PUBLIC INFRASTRUCTURE

Response to the Productivity Commission Draft Report

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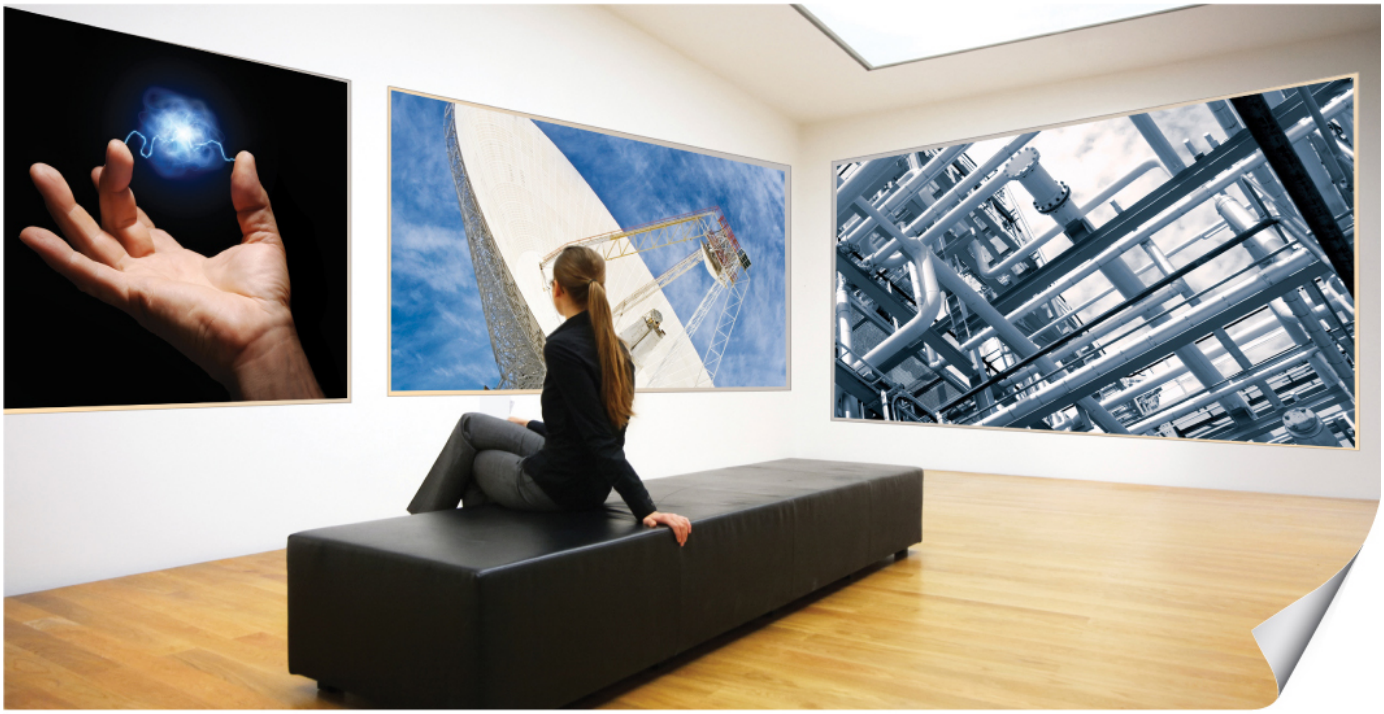

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Response to Draft Productivity Commission Report on Public Infrastructure

INTRODUCTION

In December 2013, Engineers Australia put forward a submission setting out its views on public infrastructure in response to the Commission's Issues Paper. The Commission's draft report generally reflected many of the points made in its draft recommendations and findings. Engineers Australia particularly welcomes Draft Recommendations 7.1, concerning public infrastructure institutional governance arrangements and Draft Finding 7.2 concerning the importance of governments at all levels committing and supporting these arrangements. Public infrastructure is critical to Australia's future, but present infrastructure planning, development and implementation arrangements are sub-optimal and there are too many decisions not based on objective criteria but on political expediency. Engineers Australia also sees particular merit in attaching the conditions set out in Draft Recommendation 7.3 to all forms of Australian Government funding for public infrastructure projects.

