serious injury following a crash on our roads. This entails any person taken to hospital in an ambulance following a crash. Incidents where individuals are assessed and released from medical care at the crash scene are not classified as serious injury crashes. The Road Injury Crash Index (RICI) measures how many serious road injury crashes occur per 100 million vehicle kilometres travelled.

Transurban's provides commentary on our FY19 RICI of 4.71 injury crashes per 100 million vehicle kilometres travelled on p21 of our Corporate Report.

Rounding

Discrepancies in totals may be due to rounding.

Employee data

Table 13—Total number of employees by employment contract and gender

	FY17						FY18						FY19					
	Male		Female		Total		Male		Female		Total		Male		Female		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Casual	9	26.5%	25	73.5%	34	2.1%	11	32.4%	23	67.6%	34	2.1%	16	47.1%	18	52.9%	34	2.2%
Fixed full-time	25	39.7%	38	60.3%	63	3.9%	36	45.6%	43	54.4%	79	4.8%	29	52.7%	26	47.3%	55	3.5%
Fixed part-time	0	0.0%	2	100.0%	2	0.1%	3	20.0%	12	80.0%	15	0.9%	0	0.0%	3	100.0%	3	0.2%
Permanent full-time	664	61.9%	408	38.1%	1,072	66.3%	743	62.1%	454	37.9%	1,197	72.5%	796	63.9%	449	36.1%	1,245	79.5%
Permanent part-time	9	7.3%	115	92.7%	124	7.7%	9	7.4%	113	92.6%	122	7.4%	6	6.4%	88	93.6%	94	6.0%
Supervised workers	183	56.8%	139	43.2%	322	19.9%	130	63.4%	75	36.6%	205	12.4%	91	66.9%	45	33.1%	136	8.7%
Grand total	890	55.0%	727	45.0%	1,617	100.0%	932	56.4%	720	43.6%	1,652	100.0%	938	59.9%	629	40.1%	1,567	100.0%

Transurban's headcount definition includes direct Transurban employees (permanent full time/part time, fixed term full time/part time, casuals) and temporary/contract workers (supervised workers in this definition), but excludes non-executive directors and employees on maternity leave, salary continuance and Statement of Work Contractors. Number of males, females per employment type is a % of the Grand total.

Table 14—Total workforce by region and gender

	FY17						FY18						FY19					
	Male		Female		Total		Male		Female		Total		Male		Female		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Victoria	482	57.1%	362	42.9%	844	52.2%	499	57.0%	377	43.0%	876	53.0%	507	58.5%	359	41.5%	866	55.3%
New South Wales	149	50.3%	147	49.7%	296	18.3%	167	54.6%	139	45.4%	306	18.5%	162	64.3%	90	35.7%	252	16.1%
Queensland	142	48.1%	153	51.9%	295	18.2%	157	52.3%	143	47.7%	300	18.2%	162	57.0%	122	43.0%	284	18.1%
North America	117	64.3%	65	35.7%	182	11.3%	109	64.1%	61	35.9%	170	10.3%	107	64.8%	58	35.2%	165	10.5%
Total	890	55.0%	727	45.0%	1,617	100.0%	932	56.4%	720	43.6%	1,652	100.0%	938	59.9%	629	40.1%	1,567	100.0%

Table 15—Total workforce by employee category and gender

	FY17						FY18						FY19					
	Male		Female		Total		Male		Female		Total		Male		Female		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CEO	1	100.0%	0	0.0%	1	0.1%	1	100.0%	0	0.0%	1	0.1%	1	100.0%	0	0.0%	1	0.1%
Executive Management	5	55.6%	4	44.4%	9	0.7%	6	54.5%	5	45.5%	11	0.8%	6	50.0%	6	50.0%	12	0.8%
Senior management/Specialist Leader	22	62.9%	13	37.1%	35	2.7%	26	66.7%	13	33.3%	39	2.7%	27	64.3%	15	35.7%	42	2.9%
Middle Management/Specialist Partner	79	69.3%	35	30.7%	114	8.8%	102	67.5%	49	32.5%	151	10.4%	174	67.4%	84	32.6%	258	18.0%
Manager/Specialist	62	63.9%	35	36.1%	97	7.5%	52	62.7%	31	37.3%	83	5.7%	280	64.4%	155	35.6%	435	30.4%
Professional/Technical*	16	42.1%	22	57.9%	38	2.9%	549	65.3%	292	34.7%	841	58.1%	N/A	N/A	N/A	N/A	N/A	N/A
Team leader/Advisor	472	65.6%	248	34.4%	720	55.6%	17	54.8%	14	45.2%	31	2.1%	152	58.0%	110	42.0%	262	18.3%
Customer service*	26	16.3%	134	83.8%	160	12.4%	32	18.7%	139	81.3%	171	11.8%	N/A	N/A	N/A	N/A	N/A	N/A
Entry Level/Support	24	19.8%	97	80.2%	121	9.3%	17	14.3%	102	85.7%	119	8.2%	207	49.2%	214	50.8%	421	29.4%
Total	707	54.6%	588	45.4%	1,295	100.0%	802	55.4%	645	44.6%	1,447	100.0%	847	59.2%	584	40.8%	1,431	100.0%

The Senior Executive count for FY18 excludes one female executive who was on parental leave. Including the female executive the gender split at senior executive level is 50:50.

Totals in this table excludes supervised workers.

* This category is no longer reported due to change in systems.

Table 16—Percentage of total workforce by employee category and age group

	FY17				FY18				FY19			
	Under 30	30-50	Over 50	Total	Under 30	30-50	Over 50	Total	Under 30	30-50	Over 50	Total
	CEO	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%
Executive Management	0.0%	0.5%	0.2%	0.7%	0.0%	0.5%	0.3%	0.8%	0.0%	0.5%	0.3%	0.8%
Senior management/Specialist Leader	0.0%	1.5%	1.2%	2.7%	0.0%	1.5%	1.1%	2.6%	0.0%	1.7%	1.3%	2.9%
Middle Management/Specialist Partner	0.1%	7.0%	1.7%	8.8%	0.0%	8.1%	2.3%	10.4%	0.1%	14.0%	4.0%	18.0%
Manager/Specialist	0.2%	6.3%	1.1%	7.5%	0.3%	4.6%	0.9%	5.7%	2.5%	24.8%	3.1%	30.4%
Professional/Technical*	0.3%	2.0%	0.6%	2.9%	10.5%	39.7%	7.9%	58.1%	N/A	N/A	N/A	N/A
Team leader/Advisor	9.8%	38.4%	7.4%	55.6%	0.3%	1.5%	0.3%	2.1%	3.6%	12.5%	2.2%	18.3%
Customer service*	2.3%	6.3%	3.7%	12.4%	2.3%	6.0%	3.5%	11.8%	N/A	N/A	N/A	N/A
Entry Level/Support	2.0%	5.7%	1.6%	9.3%	1.5%	5.3%	1.5%	8.2%	8.6%	15.5%	5.3%	29.4%
Total	14.7%	67.7%	17.6%	100.0%	14.8%	67.1%	18.1%	100.0%	14.8%	69.0%	16.2%	100.0%

Totals in this table excludes supervised workers.

Table 17—Composition of governance bodies by gender and age group

	FY17						FY18						FY19							
	Male		Female		Total		Male		Female		Total		Male		Female		Total			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Under 30	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
30–50	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Over 50	6	67%	3	33%	9	100%	7	70%	3	30%	10	100%	6	67%	3	33%	9	100%	6	100%
Total	6	67%	3	33%	9	100%	7	70%	3	30%	10	100%	6	67%	3	33%	9	100%	6	100%

Figures represent CEO and Transurban Board.

