QRC

submission

Working together for a **shared future**

To the Department of Education, Employment and Workplace Relations

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Review of Australian Higher Education

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The Queensland Resources Council (QRC) intended to provide confidential information related to this review in the consultations leading up to this submission. However, as QRC did not have the opportunity to be involved in these consultations, this confidential information has not been included in QRC's submission.

About the QRC
QRC is a non-government organisation representing companies with interests in exploration, mining, minerals processing and energy production. It is the resource sector's key policy-making body in Queensland, working with all levels of government, interest groups and the community.

QRC works on behalf of members to ensure Queensland's resources are developed safely, profitably and competitively, in a socially and environmentally sustainable way.

The economic importance of the resources sector
The resources sector lies at the heart of the Queensland economy. It is the foundation around which modern life revolves – providing the incomes, jobs, government revenues and infrastructure services needed for much of the state's unique quality of life.

Some simple statistics attest to this claim:

- The value of minerals and energy production in Queensland is expected to exceed $40 billion in 2008-09 – consolidating the sector's position as the state's key export earner.
- The sector represents almost 20 per cent of the state's economy.
- Exploration, mining, minerals processing, energy and electricity production companies represented by the QRC are estimated to be responsible directly and indirectly for one in every eight jobs in Queensland.
- Queensland taxpayers are forecast to benefit from the distribution of $3.6 billion in resources sector royalties collected by the state government in 2008-09, the single largest own-source revenue item for the Queensland government.
- Over the past four years, coal companies have directly underwritten investments in the state's rail and port infrastructure capacity worth more than $7 billion and are currently investing around $11.5 billion in new mine developments with potential underwriting of a further $9 billion worth of coal transport infrastructure.
- Coal seam gas discoveries in southern and central Queensland are rapidly approaching a point where the go-ahead will be given for $7-10 billion liquid natural gas (LNG) export processing facilities – creating an export industry that did not exist 10 years ago
- According to a National Institute of Labour Studies report for the Minerals Council of Australia (June 2008), by 2020, Queensland's minerals industry labour force alone will grow by 53 per cent from 44,000 to 67,000 people.

Queensland is the nation's fastest growing state in population terms, and the second fastest growing economy. The minerals and energy demand 'supercycle' being driven largely by the rapidly growing economies of China and India is considered by many leading analysts to be an once-in-a-lifetime opportunity for resource-rich and export-focused states such as Queensland.

The sector is uniquely positioned in the global economic order with governments, private companies and the wider community able to actively contribute to the economic growth that will underpin the fortunes of future generations.

Amongst the greatest domestic threats to this scenario of sustainable resource sector development are skills shortages and limited government vision. Adhering to orthodoxy, potential can be squandered and the sector relegated to a bit player in an increasingly global marketplace, where clearly unsustainable development in developing countries may prosper at Queensland's and Australia's expense.

Negative impacts of poor leadership of and investment in Australia's higher education system will be borne by the declining wealth of the nation.

Industry body collaboration on response to review Terms of Reference
QRC, Chamber of Mines and Energy Western Australia (CMEWA), the Minerals Council of Australia (MCA) and the Australasian Institute of Mining and Metallurgy (AusIMM) have an established record of collaboration with each other in leadership in education for resource sector outcomes. These four organisations have consulted on their respective submissions to the review, and agreed to consult and collaborate further on future positions and recommendations and ultimately, emergent government policy. QRC would be prepared to discuss evidence-based approaches in support of the issues identified in further consultations with the department. The QRC has consulted with the University of Queensland (UQ), James Cook University (JCU) and QRC service member CQ University (CQU) in the course of developing this submission.

QRC Approach to addressing resource sector skills needs
QRC's educational strategy ranges across the entire education spectrum. Teacher professional development (TPD), for both pre-service teachers in universities and in-service teachers particularly in secondary schools, is considered an essential industry investment to having quality teaching for the resources sector in schools.

Recognising time constraints and the diverse responsibilities of teachers, the development of on-line contextualised resources in the key learning areas of maths, science, technology and studies of society and environment (SOSE) (with links to relevant Queensland syllabi) have provided teachers with access to quality teaching resources available for implementation. These resources are developed in response to both the syllabus itself and regular teacher focus groups and delivered through a dedicated website called OresomeResources.com.

QRC's paramount schools investment is in the Queensland Minerals and Energy Academy (QMEA), a partnership between Industry, the Queensland Government and 18 private and state secondary schools around Queensland. The QMEA provides opportunities to students for classroom learning to be applied to on-site experiences, enabling students to make informed decisions about career pathways in to the sector. QRC's TPD and *OresomeResources* materials further underpin the cash and in-kind investment of member companies in these schools. The QMEA is the platform on which the future industry workforce is expected to be developed.

