Review of the Migration Occupations in Demand List

Comments on Issues Paper No 1

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1. Introduction

Engineers Australia is the peak body for engineering practitioners in Australia, representing all disciplines and branches of engineering. Membership is now approximately 89,000 Australia wide and Engineers Australia is the largest and most diverse professional engineering association in Australia. All Engineers Australia members are bound by a common commitment to promote engineering and to facilitate its practice for the common good.

Engineers Australia is the national forum for the advancement of engineering and the professional development of its members. Engineers Australia believes that Australia requires sufficient engineers to meet the aspiration of its people; that practicing engineers offer the highest levels of professional standards and that engineers continue to develop their knowledge and professional expertise through whole of life learning and professional development.

Australia has experienced an acute shortage of engineers for some time, in part because insufficient engineers are graduating from Australian universities and in part because of the large increase in the demand for engineers resulting from the commodities boom. The economic downturn has temporarily eased the situation but the recruitment difficulties experienced by employers will resume with economic recovery, especially in the export sector. Migration has been the only short term option to fill the gap and Australia's annual supply of new engineers is now disproportionately dependent on migration.

The passage of time and an accumulation of policy changes mean that a review of the MODL is appropriate. Engineers Australia agrees that a distinction needs to be drawn between nation building objectives which require a step-wise increase in the number of new engineers and cyclical factors which result in temporary variations in the demand for engineers. The model proposed in the discussion paper will meet these objectives but significant difficulties will need to be resolved.

The basis of the present MODL is an out-moded view of what engineers are and do. Replacing the old ASCO system with the skills based ANZSCO system for classifying occupations is an important step in the right direction, providing all occupations in which engineers work in a modern and sophisticated economy are taken into account. This is not the case at present and is a bone of contention. The discussion paper raises the possibility of moving to a skills basis by focusing on the qualifications held by prospective migrants supplemented by occupational information relating to work experience. This approach is preferred by Engineers Australia because it is consistent with the competency based assessment methodology used to accredit Australian university Bachelors Degrees in engineering as well as assessing the qualifications of prospective visa applicants.

Engineers Australia strongly believes that all permanent visa applicants should undergo assessment of qualifications as at present. The possibility that sponsored permanent visa classes are assigned to the cyclical component of the migration program is not an argument to dispense with qualification assessment. Temporary visa applicants do not have their qualifications assessed and while Engineers Australia understands the reasons for this, it is never-the-less very concerned about this situation. At present 51% of skilled migrants coming to Australia are in this position and Engineers Australia believes that this places disproportionate responsibility on sponsors to reassure the Australian public that engineers practicing in Australia are qualified to Australian standards.

The principles proposed for a new MODL are broadly appropriate. One key issue was mentioned above. Another is the unfortunate view that if an individual is not employed in an occupation closely related to skills held then their skills are not being fully utilised and are being wasted. This view is inappropriate in a modern sophisticated economy like the Australian economy. Dilemmas posed by this disagreement are resolvable and are explained in the Submission. There are also several points of friction relating to the skilled migration points test which are discussed.

Engineers Australia believes the main problems will arise when the proposed model is implemented. These issues are also resolvable but research and models used to formulate projections to be used to inject prospectivity into the migration system need to be more transparent than is presently the case and genuine, more formal consultation with stakeholders will be needed. Utilization of migrant skills is best measured by whether they are appropriately employed and the gap in current statistics should be sorted out accordingly instead of designing a system which uses available statistics however inappropriately.

2. The Supply of New Engineers in Australia

The purpose of this Section is to review statistics on the annual increase in the supply of Australian engineers to demonstrate the context for Engineers Australia's interest in this review of the MODL. Until the on-set of the global financial crisis, Australia was experiencing an acute shortage of engineers. The cause of this situation was the coincidence between static domestic graduations of engineers from Australian Universities and the increase in demand for engineers evident since the start of the millennium.

