

Chamber of Minerals and Energy of WA



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Submission

Review of Australian Higher Education Discussion Paper

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Introduction

1. The Chamber of Minerals and Energy of Western Australia (CME) welcomes the opportunity to make a submission to the Review of Australian Higher Education concerning the future direction of the higher education sector, its fitness for purpose in meeting the needs of the Australian community and economy and the options for ongoing reform.
2. It is essential the institutional and intellectual capacity of the entire education sector, that is schools, vocational education and higher education, is an ongoing priority of the Government and is resourced appropriately by them.
3. It is imperative that government provides for funding which recognises the increasing overheads universities are experiencing, particularly when delivering industry relevant courses in regional areas to prevent the ongoing viability of these from being perpetually challenged

CME and the WA Resources Sector

4. CME is the peak resources sector representative body in Western Australia with its members covering approximately 85% of all mineral and energy employees in Western Australia.
5. WA is one of the most productive and diversified mineral and petroleum regions in the world. It is the powerhouse of the resources industry not only in Australia, but for the Asia-Pacific region as a whole. Some of the world's leading mining and resource companies are located in Perth, and there are career opportunities for people with a variety of skills.
6. In 2006/07 WA's resources sector accounted for:
 - (a) \$53.1 billion in production value¹
 - (b) 86% of the State's merchandise export income¹
 - (c) Around 30% of the State's Gross State Product²
 - (d) \$2.2 billion in State royalties¹
 - (e) Direct employment of 62,000²
 - (f) Direct and indirect employment totalling 244,000²
 - (g) More than A\$102 billion of resources projects are either underway or planned in WA²
 - (h) \$668.7 million in Commonwealth royalties³
7. Despite the significance of the sector within Australia, resource operations are only a relatively small part of a much larger global marketplace. Australia's participation in this global marketplace also means it faces global competition.

¹ 2007 Department of Industry and Resources Statistic Digest

² 2006/2007 Department of Industry and Resources Statistics Digest

³ 2007/2008 Department of Resources Energy and Tourism

8. The Australian higher education sector has struggled to provide the human and intellectual capital the resource sector requires to remain globally competitive and this situation will continue into the future unless significant government effort and resources are expended to address key market failures. Without significant investment by governments in social infrastructure supporting the skilling of the workforce, the sustainability of the resource sector into the future will be in doubt.

Future expansion and employment needs

9. With more than \$102 billion of resources projects either underway or planned in WA it is no wonder the industry has grown remarkably over the years. In 1985/86 the value of resource production for the industry was only \$5.2 billion, whilst for 2006/07 it had risen to a hefty \$53.4 billion, thus highlighting the fact that WA's resources sector is a long-term growth story.
10. In a report recently released by the Minerals Council of Australia (MCA) it is anticipated the mining sector workforce will reach approximately 215,000, with just under 104,000 of those located in WA, an increase of 85% on our current levels. While the majority of the workforce will be required to be tradespersons or semi-skilled persons the industry across Australia will be seeking:
 - (a) Almost 9,000 professional new workers;
 - (b) Over 4,000 new associate professionals; and
 - (c) Over 4,000 additional managers and administrators⁴.

Meeting labour market and industry needs

11. In order to meet the skills requirements of the broader Australian economy, and the resources sector in particular, Governments and industry must work together to develop an effective national education and training system. The CME supports the MCA position that the national education and training system should:
 - Possess the requisite institutional and intellectual capacity to deliver quality educational outcomes at all levels; schools, vocational education and training and higher education;
 - Be a market driven system that can identify and respond to the needs of industry, rather than only accommodating the needs of the intuitional providers and student demand.
 - Be flexible enough to cater for divergent demands of the Australian economy, ranging from schools based learning through trades and vocational training to postgraduate research with:

⁴ Minerals Council of Australia 2008 The Labour Force Outlook in the Australian Minerals Sector 2008 to 2020

