



The Sustainable Engineering Society

...engineering in harmony with ecology

SENG-WA Newsletter – February 2023

In the first newsletter of 2023, we present a collection of upcoming events focussing 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. Also included is 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.

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.

QUESTIONS AND ANSWERS

A 'Climate Change Challenges' series of webinars and forums was run in 2021 by the WA Division of Engineers Australia, in conjunction with the University of WA and Murdoch University.

During the series, over 100 questions or comments were submitted from around 1000 attendees. A 'Q&A' of the most pertinent, together with suggested answers, was put together by a group of senior EA members. The answers are NOT official EA answers; they are possible answers provided by the group as thought provokers.

In our Newsletter we will be publishing one Question and one possible Answer in each edition. We invite comments from our readers, a summary of which will be published in the following edition. Simple comments, such as agree/disagree are welcome, as are more detailed comments. These may be emailed to the [Q&A reply email](#).

This month, our question and possible answer is:

Q

What about teaching climate change to other disciplines?

A

Engineers need to be circumspect about 'teaching' other disciplines; at least until we are sure we know more about climate change, or associated areas such as sustainability, than they do. A more collaborative approach would be to debate with other professions on how to progress action on climate change; professions such as economists, architects, land use planners, the legal and medical professions. As engineers we can offer "teaching" in the sense of adding a unique voice of the profession to the climate change issue, one which complements other voices.

EVENTS

INNOVATING NET-ZERO
HOSX

PETER NEWMAN
CURTIN UNIVERSITY

NICOLE LOCKWOOD
LOCKWOOD ADVISORY

MICHELE VILLA
GHD

DR VANESSA RAULAND
CLIMATE CLEVER

5PM - 7PM

16 FEBRUARY 2023

FREMANTLE WALYALUP
CIVIC CENTRE

www.thehubonsx.com.au

THIS IS
FREMANTLE

INNOVATING NET-ZERO

Event by The Hub on SX

Date: 16 February 2023

Time: 5:00 – 7:00 PM AWST

Location: Walyalup Civic Centre, 151 High St, Fremantle, WA, 6160

Sustainable practices are understood to be an imperative for all organisations. We need a shift in focus towards HOW we innovate sustainable strategies and technologies to meet Net-Zero targets. In the wake of COP27 and the Non-State Entities Report, emphasis should be placed on how we utilise innovative technologies and systems to assist organisations and sectors in adjusting to the net-zero challenge.

How can sustainable innovation undergird the streamlining of processes and improve an organisation's capacity?

The Hub on SX presents a discussion with leading experts in the field who will be sharing their insights on how sustainable innovation can achieve net-zero targets.

More information: <https://events.humanitix.com/innovation-in-sustainability>

IMPLEMENTING SUSTAINABILITY: AN ENGINEERING TOOLBOX

Event by CLM-WA and SENG-WA

Date: 22 February 2023

Time: 5:30 – 8:00 PM AWST

Location: EA Perth, Level 10, Allendale Square, 77 St Georges Terrace, WA, 6000

This event will deliver an education focused discussion on sustainable engineering, bridging the gap between theory and practice by drawing on illuminating case studies and the latest, cutting-edge research. Keynote speakers Wahidul Biswas and Michele John will provide an overview of their recent book “Engineering for Sustainable Development: Theory and Practice”, based on education materials that were developed to teach Curtin Engineering students over the past 16 years.

The College of Leadership & Management and the Sustainable Engineering Society have a history of collaborating on sustainability. Lorie Jones will outline sustainability-related actions planned by CLM-WA for 2023. Barrett Moulds will describe SENG-WA's plans for 2023, including an update on collaboration with CLM-WA on the Valuing Externalities project. This project seeks to influence the WA State government to adopt a shadow carbon price for options evaluation by Government Trading Enterprises as part of the Low Carbon Transition to achieve the WA State government's net zero 2050 goal.