The entry level qualification for professional engineers and engineering technologists is a Bachelors Degree in engineering and for engineering associates it is an Associate Degree or a Diploma or Advanced Diploma. Engineers Australia is the recognised assessment authority for prospective migration visa applications for these grades of engineer for the Department of Immigration and Citizenship. Comprehensive statistics for students graduating with associate engineer qualifications are problematic. For this reason the discussion in this Section relates to degree qualified engineers for whom good statistics are available. Engineers Australia believes that the circumstances of associate engineers are in line with this discussion.

Figure 1 shows the trends in new commencements and completions in Bachelors degrees in Engineering and Related Technologies in Australia since 1994. The trend in graduations, although subject to some annual variation, has been static for the past 15 years[1]. Engineering commencements were also static through the 1990s and then fell until 2005 when in response to broad based calls for action, the Australian Government created additional university places in engineering. The outcome was that commencements increased back to the levels of the late 1990s. In due course, the recovery in commencements will increase graduate numbers. Since 2001, the ratio of completions to commencements has averaged 56.9%. If this were to continue, graduations could increase from an average 5,870 between 2001 and 2007, to about 6,287, an increase of about 417, or 7%.

[1] See Engineers Australia, The Engineering Profession; A Statistical Overview, Sixth Edition 2009, www.engineersaustralia.org.au . There is a discontinuity in the trends in 2000 due to a change in classification systems for education statistics. The discontinuity does not affect the conclusion about a static trend in graduations.

