

2.3 Southern tablelands wind farm perceptions survey



Epuron Pty Ltd

Gullen Range Wind Farm

Prepared by ERM and Reark Pty Ltd

*Report on Community Perceptions towards Wind Farms
in the Southern Tablelands, New South Wales*

Reference: 0069605RP1

October 2007

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For
Epuron Pty Ltd

Prepared by ERM & Reark Pty Ltd

October 2007


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Gullen Range Wind Farm

Report on Community Perceptions towards Wind Farms in the
Southern Tablelands, New South Wales

Epuron Pty Ltd

Prepared by ERM & Reark Pty Ltd

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This report was prepared in accordance with the scope of services set out in the contract between Environmental Resources Management Australia Pty Ltd ABN 12 002 773 248 (ERM) and the Client. To the best of our knowledge, the proposal presented herein accurately reflects the Client's intentions when the report was printed. However, the application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. In preparing the report, ERM used data, surveys, analyses, designs, plans and other information provided by the individuals and organisations referenced herein. While checks were undertaken to ensure that such materials were the correct and current versions of the materials provided, except as otherwise stated, ERM did not independently verify the accuracy or completeness of these information sources

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EXECUTIVE SUMMARY

Much of New South Wales is in the grip of long-term drought. As a consequence, there has been growing public concern towards global warming and measures that can be undertaken to reduce its effects. In response to these concerns, there has been Federal and State government response in terms of initiatives and policies directed at addressing global warming through the examination of the use of clean alternative energy. One of these clean alternative energy options, is the establishment of wind farms.

The study area covered the Goulburn – Crookwell – Yass region, an area within the Southern Tablelands that has high wind speeds and therefore has potential for wind energy projects. The proposed Gullen Range wind farm site is within this study area and is located to the south west of Crookwell. The respondents in this study were located in small urban and rural locations within the immediate vicinity of the proposed Gullen Range wind farm; further west towards Gunning and Yass, to the north west at Binalong, to the east towards Crookwell and to the south east towards Goulburn. The study to ascertain the wider regions view towards wind farms was conducted from the 27th of July and concluded on the 2nd of August 2007.

Within the study area, there is an existing wind farm, known as Crookwell I, located to the immediate east of Crookwell township and an approved wind farm Crookwell II, to the immediate south of Crookwell I. Further approved wind farms are located to the south east known as Walwa-Gunning and Cullerin Range. Located further to the west, to the west of Yass, is the approved wind farm at Conroys Gap.

At the beginning of the study, it wasn't known just how much respondents knew of these wind farm projects, what they knew of wind farms, what the wind turbine that populated and powered them looked like, or know what it actually did. This study examines community perceptions towards renewable wind energy, derived from wind farms, for the region of south east NSW and establishes baseline data on community perceptions in the study area.

The outcomes from this study show:

- 80% of respondents are concerned, right now, with the threat of global warming and its impact on the environment. 16% said they were unconcerned.
- Awareness of wind turbines was very high. Almost all respondents had seen a wind turbine and almost 9 in 10 claimed to have actually seen one. More than 8 in 10 had seen the Crookwell wind farm.
- In terms of the local rural area, 90% of respondents were aware of announcements of wind farms to be built in the Southern Tablelands.
- 89% of respondents were in favour of wind farm projects being developed in the Southern Tablelands, 5% were opposed and 83% of respondents stated *"I would be happy to see a wind farm built on farm land near where I live"*.
- When respondents were asked regarding the acceptability of a wind farm near where they lived, 87% supported a wind farm within 25 kilometres, and 71% of respondents favoured a wind farm within one kilometre of their home.

- In considering multiple wind farms 75% accepted two 'typical' wind farms (15 to 80 turbines) in their local rural area (17% opposed).

In response to introducing the concept of multiple 'typical' (15 to 80 turbines) wind farms in the local rural area, respondents accepted 76% one typical wind farm, with three typical wind farms accepted by 64%.

This study shows the adult residents in the survey area are concerned about global warming and are aware of the alternatives available. The study also shows respondents know and understand what a wind turbine is, how wind farms appear in the landscape and are supportive of them.

Moreover when it comes to locating wind farms, respondents are not adverse to having them in their immediate locality, and a majority still approving of a wind farm within one kilometre of their home.

It is suggested that respondents feel the creation of wind farms is positive and this study shows that many are prepared to embrace them in their local area.

These outcomes are remarkably consistent with results from other surveys conducted both within Australia and overseas and a clear pattern is emerging on the acceptance of wind farms in rural communities.

INTRODUCTION

In early July 2007, Environmental Resources Management Pty Ltd (ERM) was commissioned by Epuron Pty Ltd (Epuron) to conduct research to determine the attitudes of the community to wind farm developments in the Southern Tablelands NSW, and in particular relation to the proposed Gullen Range Wind Farm.

To assist in the formulation of the study, the analysis of the data and the organisation of the telephone interviews ERM engaged Reark Pty Ltd, a firm specialising in market research and public opinion surveys.

ERM has observed in other wind farm projects, communities that are supportive of wind farms have been represented to be against wind farms during later stages of the project.

Subsequently, Epuron wished to establish some formative research on attitudes to wind farms in the area proposed for the Gullen Range Wind Farm to provide a benchmark and a record of community attitudes.

1.1

THIS STUDY

The broad goal of this study was to provide a benchmark measure of the attitudes of residents in the local rural environment, to the creation of a wind farm in that environment close to where they now live.

The study sought to explore the communities' perception of wind farms. In past Australian and overseas studies this has generally been high, however it was hypothesised that community attitudes to wind farms were also bound to attitudes to global warming and the perceived urgency of the need to adopt alternative clean energy sources, one of which is wind power, as a means of ameliorating the impact of global warming.

As these issues have increased in the public's awareness, it was also hypothesised that the public's approval ratings of wind farms may have increased from that published in earlier research studies, which still showed a significant proportion of people were in favour of wind farms in all but the most sensitive of landscapes.

1.2

RESEARCH OBJECTIVES

The following research information objectives were the focus for this study:

- Level of community concern with the issue of global warming and perceived responses to this threat;
- Perceptions of clean energy sources and personal preferences;
- Awareness, knowledge and perceptions of wind turbine generators, wind farms and wind farm projects in NSW;
- Perceived benefits and advantages/disadvantages of wind farms;
- Attitudes to the construction of wind farms in terms of the trade off between clean energy and landscape; favour/oppose wind farms in the south east region NSW; perceived need for wind energy and perceptions of location close to home;

- Awareness and assessment of wind farms planned for the local region and sources of information concerning news of wind farm projects;
- Perceptions of proximity in wind farm location in the landscape and in relation to one another; and
- Suitable NSW landscapes for wind farm location.

Appendix A: Research Methods contains details of the research method employed including a summary of the sampling procedure employed and the call statistics arising from the sampling implementation and fieldwork. This analysis identified the need for 300 telephone interviews to provide a sufficient numerical basis for the statistical analysis on which the outcomes of this study are founded.

These information objectives were incorporated into the questionnaire employed in this study. A copy of the questionnaire may be found in *Appendix B: Questionnaire*.

The study was to concentrate on residents within the Goulburn – Crookwell – Yass region of the Southern Tablelands, an area that had been identified as an area suitable for wind farms including the potential site for the Gullen Range Wind Farm, located to the South West of Crookwell, NSW.

1.3 *THE SURVEY AREA*

The survey area was selected as it bounds a region with a high potential for wind energy projects, including an existing wind farm and numerous planned projects. It also includes the area in which the proposed Gullen Range Wind Farm is proposed. The survey area for this study was a collection of urban and rural localities situated in the Goulburn – Crookwell - Yass region of the Southern Tablelands NSW. Figure 1.1 shows a map of the survey area from which respondents were contacted.

1.4 *STUDY TIMING*

The study was conducted from the 27th of July and concluded on the 2 August 2007. The survey was conducted after the Gullen Range wind farm project was announced to the local community.

1.5 *EXISTING WIND FARMS*

A wind farm is presently located the south east of Crookwell known as Crookwell I. This wind farm was commissioned in 1998 and is expected to be expanded upon with an approved adjacent wind farm located to its immediate south east to be known as Crookwell II. It is noted here that the Crookwell I turbines are considered to be ‘older’ in type 45 metres tall to a 44 metre blade diameter, and differ to those proposed for the recently proposed wind farms including the Gullen Range project.

Other sites have also been the subject of planning applications including Walwa-Gunning and Cullerin Range to the north east and east of Gunning respectively and Conroys Gap wind farm located to the west of Yass, see Figure 1.2 for further details.

An important aspect of this study is to assess the awareness of these projects and to ascertain the extent that this knowledge allows residents to assess the anticipated impact of wind energy and wind farms in particular.

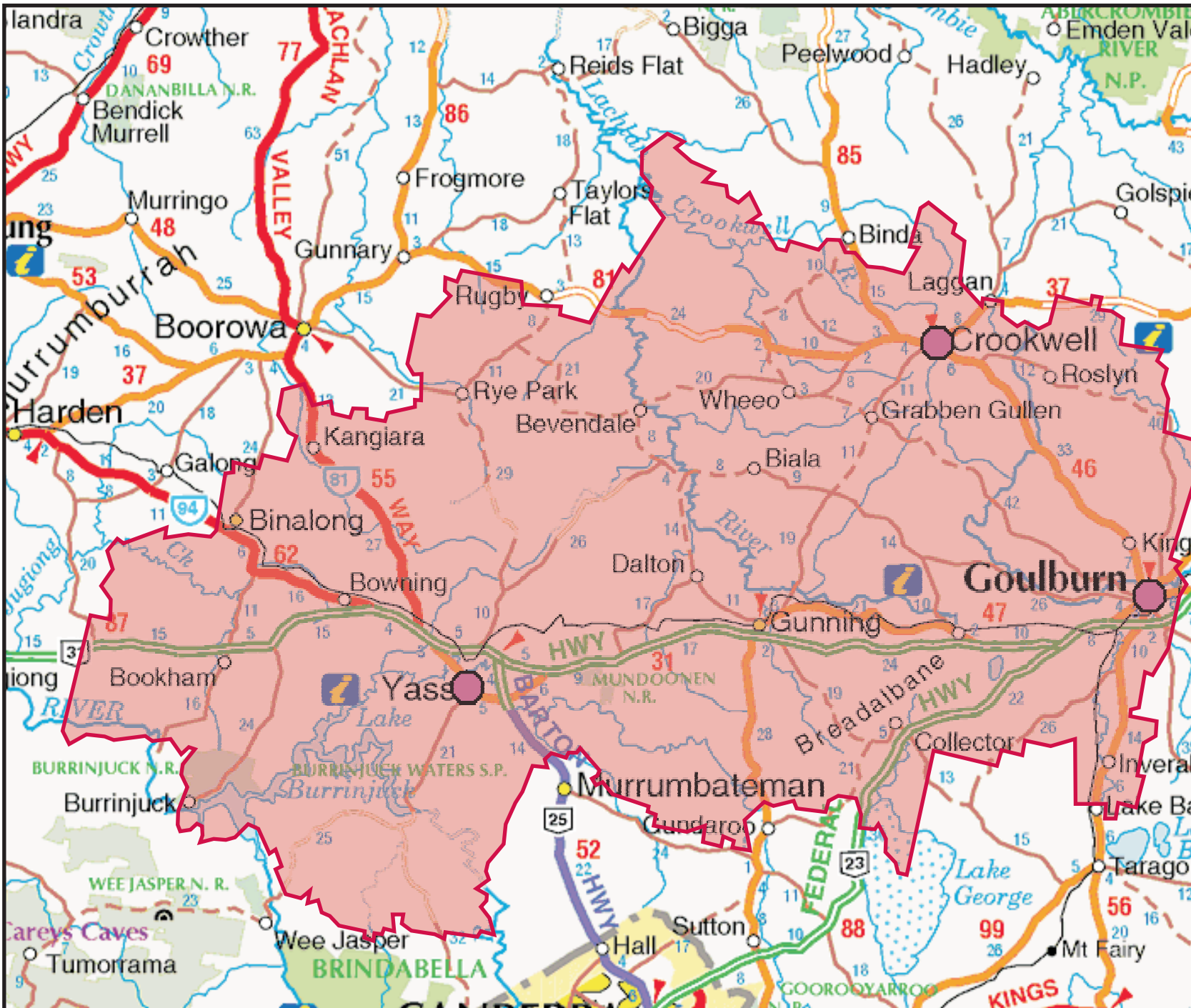


Figure 1.1
The Area from which Respondents were interviewed

Client:	EPURON		
Project:	Gullen Range Wind Farm Report Gullen Range Region, NSW		
Drawing No:	0069605s_01		
Date:	23/08/2007	Drawing size:	A4
Drawn by:	GC	Reviewed by:	-
Source:	UBD		
Scale:	Not to Scale		


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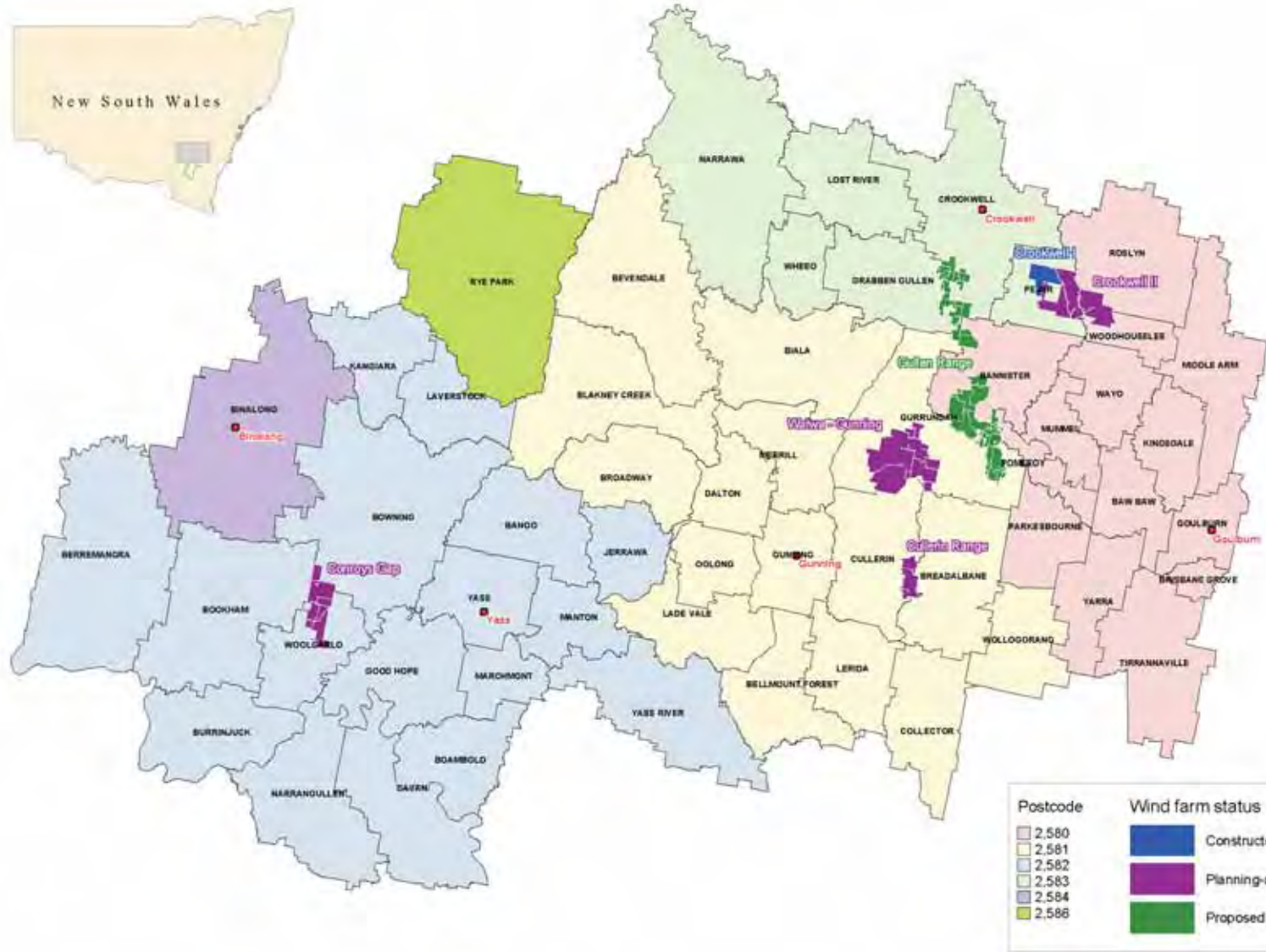


Figure 2.1
Location of Existing and Proposed Wind Farms

Client:	EPURON	
Project:	Gullen Range Wind Farm Report Gullen Range Region, NSW	
Drawing No:	0069605s_02	
Date:	23/08/2007	Drawing size: A4
Drawn by:	GC	Reviewed by: -
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Scale:	Not to Scale	



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Research into the community perception of wind farms is not new. Wind farms have been constructed both in Australia and overseas and there is some information on community responses to these relatively new forms of infrastructure. This Chapter summarises the findings of Australian and overseas studies.

2.1

RELEVANT AUSTRALIAN STUDIES

In a recent survey by the Sydney based Lowy Institute for International Policy (Macintosh & Downie 2006), Australians ranked global warming third among critical threats to the country's future, beaten only by international terrorism and nuclear proliferation. This paper states:

“Data on attitudes toward wind energy and the impact of wind farms on landscape values in Australia is limited. Research undertaken for the Australian Wind Energy Association found strong support for wind energy in the community – 95 per cent of respondents supported the use of wind farms to meet the growing demand for electricity. The overwhelming majority of respondents (91 per cent) also thought it was ‘more important to build wind farms for electricity than avoid building them in rural Australia’ (Australian Research Group 2003). Yet, these and other similar results from overseas are difficult to transpose to new developments in Australia because of the differences in wind farms and community attitudes toward landscape issues. Consequently, the aesthetic and other landscape issues associated with wind farms should be approached on a case-by-case basis having regard to the views of residents and the broader community. However, the facts that those who live closest to wind farms tend not to oppose them, that landscape and other concerns seem to subside with time, and that there is strong community support for wind energy are matters that should be considered by decision makers.” (Macintosh & Downie 2006)

As stated above, public opinion research on wind farms in NSW has been limited. Although community consultation is undertaken as part of the planning process for wind farms, this consultation is mostly qualitative in nature, in that it seeks the views on a number of aspects of the wind farm development from specific stakeholders, including the local community, and those further away, as well as the views of special interest groups, government and local government agencies involved or impacted by the development. This information is primarily anecdotal and is not rigorously documented.

