



**Queensland University of Technology**  
Brisbane Australia

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## Three theories and a process: Engaging community

### **ABSTRACT**

This study describes a successful dialogue process to explore community attitudes in connection with the use of zero or low emissions coal power involving the underground storage of carbon dioxide as a means of reducing greenhouse gas emissions. There are several broad aims and objectives of the research. Firstly, to develop a dialogue process that engages a number of community audiences and stakeholders (individuals and groups) who hold a range of opinions on the solutions to greenhouse gas emissions and climate change mitigation. Secondly, to understand the range of perspectives and potential reactions (negative and positive) of these stakeholders (individuals and groups) to the potential solutions and in particular the notion of underground storage of CO<sub>2</sub> as a greenhouse gas mitigation strategy. Finally, to determine the strategies that will be most effective in engaging individuals, community and interest groups in future dialogue or interaction that will enable the greenhouse gas mitigation and climate change debate to move forward. In this study, better knowledge of the dynamics of psychosocial relationships and communication between individual stakeholders and stakeholder groups contributes to increased understanding of the issues under investigation. The key findings of this study indicate that the public can be engaged in dialogue on the issue of carbon capture and storage and low emission technologies that does not engender adverse reactions but is seen as useful and informative and can potentially lead to behaviour change in relation to energy use. The process used to engage the public is critical to the public's reaction.

### **KEYWORDS**

Dialogue process, climate change, attitudes, behaviour, CO<sub>2</sub> emissions, community engagement

### **BACKGROUND CONTEXT TO THE RESEARCH**

Australia currently has a cost effective power supply based on abundant and well-managed fossil fuels. However, Australia's dependence on fossil fuels, principally coal, has led to increased greenhouse gas emissions. The growth in energy demand compounds this dilemma with a gap in supply and demand developing (Energy Task Force, 2004; IEA Reference). As a result there is a need to explore new technologies that are able to supply energy efficiently while reducing greenhouse gas emissions. Research into "low emission technologies" has the potential to transform the efficiency and environmental

performance of all coal fired electricity generation. It is motivated by a desire to develop and use Australia's rich endowment of energy resources in ways that generate the maximum economic, social and environmental benefit to Australia, without compromising Australia's material well-being and international competitiveness.

Research into low emissions electricity is focused on technology solutions (Horowitz, 2004; Siero, Bakker, Dekkar & van den Berg, 1996). Generally, technology solutions work towards meeting the imperatives of sustainability without impacting on society. However, technology alone cannot change energy behaviour. The best technology is useless if it is not taken up by society and social risk has the power to delay or even halt the implementation of a new technological process (Ref?). In short, society can have a fundamental affect on the market for technology solutions and raises a key question about the role of society in developing a low emissions future for Australia.

Over the past decade, there has been a large body of research examining the economic, technological and environmental aspects of low emissions coal power involving the underground storage of carbon dioxide to reduce greenhouse gas emissions (Holloway, 1999, 2001; Marland et al., 2003; Pervaiz & Sain, 2003; Pruess et al., 2003; Sims, Rogner & Gregory, 2003). Recently, public reaction has started to appear in the popular press but there is limited research in existence that examines the social impacts of such technology. For example, very little is known about public attitudes and potential behaviours to the sighting of CO<sub>2</sub> storage facilities, perceptions of the associated risk by the public, the politics of sequestration and the associated social dynamics.

Research has shown that on-going dialogue among stakeholders and proponents of new technologies is increasingly seen as a way of understanding the underlying social

concerns. These concerns will be influenced by existing regulatory regimes, the degree of public trust in the mining industry, and the degree of public trust in the research being undertaken. As the research progresses, the extent of financial, personal and corporate investment increases. Different stakeholders will influence decisions about whether to continue investing in which technologies (Littleboy, 2004). Opportunities to enter into a dialogue and engage with stakeholders is thought to help manage social risks associated with a project, that is, the risk that projects will be delayed or terminated because of community or regulatory objections (Harding 1998) and help to ensure projects sustainability.

There are several broad aims and objectives of the research. Firstly, to develop a dialogue process that engages a number of community audiences and stakeholders (individuals and groups) who hold a range of opinions on the solutions to greenhouse gas emissions and climate change mitigation. Secondly, to understand the range of perspectives and potential reactions (negative and positive) of these stakeholders (individuals and groups) to the potential solutions and in particular the notion of underground storage of CO<sub>2</sub> as a greenhouse gas mitigation strategy. Finally, to determine the strategies that will be most effective in engaging individuals, community and interest groups in future dialogue or interaction that will enable the greenhouse gas mitigation and climate change debate to move forward.

### ***Three Theories***

Recent research has demonstrated both the difficulties and advantages of using a wide variety of attitudinal and behavioural strategies within the general area of energy conservation and efficiency (Abrahamse, Steg, Vlek & Rothengatter, 2005; Geller, 2002;

Poortinga, Steg, Vlek & Wiersma, 2003; Poortinga, Steg & Vlek, 2004; Renn, Webler et al. 1995). For example, early examples of science and technology transfer such as the introduction of genetically modified foods in some countries and the sighting of toxic waste dumps in Canada and the United Kingdom failed (Renn, Webler et al. 1995). Poortinga, Steg and Vlek, (2004) examined the role of values in the field of household energy use using the concept of quality of life (QOL) and found values contributed significantly to explanations of policy support for government regulation and for market strategies aimed at managing environmental problems as well as to the explanation of the acceptability of specific home and transport energy-saving measures that reduce societies CO<sub>2</sub> emissions.

The challenge of mobilizing society to change behaviours around energy is a global problem. Social and environmental psychology and communication theory can aid our understanding of likely public attitudes and behaviour, influences on attitudes and perceptions, people's emotional adjustment to a changing environment and the assessment of environmental risks (Dake, 1992; Hallman & Wandersman, 1992; Hogg & Cooper, 2002). These approaches also provide insights into ways of encouraging attitude and behaviour change using either applied behavioural analysis or processes of social interaction and persuasion, at the individual level, or by shifts in social identity at both the individual and group level. Behavioural interventions, at the individual level, include such things as information campaigns, prompts, modelling, incentives and feedback (McMakin, Malone, & Lundgren, 2002; Staats, Harland, & Wilke, 2004). Social interaction interventions, at the individual and group levels of analysis, include social incentives and

the use of cognitive dissonance (Iyer, Kempton & Payne, 2006; Schultz, Oskamp & Mainieri, 1995).

