

**Greening ANZCA operations,  
promoting sustainable clinical practice:**  
Final report of the Environmental  
Sustainability Working Group

June 2021

## Executive Summary

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The college remains committed to minimising the health impact of climate change and promoting environmental sustainability. The Environmental Sustainability Working Group (ESWG) was established to assist council to realise its commitment by reporting to the Professional Affairs Executive Committee (PAEC) on the college's current and future approach to environmental sustainability within the organisation and profession.

As an organisation, ANZCA has taken proactive and positive action that reduces our environmental footprint and aligns with the expectations and achievements of its fellows, trainees and specialist international medical graduates (SIMGs). This environmental sustainability work is ongoing and the college works with building facility companies, contractors, suppliers, venues, travel agents and the healthcare industry across Australia and New Zealand to constantly look for improvements.

As a profession, fellows, trainees and SIMGs have been active at a local level on sustainability activities within the workplace. The establishment of the ESWG has allowed for a co-ordinated approach to activities making people aware of the impact of clinical practice on the environment and promoting ways to be more sustainable in the profession.

The ESWG believes that there will be a growing need for ANZCA to demonstrate its leadership in environmental sustainability. The organisation should consider how it meets its responsibilities in further reducing its environmental footprint. This will occur through understanding the impact of its energy needs, procurement processes and investments, and the consideration of a net-zero target.

The profession is in a unique position to support efforts in reducing carbon emissions through educating fellows, trainees, SIMGs and the community and promoting research into sustainable healthcare and translating it to clinical practice. The college can play a role in providing a platform for a community of practice to deliver these outcomes.

## Acknowledgements

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The members of the ESWG included:

- Dr Scott Ma FANZCA, Chair
- Dr Irina Baleanu-MacKinlay FANZCA FFPMANZCA (until 30 February 21)
- Dr Adam Crossley FANZCA
- Dr Jessica Hegedus FANZCA
- Dr Eugenie Kayak FANZCA
- Dr Stephen Lightfoot FANZCA (from 2 July 2020)
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## Introduction

In 2015, the Lancet Commission on Health and Climate Change describes that not only is climate change the “biggest global health threat” but also the “greatest global health opportunity” in the 21<sup>st</sup> century.<sup>1</sup> In Australia, over 7% of national carbon emissions is from the healthcare sector.<sup>2</sup> In the United Kingdom, ~5% of acute hospital carbon release has been estimated to be a direct result of anaesthesia.<sup>3</sup> All healthcare workers, including anaesthetists are in a position to significantly reduce greenhouse gas emission by making clinical and non-clinical decisions with regard to the environment.

In its commitment to environmental sustainability, ANZCA Council established the Environmental Sustainability Working Group (ESWG) to report to the Professional Affairs Executive Committee (PAEC) on the college’s current and future approach to the issue within the organisation and profession. The ESGW aimed to promote more sustainable practices in ANZCA’s operations and foster a bi-national approach to environmental sustainability in anaesthesia, perioperative medicine and pain medicine. The ESGW had representation from around Australia and New Zealand, as well as the Faculty of Pain Medicine.

The terms of reference of the ESGW were:

1. To evaluate the current practices within ANZCA and its business units that promotes environmental sustainability.
2. To gather information about current sustainability activities undertaken by fellows, trainees, and specialist international medical graduates (SIMGs) throughout Australia and New Zealand.
3. To identify gaps in the current information and resources related to education and training in environmental sustainability.
4. To identify actions that will form a sustainability strategy for ANZCA that will:
  - a. Promote greater environmental sustainability in ANZCA operations.
  - b. Foster a bi-national approach to environmental sustainability in anaesthesia, perioperative medicine, and pain medicine.

An action plan was developed to meet terms of reference. The action plan outlined activities that have been undertaken, work that is in progress and gaps where progress can be made in the future (Table 1). This report summarises the work of the college and provides recommendations for the next steps.