Engineers Australia agrees that the bid costs for infrastructure projects need to be reduced. Draft recommendations 11.1 and 11.2 are important steps in that direction and are supported. However, Engineers Australia reiterates the risks associated with moving to invest more in initial concept design specification without addressing the parlous state of engineering services available to Government agencies with public infrastructure planning and design responsibilities. Engineering positions and structures have been continually culled in public sector economy drives to the point where many agencies could not contribute in the way envisaged in the Draft Recommendation without significant engineering capacity augmentation.

The Commission's Draft Recommendation 8.2 dealing with better data collection and review processes is particularly welcome. Benchmarking infrastructure costs within a life cycle framework can contribute significantly to cost optimisation and future infrastructure planning. Engineers Australia sees particular merit in the Commission's point that the nenchmarking must be seen to be independent of both public and private sector influences. Engineers Australia would prefer the benchmarking agency to be multi-disciplinary with strong technical engineering capacities.

There are several areas of the Draft Report where Engineers Australia wishes to provide additional information and argument to sway the direction of the final report. These issues are intermittency in engineering work, public sector project management skills and the registration of engineers.

Engineers Australia and the National Engineering Registration Board (NERB) are particularly concerned about the arguments in the Draft Report concernming the registration of engineers. Engineers Australia has arrangements within its own membership that are equivalent to the standards it argues should apply to registered engineers. Membership is not compulsory (nor should it be) and so in concert with Consult Australia, the Institute of Public Works Engineering Australia and Professions Australia, Engineers Australia supports the work of NERB to provide a registration framework for non-members and members alike. The high degree of collaboration between peak engineering organisations with different primary objectives demonstrates the importance that engineers attach to formal means of demonstrating engineering competencies. Collectively the group, and Engineers Australia in particular, argue that the registration of engineers is a government responsibility that has been ignored for too long.

INTERMITTENCY IN ENGINEERING PROJECTS

In Information Request 7.1, the Commission suggests that the package of measures proposed in the Draft report would be "sufficient to constitute a pipeline that would assist purchasers and tenderers in forward planning and to minimise costs." Engineers Australia does not agree. While many recommendations would work in this direction, the package of recommendations is not sufficient to

achieve the intended result. Engineers Australia fails to see how concerns about private sector sensitivity about their commercial interests is relevant to the notion of an infrasatructure pipeline.

Monitoring the present utilisation and condition of existing infrastructure assets should be the baseline from which planning and development processes for new infrastructure projects should begin. Without this information the prospects of moving away from the status quo are limited. Private sector owned infrastructure assets cannot be excluded; there are no reasons why information about broad attributes and characteristics cannot be made generally available, but there is a case to protect commercially sensitive information.

Engineers Australia envisages that the institutions referred to in Draft Recommendation 7.1 would be responsible for all infrastructure planning in their jurisdiction, irrespective of whether eventual construction and/or ownership is public or private sector. Engineers Australia believes that Governments are responsible for infrastructure planning and that these responsibilities cannot be delegated to the private sector without creating major disruption to the optimal relationship between infrastructure planning and land use and urban planning.

The role of the private sector is also impacted by Draft Recommendation 11.1. Whether additional investment in initial concept design specification is undertaken by a central infrastructure agency or delegated to a line agency with infrastructure development responsibilities in a particular area, for example, roads, is immaterial. The implication of the draft recommendation supports government planning of infrastructure.

At present, Infrastructure Australia is able to construct high level information on infrastructure projects in the pipeline in a framework that is similar but not as well developed as envisaged in the Commission's recommendations. Engineers Australia fails to understand why the Commission is reluctant to continue with this successful example at national level and extend it to other jurisdictions.

Engineers Australia is concerned that the Commission may not fully appreciate the implications of excessive project intermittency on the engineering workforce. Engineers invest long periods of their lives in education and training, up to seven or eight years, and this is followed by an obligation to undertake continuous professional development to keep up with technological developments in their field. Few engineers would regard intermittent employment as a sufficient return on this investment. Faced with a period of unemployment due to project delays, engineers do what all rational people do, find work in other areas commensurate with transferable skills and abilities. The consequences are the loss of experienced engineers and these eventually need to be replaced, incurring additional coats. In addition to these immediate impacts, the disruption to engineering careers creates disincentives for young people to choose engineering careers.

Intermittency is a feature of several areas affected by Government decision making. The evidence relating to infrastructure is found in the large annual variability of new engineering construction on assets such as roads, railways, electricity generation and transmission, water and sewerage, gas facilities and telecommunications at State and Territory level. At national level, aggregation smooths out some of the variability but the consequences are still there. There is also evidence that intermittency has adversely affected defence acquisitions and stop/start decision making in renewable energy has led to engineers who trained specifically for this field to move to more consistent fields.