FIGURE 1: TRENDS IN COMMENCEMENTS AND COMPLETIONS FOR BACHELORS DEGREES IN ENGINEERING AND RELATED TECHNOLOGIES

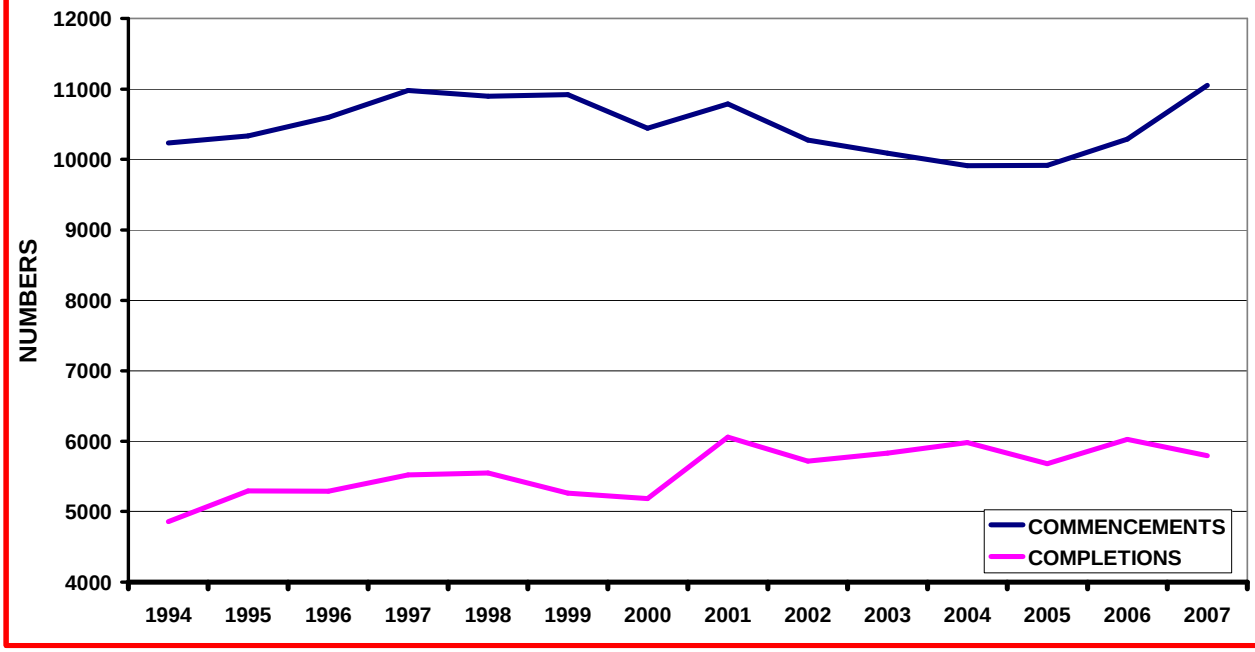


TABLE 1
IMMIGRATION OF ENGINEERS TO AUSTRALIA

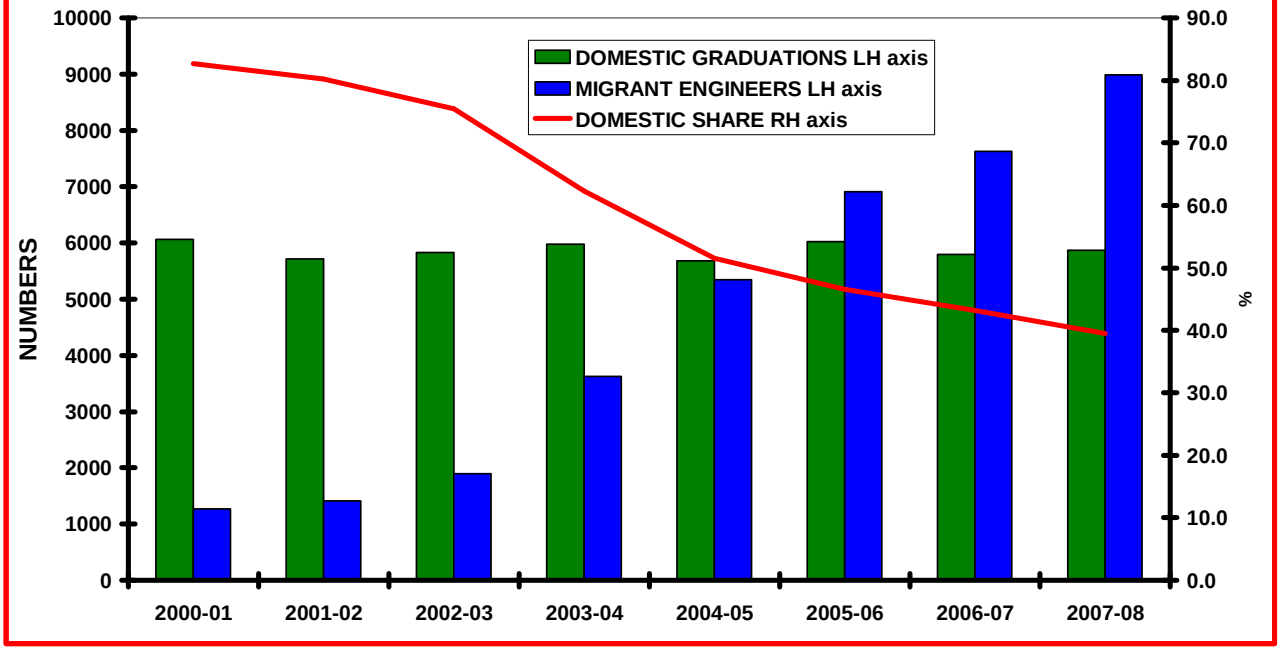
YEAR	PERMANENT OFF-SHORE	PERMANENT ON-SHORE	TOTAL PERMANENT	TEMPORARY 457 VISA	OVERALL TOTAL
2000-01	1240	31	1271	0	1271
2001-02	1140	271	1411	0	1411
2002-03	1447	451	1898	0	1898
2003-04	1420	952	2372	1250	3622
2004-05	1732	1800	3532	1810	5342
2005-06	2312	1629	3941	2970	6911
2006-07	1980	2140	4120	3510	7630
2007-08	2503	1909	4412	4580	8992

Source: To 2003-04 Birrell, Sheridan and Rapson; since 2004-05 and 457 data Department of Immigration and Citizenship

Any increase in domestic engineering graduates is welcomed by Engineers Australia, but the impact of the expected increase can be gauged from Table 1 which shows the immigration of degree qualified engineers to Australia since 2000-01. The numbers of new migrant engineers are compared to domestic graduates in Figure 2. The number of new migrant engineers has increased rapidly since 2001. By 2007-08, there were 4,412 new permanent migrant engineers and 4,580 new temporary migrant engineers. Figure 2 also shows that the share of new domestic graduate engineers in the supply of new graduate engineers has been falling. By 2007-08, domestic graduates were only 39.5% of new graduate engineers in Australia. As welcome as it is the likely

increase in new domestic graduates will do little to change the increasing dependence on migrant engineers.

