



The Sustainable Engineering Society

...engineering in harmony with ecology

SENG QUARTERLY NEWSLETTER MARCH 2023

Welcome to the March 2023 edition of the Sustainable Engineering Society (SENG) quarterly newsletter.

Please contact us if you would like to contribute content to future editions or have any feedback. We look forward to hearing from you.

The SENG Executive Committee

MESSAGE FROM THE CHAIR

Dear SENG members,

Welcome to the March edition of the SENG newsletter.

The Climate Change Authority published its first annual progress report in December 2022. This report states, that with 2030 target to reduce emissions by 43 per cent below 2005 levels, Australia will need to decarbonise at an average annual rate that is 40 per cent faster than it has since 2009 (12 Mt CO₂e per year versus the required 17 Mt CO₂-e per year to meet the 2030 target).

Achieving Australia's 2030 target requires rapid deployment of the emissions reduction technologies available today. And there are barriers, some of which are significant, to making that happen. But as engineers and scientists we are curious and solving problems is our superpower. Our challenge is how are we, as individuals and a collective, contributing to Australia's transition to a low carbon economy.

As the great Sir David Attenborough said at the UN Climate Change Conference (COP27)

"In my lifetime I have witnessed a terrible decline. In yours, you could and should witness a wonderful recovery."

What are you doing to be the change?

Michelle Bruce
SENG Chair

ANNOUNCEMENTS & NEWS

VALE WILL STEFAN

SENG was saddened to hear of the passing of Climate Councillor, Professor Will Steffen in January. Will was a brilliant scientist, gifted communicator, and a gentle soul. He was immensely kind, incredibly intelligent, and unflinchingly dedicated to driving climate action both here and around the world.

His accomplishments in Earth system science pushed boundaries and built on our knowledge by advancing concepts such as the Anthropocene, planetary boundaries, and climate tipping points. He was a leader of major international science programs, a highly respected colleague, and an inspiration to so many.

Full obituary: <https://www.climatecouncil.org.au/resources/vale-will-steffen/>

SUSTAINABILITY ONLINE TRAINING

In March 2019 a joint meeting of the Environmental College Board and the SENG National Committee decided that one of the best contribution the organisation could make to sustainability would be to provide a course for all engineers.

The first Module is called Defining the Problem and it has four components:

- Growth
- Biodiversity
- Global Warming
- Probability and Risk

Now the first component - Growth is complete, and available on the SENG website at https://www.seng.org.au/Sustainability_E-Learning.

While external costs were funded by SENG - we would like to acknowledge the enormous personal contributions of Lara Harland (Environmental College) and Steve Posselt (SENG). Without their drive and passion to deliver this project, what you see below would not be possible.

The next three components of Defining the Problem will be rolled out progressively over the next 12 months.

We hope you enjoy Growth, and we look forward to your continued support so SENG can continue to deliver initiatives such as the online training.

CLIMATE SMART ENGINEERING CONFERENCE



Engineers Australia has just announced that the 2023 Climate Smart Engineering Conference #CSE23 call for abstracts is now open. Abstracts are invited for conference themes including the circular economy, energy transition, adaptation and mitigation, systems thinking, business management and more. Don't miss your chance to inspire the profession and be at the forefront of sustainable engineering. Submit your abstract today.

<https://engineersaustralia.org.au/cse/abstracts>.

Help us spread the word to your colleagues, co-workers, peers, and friends that the call for abstracts and early bird registrations for CSE23 is now open.

Engineers Australia's signature conference, Climate Smart Engineering (CSE23) will be held at the Melbourne Convention and Exhibition Centre 29-30 November 2023. Now in its third year, CSE23 will continue to address climate change. More importantly, the conference will demonstrate that sustainable practices and environmental considerations are central to the engineering profession, whatever the discipline and wherever it's applied.

- Name: Climate Smart Engineering Conference 2023 (CSE23)
- Dates: 29-30 November 2023
- Venue: Melbourne Convention and Exhibition Centre
- Website: <https://www.engineersaustralia.org.au/cse>
- Hashtag: #CSE23
- Current phase: Call for abstracts and early bird registrations open

SENG CHAPTER & RELATED BODY UPDATES

Want to know more about SENG regional chapters? Keen to get involved? Reach out at info@seng.org.au

SENG VIC/TAS

We would like to kick off 2023 by introducing the new SENG Vic/Tas Chapter Committee. After a recruitment process in mid-2022, five new committee members were elected. We started in July 2022; however, our official term begins from the start of 2023.