However some social research has been undertaken by government agencies as well as wind farm proponents, to ascertain people's perception and response to wind farms in certain landscapes and this research is remarkably consistent.

2.1.1

Coastal Headlands, Victoria

In 2000, a study was undertaken for the Department of Natural Resources and Environment (Kantos & Quint 2000) on the many issues concerning the Victorian Coastline including the construction of wind farms on coastal headlands. *Figure 2.1* summarises the results of this particular component. The study involved a series of nine workshops as well as telephone interviews (n = 700).

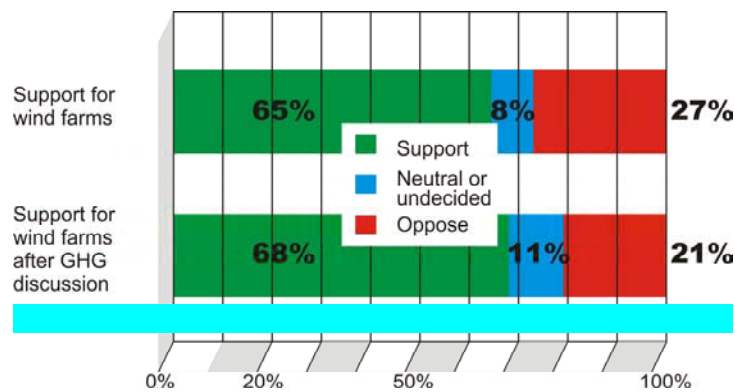


Figure 2.1 *Wind farms on Coastal Headlands - Participant Responses*

Study participants’ initial support or opposition to the construction of wind farms on coastal headlands was measured. After being exposed to arguments on renewable energy, greenhouse gas (GHG) emissions and climate change issues their responses were measured again. This study found that there was only a slight increase in participants’ acceptance of wind farms on coastal headlands, from a 65% acceptance level before arguments on green house gas emissions to 68% acceptance after these arguments were presented. However opposition reduced from 27% to 21%.

2.1.2 *Nirranda Wind Farm, Victoria*

Similar figures have been found in a 2002 visitor survey undertaken for Stanwell Corporation Limited (Offer Sharp & Associates 2002) on the possible visual impacts of the proposed wind farm on the Bay of Islands viewing platform that is located adjacent to the Nirranda site, in the Shire of Moyne approximately 250 kilometres west of Melbourne.

Approximately 80% of people were generally in support of wind farms, however when presented with a proposal for a wind farm visible from a scenic coastal lookout (the Bay of Islands) the support for a wind farm at this location reduced to approximately 71%, whilst opposition to the presence of a wind farm at this location increased from 3% to 12%.

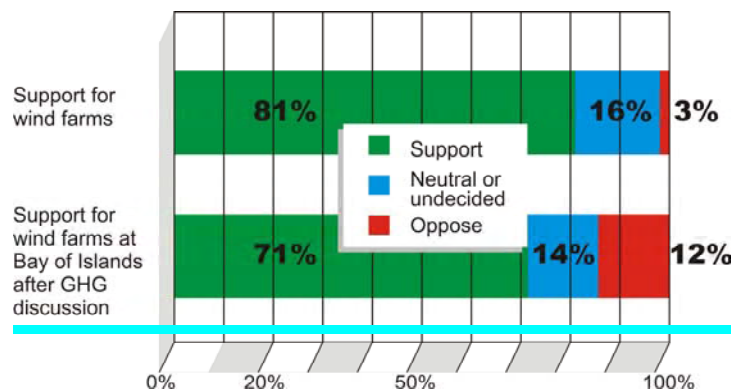


Figure 2.2 *Nirranda Wind Farm Respondents Attitudes to Wind Farms*

This figure of 71% support for wind farms is similar to the Kantos & Quint result of 68% reported previously for wind farms on exposed coastal headlands (refer Figure 2.1).

2.1.3

Yaloak Wind Farm, Victoria

Research undertaken by Offer Sharp & Associates 2004 presented at the Yaloak wind farm panel hearing in 2005 showed a similar level of community acceptance to wind farms on this inland site near Ballan, Victoria.

The study assessed community reaction to images of a wind farm in the Yaloak landscape as well as at another site at Crowlands in Western Victoria. Neither location was identified, however the Yaloak proposal had been publicised for some time before the survey and the landscape may have been recognised by some, and particularly local, respondents. Community reaction to the siting of wind turbines in these landscapes was based on interviews with 200 respondents from each of Melbourne, Bacchus Marsh and Ballarat.

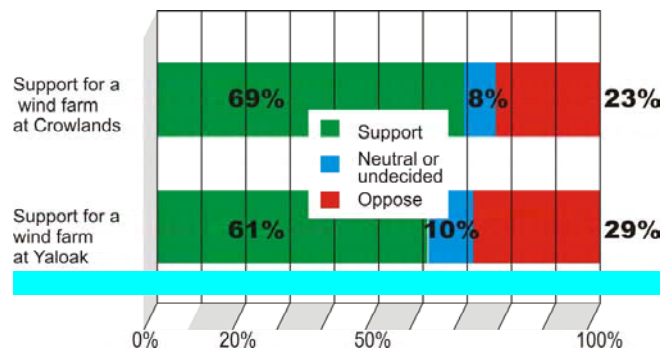


Figure 2.3 *Level of Support for Potential Wind Farms at Yaloak and Crowland Sites*

Figure 2.3 is data extracted from Table 15 Crowlands and Table 19 Yaloak in the Offer Sharp & Associates 2004 report. The data illustrates the acceptance levels for wind farms of each of these sites. The study also found slight differences in levels of support at Crowlands (67%, 66% and 73%) for respondents from Melbourne, Bacchus Marsh and Ballarat respectively, and slightly larger differences (61%, 55% and 68%) in support for the proposed wind farm at Yaloak.

However, the overall findings are similar to the earlier studies from Kantos & Quint (2000) and Offer Sharp and Associates (2002).

2.1.4

Lal Lal Wind Farm, Victoria

The recent public release of a wind farm study conducted in November 2006 for WestWind Energy Pty Ltd also shows similar results.

WestWind Energy Pty Ltd is proposing the Lal Lal wind farm to be located to the South East of Ballarat in Victoria. The study showed that there is a high degree of acceptance of wind energy by residents living in the Lal Lal area.

Results showed an approval rating for the concept of wind farming of more than 9 in 10 (93%) despite the visibility of wind turbines, most people felt that “we need to use wind power as a source of energy even if it means changing the appearance of some landscapes”.

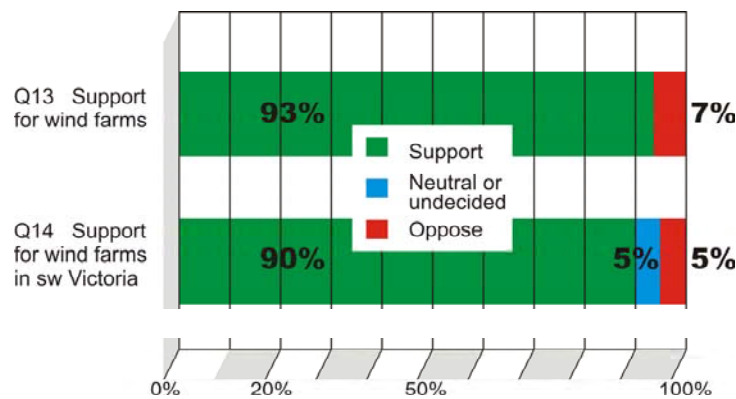


Figure 2.4 *Support for Wind Farms in South West Victoria*

In the context of landscapes most respondents were familiar, with the majority of respondents accepting of a wind farm that was set back 5 or 10 kilometres from the coast on flat or undulating grazing land (82% favour; 8% opposed). Most respondents were also accepting of a wind farm in flat to undulating open farming country like between Ballarat, Geelong, Hamilton and Ararat (83% in favour, 9% opposed). These acceptance figures are greater than those found in past Victorian and overseas studies.

The level of acceptance of wind farms was also high when the proposed wind farm was near to the respondents’ places of residence. This is shown in *Figure 2.5*.

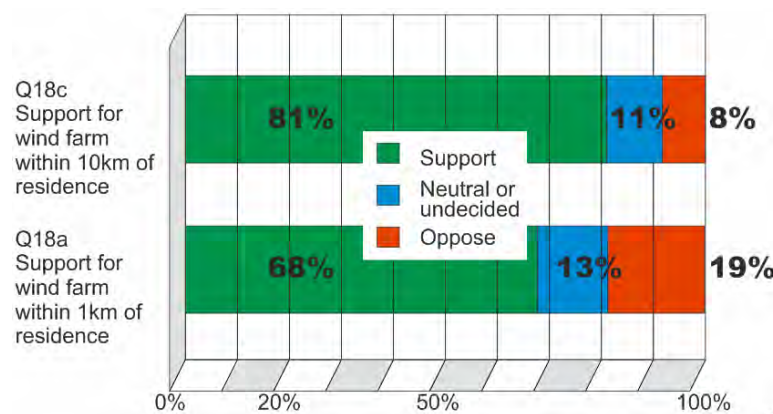


Figure 2.5 *Lal Lal Support for Wind Farms near Residence*

The Lal Lal wind farm research has demonstrated an increase in acceptability of wind farms to previous studies, and it may be hypothesised that the increasing political and community awareness of global warming and its impact on the environment has increased the level of acceptance within the community.

The study also demonstrated that although the support for wind farms drops with increasing proximity of a wind farm to the respondents’ residences, at a distance of one kilometre from their residence the majority of respondents was still supportive of a wind farm (68% favour, 19% oppose). This level of acceptance is similar to that found by studies such as the Kantos and Quint (2000) study on attitudes towards wind farms on coastal headland, detailed in Section 2.2.1.

2.2

OVERSEAS STUDIES

In addition to Victoria, Australia, community perception studies have also been undertaken overseas to gauge levels of community support and opposition to wind farms. This section explores these studies from the United Kingdom and United States of America.

2.2.1

United Kingdom

A paper presented at the 20th British Wind Energy Association Conference (Anne Marie Simon Planning 1996) gives an overview of thirteen studies undertaken between 1990 and 1996 by wind power proponents, opposition groups, the BBC, statutory authorities and a Liverpool University dissertation found that in all these studies:

- The overwhelming majority of respondents support the principal of development of wind power in the UK, and they also support their local wind farm.
- Those with direct experience of an operating wind farm are more supportive and positive than those without experience.
- Once wind farms are in operation, concerns about noise and visual impact decrease.
- The majority of people find wind farms acceptable in the landscape and more find the wind turbines graceful than ugly.
- A strong majority support and a small minority oppose wind farms, with more expressing no opinion than opposition (Freris 1998).

A summary of the results for eleven of these studies, which is taken from this paper (Anne Marie Simon Planning 1996) are reproduced below.

Table 2.1 *A Summary of Eleven Studies Conducted in the United Kingdom into Attitudes to Wind Power from 1990-96*

Location	Sponsor/Organiser	Date	In favour	Against	Don't know
Delabole, England	DTI	1992/3	84%	4%	11%
Cemmaes, Wales	DTI	1992/3	86%	1%	13%
Llandinam & Llangwryfon, Wales	CCW	1992/3	83% 78%	3% 8%	14% 14%
Llandinam Rhyd-y-Groes Taff Ely, Wales	BBC	1994	76% 61% 74%	17% 32% 9%	8% 7% 17%
Kirkby Moor, England	National Wind Power	1994	82%	9%	9%
Bryn Titli, Wales	NWP (pre construction) NWP (open day)	1996	68% 94%	14% 3%	19% 3%

Location	Sponsor/Organiser	Date	In favour	Against	Don't know
Trysglwyn, Wales	NWP (open day)	1996	96%	4%	-
Coal Clough, England	Liverpool University Dissertation	1996	96%	4%	-

Notes
NWP = National Wind Power (a wind farm developer).
CCW = Countryside Council for Wales (a statutory body)
BBC = BBC (Wales) and the University of Wales

In all these studies between 61% and 96% of survey respondents were supportive of wind power.

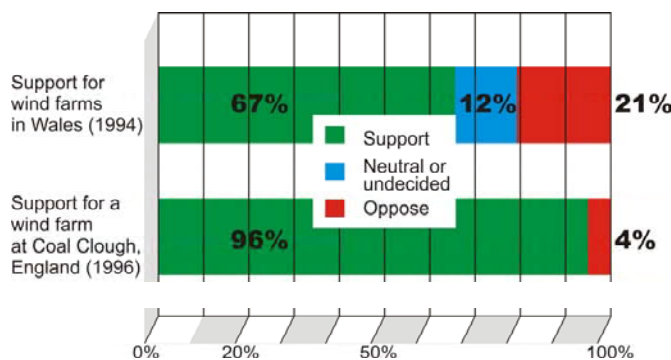


Figure 2.6 *Comparison of Selected Wind Farm Community Perception Studies in the United Kingdom*

The lowest level of acceptance was one area within the BBC 1994 study which looked at attitudes towards wind farms in Wales (Interviews with 268 respondents, conducted in two stages; stage one being just after the wind farm was built and stage two one year later). The BBC study also looked at three locations, Llandinam, Rhyd-y-Groes and Taff Ely) with the lowest support for the wind farm at Rhyd-y-Groes with 61% support and 32% against, whilst overall the BBC study found that 67% of respondents were in favour of the development of wind power in Wales, and 21% were opposed.

The highest approval was that reported in the Coal Clough (Lancashire, England) study (questionnaire completed by face to face interviews, sample of 50) with 96% approval and 4% opposition.

These figures are similar to those reported in the Australian studies.

Scotland & Ireland

A study conducted in November 2005 on community perception of wind farms in Scotland and Ireland also has similar, but higher approval ratings (further information can be obtained from <http://www.your-energy.co.uk/pdf/windfarmpaper121205.pdf>).

Table 2.2 *Wind farms in Scotland & Ireland*

	Strongly support		Support		Neutral		Oppose		Strongly oppose	
	DL (%)	BH (%)	DL (%)	BH (%)	DL (%)	BH (%)	DL (%)	BH (%)	DL (%)	BH (%)
A. Wind power in Scotland	55	55	35	22	6	16	2	0	2	7
B. Local wind farm	63	47	25	16	3	20	3	4	5	13

DL = Dun Law (operational site).

BH = Black Hill (proposed site)

(from Public Perceptions of Wind Power in Scotland and Ireland, Charles R. Warren, Carolyn Lumsden, Simone O'Dowd & Richard V. Birnie, Journal of Environmental Planning and Management, Vol. 48, No. 6, 853 – 875, November 2005, Table 4, p862).

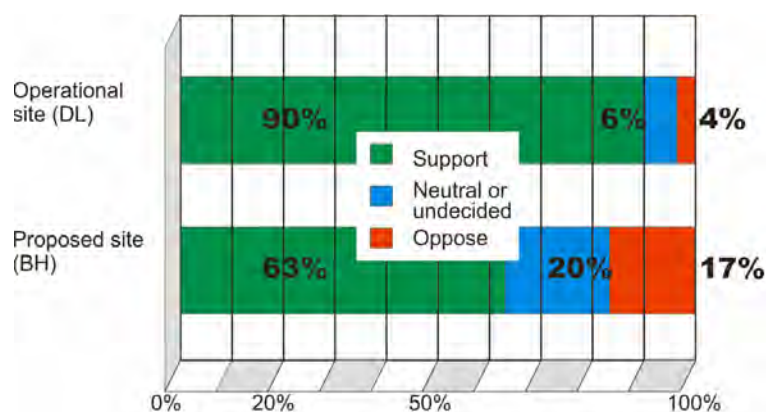


Figure 2.7 *Acceptance levels - Scotland and Ireland*

Once again this confirms that the high level of acceptance and this report also goes further and shows the increased level of acceptance within a community following construction. This is discussed further in the final sections of this chapter.

2.2.2 *North Carolina, USA*

Reported attitudes in a study from North Carolina (NC) in the USA are also similar. A paper prepared on public attitudes (Grady 2004) towards wind energy in eastern NC, which included coastal areas, and western NC, which includes mountainous areas, presented to the 'Efficient NC Conference' also found similar degrees of approval. Note: There was no information in this paper on the sample size.

Table 2.3 *Public Attitude to Placement of Wind Farms in Eastern NC*

Placement	% Not Supported	% Supported	% Don't know
Mainland	11.9	72.8	15.3
Mainland clustered	14.1	69.6	15.1
Sounds	16.6	63.6	19.8
Sounds clustered	28.0	50.2	20.5
Offshore	13.9	68.6	17.6
Offshore clustered	14.4	68.6	15.8

Table 2.3 shows the level of acceptance for clusters of wind turbines reduced to 50% for the Sounds which are the coastal areas along the eastern seaboard of North Carolina. The level of acceptance for clustered groups of wind turbines in the mainland area rose to 69.6%.

This paper (Grady 2004) also presented levels of acceptance within the more mountainous areas of Western NC.

Table 2.4 *Public Attitudes to Wind Farm Placement - Western NC*

Placement	% Not Supported	% Supported	% Don't know
Ridgetops	20	64	17
Ridgetops clustered	28	57	15
Ridgetops with other towers	16	75	10

The western area of Northern Carolina is mountainous; many parts are uncleared and show few signs of human intervention. The level of acceptance for clustered groups of wind turbines on ridgetops in this area is less (57%) than the level of acceptance reported for the mainland areas of Eastern NC (69%), however if there are other towers on the ridgetops (ie there are obvious signs of human intervention) then the level of acceptance rises to 75%.

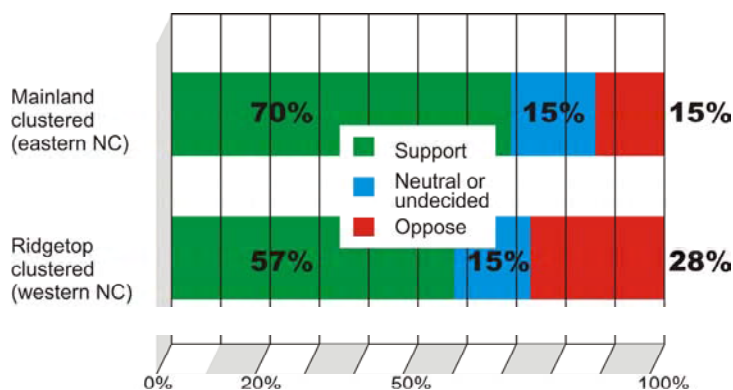


Figure 2.8 *Acceptance Levels - Northern Carolina, USA*

In summary this paper reported that:

“within groups of middle aged, middle class, pragmatic, year round residents of the mountain and coastal regions of NC, there is support for developing renewable energy as a future source of fuel for electricity generation.