Table 1. ESGW Action Plan

<i>Greening ANZCA operations</i>	
Corporate governance	Recognise action on climate change is consistent with the college’s mission through a statement Review the college’s investment policy to reduce investment in the extraction and processing of fossil fuels
Staff	Engage staff and build a team of green champions Recognise and celebrate successes in sustainability

<sup>1</sup> Watts N, Adger WN, Agnolucci P, et al: Health and climate change: policy responses to protect public health. Lancet 2015 [https://doi.org/10.1016/s0140-6736\(15\)60854-6](https://doi.org/10.1016/s0140-6736(15)60854-6)

<sup>2</sup> Malik A, Lenzen M, McAlister S, McGain F. The carbon footprint of Australian health care. Lancet Planet Health. 2018 Jan;2(1):e27-e35

<sup>3</sup> Sustainable Development Unit. Carbon Footprint from Anaesthetic gas use. [internet]. Cambridge, UK: Sustainable Development Unit; Dec 2013 [cited 1 Mar 2019]. Available from:<https://www.sduhealth.org.uk/areas-of-focus/carbon-hotspots/anaesthetic-gases.aspx>

Energy and Emissions	Undertake energy audit of ANZCA House and Ulimaroa to inform future work in reducing energy use Undertake cost-analysis for ongoing monitoring of energy use and on-site renewable energy production at ANZCA House Carbon-offset of airline travel
Procurement and Waste Management	Ensure new and renewed purchasing contracts include environmental and social considerations Undertake waste management audit to inform further diversion from landfill
ASM and events	Engage with venues that support sustainable events
<i>Promoting sustainable clinical practice</i>	
Advocacy	Develop a professional document to guide clinicians and healthcare facilities on environmental sustainability Celebrate achievements in ANZCA Bulletin Develop an audit tool for anaesthetists and departments to evaluate environmental impact Work with healthcare industry to improve sustainability in the healthcare supply chain
Education	Develop learning materials for fellows and trainees Build a Resource Hub on ANZCA Library website Support opportunities for trainees who wish to undertake a provisional fellowship in environmental sustainability
Research	Promote research in environmental sustainability Seek funding opportunities for research in environmental sustainability

## ANZCA Operations

### *Governance*

In September 2016, ANZCA Council approved the development of the professional document PS64 Statement of Environmental Sustainability in Anaesthesia and Pain Medicine Practice (promulgated in July 2019 with endorsement by the Faculty of Pain Medicine) and recommended the consideration of an approach to sustainability as an organisation.

During the devastating bushfires in Australia over the summer of 2020, ANZCA Council released a [statement on climate change](#), outlining its commitment to minimising the health impact of climate change and promoting environmental sustainability. It accepted the science presented by a number of international organisations on climate change and reinforced the college's position on sustainability and need for collective action of this public health emergency.

### *Sustainability in our offices*

From 2015 – 2020, the college has saved approximately seven hundred and twenty reams of paper by moving subscriptions, council elections, Research Foundation appeals and Christmas cards online. That is roughly equivalent to one acre of forest, something we are very proud of.

Facilities at ANZCA house have embarked upon numerous environmental sustainability projects commencing with the removal of all 160 under desk bins to assist with better sorting of waste and lessen cleaners time spent emptying the bins. The bins have been replaced with colour coded waste and recycling bins placed at the lift foyers and in the kitchen. Additionally over the past five years almost all the halogen down lights and fluorescent tube lighting in ANZCA House have been replaced with more energy-efficient LED light fittings.

Additionally, facilities have implemented a closed loop recycling program to dispose of all internal waste including that generated by contractors. Separate bins are located in the basement for metals such as copper, stainless steel and aluminium, along with bins for products such as small electrical items, e-waste and printer cartridges, batteries, obsolete mobile phones, sharps, wire clippings, fluorescent light tubes and light globes. These are then taken to a resource centre to be recycled. Motion sensors have been installed in the basement car park and fire escapes and are set to be installed in all meeting rooms.

Leveraging off the current garden revitalisation program, carbon sequestering plants and shrubs have been planted in the ANZCA House garden. Non-organic herbicides and pesticides will be banned and the rain water tanks will be connected to the irrigation system, which is currently running off the mains. A group of volunteer staff will tend to the green waste from the kitchen and ensure it is composted in the appropriate manner.

A wood chipper has been purchased and garden waste goes back onto the garden as mulch. Staff from Ulimaroa have been moved to ANZCA House, benefiting ANZCA by having all staff in one building resulting in less heating, cooling and cleaning.

*The college invests \$A5000 annually in a government approved carbon emissions offset scheme which offsets approximately 25 per cent of emissions resulting from ANZCA-related airline travel. This supports the Australian Native Reforestation 'Yarra Yarra Biodiversity Project' and the New Zealand Afforestation Project.*

COVID-19 has led to the advent of Zoom conferencing. Replacing travel with video conferencing has had a positive impact on the environment by reducing carbon emissions as well as substantially reducing costs. The college has invested in improving the infrastructure at regional/national offices to enhance the videoconference experience with zoom having been implemented in New Zealand and two in ANZCA House. Technology enhancements have been undertaken in the Council room at ANZCA House.