Table 18—Total number and rate of new employee hires by age group, gender and region

	FY17						FY18						FY19					
	Male		Female		Total		Male		Female		Total		Male		Female		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
VIC Under 30	23	1.8%	23	1.8%	46	3.7%	17	1.2%	34	2.4%	51	3.6%	30	2.0%	28	1.9%	58	3.9%
30–50	65	5.2%	47	3.8%	112	9.0%	65	4.6%	52	3.7%	117	8.3%	71	4.8%	45	3.0%	116	7.9%
Over 50	6	0.5%	12	1.0%	18	1.4%	6	0.4%	9	0.6%	15	1.1%	6	0.4%	4	0.3%	10	0.7%
Total	94	7.5%	82	6.6%	176	14.1%	88	6.3%	95	6.8%	183	13.0%	107	7.2%	77	5.2%	184	12.5%
NSW Under 30	4	0.3%	7	0.6%	11	0.9%	4	0.3%	6	0.4%	10	0.7%	6	0.4%	6	0.4%	12	0.8%
30–50	17	1.4%	18	1.4%	35	2.8%	27	1.9%	16	1.1%	43	3.1%	13	0.9%	9	0.6%	22	1.5%
Over 50	5	0.4%	2	0.2%	7	0.6%	2	0.1%	2	0.1%	4	0.3%	5	0.3%	3	0.2%	8	0.5%
Total	26	2.1%	27	2.2%	53	4.2%	33	2.3%	24	1.7%	57	4.1%	24	1.6%	18	1.2%	42	2.8%
QLD Under 30	4	0.3%	11	0.9%	15	1.2%	5	0.4%	8	0.6%	13	0.9%	6	0.4%	3	0.2%	9	0.6%
30–50	25	2.0%	15	1.2%	40	3.2%	26	1.8%	21	1.5%	47	3.3%	24	1.6%	14	0.9%	38	2.6%
Over 50	4	0.3%	4	0.3%	8	0.6%	7	0.5%	4	0.3%	11	0.8%	2	0.1%	3	0.2%	5	0.3%
Total	33	2.6%	30	2.4%	63	5.0%	38	2.7%	33	2.3%	71	5.0%	32	2.2%	20	1.4%	52	3.5%
NA* Under 30	5	0.4%	2	0.2%	7	0.6%	8	0.6%	8	0.6%	16	1.1%	8	0.5%	2	0.1%	10	0.7%
30–50	15	1.2%	8	0.6%	23	1.8%	19	1.4%	13	0.9%	32	2.3%	9	0.6%	6	0.4%	15	1.0%
Over 50	6	0.5%	0	0.0%	6	0.5%	4	0.3%	5	0.4%	9	0.6%	2	0.1%	1	0.1%	3	0.2%
Total	26	2.1%	10	0.8%	36	2.9%	31	2.2%	26	1.8%	57	4.1%	19	1.3%	9	0.6%	28	1.9%
Grand total	179	14.3%	149	11.9%	328	26.3%	190	13.5%	178	12.7%	368	26.2%	182	12.3%	124	8.4%	306	20.7%

* North America

Table 19—Total number and rate of employee turnover by age group, gender and region

	FY17						FY18						FY19						
	Male		Female		Total		Male		Female		Total		Male		Female		Total		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
VIC	Under 30	2	0.2%	9	0.8%	11	0.9%	5	0.4%	5	0.4%	10	0.8%	2	0.1%	8	0.6%	10	0.7%
	30–50	28	2.4%	18	1.5%	46	4.0%	27	2.1%	34	2.6%	61	4.7%	47	3.4%	33	2.4%	80	5.9%
	Over 50	6	0.5%	3	0.3%	9	0.8%	11	0.9%	3	0.2%	14	1.1%	7	0.5%	10	0.7%	17	1.2%
	Total	36	3.1%	30	2.6%	66	5.7%	43	3.3%	42	3.2%	85	6.6%	56	4.1%	51	3.7%	107	7.8%
NSW	Under 30	1	0.1%	6	0.5%	7	0.6%	2	0.2%	5	0.4%	7	0.5%	3	0.2%	6	0.4%	9	0.7%
	30–50	23	2.0%	9	0.8%	32	2.8%	7	0.5%	17	1.3%	24	1.9%	14	1.0%	33	2.4%	47	3.4%
	Over 50	4	0.3%	5	0.4%	9	0.8%	3	0.2%	3	0.2%	6	0.5%	5	0.4%	26	1.9%	31	2.3%
	Total	28	2.4%	20	1.7%	48	4.1%	12	0.9%	25	1.9%	37	2.9%	22	1.6%	65	4.8%	87	6.4%
QLD	Under 30	0	0.0%	1	0.1%	1	0.1%	2	0.2%	1	0.1%	3	0.2%	1	0.1%	5	0.4%	6	0.4%
	30–50	8	0.7%	7	0.6%	15	1.3%	15	1.2%	19	1.5%	34	2.6%	16	1.2%	20	1.5%	36	2.6%
	Over 50	0	0.0%	4	0.3%	4	0.3%	4	0.3%	1	0.1%	5	0.4%	5	0.4%	13	1.0%	18	1.3%
	Total	8	0.7%	12	1.0%	20	1.7%	21	1.6%	21	1.6%	42	3.2%	22	1.6%	38	2.8%	60	4.4%
NA*	Under 30	2	0.2%	1	0.1%	3	0.3%	2	0.2%	3	0.2%	5	0.4%	3	0.2%	2	0.1%	5	0.4%
	30–50	6	0.5%	3	0.3%	9	0.8%	6	0.5%	5	0.4%	11	0.9%	15	1.1%	9	0.7%	24	1.8%
	Over 50	1	0.1%	1	0.1%	2	0.2%	3	0.2%	0	0.0%	3	0.2%	4	0.3%	3	0.2%	7	0.5%
	Total	9	0.8%	5	0.4%	14	1.2%	11	0.9%	8	0.6%	19	1.5%	22	1.6%	14	1.0%	36	2.6%
Grand total	81	7.0%	67	5.8%	148	12.7%	87	6.7%	96	7.4%	183	14.1%	122	8.9%	168	12.3%	290	21.2%	

New employee hire percentage is based on the Average Employee Headcount during the corresponding period. (includes permanent, fixed term, casual, parental leave, salary continuance). New Transurban employees only including casuals, permanent, fixed term. Excludes any individual/independent/MSA contractors.

Involuntary and Voluntary turnover included for permanent employees only, percentage based on the Average Permanent Employee Headcount.

* North America

Table 20—Employee headcount

	FY17	FY18	FY19
Average employee headcount	1,248	1,407	1,478
Average permanent employee headcount	1,162	1,294	1,367

Table 21—Return to work and retention rates after parental leave by gender

	FY17		FY18		FY19	
	Male	Female	Male	Female	Male	Female
Number of employees entitled to parental leave	528	469	615	503	695	492
Number of employees that took parental leave	28	28	34	29	48	52
Number of employees who returned to work after parental leave	27	28	34	23	47	49
Number of employees who returned to work after parental leave and were still employed 12 months after their return to work	22	18	27	23	32	19
Return to work rate	96%	100%	100%	79%	98%	94%
Retention rate	88%	90%	100%	82%	94%	83%

Table 22—Average hours of training by employee category and gender

	FY17			FY18			FY19		
	Male	Female	Average	Male	Female	Average	Male	Female	Average
CEO	25	N/A	25	26	N/A	26	43	N/A	43
Executive Management	23	32	27	28	25	26	40	43	41
Senior management/Specialist Leader	25	23	24	24	20	22	34	29	32
Middle Management/Specialist Partner	21	25	22	15	16	15	6	11	8
Manager/Specialist	25	26	25	15	18	16	7	8	7
Professional/Technical*	35	27	30	8	10	9	N/A	N/A	N/A
Team leader/Advisor	12	16	13	28	40	34	7	9	8
Customer service*	20	16	16	10	11	11	N/A	N/A	N/A
Entry Level/Support	16	13	13	8	11	11	7	6	6

All training hours exclude any independent/individual/MSA contractors and casuals as not all are required to complete training.

