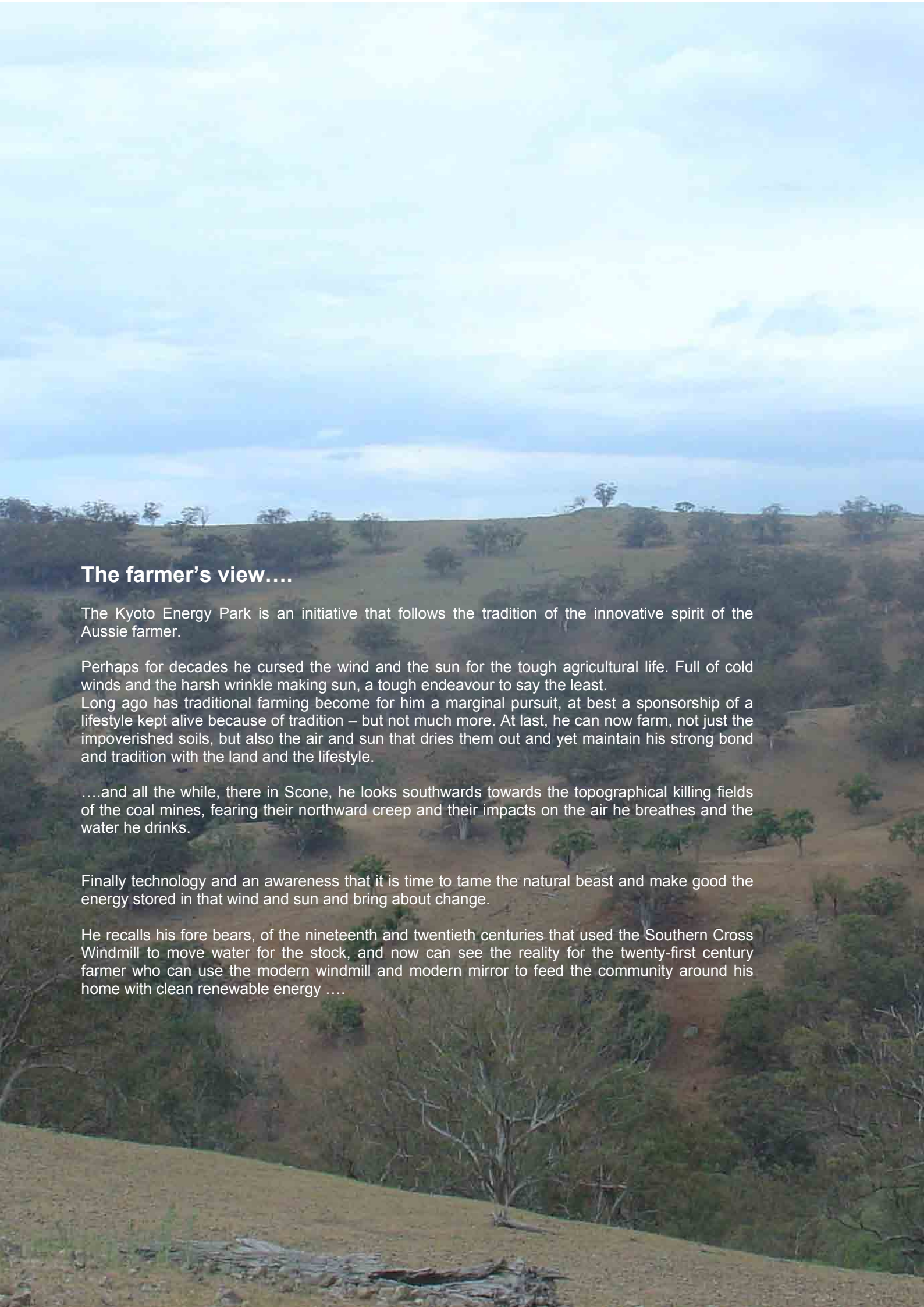
Kyoto energypark

Executive Summary



The farmer's view….

