

# ANZAM 2021 Carbon Neutral Conference Report

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# Introduction

The 34<sup>th</sup> Australian and New Zealand Academy of Management (ANZAM) Conference was hosted by Edith Cowan University School of Business and Law (SBL) on 1-2 December 2021 in virtual format. It included **119 paper presentations** and **15 workshops**. Supported by SBL PRME and Sustainability Steering Committee, SBL aimed to make ANZAM 2021 a carbon neutral conference. This goal was achieved through emission avoidance and reduction, as well as offsetting initiatives. Specifically, organising the conference in **virtual format** enabled the organisers to **avoid more than 63.5 tonnes of estimated CO2 emission** which would otherwise be generated from flights alone.

This first attempt at making ANZAM Conference carbon neutral paves the way for future ANZAM conferences to continue evaluating their social and environmental impact, and transparently report it to ANZAM members.

# Emissions Calculations

In calculating the greenhouse gases emission related to the ANZAM 2021 Conference, the following **elements were included in the calculations:**

**Videoconferencing and streaming** during the Conference (hosted by ECU) and the Doctoral Workshops (hosted by UWA)

Emissions generated during the **face to face keynote session** for the Conference held in Perth

# Avoided Emissions

As the conference was held fully online, the following commonly included elements were **avoided** and hence **excluded from the calculations**:

**Air travels** of each participant to and from Perth

**Local transport** between conference venue and hotels

Energy consumptions at **conference venue**

**Accommodation** of each participant in hotels

## Pre-Conference Event: Energy-related Emissions

# ANZAM 2021 Pre-Conference Face to Face Event

(i.e., Keynote session by Graham Kerr in Perth)

- The equivalent CO<sub>2</sub> emissions generated for this session was calculated on the basis of a 3-hour event in a 500 square meter room attended by 75 people.
- According to the “energy efficiency opportunities in the hotel industry sector” report, the average energy intensity in hotels and venues is around **1,250 MJ/m<sup>2</sup>**. Moreover, Alley et al. (2016) indicate an average intensity of **77 g CO<sub>2</sub>/MJ** for the energy supply and their emissions intensities. Therefore, the **energy-related emissions for the venue is estimated to be 48125 kg**.

Commonwealth of Australia (2002). Energy efficiency opportunities in the hotel industry sector. URL: <https://meaenergysavingbuilding.net/downloads/knowledge2/energy%20efficiency%20opportunities%20in%20hotel%20industry.pdf>

Alley, R.B; Blumsack, S.; & Bice, D. (2016). Earth and the Environment (Development), The Pennsylvania State University. URL: <https://www.e-education.psu.edu/earth104>

## Pre-Conference Event: Transport Emissions

# ANZAM 2021 Pre-Conference Face to Face Event

(i.e., Keynote session by Graham Kerr in Perth)

- In addition, assuming 75 return car ride of 30km (on average) to and from the venue, the CO<sub>2</sub> generated for the commute was measured to be **375.75 kg**.

## Carbon Avoidance:

Using a conservative approach, organising the conference in virtual format resulted in **avoiding more than 63.5 tonnes of estimated CO2 emission** which would otherwise be generated due to flights. This was calculated on the basis of where conference participants reside. Average CO2 emissions generated for the return flights to Perth from the city of residence were calculated. Then, the figures were used to calculate CO2 emissions for each participant's flight and added together to measure the total emissions. While these figures are not included in the net zero emissions calculations, they are reported to emphasise the positive sustainability impact of running the conference in virtual format. Detailed calculations are available upon request.



# Carbon Sinks

ANZAM 2021 used carbon sinks as one of the main measures to offset the carbon generated through the conference. Carbon sinks are natural systems that suck up and store carbon dioxide from the atmosphere. Specifically, we have engaged in **planting native trees and shrubs** through **The Trillion Trees Planting events** across Western Australia.

As trees grow, they absorb and store the carbon dioxide emissions. On average, throughout its lifetime, a planted tree can absorb and **offset 228 kg of CO<sub>2</sub> (assuming median life)** or 455 kg (assuming full life). We have used the conservative measure of 228 kg of CO<sub>2</sub> as the basis of our calculations in this report.