- Provision of quality higher education in areas directly relevant to Australia's comparative advantage in natural resources;
 - A strong focus on improving work readiness skills, most particularly the literacy and numeracy of all school leavers;
 - Provision of schools based apprenticeships and the specific requirements of various and varying workplaces;
 - Capability of fast tracking those with pre-qualifications and/or quick learners; and
 - Provision of a range of delivery modes (e.g. online, short course, workplace based) and locations - this is especially vital for the minerals and energy industry characterised by small numbers of employees, working in remote locations, in small regional communities and often in specialist disciplines.
12. The resources sector is frustrated by governments' past inability to adequately resource and restructure education to deliver outcomes the industry and Australia require. The resource sector has been forced to fill this capacity gap at all levels by:
- Building science teaching capacity within primary and secondary schools;
 - Relying on privately-provided training because the publicly funded VET sector (TAFE) is unresponsive to the needs of the minerals and energy industry;
 - Cross-subsidising minerals and energy related higher education programs and courses; and
 - Providing career awareness through national and state-based initiatives.
13. The resources sector underpins the economy, yet has seen massive under-investment by governments in foundation undergraduate university education in fields such as engineering.
14. Disciplines of national economic priority should receive core government funding. These may include mining, metallurgical, geophysical, petroleum and process engineering, and other related science and technology curricula.
15. To ensure the priorities are appropriate a process is required to be established that seeks input from the States and Territories to review the priorities of the core disciplines. In doing so it must be recognised that the priorities will differ across the jurisdictions to reflect the industries that operate there.
16. Existing mechanisms need to be improved to predict changes in demand in advance and account for the time it takes to attract and graduate a new student.
17. There appears limited capacity at state level to identify skills needed before there is a critical shortage and currently no formal mechanisms for aligning supply and demand of graduates for the resources sector. There is an over-

reliance on lagging data. This needs to be adjusted and full cost funding provided to enable the delivery of those courses with low student numbers that are critical for the development of the sector.

18. Student choices about what to study have been the primary determinants of what type of higher education is provided, in conjunction with the government funding received for those courses.
19. Strategic engagement for universities, industry and government to inform the focus of universities at a local level is imperative.
20. Industry is best placed to form accurate views on future demands for high level skills as together with government, they will provide most of that demand. A closer alliance with the higher education sector needs to be implemented resulting in the stakeholders being more closely aligned on individual course delivery.
21. A practical example of how this can occur is demonstrated with the CME and Curtin University Memorandum of Understanding (MOU). The MOU articulates the parties intention to develop cooperative arrangements to:
 - (a) Enhance alignment between education and research outcomes with the resources industry
 - (b) Increase the quantity and quality of students that meet industry's employment and research needs
 - (c) Develop sustainable strategies for all minerals and energy related programs.
22. Many courses require industry partnerships to deliver required outcomes for professional education, including but not limited to fieldwork and practical experience.
23. Formal integration of industry expertise into teaching and curriculum development is an essential input to secure higher quality and standards. The participation of industry experts in university programs is an identified factor in student attraction and retention.
24. Universities do not currently have the ability to respond to rapidly emerging needs whether they be related to demographic changes, current or emergent skill shortages. Currently there are no incentives for universities to innovate in how they offer their courses. For universities to be able to respond rapidly to demographic changes or skill shortages, greater flexibility in funding models are required.
25. The government has established Skilling Australia to deal with VET sector. So too should there be a strategic overview of the priority areas and future demand for professionals to inform university missions. Industry should be a party to informing the overall picture or demand. There is a need for a higher coordinating role.