The Kyoto Energy Park is an initiative that follows the tradition of the innovative spirit of the Aussie farmer.

Perhaps for decades he cursed the wind and the sun for the tough agricultural life. Full of cold winds and the harsh wrinkle making sun, a tough endeavour to say the least.
Long ago has traditional farming become for him a marginal pursuit, at best a sponsorship of a lifestyle kept alive because of tradition – but not much more. At last, he can now farm, not just the impoverished soils, but also the air and sun that dries them out and yet maintain his strong bond and tradition with the land and the lifestyle.

….and all the while, there in Scone, he looks southwards towards the topographical killing fields of the coal mines, fearing their northward creep and their impacts on the air he breathes and the water he drinks.

Finally technology and an awareness that it is time to tame the natural beast and make good the energy stored in that wind and sun and bring about change.

He recalls his fore bears, of the nineteenth and twentieth centuries that used the Southern Cross Windmill to move water for the stock, and now can see the reality for the twenty-first century farmer who can use the modern windmill and modern mirror to feed the community around his home with clean renewable energy ….

EXECUTIVE SUMMARY

The Main Points

The Kyoto Energy Park is a genuine attempt to bring to the world, Australia, the Hunter and all its people, a path towards a clean and sustainable future.

The Kyoto Energy Park seeks to create electricity, fed into the national grid, using the completely renewable and non-impacting natural resources of wind, solar energy and gravity. By integrating the numerous technologies, the project seeks to optimise the specific characteristics of the location and make for a genuinely sustainable enterprise.

The key elements of the park are:

- **3-10MW Solar Photo Voltaic Array;**
- **42 Wind Turbines;**
- **1 MW Closed-Loop Hydro Plant; and**
- **Visitor and Education Centre**

The main benefits are:

- The natural wind and solar resources are strong and combined with elevational change, the natural attributes of the site are excellent for an integrated Energy Park;
- Demand for electricity is close by and will make the use of the electricity generated from the Kyoto Energy Park highly efficient, producing enough **green power** for approximately **62 000 households**;
- The creation of the Kyoto Energy Park provides short term and long term **employment** and creates a **new tourism** destination for the Upper Hunter;
- The **Moobi Foundation**, an initiative of the Kyoto Energy Park shall **invest into the community** of the Upper Hunter through a Not-For-Profit structure (using community leaders);
- The Kyoto Energy Park is proposed to create clean and renewable electricity and create a transition to **less reliance on the burning of coal** as the main form of creation of electricity; and
- Creation of an enterprise that may continue without the time constraint of the resource that is harvested (such as coal) running out…. Wind and sun shall continue

The main impacts are:

- The placing onto the landscape of the 42 wind turbines, creating for some, an unacceptable visual intrusion and with others a positive visual beacon of commitment to making and keeping the Upper Hunter a clean green place, without coal mines and the ecological destruction that coal mining brings;
- The overall footprint (i.e. developable area) utilized by the Kyoto Energy Park components and facilities is in the order of 0.5 % of the sites' area. Overall damage and disturbance of the landform is extremely minimal. Upon completion of the life of the generator components (solar, wind, hydro) new technology can be easily installed to replace outdated technology or fully decommissioned, without any land degradation;
- The opportunity to **remove the equivalent of 82 000 cars** off the roads in terms of greenhouse gas abatement (which includes approximately **9.5 million tonnes of CO_2 gases** over the initial life of the proposed technology);
- The opportunity to create electricity with negligible use of water, leaving the water in the landscape not loosing it in the cooling towers of a coal powered power station - the **saving** of approximately **700 million litres of potable water annually** – or the equivalent of about **12 Olympic pools daily!**;
- Clean and renewable energy production free from other air pollutants such as coal dust, heavy metal compounds, carbon monoxide, sulphur and nitrogen oxides;
- Large scale significant **investment into rural Australia, rural jobs**;
- **Short and Long term jobs, reinforcing the Hunter as a region of high skills in the generation of Electricity**

The main matters consistently raised by the community relate to:

- **Intrusion into their visual reference and the potential loss of property values;**
- **Support for the concept of renewable energy, but not in the Hunter;**
- **Bird strike and Bushfire risk; and**
- **Noise Concerns.**

This Environmental Assessment Report identifies issues and the matters appropriate for consideration in the assessment of the proposal.

