Response to Supplementary Question

NSW Inquiry into the procurement of government infrastructure projects

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During the 1980s and 1990s, engineering establishments in government agencies at all levels were seriously reduced. In our 2012 report 'Government as an Informed Buyer', [1] Engineers Australia drew attention to the problems arising from a reduced technical capability seen across all levels of government. Where 20 years ago governments collectively employed over 100,000 engineers across Australia, this figure is today less than 20,000.

Our 'informed buyer' report drew attention to the risks associated with the ensuing loss of engineering expertise and these risks include the inability to manage engineering contracts because contracting staff lacked the necessary technical expertise, and the inability of contract staff to adequately assess the engineering competencies of contractors and sub-contractors.

These risks open the possibility of large financial and human costs which have been detailed in coronial enquiries, in Australian National Audit Office reports and in numerous Ministerial statements. Engineers Australia acknowledges the changes occurring across the public sector, in particular decentralisation of control and devolution of decision making, and the broader environment in which procurement takes place, notably increasing technological complexity and the frequency of very large purchases. We believe that it is insufficient to rely on the significant contract management expertise that has been developed in engineering procurement. These skills are vital, but are not a substitute for technical engineering expertise.

Engineers Australia believes the issue of informed engineering decision making runs deeper than a simple numerical adequacy in the number of available engineers. Engineers Australia is firmly of the view that the engineering advice necessary to plan, design, develop, procure and implement major infrastructure and technical programs is provided by engineers with appropriate work experience and a keen appreciation of the progress of engineering technology.

Undoubtedly the variation in the engineering skills market will have had an effect on the ability of government agencies to attract and retain suitably qualified engineers. Retaining engineering expertise is critical to effective engineering project delivery. Engineers Australia has been working with engineering employers, including government agencies, to address retention issues through working, for example:

- To increase the number of engineers achieving chartered status to verify their commitment to continuous professional development and high engineering standards.
- To encourage greater participation in their initial and continuing professional development.
- To upgrade the engineering qualifications of existing staff through articulation programs to the levels appropriate to full participation in the engineering team.

However, Engineers Australia believes that more can be done to reinforce these efforts to ensure that technical and engineering elements of procurement are fully integrated into purchasing structures and arrangements. In its 2012 report into 'the shortage of engineering and related employment skills', [2] the Senate Education, Employment and Workplace Relations References Committee agreed with Engineers Australia's recommendation that government agencies should work to retain internal engineering expertise in their workforce through creation of senior technical specialist roles. This would provide a technical career pathway (in tandem with traditional managerial/generalist career pathways) for those seeking to build specialist knowledge while continuing to enjoy career/hierarchical progression.

[1] Government as an Informed Buyer: How the public sector can most effectively procure engineering-intensive products and services https://www.engineersaustralia.org.au/sites/default/files/shado/News%20and%20Media/government_as_an_informed_buyer.pdf

[2] the shortage of engineering and related employment skills', the Senate Education, Employment and Workplace Relations References Committee http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Education_Employment_and_Workplace_Relations/Completed_inquiries/2010-13/engineering/report/index

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Engineers Australia believes this is a critical area of workplace reform that would ensure that areas of government with major technical procurement roles maintain an adequate technical assessment and advice capability. These areas of importance should not, and in many cases could not, be outsourced without creating significant project risk.

The creation of 'engineering centres of excellence' has merit and is strongly supported by Engineers Australia. We believe that a 'decentralised' model where specialists are deployed across a number of different agencies (as opposed to sitting within a single agency/portfolio) would create the most beneficial outcomes as the various portfolios of government involved in procurement often have very different technical needs.

Decentralising this function across agencies would provide an opportunity for specialist knowledge streams to grow and develop in line with an agency's area of operations (e.g. civil engineering functions are very different to, say, high-tech manufacturing, and providing a focus in each area would build domain-specific human capital, arguably something that Australia struggles to do in comparison to other advanced economies). While we believe that a decentralised model would provide the most public benefit, we acknowledge that even a centralised model that operates across a number of government/departmental portfolios would represent a major step-forward for engineering and technical project management capability.

Whichever model government adopts the creation of a community of engineering practice within government would mitigate the risk of individual engineers becoming isolated, generate cross functional awareness of inter-agency priorities, improve engineering practice, facilitate the movement of engineers between agencies, and set individual project procurement firmly within government's strategic agenda. Developing a community of engineering practice within government provides for well planned, integrated infrastructure projects with the potential to deliver major improvement and the transformative outcomes sought.

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