Table 23—Ratio of the basic salary of women to men for each employee category, by significant locations of operation

Basic salary	FY17				FY18				FY19			
	VIC	NSW	QLD	NA [#]	VIC	NSW	QLD	NA [#]	VIC	NSW	QLD	NA [#]
CEO	0:100	0:0	0:0	0:0	0:100	0:0	0:0	0:0	0:100	0:0	0:0	0:0
Executive Management	46:54	46:54	0:100	100:0	45:55	44:56	100:0	100:0	44:56	45:55	100:0	100:0
Senior management/Specialist Leader	47:53	41:59	48:52	45:55	48:52	52:48	0:100	44:56	47:53	46:54	0:100	42:58
Middle Management/Specialist Partner	50:50	38:62	46:54	50:50	50:50	44:56	48:52	51:49	49:51	45:55	48:52	51:49
Manager/Specialist	49:51	45:55	43:57	41:59	50:50	47:53	49:51	48:52	49:51	48:52	46:54	48:52
Professional/Technical*	48:52	47:53	50:50	34:66	49:51	52:48	56:49	44:56	N/A	N/A	N/A	N/A
Team leader/Advisor	50:50	51:49	50:50	40:60	45:55	46:54	49:51	0:0	49:51	45:55	47:53	46:54
Customer service*	49:51	49:51	49:51	0:0	50:50	49:51	49:51	100:0	N/A	N/A	N/A	N/A
Entry Level/Support	52:48	48:52	52:48	45:55	52:48	52:48	52:48	46:54	47:53	40:60	43:57	52:48

Table 24—Ratio of the remuneration of women to men for each employee category, by significant locations of operation

Remuneration	FY17				FY18				FY19			
	VIC	NSW	QLD	NA [#]	VIC	NSW	QLD	NA [#]	VIC	NSW	QLD	NA [#]
CEO	0:100	0:0	0:0	0:0	0:100	0:0	0:0	0:0	0:100	0:0	0:0	0:0
Executive Management	46:54	46:54	0:100	100:0	42:58	45:55	100:0	100:0	44:56	46:54	100:0	100:0
Senior management/Specialist Leader	47:53	38:62	42:58	49:51	47:53	55:45	0:100	46:54	46:54	46:54	0:100	42:58
Middle Management/Specialist Partner	50:50	38:62	47:53	51:49	50:50	43:57	48:52	51:49	49:51	44:56	47:53	53:47
Manager/Specialist	48:52	45:55	42:58	41:59	50:50	47:53	48:52	48:52	49:51	48:52	46:54	48:52
Professional/Technical*	48:52	46:54	50:50	32:68	48:52	52:48	48:52	44:56	N/A	N/A	N/A	N/A
Team leader/Advisor	50:50	51:49	49:51	39:61	45:55	45:55	50:50	0:0	49:51	45:55	46:54	46:54
Customer service*	49:51	49:51	49:51	0:0	50:50	50:50	51:49	100:0	N/A	N/A	N/A	N/A
Entry Level/Support	52:48	49:51	53:47	45:55	52:48	54:46	52:48	47:53	47:53	40:60	42:58	53:47

North America

The calculation for remuneration follows WGEA reporting methodology. Exchange Rates used for basic salary and remuneration comparisons across USA and Australia:

- FY17: Where dollar figures are supplied, USD has been converted to AUD using the exchange rate at 30 June 2017 (1 USD: 1.300 AUD)
- FY18: Where dollar figures are supplied, USD has been converted to AUD using the exchange rate at 30 June 2018 (1 USD: 1.352 AUD)
- FY19: Where dollar figures are supplied, USD has been converted to AUD using the exchange rate at 30 June 2019 (1 USD: 1.426 AUD)

Table 25—Occupational health and safety

Unplanned absenteeism	FY17		FY18		FY19	
	Absentee rate					
	Male	Female	Male	Female	Male	Female
Victoria	1.8%	2.1%	1.4%	2.2%	1.7%	2.0%
New South Wales	1.7%	2.7%	1.5%	2.8%	1.5%	2.7%
Queensland	3.2%	3.2%	2.4%	2.9%	2.4%	2.4%
North America	16%	10%	1.5%	1.8%	0.9%	1.2%

Based on unplanned hour/hours worked or scheduled to work. Excludes casual hours from 'total scheduled' hours as they are not entitled to personal leave.

Unplanned absenteeism includes sick leave (paid and unpaid), carer's leave (paid and unpaid) and bereavement/compassionate leave.

Coverage of Transurban's defined benefit plan obligations

FY19: Superannuation liabilities are met by the Group's general resources. The total payment for Australian employees was approximately AUD\$15.4M and payment to USA employees participating was AUD\$888k for FY19.

Transurban contributed the statutory minimum of 9.5 per cent for Australian employees and 4 per cent for USA employees. Maximum contributions apply. 100 per cent of employees participate in the mandatory Australian plans. Approximately 85 per cent of the USA employees participate in the voluntary 401(k) retirement and profit sharing plan. The employer provided profit sharing contribution is discretionary and has historically paid 4 per cent of its employees' eligible base earnings on an annual basis.

Benefits provided to full-time employees and not temporary or part-time employees

Performance Incentive—permanent full-time and part-time employees (with at least six months service), fixed term employees only as specified in contract or tenure of 24 months and greater.

ShareLink Tax Exempt Offer—Made available to Australian permanent full-time or part-time employees who have completed probation by the end of offer period. Employees on parental leave or salary continuance less than 12 months are eligible.

Seniority level definitions

CEO: Chief Executive Officer

Senior Executive: Direct reports to the CEO. These employees are referred to as the key management personnel in the Group's Annual Report.

Senior Management/Specialist Leader: General Manager or equivalent. Typically manage a business unit or major project. In conjunction with Senior Executives, they either set or heavily contribute to the strategic directions/goals of the Group.

Middle Manager/Specialist Partner: Typically report to a Senior Executive or a Senior Manager with employees reporting into them. Typically manage a business unit and are responsible for setting policies and procedures for their area.

Manager/Specialist: Typically report to a Middle Manager and manage a functional area within a business unit, with employees reporting into them. Responsible for the operational results for their area.

Professional/Technical*: Employees apply technical and/or professional knowledge to their role and may have specialty degree/training. They may or may not have staff reporting to them eg Engineer.

Table 26—Percentage of employees covered by collective bargaining agreements

	FY17	FY18	FY19
Percentage of employees covered by collective bargaining agreements	17.90%	14.20%	9.28%

Team Leader/Advisor: Manage a functional team. Responsible for managing targets, budgets, service levels for teams.

Customer Service*: Employees are typically operationally based eg Customer Service Officer.

Entry Level/Support: Employees are typically in administration, coordination and business support roles.

* Employee categories "Professional/Technical" and "Customer Service" are no longer used as at FY19 due to change in systems for employee categorisation.

Climate change disclosures

Introduction

As a road operator with assets across three countries and both hemispheres, climate change will affect the way that we operate our business into the future. As global and national economies transition to low-carbon solutions, we need to not only consider the impacts of changes to our climate, but also changes to technology, markets and affects on our reputation.

Climate-related risks covering both threats and opportunities are managed through Transurban's Enterprise Risk Management (ERM) Framework and are overseen by the Board of Directors through reporting and the Audit and Risk Committee. This Framework plays a critical role in helping the business deliver our business strategy, is linked to our strategic objectives and enables our performance to be monitored. It covers corporate-wide risks and risks associated with both the operation of individual road assets and our project delivery activities.

Our 2012 Climate Change Strategy, as well as our science-based target to reduce greenhouse gas emissions by 52 per cent by 2030, underpin our actions and management of climate-related impacts.

Following an initial review against the Task Force on Climate Related Disclosures (TCFD) recommendations in 2017, a number of possible enhancements were identified to improve the way Transurban manages climate-related risks and reports on financial impacts.

These enhancements related to the identification of climate-related transition risks, using scenarios to comprehensively explore risks, and identifying climate-related financial metrics which can be used in reporting.

This is our second disclosure since the release of the TCFD recommendations. Our first disclosure was included in the FY18 Sustainability Report, and outlined our objective to address the full set of TCFD recommendations by the end of the 2020 financial year. This FY19 disclosure therefore does not fully address all recommendations. Further work is planned for FY20 to analyse and integrate climate-related metrics and impacts into our business processes and provide financial disclosures. We will start to include climate-related financial disclosures in corporate financial reporting from FY20.











Progress towards many of the TCFD recommendations, especially those related to risk management and governance, is discussed in the main body of the FY19 Corporate Report. In these cases, to avoid duplication, a cross reference has been included to the relevant Report section.