E1.0 Introduction

This Environmental Assessment supports an application for Planning Approval for the construction and operation of an Energy Park (a combination of wind turbines, solar photovoltaic plant (solar PV), and closed loop mini-hydro plant) that generates electricity for direct supply in the local electricity grid.

The Kyoto Energy Park is to be located in Scone in the Upper Hunter Valley, NSW. The project is known as the Kyoto Energy Park Scone. The proponent for the project is the Kyoto Energy Park (Scone) Pty Ltd, a Sydney based company, 100% owned by Australian investors who believe in the creation of a sustainable future.

This Environmental Assessment Report has been prepared for Kyoto Energy Park (Scone) by Pamada Pty Ltd, with some sections completed by HDB Town Planning Pty Ltd. The Environmental Assessment Report addresses the NSW Department of Planning's Director General's requirements (DGRs) for the scope and content of the Environmental Assessment. In addition, it addresses issues specified by relevant stakeholder agencies, including Upper Hunter Shire Council, the Department of Environment and Conservation and other key government departments.

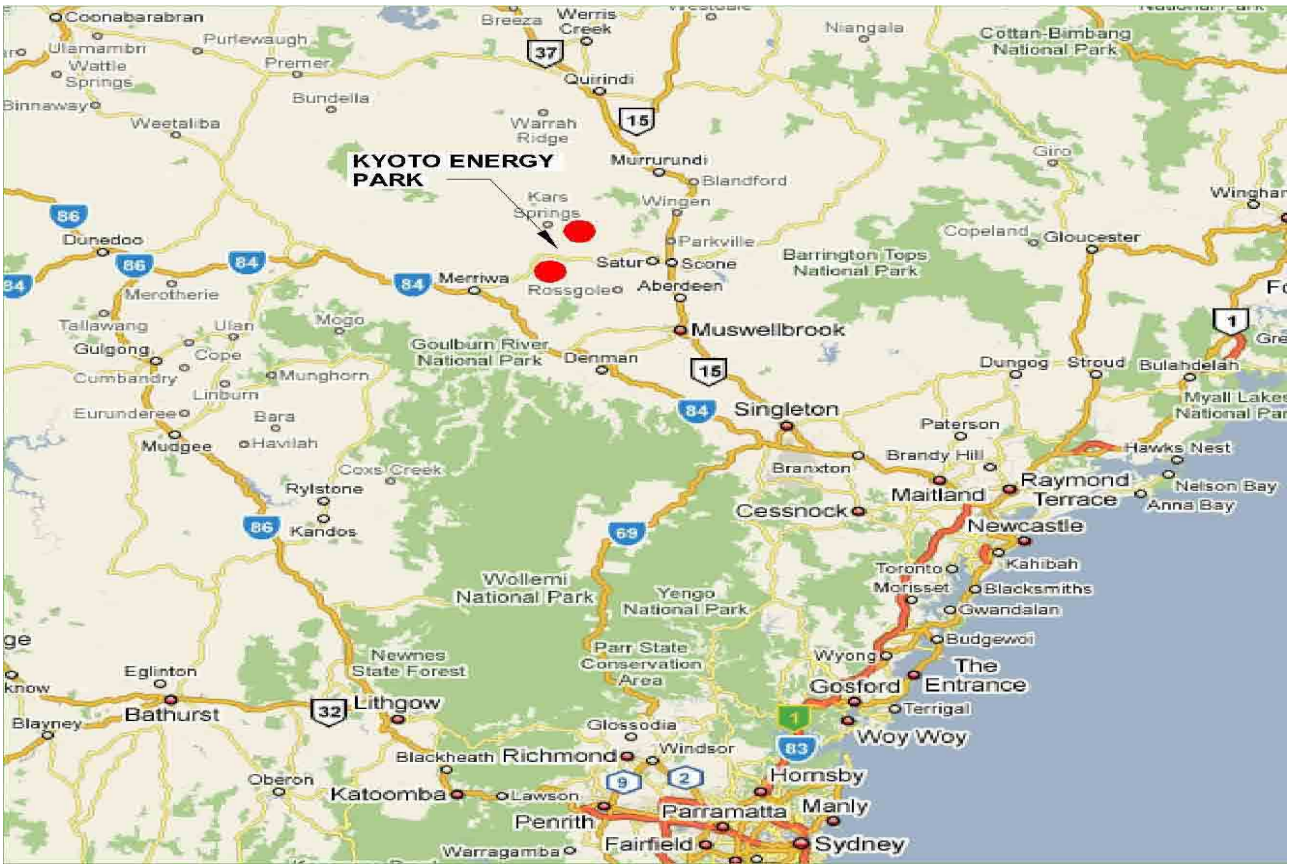
The Kyoto Energy Park comprises two (2) separate landholdings referred to as Mountain Station and Middlebrook Station, both located on elevated ridgelines of the Great Dividing Range, commencing about 7-9 kilometres west to north-west of Scone as shown below.

