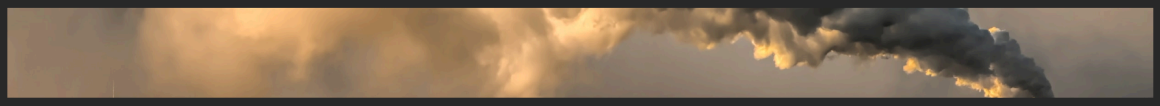
# C Zero

C zero focuses on helping reduce carbon emissions through the collaboration and promotion of micro mobility and city landscapes. Our goal at C zero is for Australia to reach zero net emission by 2050, through connecting public transport with public landscapes.

If you wish to see zero like we want to see zero, then join us and become Australia’s next hero.


ZERO

Transporting Net Zero Emissions by 2050 to a closer reality



1

**Nudge to use public transport**

User finds CZ value of public spaces and how public transport can get them there.

2

**Gamification with rewards**

You go through to your selected public location and you can see how much CZ you have accumulated through your trip.

ZERO

3

**Towards a Net Zero future**

czero will rebate you depending on the amount of carbon footprint you have reduced, and in turn can convert back to currency.

# Work:

- **Github Link:** [Website - Landing source code]
- **Website:** [Website - live]
- **Figma:** [Figma prototype link]


# Data Story:

**Proof 1:** We used the demographic dataset from the Informed Decisions community website to know the public's preferred Method of travel of work. The data below compares the Census data of the year 2011 & 2016 and we can see the preferred method of travel to work over the years is Car - as a driver.

We have had an insight of the data for South Australia as well Australia as nation wide.

Method of travel to work

| South Australia - Employed persons (Usual residence) | 2016 | | | 2011 | | | Change |
|---|---|---|---|---|---|---|---|
| Main method of travel | Number | % | Australia % | Number | % | Australia % | 2011 to 2016 |
| Train | 14,000 | 1.9 | 7.2 | 12,120 | 1.6 | 6.3 | +1,880 |
| Bus | 34,973 | 4.7 | 3.5 | 35,450 | 4.8 | 3.5 | -477 |
| Tram or Ferry | 2,907 | 0.4 | 0.7 | 2,249 | 0.3 | 0.6 | +658 |
| Taxi | 1,375 | 0.2 | 0.2 | 1,546 | 0.2 | 0.2 | -171 |
| Car - as driver | 492,360 | 66.0 | 61.5 | 471,348 | 63.8 | 60.2 | +21,012 |
| Car - as passenger | 34,006 | 4.6 | 4.6 | 39,172 | 5.3 | 5.3 | -5,166 |
| Truck | 4,509 | 0.6 | 0.8 | 5,844 | 0.8 | 1.0 | -1,335 |
| Motorbike | 3,442 | 0.5 | 0.6 | 4,033 | 0.5 | 0.6 | -591 |
| Bicycle | 7,453 | 1.0 | 1.0 | 7,471 | 1.0 | 1.0 | -18 |
| Walked only | 20,698 | 2.8 | 3.5 | 23,646 | 3.2 | 3.7 | -2,948 |
| Other | 11,002 | 1.5 | 1.4 | 10,831 | 1.5 | 1.3 | +171 |
| Worked at home | 32,678 | 4.4 | 4.7 | 30,886 | 4.2 | 4.4 | +1,792 |
| Did not go to work | 80,078 | 10.7 | 9.4 | 84,531 | 11.4 | 10.2 | -4,453 |
| Not stated | 6,639 | 0.9 | 1.0 | 10,225 | 1.4 | 1.5 | -3,586 |
| **Total employed persons aged 15+** | **746,120** | **100.0** | **100.0** | **739,352** | **100.0** | **100.0** | **+6,768** |