Artist's impression
of Beaudesert Road
fauna crossing

Task Force on Climate-related Financial Disclosures roadmap

Table 1: Status summary—TCFD recommendations

TCFD	Summary of recommendations	Actions needed to address recommendations	Status
Governance	Disclose the organisation's governance around climate-related risks and opportunities	Enhance disclosure including approach to managing climate risk with Board and Executive	 Complete Refer to 'Risk' section in FY19 Corporate Report
		Update our existing climate change strategy to align with TCFD recommendations	 Underway Transurban has had a climate change strategy in place since 2012. This strategy will be updated in FY20
Strategy	Disclose the actual and potential impacts of climate-related risks on the organisation's businesses, strategy, and financial planning where such information is material	Enhance disclosure outlining our material climate-related risks and how scenario analysis is used in the identification process	 Complete* Material risks are presented below
		Complete scenario analysis and document all climate-related emerging, strategic or market level risks (transition and physical risks)	 Complete* Material risks are presented below
		Confirm existing controls and identify key actions required to mitigate high and medium residual risks	 Underway* All controls have not been presented, however a summary of the key business opportunities have been outlined
		Develop an approach for considering climate related issues in the financial planning processes and disclose the financial impacts	 Not started To occur in FY20
Risk Management	Disclose how the organisation identifies, assesses, and manages climate-related risks	Enhance disclosure related to risk management processes including detail on how emerging and strategic risks are assessed and managed	 Complete Refer to 'Risk' section in FY19 Corporate Report
		Undertake modelling and further studies to understand the size and scope of identified material climate impacts (eg supply chain vulnerability)	 Underway The size and scope of identified risk's material climate impacts have been determined qualitatively, this initiative continues and further information will be provided in the FY20 disclosure
Metrics and targets	Disclose the metrics and targets used to assess and manage relevant climate related risks where such information is material	Investigate additional metrics to manage climate-related impacts	 Not started To occur in FY20
		Continue to disclose our GHG emissions data and targets	 Complete Refer to FY19 Corporate Report— 'Minimising our impacts'

* Note: the work completed to date has focused on our Australian assets and business operations only. This work will be expanded during FY20 to also cover our North American business

Scenario analysis and material risks

Scenario analysis

In FY19 we undertook scenario analysis to confirm transition and physical risks that will have short, medium or long-term impacts on our operations. To make sure the full breadth of possible physical and transition risks were considered, three scenarios were selected and developed with advice from external experts.

Scenarios were selected to align with the TCFD requirements, Australian Government commitments and represent the range of impacts which may occur. These scenarios included trends and assumptions across eight different variables to describe the extent of potential changes which may be possible. Variables include the carbon market, the economy, technology, social and community, environmental, freight, transport technology and urbanisation.

A summary of each scenario is presented in Figure 1.

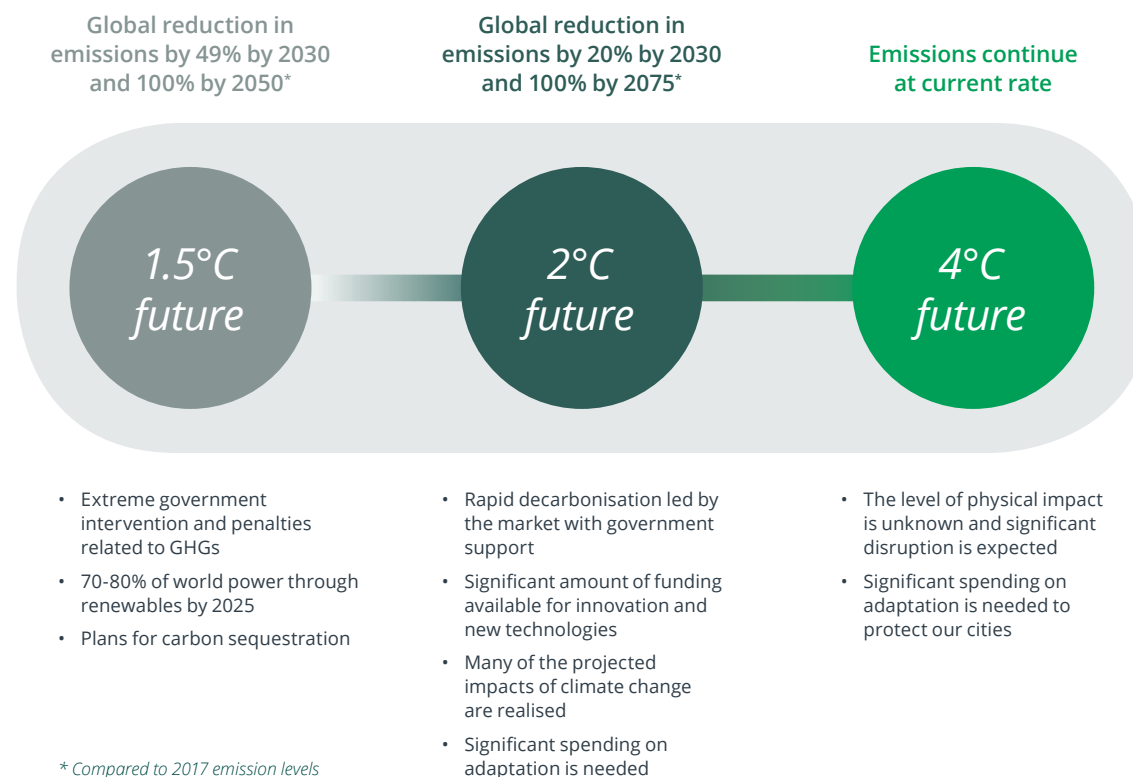
Identifying and managing material risks

Climate-related threats and opportunities were assessed in FY19 via a two stage process:

1. Interviews and workshops with various asset and delivery team employees to review the physical risks relevant across each Australian region, including a review of the existing risk registers. To assess the physical risk of climate change, the worst case climate change projection was used (RCP 8.5). During the workshops, participants also considered RCP 2.6 and RCP 4.5 when assigning various risk levels.
2. Developing the three climate scenarios and delivering workshops to identify and assess transition-related threats and opportunities. Each of these scenarios are customisable and will be updated as part of the overall approach to climate risk management.

Both pieces of work have now been combined and the assessment was finalised to determine the most material climate-related threats and opportunities for reporting.

Figure 1: Key climate scenario characteristics for TCFD purposes



At this stage the assessment is still considered qualitative, as further studies and research are yet to be completed, however it does indicate which risks may potentially have a material impact on Transurban's business. Each of these risks will be assessed further to confirm the scope and relative impact of the different consequences to better inform the management approach and reporting for future years.

An important consideration in the assessment of each risk was the relevant timeframe where the risk may be realised. In each case, the relevant scenario was documented and the most likely time horizon was identified. The likelihood and consequence was then assigned based on those parameters.

Our approach to managing climate-related risks is generally aligned to three key principles:

- **Assess and measure:** Use an evidence based approach to assess and measure climate related risks.
- **Adapt:** Identify the optimal adaptation solution and timeline using asset lifecycle models and best practice solutions.
- **Transition:** Pursue opportunities to decarbonise our business and transition towards a low emission future.

Table 2 includes a summary of the 11 material risks and outlines the existing controls which are currently in place. Other risks related to the price of oil, customer behaviour, regulatory changes related to air quality, international trade patterns, and shifts in urban development were also identified, however due to the longer timeframes and emerging nature of each risk, have not been reported at this time.

Managing climate risks on major projects

For major projects, our commitment 'to identify and respond to climate change-related risks for new assets', is supported by a number of contractual requirements. These include a requirement to undertake a climate change risk assessment, and consider the impact of design and construction on the environment, as well as a requirement to achieve sustainability performance ratings. In Australia, all major projects are required to achieve at least an 'Excellent' Infrastructure Sustainability rating through design and construction.

The Infrastructure Sustainability rating tool is facilitated by the Infrastructure Sustainability Council of Australia and sets best practice sustainability for projects. The framework includes specific requirements related to climate risk and adaptation and supports projects to deliver innovative and resilient infrastructure that can withstand physical impacts under a worst case scenario of approximately 4 degrees of warming by 2100.

The Logan Enhancement Project

Completing a comprehensive climate change risk assessment and adaptation response

Through the Logan Enhancement Project's commitment to address climate related risks, a comprehensive Climate Change Risk Assessment and Adaptation report was prepared and used to inform key design elements of the project.