More information: <https://www.engineersaustralia.org.au/event/2023/01/implementing-sustainability-engineering-toolbox-46836>

MECLA SPOTLIGHT ON MEASURING EMBODIED CARBON

Online Event by MECLA

Date: 23 February 2023

Time: 10:00 – 11:30 AM AWST

Embodied/Upfront carbon measurement and benchmarking is in a dynamic state, and a critical goal for the sector is to evolve measurement approaches that allow for consistent, comparable, and reliable benchmarking. MECLA's event will bring together experts to take a comprehensive look at the current state of play and discuss the opportunities and challenges for the future of measurement.

The NABERS' consultation paper on embodied carbon addresses the lack of a consistent method of measurement for embodied emissions in Australia. It is the product of a partnership with Green Building Council of Australia (GBCA) and 12 months of collaboration with industry and government across Australia to understand the appetite for a standard for embodied emissions. The paper includes 10 proposals for 5 topic areas that outline how a rating tool, tentatively titled the NABERS Embodied Emissions tool, would measure, verify, and compare embodied emissions in new buildings and major refurbishments.

GBCA's upfront calculation guide is open for feedback from industry and will be discussed in more detail.

More information: <https://mecla.org.au/events/>

ISC WESTERN AUSTRALIA SYMPOSIUM

Event by Infrastructure Sustainability Council

Date: 4 April 2023

Time: 8:30 AM – 6:30 PM AWST

Location: Aloft Perth, 27 Rowe Avenue, Rivervale, WA, 6103

This full day conference will review recent project successes to provide the foundation for addressing the big issues facing our sector and how they impact people, the planet and economy.

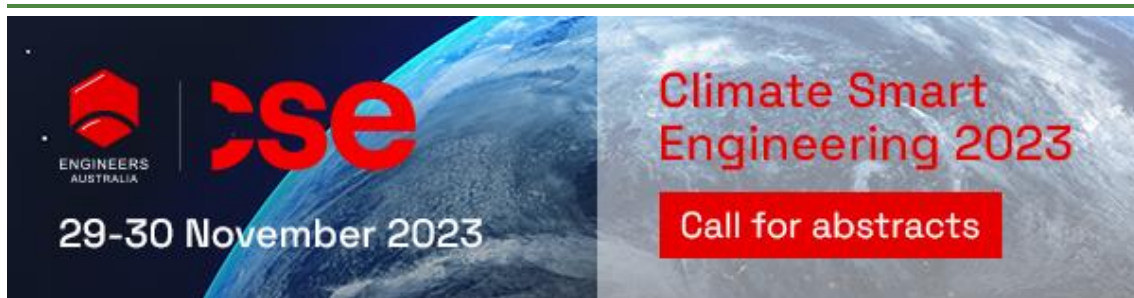
Key focus areas include:

- Western Australia's Sustainable Infrastructure Pipeline
- The IS Rating Scheme - Case Studies and New Developments
- Contractors & Suppliers - Working in tandem to meet policy challenges and supplier solutions.
- Future Focus

Join ISC for a day of discussion and case studies followed by a networking function.

Registration:

<https://www.eventbrite.com.au/e/western-australia-symposium-tickets-481299649207>



CLIMATE SMART ENGINEERING CONFERENCE 2023 (CSE23)

Event by Engineers Australia

Date: 29-30 November 2023

Location: Melbourne Convention and Exhibition Centre

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.

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.

Submit your abstract today. <https://engineersaustralia.org.au/cse/abstracts>

DISCUSSION

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

Extracts from the United Nations' High Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities, Nov 2022 by David Rice

Download report: https://www.un.org/sites/un2.un.org/files/high-level_expert_group_n7b.pdf

ANNOUNCING A NET ZERO PLEDGE: MAIN RECOMMENDATION

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: MAIN RECOMMENDATION

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: MAIN RECOMMENDATIONS

- 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 decarbonising 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: MAIN RECOMMENDATION

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: MAIN RECOMMENDATIONS

- 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: MAIN RECOMMENDATION

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: MAIN RECOMMENDATIONS

- 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: MAIN RECOMMENDATIONS

- 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 non-financial 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: MAIN RECOMMENDATION

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: MAIN RECOMMENDATIONS

- 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.

OBITUARY

SENG-WA 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.

SENG-WA extends our heartfelt condolences to his friends and family.

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



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