


STATE OF ENERGY RESEARCH CONFERENCE 2025

The Need for Speed: research in the race to net zero




Monday 14 July 2025 – see locations noted below	
	LOCATION: Michael Crouch Innovation Centre (MCIC)
10:00 - 4.00pm	Short Course: Consumer Energy Resources <i>Sponsored by AGSE - Register Here for the Short Course only</i>
	LOCATION: UNSW Scientia Building (G19), Tyree Room
3.00 - 5.00 pm	RACE for 2030 CRC: Consumer Grid Summit <i>- invite only</i>
5.00 - 7.00pm	Networking Drinks: Foyer, Tyree Room, UNSW Scientia Building – all welcome!

Tuesday 15 July 2025 – UNSW Roundhouse, Kensington, NSW	
7.45 am	Registration
	Welcome Session
8.15 am 	Introduction: Dani Alexander, CEO UNSW Energy Institute Welcome to Country: Aunty Lola Ryan, La Perouse Aboriginal Community Welcome: Vlado Perkovic, Provost UNSW Sydney Welcome remarks from Platinum Sponsor: Werther Esposito, CEO Potentia Energy


Opening Keynotes and Plenary Panel			
8.45 am	Session sponsored by AGL		
	Introduction and welcome: Suzanne Falvi, Executive General Manager Corporate Affairs, AGL Introduction to Opening Keynotes: Prof Frank Jotzo, Australian National University		
8.55 am	A/Prof Tim Nelson, Chair of the Independent Review of the NEM - NEM Review – Early Directions		
9.15 am	Lana Stockman, Commissioner, AEMC - The bird that feasts on knowledge: the role of academic research in everyday policymaking		
9.35 am	Discussion Panel: Electricity market reform towards net zero Moderator: Prof Frank Jotzo (Australian National University) Panel: A/Prof Tim Nelson (NEM), Lana Stockman (AEMC), A/Prof Zsuzsanna Csereklyei (RMIT), A/Prof Gordon Leslie (Monash University)		
10.15 am	Morning Tea and Exhibition		
10.45 am	Concurrent Sessions		
	Yellow Room - G Floor	Green Room - 1st Floor	Orange Room - 1st Floor
	Markets, policy and regulation	People and society and institutions	Resources, systems and technologies Consumer energy resources <i>Chair: A/Prof Markus Wagner, Monash University</i>
	Panel: Governing DER, Transmission and Hydrogen in Australia's Energy Transition: Of Power and Politics - Dr Anne Kallies, RMIT - Prof Penelope Crossley, University of Sydney - Mr Zubin Bilimoria, University of Sydney - Ava Hancock, National Electricity Market Wholesale Market Settings Review	Panel: Open-Source Energy Modelling in Australia – Building Tools, Capacity, and Collaboration Chair: A/Prof Anna Bruce, UNSW Panel: - Dr Dylan McConnell, UNSW - Dr Nicholas Gorman, UNSW - Dr James Foster, CSIRO - Prof Kylie Catchpole, Australian National University - John McKibben, AEMO	Traffic-Data-Driven Electric Vehicle Charging Infrastructure Planning Mr Jinhao Li, Monash University
			Flexible demand of electric water heating systems Dr Baran Yildiz, UNSW
			Reimagining Network Utilisation in the Era of Consumer Energy Resources Dr Ibrahim Ibrahim, University of Technology Sydney

11.45-11.50am	<i>Transition to second set of Concurrent Sessions</i>		
11.50am	Concurrent Sessions		
	<i>Yellow Room - G Floor</i>	<i>Green Room - 1st Floor</i>	<i>Orange Room - 1st Floor</i>
	Markets, policy and regulation: System security Chair: Dr Michelle Vaqueiro Contreras, UNSW	People and society and institutions Residential consumers Chair: A/Prof Yolande Strengers, Monash University	Resources, systems and technologies Utility-scale energy Chair: Mr Shreejan Pandey, Monash University
	AEMO's Transition Plan for System Security, current challenges of the transition, and emerging research partnership opportunities Niraj Lal, AEMO	Evaluating energy transition: Identifying transformative outcomes for Australian home energy upgrades: Prof Chris Riedy, University of Technology Sydney	Pumped hydro and pumped-up prices: the case of Australia's largest pumped hydro generator Professor Bruce Mountain, Victoria Energy Policy Centre
	Identifying energy sector interdependencies for critical infrastructure protection and resilience Dr Lygia Romanach, CSIRO		
	Reliable Grid Integration of Renewables: A Power Hardware-in-the-Loop Approach Qiyang Lei, UNSW Sydney	Predictive Zonal Heating with Machine Learning: A ChatGPT-Based Model for Simulating Resident Behaviour in Smart HVAC Systems Miss Liyuan Chen, University of Oxford	PV Asset Quality Monitoring via Daylight Photoluminescence Inspection Dr Oliver Kunz, Lab 360 Solar
	Long-Duration Storage Options for the National Electricity Market Dr Sleiman Mhanna, University of Melbourne	Understanding Household Decisions About Energy Saving Upgrades for Their Homes: A Behavioural Science Journey Mapping Approach Ms Jaime Comber, University of Technology Sydney	System dynamic modelling for emission prediction in the critical mineral mining and processing industry Mr Muhammad Islami, Murdoch University
12.50 pm	Lunch and Exhibition		
	Keynote and Plenary Panel		
1.45 pm	Prof Kylie Catchpole, Australian National University - Developing technology in an era of uncertainty, dynamism and complexity		
2.05 pm	Discussion panel: Supporting emerging energy technologies Moderator: Prof Paul Medwell, University of Adelaide Panel: Prof Kylie Catchpole (Australian National University), Alexandra McIntosh (ARENA), Blair Pritchard (Virescent Ventures), Prof Hugh Durrant-Whyte (NSW Chief Scientist & Engineer and Natural Resources Commissioner)		