The project is located primarily in the City of Brisbane at its southern border with the Logan City Council area. Brisbane is a sub-tropical locality, with a warm humid summer and mild winter. The area has experienced severe weather including tropical cyclones (rarely) and severe thunderstorms and hailstorms (annually). Southern Brisbane can be affected by drought, flood and bushfires. The local climate is affected by a variety of meteorological processes including the El Niño Southern Oscillation and the Pacific Decadal Oscillation.

In order to explore each risk and develop an informed approach to adaptation, the project team undertook the risk assessment through a multi-disciplinary workshop and also considered the four accepted emissions scenarios; Representative Concentration Pathways (RCPs) 2.6, 4.5, 6.0 and 8.5. These scenarios were used to test the sensitivity of different climate parameters and inform the final risk rating.

In accordance with the Infrastructure Sustainability rating tool, where the project team identified risks with a high or very high risk rating, they developed an adaptation response, and where possible addressed that response through design. Where risks were related to operational aspects, recommendations have been made to Transurban to address through operations.

In total the project team addressed 100% of risks with a high rating, 50% of risks with a moderate rating, and 17% of risks with a low rating. All remaining risks will be captured and managed through operational management plans and in accordance with our Enterprise Risk Management Framework.

Table 2: Material risks and controls

Time horizon for risk to be realised	TCFD category	Scenario	Risk/opportunity description	Existing controls	Example business opportunities
Opportunities					
Short term	Markets	All scenarios	Transurban takes a leadership position in climate mitigation demonstrating a strong commitment and continues to drive enhanced outcomes.	<p>In all areas of our business we strive to be leaders in our sector, and sustainability and climate mitigation are no different.</p> <p>In 2013 we established a clear energy reduction target to reduce our energy use by 10% by 2023. This was followed by a science-based greenhouse gas reduction target to reduce our emissions by 52% by 2030 (from a 2016 baseline).</p> <p>To ensure we are at the forefront of sustainability aspirations, we have also recently revised our Sustainability Strategy to align with the UN Sustainable Development Goals (SDGs). Goal 13 “Take urgent action to combat climate change and its impacts” is a material SDG for Transurban.</p>	<ul style="list-style-type: none"> • Continue to enhance our climate change disclosures in corporate reporting • Participate in the Carbon Disclosure Project (from 2019)
Short to mid term	Policy	2°C and 4°C futures	Provide a safe and reliable option for travel during periods of extreme weather.	<p>As above, there are a number of mitigation measures in place to reduce the risk to road users during extreme weather events.</p> <p>Our customer apps and tools, like the LinktGo and Linkt mobile app, provide platforms for engagement and information sharing related to weather patterns and safety.</p> <p>We conduct emergency management exercises and tests to ensure we have the capability to respond to the impacts of extreme weather on our roads. We regularly collaborate with emergency services to ensure familiarity with our assets and response processes.</p> <p>Our Operations teams prepare for extreme weather events to minimise the potential impact to our customers.</p>	<ul style="list-style-type: none"> • Together with Traffic Management Centres across our networks, further explore opportunities to integrate weather related information and updates into communications with customers (eg via appropriate and safe use of mobiles apps and variable message signage on motorways).
Mid term	Resource Efficiency	2°C future	A shift towards reuse and recycling reduces our operating costs and enables better access to goods/material within the Australian market.	<p>Our sustainability policy includes a commitment to examine and challenge the way we plan, design, construct and operate assets to reduce their whole-of-life impact while maintaining or improving their economic performance.</p> <p>We work with our suppliers to incorporate materials with recycled content in projects (eg steel slag and recycled crushed glass) and reuse materials (eg asphalt).</p> <p>There is also an initiative underway to develop a Circular Materials Strategy focussing on concrete, asphalt and steel (refer to p43 in the FY19 Corporate Report for information on a low carbon cement partnership with Beyond Zero Emissions).</p>	<ul style="list-style-type: none"> • Establish targets for reducing embodied carbon emissions for cement • Engage with suppliers and road agencies to explore strategies to achieve emission reductions in key materials
Mid to long term	Resilience	1.5°C and 2°C futures	Uptake of low emission vehicles, ride sharing solutions and autonomous vehicles, are accelerated due to climate policy changes and therefore reduces the amount of indirect emissions caused by customer vehicles on our network.	<p>Global and local patterns related to low emissions vehicles are currently managed through six-monthly trend analysis and reporting.</p> <p>A business-wide working group has also been established to explore the various operational impacts and opportunities related to low emission vehicle uptake.</p> <p>A number of strategic projects related to autonomous vehicles and ride sharing are underway to encourage reduced emissions from customer vehicles.</p>	<ul style="list-style-type: none"> • Identify additional opportunities to optimise ventilation processes and reduce ongoing power requirements • Continue to deliver strategic projects to encourage the uptake of low emission vehicles and drive reduced customer emissions

Table 2: Material risks and controls (continued)

Time horizon for risk to be realised	TCFD category	Scenario	Risk/opportunity description	Existing controls	Example business opportunities
Threats					
Short term	Physical	2°C and 4°C futures	More periods of intense rain reduces visibility, pools water, and affects road user safety. This is less relevant for our Victorian assets.	<p>In line with the Safe System based strategies across Australia and around the world, we recognise that road safety is a shared responsibility and we proactively engage with our customers, partners and the community to make every journey safe.</p> <p>We continue to strive for fatality and injury-free roads, using data and research to inform our road safety activities and action plans, and to improve the safety and performance of our networks.</p> <p>Pavement designs across our network also incorporate mitigation measures to protect against flooding and to avoid water pooling on our roads.</p> <p>Transurban Queensland has a Prolonged Severe Weather Events procedure in place to manage severe weather events which includes operational readiness, preparation, management and recovery phase requirements.</p>	<ul style="list-style-type: none"> • Continue to assess the potential impacts of adverse weather on operations and incident response practices • Continue investment into public education and behaviour change campaigns related to road user safety and safe driving
Short to mid term	Market	2°C future	Institutional investors and banks introduce more stringent lending requirements related to carbon management and climate change, prioritising investment in 'green' companies and challenging Transurban's ability to attract capital at an acceptable rate.	<p>To validate our position as leaders in sustainability, we report against a number of third party assessment frameworks including:</p> <p>Global Real Estate Benchmark (GRESB)—currently ranked first in the Global Transport Infrastructure sector</p> <p>Dow Jones Sustainability Index (DJSI)—currently ranked second in the Transport and Transportation Infrastructure Sector</p> <p>Application of the Infrastructure Sustainability (IS) rating tool for major projects</p>	<ul style="list-style-type: none"> • Participate in the Carbon Disclosure Project (CDP) • Enhance our performance in additional third-party sustainability benchmarking assessments and ESG risk ratings
Short to mid term	Physical	2°C and 4°C futures	Rising average temperatures and an increase in days of extreme heat create an unsafe working environment for employees and sub-contractors required to work outside.	<p>Transurban has a strong safety culture and encourages active reporting and management of health, safety and environmental risks and issues. There is also requirements for HSE training and awareness including practical exercises. All contractors are required to undertake an induction process and are expected to comply with Transurban minimum requirements.</p> <p>Incident response vehicles are also fitted with water and fridges for employees required to be out on the assets for extended periods of time.</p> <p>Most relevant in QLD, with the southern states longer term.</p>	

Table 2: Material risks and controls (continued)

