

ASSET SCOPE

Transurban includes information in its Sustainability Report about all assets and projects in which it holds an interest (Table 1).

For the purpose of some environmental metrics and targets in the body of the report, we limit the scope of reporting to operational assets under Transurban financial control (Table 2). This excludes construction projects, and assets in which Transurban has an equity interest but not direct management control (M5 and M7).

Separate to the Sustainability Report but provided for transparency, Transurban reports under the Australian National Greenhouse and Energy Reporting (NGER) Act which sets obligations limited to Australian assets over which Transurban has day-to-day 'operational control' (Table 3). This excludes our US assets and some Australian assets over which contractors have day-to-day asset management.

The tables below show an outline of different ownership, operational and reporting considerations for different assets.

Table 1. Transurban has interests in 15 toll roads and a number of development projects. Roads and construction projects active during FY17 are shown below by location. Other projects were in development but not construction in FY17.

| Asset (region) | Roads in FY17 | | | | | | | | | | | | | | Construction projects | | | | | | | |
|----------------|---------------|----------|-----------|----------|-----------|----------|----------|----------|----------|-----------|----------|----------|-----------|----------|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | CL (VIC) | M2 (NSW) | LCT (NSW) | ED (NSW) | CCT (NSW) | M5 (NSW) | M7 (NSW) | GM (QLD) | LM (QLD) | GBB (QLD) | C7 (QLD) | LW (QLD) | APL (QLD) | 495 (US) | 95 (US) | CTW (VIC) | WGT (VIC) | NCX (NSW) | GUN (QLD) | LEP (QLD) | ICB (QLD) | 395 (US) |

Table 2. In the FY17 Sustainability Report, many key environmental metrics and targets are focused on assets over which Transurban has financial control (>50% ownership) and the greatest ability to drive improvement.

| Asset (%) | Transurban financial control (>50% ownership) in FY17 | | | | | | | | | | | | | | Investment | | Construction projects | | | | | |
|-----------|---|-----------|------------|------------|------------|------------|------------|-------------|------------|------------|-------------|------------|-----------|----------|------------|-----|-----------------------|-----|-----|-----|-----|-----|
| | CL (100%) | M2 (100%) | LCT (100%) | ED (75.1%) | CCT (100%) | GM (62.5%) | LM (62.5%) | GBB (62.5%) | C7 (62.5%) | LW (62.5%) | APL (62.5%) | 495 (100%) | 95 (100%) | M5 (50%) | M7 (50%) | CTW | WGT | NCX | GUN | LEP | ICB | 395 |

Table 3. Separate to the Sustainability Report, Transurban reports energy and greenhouse gas emissions data under the Australian National Greenhouse and Energy Reporting (NGER) Act at the end of October each year.

| Asset | Reported under NGER regulations for FY17 | | | | | | | | | Not reported under NGER regulations for FY17 | | | | | | | | | | | | | |
|-------|--|----|-----|----|-----|----|----|-----|--|--|----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| | CL | M2 | LCT | ED | CCT | GM | LM | GBB | | C7 | LW | APL | 495 | 95 | M5 | M7 | CTW | WGT | NCX | GUN | LEP | ICB | 395 |

Abbreviations CL: CityLink, M2: Hills M2, LCT: Lane Cove Tunnel, ED: Eastern Distributor, CCT: Cross City Tunnel, M5: M5 Southwest, M7: Westlink M7, GM: Gateway Motorway, LM: Logan Motorway, GBB: Go Between Bridge, C7: CLEM7, LW: Legacy Way, APL: AirportLink, 495: 495 Express Lanes, 95: 95 Express Lanes, CTW: CityLink Tulla Widening, NCX: NorthConnex, GUN: Gateway Upgrade North, LEP: Logan Enhancement Project, ICB: Inner City Bypass, 395: 395 Express Lanes, 95S: 95 Express Lanes Southern Extension.