FIGURE 2: DOMESTIC AND MIGRATION CONTRIBUTIONS TO THE ANNUAL SUPPLY OF ENGINEERS IN AUSTRALIA



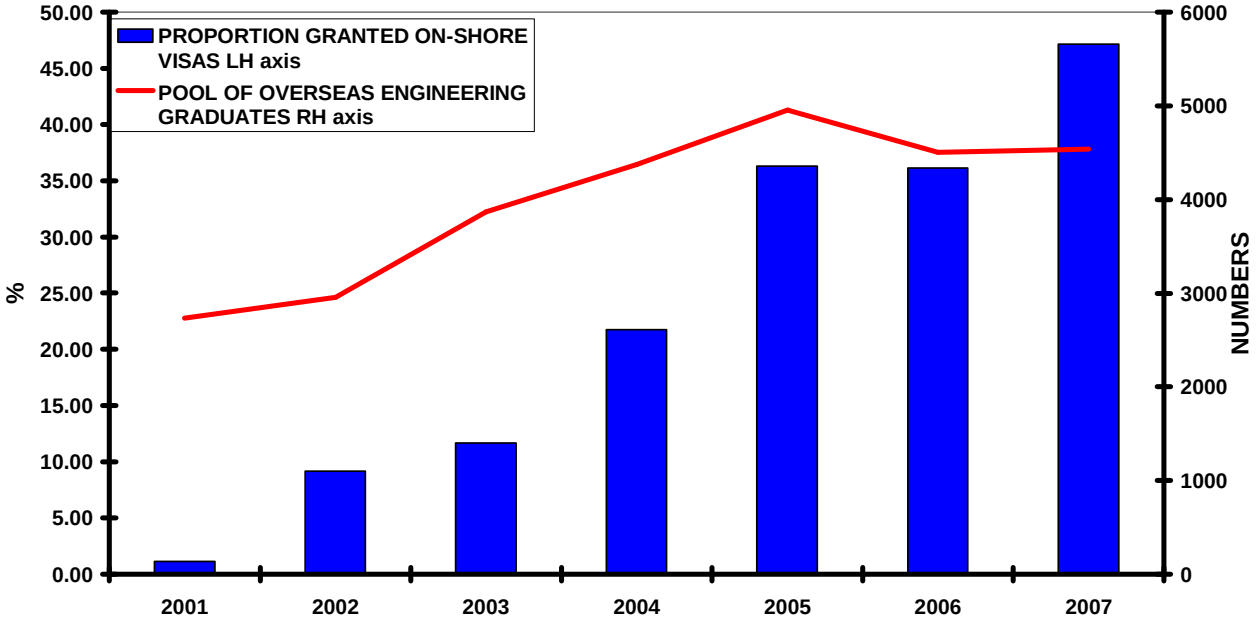
Since 2000 overseas students studying at Australian educational institutions have been able to apply for on-shore permanent migration visas. In engineering this has become an important source of permanent migrant engineers. Only new domestic Bachelors Degree graduates add to the size of the engineering profession. Domestic graduates from post-graduate courses represent improvements in the knowledge base of the profession. However, the situation for overseas students is different with graduates from Doctoral, Masters and Bachelors Degrees all eligible to apply for on-shore migration visas. The successful visa applicants from this pool all add to the size of the engineering profession irrespective of the course level studied. Figure 3 compares the trend in the pool of overseas engineering graduates eligible to apply for on-shore visas to the numbers of visas approved[2].

The red line in Figure 3 shows the pool of overseas students graduating with Doctoral, Masters and Bachelors Degrees in engineering from Australian universities since 2001 (measured on the right hand axis) increased strongly to 4,955 in 2005 but that it has moderated in the last two years to a little over 4,500. The proportion of overseas students granted on-shore migration visas was measured by comparing visas granted to this pool of overseas student graduates. Simultaneously,

[2] Statistics on overseas student completions were obtained from DEEWR for calendar years and the migration statistics are financial years. The comparison was made between completions and migration for the year ending 30 June in that calendar year. Although this is not entirely satisfactory, it is sufficiently accurate to support the points being made in the Submission.

the proportion of this pool of overseas graduates granted on-shore visas has increased rapidly so that by 2007, it was 47.2%. The effect of the on-shore visa mechanism has been to increase the numbers of new graduates from Australian engineering schools annually entering the engineering profession well above the static level of new domestic graduates.