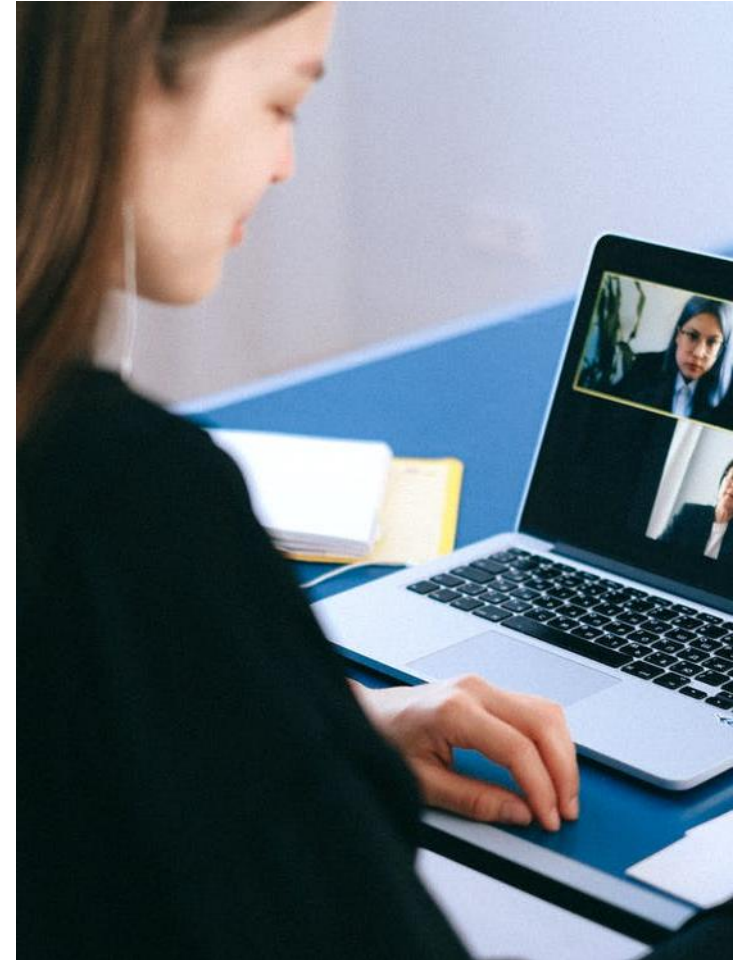




# Video Conference CO2 Emissions

According to Obringer et al. (2021), a standard videoconferencing service has a carbon footprint of **157 g CO2e/hr**, whereas turning off the video can reduce these footprints by 96%.

Obringer, R., Rachunok, B., Maia-Silva, D., Arbabzadeh, M., Nateghi, R., & Madani, K. (2021). The overlooked environmental footprint of increasing Internet use. *Resources, Conservation and Recycling*, 167, 105389.



## CO2 Emissions:

# ANZAM 2021 Online Events

	Webcam On			Webcam Off			Total
	Emission	Participants	Hours	Emission	Participants	Hours	
Doctoral Workshop	0.2	10	6.5	0.008	62	6.5	16.224
Workshops	0.2	15	2	0.008	100	2	7.6
ANZAM 2021	0.2	119	0.25	0.008	104	16	19.262

**43.086**

In addition, according to MacDonald (2014), the average footprint of an email is 50g CO<sub>2</sub> equivalent. Therefore, we have estimated the carbon footprint of the conference-related email correspondence to be **350 kg**. Moreover, according to GoClimate (2020), emissions from production of servers for use in cloud is 160 kg CO<sub>2</sub>e/year. We have therefore estimated the carbon footprint of the conference-related cloud server to be **160 kg**.

MacDonald, B. K. (2014). Avoiding thoughtless waste: consider the energy cost of emails in the NHS. *BMJ*, 348.