Environment Data

GHG EMISSIONS

| | | FY14 | FY15 | FY16* | FY17 | FY17* |
|--|--------------------------------|----------------|------------------|------------------|------------------|------------------|
| Total direct and indirect GHG emissions | tonnes CO₂-e | 121,463 | 115,815 | 113,264 | 159,237 | 151,260 |
| Total Scope 1 & 2 | tonnes CO₂-e | 57,202 | 96,110 | 95,348 | 129,258 | 123,274 |
| Scope 1 | tonnes CO ₂ -e | 149 | 1,944 | 2,020 | 3,190 | 2,746 |
| Scope 2 | tonnes CO ₂ -e | 57,053 | 94,166 | 93,328 | 126,068 | 120,528 |
| Scope 3 [#] | tonnes CO ₂ -e | 64,261 | 19,705 | 17,916 | 29,979 | 27,986 |
| Customer travel emissions | tonnes CO₂-e | 703,149 | 1,685,752 | 1,231,750 | 1,964,705 | 1,372,482 |

* M5 and M7 excluded from Transurban's '10-in-10' targets and totals for energy and emissions

Scope 3 emissions include upstream impacts of fuel and electricity supply, fugitive emissions from landfill waste, and Transurban corporate air travel. Due to large variations each year in waste quantities depending on major works (and also potential for incompleteness of waste data), calculated Scope 3 emissions may fluctuate significantly year-on-year. Scope 1 and 2 emissions are considered a better representation of Transurban's corporate emissions profile.

| FY17 ONLY | | CL | M2 | LCT | ED | CCT | M5* | M7* | GM | LM | GBB | C7 | LW | APL | 495 | 95 | Off. | Total | Total* |
|--|--------------------------------|----------------|----------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|------------|---------------|---------------|---------------|---------------|---------------|--------------|------------------|------------------|
| Total direct and indirect GHG emissions | tonnes CO₂-e | 30,854 | 4,249 | 20,829 | 6,987 | 12,601 | 1,893 | 6,084 | 5,115 | 2,114 | 114 | 12,796 | 12,660 | 34,252 | 1,428 | 755 | 6,506 | 159,237 | 151,260 |
| Total Scope 1 & 2 | tonnes CO₂-e | 25,763 | 3,702 | 18,228 | 6,078 | 10,660 | 1,213 | 4,771 | 4,224 | 1,135 | 96 | 10,576 | 10,438 | 28,430 | 1,314 | 672 | 1,959 | 129,258 | 123,274 |
| Scope 1 | tonnes CO ₂ -e | 254 | 496 | 118 | 101 | 67 | 117 | 327 | 259 | 539 | 5 | 176 | 136 | 192 | 156 | 228 | 20 | 3,190 | 2,746 |
| Scope 2 | tonnes CO ₂ -e | 25,509 | 3,207 | 18,109 | 5,977 | 10,594 | 1,096 | 4,444 | 3,964 | 596 | 91 | 10,400 | 10,302 | 28,238 | 1,158 | 444 | 1,939 | 126,068 | 120,528 |
| Scope 3 | tonnes CO ₂ -e | 5,091 | 546 | 2,601 | 909 | 1,941 | 680 | 1,313 | 892 | 979 | 19 | 2,220 | 2,222 | 5,821 | 114 | 83 | 4,547 | 29,979 | 27,986 |
| Customer travel emissions | tonnes CO₂-e | 277,113 | 207,751 | 26,138 | 50,885 | 9,416 | 236,566 | 355,656 | 325,210 | 292,596 | 723 | 15,713 | 8,450 | 26,893 | 40,410 | 91,181 | NA | 1,964,705 | 1,372,482 |

* M5 and M7 excluded from Transurban's '10-in-10' targets and totals for energy and emissions



