



VULNERABILITY AND AUSTRALIA'S ENERGY TRANSITION

SUMMARY

Australia's transition to renewable energy and net zero emissions will bring widespread social, economic and environmental change. Despite its far-reaching impacts on our way of life and communities, limited attention has been given to understanding vulnerabilities that may arise due to Australia's transition. Understanding this is essential for identifying who is most vulnerable and for ensuring Australia's energy transition is fair and equitable.

ACOLA's 2025 report, *Vulnerability and Australia's Energy Transition*, identifies who may be most at risk, where research gaps and strengths exist, and the research priorities needed to guide fair and inclusive evidence-based policy.

This factsheet summarises the key messages from the full report, available at: <https://acola.org/vulnerability-and-australias-energy-transition-report>

Why vulnerability in the energy transition matters

Australia's energy transition is not just a technological shift; it is a social process that requires public participation, transparent decision-making, and strong social licence. As Australia moves away from fossil fuels, individuals and communities will experience both opportunities and challenges.

A fair and equitable transition requires a clear understanding of **vulnerability – defined as the degree to which people or groups are susceptible to harm**. Vulnerability stems from personal factors such as health and income, community factors such as location and social networks, and broader structural conditions. These dimensions interact and evolve, making vulnerability complex and dynamic.

Understanding and reducing vulnerability

A consistent framework for assessing vulnerability helps identify where risks occur and how they can be reduced by mapping relationships between external pressures, social structures, and individual capacities.

The Vulnerability Scoping Diagram is a widely used and internationally recognised framework that maps vulnerability through three dimensions – exposure, sensitivity, and adaptive capacity – against key energy components.

Using the Vulnerability Scoping Diagram makes future research on vulnerability in Australia's energy transition clearer, more consistent, and comparable. This approach can help target policies, regulations, and engagement efforts where they are needed most – reducing costs, minimising the risk of harm, streamlining energy transition activities, and delivering greater impact to all individuals and communities.



 Exposure	 Sensitivity	 Adaptive capacity
The extent to which people, communities or systems face risks or impacts.	How likely and how strongly they are affected by those risks.	The ability of people, communities, or systems to adjust and build resilience.
Components: • Price sensitivity/energy affordability • (Un)employment • Economic dislocation	Components: • Energy access • Susceptible demographics • Housing status and security of tenure	Components: • In/exclusion from decision-making • Social cohesion • Levels of resilience

Strengthening Australia's vulnerability research

Research on vulnerability in Australia's energy transition remains limited. A coordinated, interdisciplinary approach linking social, policy, and technological research is needed to understand how vulnerabilities emerge and evolve. This will be essential to build an evidence base that supports policy development, community empowerment, and improved mitigation of transition-related vulnerabilities.

Humanities, arts and social sciences provide important insights into the lived and cultural dimensions of vulnerability, such as gender, income, Indigenous status, and place. Creative, community-based approaches can also help design inclusive and locally grounded transitions.

Climate, risk, economic and policy research reveal broader structural vulnerabilities shaped by market forces, policy design, and climate change. Integrating these perspectives and taking a vulnerability-led, rather than risk-led, approach will better identify who is most affected and guide equitable responses.

Priorities for future Australian research

Australia must urgently address key knowledge gaps in vulnerability research while building on existing research strengths to lead globally. Investment across sectors is required to expand understanding of vulnerability and ensure fair and just outcomes. For example, in the health sector, research can show how energy insecurity, extreme heat and poor housing quality all affect wellbeing.

Priority research gaps include:

- intersectionality (how overlapping social factors influence vulnerability)
- defining and measuring energy poverty
- understanding how gender impacts vulnerability in the transition
- embedding vulnerability solutions in policy.

Leveraging research strengths include:

- Aboriginal and Torres Strait Islanders and vulnerability
- regional transitions
- social impact assessments
- benefit sharing.

Addressing these gaps and leveraging these existing strengths will help shape inclusive policies and ensure all communities share in the transition's benefits.

A coordinated research agenda for action

The *Vulnerability and Australia's Energy Transition* report outlines a clear research agenda to close knowledge gaps and strengthen the nation's response to vulnerability in the energy transition.

Advancing this research agenda will:

Support better understanding of the individuals and groups most affected by and affecting vulnerability and the energy transition.

Build improved understanding of how institutional settings and impacts influence vulnerability in the energy transition.

Enhance knowledge about how energy transition timing and location relate to vulnerability.

Generate important considerations for policymaking and implementation, among other general concerns.

The report also identifies three cross-cutting themes to guide future research on vulnerability in Australia's energy transition. These themes are: the structural and institutional systems that shape vulnerability; lived and local experiences; and advancing inclusive and just research methods. The agenda also presents a series of framing questions to guide future research. Developed from gaps identified through analysis of related literature, the questions are intended to spark new thinking and encourage more coordinated, interdisciplinary approaches to studying vulnerability.



Building the foundations for a fair energy future

Implementing this research agenda will help Australia navigate the social and economic complexities of the energy transition with greater confidence and fairness. By aligning evidence, policy, and practice, it supports informed decision-making that recognises different community needs and strengths.

A coordinated focus on vulnerability will build public trust, improve resilience, and ensure that the benefits of the transition are shared more equitably across society – helping Australia move toward a more just and sustainable energy future.



About the Australian Energy Transition Research Plan

The Australian Energy Transition Research Plan, developed by the Australian Council of Learned Academies (ACOLA), provides a national framework to guide Australia's transition to net zero emissions through a coordinated, interdisciplinary research effort. The Research Plan identifies urgent and strategic research priorities that reflect Australia's unique environmental, economic and social contexts. It aims to strengthen domestic research capacity, promote equity and inclusion, and ensure research investment is targeted, collaborative and impactful. By connecting academia, industry, government and communities, the Research Plan supports evidence-based policy, innovation and participation in the clean energy transition.

Access the Research Plan here: <https://acola.org/energy-transition-research-plan/>

By providing a forum that brings together great minds, broad perspectives and knowledge, ACOLA is the nexus for true interdisciplinary cooperation to develop integrated problem solving and cutting edge thinking on key issues for the benefit of Australia.

www.acola.org

The Australian Council of Learned Academies (ACOLA) combines the strengths of Australia's Learned Academies.

LEARNED ACADEMIES

