ENGINEERS
AUSTRALIA

Productivity Commission
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Via Online Submission

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Re: National Competition Policy Analysis – Occupational Licencing and International Standards

Engineers Australia supports the important work of the Productivity Commission's National Competition Policy analysis and welcomes the opportunity to contribute to the review.

The engineering profession is essential to the nation's economic performance serving as the largest STEM employer, driving technological advancement and fostering productivity across almost every industry.

With over 243,000 engineers in the Australia's workforce across industry, universities, and government, their expertise is vital for innovation and economic growth. Engineers frequently provide services across state borders, especially in national firms and on large-scale projects.

Therefore, a nationally consistent approach to engineering registration would improve safety and accountability, support workforce mobility, and help maintain high professional standards through continuous professional development.

As Australia's national body for engineering, Engineers Australia is the voice and champion of our 130,000-plus members. We provide them with the resources, connections, and growth they need to undertake ethical, competent and high-value work in our communities. A mission-based, not-for-profit professional association, Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

As Australia's signatory to the International Engineering Alliance, Engineers Australia maintains national professional standards, benchmarked against international norms. Under the Migration Regulations 1994, Engineers Australia is the designated assessing authority to perform assessment of potential migrant engineering professionals' skills, qualifications, and/or work experience to ensure they meet the occupational standards needed for employment in Australia.

The following submission responds to the identified reforms from the National Competition Policy Analysis 2025 paper.

Your sincerely,

Jenny Mitchell

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Occupational Licensing

1a) Which occupations would be best-suited to a national licensing scheme?

As one of, if not, the largest and most diverse professional occupational groups in the country, a nationally consistent engineering registration scheme should be a national priority to boost workforce mobility, productivity and prosperity.

Engineering teams manage multiple complex risks in industry sectors from energy to defence, biomedical to construction - all of which can impact public safety and confidence.

Australia has 545,000 engineers at the last census. Of these, 243,000 are qualified professional engineers working directly in engineering roles and activities.

Engineering is at the core of Australia's prosperity. Over half of the nation's $1.7 trillion GDP is generated through six engineering-heavy segments of the economy: mining; professional and scientific services; construction; manufacturing; electricity, water and gas; and information, media and telecommunications.[1]

Across Australia, you cannot practice as an architect, doctor, teacher or lawyer without appropriate qualifications and registration. However, in most states anyone can call themselves an engineer.

You need a licence to drive across the Sydney Harbour Bridge, but you do not need to be licenced or registered as an engineer to design or build it. Inconsistently, if it was built in Queensland, you would need to be registered.

The current haphazard approach to engineering registration gives rise to complexity and confusion.

Some states - such as NSW – have not introduced a comprehensive engineering registration scheme, limiting it to a subset of building-related activities.

The nation's oldest engineering registration scheme in Queensland covers 19 areas of engineering. This compares with Victoria and ACT which cover five, WA covers four (but only for work on buildings), and NSW covers six (but only for Class 2, 3 and 9c buildings).

For example, an electrical engineer in Queensland, Victoria or the ACT designing a new solar or wind farm or transmission lines for a renewable energy zone would need to be registered. However, this would not be required in SA, WA, or NSW. In NSW, the only engineering registration required would be to design the temporary accommodation for the construction team.

Architects, lawyers, and health practitioners have uniform regulatory regimes in Australia, in contrast to the gaps and omissions which exist for engineering professionals.

In March, the Treasurer The Hon. Jim Chalmers announced the Government would work with states, territories, businesses and unions to design a national licencing scheme for electrical tradespeople.

The goal being to save "tradies time and money" and cut red tape while also ensuring the need for high standards in high-risk occupations. The development of a national licencing scheme for electricians will be linked to the National Competition Policy (NCP) framework and $900 million National Productivity Fund.

Based on Jobs and Skills Australia data, the nation has 190,000 electricians.
This compares with the 545,000 engineers in Australia, at the 2021 census.

The same benefits of reducing costs and red tape, increasing labour mobility, maintaining high standards for electricians should equally apply to Australia's ~21,000 professional electrical engineers and the half a million engineers in the economy more broadly.

A "register once, practice anywhere" model would ensure Australia has the fit for purpose regulatory architecture to reflect evolving engineering occupational competencies and changing industry structures.

