

UQ-UTS team helps electricity providers plan for climate change

14 March 2012

UniQuest's Consulting and Research Division has facilitated a contract for researchers from [The University of Queensland](#) and [University of Technology Sydney](#) to collaborate on a significant climate change project.

By identifying ways power generation and supply networks can maintain services in various climatic situations, the research aims to narrow a significant gap in industry and governments' current knowledge about the potential consequences of rising average temperatures and extreme heat events on electricity infrastructure.

UniQuest is UQ's main commercialisation company and also a commercialisation partner of UTS.

UniQuest managing director David Henderson said a multidisciplinary team from UQ's [Energy Economics and Management Research Group](#) and UTS's [Centre for Energy Policy](#) would work collaboratively to investigate the "vulnerability of the power generation and supply network infrastructure under climate change scenarios".

"The [Australian government](#), the power generation industry and the universities involved will all benefit from this collaborative approach to understanding the economic impact of future climatic conditions," Mr Henderson said.

"The return on investment in this research will help governments with their policy and fiscal decision-making. A better understanding of consumer behaviour during extreme weather events will help the power generation industry adapt to changes in demand for electricity to run air conditioning and other appliances and make appropriate infrastructure investment decisions."

The [National Climate Change Adaptation Research Facility](#) (NCCARF) provided \$420,000 in funding to complete the 18-month research program. The Australian Government established NCCARF in 2007 to generate the knowledge decision makers need to adapt to the impacts of climate change.

The research will examine the adaptive capacity of existing institutional arrangements in the [National Electricity Market](#) (NEM) to existing and predicted climate change conditions.

Key analyses will focus on climate change impacts on the reliability in the NEM under various scenarios and what strategies will be needed by the power generation and supply network infrastructure to cope with climate change.

Case studies from all major electricity regions will help determine the extent that climate change and extreme weather events might have on local infrastructure and service delivery, and how effectively existing infrastructure, generating capacity and retirements could adapt to change.

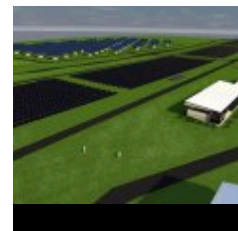
The existing UQ models replicate the NEM and the new research will also include the effects of renewable generation options. The UTS models will analyse the impacts of the water-energy

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nexus for these options.

“ For UQ and our commercialisation partner UTS, this is an opportunity for their researchers to contribute directly to addressing global issues through the transfer of knowledge and skills. The research will be led by very experienced academics, highly regarded in their respective fields, and renowned for their innovative thinking,” said Mr Henderson.

“ The Australian government’ s choice of a UQ-UTS team for the task reflects commitment, confidence and determination to deliver value on major environmental and economic issues.”

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About key members of the project team:

Professor John Foster, (Professor of Economics, UQ Faculty of Business, Economics, Law & Tourism; Program Leader, UQ Global Change Institute)

Professor Foster is Leader of the UQ Energy Economics and Management Group. He is currently engaged in CSIRO Flagship and ARC Linkage-funded research concerning the economics of innovation in emission reduction technologies and the impacts of policies to mitigate emissions. He has undertaken research in several fields on innovation diffusion processes and has expert knowledge of Australian innovation policy. He will be involved in all aspects of the project but will have a particularly strong input in the area of policy design.

Professor Deepak Sharma, (Director, UTS Centre for Energy Policy)

Professor Sharma has 30 years of professional experience in academia, and the public and private sectors in both national and international settings. He is actively engaged in teaching, research, and consulting in the energy and environmental policy fields. He has authored several articles on energy and environmental policy themes, made numerous presentations at national and international fora, and provided professional reviews and advice to many countries on a range of energy policy issues.

Professor John Quiggin, (ARC Federation Fellow, UQ Faculty of Business, Economics, Law & Tourism; UQ Global Change Institute)

Professor Quiggin is prominent both as a research economist and as a commentator on Australian economic policy. He has produced nearly 1000 publications, including five books and over 300 journal articles and book chapters, in fields such as environmental economics, risk analysis, production economics, and the theory of economic growth. Professor Quiggin’ s track record in providing research outcomes of national importance is clearly demonstrated by his recent work for the Garnaut Climate Change Review. His report “ The Implications for irrigation in the Murray-Darling Basin” provided the bulk of work presented in the Garnaut Review on the effects of climate change on agriculture.

Dr Liam Wagner, (Post-Doctoral Research Fellow, UQ Faculty of Business, Economics, Law & Tourism)

Dr Wagner’ s research expertise relates to the economics and modelling of energy markets. He also has considerable hands-on experience as an energy trader on the NEM. He has been appointed to two Commonwealth Government expert panels which provide advice on emissions trading and renewable generation technology deployment. Dr Wagner will be involved with the examination of experimental data produced during the project. He will also provide input to policy design and to conveying and explaining the implications of this research for electricity generation. Dr Wagner has demonstrable expertise in this area and a functioning modelling platform for this purpose.

Mr Craig Froome, (Program Manager – Clean Energy, UQ Global Change Institute)

Mr Froome is a Researcher and Program Manager for Clean Energy within the Global Change Institute. He is a member of UQ’ s Renewable Energy Technical Advisory Committee and the School of Economics’ Energy Economics and Management Group with his research focusing on scenarios relating to the deployment of renewable energy under existing and proposed government policy. He has undertaken a number of projects on behalf of both government and

non-government bodies.

Dr Suwin Sandu (Researcher, UTS Centre for Energy Policy)

Dr Suwin Sandu is a researcher in the Centre for Energy Policy at UTS. Prior to joining UTS, he has worked with the Australian Bureau of Agricultural and Resource Economics (ABARE) for four years where he contributed to energy policy research. He has authored a number of research reports on energy and environmental issues.

About [UniQuest Pty Limited](#)

Established by The University of Queensland in 1984, UniQuest is widely recognised as one of Australia's largest and most successful university commercialisation groups, benchmarking in the top tier of technology transfer worldwide. From an intellectual property portfolio of 1,500+ patents it has created over 70 companies, and since 2000 UniQuest and its start-ups have raised more than \$450 million to take university technologies to market. Annual sales of products using UQ technology and licensed by UniQuest are running at \$3 billion. UniQuest now commercialises innovations developed at The University of Queensland and its commercialisation partner institutions: the University of Wollongong, University of Technology Sydney, James Cook University, University of Tasmania, Mater Medical Research Institute, and Queensland Health. UniQuest also provides access to an expansive and exclusive network of independent academics to tailor a consulting or project R&D solution to meet the diverse needs of industry and government, facilitating some 500 consulting, expert opinion, testing, and contract research services each year. UniQuest is also a leading Australasian provider of international development assistance recognised for excellence in technical leadership, management and research. Working with agencies such as AusAID, NZAID, the Asian Development Bank and the World Bank, UniQuest has developed and implemented more than 400 projects with 60+ countries throughout the Pacific, South-East Asia, the Indian sub-continent and Africa.

About the [UTS Centre for Energy Policy](#)

The Centre for Energy Policy (CEP) addresses contemporary energy and environmental policy issues in national and international contexts. Energy market reforms, environmental policy options, and energy-economy interactions are key areas of focus. Research undertaken in the Centre is policy-oriented, applied, and cross-disciplinary, emphasising the weaving together of technical, business, economic, legal, social, political and philosophical dimensions of energy, environmental and economic policies.

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