In the vocational education and training (VET) area, industry, state agencies and unions have established the Mining Industry Skills Centre (MISC) to lead VET initiatives for the industry. MISC capability covers generic induction programs, mine readiness programs, industry workforce planning through its Heartbeat project, mine operator simulation capacity and brokerage of all state-funded mining training for VET programs directly with industry.

In the tertiary sector, QRC has been progressing consultations with a number of universities about future resource sector strategies, which directly aligns to this review. Additionally, QRC collaborates with the MCA's Minerals Tertiary Education Council (MTEC) and the CMEWA on national tertiary education initiatives designed to sustain programs that deliver critical undergraduate professional skills to the sector, such as mining engineers, metallurgists and geologists.

Complementing these educational investments, QRC runs a careers program using chosen scholarship student ambassadors who are given $10,000/annum living allowance and crafted opportunities to participate in industry conferences, vacation work programs etc. These ambassadors also undertake social networking through blogs and Facebook, highlighting their experiences as normal young people who just happen to have extraordinary experiences as they pursue careers in the resources sector.

QRC Vision for the higher education sector

QRC's vision is for fewer universities to be engaged in delivering a deeper capability in relation to the resources sector. The QRC contends that three or at most four mission lead universities in Queensland would deliver this. Mission lead universities would enhance alignment between education and research outcomes for the resources sector and increase the quantity and quality of students that meet industry employment and research needs. These mission lead universities should be apart of a national network with other state leaders particularly in Western Australia (WA) through the CMEWA. This national network would aim to build up a critical mass of capability in particular universities in which scarce resources should be centralised ensuring better capability to attract and deliver returns on investment from government and industry.

UQ is a key university for the resources sector, delivering the state's mining and metallurgical engineering undergraduate courses. UQ's commitment to the resources sector is evident in its research centres focused on the resources sector; the Julius Kruttschnitt Mineral Research Centre (JKMRC), the Sustainable Minerals Institute (SMI), the Minerals Industry Safety and Health Centre (MISHC) and the Centre for Mined Land Rehabilitation (CMLR). UQ has also recently announced the development of a School of Earth Science under the new Faculty of Science.

CQU which is located in the hub of the current resource sector boom considers the sector as a priority within its strategic plan and aims to be a desired provider of higher education within the region's resources sector. CQU is working to provide pathways of knowledge and engagement and to make a vital contribution to the central Queensland economy through revitalising the quality and diversity of university education in the region and through distance education. QRC understands that CQU recognises that the resources sector is the most significant industry in the region and is committed to working with individual companies and through industry groups such as QRC to add value to their operations.

JCU's proposed Tropical Mining Minerals and Exploration Resources Centre aims to 'marry strengths in exploration and mining geology with those of mechanical, civil, chemical and power engineering to provide a one-stop shop to train new graduates and provide a series of market driven modular short courses to up-skill industry professionals on an as-needs basis.'

QRC applauds this leadership by the separate universities above, and believes this can form the basis for a more strategic tertiary sector response to the resources sector's educational needs, both within Queensland and at a national and perhaps global level. Government policy and investment to accommodate and support such initiatives is strongly encouraged.

While the resources sector skills shortage refers to the hard engineering and science disciplines, softer skills including accounting, health and business, are also skills in demand within specific regional areas. Some QRC member companies report difficulties in attracting and retaining these types of professionals, not only due to a national shortage but because of the prospect of working in a remote location. QRC contends that universities in regional centres are strongly placed to deliver these soft skills for the resources sector. The high retention rate of graduates within regional areas, which is explored in QRC's response to discussion question 2, further supports this proposition.

Chapter 1 Higher education in modern Australia

1. **How adequate is the statement of functions and characteristics of higher education in modern Australia?**

The QRC is generally supportive of this statement of functions and characteristics. QRC would welcome further information on how these characteristics are prioritised and weighted against each other. In particular, will all universities need to aspire to each of the nine characteristics? Furthermore, how will the achievements of a university in a regional area compete with that of a Group of Eight (G8) university based in a metropolitan area?

As an industry that works with leading Queensland universities, the QRC appreciates the priority to better inform relationships and programs within those universities.

QRC considers that there is the potential for three or at most four mission lead universities servicing the resources sector in Queensland, as part of a larger national framework of peer 'resource sector' universities. This framework should build on existing collaborative structures such as those implemented by the MCA's MTEC in mining and metallurgical engineering. QRC proposes to expand on this strategy in consultation with key Queensland universities; UQ, JCU and CQU.