The new committee members are:

Dylan Reynolds	Mohit Jain
Jaideep Upadhyay	Peter Dalgleish
Connie He	

SENG Vic/Tas has been busy getting up to speed with our responsibilities and planning the delivery of valuable content to our members. We have a few ideas including some CPD events that are in the planning phase, preparing a set of resources and tools for our members to use and aiming to organise an in-person member mixer for our members and us to meet and exchange ideas.

We are looking forward to the year ahead!

If you would like to get in touch with us with any ideas or feedback, please feel free to reach out.

SENG WA

The WA committee has several upcoming events focusing on implementing sustainability in WA, including innovations in the sustainability space, tools for bridging the gap between theory and practice, measurement of embodied carbon as well as the call for abstracts for the upcoming Climate Smart Engineering Conference.

We invite members to contribute to the SENG Accessible Sustainability Collection by submitting any relevant sustainability and climate change material useful for research, project work, policy development and education by emailing suggested links to seng.library@gmail.com.

WA businesses are also invited to let us know how they are being Sustainability Champions in their industry. Please get in touch if sustainability is at the heart of your business, or a business you know.

SENG NSW

2022 was a year of re-establishing the SENG NSW and we are happy to report we have an active committee with most official roles now filled. A summary of members follows.

Andrew Debeck (Chairperson)	Kylie Goodwin
Ashok Ghosh	Rohit Bansod (Secretary)
Cole Scott-Curwood	Sanjay Kumarisingham (Vice Chair and curated CPD lead)
Emilie Lapointe	Sheila Anderson (Treasurer)
Emily Chung	Tom Fink

The committee has contributed to reviews of a number of policy and other documents tabled for public comment, including the NSW EPA Climate change policy and action plan.

A number of CPD events are under consideration and are in the early stages of planning, which we hope to bring to fruition this year. As part of this Sanjay is working with the National Committee to develop the curated CPD program.

SENG ACT

The 2022 committee continues into 2023.

Did you know The ACT Government has introduced a regulation under the Residential Tenancies Act 1997 to require all residential rental properties in the ACT to meet a new minimum energy efficiency standard for ceiling insulation. This new standard will commence on 1 April 2023, with a phase-in period extending to 30 November 2026. The introduction of this standard will help improve energy performance, increase thermal comfort, reduce greenhouse gas emissions, and contribute to climate change resilience.

INFRASTRUCTURE SUSTAINABILITY COUNCIL

ISC are surveying the members regarding their organisation's position in respect to action on climate change: Industry Survey -

Decarbonisation of the infrastructure sector (survey now closed).

AGM held 24 November 2022, which included announcement of three new member directors. SENG's Ben Hanley nominated. No update available yet on the outcome of the election. Minutes of the AGM not yet available on the ISC website.

IS Essentials (rating tool for projects < \$100 million capex) has been and continues to be piloted and is now being advertised for wider use by "pioneers".

SUSTAINABLE BUILT ENVIRONMENT NATIONAL RESEARCH CENTRE (SBENRC) AUSTRALIA

The SBEnrc convened on 24/1/23 to discuss potential topics to cover in research papers to be published in 2023. Shortlisted topics included understanding patterns and behaviours relating to waste generated by infrastructure projects and e-waste from advanced manufacturing, including EV battery waste.

CHARTERED PROFESSIONAL DEVELOPMENT

CURATED CPD

In addition to the traditional member led CPD events, Engineers Australia (EA) is looking to develop a curated CPD program in response to member suggestions and to provide complimentary events, that cover the broad spectrum of engineering as much as possible.

This was the approach taken last year in the lead up to the Climate smart engineering (CSE) conference 2022, where EA ran a series of events which were the outcome of member input via a taskforce program.

Preparations for this year have now started with the goal to deliver a similar program to complement CSE in the lead up to the full conference later this year.

EA is looking for suggestions, input, and collaboration on topics and speaker suggestions for this year's program. They are aiming for:

- One event per month between March and September.
- To try aligning with significant days such as Earth Day, World Environment Day, International Day for Clean Air and Blue skies, etc.
- Collaboration across branches.

Please forward any suggestions to: SENG@engineersaustralia.org.au.

DISCUSSION

INTEGRITY MATTERS: NET ZERO COMMITMENTS BY BUSINESS, FINANCIAL INSTITUTIONS, CITIES AND REGIONS

Below are a series of excerpts from the recently released UN 'Integrity Matters' report detailing key recommendations for non-state actors to make meaningful progress toward net zero targets and prevent greenwashing.

Report: United Nations' High Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities, Nov 2022

Extracts from this report follow, summarizing the main recommendations.
Prepared by David Rice, Jan 2023.