A key consequence of intermittency of engineering work is that there are temporary shortages of experienced technical personnel at the early stages of projects, precisely when these skills are most critical. Engineers Australia notes the comments in the Draft Report about the use of migrants on 457 temporary visas to band-aid these situations. The qualifications and skills of temporary migrants, unlike those applying for permanent visas, are not subject to assessment. This has long been an area of contention for Engineers Australia because the basis for accepting the qualifications of temporary

migrants is entirely subjective, highly variable and dependent on the views of employers sponsoring their visas. While a means of getting by, this policy is not an adequate basis for innovation and productivity growth arising from infrastructure development.

PUBLIC SECTOR INFRASTRUCTURE PROJECT MANAGEMENT

The Commission sought evidence on whether a relative lack of skills has led to systematic cost overruns. These problems are common in public sector procurement of assets and facilities that have significant technological and engineering content. Engineers Australia has investigated these issues in some depth and its findings are documented in the report "Government as an Informed Buyer"[1]. The report contains recommendations to deal with problems identified and to improve on-the-ground arrangements.

REGISTRATION OF ENGINEERS

This section reiterates Engineers Australia's arguments in support for a nationally consistent registration scheme for engineers and contests the Commission's reasons for dismissing such an arrangement. Engineers Australia advances the following arguments for a national scheme:

- Reduction in red tape; a consistent national registration scheme would replace fourteen inconsistent, partial registration schemes applying across States and Territories.
- End restrictions in these existing schemes on mobility of engineers and the bureaucratic and financial barriers to engineers wishing to practice in more than one jurisdiction.
- Fully assess the competence of migrant engineers who between 2006 and 2011 accounted for 71% of the increase in the supply of engineers.
- Enable effective action to be taken against engineers who practice negligently or unethically as is the case in medicine and law.
- Provide the framework for assessing the numbers of fully competent engineers in Australia, enabling more effective engineering work force planning and policy making to head off and/or address shortages of engineers.
- A benefit-cost study has shown that, despite difficulties fully ennumerating benefits, the net present value to the economy was in excess of $7 billion under a discount rate of 7% with a benefit-cost ration of 3.14[2].

Engineers Australia believes the Commission's arguments rejecting the registration of engineers are inadequate, inconsistent and miss the point. The Draft report suggests that conceptually registration of engineers would be relevant where:

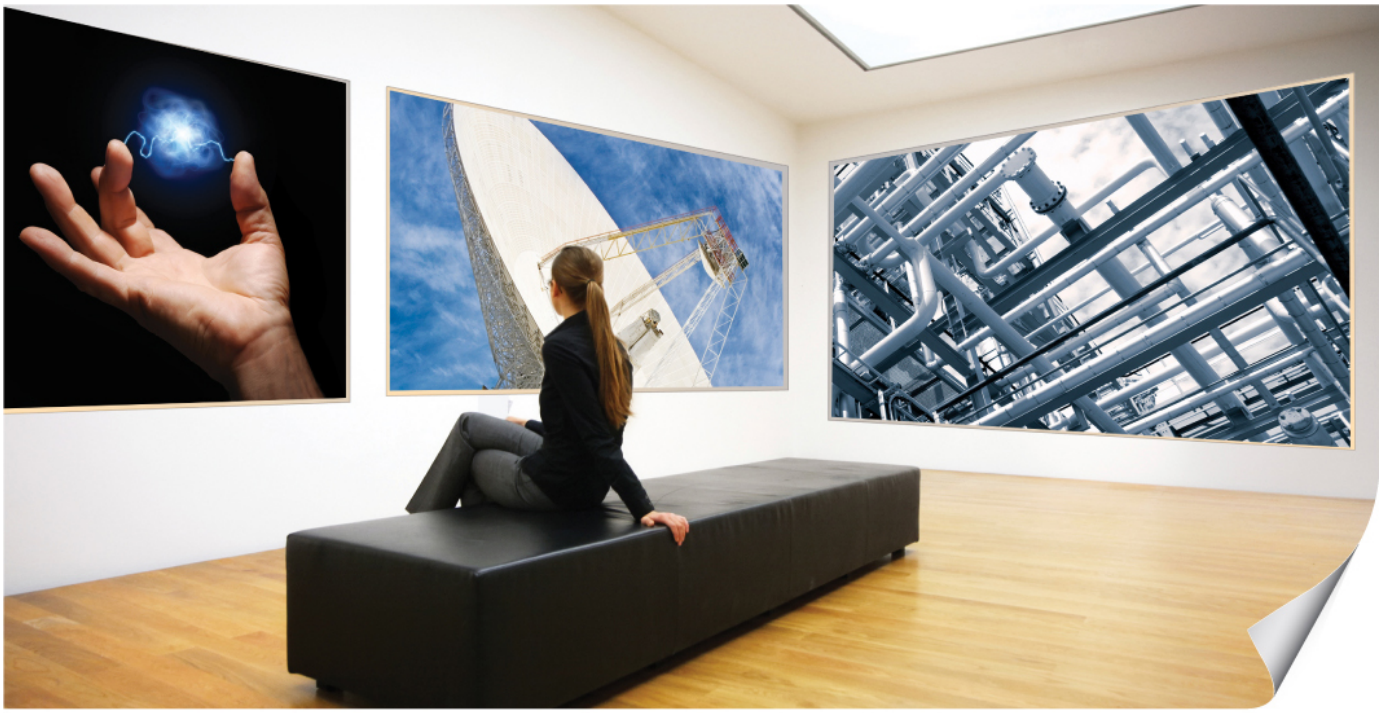
- Principle agent arrangements are typical. Project proponents and/or project managers often are not engineers. Engineers often report to non-engineer supervisors who do not have technical and engineering skills, but possess the management skills necessary to be responsible for large and complex undertakings.