FIGURE 3: THE PROPORTION OF OVERSEAS STUDENTS GRADUATING FROM ELIGIBLE ENGINEERING QUALIFICATIONS GRANTED ON-SHORE VISA



The demand for engineers in some industries will have been dampened by the down turn in the economy, but in others it has been maintained or has increased. In export industries, high value projects have been maintained and new ones have started. With economic recovery this activity is expected to accelerate as projects like Gorgon commence. Infrastructure development has been an important focus for Governments at all levels since before the economic slump and is now central to the Federal Government's economic recovery strategy. These circumstances indicate that while there may be a short term lull in the excess demand for engineers in Australia, it has not gone away. Engineers Australia believes strong action to increase the numbers of engineers is necessary from both domestic sources and from skilled migration.

3. The Need for a New MODL

The MODL is now 10 years old and has been the subject of various adjustments over time. For these reasons alone Engineers Australia believes that a review of the MODL is warranted. It is also evident from Table 1 that changing attitudes to temporary migration has resulted in migration through this route becoming larger than through the permanent entry visa arrangements. Migrants joining the engineering profession in this way do not have their qualifications assessed as is the case for permanent visa applicants. This is a matter of concern to Engineers Australia because

temporary migrants are being actively encouraged to apply for permanent visa status[3]. At present when such applications are made, assessments of qualifications are undertaken and Engineers Australia believes that this should continue. This in many cases is straightforward but there are additional points awarded for Australian work experience and for Australian qualifications and in respect of the latter this additional loading may be questionable. This issue is explored further in a later Section.

Engineers Australia also feels that confusion has developed about the appropriateness of the MODL process for short-term cyclical immigration and on-going permanent immigration. Engineers Australia agrees this requires clarification.

4. Proposed Principles for a New MODL

This Section provides comments on the principles suggested in the discussion paper.

The MODL targets skills of high economic value to Australia

Engineers Australia agrees with this principle but with some caveats.

The concept of "skills" and "occupation" are not synonymous. Engineering qualifications equip their holders to pursue engineering career paths. Historically engineering career paths were comparatively narrow and typically involved technical occupations like those represented by the ASCO codes used for engineering occupations in the general migration skills test. However, this is no longer the case because as the Australian economy has grown and become more sophisticated new engineering career paths have developed and these go well beyond traditional engineering occupations.

For example, public-private-partnerships (PPPs) have been strongly endorsed by Federal, State and Territory Governments as a vital mechanism to increase the scale and efficiency of infrastructure investment in Australia. The character of PPPs involves contracts between Governments and private sector proponents and financial arrangements to support construction and subsequent operations of the infrastructure project in question. This direction has led to an increasing demand for engineers in the finance and legal sectors, in addition to increasing the demand for traditional engineering occupations involved in infrastructure delivery. Without engineers to ensure that contractual and financial arrangements are consistent with technical requirements, PPPs would not be viable. In a modern economy engineers practice their skills in a much more diverse range of occupations than was previously the case and follow career paths which often emphasize the partnership between engineering and other disciplines.

If occupations are to be the basis for MODL, those occupations should accurately reflect a contemporary view of the career paths chosen by engineers and the occupations which relate to these paths. The introduction by the ABS of the ANZSCO system in 2006 was motivated by changes to occupations resulting from structural change in the labour market. The classification adopted a skills-based approach to reflect concerns that change will be a continuing phenomenon in the labour market.