Opportunities to participate in higher education

26. A national approach to improving indigenous and low socio-economic status (SES) participation in higher education must start at the school level. It must not be assumed that strategies to increase participation for each of these stakeholders will be the same. The work in relation of indigenous education should be separate to that required for generally low SES.
27. Universities need to work closely with secondary schools to ensure students are aware of and have access to appropriate prerequisite subjects to enable their participation in university.
28. The lack of participation and completion by indigenous Australians in education and training is not acceptable, especially during a time when the nation is experiencing critical skill shortage.
29. The majority of leaders in the resources sector are individuals who have participated in higher education and received a science or business related degree.
30. In WA, a number of companies have identified a need to address the lack of Indigenous graduates in areas of engineering and science, with a view to increasing the Indigenous professional and leadership group within the resources industry through the 'up-skilling' of the current Indigenous workforce within the sector via a trades conversion pathway.
31. Existing Indigenous tradespeople and apprentices within the industry have been identified as a potential target group to take up engineering as a professional career, given their existing qualifications and interests; practical skills and knowledge of the resources industry.
32. CME is currently working with those member companies to create clear pathways for Indigenous apprentices and tradespeople within the resources industry into university degree programs.
33. Funding to support indigenous education requires enhancement, simplification and increased flexibility.
34. Any national approach to low SES participation must be collaborative between schools, VET and universities with dedicated funding for regional students.

Connecting with other education and training sectors

35. The benefits in articulation from university to VET as well as VET to university are established in industry more broadly. Given this, there is a need for greater understanding of the barriers that are created due to the different funding models for vocational training and higher education preventing this articulation from occurring.
36. CME supports the view of the Queensland Resources Council (QRC) in that where the two sectors should have shared missions is in their alignment to the economic needs and growth areas of the nation.

Higher education's role in the national innovations system

37. Research and development investment underpins strong economic growth for industries, and economies around the world. The WA resources sector relies heavily on research and development to remain competitive. Because of this, WA is an ideal location to enhance existing effort within the R&D arena and develop a world class resource research industry encompassing both research and education.
38. The current situation in WA is one in which minerals research and development is under resourced. Many WA R&D centres are operating on short term and inconsistent funding. While WA contributes to 45% of minerals production in Australia, only 37.5% of minerals R&D occurs in this state.
39. A gap in the minerals research market currently exists in WA. It revolves around the identification of industry led contemporary strategic research that will enhance and compliment current capability and capacity.
40. CME is currently working with the government and universities in the State to determine the most appropriate mechanism to achieve the vision for WA to be a global leader in minerals research, development and post graduate education.
41. To achieve this it is necessary to:
 - (a) Enhance capacity and capability within the State by working with the research community to increase minerals research in Western Australia to a critical mass
 - (b) Establish a strategic minerals group that will provide vision, strategy and policy for minerals research in Western Australia
 - (c) Align post graduate education with research outcomes, by increasing participation and opportunities
 - (d) Promote a collaborative approach by guiding collaboration between industry, government, and research organisations
 - (e) Promote the State's research capability by promoting Western Australia as a minerals research and education hub
42. It is not intended these efforts duplicate the existing capability and research efforts in universities around Australia but rather to identify gaps and build upon the foundations that already exist.
43. To maximise research opportunities and innovation it is necessary for the government to facilitate interstate collaboration, especially around the hard sciences and specialist disciplines.
44. The MCA through the Mining Education Australia (MEA) program have demonstrated the value of collaboration in the undergraduate environment and are expanding this to extractive metallurgy and earth science in the near future.

45. In the same way that the universities would deliver skills to the resources sector, innovation would need to align to the resources sector.

Australia's higher education sector in the international arena

46. Education services are now Australia's third largest export industry after iron ore and coal. Notwithstanding this economic contribution to the nation, it has a critical role in integrating Australia into the global economic environment though producing a multicultural workforce both internally and for the international community.

47. There are greater participation rates of overseas students in post graduate study in resource related disciplines as compared to domestic student participation rates.

48. However, a robust higher education sector also requires a high-level of local student participation and cannot exist only or largely to provide higher education to international students. The local market is important as it provides necessary education and research relevance in the context of Australian society and builds the capability of Australians.

49. While there are large numbers of international students, there is only a limited uptake of those students by the resources sector. To increase the opportunities for employment within Australia for international students on completion of their studies examination of the barriers that are created by the current visa categories should be undertaken.