Method of travel to work

| Australia - Employed persons (Usual residence) | 2016 | | | 2011 | | | Change |
|---|---|---|---|---|---|---|---|
| Main method of travel | Number | % | Greater Capital Cities % | Number | % | Greater Capital Cities % | 2011 to 2016 |
| Train | 770,758 | 7.2 | 10.4 | 632,342 | 6.3 | 9.2 | +138,416 |
| Bus | 371,840 | 3.5 | 4.3 | 347,562 | 3.5 | 4.3 | +24,278 |
| Tram or Ferry | 70,591 | 0.7 | 0.9 | 57,338 | 0.6 | 0.8 | +13,253 |
| Taxi | 19,724 | 0.2 | 0.2 | 22,080 | 0.2 | 0.2 | -2,356 |
| Car - as driver | 6,574,569 | 61.5 | 59.0 | 6,059,380 | 60.2 | 58.5 | +515,189 |
| Car - as passenger | 489,927 | 4.6 | 4.3 | 537,554 | 5.3 | 4.9 | -47,627 |
| Truck | 85,882 | 0.8 | 0.7 | 104,731 | 1.0 | 0.9 | -18,849 |
| Motorbike | 64,571 | 0.6 | 0.6 | 64,298 | 0.6 | 0.6 | +273 |
| Bicycle | 107,746 | 1.0 | 1.1 | 103,891 | 1.0 | 1.1 | +3,855 |
| Walked only | 370,421 | 3.5 | 3.2 | 376,932 | 3.7 | 3.3 | -6,511 |
| Other | 146,335 | 1.4 | 1.3 | 132,411 | 1.3 | 1.2 | +13,924 |
| Worked at home | 503,581 | 4.7 | 4.2 | 443,921 | 4.4 | 3.7 | +59,660 |
| Did not go to work | 1,003,788 | 9.4 | 8.9 | 1,024,821 | 10.2 | 9.8 | -21,033 |
| Not stated | 104,063 | 1.0 | 0.9 | 149,895 | 1.5 | 1.4 | -45,832 |
| **Total employed persons aged 15+** | **10,683,796** | **100.0** | **100.0** | **10,057,156** | **100.0** | **100.0** | **+626,640** |

**Source:** Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016. Compiled and presented by .id (informed decisions). http://www.id.com.au

**Proof 2**: As we identified in the previous data set the most frequent way of commuting was Private motor vehicle, we researched on how Transport is costing Australia in terms of Emissions. We researched and used the data from University of Wollongong, Australia and were shocked to know that the Transport emissions have gone up 64% since 1990. The Transport emissions, actual & trend, by quarter, September 2009 to September 2019 has seen a constant increase.

(Note : Units in below figure are in equivalence to Million tonnes of carbon dioxide equivalent)

Quarterly Update of Australia's National Greenhouse Gas Inventory | Figures and Tables for the September Quarter 2019

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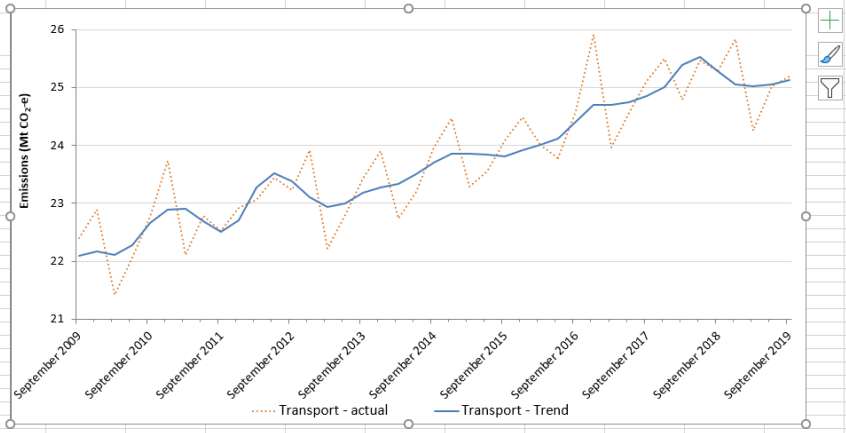
Figure 11: Transport emissions, unadjusted and trend, by quarter, September 2009 to September 2019

