

Vulnerable Supply Chains Study
Productivity Commission
Locked Bag 2, Collins St East
Melbourne, Victoria, 8003

28 April 2021

RE: Vulnerable Supply Chains Productivity Review

Engineers Australia appreciates the opportunity to provide a submission to the Australian Government's Productivity Commission examining vulnerable supply chains.

Engineers Australia is the peak body for the engineering profession in Australia, constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community. With approximately 100,000 individual members, we represent a wide range of disciplines and branches of engineering.

In 2018, Engineers Australia was engaged by the Department of Defence to convene a workshop for senior engineers exploring the effects of a collapse in global governance, resulting in major disruption to the global supply chain¹. The workshop sought to identify areas within each sector that would be affected, what those effects might be and how effects within one sector might affect others. The workshop identified a range of critical vulnerabilities such as fuel security, power, transport and health. It found that Australia would suffer massive upheaval within one week of disruptions to our supply chains. It is understood that the commission has reviewed this document as part of their development of a method for identification of vulnerable supply chains using both data and the view of experts. In addition to this report, Engineers Australia recommends the commission also consider the following.

A submission was made by Engineers Australia and its Society of Systems Engineering Australia to the Department of Home Affairs in 2020 as part of a review of critical infrastructure². This submission made a number of recommendations regarding the protection of critical infrastructure from an engineering perspective, particularly that consideration be given to the interdependency between critical infrastructure assets, and the sociotechnical/human element that comprises the broader systems encompassing these assets. It is recommended that the commission consider the broader vulnerabilities of critical infrastructure and how supply chains may affect their operations when looking at the government's role in mitigating the vulnerabilities of a global supply chain.

As this Productivity Commissions Interim Report is to complement other initiatives such as the Department of Industry, Science, Energy and Resources' Modern Manufacturing Strategy, which includes a supply chain resilience element, Engineers Australia provides the below scenario as a real-world example of threats to domestic industrial capabilities., It has potential ramifications for critical infrastructure.

On 16 March 2021, PLUS ES, which is part owned by the NSW Government, announced its intention to close the Lane Cove High Current Test Facility. The closing of this facility is of significant concern to Australia's sovereign manufacturing capability because it is the only testing facility in Australia that can verify the performance of components under very high currents that represent fault conditions, load conditions and overload conditions.

The use of the Lane Cove facility is an integral part of the testing and production cycle of industry-critical manufactured equipment including transformers, switchgear, low voltage switchboard, busduct and fault current limiters. If this equipment is not tested adequately there could be severe consequences both from a human safety

¹ 'Industry Responses in a Collapse of Global Governance' *Engineers Australia* (February 2019)
<https://engineersaustralia.org.au/sites/default/files/resource-files/2020-05/Industry%20Mobilisation%20-%20Engineers%20Australia%20workshop%20report.pdf>

² 'Letter to Department of Home Affairs RE: Exposure Draft Security Legislation Amendment (Critical Infrastructure) Bill 2020'
[https://engineersaustralia.org.au/sites/default/files/resources/Public%20Affairs/2020/Engineers%20Australia%20Submission%20-%20Critical%20infrastructure%20security%20legislation%20amendment%20\(Cth%20November%202020\).pdf](https://engineersaustralia.org.au/sites/default/files/resources/Public%20Affairs/2020/Engineers%20Australia%20Submission%20-%20Critical%20infrastructure%20security%20legislation%20amendment%20(Cth%20November%202020).pdf)

perspective and to infrastructure. Testing is often mandated by Australian and New Zealand design standards and in some instances government regulations. It is a unique facility not easily replicated and without alternatives in the southern hemisphere.

In the event this facility closes, there would be ramifications at both a state and national level. Equipment requiring testing to the level provided by the Lane Cove facility would need to be sent offshore. This would increase the cost of manufacturing and the time required to get products to market due to the equipment needing to be shipped overseas. In addition, when tested overseas any modifications required as a result of testing cannot be made easily due to the distance from the manufacturers' facilities. The Lane Cove facility has allowed manufacturing personal to be present during testing, providing the opportunity for immediate correction of some issues that can then be re-tested. Due to these factors, many months would need to be added to most testing schedules. This would lead to many local manufacturers to be unable to continue their operations, resulting in Australia becoming more reliant on international markets for this equipment and thus increasing supply chain vulnerability.

Critically, if local manufacturing of these products ceased, in the event of a major disruption to supply chains, critical infrastructure that relies on this equipment such as hospitals, mining operations, and the electricity network could over time find themselves suffering ever-degrading operations. Whilst this equipment does not need to be replaced regularly and existing infrastructure could continue to operate, the effects could be felt in trying to establish emergency infrastructure such as field hospitals or if the products in existing infrastructure were to fail. Furthermore, the closure of this facility will reduce the safety of systems as imports would need to be relied upon which may not be tested to the same standards required in Australia. The ramifications of this include both industrial safety and impacts on the safety of the general public.

Being a current example, the situation is still evolving. At the time of writing, an alliance of industry, the engineering professional and academia is raising awareness of the issue with Ausgrid and governments at the state and Commonwealth levels. Updates can be provided to the Productivity Commission over time if requested.

Engineers Australia believes this type of scenario should be considered by the commission, particularly in a review of government's role to protect critical services and infrastructure. Australia needs domestic manufacturing capabilities to reduce supply chain vulnerabilities, particularly for components that contribute to critical infrastructure. Governments therefore need to identify and protect services such as those provided by the Lane Cove facility.

If you wish to discuss this further, please contact Jonathan Russell, General Manager for Policy and Advocacy.

Regards,

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