***Communication accommodation theory***

Communication accommodation theory is a framework used for analyzing the modifications in communication style that people make during interactions, as well as the underlying motivations and their consequences. Modifications may include changes in speech style, nonverbal communication such as dress and discourse styles such as the use of jargon or slang. A central tenet of this theory is that people may choose to modify their communication styles to achieve goals such as approval or signal in-group and out-group membership (Hogg & Terry, 2000). Understanding this theoretical framework can, for example, assist communicators (scientists, government officials, industry spokespeople, etc) to make adjustments in their use of jargon, style of dress, ways they present information, etc to accommodate to the general public or target audience, thereby improving the chances of effective communication. It may also assist the people in the target audience to change negative pre-conceived ideas about scientists, government instrumentalities or industry bodies and identify them as members of their “in-group” therefore being more willing to hear what they have to say. Therefore, social identity plays a focal role in communication accommodation processes (Gallois, Giles, Jones, et al, 1995) and is relevant to understanding social relations within communities and organisations.

***Social Identity Theory***

The social identity approach is an extremely effective theoretical framework for understanding people’s reactions to and perceptions of the social impact of issues, including reactions to change, power relationship dynamics, community engagement and

increasing permeability across silos (Gardner, Paulsen, Gallois et al., 2001; Pisarski, Callan, Bohle, 2002). It should also be invaluable in understanding the social impact of CO2 sequestration.

Research has found that people, especially those with weak attitudes, will act in a manner that is inconsistent with their attitude, dependent on aspects of the context or situation, especially situations with an implicit social norm (Calder & Ross, 1973; Lavine, Huff, Wagner & Sweeney, 1998; Terry, Hogg & Duck, 1999). In other words, under certain circumstances people will change their behaviour in spite of the attitudes they hold. Terry and her colleagues (1996; 1999; 2000) drawing on social identity theory, demonstrated that a person's attitudes are more likely to become behaviour if those attitudes are norms held by a social group that the person identifies with. The concept of social identity theory (SIT) is very relevant to creating dialogue within communities and groups and is, therefore, helpful for the focus of this research. SIT has been described as a theory of dynamic and generative interdependence of self concept and inter-group relations (Hogg & Abrams 1999). In short, it is an individual's knowledge that they belong to certain social groups, together with the emotional and value significance they place on their group memberships (Tajfel and Turner 1986; Gallois and Giles 1998; Abrams 1999). SIT focuses on explaining how individual behaviour is influenced by the group both between groups and within the group. Knowledge of the groups that people identify with can help us to understand people's reactions and perception to social issues (Gardner et al., 2001), like climate change and its mitigation strategies. When people identify strongly with a particular group their individual differences are minimized and the in-group norms become more salient (Terry, Hogg et al. 1999; Hogg and Terry 2000). For example, the

more a member of the public identifies with Greenpeace as the in-group, the more he or she will feel distinct from out-group members, who might be defined as ‘environmentally unfriendly’. Where for example, this person doesn’t hold any view on climate change (weak attitude), identifying with environmentalists as a group should cause them to be more willing to adopt a range of greenhouse mitigation strategies, providing they label these strategies as environmentally friendly. In a study by Siero, Bakker, Dekker and van den Burg (1996), for example, which examined energy consumption behaviour in a metallurgy company, developing an intervention based on social identity theory resulted in sustained energy conservation, regardless of peoples original attitudes to energy consumption.

***Personality as a Moderator of Attitude and Behaviour***

A number of personality characteristics or traits are thought to remain fairly stable across a person’s life (Gruza & Goldberg, 2007). For example, characteristics such as extraversion or introversion, positive and negative affect (i.e. optimism or pessimism, ‘seeing the glass half full or half empty’) and internal or external locus of control (i.e you control life events or life events control you). Some research has indicated that people who are consistent in their answers on a personality inventory on characteristics, such as those mentioned above, were more likely to also be consistent in their behaviour (Vaughan & Hogg, 2002). For example, if people score high on extraversion they are more likely to act in an extraverted manner (Vaughan, 1977, Vaughan & Hogg, 2002). Research exploring the impact of mood, habits, and degree of control has also been shown to influence individual’s behaviour (Oskamp, 1984; Paglia & Room, 1999; Smith & Stasson, 2000; Triandis, 1977). For example, Smith and Stasson (2000) found strong emotions such as



anger impair juror's attention and judgement. Smokers may well hold the attitude that smoking is bad for them but continue to smoke from habit, especially when they feel they have little control over their behaviour (Oskamp, 1984; Triandis, 1980). In examining this range of personality characteristics we could infer for example, that people who hold a pessimistic view of the world and have an external locus of control may feel very strongly that they cannot do anything about climate change as governments control the agenda. People may for example, run their air conditioners at 21 degrees Celsius out of habit. Understanding these moderators can assist in the development of a range of strategies to change people's behaviour. For example, legislation may be more effective in bringing about change with the pessimistic, external locus of control people with high energy demand habits. People with a more optimistic world view with an internal locus of control may respond better to reason and persuasion through dialogue.

### *Cognitive Dissonance Theory*

The theory of social cognition suggests that if we can change a person's beliefs about something we are likely to change their attitudes as a result (Manis, 1978). Festinger's (1957) cognitive dissonance theory states that when we are exposed to information that is incongruent with previously or currently held beliefs it is likely to bring about discomfort or dissonance and therefore attitude change (Festinger, 1957; Festinger & Carlsmith, 1959). For example, if I ask my children to recycle because it is good for the planet, an espoused belief, yet out of tiredness throw a can that can be recycled in the rubbish (against my stated beliefs), and my children see me, I may feel a degree of guilt that potentially at least can cause me to make the effort and put the can in the recycle bin, causing my dissonance or discomfort to diminish. Policy makers can utilize this theoretical

framework by creating cognitive dissonance in society. An example, might be providing feedback on energy use to those who see themselves as energy conservationists. If people see they are not as good at conserving as they think they ought to be or indeed thought they were, the dissonance created should result in a reduction in demand by that person for energy. Important research by Bittle et al. (1979, 1980) supports this and shows that feedback on energy consumption may be effective at reducing energy consumption for high users but when the same feedback is provided to low energy users, their energy consumption increases, suggesting that feedback needs to be specifically targeted. Kantola, Syme & Campbell (1984) in a Western Australian study of household energy consumption also showed that cognitive dissonance theory can reduce energy consumption for high users.