[1] Engineers Australia, Government as an Informed Buyer: How the Public Sector can most Effectively Procure Engineering-Intensive Products and Services, prepared by Athol Yates, 2012, www.engineersaustralia.org.au

[2] See www.engineersaustralia.org.au/nerb/national-registration

  - Registration of engineers underpins the competence of the engineers in this relationship and adherence to the engineers code of ethics in the registration arrangement ensures that engineers appropriately conduct the arrangement so that assymetrical technical and engineering knowledge does not become an issue in project management.
  - Although similar results can be achieved without registration, registration provides a framework for greater consistency in outcomes and possible sanctions for taking undue advantage of the assymetry.

- Infrastructure projects are inherently lumpy. Although examples of small projects can be found, take the case of a short link between between two critical roads, the vast majority of infrastructure projects are multi-million dollar outlays, often spanning many years from planning to final completion. Once completed, asset maintenance becomes an on-going critical issue. The discussion in the Draft Report appears to accept this and then brushes it aside. Engineers Australia sees this as sloppy and unacceptable.
- The potential costs of a bad decision are high. The Draft Report cites the example of health without considering the costs of bad engineering decisions. Arguments for the registration of engineers often highlight catastrophic costs like the Barton Highway bridge collapse in the ACT. These examples are particularly relevant. The consequences are not limited to high profile cases like this example, but include numerous petty “stuff-ups”, risk averse behaviour leading to the choice of old established technology and a shorter life than should be expected. This is not the path towards an innovative and productive economy.
  - Engineers Australia does not dispute that bad health decisions are costly, but this is also the case in engineering.
  - Engineering services are embodied in practically every good or service enjoyed by the public, and infrastructure in particular.
  - Registration of engineers is a way of increasing the degree of competence and commitment applied by engineers and, through this, increasing the momentum of innovation and prospects of productivity growth while reducing and minimising economic and welfare costs to the community for project failures and reworking.
- Consumers cannot judge the quality of practitioners. At the hearing of the Senate Committee examining engineering skill shortages, Senators expressed surprise that engineers were not registered in Australia. There is a widespread community presumption that engineers are registered. After all if Real Estate Agents need to be registered ?
- A full evaluation of the Queensland scheme is clearly needed, but dismissing the relevance of this scheme and then supporting a range of other unsupported assertions, is difficult to accept. Similarly, using known limitations and defects in the Queensland scheme to dismiss Engineers Australia’s proposal is inappropriate and cannot be supported.
- The registration of engineers is not intended to attract engineers into a region, as suggested in the reference to ACT plans, but a means of distinguishing between engineers who have demonstrated their competence, committed to a code of ethics and who stay up to date with their profession and those who do not. This distinction highlights the true state of affairs in relation to the supply of fully competent engineers which has been the subject of recent skill shortages.
- The Draft Report’s treatment of the registration of engineers stands in stark contrast to its ready acceptance of the need for national occupational licencing of trades.



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