- *More than 3 out of 4 would prefer to see more future electricity derived from solar and wind*
- *Less support for turbines in sounds or national forests*
- *2 out of 3 support turbines visible from home*
- *Over 80% support turbines for residential use.”(Grady 2004)*

The degree to which the respondents believe that wind farms on mainland sites should not be prohibited is very similar to the previously cited United Kingdom and Australian studies; with between 69-73% believing that wind farms should not be prohibited.

2.3

PERCEPTION ALTERATION AFTER CONSTRUCTION

There has been no research done on the visual impact of wind farms in Australia after construction, however, overseas studies suggest greater acceptance levels by people who live in the vicinity of wind farms after their construction (Gipe n.d.)

Anne Marie Simon Planning and Research in the previously cited study also found that all studies that looked at perceptions before and after construction, reported an increase in acceptance after the wind farm was completed.

This study supports the view that familiarity does not increase opposition to a wind farm, but rather increases acceptance and support for wind turbines in the landscape.

2.4

THE ROLE OF THESE PERCEPTION STUDIES ON THE VISUAL ASSESSMENT OF WIND FARMS

All the studies quoted above are remarkably similar in community responses to wind farms in Australia and the overseas examples. The research continually shows a level of community support at around 60-70% and a level of opposition between 5-30%.

It is suggested here that this acceptance level is unique to wind farms. Similar research to the visual impact of a transmission line, a major road or other large infrastructure projects would arguably show a greater degree of dislike for the changes these projects make on the landscape. The much greater acceptance of wind turbines in the landscape may well be a result of their clean lines and aerodynamic shape, or perhaps with their perceptual link with green energy. Irrespective of the reason, it is evident from the results detailed above that wind turbines are generally accepted by the majority of viewers in all but the most sensitive of locations.

It should also be acknowledged that the research conducted above relates to those present in the general community, including visitors, tourists and residents, viewing the wind farm(s) from local roads, tourist locations and from other publicly accessible locations.

The only exception to this high level of sensitivity would be for residents who have elected to have wind turbines erected on their land. It is considered that these residents are commercial beneficiaries of the turbines and therefore are likely to be less sensitive to any visual impacts.

STUDY RESULTS

This chapter presents the findings of the respondents in the Southern Tablelands to the questionnaire. The questionnaire can be broadly separated into three distinct Parts. These parts are outlined below.

- *Part 1 – attitudes towards global warming and clean energy alternatives.* This part of the questionnaire examines the respondents' attitudes towards global warming and clean energy alternatives. Information on these items is detailed in *Section 3.1*.
- *Part 2 - wind farm awareness and the perceptions of wind farms.* This part of the questionnaire examines the awareness of wind farms in the Region followed by within the Southern Tablelands and the advantages and disadvantages of wind farms. Information on these items is detailed in *Sections 3.2*.
- *Part 3 - the positioning of wind farms in relation to personal space.* This section of the study examines the nearby established Crookwell wind farm and the respondents perceptions of this wind farm, in addition to examining wind farm location distance to one's own residence, and multiple wind farms increasing in size and density. Information on these items is detailed in *Section 3.3*.

3.1

ATTITUDES TO GLOBAL WARMING

Global warming is commonly defined as an increase in the temperature of the earth's atmosphere and in particular a sustained increase sufficient to cause climate change on a global scale. The scientific consensus is that most of the global warming that has occurred over the past 50 years has its source in human activity. The source of this human-induced activity is the release of carbon dioxide and other greenhouse gases into the atmosphere by the burning of fossil fuels, land clearing and agriculture leading to an increase in the greenhouse effect.

Given there is an active discussion concerning global warming in the media and as part of our daily lives, this study sought to establish a benchmark within the survey area, the level of concern that exists within the community and how quickly the problem should be dealt with.

Table 3.1 Respondents Concern about Global Warming

<i>Q1) Recently there has been much discussion in newspapers on radio and television concerning global warming ... Overall how concerned would you say you are right now with the threat of global warming and its impact on the environment ... would you say you are ...</i>	
<i>Definitely concerned (5)</i>	32%
<i>Somewhat concerned (4)</i>	48%
<i>Somewhat unconcerned (2)</i>	9%
<i>Definitely unconcerned (1)</i>	8%
<i>Neither concerned or unconcerned (3)</i>	4%
TOTAL CONCERNED	80%
TOTAL UNCONCERNED	17%
TOTAL	100%

Table 3.1 shows eight in ten adults say they are concerned, right now, with global warming and its impact on the environment. Less than two in ten say they are 'unconcerned'.

In July, 2006 the Lowy Institute conducted a national poll of Australians and asked them which of three alternatives best reflected the way they felt about global warming. The same question in this study was asked in order to obtain a reflection of current feeling, albeit from a regional area in only one State, to establish a relative benchmark following the passage of 12 months.

Table 3.2 Concern and Response to Global Warming

<i>Q2) Which one of the following statements comes closest to the way you feel</i>					
	Lowy Institute Poll	Concern with global warming			
		TOTAL			
		Concerned	Neither concerned or unconcerned	Unconcerned	
Weighted Base	1007	300	240	11	49
FEEL ABOUT GLOBAL WARMING					
<i>Global warming is a serious and pressing problem. We should be taking steps now even if this involves significant costs.</i>	68%	50%	61%	8%	7%
<i>Until we are sure that global warming is really a problem, we should not take any steps that would have economic costs.</i>	7%	17%	12%	24%	41%

<i>The problem of global warming should be addressed, but its effects will be gradual, so we can deal with the problem gradually</i>	24%	33%	27%	68%	52%
<i>Don't Know</i>	1%	-	-	-	-
TOTAL		100%	100%	100%	100%

Table 3.2 suggests a growing conservatism in respondents' attitudes to the appropriate response to global warming. In the Lowy Institute Poll 12 months ago just on seven in ten Australians felt global warming is "a serious and pressing problem [and] we should be taking steps now even if this involves significant costs". In the community survey just undertaken, five in ten are demanding an immediate response – a significant difference and a marked downward shift in the urgency of the issue relative to 12 months ago. Compared to the Lowy Institute Poll, there is a migration away from an immediate response, to a more gradual response (reflected by three in ten) and a more conservative approach against taking steps that would incur economic costs mentioned by nearly two in ten.

Notwithstanding the decline in urgency, relative to the Lowy Institute Poll, it is clear that more than eight in ten respondents are calling for some response albeit gradual in many cases.

Table 3.2 further shows those who expressed 'concern' with the issue of global warming weren't all advocating immediate steps be taken to address the issue. Whilst six in 10 were advocating such a response, of the balance nearly three in ten were suggesting a gradual response, whilst about one in ten were advocating do not incur economic costs until sure global warming is really a problem. An outcome that is similar to the Lowy Institute Poll in July, 2006.

Those who indicated they were 'unconcerned' with the global warming issue were more inclined to a gradual response (52%) or averse to incurring economic costs until sure global warming is a problem (41%).

3.1.1 *Clean Energy and Personal Preferences*

As noted earlier there has been much public discussion and many media reports, particularly prior to the conduct of this study, addressing the issue of clean energy. Respondents were asked in this study, which energy sources they felt were clean and which they would prefer if a new power station was to be constructed within 10 kilometres of their home.

Table 3.3 below shows sun or solar power emerges ahead of those nominated, marginally ahead of wind power. Indeed just on nine in ten respondents mentioned these two energy sources.

Table 3.3 Identification of Clean Energy Sources

Q3) Australia's demand for electricity is rapidly increasing. There are a number of ways of meeting this demand one of which involves the use of 'clean energy' sources. Which of the following do you regard as clean energy sources ...

	TOTAL	FEEL ABOUT GLOBAL WARMING		
		Act now despite costs	Do not incur costs	Gradual response
Weighted Base	300	150	52	98
CLEAN ENERGY SOURCES				
<i>Wind power</i>	86%	89%	78%	86%
<i>Sun or solar power</i>	91%	93%	85%	91%
<i>Water or hydroelectric power</i>	69%	67%	74%	67%
<i>Wave or tidal power</i>	57%	57%	44%	63%
<i>Nuclear power</i>	20%	16%	26%	24%
<i>Clean coal or gas fuelled power stations where the pollutants are buried</i>	14%	8%	18%	20%
		--		+
TOTAL	336%	331%	325%	350%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Water or hydroelectric power (69%) and wave or tidal power (57%) were also mentioned by a majority of respondents, albeit at a significantly lower level than solar or wind power. Nuclear power was mentioned by two in ten.

There was no significant difference in the response when analysed by the respondents' response to global warming, save that clean coal or gas fuelled power stations where pollutants are buried was nominated by a significantly greater proportion (20%) than the sample as a whole (14%).

3.1.2 Clean Energy and Personal Preferences Close to Home

In order to obtain a measure of respondents' preferences for clean energy sources, the study sought to make the choice more realistic by asking which of the clean energy sources that had previously been mentioned would they approve for use in a new electric power station if it was to be built within 10 kilometres of where they live. The outcome is shown in the first column in Table 3.4 below. Eight in ten respondents selected solar and wind power as approved energy sources for the new power station within 10 kilometres of their home.

As each respondent had nominated about two energy sources, respondents were asked to nominate which one energy source they would prefer. The outcomes are shown in the second column of Table 3.4 below and these have been analysed by respondents' responses to the threat of global warming.

Table 3.4 Energy Sources for a New Power Station

Q4 If there was to be a new electric power station built say within 10 kilometres of where you now live, which of the following energy sources would you approve for use by that new power station?
(a) Would you approve ...

IF MORE THAN ONE:

(b) And which one energy source would you prefer to see used by such a new power station?

	Q9(a) TOTAL	Q9(b) TOTAL	FEEL ABOUT GLOBAL WARMING		
			Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	300	212	32	56
Q4a ENERGY SOURCES APPROVE FOR USE BY NEW POWER STATION					
Q4b ENERGY SOURCE PREFER TO SEE USED BY NEW POWER STATION					
Sun or solar power	82%	48%	53%	41%	43%
Wind power	81%	41%	40%	40%	42%
Clean coal or gas where the pollutants are buried	16%	3%	2%	5%	4%
Nuclear power	14%	4%	2%	6%	6%
None of these	3%	3%	1%	6%	4%
Don't know	2%	2%	2%	2%	2%
TOTAL	198%	100%	100%	100%	100%

When it came to choosing just one energy source solar power (48%) emerges marginally ahead of wind power (41%). The other energy source choices languish well behind.

In order to force a choice between solar and wind power, respondents were asked which energy source they would select if solar power was not included and the choices available were restricted to wind power, clean coal or gas or nuclear power.

In these circumstances, as is shown in Table 3.5, wind power (80%) emerged as the clearly preferred energy source for a new power station within 10 kilometres of respondents' homes.

It is noted that those whose response to global warming was 'act now despite the costs' had a stronger preference (85%) than the sample overall and significantly greater than those who were opting for a 'gradual response' (73%) to global warming.

3.2 WIND FARM AWARENESS AND PERCEPTIONS

This part of the questionnaire examines the awareness of wind farms in the Region followed by within the Southern Tablelands and the advantages and disadvantages of wind farms.

In order to establish attitudes to wind farms later in the questionnaire, respondents were introduced to the topic of wind farms and wind turbines via a reference to recent announcements concerning the construction of wind farms in the Southern

Tablelands in New South Wales. Respondents were asked whether or not they had heard of such projects before the conduct of this study, see *Table 3.5* below.

Table 3.5 *Awareness of wind farms*

Q.5A Recently there have been announcements of wind-farms to be built in the Southern Tablelands, encompassing the Goulburn-Yass region, to generate electricity ... had you heard of any of these projects before today?				
DTR Table: 10.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300 %	150 %	52 %	98 %
<i>Q5A Heard of Southern Tablelands, encompassing the Goulburn-Yass region projects</i>				
Yes	90%	88%	97%	90%
No	9%	12%	2%	10%
Don't Know	1%	0%	2%	0%
TOTAL	100%	100%	100%	100%
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>				

Table 3.5 shows that nine in ten respondents were aware of wind farm projects in the Southern Tablelands.

As a follow-up to that question, respondents were asked if they could nominate the name(s) and/or the location of the wind farm projects they were aware of. *Table 3.6* below, tabulated the responses of project 'names' nominated by respondents.

Table 3.6 *Names of wind farm projects in the Southern Tablelands*

Q.5B Which project or projects was that? (*record name and/or location of project*) *Probe once*: Any others?

Filter: "Yes" in Q5A Heard of wind farm projects in Southern Tablelands

DTR Table: 11.0	Q2 Response to Global Warming			
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	270	131	50	89
	%	%	%	%
<i>Q5B Name of project</i>				
CROOKWELL	20%	21%	15%	20%
TARALGA WIND FARM	16%	14%	10%	21%
YASS	6%	6%	3%	6%
CONROYS GAP WINDFARM	5%	4%	4%	5%
WIND POWER / TURBINE	4%	1%	11%	6%
		--	++	
CULLERIN	4%	3%	3%	7%
WIND FARM	4%	8%	2%	0%
		++		-
GUNNING	3%	2%	1%	5%
WOODLAWN	2%	2%	2%	4%
CULLIN RANGE WIND FARM	2%	4%	0%	0%
		+		
GOULBURN	2%	2%	2%	1%
BLACK RANGE	1%	2%	0%	0%
CANBERRA	1%	1%	0%	1%
COLOURING RANGES	1%	1%	0%	1%
OBERON	1%	0%	2%	1%
BANNISTER	1%	1%	0%	1%
GULLIN RIDGE WINDFARM	1%	0%	0%	2%
CROOKLAND	1%	0%	0%	2%
BREDALIBAE	1%	0%	0%	2%
THE WOODLINE	1%	0%	0%	2%
GUNDARINGA PROPERTY	1%	1%	0%	0%
BUNDASL OR BRADEWOOD	1%	1%	0%	0%
QUEENBIEN WAY	1%	1%	0%	0%
GRABBen GULLEN	1%	0%	3%	0%
			+	
ORANGE	0%	1%	0%	0%
CURRAWANG	0%	0%	2%	0%
			+	
GURRANDAH	0%	0%	2%	0%
			+	
WOODBURN	0%	0%	0%	1%
MURRUNBATEAN	0%	1%	0%	0%
TARAGO	0%	1%	0%	0%
NUCLEAR POWER STATION	0%	0%	2%	0%
			+	
RODALBIN	0%	1%	0%	0%
KIALLA	0%	1%	0%	0%
ALL OF THEM	0%	0%	0%	1%
EPPRON	0%	1%	0%	0%

Q.5B Which project or projects was that? (*record name and/or location of project*) *Probe once*: Any others?

Filter: "Yes" in Q5A Heard of wind farm projects in Southern Tablelands

DTR Table: 11.0	Q2 Response to Global Warming			
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	270	131	50	89
	%	%	%	%
SPRING RANGE	0%	0%	2%	0%
ALLADUILLA SHIRE	0%	0%	2%	0%
ACT BORDER	0%	0%	2%	0%
COLLEX	0%	0%	0%	1%
TARAGA	0%	1%	0%	0%
WINDELLAMA	0%	0%	0%	1%
BUNGENDORE	0%	0%	0%	1%
TALGANDRA	0%	0%	1%	0%
LAKE GEORGE	0%	1%	0%	0%
DON'T KNOW	15%	19%	10%	10%
		+		
Not answered	30%	24%	41%	32%
		-		
TOTAL	126%	122%	122%	135%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Table 3.6 shows the names of wind farm projects provided by the 90% of respondents who were aware of wind farm projects in the Southern Tablelands. Inspection of the table shows that of those who were aware of projects, some 45% could not nominate a name of a wind farm project. Of those who could, Crookwell (20%) and Taralga (16%) were the two most frequently mentioned.

Similarly, in Table 3.7 below the locations of wind farm projects nominated by the 90% of respondents who claimed awareness of wind farm projects in the Southern Tablelands.

Table 3.7 *Locations of wind farm projects in the Southern Tablelands*

Q.5B Which project or projects was that? (*record name and/or location of project*) *Probe once*: Any others?

Filter: "Yes" in Q5A Heard of wind farm projects in Southern Tablelands				
DTR Table: 12.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	270	131	50	89
	%	%	%	%
<i>Q5B Location of project</i>				
CROOKWELL	32%	35%	27%	29%
TARALGA / TRARALGA	21%	18%	21%	25%
YASS	10%	10%	13%	7%
GOULBURN	9%	10%	9%	7%
CONROYS GAP	7%	7%	8%	7%
GUNNING	5%	3%	8%	7%
CULLERIN	4%	2%	2%	7%
				+
TARAGO	2%	3%	0%	1%
GULLEN	2%	2%	3%	0%
MURRUMBATEMEN / MURRUNBATEAN	1%	2%	0%	0%
WOODLAWN	1%	0%	2%	2%
PARKSBOURNE	1%	2%	0%	0%
WALWA	1%	0%	4%	0%
			++	
BIGGA	1%	0%	4%	0%
			++	
KIALLA	1%	0%	2%	1%
ORANGE	1%	1%	0%	1%
PEJAR	1%	0%	2%	1%
NEAR BOOKHAM	1%	0%	0%	2%
IN THE TABLELANDS	0%	0%	2%	0%
			+	
GUNDOWINGA	0%	0%	2%	0%
			+	
WOODBURN	0%	0%	0%	1%
BLAINY	0%	1%	0%	0%
BANASTA AREA	0%	0%	0%	1%
WARRANGORORY	0%	0%	0%	1%
SPRING RANGE	0%	0%	2%	0%
COLAMARRI RANGES	0%	0%	2%	0%
WALLA WALLA	0%	0%	0%	1%
BOWING	0%	1%	0%	0%
LETTON	0%	0%	0%	1%
BREADALBANE	0%	0%	1%	0%
TARADALE	0%	1%	0%	0%
BLACKRANGE RD	0%	1%	0%	0%
LAKE GEORGE	0%	1%	0%	0%
Not answered	22%	24%	15%	24%
TOTAL	124%	122%	128%	124%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

As shown in *Table 3.6*, where just fewer than half the respondents who claimed awareness of wind farm projects in the Southern Tablelands were unable to name the

project, *Table 3.7* results demonstrates only two in ten were unable to nominate a location. The most frequently mentioned locations were Crookwell (35%) and Taralga (21%). Amongst those who could nominate a location, a very wide range of locations were nominated.