These changes in attitude will be mediated by the cognitive effort or attentive scrutiny of the message's content. According to Echabe and Castro (1999) changes in people's attitudes are mediated by the cognitive effort or attentive scrutiny of the persuasive message's content. The stronger the cognitive effort invested in processing the persuasive message's content, the more likely an attitude change will occur. Moreover, discussion groups promote a stronger cognitive effort in comparison to individual thinking (Echabe & Castro, 1999:29). This is especially true when processing of the message leads to predominantly favourable thoughts (Petty and Cacioppo, 1986), for example, the resolution of a problem or greater understanding of an issue.

### ***Communication frameworks***

The communication frameworks discussed above have the advantage of situating the participants of this study within their social networks, they emphasize the extent to

which and how people talk to each other about CO2 sequestration. Using these frameworks assists the researchers to understand how people frame their thinking, and allows a more in-depth understanding of how people react to messages as individuals, as well as how they talk about the issues within their in-groups, which in turn frames how they perceive out-groups. With communication between intergroup members as one focal variable, this study investigates how the various target groups communicate and change their identities and hence their attitudes and behaviour in relation to CO2 sequestration and other more popular mitigation strategies. In this study, better knowledge of the dynamics of psychosocial relationships and communication between individual stakeholders and stakeholder groups contributes to increased understanding of the issues under investigation. This way of examining attitudes and behaviour is a unique contribution that communication accommodation, social identity and cognitive dissonance theories offer to this research.

### ***The Process of Dialoguing***

The value of the theoretical frameworks outlined above is that they can provide a way for developing a dialogue process that maximizes the likelihood that people will examine their beliefs and attitudes and be more willing and able to listen to unbiased information that will enable them to make more intelligent choices and contribute more meaningfully to public debate and dialogue surrounding climate change and greenhouse gas emission reduction strategies.

According to Weeks (2000), conventional avenues for public engagement, such as public meetings, citizen taskforces and advisory boards, tend to engage people with a specific interest in whatever the topic of discussion is. Gaining knowledge from people

with an interest in the topic while useful, offers a skewed view of the variety of opinions contained in the broader general public. The OECD (2001) recommends engaging the public is a sound investment and good governance that helps to build trust in government and the quality of democracy.

Public opinion, however, does not necessarily equate to informed opinion with Weeks (2000), believing that ordinary public opinion tends to be uninformed, superficial and transient. However, citizens are demanding greater transparency from governments and want more participation in shaping policies that affect their lives (OECD, 2001). Some well-documented methods of community engagement that operate on informing public opinion to gain more active participation in decision making include deliberative democracy and citizens' juries (Weeks, 2000; Woodward, 2000). There are many examples of successful engagement both in Australia and overseas such as Crookwell Wind farm, Visy Industries, The first Australian Consensus Conference and the Plymouth Hoe Citizens Jury. However, understanding why these examples have been successful is slightly more difficult to determine because of the complexity of factors involved and a plethora of theoretical perspectives. The OECD (2001) sets out a number of guiding principles for successful engagement and these include: commitment, rights, clarity, time, objectivity, resources, co-ordination, accountability, evaluation and active citizenship. Many of these have been taken into consideration in the design of this study.

This study examines the effectiveness of group discussions and dialoguing with expert scientists as a way of participating in a debate and potentially modifying previous attitudes or practices. The work of Wegner (1986) for example, suggests that groups can be regarded as systems of social memory in which the various members of the group

have fragments of the overall memory. In an effectively interacting group, members pool their memories creating a whole that is more than the sum of the parts. Using this process groups are able to offer a greater range of views, produce more extensive arguments and reasoning than any single individual, hence the greater potential for attitude change (Echabe & Castro, 1999) and effective inclusion of the public in finding and committing to greenhouse gas mitigation strategies.

***Participatory Action Research: dialoguing and community engagement***

This process is not only based on the aforementioned theoretical frameworks but also uses participatory action research as a dialoguing process. Participatory action research has emerged in recent years as a significant methodology for intervention, development and change within communities and groups. It is now promoted and implemented by many international development agencies and university programs, as well as countless local community organizations around the world.

According to Wadsworth (1998), Participatory Action Research (PAR) is research which involves all relevant parties in actively examining together, current action (which they experience as problematic), in order to change and improve it. They do this by critically reflecting on the historical, political, cultural, economic, geographic and other contexts which make sense of it. Participatory action research is not just research which is hoped will be followed by action. It is action which is researched, changed and re-researched, within the research process by participants. Nor is it simply an exotic variant of consultation. Instead, it aims to be active co-research, by and for those to be helped. Nor can it be used by one group of people to get another group of people to do what is thought best for them, whether that is to implement a central policy or an organisational or service

change. Instead it tries to be a genuinely democratic or non-coercive process whereby those to be helped, determine the purposes and outcomes of their own inquiry. (Wadsworth, 1998)

Research in PAR is ideally by local people for local people. Research is designed to address specific issues, identified by local people, such as strategies for mitigating greenhouse gases, and the results are directly applied to this issue. PAR proceeds through repeated cycles, in which researchers and the community start with the identification of major issues, concerns and problems, initiate research, originate action, learn about this action and proceed to a new research and action cycle. This process is a continuous one. Participants in Action Research projects continuously reflect on their learning from the actions and proceed to initiate new actions on the spot. Outcomes are very difficult to predict from the outset, challenges are sizeable and achievements depend to a very large extent on researcher's commitment, creativity and imagination. (Dick, 2002; McNiff, 2002; Reason & Bradburym, 2001)

Participatory action research (PAR) is in part effective because it provides time and space for discussion and reflection which can contribute to a common understanding of complex issues such as new technologies (Schon, 1985). PAR has been described as an iterative, context-dependent approach that focuses on human values, experiences and beliefs. PAR creates conditions for the development of knowledge, theoretical development and social improvements through reflective practice (Greenwood & Levin, 2003). Such cyclical learning events promote change in individuals and communities and are advantageous in that they create new knowledge about complex issues (Dick & Dalmau, 2003) such as management of demand and supply of energy. This change occurs

because of the emphasis placed on a particular situation or context, and the ability of PAR to bring stakeholder values and preferences into the deliberative process, especially with respect to potentially difficult issues (Flyvbjerg, 2001). Using a participatory action framework would enable potential users of energy to engage in meaningful dialogue which combined with other approaches can create a venue for challenging and changing their attitudes and behaviours.

