The Sustainable Engineering Society

...engineering in harmony with ecology

SENG-WA Newsletter – November / December 2023

In our last edition of the SENG-WA newsletter for 2023, we present a final reminder for the upcoming Engineers Australia Climate Smart Engineering Conference taking place at the end of November in Melbourne, an opportunity to tour the Legacy Living Lab in Fremantle and a number of other interesting events.

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.

For potential showcase in a future edition of this newsletter, we invite WA businesses 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.

The SENG-WA Committee wishes you and your families a restful and safe festive season, and a prosperous 2024!

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 *Given the strengthening positions on climate change in the USA, the EU, Australian State governments and many leaders of industry; do you see a role for EA to become more publicly visible in asking our Federal Government to adopt a bipartisan approach to energy and climate?*

A EA will continue to encourage governments of all political persuasions to take meaningful action on climate change. We will also encourage engineers to think carefully about how they create climate-smart solutions that are politically easy to embrace.

EVENTS

MAPPING THE CIRCULAR ECONOMY OF WA

Tour and Talk by The Hub on SX

Date: 23 November 2023

Time: 4:00 - 6:00 PM AWST

Location: L3 Legacy Living Lab, 27 Blinco St, Fremantle WA 6160, Australia

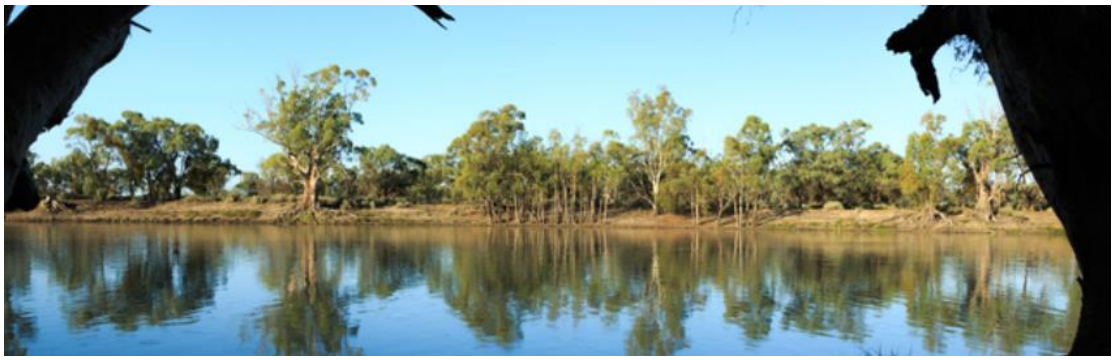
Join The Hub on SX, Roberto Minunno and Josh Hopkins for a tour of Legacy Living Lab (L3), its purpose and an insight into the WATCH project - Mapping the circular economy of WA - monitoring the contributions of circularity towards achieving Net Zero: Stage 1.

L3 is the first building in Western Australia that is both modular and designed for disassembly and reuse. L3 is constructed on recyclable steel footings, saving 20 tons of concrete. The building is not welded, glued or fixed, instead it harnesses nuts and bolts, spacers and magnets.

In three years, it will be disassembled in a day or two and moved elsewhere. If L3 had been built in a regular fashion, with end of life going to landfill, then the greenhouse gas equivalent impact would have been 50 tons. Life cycle assessment for L3 demonstrates only 5 tons of greenhouse gas equivalent impact. Designing for reuse provides a factor 10 environmental improvement.

After the event, there will be a sundowner with drinks and nibbles provided.

Registration: https://events.humanitix.com/l3-legacy-living-lab-tour-talk-and-sundowner



STRATEGY DEVELOPMENT TO PROMOTE HEALTHY WATERWAYS

Webinar by Engineers Australia

Date: 23 November 2023

Time: 9:00 - 10:00 AM AWST

The Healthy Waterways Strategy is a comprehensive plan aimed at improving the health of waterways in a sustainable manner. The 2018 Healthy Waterways Strategy is a ten-year strategy for the Port Phillip and Westernport Catchments in and around Greater Melbourne. It was co-designed with the local government, Parks Victoria, the State Government, Melbourne Water, community groups, and other organisations input. The strategy highlights the value of waterways, including plants, animals, human recreation, and cultural heritage.

This presentation will give an overview of the strategy, including some of the targets and actions. The presentation will also give an in-depth focus on the stormwater management aspects of the strategy and Melbourne Water's incentives program for improving stormwater management.

Registration: https://www.engineersaustralia.org.au/event/2022/05/strategy-development-promote-healthy-waterways-892ddac9

THOUGHT LEADERS SERIES: SUSTAINABLE DUALITY, INFRASTRUCTURE FOR TOMORROW

Webinar by Engineers Australia

Date: 5 December 2023

Time: 10:00 - 11:30 AM AWST

Our communities increasingly demand that the infrastructure we provide has an acceptable cost to – and value for – future generations. The urgency of addressing climate change, restoring our natural ecosystems and the integration of sustainable and equitable practices in infrastructure design for environmental and social benefits are key.