The two sites are large rural properties of approximately 2000 hectares each that have been extensively cleared and predominantly used for grazing of sheep and cattle. Both sites are entirely within the Upper Hunter Shire Council local government area (LGA).

The project involves the installation of 42 wind turbines (31 on Mountain station and 11 on Middlebrook Station). The actual number of wind turbines installed will depend on the selected equipment supplier and the final layout adopted. Each wind turbine will have a generation capacity of about two to three megawatts. The wind turbine structures comprise a three bladed rotor of about 90-100 metres diameter mounted on a steel tower of up to 105m high. The top of the blade sweep is a maximum of 150 metres above ground level. The turbines are linked by underground cables to a substation where the output voltage is raised from 33kV to either 66kV or 132kV.

The Kyoto Energy Park project will also require the augmentation of electricity transmission infrastructure. There are two preferred options for connection to the grid. The first is a 66kV connection to the new Scone STS currently under construction, replacing the old substation at Scone. The second is a 132kV connection to the existing Muswellbrook STS, just north of Muswellbrook. Other variations to these options have been considered and included in this report.

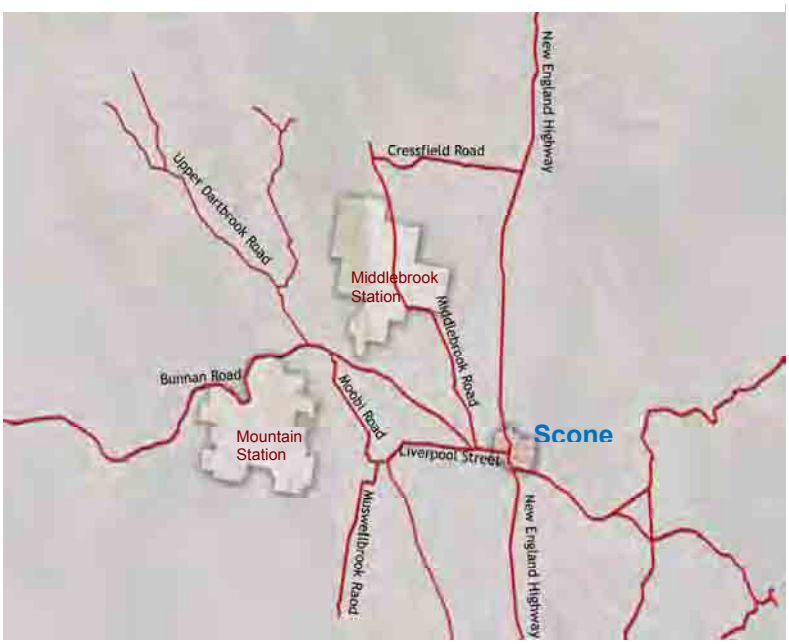
The two (2) preferred options for transmission have been selected based on detailed environmental investigation involved in this report. Final route will depend upon final Kyoto Energy Park capacity, a detailed connection study based on final capacity, and discussion over private easements.