3.15 pm	Afternoon tea and Exhibition		
	Plenary Discussion		
3.45 pm	Professor Penelope Crossley (University of Sydney) and Tim Buckley (Climate Energy Finance, Australasia) - Fireside chat: Emerging challenges and opportunities for the Asia-Pacific region's energy transition		
4.15-4.25pm	<i>Transition to Concurrent Sessions</i>		
4.25pm	Concurrent Sessions		
	<i>Yellow Room - G Floor</i>	<i>Green Room - 1st Floor</i>	<i>Orange Room - 1st Floor</i>
	Resources, systems and technologies Green hydrogen <i>Chair: Prof Paul Medwell, University of Adelaide</i>	People and society and institutions Novel approaches to net zero <i>Chair: Prof Deanna D'Allesandro, University of Sydney</i>	Markets, policy and regulation: Precinct-level analysis <i>Chair: Prof Chris Lund, Murdoch University</i>
	Infrastructure configuration and cost optimisation of renewable hydrogen supply within heavy-industry regional hubs in Australia Dr Shuang Wang, Australian National University	Decarbonising South East Asia: ASEAN's Renewable Energy Transition Dr Chris Dunstan, CSIRO	Accommodating household electrification within a growing city Dr Bjorn Sturmberg, Australian National University
	The synergy between battery and hydrogen storage in stand-alone hybrid systems: A parameterised load approach Mr Dan Virah-Sawmy, Australian National University	Immersive Net Zero Transition Data Storytelling Dr Yidan Zhang, Monash University	Carseldine Ecovillage - A case study for solar pre-cooling Dr Simon Heslop, UNSW
	Solid-State Green Hydrogen Export via Electrochemically Produced Sodium Borohydride Powders Dr Peter O'Conghaile, Curtin University	Care in the energy transition - a case study of First Nations energy systems Ms Anna Cain, UNSW	Digital-twin enabled energy flexibility for a sustainable urban precinct Dr Chengyang Liu, RMIT University
5.30 pm	Networking Drinks and Poster Session		
7pm -10pm	Conference Gala Dinner In Conversation: Dr Zhengrong Shi (CEO, Suntech Power) with Prof Peta Ashworth (Curtin University)		

Wednesday 16 July 2025		
8.00 am	Registrations with arrival tea and coffee	
8.15 am	Welcome back – Dani Alexander, CEO, UNSW Energy Institute	
Opening Keynote Session		
8.20am	 Session Sponsored by Potentia Energy Introduction to Opening Keynotes Session: Prof Stefan Trueck, Macquarie University	
8.25am	Matt Kean (Chair, Climate Change Authority) - Energy priorities in sector pathways to net zero: Insights from the Climate Change Authority	
8.50 am	Dr Mary Manning (Chief Investment Officer, National Reconstruction Fund) – TBC title	
9.10 am	Monique Miller (Chief Investment Officer, Clean Energy Finance Corporation)- Empowering Billions: The Crucial Role of Research in Australia’s Energy Transition	
9.30 am	Discussion panel: Financing approaches for new energy technologies Moderator: Prof Stefan Trueck, Macquarie University Panel: Monique Miller (Clean Energy Finance Corporation), Prof Elizabeth Thurbon (UNSW), Matt Kean (Chair, Climate Change Authority), Werther Esposito (Potentia Energy)	
10.15 am	Morning Tea and Exhibition	
10.45am	Concurrent Sessions	
	<i>Yellow Room - G Floor</i>	<i>Green Room - 1st Floor</i>
	Resources, systems and technologies Energy transition research impact <i>Chair: Prof Peta Ashworth, Curtin University</i>	People and society and institutions
		Markets, policy and regulation: Electricity pricing <i>Chair: A/Prof Zsuzsanna Csereklyei, RMIT University</i>
	Energy Transition Research Funding in Australia: challenges ahead Prof Ken Baldwin, Australian National University	Panel: The Missing 98% – A Holistic Approach to SME Integration in the Energy Transition
	Gender Diversity on Boards and Corporate Commitment to the Energy Transition Dr Harj Singh, Curtin University	Net Zero Institute, The University of Sydney: - Prof Gregor Verbic - Prof Penelope Crossley - Prof Glenn Platt
		Time-of-export vs time-of-use tariffs: Evaluating their influence on PV-battery households Dr Kelvin Say, University of Melbourne
		Misaligned Incentives: Network-Driven Design and Limited Wholesale Cost-Reflection in NSW Time-of-Use Electricity Tariffs Mr Eric Liu, Monash University