The outcomes demonstrate a very high proportion of respondents in the survey area were aware of the term 'wind farm' and had a high level of awareness, albeit somewhat vague as to name and location in some instances of prospective wind farm projects.

3.2.1 *Perceptions and Knowledge of Wind Turbines*

To ensure that all respondents were aware of what a wind turbine was, in the question to follow, a description of a wind turbine was provided to respondents followed by asking whether or not they were aware of wind turbines as described.

Table 3.8 *Awareness of wind turbines*

Q.6 The electricity from these projects is to be generated via the placement of a number of wind turbine generators in each area. Each generator is a large three bladed windmill mounted up high on top of a tubular tower and the wind turns the blades to generate the electric power ...

A. Were you aware of this type of wind turbine before today?

DTR Table: 13.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Q6A Aware of wind turbine</i>				
Yes	97%	98%	99%	96%
No	3%	2%	1%	4%
Don't Know	0%	0%	0%	1%
TOTAL	100%	100%	100%	100%

In view of the near total awareness of wind turbines, there was a correspondingly high proportion of those adults resident in the survey area who claimed to have either seen a picture of a wind turbine or had seen an actual wind turbine of the type described, see *Table 3.9* below.

Table 3.9 *Visual experience of wind turbines*

Q.6B Have you seen a picture of a wind turbine of the type I have described?				
Q.6C And have you ever seen an actual wind turbine of the type I have described?				
DTR Table: 14.0 & 15.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Q6B Seen a picture of a wind turbine</i>				
Yes	93%	91%	97%	93%
No	6%	8%	3%	6%
Don't Know	1%	1%	0%	1%
<i>Q6C Seen an actual wind turbine</i>				
Yes	89%	91%	91%	86%
No	11%	9%	9%	14%
TOTAL	100%	100%	100%	100%

As the preceding tables demonstrate, adults living in the survey area were informed with respect to the components of a wind farm, nearly all being aware of what a wind turbine is, having seen a picture of one and in most, if not all cases, having seen an actual wind turbine.

3.2.2 *Awareness and perceptions of wind farms*

Whilst most respondents were aware of announcements concerning wind farm projects in the Southern Tablelands and nearly all had an appreciation of what a wind turbine was, certainty was required as to what respondents thought wind farms to be. Accordingly, a description of a wind farm was read to respondents to see if they were aware of wind farms as described, whether they had seen a wind farm and the location of the wind farm(s) they had seen.

Table 3.10 Awareness and exposure to wind farms

Q.7 A wind farm is a collection of large wind-driven wind turbines of the type I have described ... an average to large wind farm makes enough electricity to power a large regional centre ...

A Were you aware of this before today?

B Have you ever seen a wind farm?

DTR Table: 16.0 & 17.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<u>Q7A Aware a wind farm is a collection of large wind driven wind turbines</u>				
Yes	83%	80%	86%	85%
No	14%	16%	10%	13%
Don't Know	3%	4%	4%	2%
<u>Q7B Ever seen a wind farm</u>				
Yes	90%	90%	96%	87%
No	10%	10%	4%	13%
TOTAL	100%	100%	100%	100%

The outcomes of the questioning approach, as shown in *Table 3.10*, revealed that slightly more than eight in ten respondents were aware of what wind farms were and their power generating capacity prior to the conduct of the survey. Further some nine in ten respondents claimed to have seen a wind farm, reflecting that around one in ten were not aware of its power generating capacity.

When those who had claimed to have seen a wind farm (90%) were asked to nominate where they had seen it, there were many places in Australia and overseas nominated. However, demonstrating a very high awareness of the existence of the site, 85% of respondents mentioned Crookwell.

3.2.3 Visual appeal of wind farms

An understanding of the foot print of a wind turbine and subsequently a wind farm has on the landscape where it is situated is potentially an important driver of attitudes to wind farms. Accordingly respondents who had seen a wind farm (90%) were asked how visually appealing they found them. For the balance, that is those who had not seen a wind farm (10%) asked them how visually appealing they would expect a wind farm to be.

Table 3.11 Visual appeal of wind farms

Q.8A IF SEEN: How visually appealing do you find the wind farms you have seen?				
Filter: Q7B EVER SEEN A WIND FARM Yes				
DTR Table: 19.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	270 %	135 %	50 %	86 %
<i>Q8A Visually appealing find wind farms</i>				
Very appealing (5)	24%	26%	25%	22%
Fairly appealing (4)	43%	42%	37%	47%
or Do you not have an opinion about it (3)	17%	15%	25%	17%
Not too appealing (2)	10%	13%	3%	8%
		+		
Not at all appealing (1)	6%	4%	10%	6%
TOTAL APPEALING	67%	68%	62%	69%
TOTAL NOT APPEALING	15%	17%	13%	14%
TOTAL	100%	100%	100%	100%
MEAN	3.7	3.73	3.63	3.71
STD DEV	1.11	1.11	1.2	1.09
STD ERR	0.07	0.1	0.17	0.11
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>				
Q.8B IF NOT SEEN: How visually appealing would you expect a wind farm to be?				
Filter: NOT (Q7B EVER SEEN A WIND FARM Yes)				
DTR Table: 20.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	30 %	15 %	2 %	13 %
<i>Q8B Visually appealing expect wind farm to be</i>				
Very appealing (5)	5%	6%	0%	6%
Fairly appealing (4)	29%	24%	0%	40%
or Do you not have an opinion about it (3)	28%	41%	0%	19%
Not too appealing (2)	24%	21%	52%	22%
Not at all appealing (1)	13%	7%	48%	14%
TOTAL APPEALING	34%	30%	0%	46%
TOTAL NOT APPEALING	37%	29%	100%	36%
TOTAL	100%	100%	100%	100%
MEAN	2.9	3	1.52	3.02
STD DEV	1.14	1.03	0.67	1.23
STD ERR	0.2	0.26	0.47	0.34

Table 3.11 shows, two in every three respondents who had seen a wind farm (67%) found them to be visually appealing. 17% had no opinion and only 16% found them

to be not visually appealing. For those 10% of respondents who claimed not to have seen a wind farm, they were evenly divided between those who expected them to be visually appealing (34%), not visually appealing (37%) and those who had no opinion (28%).

3.2.4 *Perceived benefits or advantages of wind farms*

Respondents were asked to use their own words for what they perceived to be the benefits or advantages of wind farms.

Table 3.12 *Perceived benefits or advantages of wind farms*

Q.9 Thinking about wind farms as I have described them ...				
a) What do you consider the major benefits or advantages of wind farms to be? <u>Probe</u> : "What else?"				
DTR Table: 21.0 R		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Q9A Benefits / advantages of wind farms</i>				
Environment/friendly affect on the environment				
ENVIRONMENTALLY FRIENDLY/NO IMPACT ON THE ENVIRONMENT	13%	15%	15%	9%
VISUALLY APPEALING/AESTHETIC	3%	4%	0%	4%
QUIET/NOT MUCH NOISE	3%	4%	3%	2%
NO WASTE	2%	4%	2%	1%
ADDRESSES GLOBAL WARMING	1%	3%	0%	0%
Nett: Environment / Friendly affect on the environment	21%	26%	18%	15%
		+		
Source of energy / power / electricity				
NATURAL ENERGY/RESOURCE SAVES ON FOSSIL FUEL / COAL / OTHER RESOURCES	11%	10%	11%	13%
RENEWABLE ENERGY	10%	11%	6%	10%
FREE GENERATING/FREE ENERGY SOURCE	9%	11%	4%	9%
HARNESS ENERGY THAT IS ALREADY THERE	7%	5%	12%	8%
CAN GENERATE ELECTRICITY/POWER GOOD SOURCE OF ENERGY/UNLIMITED/SUSTAINABLE GREEN POWER	6%	6%	3%	7%
CAN SUPPLY ENERGY TO A SMALL COMMUNITY /REMOTE AREA	6%	5%	12%	4%
ENERGY/UNLIMITED/SUSTAINABLE GREEN POWER	5%	5%	5%	6%
CAN SUPPLY ENERGY TO A SMALL COMMUNITY /REMOTE AREA	2%	3%	0%	1%
Nett: Source of energy / Power / Electricity	0%	0%	0%	1%
	49%	49%	43%	53%
Cost effective / low maintenance				

Q.9 Thinking about wind farms as I have described them ...

a) What do you consider the major benefits or advantages of wind farms to be? Probe: "What else?"

DTR Table: 21.0 R	Q2 Response to Global Warming			
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Q9A Benefits / advantages of wind farms</i>				
COST EFFECTIVE/ECONOMICAL	12%	11%	11%	13%
VERY EFFICIENT	2%	1%	3%	4%
LOW MAINTENANCE	2%	1%	8%	1%
			+++	
Nett: Cost effective / low maintenance	15%	12%	17%	18%
Safe/ low impact				
CLEAN ENERGY / NO POLLUTION / CARBON BASED EMISSIONS	55%	57%	44%	58%
SAFE/DON'T DO ANY DAMAGE	1%	2%	0%	1%
LOW AGRICULTURAL IMPACT	1%	2%	0%	0%
MINIMUM DISRUPTION TO ACTIVITIES	0%	1%	0%	0%
Nett: Safe / low impact	56%	59%	44%	58%
Other mentions				
SOURCE OF INCOME FOR LANDOWNERS/FARMERS	3%	4%	2%	1%
WILL BENEFIT FUTURE GENERATIONS	0%	0%	3%	0%
			+	
PROVIDES EMPLOYMENT	0%	0%	0%	1%
Nett: Other mentions	3%	4%	5%	2%
DON'T KNOW	1%	1%	1%	0%
NONE	3%	2%	7%	3%
Nett: None/Don't Know	4%	3%	8%	3%
TOTAL	160%	167%	151%	155%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

The principal benefits/advantages as summarised in *Table 3.12*, were:

- 56% Safe / low impact
- 49% Source of energy / power / electricity
- 21% Environment / friendly affect on the environment
- 15% Cost effective / low maintenance
- 4% No advantages

Table 3.12 demonstrates few respondents (3%) failed to nominate a benefit or advantage. Wind farms were clearly identified as a power source that was friendly to the environment, safe and had a low impact on their surroundings.

3.2.5 *Perceived disadvantages of wind farms*

Respondents were also asked to nominate what they believed to be the disadvantages, if any, they associate with wind farms.

Table 3.13 *Perceived disadvantages of wind farms*

Q.9 Thinking about wind farms as I have described them ...				
b) And what disadvantages, if any, do you associate with wind farms? <u>Probe</u> : "What else?"				
DTR Table: 22.0	Q2 Response to Global Warming			
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Q9B Disadvantages associated with wind farms</i>				
Appearance				
AESTHETICALLY UNAPPEALING/VISUALLY UNATTRACTIVE/SPOILS THE LANDSCAPE	18%	18%	18%	18%
Nett: Appearance	18%	18%	18%	18%
Effect on the Environment				
THE NOISE/HUMMING SOUND	24%	24%	30%	20%
HAZARD TO WILDLIFE/BIRDS	8%	7%	11%	9%
STRUCTURE'S LIMITED LIFE SPAN	1%	1%	0%	3%
Nett: Effect on the environment	29%	27%	37%	27%
As a power source				
NOT SUSTAINABLE/UNRELIABLE/RELY ON THE WEATHER	7%	6%	11%	7%
CAPACITY TO PRODUCE POWER IS LOW	3%	3%	2%	3%
Nett: As a power source	10%	9%	14%	9%
The cost				
THE COST OF BUILDING THE TURBINES	2%	2%	6%	2%
THE COST/NOT COMMERCIALY VIABLE MAINTENANCE COST	2%	2%	2%	1%
1%	2%	0%	0%	
Nett: The cost	5%	6%	8%	3%
Safety				
THE TECHNOLOGY IS OUTDATED	1%	2%	0%	0%

Q.9 Thinking about wind farms as I have described them ...

b) And what disadvantages, if any, do you associate with wind farms? Probe: "What else?"

DTR Table: 22.0	Q2 Response to Global Warming			
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Q9B Disadvantages associated with wind farms</i>				
SAFETY CONCERNS/CAN TRIGGER FIRES	1%	1%	0%	1%
Nett: Safety	2%	2%	0%	1%
Other				
TAKES UP A LOT OF SPACE	6%	5%	5%	9%
DEVALUATION OF PROPERTY	3%	4%	4%	1%
COMMUNITY DISHARMONY/RESIDENTS				
TAKING OPPOSING VIEWS	2%	3%	0%	2%
TOO CLUSTERED IN SOME AREAS	2%	2%	0%	2%
ENVIRONMENTAL DISTURBANCES	1%	2%	0%	0%
NOT ENOUGH INFORMATION	1%	1%	0%	2%
THE POLLUTANTS CREATED IN				
CONSTRUCTING THE TOWER	1%	1%	0%	0%
USES FOSSIL FUEL IN OPERATION	0%	0%	0%	1%
Nett: Other	15%	17%	9%	16%
DON'T KNOW	3%	2%	1%	6%
				+
NONE	37%	37%	36%	37%
Nett: None/Don't Know	40%	39%	37%	43%
				+
TOTAL	124%	124%	127%	122%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

The principal disadvantages mentioned by respondents and as summarised in *Table 3.13* are:

- 29% Effect on the environment
- 18% Appearance
- 10% As a power source
- 6% Takes up a lot of space
- 5% The cost
- 3% Devaluates property
- 2% Safety
- 40% None/DK

About four in ten respondents were unable to nominate a disadvantage they associate with wind farms. By far the greatest disadvantages mentioned related to the visual appeal and the noise or humming emanating from the turbines.

3.2.6 Attitudes to the construction of wind farms

Having established the respondents' awareness, knowledge and perceptions of wind farms, the next section of the questionnaire sought to examine specific attitudes of respondents to a variety of specific issues relating to the construction of wind farms.

3.2.7 Trade-off: clean energy versus landscape

As was evident in the preceding section, a criticism of wind farms by some is their negative affect on landscape values in the areas where they are sited. Respondents were posed the question as to whether or not they were prepared to compromise landscape value in order to obtain clean energy from wind farms. Two questions were asked of which two statements came closest to the way they felt, the results are tabulated in *Table 3.14* below.

Table 3.14 Clean energy versus landscape

Q.10 Wind farms provide clean, renewable energy that doesn't contribute to global warming through generating carbon dioxide. Some people say they detract from the appearance of the landscape. Which of these two statements comes the closest to the way you feel (*read out*)

DTR Table: 23.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300 %	146 %	51 %	103 %
<i>Q10 Statement which comes closest to feelings</i>				
We need to use wind power as a source of clean energy even if it means changing the appearance of some landscapes, or	91%	92%	90%	91%
We should leave the landscapes unchanged even if it means we are not able to use wind power as a source of clean energy	9%	8%	10%	9%
TOTAL	100%	100%	100%	100%

Table 3.14 shows, nine in ten adults in the survey area would choose wind power as a source of clean energy, even if it resulted in changing some landscapes. There was no statistically significant difference between the responses of each of the three global warming analysis groups.

3.2.8

Favour or oppose wind farm projects in the Southern Tablelands

Although respondents may have been somewhat vague as to the project name or location, as shown earlier in Table 3.5, nine in ten adults in the survey area were aware of wind farm projects in the Southern Tablelands. Respondents were asked whether they favoured or opposed these projects.

Table 3.15 *Favour or oppose wind farm projects in the Southern Tablelands*

Q.11 Taking into account the arguments you have heard for and against wind farms, what is your general opinion of the wind farm projects like those being built in the Southern Tablelands ... would you say you were (<i>read out</i>)				
DTR Table: 24.0	Q2 Response to Global Warming			
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Q11 Opinion of wind farm projects built in the Southern Tablelands</i>				
Strongly in favour (5)	51%	60% ++	41%	43% -
Generally in favour (4) or... do you not mind one way or the other? (3)	38%	33%	49%	41%
Generally opposed (2)	6%	5%	2%	9%
Strongly opposed (1)	3%	2%	2%	4%
TOTAL IN FAVOUR	89%	93%	91%	84%
TOTAL OPPOSED	5%	2%	8%	7%
TOTAL	100%	100%	100%	100%
MEAN	4.34	4.5	4.19	4.17
STD DEV	0.87	0.72	1	0.96
STD ERR	0.05	0.06	0.14	0.09
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>				

Table 3.15 shows support for the construction of wind farm projects in the Southern Tablelands is almost universal. Only 5% of those surveyed declared they were opposed to wind farm projects in the Southern Tablelands, 6% were ambivalent and 89% were in favour. The strength of support whilst uniformly high across our global warming analysis groups did vary in intensity. Amongst those saying they were 'strongly in favour', this response was significantly higher amongst those advocating an 'act now' response to global warming relative to those proposing a more gradual approach, reflecting the greater urgency felt by this group.

This section of the study examines the nearby established Crookwell wind farm and the respondents' perceptions of this wind farm, in addition to examining wind farm location distance to one's own residence, and multiple wind farms increasing in size and density

It has been said that in a marketing context the only difficulty in positioning wind energy is attempting to position it in the consumer's personal space. The proposition that wind energy is a clean energy source with low impact on the environment is clearly 'a winner' amongst those that feel global warming is a potential threat to the environment, until that is, it invades the personal space of the consumer. That's a sentiment that is tested progressively in the following series of statements, see *Table 3.16* below.

