To: National Resources Sector Taskforce

Dear Sir or Madam,

The Faculty of Engineering and Information Technologies appreciates the opportunity to express its views on this matter of national importance. Our key points are listed below. I would welcome the opportunity for further consultation if that would assist the Taskforce.

It is now generally acknowledged that there is a shortage of degree qualified Engineers and IT staff in Australia. This shortage places potential constraints on the expansion of the economy and the taking up of business opportunities, particularly in the resources sector. Strategies to address this shortfall will require broad approaches on a number of fronts ranging from improving participation in science and mathematics subjects in high school, to expanding participation in engineering education, to supporting the financial needs of tertiary institutions through to funding research and research training. Some of the opportunities to broaden participation from groups currently underrepresented in engineering education – women, rural, indigenous groups - are particularly relevant to the resources sector.

It may be tempting to think that some of the shortfall can be filled by those holding TAFE qualifications. Specifically in the resources sector, the roles of TAFE qualified personnel can always be expanded but the key roles of technological innovation, continuous improvement and development in the sector can only really be effectively driven by Higher Education qualified staff. Similarly, much of the research for the sector is carried out in universities.

An example of how productive the research relationship can be is the Australian Centre for Field Robotics, here at the University of Sydney. This is a world class research centre built on the close collaboration of industry and the University which meets the research needs of the resources and other sectors with a capability that is not obtainable anywhere else in Australia and few places globally. To create more world class centres of this kind, the research training and infrastructure needs of the University sector also need to be considered in the overall employment strategy for the sector.
Professional development of current Engineers is another area where significant opportunities exist. Across the engineering profession a high proportion of engineers have had no real exposure to the resources sector and struggle to see how their skills would be transferable. In some instances, while experienced engineers may have good engineering foundation skills, they may have become outdated. Ways need to be found to encourage more accredited professional development courses to allow engineers to up skill and take on wider roles in the resource sector. One option being developed by the Faculty is our recently accredited Masters of Professional Engineering. This degree is designed to support both the upgrading of skills and easy switching from one discipline area to another as students interests change or employment demands shift.

Anecdotal evidence suggests a significant amount of the shortfall is being met by imported expertise. Whilst this helps meet the immediate demand it can negatively impact the development of a local engineering and research culture. At least as important as simply boosting numbers is the need to sustain a local capability that ensures that Australian companies and universities remain able to participate intellectually - and ultimately to be effective commercially - as the sector evolves from a technical point of view.

In summary, the Faculty believes the Taskforce is positioned to make a useful contribution to addressing the shortfall in trained engineers in Australia in one of the key sectors impacted by that shortfall. It is suggested that in making that contribution the Taskforce recognises the strategic, leadership and research roles tertiary educated engineers perform and takes the broadest view of the industry with the aim to build an Australian research and technical capability that will support the future development and competitiveness of the sector.

Yours sincerely

Archie Johnston