

Our position on climate change

Engineers Australia recognises the scale and urgency of the challenges presented by climate change, the disruptions it causes, and the pivotal role of engineering in enabling a socially just transition to a sustainable society.

We accept and respect the findings of the Intergovernmental Panel on Climate Change (IPCC). The IPCC warns that 1.5°C of global warming will result in some regions experiencing more frequent and extreme fire, drought and flood events, and greater biodiversity loss than is currently experienced. These events will grow in frequency and severity as the world warms.

Our engineering perspective is grounded in science and concerned with the management of risk. From a risk perspective, when the projected consequence is unacceptable, what can be done should be done, unless proved that it is impracticable.

Limiting warming to 1.5°C, with an 83% likelihood of success, is the best case described by the IPCC. This case requires achievement of net zero by 2033 assuming a linear reduction in emissions¹. Such a low probability of success is unacceptable in any engineering code. The window for acting within engineering risk parameters has already closed.

Engineers Australia understands that the “net zero by 2050” scenario for meeting the 1.5°C Paris climate goal includes a temperature overshoot, which then requires a substantial drawdown of atmospheric greenhouse gases (GHG) using technologies not yet developed.

Immediate action at pace and scale must occur to minimise climate disruption. This includes rapid reductions in GHG emissions and adaptation to improve the resilience of communities, the environment and infrastructure.

Engineering is pivotal to progress

Engineering is central to our prosperity and standard of living, but it is important to acknowledge that in enabling society's past choices, engineers have contributed to the current climate challenge.

The energy, transport, telecommunication, water, buildings, agricultural and health systems that are integral to our modern society are all threatened by climate change. The natural ecosystems and biodiversity upon which we all depend are at risk, requiring active protection and rehabilitation. Engineering leadership and multi-disciplinary problem solving is crucial to achieving the necessary step change toward a sustainable society.

Practical solutions and innovative engineering are essential to transform systems, technologies and infrastructure. Engineers must be at the forefront in policy formulation and decision-making affecting the scoping, planning, design, delivery and operation of systems for climate change mitigation and adaptation.

A managed transition is needed

Climate change is a complex and multifaceted problem. It requires an ambitious and effective national strategy for emissions reduction and the development of clean industries underpinned by renewable energy. Substantial investment is needed, which will create new social and economic opportunities in all sectors and regions.

Dedicated support must be provided to vulnerable industries, communities and workforces so they can take advantage of the opportunities the transition will deliver.

¹ From 2022, assuming 2021 annual greenhouse gas emissions are 40Gt/year.

Collaboration and responsible actions will enable trusted solutions

Engineers Australia calls on governments, investors, the private sector and the wider community to work with the engineering profession to accelerate engineering innovation for a swift transition to a sustainable economy.

Initiatives must include:

- the principles of near zero emissions, climate resilience, and a circular economy in all policy, regulations, standards and technical specifications applicable to engineering
- a standardised means of calculating the emissions footprint of engineering works, products and services across the entire project and product lifecycle
- a mechanism to factor external costs including GHG emissions into product design, use, maintenance and project feasibility assessments
- a means of assessing the exposure of new and existing engineered systems to climate disruptions to inform and motivate mitigation and adaptation responses
- a means of monitoring and measuring progress to inform learning and improvement actions needed for climate change mitigation and adaptation
- improved education and training of members of the engineering team and the wider community on climate change, resilience and sustainability.

These initiatives will support engineers in their ethical responsibility to tackle climate change, and to proudly deliver the trusted products, assets and services that are the foundation for our future well-being.

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