Universities should not have expectations to operate on taxpayer funds independently of the outcomes and benefits they deliver to the nation and its intellectual capital. Some tough decisions may need to be made and implemented to realign to the new mission lead universities. Leadership within and by specific universities within a state, regional and national context is needed to ensure more optimal use of public resources.

Section 3.1 Meeting labour market and industry needs

2. **Are there impediments to the higher education sector being able to innovate in the development of courses and programs? What are these impediments and how could they be removed?**

QRC's view is that the impediments to the higher education sector being able to innovate in the development of courses and programs are of a structural and cultural nature.

The present, fractured capability across many universities and states for the resources sector is driven by history and not national or state industry needs.

Bureaucratic high cost structures of present university operations demand efficiencies and more transparent financial structures and processes in future operating models. Overheads of more than 50 percent, apparently typical of the university sector, are unsustainable.

Sustainable funding requires the prerequisite of open and accountable business models and finances in universities. There appears to be a lack of transparency in university costs. Industry can only fund outcome-based initiatives and not the operational costs of universities.

Joint action by QRC and UQ has lead to the revitalisation of teaching and research in mining and metallurgy to support the needs of this vital industry sector. Sustainability of these initiatives requires a range of further government inputs through this review process.

Universities' strategies and program delivery need to be much more permeable to industry input, i.e. information, advice and expertise, experienced personnel, and emerging industry practice, especially in delivery of programs to students. Present programs struggle with currency of content. The resources sector is in advance of the universities in adoption and deployment of new ideas and technologies in the teaching of relevant courses. Anecdotal reports from students returning from vacation work in their undergraduate years support this. QRC is pleased to hear recently from JCU that it has a commitment to providing market driven courses with industry consultants employed as needed. CQU has also voiced a commitment to working with individual companies and the QRC to deliver outcomes to the resources sector through flexible course delivery, courses to up-skill para-professionals and work integrated learning (WIL).

Education is the domain of university management and academics. Quality and standards have important elements to industry application. New quality standards and benchmarks and performance payments should reflect industry inputs.

Formal integration of industry expertise into teaching is an essential input to secure higher quality and standards. More sophisticated communication skills are needed in relation to developing and maintaining a client base. Practices from government and industry could be incorporated into their framework.

Queensland has at least eight separate 'home' universities scattered across a very large state. While history shows that students will travel for specific programs and that universities compete on a national level for the very high achieving students, there is value in having quality universities in strategic regional centres. JCU reports that 'over 75 percent of JCU graduates are working in north Queensland following graduation.' The population base is growing rapidly along the Queensland coast and concentration of tertiary capability for the sector in south east Queensland would not be desirable. Future funding mechanisms and infrastructure investments should take this into account. CQU is situated in the strongly growing central Queensland region and JCU resides in Queensland's designated 'northern economic triangle' which includes the north west minerals province, based

around Mount Isa. According to Australian Bureau of Statistics (ABS), population growth within these regions of Queensland have been well and truly keeping pace with the Brisbane region[1].

Any changes proposed and agreed to by all stakeholders will need time to be designed and implemented, but industry and the nation needs decisive action. Government commitment to the change process will be required over the life of the review and subsequent policy implementation. A new approach to driving change within government and universities needs to be an outcome of this review.

3. What are the appropriate mechanisms at the national and local level for ensuring higher education meets national and local needs for high level skills? What is the role of state and territory governments in this area?

Outcomes based guidance is required on where individual universities establish their missions and where they choose to replicate programs available in other universities who may not share the same mission capability.

The resources sector underpins the economy, yet has seen massive under-investment by governments in foundation undergraduate university education in fields such as engineering.

Undergraduate programs of national economic priority should be core government investments. These may include mining, metallurgical and geophysical engineering, earth science and related research and development courses. In delivering these courses, government policies to support transition to retirement or 'post-retirement' of critical resources sector personnel and knowledge into university programs is essential.

Sustainable funding is required. Cost-shifting from government to the resources sector for fundamental undergraduate programs of national economic priority is short-sighted and self-defeating, dooming the nation's future potential. Government transition funding will be needed to implement change. Universities cannot reasonably do this from within their existing resources.

Strategic engagement for universities, industry and government to inform where universities focus individually equals national leadership.

The State government must play its part in ensuring that there is a capability among Queensland universities to deliver outcomes to the state's resources sector.

4. How adequate are the mechanisms for aligning supply and demand of graduates? How do pricing and labour market signals impact on student choices?