Kyoto Energy Park Location Plan

Construction works will occur over a single stage for approximately 20 months duration from commencement of operations.

Works will broadly comprise the forming of internal access tracks, preparation of footings for the wind turbines, transportation and erection of turbine structures, transportation and installation of the solar PV plant and mini hydro plant (Closed loop), construction of a site substation and Maintenance shed, trenching and installation of underground cables, transmission line for external connection to the grid, construction of a Visitor's and Education Centre and Manager's residence and restoration of the site.



E2.0 The Strategic Imperative

Governments globally, including Australia now recognise the urgency with which we need to address climate change. Unless we do this quickly, we will reach the tipping point of no return and the world as we know it and the natural beauty, the regular climatic patterns as we have come to expect, are to change forever and not well…..

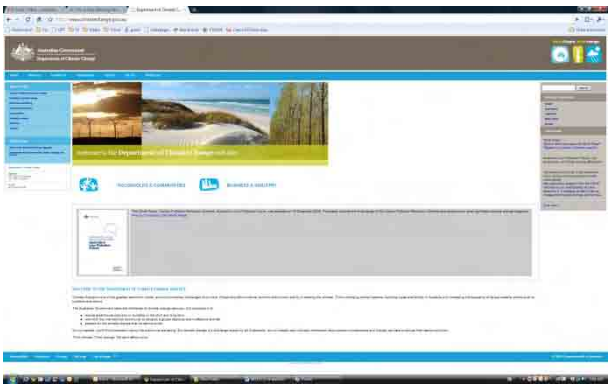
Without doubt, mining, and in particular coal mining is very important to Australia's economy and the economy of many regions, including the Hunter Valley. Many in our community benefit greatly from the lucky and rich resource Australia has. The innovation and skill with which we, as a nation have harvested the natural mineral resources is a testament and incredible compliment to the competency of the Australian nation. The task, whilst clever and without pun intended, the resourcefulness in which we plunder our soils however, in the broader picture, brings us more long term pain than perhaps is justified by the short term gain.