[3] Janet Phillips, Skilled Migration to Australia, 5 June 2006, www.aph.gov.au/library

Engineers Australia supports moving to the ANZSCO classification system. Moving to the ANZSCO classification will bring the approach to occupations applied in the migration skills test up to date with contemporary approaches to the labour market but it will not resolve the wider issue being argued here unless *all* occupations in which engineers are employed are taken into account. The ANZSCO occupations with "engineering" in their titles were not intended to be limiting in the way occupation codes have been used in the migration assessment processes. The intention was simply to describe those occupations in which engineering qualifications are used in traditional ways. This argument applies equally to accountants, lawyers and economists and other professionals and is not special pleading by engineers.

The discussion relating to this principle includes how "high economic value" should be treated. In principle high economic value depends on whether visa applicants obtain employment related to their skills. Work experience since graduation is a useful guide but Engineers Australia does not support combining an occupational approach with an earnings threshold as is the case in the UK and New Zealand. The limitation of "occupations" has already been discussed and identifying relevant salary thresholds would be fraught, impractical and administratively complex.

The alternative approach to "high economic value" proposed in the discussion paper is to move to a skills basis by identifying a visa applicant's qualification and to combine this information with occupational experience. In practice this means working within the Australian Qualification Framework (AQF) and using the Australian Standard Classification of Education (ASCED). An approach along these lines would be consistent with the competency based assessment of qualifications used by Engineers Australia.

A competency based approach brings the migration assessment process into line with the basis upon which Australia's education system is based. Engineers Australia favours this approach because it would result in consistency between different institutional arrangements, it resolves the problems created by basing assessments on occupations and because all Engineers Australia processes, from its accreditation of university degrees, to professional development of members, Chartered Engineer status and migration qualification assessments[4], are competency based. Material on the approach used by Engineers Australia can be accessed on its web-site[5]. Adoption of a competency based approach will offer the most flexible and robust approach to high economic value skills, for engineers and for other disciplines.

The MODL complements domestic skill supply and maximizes skill utilization

Engineers Australia agrees that the operation of the MODL should complement domestic skill supply. However, there are two sides to this issue. Figure 2 showed that in 2007-08 new domestic graduates in engineering were 39.5% of the additional new engineers entering the engineering profession; the rest were migrant engineers entering Australia either permanently or on temporary visas.

Engineers Australia strongly supports skilled migration, especially in circumstances where strong cyclical factors result in a serious imbalance between the demand for and supply of engineers.

[4] In practice some assessments relate to international agreements, such as the Washington Accord, under which signatories agree to recognise each others engineering qualifications. These agreements are, however, underpinned by recognition of competencies.

[5] www.engineersaustralia.org.au/education

One of the motivations for the review of MODL was to manage the flow of skilled migrants so that the unemployment costs of an economic slow down are not disproportionately borne by persons already living and employed in Australia. Engineers Australia considers this an important concern.

Engineers Australia has some difficulty in understanding how the present situation can be seen as balanced policy. New domestic engineering graduations have been static for too long and there should be stronger policies to increase domestic graduations. Recent increases in university engineering places will help but this action is insufficient because the additional new graduates are a small fraction of current migration levels. Table 1 shows that in 2007-08, 51% of migrant engineers entered Australia on temporary 457 visas. This is 31% of the additional number of engineers entering the profession from domestic graduations and migration and is symptomatic of a structural problem in Australia.

Engineers Australia finds the remarks that “the extent of people working in occupations which are not at all related to their skills and training represents wastage and the misallocation of resources” an unfortunate and out-moded point of view as explained in the above remarks on engineering careers and occupations. Skill utilization is more usefully measured by whether migrants with engineering qualifications have found employment in occupations which use their skills productively. The discussion paper indicates that a key weakness in migration statistics is the lack of statistics on post-migration experience. Engineers Australia strongly suggests that this failure should be remedied quickly, preferably as part of the proposed new policy package. Another measure of skill utilization is the relative size of the temporary migration component. This is less effective than the employment measure but is available now.

The MODL is Prospective

Engineers Australia agrees that the retrospective character of the current MODL is ineffective and should be changed in favour of a prospective approach looking forward 3-5 years, however there are likely to be a myriad of practical implementation issues.

The most comprehensive labour market statistics, that cross-match occupation with education qualifications, are the Population Census statistics. These statistics are of limited value for time series projections. Various econometric models incorporate labour market modules that use statistics from the ABS Labour Force Survey. The limitations of this approach is that at 4 and 6 digit occupational level, required for the kind of occupational approach now in use, statistics are beset with standard error problems accentuated by the reduced samples in the recent past.