ENERGY CONSUMPTION

| | | FY14 | FY15 | FY16* | FY17 | FY17* |
|---------------------------------|-----------|----------------|----------------|----------------|----------------|----------------|
| Total energy consumption | GJ | 221,849 | 403,516 | 415,829 | 586,839 | 556,568 |
| Direct- Fuel | GJ | 2,371 | 28,180 | 29,251 | 45,838 | 39,483 |
| Natural gas | GJ | 821 | 599 | 558 | 780 | 780 |
| Petrol | GJ | 1,029 | 15,523 | 4,375 | 9,359 | 7,957 |
| Diesel | GJ | 509 | 11,813 | 22,271 | 35,695 | 30,742 |
| LPG | GJ | 12 | 245 | 2,047 | 4 | 4 |
| Indirect- Electricity | GJ | 219,478 | 375,336 | 386,577 | 541,002 | 517,085 |
| Grid electricity | GJ | 210,619 | 363,222 | 374,313 | 528,594 | 504,850 |
| Solar and GreenPower | GJ | 8,859 | 12,114 | 12,264 | 12,407 | 12,235 |

* M5 and M7 excluded from Transurban's '10-in-10' targets and totals for energy and emissions

| FY17 ONLY | | CL | M2 | LCT | ED | CCT | M5* | M7* | GM | LM | GBB | C7 | LW | APL | 495 | 95 | Off. | Total | Total* |
|---------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|------------|---------------|---------------|----------------|---------------|--------------|--------------|----------------|----------------|
| Total energy consumption | GJ | 88,063 | 20,791 | 79,301 | 27,222 | 46,641 | 6,577 | 23,694 | 21,985 | 10,394 | 487 | 50,498 | 49,476 | 133,099 | 12,957 | 7,457 | 8,197 | 586,839 | 556,568 |
| Direct- Fuel | GJ | 3,813 | 7,048 | 1,690 | 1,431 | 946 | 1,707 | 4,648 | 3,688 | 7,641 | 68 | 2,498 | 1,926 | 2,772 | 2,309 | 3,372 | 279 | 45,838 | 39,483 |
| Natural gas | GJ | 780 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 780 | 780 |
| Petrol | GJ | 77 | 463 | 261 | 16 | 0 | 1,251 | 151 | 214 | 0 | 0 | 191 | 8 | 1,028 | 2,309 | 3,372 | 17 | 9,359 | 7,957 |
| Diesel | GJ | 2,953 | 6,585 | 1,429 | 1,415 | 946 | 456 | 4,497 | 3,474 | 7,641 | 68 | 2,307 | 1,918 | 1,744 | 0 | 0 | 262 | 35,695 | 30,742 |
| LPG | GJ | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| Indirect- Electricity | GJ | 84,250 | 13,743 | 77,611 | 25,791 | 45,694 | 4,870 | 19,046 | 18,297 | 2,753 | 419 | 48,000 | 47,550 | 130,328 | 10,648 | 4,084 | 7,918 | 541,002 | 517,085 |
| Grid | GJ | 84,250 | 13,743 | 68,298 | 25,615 | 42,953 | 4,698 | 19,046 | 18,297 | 2,753 | 419 | 48,000 | 47,550 | 130,328 | 10,648 | 4,084 | 7,913 | 528,594 | 504,850 |
| Solar and GreenPower | GJ | 0 | 0 | 9,313 | 176 | 2,742 | 172 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12,407 | 12,235 |

* M5 and M7 excluded from Transurban's '10-in-10' targets and totals for energy and emissions

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. In FY17 this extrapolated data accounted for approximately 13% of Transurban's total fuel use.



SIGNIFICANT AIR EMISSIONS

Air emissions data reflects customer vehicle emissions extracted by tunnel ventilation systems.

| CityLink | UNIT | FY14 | FY15 | FY16 | FY17 |
|------------------------------------|--------|------|------|------|------|
| NOx (oxides of nitrogen) | tonnes | 105 | 106 | 111 | 110 |
| CO (carbon monoxide) | tonnes | 223 | 214 | 224 | 136 |
| PM10 (fine particles <-10 microns) | tonnes | 6 | 6 | 6 | 6 |
| VOC (volatile organic compounds) | tonnes | 4 | 4 | 4 | 4 |