[1] **Engineering Tomorrow.** Engineers Australia, Apr. 2025, https://www.engineersaustralia.org.au/sites/default/files/2025-04/engineering-tomorrow.pdf.

Among the nation's many vital occupations, the engineering profession is most suited to a national licencing/registration scheme, given:

- Public Safety: Engineers are responsible for designing and overseeing critical infrastructure and systems - such as bridges, buildings, transport networks, and water, waste and energy systems—where failures can have serious consequences for public safety, health, and the environment.
- Size & Scale: Less than 20 per cent of Australia's 243,000 qualified engineers working directly in engineering practice are registered.
- Cross-Jurisdictional Practice: Engineers frequently provide services across state borders, especially in national firms or on large-scale projects, making consistent licensing/registration essential for mobility and efficiency.
- Misaligned Schemes: Some states have registration schemes for engineers, however they are neither aligned nor harmonised. This creates administrative complexity and increased costs for individuals and businesses to navigate different requirements in each jurisdiction.

A nationally consistent approach would reduce these burdens, improve safety and accountability, and support workforce mobility, and help maintain high professional standards through continuous professional development.

Engineers Australia advocates statutory registration should apply to anyone who provides professional engineering services. This should cover all areas of engineering and industries, not just specific sectors such as building. Registration of engineering technologists and associates is also supported.

Registration should apply only to individuals (rather than businesses) because professional engineering is an outcome delivered predominantly by employees.

Registration would see engineers assessed against competencies aligned to leading international standards, providing assurance and confidence to the public and the Australian Government.

Australia, through Engineers Australia, in 1989 was a founding member and signatory to the Washington Accord which established the global benchmarks and standards for professional engineering education.

Australia's national engineering competency standards, the National Competency Standards (NCS), are aligned to the International Engineering Alliance (IEA) Graduate Attributes and Professional Competencies (GAPC) and serve as the entry to practice qualifications in Australia.

A national solution to engineering registration has very broad industry support. Eighty-eight per cent of Australians believe engineers should be registered, and just four per cent did not, based on a poll of 1,200 people in July 2019 by Engineers Australia.

In summary, a comprehensive and consistent approach to engineering registration in Australia would deliver multiple benefits, both economically and to the public good, including:

1. Increased Public Safety & Confidence: Registration enhances public safety. In the absence of registration, anyone can purport to be an engineer without appropriate qualifications, experience, or competencies and disregard such professional standards and ethical conduct obligations. Increasing public awareness of the obligations expected of professional engineers (much in the same way legal and medical practitioners owe a public duty) is a demonstrably important social good.
2. National Coverage: Eliminating gaps in coverage, and ensuring full participation across all states and territories, would lift coverage across Australia's engineering profession.
3. Unified Professional Standards: Clear, consistent standards for (i) registration, (ii) qualifications, and (iii) competency assessments, would reduce confusion and variation between state jurisdictions.
4. Reduced Administrative Burden: Eliminate the need for engineers to notify regulators each time they intend to work in a different state.
5. Future Fit: Engineering higher education is continually changing as are the roles and functions of qualified engineers due to technology, such as artificial intelligence, and working online across borders.

6. Legislative efficiency: Enable regulators to more effectively develop, implement and improve upon a consistent regulatory framework for the delivery of engineering services.

1b) What would be the first steps towards a national licensing scheme for selected occupations?

The Australian Government can use its voice, influence and financial incentives to bring the jurisdictions together to embrace a uniform solution to national engineering registration. Engineers Australia recommends:

1. National Engineering Registration be included in the list of priority occupational reforms required to be completed by the states and territories to participate or share in the $900 million National Productivity Fund (NPF).
2. The Productivity Commission undertake an analysis of the top 10 occupational professions and the harmonisation, or lack of thereof, of the current state-based automatic mutual recognition (AMR) schemes to inform and reform improvements to AMR.
3. The Treasurer through the Council on Federal Financial Relations task the Council, DEWR and Engineers Australia to develop by 1 March 2026, model legislation for national engineering registration which all states and territories should implement to facilitate automatic mutual recognition (AMR).

Australia has successful professional registration schemes in use, including the architects registration scheme, facilitated by Automatic Mutual Recognition (AMR).

Work to develop and implement a nationally consistent engineering scheme should not be an onerous task or take long given many of the component parts – state legislation and AMR - already exist.

What is required is national prioritisation to help deliver a practical, productivity enhancing outcome for one of Australia's largest occupational groups.

