

Faculty of Minerals and Energy

School of Engineering and Energy
Murdoch University
South Street,
Western Australia, 6150, Australia

Ph: 61- 08 9360 7227
Fax: 61- 08 9360 6346

11 August 2008

Committee Secretary
Senate Education, Employment and Workplace Relations Committee
Department of the Senate
PO Box 6100
Parliament House
Canberra, ACT 2600

Dear Sir/Madam,

Inquiry into the Effects of Climate Change on Training and Employment Needs

Thank you for inviting us to make a submission to this important inquiry.

Murdoch University is one of Australia's leading providers of tertiary education in the renewable energy and climate change field. We have been involved in research in this field for more than thirty years and we have offered courses in renewable energy, energy studies and renewable energy engineering since 1992. We currently offer a full suite of courses that address all aspects of climate change and renewable energy. They include:

- BSc in Sustainable Energy Management
- BE in Renewable Energy Engineering
- BSc in Sustainable Development
- PGDip in Energy Studies
- PGDip in Energy and Environment
- PGCert in Energy Studies
- MSc in Renewable Energy
- MSc in Sustainable Architecture
- MPhil and PhD by research in climate change or renewable energy fields.

This University has research strengths in renewable energy systems, energy management, energy policy and planning, alternative transport fuels, energy efficient building design, sustainable development and climate change impacts and adaptation.

We hosted the former Australian Cooperative Research Centre for Renewable Energy (ACRE) between 1996 and 2004 and we currently operate the Research Institute for Sustainable Energy (RISE), the national Renewable Energy Systems Test Laboratory (RESLab) and the Centre for Research into Energy for Sustainable Transport (CREST).

In addressing your terms of reference we would like to note:

1. Our courses are all available on line and externally, as well as on campus. Our students come from all over Australia and we have many international students as well.
2. Our courseware is very high quality and has been refined and developed over more than 10 years. We were funded originally by ACRE to develop this courseware for the whole country and since the closure of ACRE in 2004 we have managed to maintain it from our own resources.
3. Our capacity to expand our offerings is limited by resource constraints and we currently do not advertise our courses because of this limitation. We receive more than enough applications from internet searches and personal references. We currently have about 100 students enrolled in our courses and about 10 higher degree students in this field.
4. We are considering the offering of a postgraduate diploma in Greenhouse Accounting and Climate Science through Open Universities Australia.
5. We currently have seven academic staff working in this area but we would need to increase those numbers to around 10 in order to cope with the current level of demand for our courses.
6. We have conducted surveys of students and employers and identified the main areas of demand in relation to climate change education and have developed our courses specifically to address these needs.
7. Currently all of our graduates have good employment prospects and we are unable to meet all of the requests that we receive from employers for graduates in this field.
8. We have established international cooperation with Massey University in New Zealand and Oldenburg and Flensburg Universities in Germany and are negotiating a collaboration agreement with Loughborough University in the United Kingdom.
9. A copy of a recent paper on our approach to renewable energy and climate change education is attached.
10. Murdoch University is a core member of the National Centre for Climate Change Adaptation and we have strong teaching and research programs in this area.

We believe that the demand for climate change education will continue to grow strongly as employers seek professional people to assist them with greenhouse accounting, adaptation measures, passive solar design, energy management and microgeneration. We are well placed to cater to some of this demand but we do need Government assistance if we wish to maintain the high quality courseware and facilities as we expand. Since the demise of ACRE we have been constrained by limited resources for renewable energy training. The new emissions trading scheme is likely to produce a huge new demand in this area and we would be able to assist with training if funds were provided to develop new courseware and facilities. This should be an important part of the climate change strategy. We would suggest the establishment of several national centres for renewable energy and climate change education as part of this strategy.

We also provide assistance to the region, through cooperative teaching arrangements and on line enrolments. We also have several international students with Endeavour Awards. We would like to take more and perhaps additional Endeavour Awards could be created in this priority area.

Full details of our courses and research projects are available from our web site at www.eepe.murdoch.edu.au/areas/energy . For additional information you may contact Professor Phillip Jennings and Dr Trevor Pryor, the Senior Academic and Program Chair of Energy Studies, respectively. Their contact details are as follows:

Dr Trevor Pryor/Professor Phillip Jennings
School of Engineering and Energy
Murdoch University
Murdoch WA 6150
Tel: (08) 9360 2416 (Dr Pryor) / (08) 9360 2274 (Professor Jennings)

Yours sincerely,



Professor Parisa A. Bahri
Dean, School of Engineering and Energy

cc. Professor Phillip Jennings, Dr Trevor Pryor