GoClimate (2020). *The Carbon Footprint of Servers*. URL: <https://www.goclimate.com/blog/the-carbon-footprint-of-servers/>

## CO2 Emissions:

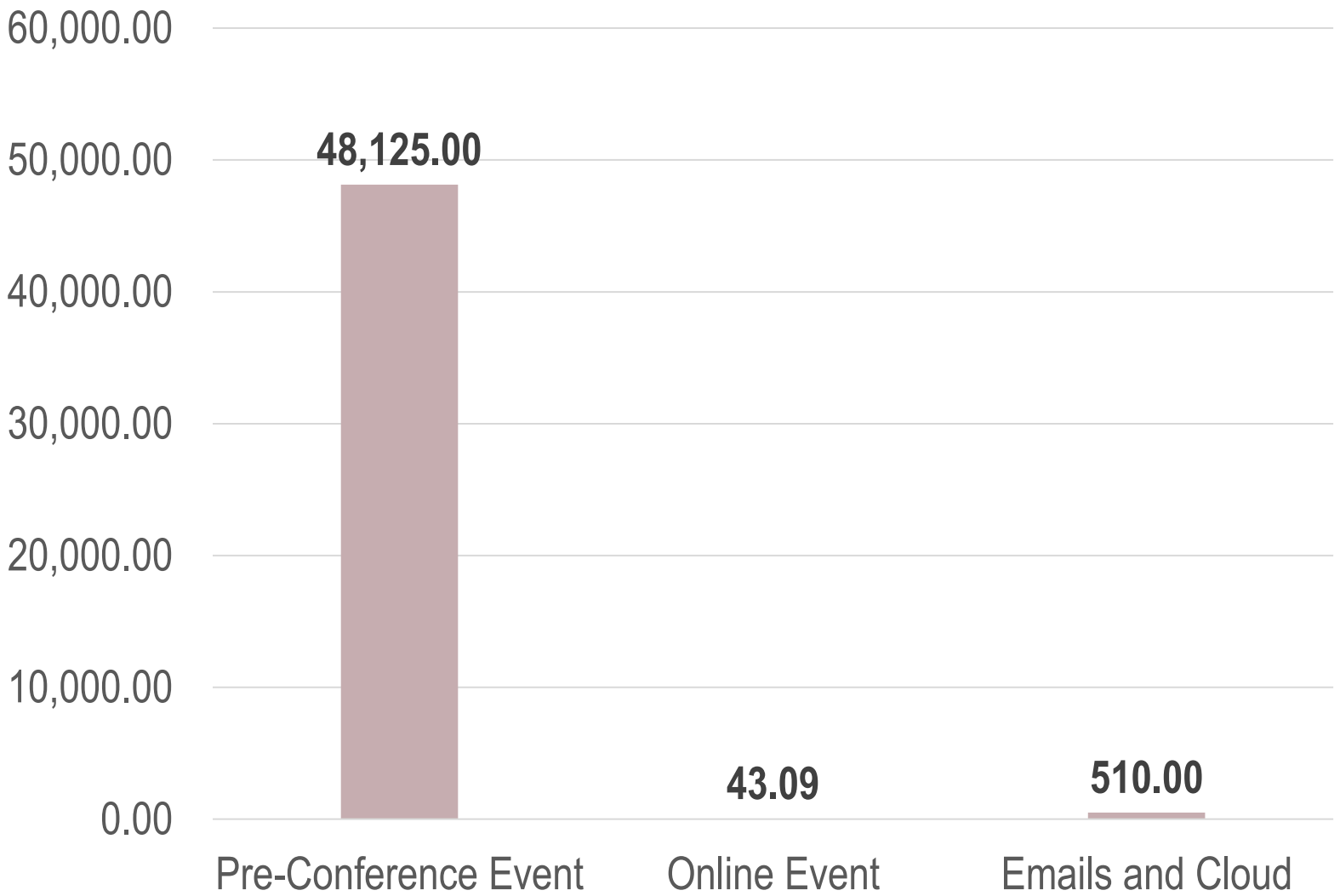
# Overall ANZAM 2021 Conference

Item	Emissions (KG)
Air Travel	0.00
Local Transport *	375.75
Accommodation	0.00
Venue *	48,125.00
Online Event	43.09
Emails and Cloud	510.00
<b>TOTAL</b>	<b>49,053.84</b>

\* Calculated for Graham Kerr's face-to-face keynote session in Perth

**Note:** In calculating the required number of trees to be planted to offset the generated emissions, in addition to using the conservative measure of 228kg offset per tree for its median life, we also multiplied the number of required trees to be planted by 1.5 to be further conservative.

