



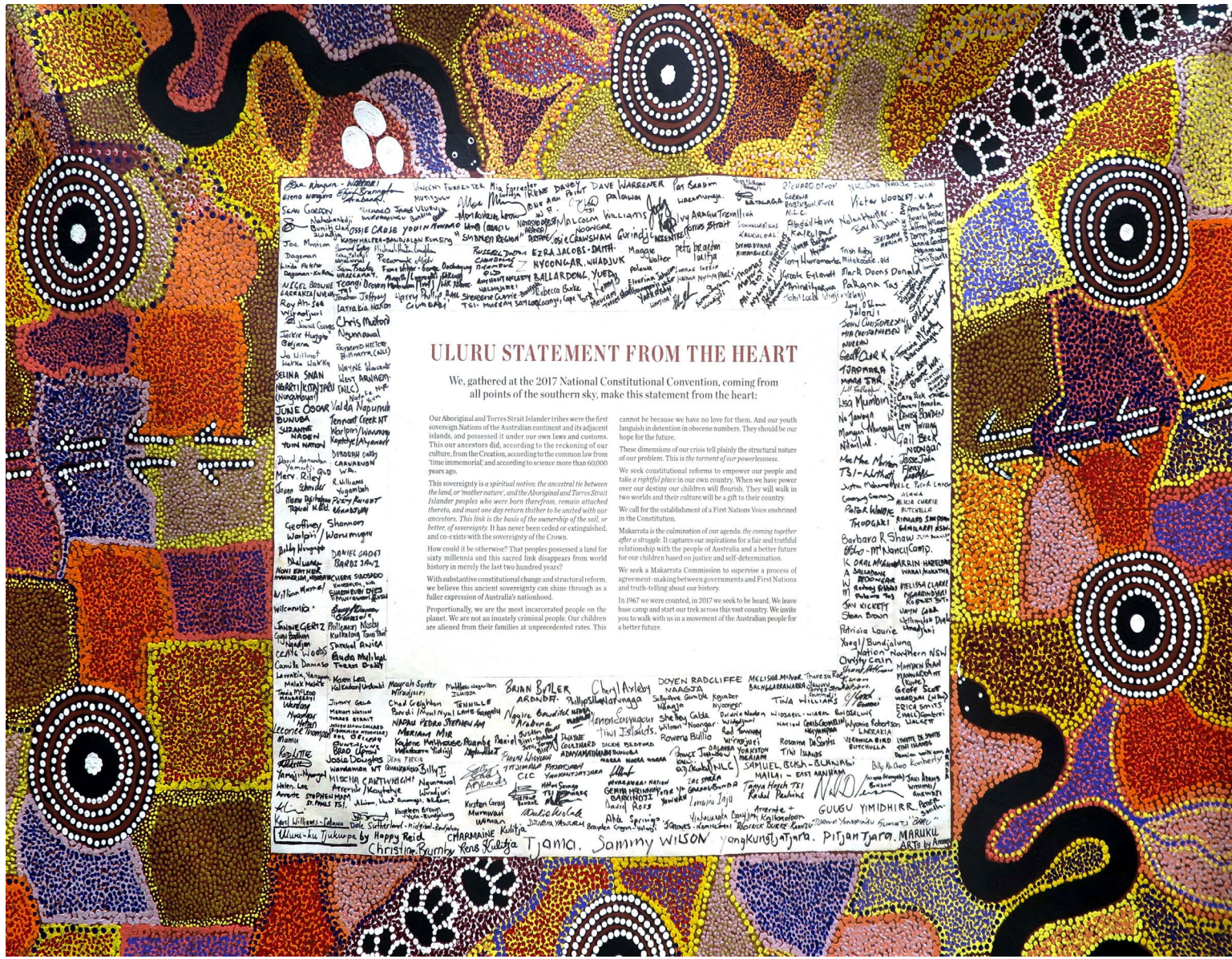
**Thank you for joining the RACE for
Networks online meeting.
We will commence shortly.**

This will be a recorded session.



RACE for Networks update

September 2024



ULURU STATEMENT FROM THE HEART

We gathered at the 2017 National Constitutional Convention, coming from all points of the southern sky, make this statement from the heart:

Our Aboriginal and Torres Strait Islander tribes were the first sovereign Nations of the Australian continent and its adjacent islands, and possessed it under our own laws and customs. This our ancestors did, according to the reckoning of our culture. From the Creation, according to the common law from time immemorial, and according to science more than 60,000 years ago.