Table 3.16 *Wind farm positioning statements*

Q.12 How much do you agree with the following statements? (*read out first statement*)
And is that (agree/disagree) strongly, or just (agree/disagree) or do you neither agree nor disagree with the statement? DO NOT ROTATE STATEMENT ORDER

DTR Table: 25.0		Q12L STATEMENTS				
	Wind energy is a good alternative energy source	Australia should be investing more in wind energy	I would be happy to see more wind farms in Australia	Local Government should encourage wind farm development	Wind farm developments contribute to the local economy	I would be happy to see a wind farm built on farmland near where I live
WEIGHTED BASE	300 %	300 %	300 %	300 %	300 %	300 %
<i>Q12 Agree/disagree</i>						
Strongly Agree (5)	61%	63%	55%	53%	30%	45%
Agree (4)	35%	29%	36%	31%	35%	38%
Neither Agree nor Disagree (3)	1%	3%	2%	5%	20%	6%
Disagree (2)	2%	4%	6%	8%	12%	6%
Strongly Disagree (1)	1%	1%	1%	3%	2%	5%
TOTAL AGREE	96%	92%	91%	84%	65%	83%
TOTAL DISAGREE	3%	5%	7%	11%	15%	11%
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	4.53	4.49	4.37	4.23	3.79	4.13
STD DEV	0.72	0.82	0.89	1.05	1.07	1.08
STD ERR	0.04	0.05	0.05	0.06	0.06	0.06

Table 3.16 shows that few of the adults in this survey were ambivalent (<3%) or opposed to the views (<7%) that wind farms were a good alternative energy source, that Australia should be investing more in wind technology or that they would like to see more wind farms in Australia. Indeed these views were supported by 91% or

more. At a local level however, there was less conviction that “Local government should encourage wind farm development”, albeit that 84% did agree with that statement, still remarkably high, even if falling marginally below the nationally oriented statements.

A claim that “wind farm developments contribute to the local economy” whilst agreed to by two in three attracted some scepticism: 15% disagreed, but a further 20% were ambivalent. This outcome would suggest that local promotion of the economic benefits flowing from wind farm development to the local area is warranted.

With respect to the statement “I would be happy to see a wind farm built on farmland near where I live” agreement is high (83%) and similar to that accorded to local government supporting wind farm development. It is noted however, that ‘Strong’ agreement with the statement is significantly (5% change or more) lower than both the nationally orientated statements and the local government statement recorder in other studies, see Chapter 2.

Analysing these outcomes by the three global warming analysis groups, it is evident that the greatest support for wind energy comes from those who have an ‘act now’ response to global warming, see Table 3.17 below.

Table 3.17 *Wind farm positioning statements analysed by response to global warming*

Q.12 How much do you agree with the following statements? <i>(read out first statement)</i>				
And is that (agree/disagree) strongly, or just (agree/disagree) or do you neither agree nor disagree with the statement? DO NOT ROTATE STATEMENT ORDER				
DTR Table: 26- 31		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Wind energy is a good alternative energy source</i>				
TOTAL AGREE	96%	96%	95%	96%
TOTAL DISAGREE	3%	3%	2%	4%
<i>Australia should be investing more in wind energy</i>				
TOTAL AGREE	92%	95%	87%	91%
TOTAL DISAGREE	5%	5%	7%	4%
<i>I would be happy to see more wind farms in Australia</i>				
TOTAL AGREE	91%	93%	88%	89%
TOTAL DISAGREE	7%	5%	10%	9%
<i>Local Government should encourage wind farm development</i>				
TOTAL AGREE	84%	89%	79%	79%
TOTAL DISAGREE	11%	7%	17%	15%
		+		
		-		
<i>Wind farm developments contribute to the local economy</i>				

TOTAL AGREE	65%	69%	62%	61%
TOTAL DISAGREE	15%	12%	23%	15%
<i>I would be happy to see a wind farm built on farmland near where I live</i>				
TOTAL AGREE	83%	87%	83%	77%
TOTAL DISAGREE	11%	7%	15%	13%
TOTAL	100%	100%	100%	100%
Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---				

3.3.1 Living with a wind farm within 10 kilometres of home

As a follow-up question to the statement “I would be happy to see a wind farm built on the farmland near where I live”, respondents were asked whether it would make a difference to the way they had responded to that question, if it was proposed to build a wind farm within 10 kilometres of where they live now. Table 3.18 details these findings.

Table 3.18 Favour/oppose wind farms more or less if 10 kilometres from home

Q.13 And what if it was proposed to build a wind farm within 10 kilometres of where you live now, would that make any difference to the way you feel? Would it make you *(read out)*

DTR Table: 32.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
I would be happy to see a wind farm built on farmland near where I live				
TOTAL AGREE	83%	87%	83%	77%
TOTAL DISAGREE	11%	7%	15%	13%
<i>Q13 Difference if wind farm built within 10 kilometres of where live now</i>				
Favour it more	22%	22%	22%	23%
Oppose it more	8%	6%	11%	8%
or, make no difference to your opinion	70%	71%	67%	69%
TOTAL	100%	100%	100%	100%

Table 3.18 shows seven in ten respondents claimed that having a wind farm within 10 kilometres of where they lived now would make no difference to their response to the statement.

Of the three in ten who claimed the proximity of the wind farm to their place of residence would make a difference to their response: two in ten claimed it would only serve for them to favour the statement more.

3.3.2

A focus on the local rural area

This section of the questionnaire focused on the Crookwell wind farm which was commissioned in July, 1998 and is situated about 10 kilometres South East of Crookwell and located in the North East of the defined survey area, see Figure 1.2. As Crookwell is presently the only operational wind farm in the survey area, part of this assessment was to establish respondents' awareness, knowledge, familiarity and attitude to this wind farm.

As noted earlier in this report (see *Table 3.6* and *Table 3.7*) with the exception of Crookwell and Taralga, knowledge of other wind farm projects and their locations in the survey area at an unprompted level was somewhat vague, nonetheless there was certainly a consciousness of activity in the Southern Tablelands even if the details could not be recalled with clarity.

3.3.3

Awareness of the Crookwell wind farm

Table 3.19 below shows aided awareness of respondents towards the Crookwell wind farm.

Table 3.19 *Awareness of Crookwell wind farm*

Q.14 There is presently a small wind farm located near Crookwell in the Southern Tablelands that was constructed in 1997 and has only 8 wind turbines ... the wind farm is located to the South East of Crookwell which is about 30 kilometres north-west of Goulburn...

a) Were you aware of the existence of this wind farm near Crookwell before today?

DTR Table: 33.0			
Q14D Is Crookwell wind farm in your local rural area			
	TOTAL	Crookwell is local	Crookwell NOT Local
WEIGHTED BASE	300	195	105
	%	%	%
<i>Q14A Aware of existence of wind farm near Crookwell before today</i>			
Yes	94%	96% +	90% -
No	6%	4% -	10% +
TOTAL	100%	100%	100%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Table 3.19 demonstrates respondents' awareness of the Crookwell wind farm was almost universal with 94% of respondents aware of the wind farm. Amongst those who claimed the Crookwell wind farm was in their local area, aided awareness was as expected significantly greater (96%) than those for whom it was not (90%).

3.3.4 *Personally seen the Crookwell wind farm?*

Respondents were asked who were aware of the Crookwell wind farm whether they had personally seen it. Table 3.20 below shows 87% of those who were aware of the Crookwell wind farm had actually seen it, which, due to the high awareness of the wind farm, is 82% of all respondents.

Table 3.20 *Personally seen the Crookwell wind farm*

Q.14B IF YES IN Q.14 a): Have you personally, seen the wind farm near Crookwell?			
Filter: Q14A Aware of existence of wind farm near Crookwell before today			
DTR Table: 34.0	Q14D Is Crookwell wind farm in your local rural area		
	TOTAL	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	281	187	94
	%	%	%
<i>Q14B Seen wind farm near Crookwell</i>			
Yes	87%	91% ++	78% --
No	13%	9% --	21% ++
Don't Know	0%	0%	1%
<i>Q14B Seen wind farm near Crookwell - ALL RESPONDENTS</i>			
WEIGHTED BASE	300	195	105
	%	%	%
Yes	82%	88% ++	68% --
No/DK	18%	12% --	32% ++
TOTAL	100%	100%	100%
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>			

As would be expected, those who consider the Crookwell wind farm to be in their local rural area (see later) are significantly more likely to have seen the wind farm, relative to others resident in the survey area.

3.3.5 *Frequency of seeing the Crookwell wind farm*

During the course of a year seven in ten respondents in the survey area are in the vicinity and able to see the Crookwell wind farm. Amongst those who are aware of the existence of the Crookwell wind farm and have seen it, the proportion of those that are able to see it during the course of a year is significantly higher (88%).

Table 3.21 *Frequency of seeing the Crookwell wind farm*

Q.14C IF YES IN Q.14 b): And how often are you in the vicinity to see the wind farm near Crookwell ...would it be (<i>read out if necessary</i>)			
Filter: Q14A Aware of existence of wind farm near Crookwell before today yes and q14b seen wind farm near Crookwell Yes			
DTR Table: 35.0			
	Q14D Is Crookwell wind farm in your local rural area		
	TOTAL	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	245	171	74
	%	%	%
<i>Q14C Often in vicinity to see the wind farm near Crookwell</i>			
At least once a day (365)	5%	7%	0%
		+	-
Several times a week (156)	8%	10%	4%
At least once a week (52)	12%	14%	6%
<i>At least once a week</i>	24%	32%	9%
At least once a month (12)	18%	19%	14%
<i>At least once a month</i>	42%	51%	23%
Every two or three months (4)	9%	10%	8%
Three or four times a year (3)	13%	13%	11%
Once or twice a year (2)	24%	17%	39%
		---	+++
<i>At least once a year</i>	88%	90%	82%
less often	12%	10%	18%
TOTAL	100%	100%	100%
MEAN	44.6	56.49	14.21
STD DEV	88.77	100.3	32.86
STD ERR	6.08	8.14	4.21
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>			
<u>ALL RESPONDENTS</u>			
At least once a week	20%	28%	7%
At least once a month	34%	44%	17%
At least once every 6 months	52%	65%	30%
At least once a year	72%	80%	58%
Less often	10%	8%	12%
Never	18%	12%	30%
TOTAL	100%	101%	100%

Table 3.21 shows the frequency of seeing the Crookwell wind farm is more frequently on view to those who consider the Crookwell wind farm to be located in their local rural area. Nonetheless 58% of all respondents who don't consider the Crookwell wind farm to be in their local area see the wind farm at least annually and of those who are aware of it and have seen it previously, exposure rises to 82% each year.

Amongst those who have seen the Crookwell wind farm and consider it to be located in their local rural area, 51% see the wind farm at least once each month, compared to 23% of those who have seen the wind farm but do not consider the Crookwell wind farm to be in their local rural area.

3.3.6

Consider the Crookwell wind farm to be in your local rural area?

Respondents were asked whether or not they considered the Crookwell wind farm to be in their local rural area, see Table 3.22 and 3.23 below. No assisting definition of what the 'local rural area' comprised was provided, the outcome depending purely on the respondents' perceptions.

Table 3.22 *Is the Crookwell wind farm in your local area*

Q.14D ASK EVERYONE: The Crookwell wind farm is located about 10km to the South East of Crookwell ... is the Crookwell wind farm in what you would consider to be your local rural area?

DTR Table: 36.0		Q2 Response to Global Warming		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response
WEIGHTED BASE	300	150	52	98
	%	%	%	%
<i>Q14D Crookwell wind farm considered to be in local rural area</i>				
Yes	65%	62%	67%	68%
No	34%	35%	33%	32%
Don't Know	1%	3%	0%	0%
		+		
TOTAL	100%	100%	100%	100%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Table 3.23 Distance respondents reside from Crookwell wind farm

Q14E About how far is the Crookwell wind farm from where you live?			
<u>If necessary:</u> Would it be ...			
DTR Table: 37.0		Q14D Is Crookwell wind farm in your local rural area	
	TOTAL	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	195	105
	%	%	%
<i>Q14E Kilometres Crookwell wind farm from where live</i>			
less than 1 kilometre (.5)	1%	1%	0%
1 to 3 kilometres (2.5)	1%	1%	0%
4 to 10 kilometres (7)	8%	12%	1%
		+++	---
11 to 25 kilometres (18)	20%	27%	8%
		+++	---
more than 25 kilometres (26)	68%	57%	90%
		---	+++
Don't Know	2%	2%	2%
TOTAL	100%	100%	100%
MEAN	22.46	20.94	25.25
STD DEV	6.23	7.04	2.63
STD ERR	0.36	0.51	0.26

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Two in three respondents considered the Crookwell wind farm was within their local rural area. There was no statistically significant difference across the global warming analysis groups.

Just on seven in ten respondents indicated they lived more than 25 kilometres from the Crookwell wind farm. Indeed, even amongst those who considered the Crookwell wind farm to be in their local rural area, 57% stated they lived more than 25 kilometres from the wind farm – only 14% said they lived within 10 kilometres.

Amongst the respondents who did not consider the Crookwell wind farm to be in their local rural area (34%) some 90% stated they lived more than 25 kilometres from the wind farm, see *Table 3.24* below.

3.3.7

Favour or oppose the Crookwell wind farm?

Few of the respondents in this survey (3%) were opposed to the Crookwell wind farm. Analysis of the outcome by the global warming response groups shows that those who favour a 'gradual' approach to global warming are less committed in their support for Crookwell and exhibit a statistically significant higher level of ambivalence toward the wind farm relative to those who favour an 'act now' response. The response of the 'gradual' group is similar to those who don't regard the Crookwell wind farm as falling within their local rural area.

Comparing the responses of those who regard the Crookwell wind farm as falling within their local rural area versus those who don't, we find a statistically significant difference between the two. Of those who regard Crookwell wind farm as local, 89% favour the farm, whereas for those who do not regard it as local, only 78% find favour with the farm - 18% are ambivalent. It would appear that those who live in the vicinity of a wind farm are more likely to favour it than those who don't. Proximity appears to mitigate concerns.

Notwithstanding these comments, community support for the Crookwell wind farm can only be summarised as outstanding with 85% of respondents saying they are in favour of the wind farm, see *Table 3.24* below.

Table 3.24 *General opinion of the Crookwell wind farm*

Q14F And what is your general opinion of the Crookwell wind farm, would you say you are ... (<i>read out</i>)						
DTR Table: 38.0		Q2 Response to Global Warming			Q14D Is Crookwell wind farm in your local rural area	
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	150	52	98	195	105
	%	%	%	%	%	%
<i>Q14F General opinion of the Crookwell wind farm</i>						
Strongly in favour (5)	50%	59% ++	40%	42% -	53%	45%
Generally in favour (4)	35%	29% -	45%	38%	36%	33%
or... do you not mind one way or the other (3)	12%	10%	10%	17% +	9% -	18% +
Generally opposed (2)	2%	1%	6%	3%	2%	3%
Strongly opposed (1)	0%	0%	0%	0%	0%	1%
TOTAL IN FAVOUR	85%	89%	85%	80%	89% +	78% -
TOTAL OPPOSED	3%	2%	6%	3%	2%	4%
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	4.33	4.46	4.19	4.19	4.4	4.19
STD DEV	0.8	0.76	0.83	0.82	0.74	0.89
STD ERR	0.05	0.06	0.12	0.08	0.05	0.09
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>						

3.3.8

How close, is "close to home"?

As detailed above, if a respondent lives in the vicinity of a wind farm the respondent is more likely to favour it, or at least more likely to have an opinion of it, than if the wind farm is not located in the respondent's vicinity.

Critics of wind farms have, amongst other things, highlighted the lack of visual appeal of wind farms and noise as issues for wind farms. As can be seen in *Table 3.34* above, 24% mentioned 'noise' as a disadvantage of wind farms and a further 18% mentioned the lack of visual appeal as a disadvantage. However, at least two in three who had seen a wind farm felt they were visually appealing (see *Table 3.11*), nine in ten respondents accepted that changes to landscape were necessary if we are to adopt wind power (see *Table 3.14*) and further just on nine in ten were in favour of wind farm projects in the Southern Tablelands (see *Table 3.15*).

In this section, the study sought to address the issue of noise impact of wind turbines and the proximity of wind turbines to respondents' homes. It is noted that 83% of respondents agree they would be happy to have a wind farm located in the farm land near where they live and if that was within 10 kilometres of their home, it would on balance make no difference to their opinion (see *Table 3.18*).

In the next section of the questionnaire, respondents were advised that scientific testing had established that people need to be less than 800 metres from the wind turbines to hear any significant noise, even in extreme wind conditions. With this in mind, respondents were asked to consider how strongly they either favoured or opposed having a wind farm located 1 kilometre, 3 kilometres, 10 kilometres and 25 kilometres of their home.

3.3.9

A wind farm one kilometre from home?

When asked whether they would favour or oppose a wind farm located one kilometre from their home, 71% of respondents in this community survey said they would be in favour of the wind farm. 19% were opposed and 10% were ambivalent, see *Table 3.25*.

Table 3.25 *Favour or oppose a wind farm one kilometre from home*

Q.15 Scientific tests conducted at wind farms have shown that people need to be less than approximately 800 metres from the wind turbines for them to hear any significant noise, even in extreme wind conditions. Bearing this in mind ...

a) Would you favour or oppose a wind farm if it was located ONE KILOMETRE from where you live now? Would that be *(read out)*

Q14D Is Crookwell wind farm in your local rural area

DTR Table: 39.0

	TOTAL	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300 %	195 %	105 %
<u>Q15A Favour / oppose - wind farm if it was located one kilometre from home</u>			
Strongly in favour (5)	39%	46% ++	27% --
Generally in favour (4) or... do you not mind one way or the other? (3)	32% 10%	29% 7%	36% 14%
Generally opposed (2)	9%	8%	12%
Strongly opposed (1)	10%	9%	11%
TOTAL IN FAVOUR	71%	75% +	64% -
TOTAL OPPOSED	19%	17%	23%
TOTAL	100%	100%	100%
MEAN	3.81	3.95	3.57
STD DEV	1.32	1.31	1.31
STD ERR	0.08	0.09	0.13

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Whilst there was no significant difference between the responses of the global warming analysis groups, there was a statistically significant difference in the response provided by those who regarded the Crookwell wind farm as falling within their local rural area (75%) and those who did not (64%). This outcome is due in part the higher proportion of those in the 'non-local' group who were ambivalent about the proposition.

3.3.10 *A wind farm three kilometres from home?*

When asked to consider a wind farm three kilometres from home, there was a significant increase in the proportion of respondents who were in favour of the wind farm, see *Table 3.26* below. Those in favour increased from 71% in favour of a wind farm one kilometre from home to 79% for a wind farm three kilometres from home.