## **METHODS**

### ***Workshops as a Process of Engagement***

A prospective and longitudinal design was used to collect data. The design consisted of a series of twelve half-day workshops to capture participants' knowledge, attitudes and opinions on a range of mitigation strategies including carbon capture and storage and environmental issues. The data gathered consisted of a Time 1, 2 & 3 questionnaire, videotapes of workshops to capture non-verbal behaviours of participants, demonstrating their individual responses to the interventions, and audio tapes of the entire workshop. This process provides an opportunity to frame the intervention using Social Identity Theory and Communication Accommodation Theory by allowing the participants time to reflect and react to the information in their social networks. The researchers can then assess any changes in attitudes and behaviours as a result of participants' reflections and reactions to both the formal information and more informal interaction with peers and presenters.

#### ***Pre-Workshop Phase:***

The CSIRO provided a scientist with a background and knowledge of climate change and greenhouse gas mitigation strategies who was willing to participate in the

project; one researcher acted as the workshop facilitator and the other as observer/note taker. The researchers provided training for the scientist in communication skills for presenting to different workshops audiences based on Communication Accommodation Theory. The relationship between a spokesperson and different groups is crucially important, and handling of information can be delicate in what can be described as a potentially volatile situation. Therefore, training to enhance the skills of the scientist spokesperson and using an experienced group facilitator are critical to facilitate communication in the workshops.

### **Workshop Phase:**

Participants were seated in a semi-circle, then given a short 10-minute introduction about the project, the objectives and aims of the process. The purpose of this phase was to start building rapport and trust with participants, explain the purpose and format of the workshop, and set the agenda for the coming 4 hours.

Participants then completed a 15 minute Time 1 survey containing items such as:

- Demographics (sex, age, ethnicity, occupation, dependents, socio-economic group, geographic location, etc)
- Political attitudes to the environment and environmental issues
- Sources of information accessed (television, newspapers, radio, internet, magazines, scientific reports, interviews with scientists, etc.) and level of trust of these sources
- Knowledge of CO<sub>2</sub> sequestration and related issues (e.g. global warming, greenhouse gases, etc)
- Social identity and social network measures



- Preferred channels of communication and information reception

Step 3 involved a 40 minute controlled interactive discussion aimed at finding out participants' knowledge of the topic and their expectations of the session. At the same time the observer (researcher) recorded whom participants talked to, who dominated conversation and who was given credibility. The purpose of this phase was firstly to act as a relationship building exercise both with the facilitators and with each other in order to start a process of engagement. Secondly, we wanted to gain some understanding of participants' knowledge, attitudes and current behaviour in relation to environmental issues and to give participants an opportunity to voice their opinions to others in the group. Facilitating this interaction conveyed to participants that we were genuinely interested in their opinions and to determine who, if any, were the opinion leaders within the group.

In step 4, participants were then presented with information in a variety of forms including video, radio, face-to-face presentation by an 'expert' scientist and written information (7.30 Report on Climate Change; Radio National, Earthbeat; Financial Review; WWF; and CSIRO scientist presentation). A variety of media channels were chosen to reflect the preferred ways that people receive information. The purpose of this phase was to present participants with accurate information on which to form informed opinions. Varying the media and keeping each segment short maximised the attention of participants and their engagement with the materials and with the scientist. Throughout the one hour session participants were encouraged to ask questions and express any concerns they held. The television program set the agenda and focused participants' attention on greenhouse gas emissions and their potential consequences. The radio

segment focused attention on the issue of over-reliance on a single source of energy generation and its potential consequences. The scientist's presentation gave participants' unbiased information of a more global picture on greenhouse gas emissions, sources of energy production, and their relative cost and benefits. It introduced various low emission technologies, with a specific focus on the potential role of carbon capture and storage in reducing greenhouse gas emissions. The final WWF paper presented an evaluation of the potential issues surrounding carbon capture and storage. Ensuring the scientist's availability and willingness to answer questions was designed specifically to encourage a dialogue of engagement in which participants would know that their questions and opinions were both valid and valued.

Participants were given a 30 minute break in which food and beverages were served. The purpose of this phase was to encourage informal interactions between the participants and between participants and the scientist. Participants were then involved in a final 1 hour interactive discussion followed by a 15 minute Time 2 questionnaire. The purpose of this phase was to gain information on the ways participants like to be engaged, any changes in their opinions that occurred and why, future intentions and the factors that influence those intentions, and evaluation of the half-day workshop.

***Post Workshop Phase:***

Finally, a follow up time 3 survey was mailed to participants 30 days after attending the workshop, to examine the robustness of any change in opinions from the workshops.

***Participants***

Recruitment of participants was through a variety of sources. These included word of mouth through social and professional networks, other Universities, Faculties and Centres, community centres, retirement villages, community radio advertising, UQ Update (electronic newsletter), and through targeted environmental groups. Some of the organisations contacted included the Local Government Association of Queensland, Brisbane City Council, Department of Primary Industries, Greening Australia, Queensland Conservation Council; Wilderness Society, Friends of the Earth, Roche Mining, Rio Tinto, Hatch, Queensland Mining Council, Parks and Wildlife, Environmental Protection Agency, Australian Mining and Workers Union.

Participants consisted of 95 people drawn from groups thought to represent the Australian general public, i.e. society at large. Participants were chosen to reflect differences in socioeconomic, relationship and employment status, occupation, gender, age, urban and rural, culture, union affiliation, scientific background and environmental and political interests. Selection of participants in the workshops, where possible, reflected sensitivity to the dynamics involved in mixing people of different gender, ethnic background, professional, educational and political persuasion (e.g. environmentalist versus non-environmentalist). The groups were also selected to reflect participant's social identities where possible. The groupings shown in Table 1 represent either stakeholder groups or groups it was thought might respond differently to the range of greenhouse gas mitigation strategies based on their age, socioeconomic status, geographic location, family responsibilities or stage in the life cycle. All are representative of the general population.