There are currently no mechanisms for aligning supply and demand of graduates. Under the current system, student choices about what to study are the primary determinant of how much and what sort of higher education is provided in the first place. The global shortage of senior staff in the academic system further impacts on the delivery and quality of courses.

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[1] According to ABS, state population growth from June 2001 to June 2007 has been 12.5% in Fitzroy, 18.6% in Mackay region, 12.6% in Northern region and 13.1% in Far North, and 14.0% in the Brisbane region. Source: Regional Population Growth, Australia (cat. no. 3218.0).

There is now a global labour market for academic and research staff and commentators have frequently raised concerns about the ability of Australian universities to attract and retain high quality academic staff in the face of increasing global competition. This is an issue for the resources sector and the nation.

One of the roles of the QRC is to work with universities and government to ensure a sustainable tertiary sector that delivers industry's needs

Specifically, sponsoring expert personnel into Registered Training Organisations (RTO) and into education institutes is on the QRC radar for 2008-09 through both the QRC careers and teacher professional development initiatives. QRC research shows that the relevance and currency of content within university teaching programs for the minerals and energy sector impacts directly on the quality of graduates available to industry. The participation of industry experts in university programs is also an identified factor in student attraction and retention to those programs. The aging workforce in the mining industry will result in a significant loss of intellectual capital from companies in coming years. This could be a positive for universities prepared to recruit such expertise.

QRC has received anecdotal reports that student's decisions to study engineering for example, are influenced by increase media coverage of the infrastructure and resources sector boom in Queensland. However, lag times apply to the situation where students note media coverage of a boom already in full-swing, then choose to enrol in the relevant degree and graduate four years later.
It is promising to see significant increases in first year enrolments in UQ engineering. The 2008 first year cohort is almost 1,000 students strong and preferences for mining and metallurgy are increasing steadily. While these developments at UQ are promising it is not a result of a mechanism aligning supply and demand of graduates in a timely manner nor is it understood to be the case for all universities. Advice from UQ suggest that this growth has been at the expense of undergraduate science degrees and that Australia's real problem is the lack of math and science qualified school leavers. Furthermore, high level representatives from industry cite that graduates only become fully functioning engineers several years after graduation. QRC contends that although pricing and labour market signals appear to have some impact on student choices, the length of lag times negate any immediate relief for skill shortages.

JCU's proposed development of a new Tropical Mining Minerals and Exploration Resources Centre proposes to manoeuvre around some of these issues by marrying strengths in exploration and mining geology with other engineering courses to provide a one-stop-shop to train new graduates for the resources sector. Focused, market driven short courses would also be provided to up-skill professionals on a needs basis. Furthermore, JCU identifies it has a large market to attract and train for the resources sector.

5. Are there particular examples of good practice where you can demonstrate either rapid response to skill shortages or successful initiatives to improve generic skills?

Universities are not by nature responsive or flexible institutions. Education can only occur in real time and hence, rapid responses to skill shortages are not possible. Higher level skills cannot be accelerated to meet immediate demand. Realistically, only adequate planning and investment for the long term can address skill shortages effectively.

Universities, industry and government should be planning to circumnavigate events like the near-death experience of UQ's mining and metallurgical engineering courses in 2004. Without this consultation and planning, future needs can not be foreseen. The government should be funding priority undergraduate courses; universities should be providing these courses through new governance with revised investment processes for industry.

There are examples of innovative and successful initiatives occurring on an isolated basis. For example, Mining Education Australia (MEA) provides a common curriculum for 3rd and 4th year mining engineering and allows students to graduate with a world-class degree, from an industry supported national program. MEA is a national education joint venture between the three major mining education providers in Australia; University of Queensland (UQ), Curtin University (CU) and the University of New South Wales (UNSW). The University of Adelaide (UA) has recently joined the program and CQUniversity (CQU) is an associate of the program.

An example of a sucessful initaitve in the energy sector is the Power Generation Skills Development Program (PGSDP) which offers professional engineers and those operating in para-professional roles the opportunity to accelerate their technical competency and fast-track their career in the power generation sector. The PGSDP aims to offer industry a larger pool of qualified staff available to meet future skill requirements. The PGSDP is an alliance between the power generation industry and CQU, UQ and the Queensland University of Technology (QUT) and aims to develop and deliver world-class postgraduate programs that meet the needs of the Australian power generation industry and its current and future workforce.

Some QRC member companies have co-operative engineering programs and engineering cadetships in place with their local university. Associate engineering degrees and bridging courses for engineering and spatial science at the University of Southern Queensland (USQ) are other examples of industry and university lead initiatives.