Our profession can influence sustainability throughout the entire project life cycle through early community engagement, designing to maximise social and environmental benefits, and building a circular economy to minimise consumption and waste. We need to be dynamic in our approach to sustainability, expand knowledge, and improve technologies and systems.

Join EA to hear technical specialists provide valuable suggestions for implementing sustainable practices into projects to meet today's needs without compromising future generations, and gain insights into the challenges and opportunities clients face in adapting to ever changing needs.

Registration: https://www.engineersaustralia.org.au/event/2022/05/thought-leaders-series-sustainable-duality-infrastructure-tomorrow-ff14fe16

CLIMATE SMART ENGINEERING 2023 (CSE23)

Conference by Engineers Australia

Date: 29 – 30 November 2023

Location: Melbourne Convention and Exhibition Centre

Introduction video (click to view):

Since its foundation in 2021, CSE has become a focal point for debate and knowledge sharing. Last year, CSE22 explored the ways engineers can navigate the complexities of achieving net zero emissions and drive the transition to a clean energy economy.

This year, a full technical program will support the plenary sessions. CSE23 has a Plenary Program Advisory Council, chaired by EA CEO Romilly Madew and a Technical Program Advisory Team chaired by Engineers Australia Chief Engineer Jane MacMaster and comprising the input of 19 Engineers Australia colleges and technical societies.

CSE23 will bring you the latest in world-leading views and engaging debate on solutions to address climate change, responding to extreme events, biodiversity loss, boosting the circular economy and upholding the principles of sustainable practices in engineering.

More information and registration: https://www.engineersaustralia.org.au/learning-and-events/conferences-and-major-events/climate-smart-engineering

ZERO EMISSION VEHICLES - ARE WE THERE YET?

Event by Western Roads Federation

Date: 7 December 2023

Time: 9:30 – 11:30AM AWST

Location: Curtin University, Kent Street, Bentley, WA 6102

Clients and Governments are asking Transport Companies to invest in Zero Emission vehicles, but which technology? Hydrogen, Battery, Synthetic Fuels – are there others? Are they robust enough to use in operations? What are the issues and risks? These questions will be addressed, along with available Government incentives and the information needed to make an informed decision about low emission transport for business.

Registration: https://www.eventbrite.com.au/e/are-we-there-yet-tickets-759554466857

HYDROGEN TECHNICAL MASTERCLASS

Course by Australian Institute of Energy, Engineers Australia and HSA

Date: 13 February 2024

Location: Engineers Australia – WA, 77 Saint Georges Terrace #Level 10 Perth, WA 6000

A 3-day masterclass for current or aspiring hydrogen industry stakeholders, delivered by Australia's leading hydrogen industry professionals.

Gain practical knowledge with lessons and insights garnered from real-world experience on hydrogen project delivery and design.

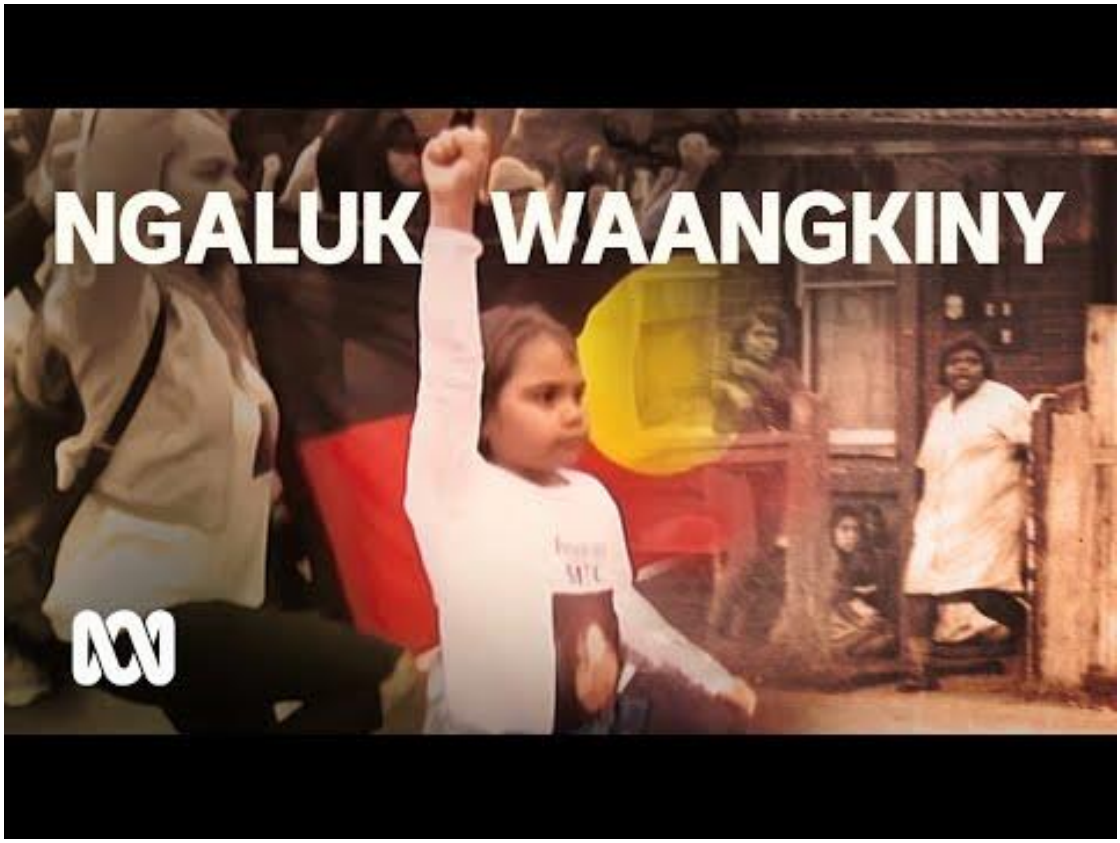
Hear from the experts on hydrogen electrolysis, compression, refuelling, process safety and many more key topics faced by Australia's burgeoning hydrogen sector.