Engineers Australia is aware of the DEEWR research which supports current MODL arrangements. As the discussion paper notes, the DEEWR methodology draws on a wide range of sources, reflecting the piece-meal nature of labour market statistics. The methodology is not entirely transparent, but appears to be geared to making an informed judgment rather than producing numerical projections. Just as the present MODL is a crude instrument, DEEWR officers have acknowledged in consultations that their methodology, although also crude, is good enough for current purposes. Engineers Australia agrees with this view but suggests that adaptation of the DEEWR methodology to produce forecasts for a prospective MODL will be extremely challenging.

On the other hand, if the alternative approach, moving to a skills based approach, were pursued DEEWR has access to the significant statistical resources of the Higher Education Division for

degree qualifications and would also have access to the statistical resources of NCVER for TAFE level qualifications. Though the quality of occupations statistics is not in themselves sufficiently robust to support projections, they are a useful complement to better quality educational statistics. Engineers Australia urges the Review to seriously look at such an approach.

The MODL should not be driven by short term employment cycles

Australia's migration program is primarily driven by population growth and structure considerations and the preference for skilled migrants since 1999 has been driven by the importance of labour market outcomes beneficial to migrants and to the economy at large. Engineers Australia does not have a population policy and does not wish to offer comment on population policy.

The migration model proposed in the discussion comprises two components:

- Nation building component consisting of independent permanent skilled migration
- Cyclical component consisting of permanent employer and State/Territory sponsored and temporary migration

The discussion paper implies, but does not clearly state, that the revised MODL would drive the nation building component and the cyclical component would rely on sponsorship of permanent and temporary migrants by employers and/or jurisdictional Governments.

Engineers Australia believes this approach could deal with the unusual circumstances that have characterized the engineering profession for the past 6-7 years. Domestic graduations are clearly insufficient to meet the demand for engineers in the Australian economy. Subject to comments made above about the need for additional action to increase domestic graduations, the nation building component would build on this to increase total new graduates entering the profession closer to a balance between supply and demand. Consistent with current practice all prospective visa applicants would have their qualifications assessed in line with Australian standards. Engineers Australia agrees that a revised MODL embodying the remarks made above would be an appropriate tool to direct the allocation of available permanent independent skilled visas.

The cyclical component will comprise permanent sponsored visa classes and temporary 457 visa classes. Since the driver of these visa types are sponsors, the MODL need not have direct application to the cyclical component but serves as a means of confirming to individual sponsors that the difficulties they are facing are widespread. Migrants entering Australia on temporary 457 visa classes do not have their qualifications assessed. While Engineers Australia understands the arguments for this approach, the organisation does not agree with it. As discussed in Section 2, 51% of migrant engineers in 2007-08, or 31% of the total addition to the engineering profession did not have their skills assessed. This is placing a disproportionate responsibility on sponsors to reassure the Australian public that engineers practicing in Australia are qualified to Australian standards.

At present applicants for permanent sponsored visa classes undergo qualifications assessments. Engineers Australia strongly believes that all applicants for permanent visa classes should continue to have their qualifications assessed. Engineers Australia would strongly object to a change to this approach in the interests of administrative convenience within the cyclical component. Similarly, Engineers Australia believes that all temporary 457 entrants who

subsequently apply for permanent visa status should undergo qualifications assessment as is presently the case.

Finally, Engineers Australia notes the importance of distinguishing between different types of cyclical phenomena. On the one hand, demand for skills will rise and fall with the conventional economic cycle and this will apply to engineers as much as everyone else. However, the export commodities boom, recession aside, is characterized by a massive build up phase involving construction of mines and associate infrastructure followed by an operational phase which involves much less construction. The demand for engineers is significantly stronger in the build up phase than in the operational phase and the timing of project commencements can give rise to cyclical demand for engineers as a result. This is a complex and difficult issue to incorporate in a revised MODL but it is a substantial part of the engineering skills shortage.