QRC reiterates that although these are examples of innovative and successful initiatives, they are occurring only on an isolated basis with significant leadership and investment from industry. QRC contends that it is the responsibility of government to fund priority undergraduate courses and that universities should be providing these courses through new governance with revised investment processes for industry.

6. How effectively are Australian higher education institutions responding to demographic change, especially in providing lifelong learning to meet the challenge of the ageing population and the need for upgrading of skills and re-training?

Universities do not currently have the ability to respond rapidly to emerging needs whether they be related to demographic changes, current or emergent skill shortages.

QRC is not in a position to gauge the effectiveness or performance of how all universities deliver their courses but, QRC notes that foreseeable demographic changes highlight the need to continue to attract more mature aged students wanting a career change or to up-skill.

As noted in the discussion paper, QRC has also received anecdotal reports that there will be little increase in domestic demand for higher education from the traditional school-leaver cohort in coming years should current participation patterns continue.

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 skills shortages, greater flexibility in funding and governance models are required along with greater permeability to industry input.

JCU is demonstrating foresight in demographic changes to the student population with proposals of offering shorter programs delivering specialised training or re-skilling outcomes. CQU also expresses a desire to be 'more agile' but is presently restricted by the current funding model which is based on large, static cohorts of students.

7. What is the relevance and applicability of the findings and approaches proposed in the United Kingdom (UK) paper, Higher Education at Work, for increasing skills levels in the workforce to Australia?

On preliminary reading of the document, it appears to converge and reinforce some propositions of the Australian review particularly in the greater focus on employability skills of graduates and the need for Science, Technology, Engineering and Math (STEM) courses. Particularly reinforcing is the emphasis on industry partnerships and their professional skills needs informing higher education responses.

The similarities end where it comes to the student population. Australia has a smaller population of widely distributed and thinner pools of potential students for Australian universities. This would need to be considered in any application of UK policy decisions in Australia.

Section 3.2 Opportunities to participate in Higher Education

One of the QRC's goals is to build the resources sector's capacity to sustain a highly skilled and diversified workforce. Through QRC's range of initiatives in this area, key demographics include the so-called generation Y, Indigenous people and women. QRC's Women in Resources Action Plan (WRAP) aims to increase the number of women employed in non-traditional roles within the resources sector. QRC is pleased to report an increasing participation of women in these roles along with increases in women in undergraduate engineering degrees; at present, 23 percent of UQ's third year Mining engineering class are female.

A national approach to improving Indigenous and low socio-economic status (SES) participation in higher education must start at the school level. QRC contends that there should be greater access to appropriate information about subject selection for all people to be able to reasonably aspire to a university education in whatever field they want and areas of national economic priority in particular. Naturally, particular groups will require greater support and mentoring to assist them through university.

The nation needs to ensure that the universities delivering programs to meet the needs of Indigenous and low SES groups are engaged by the schools sector to ensure that students have access to appropriate prerequisite subjects to enable their participation in university.

QRC would like to see greater involvement of Indigenous and low SES in higher education and would look to education and political leadership through schools and in universities to make this happen.

QRC sees Indigenous participation as important and has aspirations for more Indigenous people to enter into professional careers within the resources sector and ideally, to run operations in the future. Our dependence is on education at the primary and secondary level and other government social policies ensuring that there is a sufficient opportunity to get into university and participate competitively. DEEWR is currently funding the development of an Indigenous strategy by the QMEA. There may be also be opportunities to build an Indigenous workforce through the established links some universities have with Indigenous communities i.e. JCU's link with the School of Indigenous Australian Studies.

8. Should there be a national approach to improving Indigenous and low SES participation and success in higher education?

Yes, see QRC's comments under Section 3.2.

9. If you support a national approach to improving Indigenous and low SES participation and success how do you see it being structured, resourced, monitored and evaluated?

QRC makes no submission to this question.

10. What institutional initiatives have proved successful in increasing low SES or Indigenous participation and success? (Please provide information about outcomes as well as activities.)

QRC makes no submission to this question.

11. What evidence is available from institutions about the impact on individuals or groups of either failure to gain income support or the inadequacy of income support?

There is some argument that there needs to be greater policy consideration as to the whole framework around what portion students must pay for their higher education. Students who enrol in courses of national significance such as engineering and science should be in a lower Higher Education Loan Program (HELP) band. Furthermore, in this economic environment of very low unemployment, we need to appreciate the opportunity cost to the student who chooses to continue onto higher education from high school. What is the true impact of the cost to the student who pursues higher education?