| Lane Cove Tunnel | UNIT | FY14 | FY15 | FY16 | FY17 |
|------------------------------------|--------|------|------|------|------|
| NOx (oxides of nitrogen) | tonnes | 46 | 52 | 111 | 43 |
| CO (carbon monoxide) | tonnes | 91 | 98 | 224 | 71 |
| PM10 (fine particles <-10 microns) | tonnes | 2 | 2 | 6 | 2 |
| VOC (volatile organic compounds) | tonnes | 44 | 47 | 4 | 42 |

| Cross City Tunnel | UNIT | FY14 | FY15 | FY16 | FY17 |
|------------------------------------|--------|------|------|------|------|
| NOx (oxides of nitrogen) | tonnes | NA | 2.15 | 111 | 9.1 |
| CO (carbon monoxide) | tonnes | NA | 8.28 | 224 | 25.0 |
| PM10 (fine particles <-10 microns) | tonnes | NA | 0.31 | 6 | 0.4 |
| VOC (volatile organic compounds) | tonnes | NA | 0.43 | 4 | 2.2 |

The three tunnels above have regulatory requirements for total air emissions load (total tonnes emitted) as well as in-tunnel air quality. Total air emissions load for these three tunnels for FY17 was 162 tonnes NOx, 231 tonnes CO, 8 tonnes PM10 and 48 tonnes PM2.5. For FY17 there were no exceedances of air quality limits for these assets.

Queensland tunnel assets CLEM7, Legacy Way and AirportLinkM7 also have exhaust ventilation systems and regulatory requirements on ambient air quality. In-tunnel air quality as well as ambient air quality monitoring at nearby locations is undertaken and reported on the go via network website: <http://govianetwork.com.au/sustainability/air-quality-reports-2/>. It has not been reported in the same tables above since it is concentration-based air quality data (e.g. ppm) rather than total air emissions load (e.g. tonnes). In FY17 there were three exceedances of ambient air quality goals on Legacy Way and three exceedances on AirportLink. Each of these were related to particulate matter concentrations in the ambient air. In circumstances where an exceedance of the ambient air quality goals occurs, Transurban reports to the regulator about the performance of tunnel ventilation systems at the time and investigates whether tunnel ventilation or other unrelated outdoor sources have impacted ambient air quality.

Hills M2 and Eastern Distributor assets also feature shorter tunnel or partially 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.



Environment Data

WATER CONSUMPTION

| Potable water use | UNIT | FY14* | FY15* | FY16 | FY17 |
|---------------------|----------------------|---------------|---------------|---------------|---------------|
| CityLink | m ³ | 10,100 | 13,651 | 15,004 | 55,161 |
| Hills M2 | m ³ | 3,690* | 422 | 423 | 446 |
| Lane Cove Tunnel | m ³ | 596 | 451 | 592 | 592 |
| Eastern Distributor | m ³ | 691 | 724 | 724 | 929 |
| Cross City Tunnel | m ³ | n/a | 1,857 | 2,706 | 2,706 |
| M5 Southwest | m ³ | 4,676* | 2,076 | 2,076 | 2,076 |
| Westlink M7 | m ³ | n/a | n/a | n/a | 2,436 |
| Gateway | m ³ | n/a | n/a | 130 | 160 |
| Logan | m ³ | n/a | n/a | n/a | 0 |
| GBB | m ³ | n/a | n/a | n/a | 0 |
| CLEM7 | m ³ | n/a | 1,070 | 1,070 | 1,070 |
| Legacy | m ³ | n/a | n/a | 8,165 | 8,165 |
| AirportLink | m ³ | n/a | n/a | n/a | 98 |
| 495 Express Lanes | m ³ | 776 | 530 | 530 | 530 |
| 95 Express Lanes | m ³ | n/a | 204 | 204 | 204 |
| Corporate offices | m ³ | 546 | 1,675 | 1,675 | 1,993 |
| TOTAL | m³ | 21,075 | 22,660 | 33,298 | 76,565 |

* Includes water usage on upgrade projects that were reported in previous Sustainability Reports

Estimates used for water usage on some assets based on historical figures.