1c) Why did previous attempts at a national licensing scheme fail? How could a renewed attempt overcome the barriers?

In July 2008, the Council of Australian Governments (COAG) agreed to a National Occupational Licensing System and the development of a National Occupational Licensing Authority (NOLA), however engineering registration was not high on the agenda of proposed reforms.

A single national registration scheme was previously considered unfeasible due to Australia's federated model of government, where states and territories hold responsibility for occupational legislation.

The current state-based registration schemes and mutual recognition has led to inconsistencies in standards, definitions, and processes across states and territories, creating administrative burdens and added costs for engineers and businesses.

A fresh commitment to productivity, efficiency and consistency could overcome these barriers by:

- The Commonwealth providing strong support. Previous attempts at establishing a national licensing scheme for engineers have historically not had Commonwealth support meaning that states were allowed to pursue different forms of registration at their own pace.
- Developing and agreeing model legislation all states and territories could quickly and easily adopt to ensure alignment between all jurisdictions.

Queensland has had a registration scheme since 1930, and the current Act is considered an effective and broad reaching model to follow.

Victoria and the ACT's Professional Engineering Acts are largely aligned with Queensland, albeit with fewer areas of engineering listed.

The public and industry would be better served by wider coverage of engineering activities.

Therefore, Engineers Australia recommends the nation put in place a nationally consistent engineers registration scheme. This could be best achieved via a standalone Professional Engineers Act in all jurisdictions which mirrors Queensland's Professional Engineers Act.

Such an approach would see the largest state economies aligned, enabling effective use of the federal *Mutual Recognition Act* - as it was intended - and enable a 'register once, practice anywhere' approach, similar to a driver's licence, and the national consistency now being sought for electrical tradies.

1d) What benefit would a national licensing scheme provide over an expansion of the automatic mutual recognition scheme?

Engineers Australia does not propose the Australian Government license engineers.

Engineers Australia recommends the Australian Government use its voice and influence to catalyse agreement on a uniform and comprehensive state-based registration approach, utilising AMR.

This would deliver national benefits of cost, safety, labour mobility, productivity improvements and be future fit for the changes of tomorrow occurring in engineering from biomedical, civil, chemical, mining, mechanical, and many more.

1e) How could the Productivity Commission best quantify the benefits of a national licensing scheme?

There are multiple qualitative and quantitative benefits Australia would secure through a nationally consistent approach to engineering registration.

Qualitative benefits include the public good of increased public confidence and raising professional standards, while cost savings could be achieved in reduced regulatory overlap and multiple registrations.

Given the Commonwealth will pursue the national licencing of electricians to deliver national consistency and productivity gains, we recommend the Productivity Commission use the same methodology and metrics to assess the benefits of nationally consistent engineering registration.

In assessing such benefits, the Productivity Commission could consider:

1. Administrative cost savings: Quantifying the savings for engineers and businesses from eliminating the need for multiple registrations and navigating different state systems. Nationally consistent schemes could deliver substantial savings for businesses with engineers working across state borders.
2. Enhanced national mobility: The economic impact of improved access to skilled practitioners across the country.
3. Reduction in risks to public health, safety, and welfare: Analysing incidents of engineered system failures and associated costs, including potential loss of life or injury. Assessing how a unified national registration approach strengthens confidence in practitioner competency and reduces such risks and incidents. Case studies from unregulated work in civil infrastructure can help illustrate these impacts.
4. Reduced rework: Estimating the costs associated with rectification work due to deficient engineering would be valuable.

International Standards

Engineers Australia believes there are several areas of Australian regulation where greater harmonisation with both domestic and international standards is required. These can be broadly split into two categories:

Category 1 - Standards for assessing engineer competency:

- Engineer registration. Reform is needed through a nationally consistent registration scheme to ensure registration standards and assessment processes are aligned nationally and internationally. Engineers Australia, as the Australian signatory to the IEA education accords and authorised member of mobility agreements, is responsible for aligning national engineering competencies with international standards. Competency assessments should align with the IEA Graduate Attributes and Professional Competencies (GAPC), which are internationally recognised standards. Engineers Australia should be responsible for setting how engineering competency standards are assessed for acceptance by Australian regulators.
- Continuing Professional Development (CPD) requirements for engineers can vary across different jurisdictions within Australia. This inconsistency means that engineers who provide services in more than one state or territory may need to maintain separate records and keep track of differing CPD requirements for each jurisdiction.