QRC has received anecdotal reports from undergraduate students that the financial barriers to attending university are associated with the immediate costs of living expenses and educational expenses i.e. text books and field trips, rather than the longer term costs such as their HELP debt. Furthermore, when a student chooses to enrol in university full time, the opportunity to work full time is foregone and even part time work can be at the expense of their studies.

'When I was in year 12 and considering uni, I sat down with my family and we discussed how much it would cost for me to go to uni for four years and we worked out if we could afford it and how we would manage it. I know my mates did the same thing with their families.' 3rd year UQ mining engineering student.

Unless students are eligible for financial support to alleviate some of these immediate costs, university becomes an unaffordable pathway for some students.

QRC is not in a position to comment on the mechanisms of financial assistance available to students who are in this particular situation. However, QRC can attest to the hundreds of thousands of dollars invested by QRC member companies each year in undergraduate scholarships, academic prizes and paid vacation work.

'There are heaps of scholarships and vacation work opportunities available mainly to 2nd and 3rd year students but you don't know about these opportunities when you are making the decision to go to university so you can't weight these things into your decision to go to uni or not.'

'Since I started university, I have won a scholarship worth $10,000 per annum for the duration of my four year degree, every summer so far I have received paid vacation work and I have also received a few money prizes for academic achievements along the way.'

'You don't even think about your HELP debt because you know you don't have to pay that off for years. You don't really think about it as real debt. Regardless, when you get nearer to graduation and you can probably find an employer who will pay it off for you if you stay with them for a year or two'. 3rd year UQ mining engineering student.

Who is really paying the cost of attending university?

Section 3.3 The student experience of higher education

12. How can the quality of the student experience within Australia's higher education institutions be monitored nationally? Is there evidence that declining student: staff ratios have impacted on the quality of the student experience?

QRC would welcome the universities' advice on measuring the success of courses and the student experience. It is QRC's view that the quality of the education experience is in part related to the course's relevance to industry and the universities ability to engage industry in the development and delivery of the program. Access to industry and inclusion of industry staff and information in courses would be an important part of the student experience.

QRC would like the results of destination surveys to be public, particularly results that show if students are being employed after graduation in jobs for which they studied and if they are being retained in that industry over time. QRC would also welcome information on the student experience of women in resource sector courses.

QRC has seen anecdotal evidence that the entry requirements including the Overall Position (OP) score and compulsory prerequisites for engineering have been relaxed over the past four years to ensure a greater number of first year student enrolments. QRC has also received anecdotal reports that this is impacting what academics can teach in first year. This impacts on the quality of students' academic experience in university. In tangent with this, QRC is concerned that there are alarmingly low numbers of qualified math and science teachers in high schools. While QRC recognises the establishment of the Toowong Science and Math Academy in Brisbane, more needs to be done to address this shortage of STEM teachers and the decline of students undertaking these subjects.

13. How can the quality of learning outcomes in Australian higher education be measured more effectively?

The quality learning outcomes should be measured against industry standards and demand for graduates. Measurement should be timely and available to industry and prospective students.

14. How do institutions measure the quality of their learning outcomes and how do they know they are nationally and internationally competitive?

QRC is not in a position to directly answer this question except to say that any information should be available in a timely manner and available to prospective students and industry.

Section 3.4 Connecting with other education and training sectors

QRC considers that the concept of merging education and training sectors is a longer term strategy. QRC would want to see significant reform in the VET sector as proposed by the Australian Government's Skilling Australia and as prioritised by the Council of Australia Government (COAG) on July 3 2008. In QRC's experience of the higher education sector, improvements also need to be made here before any such merge could be considered.

In its pitch for three or four Queensland mission lead universities, the QRC is not seeking to 'colonise' any universities. QRC supports reasonable diversity in universities and that it should be sustained. In Queensland, linkages into VET and schools sector are desirable through the MISC and QMEA and other schools.

QRC supports CQU as it works even more collaboratively with the TAFE sector to further three key goals: (i) to create better lifelong learning pathways for students through the integration of work, education and training, (ii) to provide locally available higher education opportunities with a less vocational emphasis to family members and (iii) to support regional industry development initiatives including the QMEA. Good example include Anglo Coal's cadetship initiatives and BMA's Skills for Growth program which CQU has developed in collaboration with the TAFE sector in order to support the growth of para-professional occupations and the development of para-professional into fully qualified experienced professionals.

The benefits in articulation from university to VET, as well as VET to university are established in industry more broadly. The issue is quality of VET delivery and integrity of theoretical and on-the-job components that assures 'competency'.