Table 3.26 *Favour or oppose a wind farm three kilometres from home*

Q.15B Would you favour or oppose a wind farm if it was located THREE KILOMETRES from where you live now? Would that be <i>(read out)</i>			
DTR Table: 40.0	Q14D Is Crookwell wind farm in your local rural area		
	TOTAL	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	195	105
	%	%	%
Q15B Favour / oppose - wind farm if it was located three kilometres from home			
Strongly in favour (5)	46%	48%	43%
Generally in favour (4)	32%	32%	32%
or... do you not mind one way or the other? (3)	9%	8%	10%
Generally opposed (2)	7%	6%	9%
Strongly opposed (1)	6%	6%	6%
TOTAL IN FAVOUR	79%	80%	75%
TOTAL OPPOSED	13%	12%	15%
TOTAL	100%	100%	100%
MEAN	4.06	4.11	3.97
STD DEV	1.16	1.14	1.2
STD ERR	0.07	0.08	0.12

Table 3.26 shows that at three kilometres from home there is no statistically significant difference in the outcome for any of the analysis groups, including those who live / don't live within the local rural area of the Crookwell wind farm.

3.3.11 *A wind farm ten kilometres from home?*

At ten kilometres from home the proportion in favour of the wind farm rises again. At ten kilometres, 83% support the wind farm, the same outcome as reported earlier (see Table 3.27).

Table 3.27 *Favour or oppose a wind farm ten kilometres from home*

Q.15C Would you favour or oppose a wind farm if it was located TEN KILOMETRES from where you live now? Would that be <i>(read out)</i>			
DTR Table: 41.0		Q14D Is Crookwell wind farm in your local rural area	
	TOTAL	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300 %	195 %	105 %
<i>Q15C Favour / oppose - wind farm if it was located ten kilometres from home</i>			
Strongly in favour (5)	53%	54%	50%
Generally in favour (4)	31%	31%	30%
or... do you not mind one way or the other? (3)	8%	8%	9%
Generally opposed (2)	4%	2%	7%
		-	+
Strongly opposed (1)	4%	4%	4%
TOTAL IN FAVOUR	83%	85%	80%
TOTAL OPPOSED	8%	7%	11%
TOTAL	100%	100%	100%
MEAN	4.24	4.29	4.14
STD DEV	1.04	1.01	1.1
STD ERR	0.06	0.07	0.11

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

As can be seen in Table 3.27, support for the wind farm has strengthened at the expense of those opposed or ambivalent to the earlier propositions. Generally, support is more committed amongst those for whom the Crookwell wind farm is within the respondents' local rural area. This outcome tends to reinforce the earlier proposition that the more familiar respondents become with wind farms in their usual environment, the less likely they are to be opposed to them.

3.3.12 *A wind farm twenty five kilometres from home?*

At twenty five kilometres from home, 87% of the community sample in the survey area was in favour of the proposition, see *Table 3.28* below.

Table 3.28 *Favour or oppose a wind farm twenty five kilometres from home*

Q.15D Would you favour or oppose a wind farm if it was located TWENTY FIVE KILOMETRES from where you now live? Would that be <i>(read out)</i>			
DTR Table: 42.0		Q14D Is Crookwell wind farm in your local rural area	
	TOTAL	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	195	105
	%	%	%
<i>Q15D Favour / oppose - wind farm if it was located twenty five kilometres from home</i>			
Strongly in favour (5)	57%	59%	54%
Generally in favour (4)	30%	28%	33%
or... do you not mind one way or the other? (3)	9%	9%	9%
Generally opposed (2)	2%	2%	4%
Strongly opposed (1)	2%	3%	1%
TOTAL IN FAVOUR	87%	87%	87%
TOTAL OPPOSED	5%	4%	5%
TOTAL	100%	100%	100%
MEAN	4.37	4.38	4.35
STD DEV	0.9	0.92	0.85
STD ERR	0.05	0.07	0.08

3.3.13

Acceptance of wind farms by distance from home - a summary

The preceding sections have indicated those in favour of a wind farm close to where they live, rises from a low of 71% when the wind farm is located one kilometre from home to a high of 87% when it is located twenty five kilometres away. *Table 3.29* summarises the proportions in favour and opposed for each of the four distances tested.

When attempting to assess the outcomes of this questioning procedure, it should be reiterated that questions have been presaged by introducing the concept of wind noise from the wind turbines that comprise wind farms. Respondents were advised that “Scientific tests conducted at wind farms have shown that people need to be less than approximately 800 metres from the wind turbines for them to hear any significant noise, even in extreme wind conditions”.

It is noted here that noise assessments are specific to each site, and therefore while 800 metres is considered ‘a typical distance’ where noise is no longer discernable, this may be a shorter or larger distance at some sites.

While the exact distance where noise is no longer discernable is subject to a specific site, the clear outcome of this survey is that the majority of residents are willing to live very close to the area where noise is discernable.

Table 3.29 *Acceptance of wind farms by distance from home*

Q. 15 Scientific tests conducted at wind farms have shown that people need to be less than approximately 800 metres from the wind turbines for them to hear any significant noise, even in extreme wind conditions. Bearing this in mind ... Would you favour or oppose a ...			
DTR Table: 39.0 to 42.0	Q14D Is Crookwell wind farm in your local rural area		
	TOTAL	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	195	105
	%	%	%
<i>Q15A Wind farm located one kilometre from home</i>			
TOTAL IN FAVOUR	71%	75% +	64% -
TOTAL OPPOSED	19%	17%	23%
<i>Q15B Wind farm located three kilometres from home</i>			
TOTAL IN FAVOUR	79%	80%	75%
TOTAL OPPOSED	13%	12%	15%
<i>Q15C Wind farm located ten kilometres from home</i>			
TOTAL IN FAVOUR	83%	85%	80%
TOTAL OPPOSED	8%	7%	11%
<i>Q15D Wind farm located twenty five kilometres from home</i>			
TOTAL IN FAVOUR	87%	87%	87%

TOTAL OPPOSED	5%	4%	5%
TOTAL	100%	100%	100%
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>			

At the very least, the outcomes from these questions suggest that at least 71% of respondents are prepared to accept a wind farm one kilometre from home, that 10% were ambivalent, not caring one way or the other and that only 19% expressed opposition.

It is observed that the percentage of respondents opposed to wind farms, drops significantly for wind farms ten kilometres from home (8%) and declines further to 5% at twenty five kilometres.

3.3.14 *The issue of wind farm size*

Whilst this study has explored the knowledge, understanding and attitudes to various dimensions of wind farms, remaining unassessed is the issue of the size of wind farms. To this point in the questionnaire there has been a focus of the respondents to Crookwell wind farm. The Crookwell wind farm, which is established as well known to respondents in the survey area, has however eight wind turbines.

In this section, the assessment sought to establish the extent to which respondents either favour or oppose wind farms of varying sizes in their local rural area.

3.3.15

Aided awareness of approved wind farm projects in the survey area

As noted earlier, respondents in the survey area were aware of wind farm projects in the Southern Tablelands, but with the exception of Crookwell and Taralga were somewhat vague as to their location. This was assessed by reading a short list of approved but yet to be constructed wind farm projects in the Southern Tablelands, specifying their locations and the number of wind turbines that would comprise each wind farm.

The purpose of the question was to not only establish awareness of each specific project, but to provide information to respondents concerning the actual size of the wind farm via the administration of the question.

Table 3.30 *Aided awareness of approved wind farm projects*

Q.16 At present a number of wind farms have been approved, but are yet to be built in the Southern Tablelands ... which of the following wind farm developments in the Southern Tablelands were you aware of before today ...

DTR Table: 43.0	TOTAL	Q2 Response to Global Warming			Q14D Is Crookwell wind farm in your local rural area	
		Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300 %	150 %	52 %	98 %	195 %	105 %
<i>Q16 Aware a number of wind farms have been approved in the Southern Tablelands</i>						
the Conroy's Gap wind farm near Yass with 15 wind turbines	51%	50%	54%	52%	48%	58%
the Cullerin Range wind farm with 15 wind turbines	54%	44% ---	70% ++	61%	56%	50%
the Gunning wind farm near Gunning with 32 wind turbines	59%	52% -	75% ++	60%	62%	53%
the Crookwell 2 wind farm near Crookwell with 46 wind turbines	71%	71%	73%	69%	76% ++	60% --
the Taralga wind farm near Taralga with 69 wind turbines	63%	57% -	73%	67%	69% ++	53% --
None of these	7%	9%	2%	7%	6%	9%
TOTAL	305%	283%	346%	317%	317%	283%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Table 3.30 shows at least one in two respondents are aware of each of the wind farm projects nominated. Only 7% were unable to nominate a project.

The leading projects were:

- Crookwell 2, mentioned by 71%
- Taralga, mentioned by 63%, and
- Gunning, mentioned by 59%.

The Conroy's Gap and Cullerin range wind farms followed closely behind in terms of aided awareness.

Not unexpectedly, aided awareness of Crookwell 2 (76%) and Taralga (69%) was significantly greater amongst those respondents who described the Crookwell wind farm as falling within their local rural area, albeit that their interest in such projects appears to have been stimulated by the existence of the Crookwell wind farm. Only the Conroy's Gap wind farm near Yass, the most distant from Crookwell, was better known by those who did not include the Crookwell wind farm in their local rural area.

It is noted here that analysis of the aided awareness of these approved, but yet to be constructed wind farms, by the global warming groups appears to produce statistically significant aided awareness profiles across these three groups. Given the stated responses of these groups differ; the reasons for the differential responses at Conroy's Gap, Cullerin Range and Gunning perhaps relate to the differences in the approval process and/or the site histories which is beyond the scope of this report.

3.3.16

Acceptance of small wind farms

Respondents were informed that wind farms are usually sited on ridges and hills on private land in rural areas where wind flow is the greatest; that wind farms are built in varying sizes depending on local conditions and may contain as few as 8 wind turbines, but typically 15 to 80 wind turbines spaced about 400 to 500 metres apart. In this context respondents were asked whether they would favour or oppose the development of a small wind farm of up to 15 wind turbines in their local rural area, see Table 3.31.

Table 3.31 Favour or oppose a small wind farm in the local rural area

Q.17 Wind farms are usually sited on ridges and hills on private land in rural areas where wind flow is the greatest ... wind farms are built in varying sizes depending on local conditions and may contain as few as 8 wind turbines, but typically 15 to 80 wind turbines spaced about 400 to 500 metres apart ...

a) Thinking about the local rural area in your vicinity ... would you favour or oppose the development of a small wind farm of up to 15 wind turbines in your local rural area? Would that be (*read out*)

DTR Table: 44.0	TOTAL	Q2 Response to Global Warming			Q14D Is Crookwell wind farm in your local rural area	
		Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300 %	150 %	52 %	98 %	195 %	105 %
<i>Q17A Favour / oppose small wind farm of up to 15 wind turbines in local rural area</i>						
Strongly in favour (5)	56%	61%	53%	49%	59%	50%
Generally in favour (4)	32%	31%	36%	33%	31%	35%
or... do you not mind one way or the other (3)	5%	3%	2%	9%	4%	6%
Generally opposed (2)	4%	2%	7%	6%	3%	6%
Strongly opposed (1)	3%	3%	2%	4%	3%	3%
TOTAL IN FAVOUR	88%	92%	89%	81%	90%	85%
TOTAL OPPOSED	7%	5%	9%	10%	6%	9%
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	4.34	4.46	4.31	4.16	4.4	4.22
STD DEV	0.97	0.88	0.97	1.08	0.94	1.02
STD ERR	0.06	0.07	0.14	0.11	0.07	0.1

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Almost all respondents (88%) were in favour of such a project in their local rural area, only 7% were opposed.

Analysis by the global warming groups produced significantly different outcomes between the three groups. Those with an 'act now' focus were significantly more disposed to such a project (92% favoured it), whereas those who adopt a 'gradual' response were less inclined to favour the project (81%), albeit the level of actual support was very high anyway.

There were no significant differences between those who classified the Crookwell wind farm as falling within/outside their local rural area.

3.3.17 Acceptance of typical wind farms

Having established whether respondents either favour or oppose 'small' wind farms, respondents were asked whether they would favour or oppose a 'typical' wind farm with 15 to 80 wind turbines in their local rural area.

Table 3.32 Favour or oppose a typical wind farm in the local rural area

Q.17B Would you favour or oppose the development of a typical wind farm with 15 to 80 wind turbines in your local rural area? Would that be (<i>read out</i>)						
DTR Table: 45.0	Q2 Response to Global Warming				Q14D Is Crookwell wind farm in your local rural area	
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	150	52	98	195	105
	%	%	%	%	%	%
<i>Q17B Favour / oppose typical wind farm with 15-80 wind turbines in local rural area</i>						
Strongly in favour (5)	37%	44%	37%	28%	40%	32%
		+		-		
Generally in favour (4)	39%	37%	40%	40%	38%	40%
or... do you not mind one way or the other (3)	5%	5%	1%	6%	3%	9%
					--	++
Generally opposed (2)	10%	8%	12%	14%	11%	9%
Strongly opposed (1)	9%	6%	11%	12%	8%	10%
TOTAL IN FAVOUR	76%	81%	76%	68%	78%	72%
		+		-		
TOTAL OPPOSED	19%	14%	22%	26%	19%	18%
		-		+		
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	3.86	4.06	3.8	3.58	3.91	3.76
STD DEV	1.26	1.15	1.34	1.35	1.26	1.26
STD ERR	0.07	0.1	0.19	0.13	0.09	0.12
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>						

Table 3.32. shows those in favour of a 'typical' wind farm with 15 to 80 turbines was significantly lower than for 'small' wind farms with those favouring such a wind farm falling from 88% for a 'small' wind farm to 76%. Moreover, those opposed to a 'small' wind farm (7%) increased significantly to 19% expressing their opposition to a 'typical' wind farm. Nonetheless support for a typical wind farm from three in every four adults in this community survey is very strong support.

Support was highest from those with an 'act now' focus in response to global warming at 81%, but again significantly lower amongst those advocating a 'gradual' approach to global warming at 68%.

Support for a typical wind farm was lower amongst those without a wind farm in their local rural area, but not significantly so – the difference was more in the intensity of the support provided.

3.3.18 Acceptance of large wind farms

Respondents were asked whether they favour or opposed the development of a large wind farm with greater than 80 and up to 120 wind turbines in their local area, see Table 3.33.

Table 3.33 Favour or oppose a large wind farm in the local rural area

Q.17 C And would you favour or oppose the development of a large wind farm with greater than 80 and up to 120 wind turbines in your local rural area? Would that be (<i>read out</i>)						
DTR Table: 46.0	Q2 Response to Global Warming			Q14D Is Crookwell wind farm in your local rural area		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	150	52	98	195	105
	%	%	%	%	%	%
<i>Q17C Favour / oppose - large wind farm with 80 - 120 wind turbines in local rural area</i>						
Strongly in favour (5)	27%	32%	27%	21%	31%	20%
Generally in favour (4)	34%	36%	30%	32%	32%	37%
or... do you not mind one way or the other (3)	7%	8%	2%	9%	5%	11%
Generally opposed (2)	17%	14%	22%	19%	18%	16%
Strongly opposed (1)	15%	10%	19%	20%	13%	17%
		-			+	-
TOTAL IN FAVOUR	61%	68%	58%	53%	64%	57%
		+		-		
TOTAL OPPOSED	32%	24%	41%	38%	31%	33%
		--				
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	3.42	3.66	3.26	3.15	3.51	3.27
STD DEV	1.42	1.33	1.53	1.45	1.43	1.4
STD ERR	0.08	0.11	0.21	0.14	0.1	0.14

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

The pattern of support declining with the increase in size of the wind farm continued. Nonetheless, 61% of respondents in the survey area indicated they favoured the development of a large wind farm in their local area. Opposition continued to grow commensurate with the size of the wind farm. Those opposed to the development of a wind farm in their local rural area grew from 7% for a small wind farm, to 19% for a 'typical' wind farm and then to 32% for a large wind farm. Nonetheless, at least six in ten respondents supported a wind farm of greater than 80 and up to 120 wind turbines in their local rural area.

Those with an 'act now' response to global warming were the most positive supporters (68%), but those advocating a 'gradual' response were significantly less supportive (53%).

Those whose local rural area encompassed the existing Crookwell wind farm continued to offer a greater intensity of support relative to their counterparts who lived further away.

3.3.19

Acceptance of wind farms by size – a summary

Table 3.34 below provides a summary of the response of respondents to the development of wind farms of varying size in their local rural areas.

Table 3.34 Favour or oppose wind farms of varying size in the local area

Q.17A Thinking about the local rural area in your vicinity ... would you favour or oppose the development of a small wind farm of up to 15 wind turbines in your local rural area? Would that be (*read out*)

Q.17B Would you favour or oppose the development of a typical wind farm with 15 to 80 wind turbines in your local rural area? Would that be (*read out*)

Q.17 C And would you favour or oppose the development of a large wind farm with greater than 80 and up to 120 wind turbines in your local rural area? Would that be (*read out*)

DTR Tables: 44.0 to 46.0	Q2 Response to Global Warming			Q14D Is Crookwell wind farm in your local rural area		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300 %	150 %	52 %	98 %	195 %	105 %
<u>Q17A Favour / oppose small wind farm of up to 15 wind turbines in local rural area</u>						
TOTAL IN FAVOUR	88%	92% +	89%	81% -	90%	85%
TOTAL OPPOSED	7%	5%	9%	10%	6%	9%
<u>Q17B Favour / oppose typical wind farm with 15-80 wind turbines in local rural area</u>						
TOTAL IN FAVOUR	76%	81% +	76%	68% -	78%	72%
TOTAL OPPOSED	19%	14% -	22%	26% +	19%	18%
<u>Q17C Favour / oppose - large wind farm with 80 - 120 wind turbines in local rural area</u>						
TOTAL IN FAVOUR	61%	68% +	58%	53% -	64%	57%
TOTAL OPPOSED	32%	24% --	41%	38%	31%	33%
TOTAL	100%	100%	100%	100%	100%	100%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

As noted in preceding sections, support for wind farms declines with increasing size when it is proposed they are to be developed in the respondents' local rural areas:

- 88% favour a small wind farm of up to 15 wind turbines;
- 76% favour a typical wind farm with 15 to 80 wind turbines; and
- 61% favour a large wind farm with greater than 80 and up to 120 wind turbines.

Those advocating an 'act now' response to global warming demonstrate a statistically significant higher level of support for each option. Conversely, those who advocate a 'gradual' response to global warming demonstrate a significantly lower level of

support for each option. Nonetheless, a majority of this group still support the development of a large wind farm.