Units: Million tonnes of carbon dioxide equivalent

| Quarter | Transport - actual | Transport - Trend |
|---|---|---|
| September 2009 | 22.4 | 22.1 |
| December 2009 | 22.9 | 22.2 |
| March 2010 | 21.4 | 22.1 |
| June 2010 | 22.1 | 22.3 |
| September 2010 | 22.8 | 22.7 |
| December 2010 | 23.7 | 22.9 |
| March 2011 | 22.1 | 22.9 |
| June 2011 | 22.8 | 22.7 |
| September 2011 | 22.5 | 22.5 |
| December 2011 | 22.9 | 22.7 |
| March 2012 | 23.1 | 23.3 |
| June 2012 | 23.4 | 23.5 |
| September 2012 | 23.2 | 23.4 |
| December 2012 | 23.9 | 23.1 |
| March 2013 | 22.2 | 22.9 |
| June 2013 | 22.8 | 23.0 |
| September 2013 | 23.4 | 23.2 |
| December 2013 | 23.9 | 23.3 |
| March 2014 | 22.7 | 23.3 |
| June 2014 | 23.2 | 23.5 |
| September 2014 | 24.0 | 23.7 |
| December 2014 | 24.5 | 23.9 |
| March 2015 | 23.3 | 23.9 |
| June 2015 | 23.5 | 23.8 |
| September 2015 | 24.1 | 23.8 |
| December 2015 | 24.5 | 23.9 |
| March 2016 | 24.0 | 24.0 |
| June 2016 | 23.8 | 24.1 |
| September 2016 | 24.6 | 24.4 |
| December 2016 | 25.9 | 24.7 |
| March 2017 | 24.0 | 24.7 |
| June 2017 | 24.6 | 24.7 |
| September 2017 | 25.1 | 24.8 |
| December 2017 | 25.5 | 25.0 |
| March 2018 | 24.8 | 25.4 |
| June 2018 | 25.5 | 25.5 |
| September 2018 | 25.3 | 25.3 |
| December 2018 | 25.8 | 25.1 |
| March 2019 | 24.3 | 25.0 |
| June 2019 | 25.0 | 25.1 |
| September 2019 | 25.2 | 25.1 |



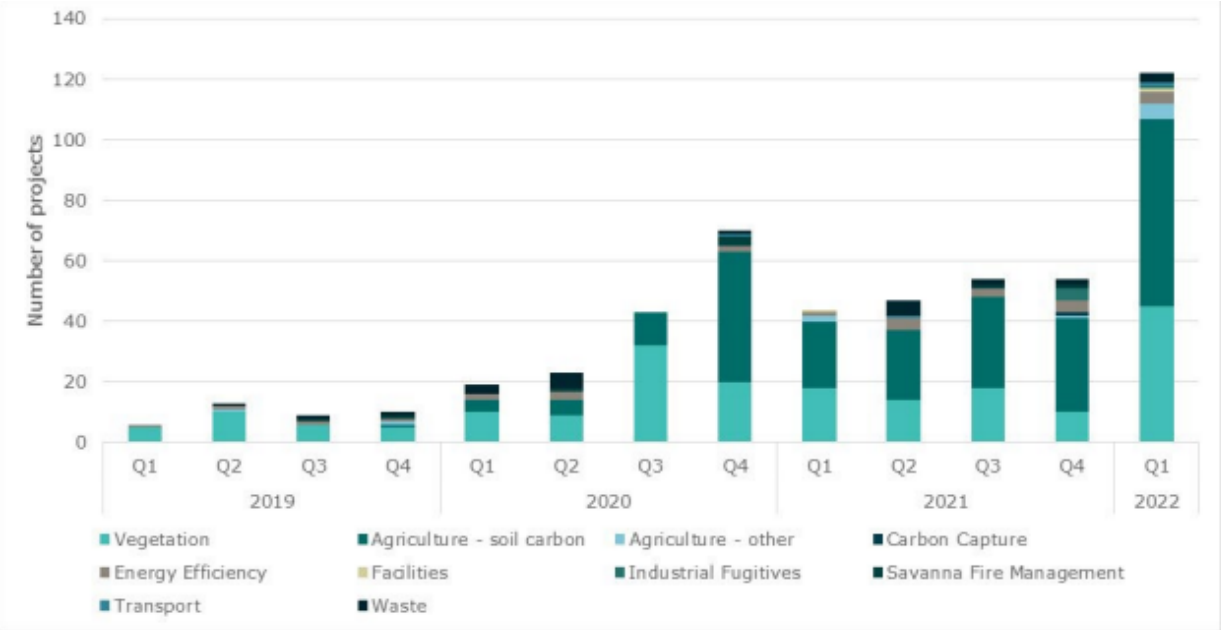

**Reference:** Australian Government || Department of Industry, Science and Resources. 2020. *National Greenhouse Gas Inventory: September 2019*. [online] Available at: https://www.industry.gov.au/data-and-publications/national-greenhouse-gas-inventory-september-2019 [Accessed 21 August 2022].