QRC's vision is for fewer universities to be engaged in delivering a deeper capability in relation to the resources sector. These mission lead universities should be apart of a national network with other state leaders particularly in Western Australia (WA) through the CMEWA. This national network would aim to build up a critical mass of capability to develop mission lead universities in which scarce resources should be centralised ensuring better capability to attract and deliver returns on investment from government and industry.

15. To what extent should vocational education and training and higher education continue to have distinctive missions and how should these missions be defined?

The VET and tertiary education sectors should have mutual exclusivity in their delivery of education and training. Where the two sectors should have shared missions is in their alignment to the economic needs and growth areas of the nation. Both selected VET and tertiary education providers should have a strategy of delivering education and training outcomes for the resources sector.

16. Does the movement between the sectors of students with credit need to be improved? If so, in what ways?

QRC makes no submission to this question.

17. To what extent should relative provision between the sectors be planned or demand driven. What are the effects of current differences on funding, governance and regulation in limiting planning or influencing choice between the sectors?

Provision between the sectors must be demand driven on the economic priorities of the nation. Demand should not be recognised as purely driven by student choice since student choice is not a perfect selection method nor reflective of the nation's economic priorities.

We must see universities collaborating more on mission lead areas within states and across Australia. We would like to see a national resources sector capability strategically driven by MCA and state resources industry associations, enabled by the recommendations of this review.

18. Can institutions provide examples of good practices which have led to movement between the sectors with high levels of credit and good learning outcomes?

QRC is unaware of any such initiatives. These initiatives should be driven by universities and government with industry, not by industry itself.

Section 3.5 Higher education's role in the national innovation system

QRC considers that higher education's role in the national innovation system would be an element of the proposed mission lead universities. In the same way that the universities would deliver skills to the resources sector, innovation would align to the resources sector. Furthermore, channelling innovations lead by research professionals through these mission lead universities within a state, region and within the national context would ensure optimal use of public research skills and investment. In this framework of mission lead universities within a global network of universities, Australia becomes a prominent global leader in resources sector innovations. JCU has identified opportunities for collaboration nationally and internationally with key research groups through it's Tropical Mining Minerals and Exploration Resources Centre. Through this centre, JCU would also seek educational links with universities in Australia and south east Asia. UQ is presently pursuing existing and new projects in clean coal, coal seam gas and related technologies as well as developing a major centre for research and training into geothermal energy. In the broader resources area, the SMI is currently working, under instruction from the Vice Chancellor, to articulate a research strategy for energy.

19. By what mechanisms should research activities in Australian universities be supported?
QRC makes no submission to this question.

20. On what principles and for what purposes should research activity be concentrated in particular universities or types of universities?

QRC makes no submission to this question.

21. Do you believe there is a place in Australia's higher education system for universities that are predominantly 'teaching only' universities? If so, why?

QRC believes that there is potential for the proposed mission lead universities to be complemented by teaching only universities. These universities would not have the responsibility of delivering the teaching and research outcomes for the resources sector but rather, to just deliver specified teaching outcomes to the resources sector to complement the mission lead universities.

Section 3.6 Australia's higher education sector in the international arena

If there was a Queensland or national resources sector tertiary capability of mission lead universities, it should be driven by an announced government priority. QRC would like to see these mission lead resources sector universities linked into a global network that actively encourages the free flow of ideas, students and academics. See the example of JCU under section 3.5.

22. Are there any unintended consequences of the current approach to internationalisation of higher education in Australia?

QRC makes no submission to this question.

23. What is an appropriate role for government in assisting the Australian higher education system to internationalise? On what principles should this role rest and what purposes should it serve?

QRC makes no submission to this question.

24. Can you provide any examples of good practice in encouraging local students to undertake study in other countries?

QRC makes no submission to this question.

Section 3.7 Higher education's contribution to Australia's economic, social and cultural capital

In line with the concept of the proposed mission lead and regionally focused universities, QRC would want to see outcomes of the review reinforcing those roles. As raised in discussion question one, how does the international research role of the University of Melbourne (UOM) for example relate to JCU effectively delivering a resources sector workforce to the far north Queensland region or CQU strengthening the region of state and national significance? While QRC strongly endorses the approach of mission lead universities aligned to the economic development of the needs of the nation, QRC does not see that as excluding or diminishing universities' contributions in other ways to the

social and cultural profile and wealth of Australia. These priorities should also be an important part of their mission.

25. How would you define knowledge transfer and community engagement in an Australian context?

QRC makes no submission to this question.

26. Do you believe that knowledge transfer and community engagement are legitimate and appropriate roles for contemporary higher education institutions? If so, how do you see this additional role for the higher education sector blending with its traditional roles and are there limits to these additional roles?