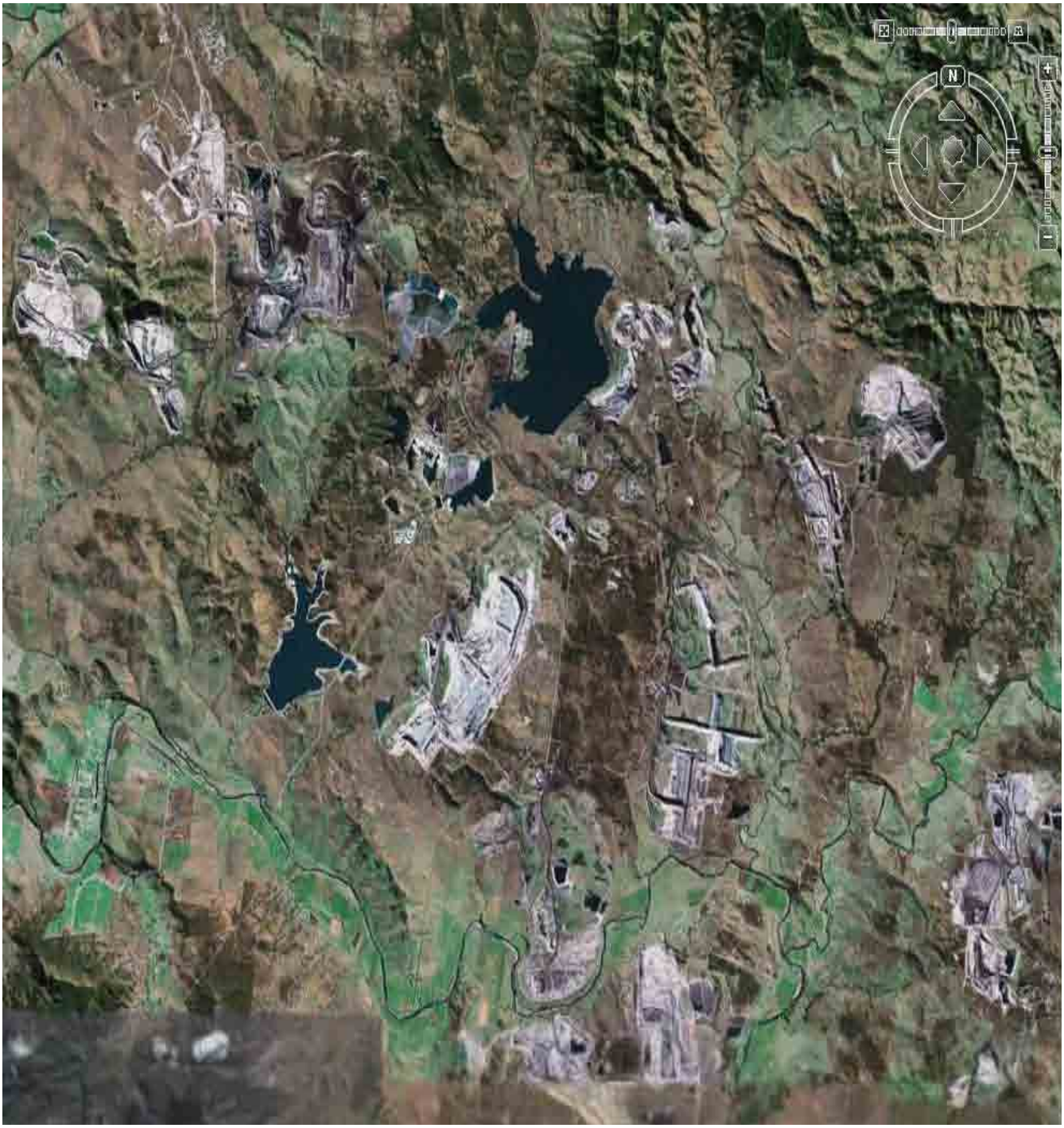
And finally the world has understood this, and it isn't only a few hippies…. We all, as citizens of the world are making changes to the way we use energy, the way we manage our resources.

Our newspapers are full of stories, the leaders of the largest economies are all finally recognising it, and recently serious scientific muscle has come out to say that unless we drastically address our creation of CO_2, we may get to the point of no return, if we haven't already got there.

They say we have to spend billions today to save trillions later. Probably true, and it will always be difficult to measure, but no amount of money will compensate people for dying because of reduced air quality, rising oceans, worsening droughts, more severe storms and less water.

The time is now, to undertake all means to build the framework for a green future.





Hunter Valley Mines circa 2004

E3.0 REGIONAL PERSPECTIVE and BENEFITS

The Hunter Valley is famous for its wines, horses, green hills, valleys and picturesque landscapes. The Hunter is home however, to coal mining and power industries, two industries with vast impacts over land, the wealth of the population, the visual amenity of a whole region as well as health, natural habitats, natural landform amongst many. The Coal Industry is a very important part of NSW and Australia's community and economy, with the Hunter playing a vital role. Coal is undeniably a driving force in the economy of the region and many community groups deserve to recognize the coal industries' support.

The majority of mining and energy production occurs in the Muswellbrook and Singleton Shires immediately south of the Upper Hunter Shire.