50. There is no appropriate visa for an Australian sponsor to recruit overseas students and place such intake on their domestic graduate training programmes having duration of up to three years. Only shorter term visa are available which provide limited return to industry.

Resourcing the system

51. The relative reduction in public funding for Australian universities over several decades in comparison to other countries that may be considered its competitors is well documented and is of concern to the resources sector, particularly the decline in sector-specific higher educational funding as first reported in the MCA's Back from the Brink report of 1998⁵.

52. A higher education sector with the institutional capacity to ensure an ongoing supply of resource sector professionals is critical to the future of the industry and the prosperity of Australia.

53. The resources sector has demonstrated it is prepared to invest in higher education, but has observed the level of cost shifting to the private sector growing and considers this unsustainable and unacceptable.

⁵ Minerals Council of Australia Discussion Paper, Back from the Brink - Reshaping Minerals Tertiary Education, February 1998.

54. A significant rethink of the current higher education funding arrangements is required if the sector is to be able to meet the skill demands of Australian industry, and specifically the Australian resources industry into the future.
55. Although the discussion paper points to government as the current main source of university funds, the antiquated funding model has forced universities to become more reliant on other sources of income. International student fees are a large part of university funds and although Australia has been recognised as a leader in international education, other countries are beginning to challenge this. In tangent to this, there is increased competition between many universities for industry funding which is diluting the impact of industry funding.
56. The current funding model:
- (a) is antiquated and was developed for a different economic environment;
 - (b) does not reflect national priorities;
 - (c) in the case of some university courses, threatens the sustainability of courses of national priority;
 - (d) provides a financial incentive for universities to provide programs that are inexpensive to run and attract many students and conversely to close programs that are small and therefore not economic;
 - (e) does not reflect actual delivery costs; especially science and engineering courses;
 - (f) does not allow for small university departments to survive without significant university cross-subsidisation or industry support;
 - (g) does not reward industry support.
57. Overall the fixed level of government funding per place and increasing the number of government funded places is a flawed approach. Funding should be linked to outcomes. Student demand should no longer be the prime driver for the allocation of resources.
58. If the policy of the Commonwealth government is that universities must act on a commercial and competitive basis then they cannot justify delivering services in regional and remote areas, especially in the larger and more remote states such as WA. If it is also the policy of the Commonwealth government that Australians in regional and remote areas should receive at least a basic level of access to these higher educational services, then the activity must be supported at a level consistent with government policy on commercial and competitive behaviour through a transparent and accurate regional loading.
59. Unless this policy and funding paradox is resolved then rural and remote participation in higher education will continue at its current unacceptable levels.

60. Additionally, the viability of facilities such as the Curtin University Western Australian School of Mining (WASM) will be questionable. Institutions such as this are vital to addressing the skill shortage in the industry while also ensuring that graduates have the theoretical and practical knowledge required by industry.
61. Over the last decade the financial capacity of Australian universities to subsidise intrinsically high cost programs has declined due to under-indexation of the Commonwealth grants. While WASM has attracted an annual internal subsidy from Curtin University in recognition of its strategic importance as premier mining school it has become increasingly reliant on industry investment through individual companies and the Minerals Council of Australia.
62. It is imperative that government provides for funding which recognises the increasing overheads universities are experiencing, particularly when delivering industry relevant courses in regional areas to prevent the ongoing viability of these from being perpetually challenged
63. It is not intended for universities to profit from contributions from government. However, they should be reasonably funded for the legitimate costs of fulfilling its mandate and meet the expectations and needs of the nation in teaching and learning and research.
64. The level of competition is required and healthy for the sector as a whole but this should not be to the point where it impacts its capacity to make long term strategic decisions or approach minimum quality standards, through all stages of the economic and political cycle.

Governance and regulation

65. CME supports QRC's position in that it is not solely the level of regulation but the nature of regulation that should be reviewed. In considering the core functions and characteristics CME and QRC would like to see an overarching and enlightened regulatory scheme that allows outcomes to be delivered.