Time horizon for risk to be realised	TCFD category	Scenario	Risk/opportunity description	Existing controls	Example business opportunities
Threats (continued)					
Mid term	Physical	2°C and 4°C futures	Unplanned and high cost maintenance activities due to accelerated deterioration of road surfaces from severe weather.	<p>Pavements and structural elements of our assets are designed and delivered in accordance with best practice and state required specifications. These designs consider weather-related impacts and therefore already incorporate a strong level of adaptation.</p> <p>All parts of our network are inspected at least yearly. For some components, asset stress testing is also undertaken.</p> <p>Alternative materials that promise better durability while also meeting specifications are being trialled (eg stone mastic asphalt on the M2). These trials are important so products with enhanced performance can be tested.</p>	<ul style="list-style-type: none"> Integrate climate-related considerations into lifecycle planning processes and measure asset resilience Explore opportunities for smart monitoring and real-time alerts for key components of the assets
Mid term	Physical	4°C future	Access to, and use of, our network is negatively impacted during periods of extreme weather.	<p>We strive to create strong relationships with all our stakeholders, including governments. This relationship creates opportunities to discuss issues and work together to deliver solutions.</p> <p>Many of our government partners have existing adaptation strategies in place to manage the effects of climate change. The City of Sydney and Melbourne Council are also part of the 100 Resilient Cities network.</p> <p>Cooperative arrangements with the various Traffic Management Centres in NSW, QLD, and VIC to alert road users in instances of extreme weather.</p>	<ul style="list-style-type: none"> Actively monitor local and state government resilience plans to identify vulnerabilities and partnership opportunities. Integrate climate metrics and data into traffic modelling to further measure this risk Explore opportunities to communicate weather-related information to our customers through digital messaging channels
Mid term	Policy	1.5°C and 2°C futures	The price of electricity continues to increase, driven by new government mandates and carbon pricing, and increases asset operating costs.	<p>A target to reduce our energy use by 10 per cent by 2023 is currently in place. This target is supported by specific objectives and actions.</p> <p>A number of specific actions are underway to improve the energy efficiency of our network including upgrading to LED lights and optimising ventilation systems.</p>	<ul style="list-style-type: none"> Continue to explore opportunities for renewable energy procurement and installations
Mid to long term	Resource Efficiency	1.5°C and 2°C futures	Changes in international trade and impacts from overseas weather events affects our supply chain and access to critical materials and equipment.	<p>Our sustainable procurement approach is informed by the International Guidance Standard on Sustainable Procurement (ISO 20400:2017). Work is well underway to better understand sustainability and human rights risks across our supply chain.</p> <p>Our Supplier Sustainability Code of Practice also sets governance, community, environmental management, social responsibility and supply chain criteria for all suppliers working with Transurban.</p> <p>This increased transparency across our supply chain will help us manage additional risks as they arise.</p>	<ul style="list-style-type: none"> Building on the sustainable procurement program of activities, undertake a study into our supply chain's vulnerability to climate impacts

Global Reporting Initiative (GRI) annotated index

GRI Index

Transurban reports non-financial data with reference to the Global Reporting Initiative (GRI) Standards. The table below either shows where content for a specific GRI indicator can be found within Transurban's FY19 Reporting Suite and/or contains a brief comment in relation to the indicator.

GRI	Disclosure	Location or response ¹
General Disclosures		
102-1	Name of the organisation	Transurban Limited
102-2	Activities, brands, products, and services	FY19 Corporate Report/Introduction and overview/About us
102-3	Location of headquarters	Tower Five, Collins Square, 727 Collins Street, Docklands, Victoria Australia
102-4	Location of operations	FY19 Corporate Report/Introduction and overview/About us
102-5	Ownership and legal form	FY19 Corporate Governance Statement
102-6	Markets served	FY19 Corporate Report/Introduction and overview/About us
102-7	Scale of the organisation	FY19 Corporate Report/Introduction and overview/About us FY19 Corporate Report/Our business performance, Financial statements
102-8	Information on employees and other workers	FY19 Corporate Report/Our business performance/Our people FY19 Sustainability Data and Climate Change Disclosures/Employee data tables

¹ Not applicable—indicator does not apply to Transurban's business or operations; Non-core—indicator designated by GRI as discretionary for reporting purposes; Not material—indicator is not considered important to our stakeholders and there are limited potential consequences; Not reported—material indicator but data are not available (data collection methodology and processes are under development)

GRI	Disclosure	Location or response ¹		
102-9	Supply chain	<p>FY19 Corporate Report/Our business performance/Business partners and suppliers</p> <p>Transurban has a large and complex supply chain covering day-to-day operations and major projects. In FY19 we engaged directly with over 1,600 suppliers. Key spend categories include Infrastructure (our highest spend area—65% of total spend), Technology and Corporate Services. We have 47 spend sub-categories and highest spend areas include Major Project Construction and Acquisition, Operations and Maintenance Prime Services, Intelligent Transport Systems, Professional Services and Consulting, Financial Services and Customer Communications</p>		
102-10	Significant changes to the organization and its supply chain	<p>FY19 Corporate Report/Introduction and overview/About us</p> <p>FY19 Corporate Report/Our business performance/Investors, Business partners and suppliers</p> <p>FY19 Directors' Report</p> <p>FY19 Investor Presentation</p>		
102-11	Precautionary Principle or approach	<p>The Precautionary Principle applies to Transurban in terms of vehicle use on our roads and air emissions. Transurban ensures that air emissions from tunnels comply with all regulatory requirements and is investigating potential solutions to improve air quality through our Jungliefy Breathing Wall trial on Sydney's Eastern Distributor and Hills M2 and promoting use of electric vehicles (in partnership with the Quebec Ministry of Transport) on Montreal's A25 by waiving tolls</p>		
102-12	External initiatives	<p>Transurban subscribes to or endorses a number of economic, environmental and social charters, principles or other initiatives including:</p> <ul style="list-style-type: none"> • United Nations Global Compact • United Nations' Sustainable Development Goals • Infrastructure Sustainability ratings for major projects (Australia) • Envision sustainability ratings for major projects in North America • ISO 20400 – Sustainable procurement (guidance) • ASX Council's Corporate Governance Principles 		
102-13	Membership of associations	<table border="0"> <tr> <td data-bbox="907 973 1523 1463"> <p>Key Australian memberships include:</p> <ul style="list-style-type: none"> • Committee for Economic Development of Australia • Infrastructure Partnerships Australia • Business Council of Australia • Infrastructure Sustainability Council of Australia (ISCA) • Roads Australia • Electric Vehicle Council • Business Renewables Centre Australia • Intelligent Transport Systems Australia • Signatory member of UN Global Compact/Global Compact Network Australia • ISCA Modern Slavery Coalition pilot (road construction sector) • National Road Safety Partnership Program • Thriving Communities Partnership • Social Traders </td> <td data-bbox="1590 973 2119 1463"> <p>Key North American memberships include:</p> <ul style="list-style-type: none"> • The Association for the Improvement of American Infrastructure • American Highway Users Alliance • American Road and Transportation Builders Association • International Bridge, Tunnel and Turnpike Association • Intelligent Transportation Society of America • Intelligent Transportation Society of Virginia • Northern Virginia Transportation Alliance </td> </tr> </table>	<p>Key Australian memberships include:</p> <ul style="list-style-type: none"> • Committee for Economic Development of Australia • Infrastructure Partnerships Australia • Business Council of Australia • Infrastructure Sustainability Council of Australia (ISCA) • Roads Australia • Electric Vehicle Council • Business Renewables Centre Australia • Intelligent Transport Systems Australia • Signatory member of UN Global Compact/Global Compact Network Australia • ISCA Modern Slavery Coalition pilot (road construction sector) • National Road Safety Partnership Program • Thriving Communities Partnership • Social Traders 	<p>Key North American memberships include:</p> <ul style="list-style-type: none"> • The Association for the Improvement of American Infrastructure • American Highway Users Alliance • American Road and Transportation Builders Association • International Bridge, Tunnel and Turnpike Association • Intelligent Transportation Society of America • Intelligent Transportation Society of Virginia • Northern Virginia Transportation Alliance
<p>Key Australian memberships include:</p> <ul style="list-style-type: none"> • Committee for Economic Development of Australia • Infrastructure Partnerships Australia • Business Council of Australia • Infrastructure Sustainability Council of Australia (ISCA) • Roads Australia • Electric Vehicle Council • Business Renewables Centre Australia • Intelligent Transport Systems Australia • Signatory member of UN Global Compact/Global Compact Network Australia • ISCA Modern Slavery Coalition pilot (road construction sector) • National Road Safety Partnership Program • Thriving Communities Partnership • Social Traders 	<p>Key North American memberships include:</p> <ul style="list-style-type: none"> • The Association for the Improvement of American Infrastructure • American Highway Users Alliance • American Road and Transportation Builders Association • International Bridge, Tunnel and Turnpike Association • Intelligent Transportation Society of America • Intelligent Transportation Society of Virginia • Northern Virginia Transportation Alliance 			