#### *Sustainability at ANZCA events*

The college upholds a commitment to only host events at venues that have a publicly available sustainability statement. Where possible organic waste is converted to fertiliser and green electricity.

*At the 2018 ASM in Sydney, unused food was sent to Australia's leading food rescue organisation OZ Harvest, to be distributed to people in need and diverting food waste from landfill.*

As part of the college's commitment to environmental sustainability we have eliminated printed registration brochures, handbooks and pocket programs from Annual Scientific Meetings (ASM). The volume of paper to produce brochures and handbooks for one ASM equates to approximately eight hundred and eighty reams of paper, which is in excess of fifty trees and well in excess of an acre of forest.

The college no longer saw this as tenable and now opts for online brochures and handbooks, provides access to the ASM virtually and promotes use of the ASM app. Additionally, single use signage has been eliminated and events have moved towards digital signage.

Since 2016 some of the items eliminated from events are satchels, plastic name badges and bottled water. Delegates are encouraged to bring their own Keep Cups and use the water stations for re-filling water bottles.

## Sustainable clinical practice

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### *Environmental sustainability audit tool*

After its inaugural meeting in October 2019, the ESWG began work on an [Environmental Sustainability Audit Tool](#). The audit tool document was developed based on ANZCA's PS64, the American Society of Anesthesiologists' document 'Greening the Operating Room' and Doctors for the Environment Australia's Sustainable Hospitals document. The tool was launched on World Environment Day in 2020. The tool covers activities to reduce, re-use and recycle, as well as suggestions on how to measure performance. The purpose of the tool is to provide clinicians and departments ideas on interventions that may be appropriate in their local context.

### *Resources*

Members of the ESWG assisted with the development of the environmental sustainability LibGuide on the ANZCA library website (<https://libguides.anzca.edu.au/enviro/overview>). It provides users an extensive range of resources, including recent journal articles and media.

### *ANZCA Bulletin articles*

December 2019	"Environmental Sustainability Working Group (ESWG)" "South Metro Health Service Sustainability Committee" – Dr Adam Crossley "Sunshine Coast University Hospital" – Dr Tegan Owen
January 2020	"A call to arms" – Dr Tom Pierce and Dr Cathy Lawson
April 2020	"Flinders' recycling initiative" - Dr Alexandra Zanker
June 2020	"Clean Up Theatre Day – "Reduce Bluey Use" - Dr Sophia Grobler and Dr Jess Davies
Spring 2020	"Searching for gold in the garbage" – Carolyn Jones
Summer 2020	"Helping anaesthetists to reduce waste" – Dr Debbie Wilson "WA anaesthetists - champion green action" - Dr Adam Crossley, Dr Jennifer Liddell, Adrienne Wehr "Moving towards a net, Zero emissions target" - Carlos Machado
Autumn 2021	"Managing anaesthesia waste – results of Queensland survey" – Dr Yean Hwang and Assoc Prof Kerstin Wyssusek
Winter 2021	"NSW health district drives change to reduce healthcare waste" - Dr Timothy Wong, Dr Lara Beukes, Dr Candice Peters, FANZCA and Dr Gavin Sullivan, FANZCA "Raising awareness in healthcare" – Dr Rajesh Pachchigar

### *Webinars*

A webinar was run on 3 December, 2020 which promoted research in environmental sustainability and showcased the activities of the working group. Presentations were conducted by Dr Jess Davis and Dr Sophie Grobler on trainee run initiative 'TRA2SH' that aims to reduce theatre waste and Dr George Zhong and Prof Ali Abbas presented on 'The Power of Cross-Disciplinary Research' focusing on the relationship between anaesthesia and chemical engineering. The webinar concluded with a panel discussion run by

Assoc Prof Forbes McGain, Assoc Prof Kerstin Wyssusek and Dr Rob Burrell. There were over 120 live attendees with over 300 registrations in total who will be able to view the webinar at a later date.

Due to copious positive feedback from the initial webinar, a further virtual seminar has been scheduled for 10 June 2021 titled "Life Cycle Assessments: The Environmental Footprint of Anaesthesia" focusing on the practical aspects of how to conduct a life cycle assessment including the role of the physician. Speakers include internationally recognized researchers in hospital environmental sustainability and the important role of life cycle assessment; Associate Professor Jodi Sherman, Associate Professor Forbes McGain and Scott McAlister, University of Melbourne. The event will be chaired by Dr Eugenie Kayak. A panel discussion will take place after the presentations. A nominal fee has been charged raising revenue for the working group which normally runs with no budget.