This sovereignty is a spiritual notion: the ancestral link between the land, or 'mother nature', and the Aboriginal and Torres Strait Islander peoples who were born therefrom, remain attached thereto, and must one day return thither to be united with our ancestors. This link is the basis of the ownership of the soil, or better, of sovereignty. It has never been ceded or extinguished, and co-exists with the sovereignty of the Crown. How could it be otherwise? That peoples possessed a land for sixty millennia and this sacred link disappears from world history in merely the last two hundred years?

With substantive constitutional change and structural reform, we believe this ancient sovereignty can shine through as a fuller expression of Australia's nationhood.

Proportionally, we are the most incarcerated people on the planet. We are not an innately criminal people. Our children are alienated from their families at unprecedented rates. This

cannot be because we have no love for them. And our youth languish in detention in obscene numbers. They should be our hope for the future.

These dimensions of our crisis tell plainly the structural nature of our problem. This is the torment of our powerlessness.

We seek constitutional reforms to empower our people and take a rightful place in our own country. When we have power over our destiny our children will flourish. They will walk in two worlds and their culture will be a gift to their country. We call for the establishment of a First Nations Voice enshrined in the Constitution. Makarrata is the culmination of our agenda: the coming together after a struggle. It captures our aspirations for a fair and truthful relationship with the people of Australia and a better future for our children based on justice and self-determination. We seek a Makarrata Commission to supervise a process of agreement-making between governments and First Nations and truth-telling about our history.

In 1967 we were counted, in 2017 we seek to be heard. We leave base camp and start our trek across this vast country. We invite you to walk with us in a movement of the Australian people for a better future.

We acknowledge the Traditional Owners of the ancestral lands in the various locations from which we meet today, and recognise their continuing connection to the land, waters and culture.

We pay respect to Elders past and present – acknowledging them as the traditional custodians of knowledge of these lands.

Agenda

- Welcome to Country and introduction
- RACE for Networks update
- Introduction to Redgrid
- GridGuru Demonstration
- Monash expertise
- Questions / Discussion
- Next steps

EQUAL_{by}30

Equal Pay, Equal Leadership, Equal Opportunities

Slido code: 4893200



RACE for 2030

We are an **industry led** collaborative research center focused on **accelerating the transition** to Reliable, Affordable, Clean Energy for 2030, centred on **energy end users** and the **networks** that supply them.