Category 2 - Standards affecting the work engineers do:

- Building and construction sector. The building and construction industry is a vital part of the economy but faces underlying issues including ineffective regulation and inconsistencies. Building regulation in Australia is primarily state-based with little consistency, evidenced by eight different building Acts which each interpret the National Construction Code differently.
- Infrastructure design standards and standards related to decarbonisation in infrastructure delivery. Greater alignment of standards for design and safety will facilitate consistent infrastructure design, faster project delivery, streamline procurement and reduce administrative burden.
- Artificial Intelligence. The global discussion around AI ethics, including initiatives like the European Union's AI Act and OECD AI principles, underscores the need for Australia to align with international standards and contribute to global AI governance.
- Cyber security. Aligning with international standards is an important first step for providing greater security for consumer Internet of Things (IoT) devices. Harmonisation ensures Australia's international regulations framework matches global market regulations, crucial for maintaining international competitiveness. Aligning standards also strengthens the basis for future international collaboration to protect Australian cyberspace.
- Biomedical devices. By aligning with internationally accepted definitions and classifying devices based on intended purpose and risk level, consistent with the approach for other medical devices, regulation can be applied appropriately to ensure user and public safety.

Australian governments can also help to improve the uptake of industry standards through a combination of procurement policies, legislation and regulations including requirements to follow such industry standards and government funded access to make the standards more accessible (to a broader group beyond practitioners) and increase visibility among the general public.

2b) The Impact of a Lack of Harmonisation

A lack of harmonisation across jurisdictions in both standards used to assess engineer competency and standards which affect the work that engineers do leads to several negative impacts:

- It leads to real public safety and economic disadvantages.
- It undermines and limits national consistency.
- It allows for potential 'backdoors' for engineers to be assessed under schemes which are not fully aligned with international standards and undermines trust.
- It puts impractical and unreasonable obligations on individual engineers.
- It makes it potentially unattractive for engineers to practice in certain states and means that companies cannot utilise the best or most appropriate talent for different jobs.
- Complying with inconsistent regulation can lead to increased costs and delays in projects. This extra burden often gets passed onto clients and consumers with higher costs for goods and services.
- Inconsistent regulation causes confusion for regulators and professions. It results in impediments to information sharing and national initiatives, and confusion about who to approach.
- For engineers working on overseas projects or overseas engineers working on Australian projects, inconsistent regulation is onerous and can impede Australian firms exporting services.

2c) Barriers to Greater Harmonisation

1. **Federated System and Inconsistent Legislation**

- Australia's federal system means that states and territories are primarily responsible for professional registration and regulation of construction work, leading to varying legislation across jurisdictions, rather than a single national framework.
- Engineer registration schemes are not uniformly applied; for example, NSW's scheme focuses solely on the building sector, unlike the broader standalone acts in Queensland, Victoria, and the ACT, which leads to inconsistency.
- Varying requirements for engineer registration exist across states and territories, including differences in costs, areas of engineering, registration periods, Continuing Professional Development (CPD) requirements, and legal obligations.
- Complications arise from prescribing "Areas of Engineering" due to unclear definitions of boundaries, overlapping scopes of work, and niche areas being subsets of broader ones; this increases regulatory workload for auditing compliance and prosecuting offences.
- There are eight different building Acts nationally, each establishing different requirements for aspects like inspections and certification, causing confusion for regulators and professionals.
- There is a lack of clear and consistent definitions for building elements (e.g., footings versus foundations), subdivision works, and protection works, as well as for prescriptive standards and remedial work on existing buildings.

2. **Lag in Standards Adoption and Misaligned Processes**

    - Mandatory standards can lag behind updates to voluntary Australian standards, particularly in the cases of cybersecurity and AI.

    - The administrative processes of regulatory bodies (which allow for the ability for ministers to refer to standards be they international, regional or private) and standards development organisations, like Standards Australia (which approve standards via expert committees), are not always aligned, which creates inefficiencies.

3. **Sovereign Decision-Making and National Context**

    - Aligning with international standards while maintaining Australia's sovereign right to determine what is best for its economy, environment and safety systems does present challenges. One example is with fire extinguishers: international standards do not match the same long established labelling requirements that are found in Australia. Implementing the international standard in this case could cause confusion and increases the risk of injury or death from improper use of the fire extinguisher.