**BASE CASE PROJECTIONS OF DIRECT GREENHOUSE GAS (CARBON DIOXIDE EQUIVALENT) EMISSIONS FOR AUSTRALIAN CIVIL TRANSPORT BY MODE, 1990-2020**

*(gigagrams of $CO_2$ equivalent)*

| *Fin. Year* | *Motor Vehicles* | *Rail (non-electric)* | *Maritime* | *Aviation* | *Total* |
|---|---|---|---|---|---|
| 1990 | 53184 | 1741 | 2294 | 2564 | 59783 |
| 1991 | 52905 | 1732 | 2152 | 3140 | 59929 |
| 1992 | 53280 | 1685 | 2201 | 3392 | 60557 |
| 1993 | 54578 | 1658 | 2196 | 3552 | 61984 |
| 1994 | 55713 | 1792 | 2240 | 3706 | 63450 |
| 1995 | 58156 | 1743 | 2471 | 4273 | 66643 |
| 1996 | 59744 | 1696 | 2273 | 4638 | 68351 |
| 1997 | 60424 | 1729 | 2265 | 4837 | 69255 |
| 1998 | 62045 | 1757 | 2269 | 4845 | 70917 |
| 1999 | 63812 | 1808 | 2131 | 4780 | 72531 |
| 2000 | 65286 | 1874 | 2116 | 4998 | 74274 |
| 2001 | 65591 | 1840 | 2021 | 5135 | 74587 |
| 2002 | 68484 | 1926 | 2079 | 4725 | 77215 |
| 2003 | 69742 | 1977 | 2056 | 5039 | 78813 |
| 2004 | 73189 | 2016 | 2054 | 5581 | 82841 |
| 2005 | 74136 | 2060 | 2051 | 5946 | 84193 |
| 2006 | 75234 | 2103 | 2053 | 6219 | 85609 |
| 2007 | 77077 | 2142 | 2054 | 6411 | 87684 |
| 2008 | 79054 | 2176 | 2056 | 6674 | 89961 |
| 2009 | 81075 | 2210 | 2057 | 6929 | 92272 |
| 2010 | 82671 | 2244 | 2061 | 7173 | 94148 |
| 2011 | 83957 | 2277 | 2064 | 7312 | 95611 |
| 2012 | 85178 | 2310 | 2069 | 7522 | 97079 |
| 2013 | 86276 | 2339 | 2073 | 7716 | 98405 |
| 2014 | 87324 | 2367 | 2079 | 7803 | 99573 |
| 2015 | 88326 | 2394 | 2085 | 7967 | 100773 |
| 2016 | 89246 | 2421 | 2090 | 8114 | 101871 |
| 2017 | 90189 | 2447 | 2097 | 8262 | 102995 |
| 2018 | 91075 | 2473 | 2104 | 8412 | 104064 |
| 2019 | 91991 | 2498 | 2112 | 8564 | 105164 |
| 2020 | 92892 | 2523 | 2119 | 8716 | 106251 |

**Proof 3:** From the above two datasets & research we brainstormed and came to the conclusion to check whether there are enough registered projects for Transport to support the cut off for Emissions. We used the Australian Government Data set for Clean Energy Regulator and realized that there was no interest in the project for Transport Q1 for 2019, fast forward to 2022 and datasets still say there are Negligible Transport projects in Q1 for 2022 as well.



**Reference :**

**Proof 4:** After brainstorming around the problem, we came up with a solution - Czero with an aim to promote people to use public transport more along with public spaces in a carbon controlled way. As our solution bridges between public transport & public spaces we did a research to know how often people are accessing the public spaces. According to an article in the IT news Australia was grinding to halt, especially more post the Covid period. After numerous research we used the data set from Google - COVID-19 Community Mobility Report which proved there had been a major decrease in public spaces as well as transport

## South Australia

Retail and recreation

**-2%** compared to baseline


Supermarket and pharmacy

**+20%** compared to baseline


Parks

**-32%** compared to baseline


Public transport

**-12%** compared to baseline


Workplaces

**+5%** compared to baseline


Residential

**+6%** compared to baseline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## Victoria

Retail and recreation

**-15%** compared to baseline


Supermarket and pharmacy

**-0%** compared to baseline


Parks

**-39%** compared to baseline


Public transport

**-40%** compared to baseline


Workplaces

**-13%** compared to baseline


Residential

**+9%** compared to baseline


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Conclusion (Why this Solution): After researching & brainstorming all the poof datasets we were convinced we can use Czero as an opportunity to bridge public transport & public spaces and connect both aspects to promote a better & healthier environment for future generation that leads to achieve Net Zero Emission by 2050

1. Clean Energy Regulator data shows lack of support for transport projects
2. Data shows there is limited (negligible) interest in transport project
3. Data shows australia is the hird largest source of emission
4. Lowest annual emission of carbon since 2008 (data that they have provided us
5. Research has indicated a decrease in the use of public spaces over the last 3 years

# #NetZeroEmission #PublicTransport #PublicSpaces #Web3 #CityLandscape