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Of the 95 people that participated in the workshops, 60% (n=57) were female and 40% or 38 were male. Forty-five percent were aged 18-29, 18% were aged 30-40, 15% in the 41-50 age group, 17% aged between 51-65, and 6% 66 years or older. Participants were mostly full-time workers (32.6%) or full-time students (24.2%) followed by part-time or casual workers (15.8%). Seven percent were retired, 7% self-employed, 6% unemployed, 4% engaged in home duties and 2% part-time students. The majority (53.7%) of participants had a partner, 41% were single, 4% separated or divorced and 1% widowed. Although most participants (76.8%) had no dependent children the rest had between 1-3 dependent children. Amongst those respondents with dependent children, the average number of children was 2. Participants included both white-collar and blue-collar workers and a broad spectrum of occupations (e.g. farmers, laborers, teachers, receptionists, nurses, artists, telemarketers, engineers, journalists, managers, pharmacist, medical research scientists, sales assistants, soil scientists, academics, trade unionists and miners). Employed participants worked for a variety of organisations including government and non-government, profit and not for profit, small, medium and large organisations. A sample of these organisations included universities, CSIRO, medical laboratories, Environmental Protection Agency, building companies, real estate agencies, primary and secondary schools, hospitals, mining companies, trade unions and manufacturers. The majority of participants (approximately 70%) had English as a first language and were first, second or later generation Australians. Other nationalities and 1<sup>st</sup> languages included Chinese (Mandarin), Cypriots, Danes, English, Fijians, Germans, Greeks, Indians, Indonesians, Irish, Italians, Japanese, New Zealanders, Nigerians,

Norwegians, Poles, Scots, Serbians, Singaporeans, Sri Lankans, Thais, Vietnamese, and Zambians. Workshop participants had some environmental knowledge but were generally not well informed with issues surrounding energy supply, greenhouse gas emissions, CO2 sequestration and mitigation strategies.

### ***Methodology and Analysis***

The half-day workshops were designed as a process of engagement to facilitate the capture of the participants' knowledge and experience. To capture the information arising from the workshops a number of data collection methods were required. Firstly, all workshops had two researchers in attendance: one to facilitate the process, while the second acted as an observer and note taker. Secondly, each of the workshops was audio and video taped and then transcribed and coded thematically. Surveys were used to collect quantitative information and to assist in identifying changes in knowledge and attitudes before and after the information session. The video recordings were important in capturing non-verbal behaviour and group dynamics.

Quantitative methods were used to test the hypothesized relationships between variables and to evaluate change in behaviour over time. The Statistical Package for the Social Sciences (SPSS) was utilized for the quantitative analysis. Changes in attitude as a result of the intervention were assessed through repeated measures t-tests. This analysis provides a fine-grained appraisal of change over time by comparing change in both individual cases and the sample over time. Sample sizes for time 1, time 2 and time 3 were 95, 95 and 59 respectively. This represents a response rate of 100% at Time 1 and Time 2. Only 59 participants completed and returned the Time 3 survey, representing a 62% response rate at time 3.

Survey responses were tabulated and analysed differently depending on the nature of the question. Questions for which respondents chose one or more options (e.g. age group, yes/no questions) are tabulated with frequencies and/or percentages. Questions that involved ratings on a 7-point scale (from 1= strongly disagree to 7 = strongly agree) are tabulated with mean scores. For analysis, the survey questions were divided into five groups, which reflected questions that were unique to each of the time 1, time 2 and time 3 surveys, questions that were repeated across the time 1 and time 2 surveys, and questions that were repeated across all three surveys. For questions repeated across surveys, the presence of significant changes over time was assessed via repeated-measures t-tests. Additional analyses were conducted to identify whether there were any differences between those participants who completed all three surveys and those who completed only Time 1 and Time 2. Separate analyses were conducted to identify any difference.

As a central concern of this project is dialogue and engagement, qualitative methods were used to provide a deeper understanding of the nature and meaning of engagement and to evaluate the workshop process and outcomes. Data from the workshops were analyzed in two ways. First, content analyses identified the key concepts and their correlates. Secondly, thematic analysis, a data organisational tool, identified the scope and range of ideas, attitudes, and beliefs in the transcripts using the language of the participants. A more in-depth textual data-mining tool Leximancer, was used to map the most salient network relationships in the data. Thematic analysis helps the researcher to identify the range and scope of themes and to group comparable themes. Leximancer facilitates the researcher to determine the most important concepts, as measured by their

networks in the text. Social network and changes in social networks were analysed using the video analysis. Video analysis of 11 groups was used to triangulate and confirm relationships found in both the quantitative and qualitative analyses.

### ***Ethics***

The research was granted ethical clearance and adhered to University and the NHMRC guidelines for the ethical conduct of research at all times.

## **RESULTS**

### ***Demographic Differences***

Analyse were performed to examine potential demographic differences due to age and gender. Age group was re-coded into 2 groups – 18-29 years and 30 years and over. The sample size was insufficient to allow more fine-grained distinctions between age groups. Younger respondents were more likely to be single ( $p<.001$ ), and more likely to be students ( $p<.001$ ). Younger people were generally more trusting of the information they gained from a variety of sources. Younger people were more likely to state that they didn't want to have to think about environmental issues after the workshop. Older people reported different patterns of media usage to younger people. Older people were more positive about several aspects of the information provided in the workshop, and had a more positive reaction to workshop information presented in radio format.

Gender and age difference were found in the quantitative data. Males were less prepared to consider environmental issues than females, both before and after the workshop. Females held more “socially responsible” attitudes, both about environmental and other issues. These differences were maintained after the workshop. Females were more interested in gaining further information, and were more supportive of community

engagement strategies suggested after the workshop. Females reported more behaviour change as a result of the workshop. These differences may reflect real attitudinal differences, or a greater tendency for acquiescence bias in women, or both.

### ***Attitudes to Low Emission Technologies***

The video analysis indicated that the behaviour of almost all participants indicated that the information presentation phase was the one in which they voiced more of their opinions and had the greatest involvement. Whilst there were exceptions, most of the participants were 'involved' in the process. Participation was more active for some and more passive for others, however, virtually all showed respect for the facilitators and the workshop process, whether or not they were actively involved in discussion.

Qualitative analysis identified three themes of particular salience to participants. These themes were seen as the most significant to participants and included: carbon capture and storage as a new technology and other options or alternatives; the risks and costs of investing in sequestration; and the public having a voice (engagement). The thematic and survey analyses cast light on participants' beliefs and opinions in relation to these areas.