| FY17 ONLY | UNIT | CL | M2 | LCT | ED | CCT | M5* | M7* | GM & LM | GBB | C7 | LW | APL | 495 | 95 | Off. | Total | Total* |
|--------------------------------|----------------------|----------------|------------|------------|------------|--------------|--------------|--------------|------------|----------|--------------|--------------|-----------|------------|------------|--------------|----------------|----------------|
| Potable water | m ³ | 55,161 | 446 | 592 | 929 | 2,706 | 2,076 | 2,436 | 160 | 0 | 1,070 | 8,165 | 98 | 530 | 204 | 1,993 | 76,565 | 72,053 |
| Recycled | m ³ | 172,585 | - | - | - | - | - | - | 120 | - | - | - | - | - | - | - | 172,705 | 172,705 |
| Total water consumption | m³ | 227,746 | 446 | 592 | 929 | 2,706 | 2,076 | 2,436 | 280 | 0 | 1,070 | 8,165 | 98 | 530 | 204 | 1,993 | 249,270 | 244,758 |



GROUNDWATER

Groundwater totals are natural drainage into road tunnels. Most of this water is treated by water treatment plants and either returned to aquifers or discharged to waterways.

| CityLink | UNIT | FY15 | FY16 | FY17 |
|--|----------------------|----------------|----------------|----------------|
| Total water withdrawal, of which | m³ | 229,392 | 190,324 | 254,623 |
| Groundwater from tunnels | m ³ | 215,741 | 175,320 | 199,462 |
| Total potable water use, of which | m³ | 13,651 | 15,004 | 55,161 |
| Deluge testing in tunnels | m ³ | 1,144 | 1,144 | 554 |
| Groundwater recharge* | m ³ | 6,569 | 6,606 | 5,028 |
| Shallow recharge | m ³ | n/a | n/a | 42,260 |
| Irrigation | m ³ | 5,938 | 7,254 | 7,319 |
| Volume of water recycled/reused | m³ | 188,755 | 175,320 | 172,585 |
| Percentage of water recycled/reused | m³ | 82% | 92% | 87% |
| Water discharge by destination | UNIT | FY15 | FY16 | FY17 |
| Total water discharge | m³ | 226,061 | 181,926 | 205,614 |
| Groundwater recharge | m ³ | 195,324 | 178,735 | 174,935 |
| Groundwater discharge to Yarra River | m ³ | 26,986 | 0 | 26,877 |
| Discharge to sewer | m ³ | 3,751 | 3,191 | 3,802 |

* This figure comprises potable water used to clean the filters at the water treatment plant and additional recharge to the aquifers as required.

| Lane Cove Tunnel | UNIT | FY15 | FY16 | FY17 |
|---|----------------------|---------------|---------------|---------------|
| Total water withdrawal, of which | m³ | 51,151 | 51,210 | 55,742 |
| Groundwater from tunnels | m ³ | 50,700 | 50,618 | 55,150 |
| Total potable water use | m ³ | 451 | 592 | 592 |
| Water discharge by destination | UNIT | FY15 | FY16 | FY17 |
| Total water discharge | m³ | 50,700 | 50,618 | 55,150 |
| Groundwater discharge to rivers/waterways | m ³ | 50,700 | 50,618 | 55,150 |



Environment Data

| Cross City Tunnel | UNIT | FY15 | FY16 | FY17 |
|---|----------------------|----------------|----------------|----------------|
| Total water withdrawal, of which | m³ | 110,724 | 115,498 | 135,013 |
| Groundwater from tunnels | m ³ | 108,867 | 112,792 | 132,307 |
| Total potable water use | m ³ | 1,857 | 2,706 | 2,706 |
| Water discharge by destination | UNIT | FY15 | FY16 | FY17 |
| Total water discharge | m³ | 108,867 | 112,792 | 132,307 |
| Groundwater discharge to rivers/waterways | m ³ | 103,607 | 111,150 | 131,285 |
| Discharge to sewer | m ³ | 5,260 | 1,642 | 1,022 |