    - Differences between Australian and international standards can lead to additional compliance costs for businesses, potentially requiring product modification or retesting for the Australian market. This can also slow market entry and reduce the range of products available in Australia.

    - The changing landscape of global standards, with new influences and investments often propagated outside accepted international standards bodies, poses challenges for Australia's long-term prosperity and its ability to influence these standards.

2d) How this is operating in practice for sectors where regulators can mandate standards or accept overseas approvals

Currently there are a few sectors where regulators are mandating the use of overseas standards in engineering work. Whilst Engineers Australia believes that aligning engineering work with international standards is broadly beneficial, automatically adopting overseas standards without domestic consultation risks removing Australian industry and consumers from the process of developing consumer protections. This potentially cedes law-making power to overseas organisations.

Differences between Australian standards and comparable overseas standards may seem minor but can have significant safety implications for consumers if not appropriate for Australian conditions. Australian engineering work must reflect the Australian context and conditions. It is essential that there is expert oversight when adopting international standards to ensure alignment with local safety, quality, and environmental conditions.

Reforms to Australia's standards and conformance infrastructure to support greater harmonisation

- Prioritising harmonisation across states and territories should be the focus – in particular engineering registration - to reduce internal fragmentation and inefficiencies.

- Australia should adopt international standards where possible but maintain expert oversight to ensure alignment with local safety, quality, and environmental conditions. This process must involve technical experts and stakeholders and should not be bypassed.

- Apply consistent regulatory rules to all standards—domestic or international—ensuring transparency, consultation, and scrutiny.

Sector-Specific Reforms

Engineer Registration

- Australia should establish nationally consistent registration standards, definitions, and assessment processes aligned with IEA GAPC and the Australian National Competency Standards (NCS).
- In so doing develop clear, consistent guidelines for approving professional associations as assessment entities, with legislative clarity on approval criteria.
- Require assessment entities to verify qualifications against accepted standards and refer international equivalence assessments to appropriate Australian signatories.
- Regularly monitor and audit assessment schemes with expert input.

Building and Construction

- Ensure states have fully implemented all 24 recommendations from the Building Confidence Report (BCR).
- Harmonise definitions of key terms across jurisdictions.
- Develop clear standards for remedial work on existing buildings.
- Standardise key construction documents (e.g., tender, design, procurement, handover).

Infrastructure

- Address regulatory barriers (e.g., licensing, procurement) that hinder skill uptake or worker mobility through national harmonisation.
- Adopt consistent national design standards, guidelines, and specifications for infrastructure projects. This drives efficiency, controls costs, and supports longer-term integration and connectivity. Address inconsistencies in existing guides (like Austroads) and consider adopting approaches from international guides until national ones are fit-for-purpose.
- Embrace consistent digital approaches, like BIM and digital twins, across infrastructure planning and operations to enhance productivity and ensure Australia is future-ready.
- Implement a unified procurement framework based on ISO 55000 for asset management.

Biomedical Devices (Assistive Technology):

- Engineers Australia strongly supports referencing and using internationally recognised standards like ISO 9999:2022 and the identically adopted AS/NZS ISO 9999:2023 in future regulations.
- Adopting internationally accepted definitions of assistive technologies that focus on the product's physical or mechanical effect, consistent with the approach for other medical devices, rather than specifying user groups or location. This resolves ambiguity and inconsistency in current regulatory language.
- Assessing and classify assistive technologies based on their intended purpose and risk level, consistent with the approach for other medical devices. Consider a further stratification of risk levels within the low-risk classification based on an internationally accepted, evidence-based framework.
- Explore alternatives to blanket exemptions that reduce regulatory burden while maintaining

Artificial Intelligence

- Align with international conversations and frameworks on AI ethics and governance, such as the EU's AI Act and OECD AI principles.

Cyber Security

- For consumer Internet of Things (IoT) devices, align with international standards like the European Standard ETSI EN 303 645 as an important first step, recognising that a tailored approach is needed due to device diversity.
- Ensure Australia's international regulations framework matches global market regulations to maintain international competitiveness and collaboration capabilities.
- Leverage existing legislative frameworks, such as the Competition and Consumer Act 2010, for consumer product cyber security rather than necessarily creating new legislation, to avoid additional layers of red-tape and minimise supply chain impediment.