### ***Carbon Capture and Storage as a Low Emission Strategy***

The qualitative analysis identified that carbon capture and storage was the topic most salient to participants across the whole workshop. The thematic analyses identified that across all groups there was support for the use of carbon capture and storage as an interim strategy. This support was not enthusiastic, however, but more as a practical solution to a difficult problem as expressed in the following quote:

*I think I would support it [carbon capture and storage] because we're going to continue using it [coal], I mean if we don't use it [carbon capture and storage],*



*we're going to use coal anyway and there's going to be gas going into the atmosphere so we have to try and stop it, that's the real thing. If it [CO2] leaks out, than it leaks out. It's going to be out in the atmosphere anyway if we don't do it. So we can try – it's better than just letting it go out there in the first place*

All groups were concerned or suspicious that industry, if given the green light to use sequestration, would use it as a long-term strategy.

*The risk is whether an interim thing turns into long-term thing. It has to be monitored – it depends on the kind of regulation that is laid down. Letting industry regulate itself, which is obviously a pretty dangerous thing to do. Industry can get out of control.*

The Leximancer and thematic analysis showed that in every group some people admitted they were somewhat fearful of this potential strategy as exemplified in the following quotes:

*Just like the way they introduced cane toads and things like that, they just do it to experiment and half the time they don't know what the consequences are going to be and to put all that money and time, building pipes and factories to do all that, and destroying the environment while they are doing it, they are going to destroy something in a different way.*

*Yeah. I don't think it's the long-term type of solution. Until it is implemented though you don't know what problems are going to be there? As in anything else they've tried new, sort of, I'm just thinking about it from a scientific point of view where they do research into it and as far as they can see it isn't a problem but there's always unforeseen things and its also you don't know exactly how its going to go. Like you say you can make projections and models but until it happens nothing.*

### ***Short Term Alternative Strategies***

Apart from recognition that carbon capture and storage is a potential interim strategy most groups (n=8) wanted to also suggest a conservation strategy, of educating the public to use less electricity. Other strategies suggested included using a mix of fossil fuels and renewables (n=4), continue the R&D for renewables (n=4), increasing the price of electricity to force conservation (n=3), diversifying so we don't rely too heavily on any one energy supply (n=3) and developing more energy efficient buildings, cars and appliances (n=2). Two groups wanted to invest only in renewable energy and divert all funding to this one option. One group thought it important to stress that nuclear energy was not an option.

### ***Long-term Energy Strategies***

Overwhelmingly, people would like the long-term focus to be on developing sustainable renewable technologies, particularly solar energy. However, they also stressed the role of education, having a diversified strategy and bringing energy generation closer to the public as typified below.

*...I think the longer term really needs to focus on renewable resources that seem to be, particularly in Australia, the sun side of it. So a) we've got to try and make that more economical to use and secondly, obviously try and solve this system of storing it or doing something with it that we can cope with the periods that there is going to be a shortage of it. That obviously is the room we'd like to be in, in the end. ...Other longer-term strategies include educating the public to use less electricity, using diverse energy sources and increasing community responsibility by bringing energy generation closer to the public.*

### ***Changes in Attitudes and Beliefs in Time 1 to Time 2 Surveys***

Changes in attitude as a result of the workshops process were assessed through repeated measures t-tests. The time 1 mean equals the average rating at time 1 (on a 7 point scale from strongly disagree to strongly agree). The time 2 change equals the average increase in individual's ratings from time 1 to time 2. A negative number

represents an average decrease in ratings. Significant changes from time 1 to time 2 for all 95 participants are included in this phase of the quantitative analysis.

The first three questions in Table 2 below were placed in the survey to act as an indicator of whether any change was directly a result of the workshop process. As these beliefs were not discussed in the workshop no change should have occurred in the means. As can be seen there was no significant change in the means of these items implying that we can have confidence that any change in means can be attributed to the workshop process.

As indicated by item 6 in the table below, participants showed a relatively high level of concern in relation to global warming at time 1, which significantly increased by the end of the workshop. Items 21 and 22 indicate participants wanted more information about global warming at time 1 but this need had decreased after receiving information throughout the workshop. Participants agreed that greater legislation was probably required to encourage the development of new energy technologies, which increased as a result of the workshop. The workshop discussions increased people's belief in the need for research, especially in relation to solving the technical problems associated with producing renewable energy. There was a strong belief initially that all homes should use solar energy where possible. This belief weakened as a result of information participants received on greenhouse gas emissions from the production of solar panels. Providing participants with information on energy consumption due to air conditioning usage also resulted in a strengthening of the belief that Australians should reduce their use of air conditioners and should try harder to save energy. At the end of time 2 participants were

more favorably disposed to the notion that coal should be used to generate electricity today.

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 Insert table 2 about here  
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***Measures Repeated Across Time 1, Time 2 and Time 3***

To allow comparability between mean ratings at all time points, only cases at times 1 and 2 that match the time 3 data are included in the following tables. “Completers” are those 59 respondents who participated in all three phases of the survey process. “Non-completers” are the 36 respondents who completed surveys at time 1 and time 2, but not at time 3. Completers were more likely to be older than non-completers ( $p < .05$ ). Completers were more likely to watch more television, especially the ABC. Completers were less concerned about CO<sub>2</sub> emissions before and after the workshop than non-completers. Non-completers reported a higher preference that their opinions be sought on environmental issues. These results might in part be explained by the notion that people who began the process with higher levels of concern about environmental issues may have been more likely to be “overwhelmed” by the workshop content, and therefore less likely to engage in the time 3 survey. Overall, there were very few differences between completers and non-completers, which suggest that the time 3 responses are generally representative of the entire sample of people who began the survey process.

***Time 1 – Time 2:*** Immediately after the workshop respondents were more concerned about global warming and less positive about solar energy. They were more supportive of coal as a source of energy and more likely to agree they have enough

information about global warming. Participants tended to be more positive about existing legislation and legislation requirements, and more likely to agree that Australians should try harder to reduce energy consumption. As well as reduce the use of air conditioners.

*Time 1 – Time 3:* At the follow-up survey, compared to pre-workshop responses, respondents were more concerned about CO<sub>2</sub> emissions and global warming. They continued to be less supportive of solar energy and were more supportive of wind farms and gas as alternative energy sources. Participants were also less likely to think they needed more information about global warming, and more encouraging of research into renewable energy. Overall, there appears to be some rebounding of attitudes following the workshop, with many attitudes influenced by the workshop altering back towards their former levels. There are some notable exceptions to this trend – e.g. concern about CO<sub>2</sub> emissions, support for solar energy, and support for wind farms all continued to increase, whilst need for information on global warming continued to decrease.