More information: https://www.eventbrite.com.au/e/hydrogen-technical-masterclass-perth-tickets-759302493197

NEWS

NGALUK WAANGKINY (US TALKING) - ABORIGINAL ELDERS SHARE THEIR LIVES AND LEGACY

The video below (click to view) tells the story of improvements in relationship between the City of Perth and Wadjuk aboriginal elders, and their work in developing a Reconciliation Action Plan.



https://www.youtube.com/watch?v=dXO7L7vtjoY

MILESTONE FOR GREEN ENERGY TRANSITION IN WA

bp's plans to produce green hydrogen at its Kwinana Energy Hub in Western Australia have reached a milestone with the company's H2Kwinana project entering front-end engineering and design (FEED).

The company said the H2Kwinana project, supported by $70 million from the Australian government as part of its Regional Hydrogen Hubs program, is to include a 100 MW electrolyser, with the potential to expand to a total of 1.5 GW production in subsequent phases.

The project also involves the installation of hydrogen storage, compression and truck loading facilities and upgrades to bp's existing on-site hydrogen pipeline system.

When operational, the facility could produce more than 14,000 tonnes of green hydrogen per annum for industrial use and heavy transport.

Site works for H2Kwinana are already underway, with construction proper to start in 2026 with the project expected to be delivered by mid-2027.

More information: https://www.pv-magazine-australia.com/2023/11/17/feds-tip-70-million-into-kwinana-hydrogen-hub-as-bp-eyes-1-5-gw-capacity-project/

Press release: https://www.wa.gov.au/government/media-statements/Cook-Labor-Government/Major-milestone-for-green-energy-transition-in-WA-20231117

NEW STUDY INTO THE POTENTIAL OF CCUS HUBS IN WA

Case study: A new study has found WA capable of storing its own Carbon and turning existing infrastructure into Carbon Capture Utilisation and Storage (CCUS) hubs.

The Western Australian (WA) LNG Jobs Taskforce commissioned CSIRO and Global Carbon Capture and Storage Institute (GCCSI) to undertake a study into the potential for developing Carbon Capture Utilisation and Storage (CCUS) hubs in Western Australia. The report has identified that CCUS Hubs:

- Would support cross-sector collaboration towards decarbonisation including the co-location of hydrogen and ammonia industries.
- Have the potential to attract significant overseas investment for the Western Australian economy and potentially boost WA's GDP by billions of dollars.

The WA Government will be investing $4.3 million to establish the CCUS industry in WA to capitalise on the State's potential as a hub for carbon storage.

More information: https://www.wa.gov.au/government/announcements/new-study-the-potential-of-ccus-hubs-wa

Editorial note: The International Energy Agency notes that "CCUS deployment has been behind expectations in the past but momentum has grown substantially in recent years, with over 500 projects in various stages of development across the CCUS value chain. Nevertheless, even at such level, CCUS deployment would remain well below what is required in the Net Zero Scenario." For example, Chevron's Gorgon carbon dioxide injection project has been subject to extensive delays, cost over-runs due to unanticipated complications and continues to perform significantly under capacity, which has resulted in more carbon dioxide being released to the atmosphere than expected from the Gorgon project. The Federal and WA governments have agreed to take on liability for carbon dioxide leakage from the project after the 15 year closure period.

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