



**Trailblazer
Recycling &
Clean Energy**

Program Summary

A collaborative partnership between



The Trailblazer for Recycling and Clean Energy (TRaCE) is moving innovative recycling and clean energy technologies out of the lab and into global manufacturing.

The collaborative TRaCE program will fast track commercialisation, strengthen capability at the institutional level, provide infrastructure for technology development, and deliver the critical skills needed to propel clean energy industries into the future.

Revolutionising industry

The University of Newcastle and UNSW Sydney are leading the way in Australia's Recycling and Clean Energy (RaCE) research, accounting for over 40% of the country's efforts through specialised research hubs, centres, and initiatives, backed by government and industry partnerships. This research has immense potential to create a lasting impact on industry while securing the future of our environment.

TRaCE's commercialisation agenda, guided by the National Manufacturing Priority Roadmap, aims to revolutionise industries by offering alternative energy sources to fossil fuels. The TRaCE program will address challenges hindering decarbonisation, including the development and adoption of low-carbon technologies, their integration into existing systems, and scalability for larger markets. Additionally, TRaCE will promote knowledge sharing on innovative practice and build critical skill pathways to drive strong economic growth.

TRaCE will contribute to delivering:

- A world-leading model for research commercialisation
- Sovereign manufacturing capability
- Circular supply chains
- Globally competitive industries
- Support for 5,200 regional jobs
- Up to \$15B economic boost to the GDP over 20 years
- 180Mt reduction in greenhouse emissions

Research themes

To decarbonise the manufacturing sector, TRaCE targets four complementary technology themes to shift toward electricity-based manufacturing derived from renewable energy sources. Where electrification is not applicable, green fuels and chemicals must become cost-effective and efficient alternatives to fossil-fuel based products.

Next Generation Solar PV and Systems

Projects that accelerate integration and scale of solar technologies.

Electrification, Energy Systems and Storage

New projects that drive manufacturing in industry electrification, clean energy systems and storage.

Sustainable Fuels and Chemicals Manufacturing

New projects that commercialise green fuels and chemicals.

Recycling and MicroFactories™

New projects for recycling, reforming and reuse of waste materials.

Driving impact

TRaCE is dedicated to driving a decade's worth of change in four years. TRaCE's combination of activities will accelerate the commercialisation of research, mature collaboration frameworks between industry, universities and government, and an upskilled RaCE workforce.

Focus areas and activities

The TRaCE program's focus areas are split into three groups positioned to meet TRaCE targets and accelerate the commercialisation of technology:

Business development and partnerships

TRaCE purposefully builds capability and capacity in research commercialisation support. This will occur through collaboration with the University of Newcastle's Knowledge Exchange and Enterprise group, NIER, UNSW Sydney's Knowledge Exchange Group and the active TRaCE interventions listed under our focus areas to fast-track TRaCE projects through the Technology and Commercial Readiness Level continuums.

TRaCE is connecting industry partners with world leading researchers to create more efficient and sustainable technologies in the RaCE sectors. TRaCE's direct link to the NSW Decarbonisation Innovation Hub will further support industry and researchers to identify commercialisation pathways, cost-effective use cases and market opportunities for decarbonisation technologies and services.

Research and technology development

Best Practice approaches in research, development and commercialisation will be applied across all projects of the four research themes. TRaCE research will be informed by and address knowledge gaps, the Intellectual Property landscape, market demand and market supply.

New infrastructure and staff will be essential to support the development of innovations within the four research themes from the lab to commercial applications. The TRaCE program will build several workshops and create team structures to aid researchers to develop their technologies.

Contact us

If you would like to get involved or have an enquiry about the program, please contact trace@newcastle.edu.au

For further information, visit newcastle.edu.au/nier
unsw.edu.au
education.gov.au

TRaCE is supported by the Australian Government Department of Education through the Trailblazer Universities Program.

Education and cultural change

TRaCE aims to transform the rewards for research outputs and commercialisation, industry collaboration, and activities that build collective capacity in recycling and clean energy fields.

TRaCE will collaborate with industry and government partners on activities focused on upskilling and reskilling employees, providing students with work-ready skills through industry-embedded PhD programs, new academia and industry fellowship mobility models and well-defined vocational pathways from TAFE and trades.

With our combination of industry-relevant infrastructure projects and focus on critical skills development, TRaCE will develop industry workers and university graduates with job-ready skills needed this decade.