3.3.20 *Cumulative impact of successive wind farm developments*

In the final section of the questionnaire respondents were asked to consider a scenario where a typical wind farm of 15 to 80 wind turbines had been constructed on the hills or ridges of private farmland in their local rural area and, it was proposed that a second wind farm of similar size was also to be located in their local rural area.

3.3.21 *The preferred site for a second wind farm in the local rural area*

Given the existence of one typical wind farm in the local rural area, some two in three respondents preferred the second typical wind farm to be located either adjacent or nearby the first wind farm, see *Table 3.35*.

Table 3.35 Preferred site for a second wind farm in the local rural area

Q.18 If for the moment you could imagine a typical wind farm with 15 to 80 wind turbines was sited on the hills or ridges of private farmland in your local rural area ... and it was proposed to site another wind farm of similar size in your local rural area ...

a) Would you prefer that it was (*read out*)

b) IF "BE LOCATED ELSEWHERE": How far away from the existing site should it be located? If necessary: How many kilometres away?

DTR Table: 47.0 & 48.0	Q2 Response to Global Warming			Q14D Is Crookwell wind farm in your local rural area		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300 %	150 %	52 %	98 %	195 %	105 %
<i>Q18A Preferred site of 2nd wind farm of 15 - 80 wind turbines in local rural area</i>						
sited adjacent to the existing wind farm,	42%	44%	41%	40%	43%	41%
not adjacent, but nearby the existing wind farm, or be located elsewhere in your local rural area	21%	20%	29%	16%	18%	26%
further away and out of sight from the existing wind farm	37%	36%	30%	44%	39%	34%
TOTAL	100%	100%	100%	100%	100%	100%
WEIGHTED BASE	112 %	54 %	15 %	43 %	77 %	36 %
<i>Q18BCD Kilometres from the existing site should be located</i>						
Up to 5 km	19%	21%	24%	16%	18%	22%
Up to 10 km	21%	16%	16%	27%	20%	21%
Up to 20 km	19%	16%	14%	22%	22%	10%
Up to 50 km	15%	12%	21%	17%	12%	21%
More than 50 km	4%	3%	0%	6%	5%	0%
DON'T KNOW	22%	31%	25%	12%	23%	24%
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	19.34	17.87	16.99	21.54	19.98	17.89
STD DEV	20.53	20.07	14.59	22.68	22.28	16.11
STD ERR	2.11	3.13	4.22	3.51	2.76	2.96

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

The balance, roughly one in three advocated somewhere further away and out of sight of the first wind farm, which on average equated to approximately 20 kilometres.

There were no statistically significant differences between the analysis groups.

3.3.22 Acceptance of two 'typical' wind farms in local rural area

Respondents were asked earlier (see Table 3.32) whether they favour or oppose a 'typical' wind farm of 15 to 80 turbines in their local rural area and 76% favoured the proposition. 19% were opposed.

Table 3.36 Favour or oppose two typical wind farms in local rural area

Q.18 c) Would you favour or oppose the location of two typical wind farms each one of 15 to 80 turbines your local rural area? Would that be (<i>read out</i>)						
DTR Table: 49.0	Q2 Response to Global Warming			Q14D Is Crookwell wind farm in your local rural area		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	150	52	98	195	105
	%	%	%	%	%	%
<i>Q18C Favour / oppose two typical wind farms each one 15-80 turbines in local rural area</i>						
Strongly in favour (5)	34%	41% ++	30%	24% -	36%	30%
Generally in favour (4) or... do you not mind one way or the other (3)	42%	38%	40%	48%	43%	40%
Generally opposed (2)	8%	7%	8%	8%	5%	13%
Strongly opposed (1)	10%	7%	14%	12%	--	++
TOTAL IN FAVOUR	75%	79%	71%	72%	79%	70%
TOTAL OPPOSED	17%	13%	21%	20%	17%	17%
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	3.85	4.02	3.72	3.68	3.9	3.77
STD DEV	1.19	1.14	1.25	1.2	1.2	1.17
STD ERR	0.07	0.09	0.18	0.12	0.09	0.11
<i>Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---</i>						

As can be seen from Table 3.36, these outcomes basically remain unchanged when respondents are asked to consider whether they favour or oppose two 'typical' wind farms in their local rural area. 75% were in favour and 17% were opposed. Those in the 'act now' global warming response group and those for whom the Crookwell wind farm was in their local rural area were the most committed.

3.3.23

Acceptance of three 'typical' wind farms in local rural area

When respondents were asked whether they would favour or oppose a third 'typical' wind farm.

Table 3.37 *Favour or oppose three typical wind farms in local rural area*

Q18 d) Would you favour or oppose the location of three typical wind farms each one of 15 to 80 turbines in your local rural area? Would that be (<i>read out</i>)						
DTR Table: 50.0	Q2 Response to Global Warming				Q14D Is Crookwell in your local rural area	
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	150	52	98	195	105
	%	%	%	%	%	%
<i>Q18D Favour / oppose three typical wind farms 15-80 turbines in local rural area</i>						
Strongly in favour (5)	30%	34%	31%	21%	33%	23%
Generally in favour (4)	35%	34%	29%	39%	37%	30%
or... do you not mind one way or the other (3)	9%	11%	11%	6%	6%	16%
Generally opposed (2)	14%	11%	13%	21%	11%	20%
Strongly opposed (1)	12%	11%	16%	13%	13%	11%
TOTAL IN FAVOUR	64%	68%	60%	61%	70%	53%
					++	--
TOTAL OPPOSED	27%	21%	29%	34%	24%	31%
		-				
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	3.55	3.7	3.46	3.36	3.66	3.34
STD DEV	1.37	1.33	1.47	1.36	1.38	1.33
STD ERR	0.08	0.11	0.21	0.13	0.1	0.13

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Not unexpectedly the proportion in favour declined significantly from the 75% who favoured two wind farms to 64% who favoured three 'typical' wind farms, see *Table 3.37*. Those opposed rose significantly from the 17% who were opposed to two wind farms to 27% who were opposed to three 'typical' wind farms.

Of interest here is the significantly different response emanating from those who already have a wind farm in their local area (70%) from those who don't (53%) as *Table 3.37* shows. This outcome highlights that experience of living with wind farms in the local rural area would appear to impact on respondents positive predispositions toward wind farms in their local rural area.

Amongst the global warming response groups, there is a significant absolute difference between the 'act now' group and the other two groups and in particular a significant increase in the proportion of the 'gradual' response group who now oppose the introduction of a third wind farm into their local rural area.

3.3.24

Acceptance of four 'typical' wind farms in local rural Area

When asked whether they would favour or oppose a fourth 'typical' wind farm of 15 to 80 turbines in their local area, those respondents in favour declined from 64% in favour of three, to 56% in favour of four wind farms. Opposition increased from 27% of respondents who were opposed to three wind farms, to 34% who were opposed to four wind farms as *Table 3.38* below shows.

Table 3.38 *Favour or oppose four typical wind farms in local rural area*

Q.18 e) Would you favour or oppose the location of four typical wind farms each one of 15 to 80 turbines in your local rural area? Would that be (<i>read out</i>)						
DTR Table: 51.0	Q2 Response to Global Warming			Q14D Is Crookwell in your local rural area		
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell local - Yes	Crookwell Local - No/DK
WEIGHTED BASE	300	150	52	98	195	105
	%	%	%	%	%	%
<i>Q18E Favour/oppose four typical wind farms 15-80 turbines in local rural area</i>						
Strongly in favour (5)	27%	31%	27%	20%	30%	21%
Generally in favour (4)	30%	31%	24%	31%	31%	27%
or... do you not mind one way or the other (3)	10%	10%	12%	10%	7%	17%
Generally opposed (2)	18%	16%	15%	23%	18%	19%
Strongly opposed (1)	15%	13%	22%	16%	15%	16%
TOTAL IN FAVOUR	56%	62%	51%	51%	61%	48%
TOTAL OPPOSED	34%	29%	37%	39%	33%	35%
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	3.34	3.51	3.19	3.16	3.43	3.18
STD DEV	1.43	1.4	1.54	1.4	1.45	1.39
STD ERR	0.08	0.12	0.22	0.14	0.1	0.14

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

Once again, there is a significant difference in the outcome when comparing those for whom Crookwell is in their local rural area (61% approve) versus those for whom the Crookwell wind farm is not within their local rural area (48% approve). Further examination of those for whom Crookwell is not 'local', shows that the proportion of this group who oppose a fourth wind farm is similar to the overall sample and that a significant proportion of this group remain uncommitted, either way. The same pattern is evident in each of the earlier questions.

3.3.25

Acceptance of multiple wind farms in local rural area - summary

Table 3.39 summarises the outcomes to each of the three questions in this section and also included the earlier question relating to those who favour / oppose one 'typical' wind farm in their local rural area.

Table 3.39 Favour or oppose multiple wind farms – summary

Q.17B Would you favour or oppose the development of a typical wind farm with 15 to 80 wind turbines in your local rural area? Would that be (*read out*)

Q.18 c) Would you favour or oppose the location of two typical wind farms each one of 15 to 80 turbines your local rural area? Would that be (*read out*)

Q.18 d) Would you favour or oppose the location of three typical wind farms each one of 15 to 80 turbines in your local rural area? Would that be (*read out*)

Q.18 e) Would you favour or oppose the location of four typical wind farms each one of 15 to 80 turbines in your local rural area? Would that be (*read out*)

DTR Table: 45, 49, 50 & 51	Q2 Response to Global Warming				Q14D Is Crookwell wind farm in your local rural area	
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300 %	150 %	52 %	98 %	195 %	105 %
<i>Q17B Favour / oppose ONE typical wind farm with 15-80 wind turbines in local rural area</i>						
TOTAL IN FAVOUR	76%	81% +	76%	68% -	78%	72%
TOTAL OPPOSED	19%	14% -	22%	26% +	19%	18%
<i>Q18C Favour / oppose TWO typical wind farms each one 15-80 turbines in local rural area</i>						
TOTAL IN FAVOUR	75%	79%	71%	72%	79%	70%
TOTAL OPPOSED	17%	13%	21%	20%	17%	17%
<i>Q18D Favour / oppose THREE typical wind farms 15-80 turbines in local rural area</i>						
TOTAL IN FAVOUR	64%	68%	60%	61%	70% ++	53% --
TOTAL OPPOSED	27%	21% -	29%	34%	24%	31%
<i>Q18E Favour/oppose FOUR typical wind farms 15-80 turbines in local rural area</i>						
TOTAL IN FAVOUR	56%	62%	51%	51%	61% +	48% -
TOTAL OPPOSED	34%	29%	37%	39%	33%	35%
TOTAL	100%	100%	100%	100%	100%	100%

Significance levels: 95% = + or - 99% = ++ or -- 99.9% = +++ or ---

These outcomes would suggest that nearly three in four respondents would support two ‘typical’ wind farms each one of 15 to 80 turbines in their local rural area. The addition of a third wind farm would be supported by approximately two in three.

Opposition to successive wind farms appears to reach its maximum of about one in three with the addition of a fourth wind farm.

The outcomes to these questions also suggest that as respondents gain experience living with wind farms in their local rural environment they are likely to become more accepting of them.

3.3.26

Placement of multiple wind farms in the local rural area

The placement of a number of wind farms in the respondents' local rural area is also a potential issue, given there is some concern for landscape values. Respondents were asked whether they would prefer wind farms to be concentrated in a few clusters, close together or spread out at reasonable intervals along the main road or highway, if a number of wind farms were built on the ridges and hills that they can see when travelling along the main road or highway in their local rural area.

Table 3.40 *Placement of multiple wind farms in the local rural area*

Q19 Finally, if a number of typical wind farms were built on the ridges and hills that you can see when traveling along the main road or highway in your local rural area ...						
a) Would you prefer the wind farms (<i>read out</i>)						
b) If "SPREAD OUT" IN Q.19 a): How far apart should those intervals be? RECORD IN KILOMETRES						
DTR Table: 52.0 & 53.0					Q14D Is Crookwell wind farm in your local rural area	
	TOTAL	Act now despite costs	Do not incur costs	Gradual response	Crookwell IS local	Crookwell NOT local
WEIGHTED BASE	300	150	52	98	195	105
	%	%	%	%	%	%
<u>Q19A Preference of wind farms seen on ridges / hills when driving</u>						
to be concentrated in a few clusters close together, or spread out at reasonable intervals along the main road or highway	52%	52%	59%	48%	50%	55%
	48%	48%	41%	52%	50%	45%
TOTAL	100%	100%	100%	100%	100%	100%
<u>Filter: Q19A Preference of wind farms seen on ridges / hills when driving spread out at reasonable intervals along the main road or highway</u>						
WEIGHTED BASE	145	72	21	52	98	47
	%	%	%	%	%	%
<u>Q19BCD Kilometres apart should intervals be</u>						
1	20%	19%	28%	18%	21%	16%
2	5%	7%	3%	4%	3%	10%
3	3%	4%	4%	1%	2%	6%
4	1%	1%	0%	2%	0%	4%
5	13%	15%	11%	12%	13%	13%
7	1%	1%	0%	1%	2%	0%
8	0%	0%	3%	0%	1%	0%
10	12%	9%	10%	17%	10%	15%
15	4%	5%	4%	1%	4%	3%
20	7%	3%	13%	10%	7%	6%
25	1%	1%	3%	0%	2%	0%
30	3%	3%	8%	1%	5%	0%
More than 50km	1%	0%	0%	2%	1%	0%
DON'T KNOW	28%	31%	12%	30%	30%	25%
TOTAL	100%	100%	100%	100%	100%	100%
MEAN	8.46	7.02	11.61	9.50	9.85	6.43

The data suggests that the community has no clear preference between a few clusters, close together, or spread out at reasonable intervals along the highway, see Table 3.40. For those who preferred the wind farms to be 'spread out', a reasonable interval would appear to be 8 to 10 kilometres.

CONCLUSION

This study has shown there is a high degree of acceptance of wind energy by respondents within the Goulburn – Crookwell – Yass region of the Southern Tablelands.

Results have shown an approval rating of almost 9 in 10 (89%) respondents in favour of wind farm projects being developed in the Southern Tablelands. With over 9 in 10 (96%) of respondents agreeing 'wind energy is a good alternative energy source', see *Figure 4.1*).

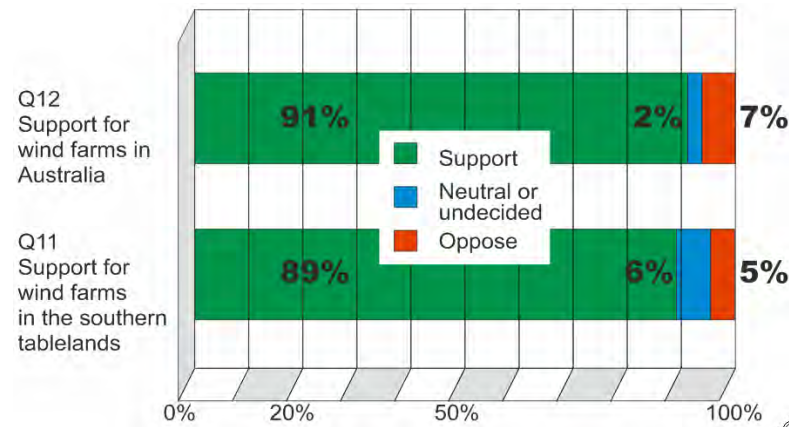


Figure 4.1 *Support for wind farms*

Further to this, most respondents (83% favour, 8% opposed) were accepting of a wind farm set back 10 kilometres from their home, with a slight decrease to 7 in 10 respondents (71% Favour, 19% opposed) accepting a wind farm set one kilometre from their home, see *Figure 4.2*). This is a very similar level of acceptance that has been identified in the recent Lal Lal wind farm study (refer Section 2.2.4). Lal Lal wind farm was located in central Victoria in a landscape that was not dissimilar to that of the Gullen Range site.

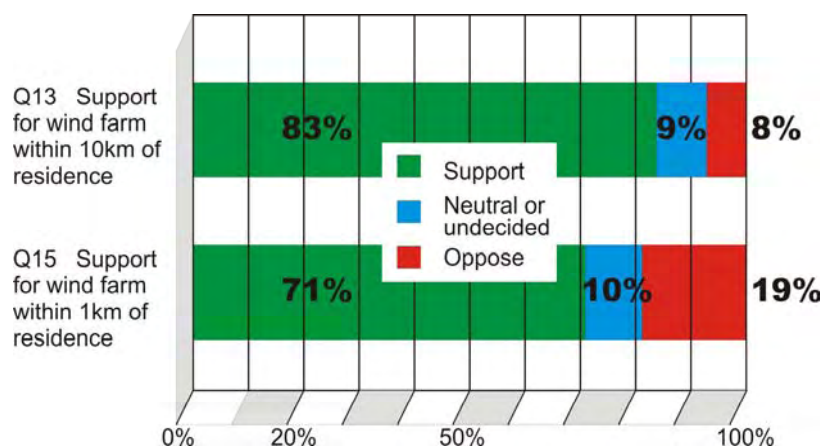


Figure 4.2 *Support for wind farms near respondent's residence*

As well as the statistical similarity in the level of support between sites in Victoria and NSW, there is also a similarity in the level of support when a wind farm is proposed within 1 kilometre of a respondent's residence and if it is located on some of the most scenic of Victoria's coastline (Kanos & Quint, 2000, cited in Section 2.2.1).

In response to introducing the concept of multiple 'typical' (15 to 80 turbines) wind farms in the local rural area, respondents accepted 76% (19% opposed) one typical wind farm, with three typical wind farms accepted by 64% (27% opposed) see *Figure 4.3*.