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 Insert table 3 about here  
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***Engaging Community: Public opinions and attitudes on carbon capture and storage***

Workshop evidence demonstrated that the general public had very little knowledge and understanding of carbon capture and storage, unless they belonged to a particular interest or lobby group. In fact, only one or two members of the public displayed any knowledge of carbon capture and storage and these were people either researching in coal technologies or working in the area of sustainability. Even those people who were members of environmental groups such as Friends of the Earth, WWF and Greenpeace or involved in environmental protection or sustainable development had not heard of the concept.

Although coal was seen as less favourable when compared with renewable energy sources, very few people in the workshops actually expressed the opinion that coal was “bad”. Evidence from the workshops showed that people were interested in learning about the associated risks and benefits of CO<sub>2</sub> sequestration as well as gaining an understanding of how the science behind it works. Participants believed that there is probably a case for ongoing research into the technology however it was felt this should not be at the expense of renewables. Most workshop participants while recognizing that carbon capture and storage is a potential interim strategy wanted to also suggest a conservation strategy of educating the public to use less electricity and the probable need to use a mix of fossil fuels and renewables.

Overwhelmingly, workshop participants expressed the view that they would like the long-term focus to be on developing sustainable renewable technologies, particularly solar energy. However, they also stressed the role of education in reducing usage, having a diversified strategy and bringing energy generation closer to the public. Interestingly, after the workshop respondents were more concerned about global warming and less positive about solar energy. They were more supportive of coal as a source of energy and more likely to agree that Australians should try harder to reduce energy consumption. However, at the end of the workshop, 70% of participants stated their willingness to pay more for electricity if it reduced global warming but only 30% were willing to double the cost of their electricity bill.

The workshop analyses identified that across all groups there was support for the use of carbon capture and storage as an interim strategy. However, in every group some people admitted they were somewhat fearful of this potential strategy and support was not enthusiastic and rather seen as a possible practical solution to a difficult problem. All groups were concerned or suspicious that industry, if given the green light to use sequestration, would use it as a long-term strategy.

Our analysis showed that the scientist’s presentation was the most powerful segment; gave participants’ unbiased information of a more global picture on greenhouse gas emissions, sources of energy production, and their relative cost and benefits.

## **DISCUSSION AND CONCLUSION**

This study used communication accommodation, social identity and cognitive dissonance theories as the theoretical lens through which the study was developed. It used these theoretical frameworks and participatory action research to create a dialogue process. This approach creates an imperative for planning for people's reactions to and perceptions of community engagement and the impact of CO<sub>2</sub> sequestration as a potential low emission strategy. It places a focus on the process of engagement rather than the content of engagement. In using these approaches emphasis is placed on ensuring that participants perceive they are valued members of an in-group in which they have knowledge to contribute to understanding the issue and their reactions to it. They are active contributors to knowledge. Social identity theory in this instance situated the participants wherever possible within their social networks, therefore encouraging people talk to each other about the topics of discussion and build trust and rapport with each other, the facilitator and scientist.

Communication accommodation theory was used as a framework to ensure modifications in communication style were made by the facilitators and scientist during interactions to foster a sense of trust and build rapport with the group. Applying this theoretical framework, for example, assisted scientists to make adjustments in their use of jargon to accommodate to the general public, thereby improving the chances of effective communication. Cognitive dissonance theory was used to encourage participants to examine their existing attitudes and opinions and potentially modify them.

The outcome of the workshops was that participants engaged with the process and modified their attitudes and opinions through exposure to the materials presented. The purpose of the workshop was to engage, inform and to gain participant's knowledge

which participants also saw as the purpose. Workshop participants were positive in their evaluation of the facilitator, scientist, the information provided and the venue. The total package of information was rated as most useful.

The main strengths of this research are in the theoretical frameworks used in designing the workshop process as outlined above, and therefore, its research design. The research design for this study gathered both qualitative and quantitative data across multiple workshops and from multiple sources (general public and key stakeholders) using a participatory process. The quantitative workshop survey data was gathered longitudinally across three phases enabling the researchers to track changes in opinions and attitudes and the robustness of those changes. Using three forms of qualitative workshop data (audio and video transcripts and notes) and three forms of analysis of this data (content, thematic and data mining) enabled the researchers to triangulate this data and determine the most important themes and concepts within the data as well as identify key differences within and across groups of workshop participants.

The main limitation of the research design is the relatively small number of participants and the fact that workshop data was gathered predominantly in only two sites (Brisbane, Qld & Northern NSW). The results may be generalisable to these two Australian regions but care should be taken in extrapolating the findings to the rest of Australia. In particular, it should be noted that Queensland is a centre for coal mining activity and this may have influenced the opinions of participants to some extent. The findings do suggest, however, the importance of engaging in community dialogue using this process and provides a tool to potentially ascertain and inform views of low emission technologies and the role they play in greenhouse gas mitigation.



The tool is also potentially useful in assisting those engaged in community engagement, especially around highly politically sensitive topics, to gain public trust and understand the public's position in relation to these topics and provide the public with information that is more likely to be accepted. The process enables the public to gain accurate information and have their views heard in a way that has a chance of being accepted. It enables public debate to occur while minimizing the risk of the agenda being hijacked by those with a personal agenda. It therefore potentially provides decision makers with an invaluable community engagement tool.

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**Table 1 Workshop Participant Breakdown**

Targeted Group Type	Actual Group Type	N	Location
Retirees	Retirees	10	Ballina NSW
Unemployed & Blue Collar Workers	Unemployed & Blue Collar Workers	4	Ballina NSW
Students	Postgraduate Students	7	Brisbane Qld
Young professionals	Young professionals (White and Blue Collar) & unemployed	9	Brisbane Qld
Environmental activists	Environmental activists & people with an interest in the topic	11	Brisbane Qld
30-40 year olds with kids	30-40 year olds with kids & environmental activists	5	Brisbane Qld
Professionals with an Interest in the topic	Professionals with an interest in the topic	12	Brisbane Qld
Scientists	Scientists & Professionals with an interest in the topic	5	Brisbane Qld
Mine workers, trade unionists	Mining workers, trade unionists & People with an interest in the topic	6	Brisbane Qld
40-65 year olds	Scientists & 40-65 year olds	8	Brisbane Qld
People with an interest in the topic	People with and without an interest in the topic	8	Brisbane Qld
People with an interest in the topic	Scientists & people with an interest in the topic	10	Brisbane Qld