| CLEM7 | UNIT | FY15 | FY16 | FY17 |
|---|----------------------|---------------|---------------|---------------|
| Total water withdrawal, of which | m³ | 51,280 | 47,081 | 42,181 |
| Groundwater from tunnels | m ³ | 50,210 | 46,011 | 41,111 |
| Total potable water use | m ³ | 1,070 | 1,070 | 1,070 |
| Water discharge by destination | UNIT | FY15 | FY16 | FY17 |
| Total water discharge | m³ | 50,210 | 46,011 | 41,111 |
| Groundwater discharge to rivers/waterways | m ³ | 50,210 | 46,011 | 41,111 |

| Legacy Way | UNIT | FY15 | FY16 | FY17 |
|---|----------------------|-------------|----------------|---------------|
| Total water withdrawal, of which | m³ | n/a | 109,080 | 86,593 |
| Groundwater from tunnels | m ³ | n/a | 100,915 | 84,556 |
| Total potable water use | m ³ | n/a | 8,165 | 2,037 |
| Water discharge by destination | UNIT | n/a | FY16 | FY17 |
| Total water discharge | m ³ | n/a | 100,915 | 84,556 |
| Groundwater discharge to rivers/waterways | m ³ | n/a | 100,915 | 84,556 |



WASTE AND RECYCLING

| | UNIT | FY14 | FY15 | FY16 | FY17 | FY17* |
|--|---------------|---------------|--------------|--------------|--------------|--------------|
| Total waste by disposal method: | tonnes | 40,583 | 3,389 | 2,326 | 6,595 | 4,715 |
| Landscaping | tonnes | 719 | 171 | n/a | n/a | n/a |
| Landfill | tonnes | 1,700 | 2,298 | 2,167 | 2,755 | 2,222 |
| Recycled | tonnes | 38,165 | 920 | 160 | 3,840 | 2,493 |

| FY17 ONLY | UNIT | CL | M2 | LCT | ED | CCT | M5* | M7* | GM | LM | GBB | C7 | LW | APL | 495 | 95 | Off.^ | Total | Total* |
|--|---------------|--------------|-----------|----------|-----------|------------|------------|--------------|--------------|------------|----------|-----------|-----------|-----------|-----------|------------|------------|--------------|--------------|
| Total waste by disposal method: | tonnes | 1,244 | 60 | 6 | 91 | 318 | 244 | 1,637 | 2,036 | 381 | 0 | 89 | 64 | 11 | 83 | 331 | 331 | 6,595 | 4,715 |
| Landfill Tonnes | tonnes | 1,244 | 29 | 4 | 20 | 188 | 233 | 301 | 30 | 377 | 0 | 35 | 46 | 9 | 44 | 197 | 197 | 2,755 | 2,222 |
| Recycled Tonnes | tonnes | 0 | 32 | 2 | 71 | 130 | 11 | 1,336 | 2,006 | 4 | 0 | 53 | 18 | 2 | 39 | 135 | 135 | 3,840 | 2,493 |

^ Office waste totals include some actual data and some estimation based on waste audits. Recycled waste for corporate offices include recycled paper, organic waste and commingled recyclables.

| E-TAG DISPOSAL MANAGEMENT | FY14 | FY15 | FY16 | FY17 |
|---|---------|---------|---------|---------|
| e-TAGs issued - CityLink, Roam and Roam Express | 290,931 | 604,680 | 752,719 | 837,281 |
| e-TAGs recycled - CityLink, Roam and Roam Express | 109,892 | 179,746 | 190,574 | 215,174 |

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.

NOTES

Transurban is reporting environmental data on all operational assets above. Construction projects CityLink Tulla Widening, West Gate Tunnel, NorthConnex, Gateway Upgrade North, Logan Enhancement Project, Inner City Bypass, 395 Express Lanes and 95 Express Lanes Southern Extension are under contractor control during Design and Construct contracts. Transurban collects data on these assets but has not included this in the data tables above in order to better show steady-state operational trends. AirportLinkM7 was acquired by Transurban in April 2016 and has been included for the first time in our FY17 data.

Discrepancies in totals may be due to rounding.