GRI	Disclosure	Location or response¹
102-14	Statement from senior decision-maker	FY19 Corporate Report/CEO message
102-15	Key impacts, risks, and opportunities	FY19 Corporate Report/Our business performance/Communities FY19 Corporate Report/Governance and risk
102-16	Values, principles, standards, and norms of behaviour	FY19 Corporate Governance Statement
102-17	Mechanisms for advice and concerns about ethics	FY19 Corporate Governance Statement
102-18	Governance structure	FY19 Corporate Governance Statement
102-19	Delegating authority	FY19 Corporate Governance Statement
102-20	Executive-level responsibility for economic, environmental, and social topics	The following executives were responsible for economic, environmental and social matters in FY19: <ul style="list-style-type: none"> • Economic performance and sustainable procurement: Chief Financial Officer (Adam Watson) • Sustainability: Group Executive Victoria and Strategy (Wes Ballantine) • Health, safety and environment: Group Executive, Project Delivery (Tony Adams) • Community: Group Executive, Corporate Affairs (Henry Byrne) • Customer: Group Executive, Customer (Kris Cooney) • Diversity: Group Executive, People and Culture (Suzette Corr)
102-21	Consulting stakeholders on economic, environmental, and social topics	FY19 Corporate Report/Introduction and overview/Stakeholder engagement
102-22	Composition of the highest governance body and its committees	FY19 Corporate Governance Statement FY19 Corporate Report/Governance and Risk (Board of Directors)
102-23	Chair of the highest governance body	FY19 Corporate Governance Statement
102-24	Nominating and selecting the highest governance body	FY19 Corporate Governance Statement
102-25	Conflicts of interest	FY19 Corporate Governance Statement
102-26	Role of highest governance body in setting purpose, values, and strategy	FY19 Corporate Report/Governance and Risk
102-27	Collective knowledge of highest governance body	Non-core and Not material
102-28	Evaluating the highest governance body's performance	Non-core and Not material
102-29	Identifying and managing economic, environmental, and social impacts	FY19 Corporate Governance Statement
102-30	Effectiveness of risk management processes	FY19 Corporate Governance Statement
102-31	Review of economic, environmental, and social topics	FY19 Corporate Governance Statement
102-32	Highest governance body's role in sustainability reporting	The FY19 Corporate Report has been reviewed by Transurban's Board
102-33	Communicating critical concerns	Non-core and Not material
102-34	Nature and total number of critical concerns	Non-core and Not material

GRI	Disclosure	Location or response¹
102-35	Remuneration policies	FY19 Remuneration Report
102-36	Process for determining remuneration	FY19 Remuneration Report
102-37	Stakeholders' involvement in remuneration	FY19 Remuneration Report
102-38	Annual total compensation ratio	Non-core and Not material
102-39	Percentage increase in annual total compensation ratio	Non-core and Not material
102-40	List of stakeholder groups	FY19 Corporate Report/Introduction and overview/Our Strategy, Stakeholders
102-41	Collective bargaining agreements	FY19 Sustainability Data and Climate Change Disclosures/Employee data tables
102-42	Identifying and selecting stakeholders	FY19 Corporate Report/Introduction and overview/Our Strategy, Stakeholders
102-43	Approach to stakeholder engagement	FY19 Corporate Report/Introduction and overview/Our Strategy, Stakeholders FY19 Corporate Report/Our business performance/Customers
102-44	Key topics and concerns raised	FY19 Corporate Report/Introduction and overview/Our Strategy, Stakeholders
102-45	Entities included in the consolidated financial statements	FY19 Financial Statements
102-46	Defining report content and topic Boundaries	FY19 Sustainability Data and Climate Change Disclosures/Reporting scope and materiality
102-47	List of material topics	FY19 Sustainability Data and Climate Change Disclosures/Reporting scope and materiality
102-48	Restatements of information	No restatements are provided for FY18
102-49	Changes in reporting	FY19 Sustainability Data and Climate Change Disclosures/Reporting scope and materiality
102-50	Reporting period	FY19 Corporate Report/Introduction and overview/About this report
102-51	Date of most recent report	Our FY18 sustainability report was released 11 October 2018
102-52	Reporting cycle	Transurban reports annually on an Australian Financial Year basis
102-53	Contact point for questions regarding the report	FY19 Corporate Report/Back cover; Corporate@transurban.com
102-54	Claims of reporting in accordance with the GRI Standards	FY19 Corporate Report/Introduction and overview/About this report
102-55	GRI content index	This table
102-56	External assurance	FY19 Corporate Report/Introduction and overview/About this report FY19 Sustainability Data and Climate Change Disclosures/Assurance statement

GRI	Disclosure	Location or response¹
Management Approach		
103-1	Explanation of the material topic and its Boundary	FY19 Sustainability Data and Climate Change Disclosures/Reporting scope and materiality FY19 Corporate Report/Our business performance/Customers, Communities, Our people, Government and industry, Business partners and suppliers, Investors
103-2	The management approach and its components	FY19 Corporate Report/Our business performance/Customers, Communities, Our people, Government and industry, Business partners and suppliers, Investors
103-3	Evaluation of the management approach	FY19 Corporate Report/Introduction and overview/Stakeholder engagement (material topics are discussed in the context of each stakeholder group)
Economic Performance		
201-1	Direct economic value generated and distributed	FY19 Investor Presentation FY19 Corporate Report/Our business performance/Communities
201-2	Financial implications and other risks and opportunities due to climate change	FY19 Corporate Report/Governance and risk (discusses our progress with implementing TCFD recommendations)
201-3	Defined benefit plan obligations and other retirement plans	Non-core and Not material
201-4	Financial assistance received from government	Not reported
Market Presence		
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Non-core and Not material
202-2	Proportion of senior management hired from the local community	Non-core and Not material
Indirect Economic Impacts		
203-1	Infrastructure investments and services supported	FY19 Investor Presentation
203-2	Significant indirect economic impacts	FY19 Corporate Report/Our business performance/Customers, Our People, Business partners and suppliers
Procurement Practices		
204-1	Proportion of spending on local suppliers	Our total procurement spend in FY19 was \$1.85B. 99.4% of this spend was with local suppliers (Australia—94.4% or USA—5%) and the balance (0.6%) with suppliers in other countries
Anti-corruption		
205-1	Operations assessed for risks related to corruption	100% of operations assessed for corruption in FY19
205-2	Communication and training about anti-corruption policies and procedures	Training on anti-corruption policies and procedures are undertaken annually across the organisation and employee opinions about the effectiveness of controls are assessed via the 'Our Voice' survey. Training is supported by internal communication
205-3	Confirmed incidents of corruption and actions taken	Nil incidents in FY19

GRI	Disclosure	Location or response ¹
Anti-competitive Behaviour		
206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Nil actions for FY19
Materials		
301-1	Materials used by weight or volume	Not reported
301-2	Recycled input materials used	Not reported
301-3	Reclaimed products and their packaging materials	Not applicable
Energy		
302-1	Energy consumption within the organization	FY19 Corporate Report/Our business performance/Communities FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables
302-2	Energy consumption outside of the organization	Not reported
302-3	Energy intensity	FY19 SDG Progress Report/Goal 7
302-4	Reduction of energy consumption	FY19 Corporate Report/Our business performance/Communities FY19 SDG Progress Report/Goal 7
302-5	Reductions in energy requirements of products and services	Not applicable
Water and Effluents		
303-1	Interactions with water as a shared resource	Non-core and Not material
303-2	Management of water discharge-related impacts	Non-core and Not material
303-3	Water withdrawal	FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables
303-4	Water discharge	FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables
303-5	Water consumption	FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables
Biodiversity		
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Sections of the following motorways are located adjacent to areas of high biodiversity value (National Parks or nature reserves): <ul style="list-style-type: none"> • Hills M2 (Sydney—Lane Cove National Park) • Gateway Motorway (Brisbane—Karawatha Forest, Nudgee Waterhole Reserve, Belmont Hills Reserve, Stretton Wetland) • Legacy Way (Brisbane—Mount Coot-Tha Forest/D'Aguilar National Park Reserve) • Logan Motorway (Brisbane—Glider Forest Conservation Area, Sergeant Dan Stiller Memorial Reserve)