**Table 2: Changes in Attitudes and Beliefs in Time 1 to Time 2 Surveys**

Beliefs	Time 1	Time 2
	Mean	Change
1. Australia should not become a republic	3.28	-.06
2. Australia should be more compassionate towards illegal immigrants	5.28	.05
3. The Australian government currently does enough for disadvantaged Australians	3.05	.25
4. I believe there is a single solution to Australia's energy needs	2.27	.08
5. I am concerned about the amount of carbon dioxide being emitted from industry	5.58	.26 <sup>+</sup>
6. I am not concerned about global warming	2.68	-.76***
7. I believe the government should be regulating industry in the area of carbon dioxide emissions	5.88	.16

<b>Beliefs</b>	<b>Time 1 Mean</b>	<b>Time 2 Change</b>
8. I would not be willing to pay more for electricity even if it reduces the effects of global warming	2.77	.29
9. I think cars should be powered by non-petrol sources such as solar energy or gas	5.73	.18
10. I think all homes should use solar energy if possible	6.19	-.54***
11. I would be willing to double what I currently pay for electricity if it reduces the effects of global warming	4.33	.06
12. I believe the 'Great Barrier Reef' is endangered	5.72	.09
13. I think tree clearing by Australian farmers contributes to greenhouse gas emissions	5.58	.25*
14. The salinity in Australia's soil will create problems for future generations of Australians	6.22	.03
15. Coal should be used to generate electricity today	3.40	.34 <sup>+</sup>
16. Wind farms are not a viable source of electricity generation yet	3.62	-.08
17. Gas is an unstable source of power generation	3.64	.12
18. Nuclear power stations are a better source of electricity supply than coal fired power stations	3.55	-.16
19. I think planting more trees would help to absorb carbon dioxide from the atmosphere	6.06	.17 <sup>+</sup>
20. I think carbon capture and storage is a good way to reduce greenhouse gases	4.44	.23
21. I have enough knowledge about global warming	2.78	.58**
22. I need more information about global warming	5.94	-.46**
23. Australian governments have enacted legislation that will lead to the development of new energy technologies	3.68	.35*
24. Greater legislation is required to encourage the development of new energy technologies	5.58	.51***
25. The government should encourage research that will solve the technical problems associated with producing renewable energy	6.23	.36**
26. I think Australia should continue to get energy from traditional sources such as coal mines	2.92	.27 <sup>+</sup>
27. Australians should try harder to save energy	6.15	.32**
28. Australians should reduce their use of air conditioners	5.01	.56***

<sup>+</sup>p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001

Note: Ratings made on a 7-point scale from strongly disagree to strongly agree; higher scores represent more agreement.

Note: Positive changes over time reflect average increases in ratings; negative changes reflect average decreases in ratings.



**Table 3: Beliefs about attitudes change**

Belief	Mean Rating			Change Over Time		
	Time 1	Time 2	Time 3	T1 to T2	T2 to T3	T1 to T3
Australia should not become a republic	3.34	3.19	3.14	-0.15	-0.05	-0.20
Australia should be more compassionate towards illegal immigrants	5.36	5.46	-	0.10	-	-
The Australian government currently does enough for disadvantaged Australians	3.05	3.46	-	0.41	-	-
I believe there is a single solution to Australia's energy needs	2.19	2.44	1.93	0.25	-0.51*	-0.26
I am concerned about the amount of carbon dioxide being emitted from industry	5.29	5.56	5.95	0.27	0.39 <sup>+</sup>	0.66*
I am not concerned about global warming	2.93	1.9	2.34	-1.03***	0.44*	-0.59*
I believe the government should be regulating industry in the area of carbon dioxide emissions	5.69	6.07	6.02	0.38*	-0.05	0.33
I would not be willing to pay more for electricity even if it reduces the effects of global warming	2.75	2.98	2.73	0.23	-0.25	-0.02
I think cars should be powered by non-petrol sources such as solar energy or gas	5.85	5.93	5.75	0.08	-0.18	-0.10
I think all homes should use solar energy if possible	6.22	5.72	5.19	-0.50**	-0.53**	-1.03***
I would be willing to double what I currently pay for electricity if it reduces the effects of global warming	4.39	4.37	4.46	-0.02	0.09	0.07
I believe the 'Great Barrier Reef' is endangered	5.56	5.64	-	0.08	-	-
I think tree clearing by Australian farmers contributes to greenhouse gas emissions	5.51	5.72	-	0.21	-	-
The salinity in Australia's soil will create problems for future generations of Australians	6.27	6.35	-	0.08	-	-
Coal should be used to generate electricity today	3.47	3.93	3.71	0.46*	-0.22	0.24
Wind farms are not a viable source of electricity generation yet	3.80	3.49	2.92	-0.31	-0.57**	-0.88***
Gas is an unstable source of power generation	3.73	3.88	3.25	0.15	-0.63**	-0.48*
Nuclear power stations are a better source of electricity supply than coal fired power stations	3.66	3.35	-	-0.31	-	-
I think planting more trees would help to absorb carbon dioxide from the atmosphere	5.92	6.1	-	0.18	-	-
I think carbon capture and storage is a good way to reduce greenhouse gases	4.59	4.81	4.41	0.22	-0.40*	-0.18
I have enough knowledge about global warming	2.75	3.37	-	0.62**	-	-
I need more information about global warming	5.8	5.27	5.12	-0.53*	-0.15	-0.68***
Australian governments have enacted legislation that will lead to the development of new energy technologies	3.68	3.86	-	0.18	-	-
Greater legislation is required to encourage the development of new energy technologies	5.46	6.1	-	0.64***	-	-
The government should encourage research that will solve the technical problems associated with	6.12	6.57	6.59	0.45**	0.02	0.47*



**Table 3: Beliefs about attitudes change**

Belief	Mean Rating			Change Over Time		
	Time 1	Time 2	Time 3	T1 to T2	T2 to T3	T1 to T3
producing renewable energy						
I think Australia should continue to get energy from traditional sources such as coal mines	2.95	3.37	3.34	0.42*	-0.03	0.39 <sup>+</sup>
Australians should try harder to save energy	6.14	6.42	6.27	0.28 <sup>+</sup>	-0.15	0.13
Australians should reduce their use of air conditioners	4.86	5.44	5.10	0.58**	-0.34*	0.24

<sup>+</sup>p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001

Note: Some specific items were not repeated at Time 3.

Note: Ratings made on a 7-point scale from strongly disagree to strongly agree; higher scores represent more agreement.

Note: Positive changes over time reflect average increases in ratings; negative changes reflect average decreases in ratings.