Enabling energy research impact through standardisation Prof Paul Medwell, University of Adelaide	- Dr Lee White - Dr Danielle Kent	A Smart Menu-based Pricing Model for Profitable V2G Integration in Public Parking Lots Miss Mozhdeh Hematiboroujeni, Monash University
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11.45-11.50am	<i>Transition to main Plenary (Yellow) Room</i>	
Discussion Panel		
11:50am 	Session Sponsored by RACE for 2030 Discussion Panel: Running two races at once: AI and the energy transition Introduction & Welcome – Dr Bill Lilley, RACE for 2030 Moderator: Dr Bill Lilley (RACE for 2030) Panel: Prof Adam Berry (UTS), Prof Sue Keay (UNSW AI Institute), A/Prof Markus Wagner (Monash University), Mr David Hughes (Transgrid)	
12.35pm	Lunch and Exhibition	
Keynote and Plenary Panel		
1.35 pm	Prof Heidi Norman, UNSW Indigenous Land and Justice Research Group - First Nations energy policy and local visions of energy justice	
1.55 pm	Discussion panel: Embedding people, culture, and justice into the energy transition Moderator: Dr Chris Briggs, UTS Institute for Sustainable Futures Panel: Prof Heidi Norman (UNSW Indigenous Land and Justice Research Group), Prof Yolande Strengers (Monash University), Andrew Bray (National Director, RE-Alliance)	
2.35-2.40pm	<i>Transition to Concurrent Sessions</i>	
2.40pm Concurrent Sessions		
<i>Yellow Room - G Floor</i>	<i>Green Room - 1st Floor</i>	<i>Orange Room - 1st Floor</i>
People, society and institutions	Resources, systems and technologies: Green iron and steel <i>Chair: Prof Frank Jotzo, ANU</i>	Markets, policy and regulation: Market design <i>Chair: Prof Stefan Trueck, Macquarie University</i>
Panel: Policy recommendations to empower and mobilise NSW Aboriginal landholders in renewable energy transition - Prof Heidi Norman, UNSW Indigenous Land and Justice Research Group	Opportunities for Australian iron ore and green iron exports into a Chinese green steel market Dr Jorrit Gosens, Australian National University Smart utilization of hydrogen in iron and cement sectors Dr Muhammad Aqib Chishty, University of Adelaide	Learning from Peninsular Malaysia on DER integration Dr Gabrielle Kuiper Flexibility premiums in price setting of wholesale electricity markets: a quantile regression approach

<ul style="list-style-type: none"> - Dr Chris Briggs, UTS Institute for Sustainable Futures - Therese Apolonio, UNSW Indigenous Land and Justice Research Group - Dr Saori Miyake, UTS - Dr Sarah Niklas, UTS Institute for Sustainable Futures 	<p>The Impact of Flexibility in Iron Making on the Cost of On and Off Grid Green Iron Production in Australia</p> <p>Mr Max Van Someren, Bivios</p>	<p>Mr Santosh Sapkota, Macquarie University</p> <p>What is the Role of Corporate PPAs in Energy Transition? Lessons from the Australian Experience</p> <p>Dr Chris Briggs, UTS Institute for Sustainable Futures</p>
3.40 pm	Afternoon Tea and Exhibition	
Keynote and Plenary Panel		
3.55 pm	Prof Gus Nathan, University of Adelaide - Challenges and opportunities in the net zero energy transition for heavy industry	
4.15pm	<p>Discussion Panel: Can Australia truly become a renewable energy innovation superpower?</p> <p>Moderator: Prof Deanna D'Alessandro, University of Sydney</p> <p>Panel: Prof Gus Nathan (University of Adelaide), Dr Rahman Daiyan (OzAmmonia), Alice Lang (5B)</p>	
4:55pm	Closing comments – Dani Alexander, CEO, UNSW Energy Institute	
5.15 pm	Conference Close	