RACE for Business

Digitalising industry

Decarbonising business and supply chains



RACE for Homes

Mainstreaming efficient electric homes

Engineering smarter homes



RACE for Networks

Designing future networks

Developing local grid solutions



RACE for EVs

Optimising transport and power use

Integrating electric vehicles with the grid



RACE for Change

Incorporating end-users in whole of system design

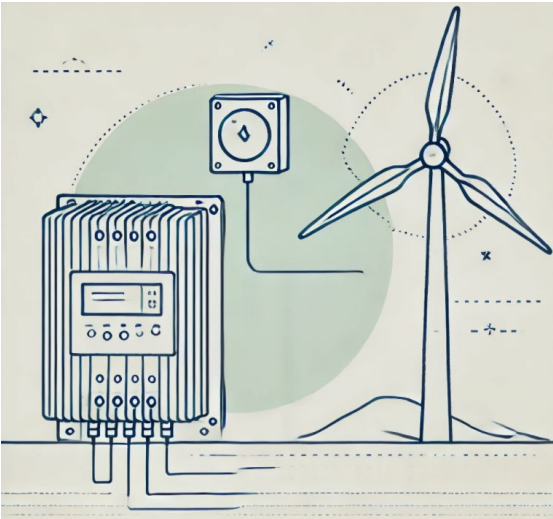
Transforming systems through innovation

Building a net zero workforce

RACE for Networks – projects underway

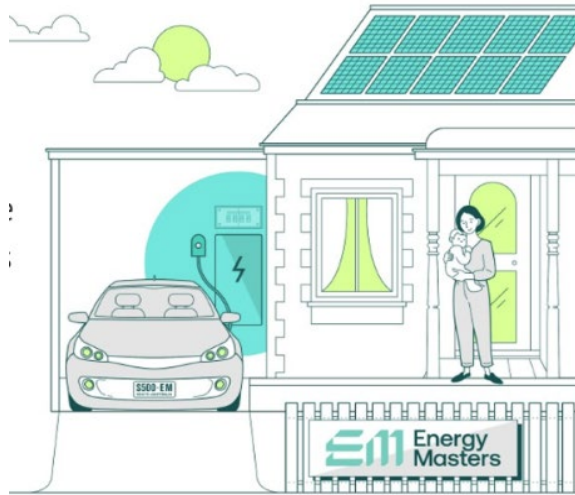
Grid Forming Inverters

And their network impacts when densities grow



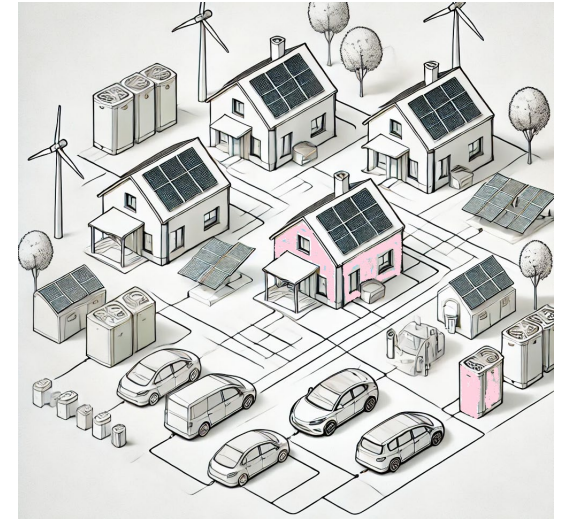
Energy Masters

500 energy-smart homes



Smart Energy Communities

Deep dives into small microgrid communities





Introducing: GridGuru

Project lead partners: RedGrid and Monash University

Slido code: 4893200



RedgridGPT Team



Simon Wilson
CEO - Redgrid

Simon has over two decades of diverse experience in executive leadership, technical architecture, and strategic planning. He currently serves as the CEO of RedGrid and is the Founder CEO of Australian Regional AI Network. Simon's previous roles include Service Planning Architect at National Australia Bank, Enterprise Architect at Singtel Optus, Solution Architect at IBM, and Network Specialist at Netstar. He is also an Advisory Council Member at the Australian Digital Commerce Association.



Phil Beadle
Chief AI Engineer – Redgrid

Phil is an experienced R&D Software Engineer with a track record of delivering Proof of Concept solutions that turn cutting-edge ideas into profitable products. Former Microsoft MVP (5 years), skilled in various programming languages (Unity3D & C#), frameworks (Vue.js), and methodologies, developing RAD tools and hApps for Holochain.org. He offers extensive strategic leadership, implementation management, and hands-on experience in Azure, Scrum, Agile, and Test Automation. Certified Azure Developer.



Jason Clark
Managing Director Energy, Infrastructure,
and Sustainability

Jason is a strategic executive with deep expertise in the energy industry. He served as the Executive General Manager of Emerging Energy Solutions at Ausgrid and held multiple senior leadership roles at AGL, where he led the distributed energy services division. Jason has a proven track record of delivering long-term value across diverse teams and projects.



Emily Loving
Head of Product

Emily led the discovery phase for the RACE phase 1 project for GridGuru. She is recognized for her expertise in understanding customer challenges and transforming them into innovative solutions. Emily has a robust background in developing products for the energy sector, including a B2B2C consumer energy response programme and data platform. Her strategic approach has been pivotal in aligning product developments with consumer needs and industry standards.



REDGRIDPT

OUR MISSION IS TO DEMOCRATISE ENERGY PLANNING AND DESIGN!

OBJECTIVE:

BUILD THE FOUNDATION OF A COLLABORATIVE PLATFORM FOR ENERGY
BASED ON AN OPEN ARCHITECTURE AND USING EMERGING SOFTWARE TO
ENABLE A FASTER ENERGY TRANSITION.

KEY CAPABILITIES:

Identification of low
voltage network
constraints

Insights and evaluation
capability to increase
network hosting
capacity

Plan, test, evaluate and
to optimize grid
configurations for
strategic investment.

Use Data insights and
AI to enhance
customer engagement
and network
management.