GRI	Disclosure	Location or response ¹
304-2	Significant impacts of activities, products, and services on biodiversity	In some cases, motorways run through areas of fragmented natural habitat (routes were approved under relevant environmental impact assessment and planning approval processes). As a consequence, there are impacts on wildlife movement in certain areas and potential for fatalities through interaction with motorway traffic
304-3	Habitats protected or restored	Ongoing assessment of two past restoration/regeneration projects underway with Landcare Australia (Power St Loop—Victoria and M2 Motorscapes—NSW) For the Logan Enhancement Project in QLD, habitat connectivity will be enhanced by 41% and there will be a 20% improvement in the overall ecological value of the project area
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Not reported

Emissions

305-1	Direct (Scope 1) GHG emissions	FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables
305-2	FY19 Corporate Report/Our business performance/Communities	FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables FY19 Corporate Report/Our business performance/Communities
305-3	Other indirect (Scope 3) GHG emissions	FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables FY19 Corporate Report/Our business performance/Communities
305-4	GHG emissions intensity	FY19 SDG Progress Report/Goal 9
305-5	Reduction of GHG emissions	FY19 Corporate Report/Our business performance/Communities
305-6	Emissions of ozone-depleting substances (ODS)	Not applicable
305-7	Nitrogen oxides (NOX), sulphur oxides (SOX), and other significant air emissions	FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables

Effluents and Waste

306-2	Waste by type and disposal method	FY19 Sustainability Data and Climate Change Disclosures/Environmental data tables
306-3	Significant spills	Nil significant spills in FY19
306-4	Transport of hazardous waste	Not reported

Environmental Compliance

307-1	Non-compliance with environmental laws and regulations	Nil significant fines or significant non-monetary sanctions in FY19
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Supplier Environmental Assessment

308-1	New suppliers that were screened using environmental criteria	Key suppliers are required to complete 'returnable schedules' which include questions regarding environmental criteria
308-2	Negative environmental impacts in the supply chain and actions taken	Not reported

GRI	Disclosure	Location or response¹
Employment		
401-1	New employee hires and employee turnover	FY19 Sustainability Data and Climate Change Disclosures/Employee data tables
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	FY19 Sustainability Data and Climate Change Disclosures/Employee data tables
401-3	Parental leave	FY19 Sustainability Data and Climate Change Disclosures/Employee data tables
Labour/Management Relations		
402-1	Minimum notice periods regarding operational changes	As per enterprise agreements and standard practice, we notify employees as soon as practicable after a decision is made, allowing a period for consultation with employees who may be adversely affected (period varies depending on nature of change, but generally provide a minimum consultation period of one week)
Occupational Health and Safety		
403-1	Occupational health and safety management system	Transurban has an occupational health and safety (OHS) management system aligned with international management system standards ISO 45001
403-2	Hazard identification, risk assessment, and incident investigation	Transurban has an enterprise risk management framework, standards, procedures and systems to systematically conduct risk assessments, identify hazards and conduct incident investigations
403-3	Occupational health services	Transurban promotes and supports worker health through Belonging and wellbeing programs. Belonging and wellbeing program focuses on four pillars: Mind, Body, Connected and Recognition in and outside of the workplace
403-4	Worker participation, consultation, and communication on occupational health and safety	Transurban has various methods and forums to enable worker participation, consultation and communication on occupational health and safety
403-5	Worker training on occupational health and safety	Transurban has a group wide Health, Safety and Environment Induction for all employees and contractors. In addition, various OHS training is undertaken on specific work-related hazards, high risk activities, or hazardous situations
403-6	Promotion of worker health	Transurban promotes and supports worker health through Belonging and wellbeing programs. Belonging and wellbeing program focuses on four pillars: Mind, Body, Connected and Recognition
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Transurban's OHS management system sets out clear standards, procedures, systems and tools to prevent and mitigate occupational health and safety impacts directly linked by business relationships
403-8	Workers covered by an occupational health and safety management system	Transurban has an OHS management system aligned to international management system standard ISO 45001, and is applicable to all employees and other workers under the management and control of Transurban
403-9	Work-related injuries	FY19 Corporate Report/Business Partners and Suppliers FY19 Corporate Report/Our People
403-10	Work-related ill health	FY19 Corporate Report/Business Partners and Suppliers FY19 Corporate Report/Our People

GRI	Disclosure	Location or response¹
Training and Education		
404-1	Average hours of training per year per employee	FY19 Sustainability Data and Climate Change Disclosures/Employee data tables
404-2	Programs for upgrading employee skills and transition assistance programs	FY19 Corporate Report/Our people/Building capability In the event that an employee's role is made redundant and there is no alternative role, Outplacement Services are provided to the employee
404-3	Percentage of employees receiving regular performance and career development reviews	100%
Diversity and Equal Opportunity		
405-1	Diversity of governance bodies and employees	FY19 Corporate Governance Statement
405-2	Ratio of basic salary and remuneration of women to men	FY19 Sustainability Data and Climate Change Disclosures/Employee data tables
Non-discrimination		
406-1	Incidents of discrimination and corrective actions taken	Nil instances in FY19
Freedom of Association and Collective Bargaining		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Non-core and Not material
Child Labour		
408-1	Operations and suppliers at significant risk for incidents of child labour	Transurban is developing its approach to addressing Modern Slavery in our supply chains and will release a Modern Slavery Statement in FY21 as per the Commonwealth Modern Slavery Act, 2018
Forced or Compulsory Labour		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	Transurban is developing its approach to addressing Modern Slavery in our supply chains and will release a Modern Slavery Statement in FY21 as per the Commonwealth Modern Slavery Act, 2018
Security Practices		
410-1	Security personnel trained in human rights policies or procedures	Not applicable

GRI	Disclosure	Location or response ¹
Rights of Indigenous Peoples		
411-1	Incidents of violations involving rights of indigenous peoples	Not applicable
Human Rights Assessment		
412-1	Operations that have been subject to human rights reviews or impact assessments	Non-core and Not material
412-2	Employee training on human rights policies or procedures	FY19 Sustainability Data and Climate Change Disclosures/Employee data tables
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	All suppliers are subject to Transurban's Supplier Sustainability Code of Practice which include human rights requirements
Local Communities		
413-1	Operations with local community engagement, impact assessments, and development programs	FY19 Corporate Report/Our business performance/Communities
413-2	Operations with significant actual and potential negative impacts on local communities	FY19 Corporate Report/Our business performance/Communities
Supplier Social Assessment		
414-1	New suppliers that were screened using social criteria	Key suppliers are required to complete 'returnable schedules' which include questions regarding social criteria
414-2	Negative social impacts in the supply chain and actions taken	Contractors for all major projects have and implement procedures to record and manage community complaints
Public Policy		
415-1	Political contributions	FY19 Corporate Governance Statement Data are reported annually to the Australian Electoral Commission
Customer Health and Safety		
416-1	Assessment of the health and safety impacts of product and service categories	FY19 Corporate Report/Our business performance/Customers FY19 SDG Progress Report/Goal 3
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	In January 2019, a Tullamarine Freeway sign, which was among assets built by CPB Contractors as part of the CityLink Tulla Widening Project, fell and hit a passenger vehicle. An extensive investigation into the incident confirmed the preliminary finding that the absence of 'stiffener plates' inside the gantry the sign was mounted on, was the primary cause. The investigation, which has been independently reviewed and verified, highlighted that the missing stiffener plates are the result of failures in the quality control and inspection processes during fabrication of the gantry. While on-site audits show no signs of deterioration or stress, to ensure the signage meets a 100 year life-span, similar top-mounted signs installed as part of the Project will be strengthened

GRI	Disclosure	Location or response ¹
Marketing and Labelling		
417-1	Requirements for product and service information and labelling	Not applicable
417-2	Incidents of non-compliance concerning product and service information and labelling	Non-core and Not material
417-3	Incidents of non-compliance concerning marketing communications	Nil instances in FY19
Customer Privacy		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	One potential breach reported in Australia to the Office of the Australian Information Commissioner
Socioeconomic Compliance		
419-1	Non-compliance with laws and regulations in the social and economic area	Nil instances in FY19