Announcing a Net Zero Pledge:

A net zero pledge should be made publicly by the leadership of the non-state actor and represent a fair share of the needed global climate mitigation effort. The pledge should contain interim targets (including targets for 2025, 2030 and 2035) and plans to reach net zero in line with IPCC or IEA net zero greenhouse gas emissions modelled pathways that limit warming to 1.5°C with no or limited overshoot, and with global emissions declining by at least 50% by 2030, reaching net zero by 2050 or sooner. net zero must be sustained thereafter.

Setting Net Zero Targets:

Non-state actors must have short-, medium- and long-term absolute emissions reduction targets and, where appropriate, relative emissions reduction targets across their value chain that are at least consistent with the latest IPCC net zero greenhouse gas emissions modelled pathways that limit warming to 1.5°C with no or limited overshoot, and where global emissions decline at least 50% below 2020 levels by 2030, reaching net zero by 2050 or sooner.

Using Voluntary Credits:

- *Non-state actors must prioritise urgent and deep reduction of emissions across their value chain. High integrity carbon credits in voluntary markets should be used for beyond value chain mitigation but cannot be counted toward a non-state actor's interim emissions reductions required by its net zero pathway.*
- *High-integrity carbon credits are one mechanism to facilitate much needed financial support towards decarbonizing developing country economies. As best-practice guidelines develop, non-state actors meeting their interim targets on their net zero pathway are strongly encouraged to balance out the rest of their annual unabated emissions by purchasing high-integrity carbon credits.*
- *A high-quality carbon credit should, at a minimum, fit the criteria of additionality (i.e. the mitigation activity would not have happened without the incentive created by the carbon credit revenues) and permanence.*

Creating a Transition Plan:

Non-state actors must publicly disclose comprehensive and actionable net zero transition plans which indicate actions that will be undertaken to meet all targets, as well as align governance and incentive structures, capital expenditures, research and development, skills and human resource development, and public advocacy, while also supporting a just transition. Transition plans should be updated every five years and progress should be reported annually.

Phasing Out of Fossil Fuels and Scaling Up Renewable Energy:

- *All net zero pledges should include specific targets aimed at ending the use of and/or support for fossil fuels in line with IPCC and IEA net zero greenhouse gas emissions modelled pathways that limit warming to 1.5°C with no or limited overshoot, with global emissions declining by at least 50% by 2030, reaching net zero by 2050.*
- *The transition away from fossil fuels must be just for affected communities, workers, and all consumers to ensure access to energy, and avoid transference of fossil fuel assets to new owners.*
- *The transition away from fossil fuels must be matched by a fully funded transition toward renewable energy.*

Detailed recommendations: *Include ending expansion of existing coal, oil and gas reserves and exploration for new reserves. Methane emissions from the energy sector— coal, oil and gas production —should be reduced by at least 64% by 2030 from 2020 levels to be consistent with global modelled pathways that limit warming to 1.5°C with no or limited overshoot as assessed by the IPCC’s 6th Assessment Report.*

Aligning Lobbying and Advocacy:

Non-state actors must align their external policy and engagement efforts, including membership in trade associations, to the goal of reducing global emissions by at least 50% by 2030 and reaching net zero by 2050. This means lobbying for positive climate action and not lobbying against it.

People and Nature in the Just Transition:

- *As part of their net zero plans, businesses, cities, and regions with material land-use emissions must achieve and maintain operations and supply chains that avoid the conversion of remaining natural ecosystems— eliminating deforestation and peatland loss by 2025 at the latest, and the conversion of other remaining natural ecosystems by 2030.*
- *Financial institutions should have a policy of not investing or financing businesses linked to deforestation and should eliminate agricultural commodity-driven deforestation from their investment and credit portfolios by 2025, as part of their net zero plans*

Increasing Transparency and Accountability:

- *Non-state actors must annually disclose their greenhouse gas data, net zero targets and the plans for, and progress towards, meeting those targets, and other relevant information against their baseline along with comparable data to enable effective tracking of progress toward their net zero targets.*
- *Non-state actors must report in a standardised, open format and via public platforms that feed into the UNFCCC Global Climate Action Portal to address data gaps, inconsistencies and inaccessibility that slow climate action.*
- *Non-state actors must have their reported emissions reductions verified by independent third parties. Special attention will be needed to build sufficient capacity in developing countries to verify emission reductions.*
- *Disclosures ought to be accurate and reliable. Large financial and nonfinancial businesses should seek independent evaluation of their annual progress reporting and disclosures, including opinion on climate governance, as well as independent evaluation of metrics and targets, internal controls evaluation and verification on their greenhouse gas emissions reporting and reductions.*

Investing in Just Transitions:

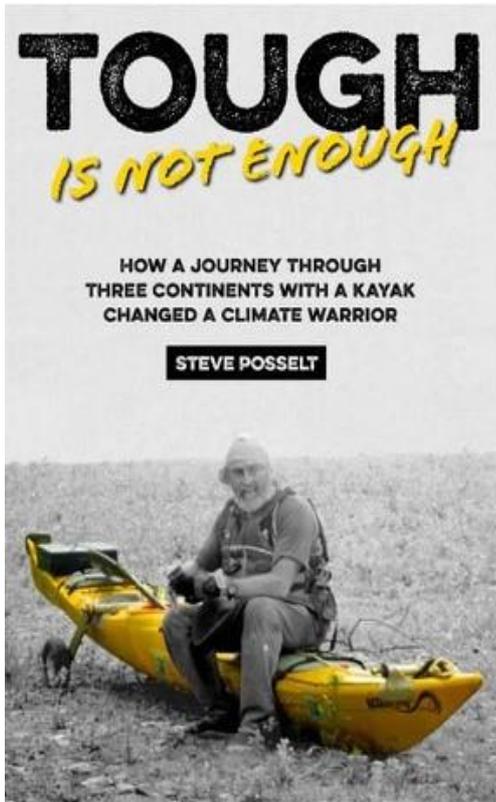
To achieve net zero globally, while also ensuring a just transition and sustainable development, there needs to be a new deal for development that includes financial institutions and multinational corporations working with governments, Multilateral Development Banks and Development Finance Institutions to consistently take more risk and set targets to greatly scale investments in the clean energy transition in developing countries.

Accelerating the Road to Regulation:

- *In order to ensure rigour, consistency and competitiveness, regulators should develop regulation and standards in areas including net zero pledges, transition plans and disclosure, starting with high-impact corporate emitters, including private and state-owned enterprises and financial institutions.*
- *The challenge of fragmented regulatory regimes should be tackled by launching a new Task Force on net zero Regulation that convenes a community of international regulators and experts to work together towards net zero.*

READING

BOOK REVIEW



Tough is Not Enough covers Steve Posselt's journey from Canberra to Sydney, New Orleans to New York, Portishead to Paris for COP 21, and then Ballina to Canberra, a trip spanning three continents over twelve months. It is the culmination of a decade of battling on the front line as a climate warrior. Join Steve on his last kayak trip, the trip he finally learns what climate change denial is, why our leaders will not respond to it, why many people don't care, and how to help those who do care.

Lovers of adventure will thrill at the task Steve Posselt set himself on the biggest Kayak trip of his life. Up the Mississippi, through the canals of the US and the UK, down the Thames, across the channel and up the Seine to Paris.

Crazy? Steve Posselt is a climate warrior, determined to raise the awareness of climate chaos and its impact on our daily lives. He set off from Canberra in January 2015 to drag his kayak through three continents and attend the Paris Climate Conference, COP21.

This is the story of what he learned about himself (and the environment and climate change) on the way. It's also the story of despair and redemption as a buoyant, enthusiastic movement embraced him when he finally returned home.

A must read for every adventurer, climate activist, so that we may all too Connect Climate Chaos and do something about it. Steve Posselt is a 66-year-old civil and water engineer, adventurer, and grandfather. He's a Fellow of Engineers Australia and has been a climate activist for well over a decade, using extremely long kayak journeys to promote awareness and education. Currently chair of the Sustainable Engineering Society he is working with Engineers Australia to come to grips with the urgency for climate change action. Steve is one of 100 engineers noted to have made a difference and profiled by Engineers Australia for their centenary celebrations. Old Yella, his wheeled kayak, has served him faithfully for 12 years over 12,000km, with almost 2,000km of that dragging it over land.

Using his engineering knowledge his goal has been to alert people to the real risks that climate change presents and to put them into perspective against infrastructure risk calculations that we all depend on.

Steve is passionate about doing whatever he can to provide a suitable world for his grandchildren. He is the author of Cry Me a River. Tough Is Not Enough is his second book. He lives in Ballina.

Further reviews follow.

“When you feel helpless, faced with the idiocy and blindness of the powerful, the politicians, the people next bloody door... read Steve’s book.” —Di Morrissey AM, author

*“Steve inspires us all to take extraordinary action in this age of global climate crisis.”
—Senator Bob Brown (retired)*

*“Engineers are known for their solid use of facts and their persistence and resilience – that’s Steve in a nutshell.”
—Peter McIntyre CEO, Engineers Australia*

FURTHER READING

The SA/NT/OS committee has collated a list of links to interesting projects and technology developments related to sustainable engineering. These are updated regularly, and can be found on our website at <https://www.seng.org.au/node/857>

CONTACT

GET IN TOUCH!

We welcome your feedback, ideas, and comments on the SENG newsletter.

You can contact us via the contact form on our website or by emailing info@seng.org.au.

Please visit our website and LinkedIn for updates regarding SENG events, news and more.



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