# ANZAM 2021 Emissions Breakdown



# Carbon Neutral ANZAM 2021



**323** trees to be planted  
to offset

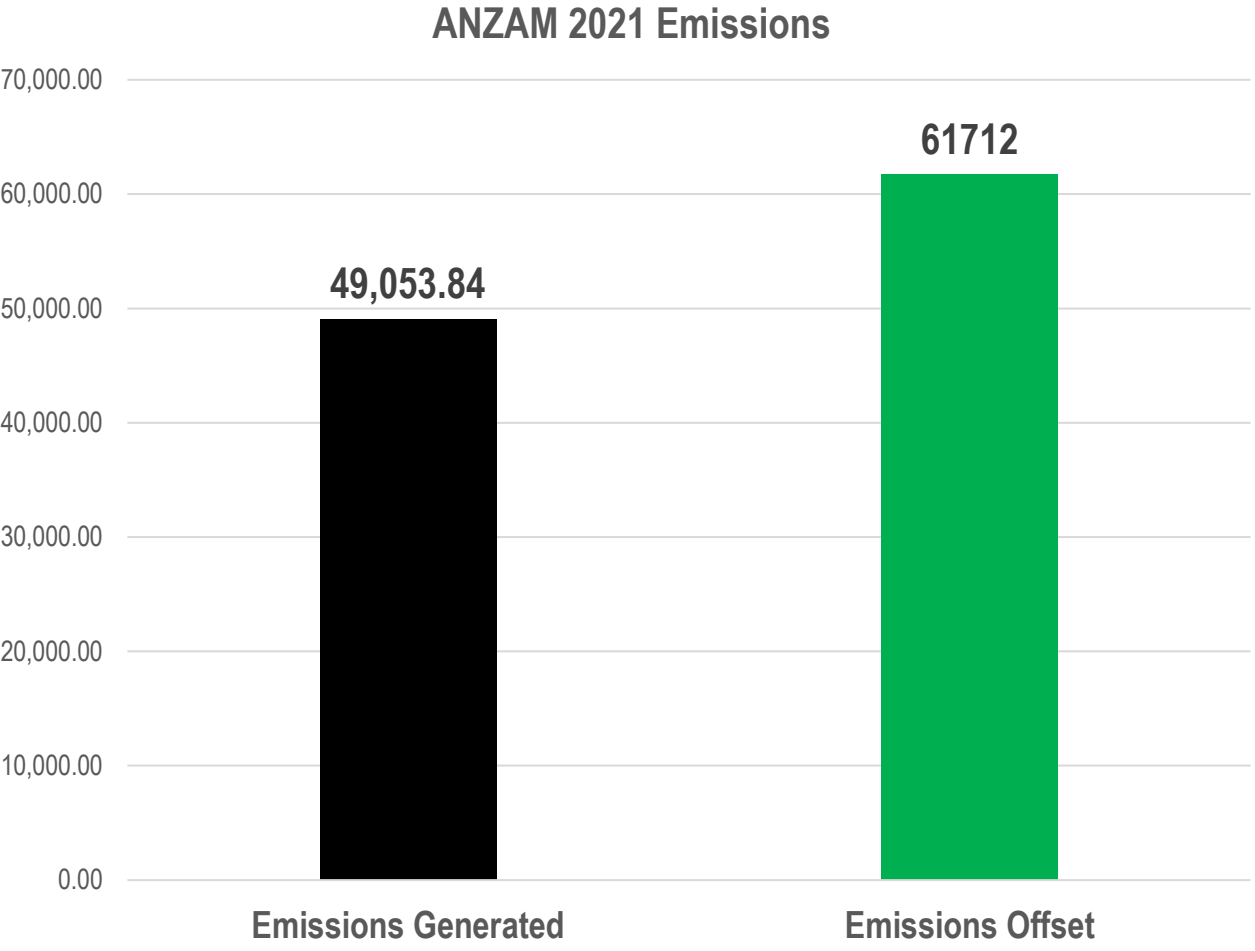
**49.1** Tons of CO2 Emissions

Offsetting through trees	Trees to be Planted
228 kg assuming median life	215
455 kg assuming full life	108

**Trees  
Planted**  
**406**

**Progress**  
**125.8%**

# Carbon Neutral ANZAM 2021



**Net emissions: - 12,658.16 kg**