QRC makes no submission to this question.

27. If you think that knowledge transfer and community engagement are appropriate roles for higher education institutions, how do you believe these functions should be funded?

QRC makes no submission to this question.

Section 3.8 Resourcing the system

28. What incentives or unintended consequences are there in the current arrangements for higher education funding?

Although the discussion paper points to government as the current main source of universities funds, the antiquated funding model has forced universities to become more reliant on other sources. International student fees are a large part of universities 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 as previously highlighted, is diluting the potential impact of industry funding.

Anecdotal reports from undergraduate students suggest that there could be a growing trend in the costs of attending university being passed to companies. See QRC's response to discussion question 11.

Recent moves by government to reduce the HELP debt of particular courses is not the complete solution as the financial barriers to attending university are associated with the immediate costs outlined in discussion question 11. QRC is not looking for radical change imposed on universities at a time of economic down turn. However, QRC is looking for assurance of continuing government funding which recognises the increasing overheads universities are experiencing.

29. To what extent are the current funding models adequate to secure the future of Australia's higher education sector? If there are better models, what are they?

Current funding models are antiquated as they were developed for a different economic environment and do not reflect national priorities. In the case of some university courses, the current funding models threaten the sustainability of courses of national priority such as UQ's mining and metallurgical engineering courses. Furthermore, CQU reports that the current funding models are based on large

static cohorts of students supported by intense infrastructure available in metropolitan areas. The model does not take into account costs of delivering higher education in regional centres.

Mission lead universities for the resource sector at least provide a better investment framework for industry to invest in specific universities. Currently, the potential for industry funding is being diluted with too many universities with a shallow commitment to the resources sector. As previously highlighted, universities are competing with one another for the same teaching staff and investment.

Government transition funding will be needed to implement change. Universities cannot reasonably do this from within their existing resources.

30. Are the current institutional arrangements for determining relative funding between higher education institutions appropriate? If not, what changes should be considered?

Overall the fixed level of government funding per place and increasing the number of government funded places is a flawed approach. QRC prefers the approach identified in the initial discussion paper around the concept of mission lead universities in which funding is linked to outcomes. Student demand should no longer be the prime driver for the allocation of resources or more appropriately, that student demand in non-priority areas should attract less funding or larger student contributions than for identified priority courses of national significance.

The government has established Skilling Australia to deal with the VET sector. So too should there be a strategic overview of the priority areas and future demand for professional skills to inform university missions. Industry should be a party to informing that overall picture of demand and as a part of approving missions with specific universities. There is an obvious need for a higher coordinating role.

How the university chooses to manage the funds is the concern only of the university providing the investment delivers outcomes. A revised model should enable investment in strategic priorities.

Section 3.9 Governance and regulation

31. Is it time to reshape tertiary education in Australia and streamline financing and regulatory arrangements? If so, what structural changes would you make and why?

The tertiary education sector in Australia should be charged to deliver outcomes and be held accountable for these. QRC would prefer to see less regulation and more flexibility to enable universities to establish modern management practices including accountability for outcomes, budget and reporting transparency. More sophisticated investment models conducive to philanthropy are also needed. New staffing and management practices consistent with the new mission outcomes, industry standards and practices, and workplace relations are also required. Independent boards i.e. senates should oversee these matters.

There should be less regulation particularly in micro management of inputs and the day-to-day management of universities.

All of these issues taken into account should take some of the pressure off the niche courses of typically small class sizes which are of national significance and begin to ensure their sustainability for the future i.e. mining and metallurgical engineering.

32. Is the level of regulation in the sector appropriate? If not, why not, and what should be done to reduce the level of regulation?

QRC contends 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, QRC would like to see an overarching and enlightened regulatory scheme that allows these outcomes to be delivered.

33. Does Australia's Quality Assurance Framework need revision? If so, why? What changes would you make?

Given the core functions and characteristics, the quality assurance framework should reflect these needs and the desired outcomes. Quality assurance of outcomes is desirable as apart of any strategic realignment of the higher education sector.

34. Are changes required to the Australian Qualifications Framework?

QRC makes no submission to this question.

35. Is there more that could be done to improve university governance? How should this be done?

Yes, see response to the preceding questions. QRC reiterates that management models for modern organisations are well researched in literature and that universities themselves would benefit from new governance models, management structures and practices and regimes of accountability for outcomes. This should be done by ensuring universities have the right people working within the institutions, appropriate funding and accountability.

As Australia's higher education sector is increasingly regarded as an industry in its own right, the QRC would like to see universities adopt good business practices.

Queensland Resources Council
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