### *Advocacy*

The healthcare industry sustainability group's focus is on two areas as set out below. Data was collected in an Anaesthetic Associated Waste Survey with questions pertaining to that received 550 responses.

#### 1. Advocating for the eradication of Clausen hooks on anaesthetic masks.

The hooks are no longer required and are widely known to be obsolete by anaesthetists, yet the masks continue to be manufactured and supplied with hooks. The group is working with manufacturers and suppliers to provide the masks without hooks, creating environmental and cost benefits. The consensus is the change needs to stem from procurement departments in hospitals. A database of suppliers supplying the masks without Clausen hooks will be created and distributed to hospital's procurement departments. The initiative will be promoted on social media and in the Bulletin. The group will continue to work on the long term goal of working with manufacturers to manufacture the masks minus the hooks. This project is being led by Dr Jess Hegedus.

#### 2. Procurement and use of anaesthesia drug trays in hospitals.

Investigations have revealed that various types of drug trays are being used in different hospitals ranging from single use plastic (that may or may not be recycled), reusable plastic that is cleaned between uses, cardboard trays and sugar cane starch trays. A literature search was conducted on this topic. The group will assess the life cycle analysis of the various products and review the recycling options available for hospitals. They aim to publish a document that lists the different materials and the environmental impacts of each

### *Research*

A project group are reviewing the evidence for high minimum fresh gas flows (2 L/min) for administering sevoflurane. Currently, the TGA guidelines advise against running fresh gas flows below 2 L/min in a circle absorber breathing system. A literature review is being prepared and the group aims to present their findings at the June Safety and Quality meeting with the ultimate goal being to educate fellows, change the recommendation and write a journal article on this topic. The Anaesthetic Associated Waste Survey also has questions to better understand the factors influencing the fresh gas flow rate utilised with sevoflurane amongst Australian and New Zealand anaesthetists/trainees.

### *Support of HEAL*

ANZCA has pledged its strong support for the Healthy Environments And Lives (HEAL) network application to the National Health and Medical Research Council (NHMRC) Special Initiative in Human Health and Environmental Change, led by the Australian National University.

ANZCA has committed to contribute to the goals and objectives of the network by actively engaging with network partners through participation in HEAL's Community of Practice and Advisory Board, contributing knowledge and expertise, collaborate on research projects and providing access to health and environmental data and related tools.

## Future Directions

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### *Energy audit*

An energy audit is set to take place at ANZCA House in 2022 with a detailed plan to be developed through corporate services and the college facilities contractor, Australis. Melbourne lockdowns have delayed this process however it is still an important planned activity.

### *ANZCA Investments*

The Council is committed to divestment in fossil fuel and an increase in renewables to support a greener college. Both FARM and Council have been actively engaged in this process.

### *Learning material for fellows, trainees, SIMGs and the community*

Members of the working group are developing a patient information sheet on “How green is my anaesthetic?” The paper addresses the effects of anaesthetic gases on the environment, how anaesthetists are addressing this and aims to educate the patient on what choices they can make to reduce the environmental impact of their anaesthetic. A risk analysis is being undertaken to identify any concerns or potential unintended consequences of producing this consumer information. The group will then seek further review from PAEC prior to publishing this information.

### *Research grants*

The ESWG are collaborating with the ANZCA Research Foundation to raise sufficient initial and ongoing funding to deliver a new annual ANZCA grant (of at least \$10,000) through the ANZCA Research Committee’s existing peer-reviewed research grant program. The aim of the grant will be to encourage and support research in the below areas:

1. To evaluate the environmental impact of current anaesthesia, pain medicine and perioperative practice
2. To evaluate the impact of implementing environmentally sustainable anaesthesia, pain medicine and perioperative care on patient outcomes and cost
3. To establish effective implementation models to promote environmentally sustainable anaesthesia, pain medicine and perioperative management

### *Establishment of a sustainability network*

The Environmental Sustainability Network (ESN) will be a community of practise for fellows, trainees, SIMGs and non-members with an interest in the area of environmental sustainability. It will be managed by ANZCA’s membership services unit within the iMIS member database. The work will be led by the members within the network.

The overarching purpose and vision of the network is to “*advocate, collaborate and promote initiatives and projects related to environmental sustainability within anaesthesia, perioperative medicine and pain medicine*”. This will:

- Allow members to have more of a voice in this area
- Allow experienced fellows to mentor junior fellows in this area
- Create networking opportunities for future collaborations
- Support and promote the development of research into environmental sustainability

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