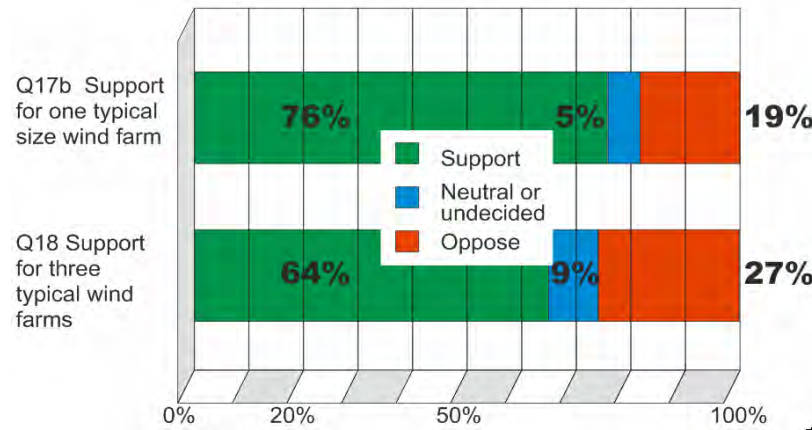


Figure 4.3 *Support for multiple wind farms*

Figure 4.3 again highlights the remarkably consistent levels of approval for one or more wind farms in the area. The lowest level of acceptance at 64% for three wind farms is again very similar to the levels of support shown for the most sensitive of locations, weather with one kilometre of the respondent's house or on coastal headlands along Victoria's coast.

The study also found that the community has no clear preference between a few clusters, close together, or spread out at reasonable intervals along the highway. Therefore it would seem that this landscape can absorb future wind farm developments, as the community has not a strong preference.

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Appendix A

Research Methods

RESEARCH METHODS

The research approach developed for this project in order to satisfy the Research Objectives as defined in this report are set out below.

SCOPE

The study was conducted by telephone within a proscribed geographic area as defined by post-codes and locality names in a defined survey area to as identified in Figure 1.2.

SAMPLE SOURCE

The sample would be derived from the most recent source of Electronic White Pages listing residential numbers in the defined survey area. ERM provided a listing of locality names and associated postcodes that lay within the bounded survey area. A map of the survey area as agreed with ERM and as provided by ERM has been reproduced and appears in this Appendix.

Based on the listing of locality names and post-codes a sample frame was selected from the Electronic White Pages comprising all addresses that contained matching locality names.

This approach whilst selecting telephone connected residential dwellings also selected non-residential locations (eg business, institutions) that had to be qualified in the interviewing process and excluded from the sample.

From the sample frame compiled in this manner a listing of telephone numbers within the defined survey area was developed.

SAMPLE SIZE

It was determined that a sample size of $n = 300$ be used in this study. A survey estimate of 50% of a sample of $n = 300$ will have a sampling precision (or confidence interval) of $50 \pm 5.7\%$ at the 95% confidence level, see *Table A.1* below.

Table A.1 *Expected Sampling Error*

Expected Sampling Error (Plus or Minus) at the 95% Confidence Level (Simple Random Sample)

Percentage of the sample or sub-sample giving a certain response or displaying a certain characteristic for percentages near:

Size of Sample or Subsample	10 or 90	20 or 80	30 or 70	40 or 60	50
300	3.4	4.5	5.2	5.6	5.7
200	4.2	5.6	6.4	6.8	6.9
150	4.8	6.4	7.4	7.9	8.0
100	5.9	7.9	9.0	9.7	9.8
75	6.8	9.1	10.4	11.2	11.4
50	8.4	11.2	12.8	13.7	14.0

It is important to be aware that when utilising survey sample data, that the precision of each survey estimate is a function of the size of the sample (or sub-sample) to which it relates. Sampling precision is a function of sample size as is reflected in *Table A.1*.

RESPONDENT DEFINITION

The respondent in this study was defined as a randomly selected adult (using the nearest birth date technique) resident in a telephone connected dwelling within the defined survey area.

INTERVIEW METHOD

The study was conducted by telephone using a state-of-the-art Computer Assisted Telephone Interviewing (CATI) system.

Fieldwork was conducted to the highest industry standards, the field team being quality accredited via the industry IQCA scheme and to ISO).

QUESTIONNAIRE

The questionnaire employed in the study was developed by in conjunction with ERM who approved the questionnaire prior to the initiation of fieldwork. The questionnaire took an average of 17 minutes to administer.

A copy of the questionnaire employed in this study is included in Appendix B.

FIELDWORK DATES AND OUTCOMES

The questionnaire was subject to pilot and time testing prior to the commencement of fieldwork in late July 2007. Fieldwork was conducted during the evening and was concluded in early August, 2007.

Call outcomes are summarized in *Table A.2*.

Table A.2 *Contact Outcome*

Contact outcome	Response Profile		
	%	no	%
Interviews achieved	53.19%	300	12.2%
Quota full	0.18%	1	0.0%
Did not qualify	46.63%	263	10.7%
Respondent not available	0.00%	0	0.0%
<i>Total eligible for screening:</i>	<i>100.00%</i>	<i>564</i>	<i>22.9%</i>
Refused		1,274	51.8%
Language barrier		35	1.4%
<i>Total not eligible for screening:</i>		<i>1,309</i>	<i>53.2%</i>
Nil contact after specified calls		0	0.0%
Answer machine/fax		73	3.0%
Invalid number		515	20.9%
<i>Total Invalid numbers</i>		<i>588</i>	<i>23.9%</i>
<i>Total numbers used:</i>		<i>2,461</i>	<i>100.0%</i>
<i>Status not determined</i>		<i>816</i>	<i>24.9%</i>
<i>Total numbers in use:</i>		<i>3,277</i>	

DATA ANALYSIS

The outcome of the survey was presented in the form of Detailed Tabular Results under separate cover. It is these Detailed Tabular Results upon which this report is based.

Appendix B

Questionnaire

QUESTIONNAIRE OUTLINE
Windfarm Impact Study – Southern Highlands
EPURON 160707 AR
Version 7 - FINAL
Wednesday, July 25, 2007

INTRODUCTION

Good (...). My name is from Reark Research and at the moment we are talking to people about alternative forms of electric power generation. In this study I must speak to a cross section of the public

- a) to help me select the person I need to speak to can you tell me how many persons in this household are aged 18 years or more? (*record #*)
- b) In this study I need to speak to the person amongst those (*..say # of people in a)..*) whose next birthday is closest to today's date? Who would that be?

RECORD NAME OF PERSON AND ARRANGE CALL-BACK IF NECESSARY

- c) **IF LOOKING FOR QUOTA:** Can I speak to the (*..man/woman..*) amongst those (*..say # of people in a)..*) whose birthday is closest to today's date?
- d) Just to make sure I'm speaking to the correct cross section of people, can you tell me please into which of these age groups do you fall ... Are you (*read out*)
 - 18 to 24 years
 - 25 to 39 years
 - 40 to 54 years
 - 55 years of age or more
- e) If necessary: And are you ... (*read out*)
 - Male
 - Female

PROCEED WITH SELECTED RESPONDENT OR ARRANGE SUITABLE TIME FOR CALL-BACK:

1. Recently there has been much discussion in newspapers on radio and television concerning global warming ... Overall how concerned would you say you are right now with the threat of global warming and its impact on the environment ... would you say you are ... (*read out*)
 - Definitely concerned
 - Somewhat concerned
 - Somewhat unconcerned
 - Definitely unconcerned.
 - or, Neither concerned or unconcerned
2. Which one of the following statements comes closest to the way you feel (*read out*)
 - Global warming is a serious and pressing problem. We should be taking steps now even if this involves significant costs.
 - Until we are sure that global warming is really a problem, we should not take any steps that would have economic costs.
 - The problem of global warming should be addressed, but its effects will be gradual, so we can deal with the problem gradually



3. Australia's demand for electricity is rapidly increasing. There are a number of ways of meeting this demand one of which involves the use of 'clean energy' sources. Which of the following do you regard as clean energy sources ... (read out)?

RANDOMISE ORDER

- Sun or solar power
- Wind power
- Water or hydroelectric power
- Wave or tidal power
- Nuclear power
- Clean coal or gas fuelled power stations where the pollutants are buried

4. a) If there was to be a new electric power station built say within 10 kilometres of where you now live, which of the following energy sources would you approve for use by that new power station? Would you approve ... (read out)

RANDOMISE ORDER

- Sun or solar power
 - Wind power
 - Nuclear power
 - Clean coal or gas where the pollutants are buried
 - *(None of these)*
 - *(Don't know)*
- b) IF MORE THAN ONE: And which one energy source would you prefer to see used by such a new power station?
- c) If the choice was between (read out list) ... which one energy source would you prefer to see used by such a new power station?

RANDOMISE ORDER

- Wind power
- Nuclear power
- Clean coal or gas where the pollutants are buried
- *(None of these)*
- *(Don't know)*

WIND ENERGY & WIND FARMS

5. a) Recently there have been announcements of wind-farms to be built in the Southern Tablelands, encompassing the Goulburn-Yass region, to generate electricity ... had you heard of any of these projects before today?

- Yes
- No
- *(Don't Know)*

- b) Which project or projects was that? (record name and/or location of project) Probe once: Any others?

6. The electricity from these projects is to be generated via the placement of a number of wind turbine generators in each area. Each generator is a large three bladed windmill mounted up high on top of a tubular tower and the wind turns the blades to generate the electric power ...

- a) Were you aware of this type of wind turbine before today?



- Yes
 - No
 - *Don't Know*
- b) Have you seen a picture of a wind turbine of the type I have described?
- Yes
 - No
 - *Don't Know*
- c) And have you ever seen an actual wind turbine of the type I have described?
- Yes
 - No
 - *Don't Know*
7. A wind farm is a collection of large wind-driven wind turbines of the type I have described ... an average to large wind farm makes enough electricity to power a large regional centre ...
- a) Were you aware of this before today?
- Yes
 - No
 - *Don't Know*
- b) Have you ever seen a wind farm?
- Yes
 - No
 - *Don't Know*
- c) IF 'YES' IN b): Where was that?
- Near Crookwell (Crookwell 1)
 - Near Hampton (Hampton)
 - Near Blayney (Blayney)
 - Elsewhere in NSW
 - Elsewhere in Australia
 - New Zealand
 - Asia
 - Europe
 - UK
 - North America
 - Somewhere else
8. CHECK Q.7(b)
- a) IF SEEN: How visually appealing do you find the wind farms you have seen?
- Very appealing
 - Fairly appealing
 - Not too appealing
 - Not at all appealing
 - or Do you not have an opinion about it
- b) IF NOT SEEN: How visually appealing would you expect a wind farm to be?



- Very appealing
 - Fairly appealing
 - Not too appealing
 - Not at all appealing
 - or Do you not have an opinion about it
9. Thinking about wind farms as I have described them ...
- a) What do you consider the major benefits or advantages of wind farms to be? Probe: “What else?”
- b) And what disadvantages, if any, do you associate with wind farms? Probe: “What else?”
10. Wind farms provide clean, renewable energy that doesn't contribute to global warming through generating carbon dioxide. Some people say they detract from the appearance of the landscape. Which of these two statements comes the closest to the way you feel (read out)
- a) We need to use wind power as a source of clean energy even if it means changing the appearance of some landscapes, or
- b) We should leave the landscapes unchanged even if it means we are not able to use wind power as a source of clean energy
11. Taking into account the arguments you have heard for and against wind farms, what is your general opinion of the wind farm projects like those being built in the Southern Tablelands ... would you say you were (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other?
12. How much do you agree with the following statements? (read out first statement)
And is that (agree/disagree) strongly, or just (agree/disagree) or do you neither agree nor disagree with the statement?

DO NOT ROTATE STATEMENT ORDER

- Wind energy is a good alternative energy source
- Australia should be investing more in wind energy
- I would be happy to see more wind farms in Australia
- Local Government should encourage wind farm development
- Wind farm developments contribute to the local economy
- I would be happy to see a wind farm built on farmland near where I live

SCALE

- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
13. And what if it was proposed to build a wind farm within 10 kilometres of where you live now, would that make any difference to the way you feel? Would it make you (read out)
- Favour it more



- Oppose it more
- or, make no difference to your opinion

AWARENESS OF WIND FARMS

14. There is presently a small wind farm located near Crookwell in the Southern Tablelands that was constructed in 1997 and has only 8 wind turbines ... the wind farm is located to the South East of Crookwell which is about 30 kilometres north-west of Goulburn ...
- a) Were you aware of the existence of this wind farm near Crookwell before today?
- Yes
 - No
 - Don't Know
- b) IF YES IN Q.14 a): Have you personally, seen the wind farm near Crookwell?
- Yes
 - No
 - Don't Know
- c) IF YES IN Q.14 b): And how often are you in the vicinity to see the wind farm near Crookwell ...would it be (*read out if necessary*)
- At least once a day
 - Several times a week
 - At least once a week
 - At least once a month
 - Every two or three months
 - Three or four times a year
 - Once or twice a year
 - less often
 - (Don't know)
- d) ASK EVERYONE: The Crookwell wind farm is located about 10km to the South East of Crookwell ... is the Crookwell wind farm in what you would consider to be your local rural area?
- Yes
 - No
 - Don't Know
- e) About how far is the Crookwell wind farm from where you live?
If necessary: Would it be ...
- less than 1 kilometre
 - 1 to 3 kilometres
 - 4 to 10 kilometres
 - 11 to 25 kilometres
 - more than 25 kilometres
 - (Don't Know)
- f) And what is your general opinion of the Crookwell wind farm, would you say you are ... (*read out*)
- Strongly in favour
 - Generally in favour



- Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other
15. Scientific tests conducted at wind farms have shown that people need to be less than approximately 800 metres from the wind turbines for them to hear any significant noise, even in extreme wind conditions. Bearing this in mind ...
- a) Would you favour or oppose a wind farm if it was located ONE KILOMETRE from where you live now? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other?
- b) Would you favour or oppose a wind farm if it was located THREE KILOMETRES from where you live now? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other?
- c) Would you favour or oppose a wind farm if it was located TEN KILOMETRES from where you live now? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other?
- d) Would you favour or oppose a wind farm if it was located TWENTY FIVE KILOMETRES from where you now live? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other?

CUMULATIVE IMPACT

16. At present a number of wind farms have been approved, but are yet to be built in the Southern Tablelands ... which of the following wind farm developments in the Southern Tablelands were you aware of before today ...
- the Conroy's Gap wind farm near Yass with 15 wind turbines
 - the Cullerin Range wind farm with 15 wind turbines
 - the Gunning wind farm near Gunning with 32 wind turbines
 - the Crookwell 2 wind farm near Crookwell with 46 wind turbines
 - the Taralga wind farm near Taralga with 69 wind turbines
 - None of these



17. Wind farms are usually sited on ridges and hills on private land in rural areas where wind flow is the greatest ... wind farms are built in varying sizes depending on local conditions and may contain as few as 8 wind turbines, but typically 15 to 80 wind turbines spaced about 400 to 500 metres apart ...
- a) Thinking about the local rural area in your vicinity ... would you favour or oppose the development of a small wind farm of up to 15 wind turbines in your local rural area? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other
- b) Would you favour or oppose the development of a typical wind farm with 15 to 80 wind turbines in your local rural area? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other
- c) And would you favour or oppose the development of a large wind farm with greater than 80 and up to 120 wind turbines in your local rural area? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other
18. If for the moment you could imagine a typical wind farm with 15 to 80 wind turbines was sited on the hills or ridges of private farmland in your local rural area ... and it was proposed to site another wind farm of similar size in your local rural area ...
- a) Would you prefer that it was (read out)
- sited adjacent to the existing wind farm;
 - not adjacent, but nearby the existing wind farm; or
 - be located elsewhere in your local rural area further away and out of sight from the existing wind farm
- b) IF "BE LOCATED ELSEWHERE": How far away from the existing site should it be located? If necessary: How many kilometres away?
- RECORD NUMBER OF KILOMETRES
- c) Would you favour or oppose the location of two typical wind farms each one of 15 to 80 turbines your local rural area? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other



- d) Would you favour or oppose the location of three typical wind farms each one of 15 to 80 turbines in your local rural area? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other
- e) Would you favour or oppose the location of four typical wind farms each one of 15 to 80 turbines in your local rural area? Would that be (read out)
- Strongly in favour
 - Generally in favour
 - Generally opposed
 - Strongly opposed
 - or ...do you not mind one way or the other
19. Finally, if a number of typical wind farms were built on the ridges and hills that you can see when traveling along the main road or highway in your local rural area ...
- a) Would you prefer the wind farms (read out)
- to be concentrated in a few clusters close together; or
 - spread out at reasonable intervals along the main road or highway
- b) IF "SPREAD OUT" IN Q.19 a): How far apart should those intervals be?
- RECORD IN KILOMETRES

DEMOGRAPHICS

The last few questions I have to ask are to ensure we have a good cross section in our sample ...

A LOCATION

Can you tell me what your post code is there? (record postcode)

B SHOPPING

In which town do you do your major weekly grocery shopping? (record town name)

C OCCUPATION

Are you currently... (read out)

- a. Working full time
- b. Working part time
- c. Studying full time
- d. Studying part time
- e. Undertaking home duties
- f. Retired
- g. Unemployed and looking for work, or
- h. Something else (Specify _____)

ASK IF WORKING FULL TIME or PART TIME:

D Do you work for a company or organisation or are you self employed?

1. Work for a company or organisation



2. Self employed

E And what is your occupation

.....

Record verbatim above and then code into category below:

1. Upper white
2. Lower white
3. Upper blue
4. Lower blue
5. Not employed/retired/pensioner/student

F EDUCATION

Which of the following best describes the highest education level you have reached?

READ AND CODE ONE ONLY.

- Primary only
- Up to 4 years secondary
- 5-6 years secondary
- TAFE qualification
- University qualification
- Post graduate

G URBAN/RURAL RESIDENT

Is your home located ...

READ AND CODE ONE ONLY.

- In town?
- Out of town on a small rural residential property?
- Out of town on a medium to large farming property?

H HOME OWNERSHIP

And are you presently ...

READ AND CODE ONE ONLY

- Renting or leasing your home
- Have a mortgage which you are paying off, or
- fully own your home?

I PERIOD OF RESIDENCE

Finally, how long have you been a resident in this area ... Would it be (read out)

- Less than 12 months
- 1 to 2 years
- 3 to 5 years
- 6 to 10 years
- More than 10 years



PRIVACY STATEMENT

REQUIRED PRIVACY CLOSE:

Thank you, that's the end of the interview. As this is market research it is carried out in compliance with the Privacy Act would you like to know more?

Read out if wanted:

The information you provided will be used only for research purposes. Once this project is completed your contact details will be removed from your responses in approximately four months time. Under the Privacy Act you have the right to request access to the information you have provided.

Read to all:

As part of quality control procedures, someone from our project team may wish to re-contact you to ask a couple of questions verifying some of the information we just collected. Can I confirm your phone number?

Thanks again for your time, just to remind you I'm from Reark Research. If you have any queries you can call the Market Research Society's Survey Line on 1300 364 830.



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