OPEN, EXTENSIBLE, INTELLIGENT & INTERACTIVE ENERGY SYSTEM
MODELING PLATFORM FOR EVERYONE

Monash University Expertise

- Software systems and cyber security
- Blockchain
- Data storage, encryption & analysis
- Machine Learning
- Optimisation

IT: #1 in Australia (THE'24 ranking)

- Software systems and cyber security
- Blockchain
- Data encryption & analysis
- Data Science and AI
- Optimisation
- Visualisation



Markus Wagner

Associate Professor - Monash University

Markus is from the Department of Data Science and AI, Faculty of Information Technology, Monash University. His research topics range from mathematical runtime analysis of heuristic optimisation algorithms and theory-guided algorithm design to applications of heuristic methods to software engineering and renewable energy production.

He is also the Associate Director for Smart Energy Systems at the Monash Energy Institute.



Mahsa Salehi



Hui Cui



Ehsan Shareghi



Hao Wang



Sarah Goodwin



Terrence Mak



Armin Sakzad



Muhammed Esgin



Ron Steinfeld



Q&A



Slido code: 4893200

RACE for Networks – project concepts

- Customer centric cost reflective pricing
- Exploring the value stack within Distribution REZ
- Household battery adoption and grid integration (crossing the chasm)
- PV Generation and Bushfire impacts on output
- Next generation energy optimisation for a water utility
- Deep dive into Power Quality in high CER environments
- Developing PLEXOS modelling in the Distribution network
- SOCI impacts on response rates for CER, protection and network equipment



Next Steps

GridGuru:
Partner building

Contact Neil neil.horrocks@racefor2030.com.au
or Annie annie.carapetian@racefor2030.com.au

* Workshop with interested parties?

Other projects

Set up a call with Neil to find out more



Unlocking network complexity for faster and better stakeholder engagement
This innovation moonshot can develop a platform that is effortlessly accessible by your entire staff and stakeholder cohort when engaging on complex network issues or considering opportunities or impacts of the energy transition.

An open-source collaboration tool for tomorrow's network

GridGuru: Breaking the barriers with AI-Assisted Energy Modelling

Project description
GridGuru is a transformative initiative aimed at enhancing the transition of Australia's electricity networks through advanced AI-assisted energy modelling. The project offers an intuitive, interactive, and user-friendly platform that enhances engagement, negotiation, and comprehension of complex network investment planning and asset management. It leverages machine learning, advanced generative AI, large language models and best of breed visualisation platforms and technologies.

Features

- User-friendly Large language model (LLM) for easy collaboration.
- Open data access for community groups and new energy providers.
- Integrated hosting capacity modelling for LV grids.
- It reveals technical and financial opportunities and roadblocks.
- GridGuru provides optimal strategies for network management and other new projects

Targeted impacts
This project aims to significantly improve the speed, effectiveness and manner in which electricity networks work with their customers, shareholders, stakeholders and regulators. GridGuru will provide an intuitive platform on which these groups can meet, discuss, model and negotiate complex network issues. It will also help to build scenario testing for CER growth, assess maximum and minimum demand studies and explore various other scenarios.

Project Outcomes

- An open-source AI-powered digital twin of the network.
- Local load model and analysis.
- An open-access platform for energy data sharing and collaboration.

Benefits

- More effective technical discussions with Senior Executive and Boards
- Faster and clearer demonstration of impact leading to investment justifications.
- Self service exploration of network constraints by energy project proponents (Commercial developers, Community energy groups, Energy consultants).
- Simpler and understandable engagement with shareholders and customer forums on complex issues.
- Demonstration of CAPEX strategy for regulatory submission.
- Engage with emergency services and reconstruction agencies.
- GridGuru supports shareholders, executive management teams, policy and regulatory stakeholders, community developers, commercial developers, and supply chain suppliers.

Be an innovative partner
Join us if you are a network or retail business, policy maker, Government stakeholder and/or have energy project proponents.

Contact Details
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Annie Carapetian, Research Partner Manager: annie.carapetian@racefor2030.com.au

racefor2030.com.au

RACE for 2030
RESEARCH AND COLLABORATION FOR ENERGY TRANSITION

Next Event



- RACE for Networks webinar: featuring learnings from Plico VPP Trial

Topic: Demonstration of a CER Orchestration program that drove customer change

When: 30th October 2024 12:00pm – 1:00pm AEDT

We're excited to host a knowledge-sharing session with Plico Energy, where they'll delve into their first-hand experiences and lessons learned from operating a highly successful VPP program in Western Australia.

Register here: [Zoom Registration](#)



Thank you

RACE for
2030
RELIABLE
AFFORDABLE
CLEAN
ENERGY



Australian Government
Department of Industry,
Science and Resources

AusIndustry
Cooperative Research
Centres Program