The MODL needs to take account of other migration arrangements

The skills points test is weighed in favour of younger applicants. Approximately 80% of prospective engineer visa applicant qualifications assessed by Engineers Australia are less than 34 years old. Australian data shows that most engineers younger than this would be either Grade 1 Engineers (the entry level to the profession with median age about 25-26 and median work experience of 2-3 years depending on private or public sector) or Grade 2 Engineers (can work without detailed supervision but under guidance of an experienced engineer; median age 30-35 years and median experience 6-12 years dependent on private or public sector).

In contrast, surveys undertaken by Engineers Australia indicate that employers have experienced their greatest recruitment difficulties in respect to Grade 3 engineers (work is independently carried out within conventional engineering guidelines; median age 38-42 years and median experience 13-18 years depending on public or private sector). Engineers with these characteristics are at present at a disadvantage compared to younger applicants. Engineers Australia believes that targeting can be improved to deal with these issues. This issue cuts across the two components proposed for a new balanced skilled migration model.

The discussion paper flags the possibility that overseas students could be required to be sponsored on a temporary visa for a time before being eligible for permanent migration. Engineers Australia does not object to new overseas students graduating in engineering being immediately eligible to apply for permanent migration visas providing that their qualifications are assessed in the normal way. This is essential for reasons covered above. New graduates gain experience through on the job experience and it is immaterial whether this occurs on a temporary or a permanent visa. This suggestion does not deal with the shortage of more experienced engineers which needs to be addressed with by adjusting how the assessment deals with age and experience.

The MODL is evidence based and underpinned by a robust and transparent methodology

It is difficult to argue with this principle. However, it is simply not true that the present methodology is robust and transparent. Statistics for engineers and engineering are piecemeal and this applies across the board and not just to labour market outcomes. There has been little rigorous evaluation of DEEWR projection methodologies; how they work and how well they project the future. Engineers Australia has misgivings about the perspective officials have about what are legitimate

engineering jobs and what is wastage. There is also a propensity by officials to act as guardians of the prevailing order and for consultations with stakeholders to be informal, haphazard and designed to sell a pre-determined position. These issues need to be robustly addressed to build confidence in new arrangements.

5. Additional Comments

Engineers Australia has concerns about aspects of the points allocation arrangements in the points test. To reiterate comments above, Engineers Australia believes that a better balance between age and work experience must be found in order for the migration system to function as little more than a supplement for new inexperienced graduates.

Engineers Australia is also concerned about the points allocated to Australian educational qualifications, particularly to Masters degrees (15 points) and to Australian study met (5 points). Assessment of prospective migration visa applicant qualifications undertaken by Engineers Australia are competency based and not on the basis of degree nomenclature even when these degrees are from Australian universities. Engineers Australia's university accreditation program focuses on Bachelors degrees held by prospective visa applicants and do not focus on Masters degrees held except as a secondary source of information. It is not necessarily the case that the holder of a Masters degree will satisfy Engineers Australia's competency test.

A recent survey undertaken by the Council of Australian Engineering Deans[6] concluded that in respect of coursework Masters Degrees in engineering:

- There were no accepted standards for formal naming of degrees. Similar problems a decade ago in the UK led to Government and higher education community concerns over quality and standards.
- Degree aims and objectives are typically developed to meet university perceptions of market opportunities.
- Entry requirements, course duration and project work content vary widely.
- Little information about assessment methodologies is available.

Engineers Australia believes that these degrees are too variable to be taken on face value. When assessing an overseas graduate holding an Australian university coursework Masters Degree, Engineers Australia applies its competency approach primarily to the applicants Bachelors Degree consistent with its accreditation program for Bachelors Degrees in engineering in Australian universities. In view of this situation Engineers Australia believes the additional points allocated to coursework Masters Degrees should be reviewed. In parallel the points allocated to Australian studies completed should be reviewed to establish whether this study was the completion of an accredited Bachelors Degree or another qualification.

Engineers Australia is confident that overseas students holding PhDs from Australian universities are indistinguishable from domestic graduates from these programs.

[6] John M Simmons, Survey of Australian Coursework Masters Programs in Engineering, Report to the Australian Council of Engineering Deans, December 2005