There are numerous proposals and feasibility studies underway investigating non renewable forms of coal and gas electricity production in the Upper Hunter Shire. As clean, renewable resources, rather than fossil fuels are used in the process of electricity generation, there are zero emissions and adding to the greenhouse effect. This will aid the move toward a 'cleaner' more sustainable environment available for future generations of the Hunter. The renewable energies as proposed are free from CO^2, noxious air pollutants and clean water requirements. This will be particularly important for the residents and natural environment of the Upper Hunter region with current plans to further expand fossil fuel based electricity production (coal and gas) in the Upper Hunter.

The open cut mining sites and power stations in the Muswellbrook area use over 5000 hectares (15000 acres) of high quality farming land. The same coal fired power plants produce tonnes of CO_2 ozone depleting gases, speeding up the impact of global warming. And that coal, (the majority) which is excavated and exported to other countries rather than used in the local power stations, nevertheless contributes to global warming overseas at increased inefficiencies.

Over the past ten years the rapid pace of development of the coal industry has seen more mines, larger mines, mines that were previously closed, reopened, mines that were underground and now proposing to be open-cut. The landscape is changing around the region so quickly, that the largest dominant landscape feature around Muswellbrook today is the large coal slagheap to the west. The coal industries attempt to conceal the changes to the land with densely landscaped batter built up against roadways but the experience of driving through the Hunter is no longer one of a rolling valley with the backdrop of mountains, but one of impact after impact of the mines along one's journey.

Recognising a need to create a cleaner, more renewable future, a large scale solar array is proposed near Singleton which is proposed to generate approximately 3MWh of energy. This is in comparison to 2600 MWh currently being produced by the 3 power stations in the Muswellbrook Shire.

And recognising a need to address renewable energy, the Upper Hunter Shire has actively promoted the investigation and implementation of alternative renewable energy generation. As soon as Council discovered its Local Environment Plan did not allow eco-generating works, it sought to change the LEP and make it possible for projects such as the Kyoto Energy Park to be assessed.

Despite the changing topography of the Hunter as a result of the mines, many other changes have occurred in the region. The wineries, coastal development and the improved road system, successful horse breading and training in the Scone area, all have brought a new awareness to the region about the sensitivity of the land and the air we breathe and generated a ground swell of support for a future less reliant on the coal industry to power our homes and the world.

Accordingly, the opportunity has emerged and with the Kyoto Energy Park is the hope that all residents in the area, whether they subscribe specifically or not, with the development of the Kyoto Energy Park, will use green, renewable energy to power their community.

Local interest in participating in the financial entity remains high and once all regulatory approvals have been met, the local community will be provided with an opportunity to 'own' a piece of their own green power supplier in preference to a broader offer to the public.

With the 'ownership' of the Kyoto Energy Park education programmes and a refreshed even greener regional identity can further develop and that will reinforce the message that Scone is clean and green and acts in accord with its values.

The Kyoto Energy Park is a great opportunity for the region to shout its support of renewable energy, rather than simply accept the landscape degradation of the mining activities. It is supportive of the strong support in the region for a shire without coal mines and clean and green activities supporting the horse industry.

E4.0 Project Description

At its core, the proposal for the Kyoto Energy Park is to align the opportunity for numerous renewable energy technologies to work together to create electricity from renewable sources.

Proven Technologies

Enormous global investment and research into energy generating devices from renewable sources over the past twenty years has seen a vast uptake in feasible, efficient and practical solutions to the ever growing demand for energy. Much of global progress has been on the back of financial support from governments. This is changing with government support reducing generally. Costs for renewable energy have been reducing as well as costs in traditional forms of energy generation (coal and hydro) becoming more expensive or seen as environmentally unacceptable. Communities around the world are realizing the true cost and impact of their reliance on coal and hydro-electric energy is harming our global environment, possibly to levels which degrade our environment that we'll never be able to recover from.

Renewables are a realistic alternative. The main reason to continue to develop energy from renewable sources is that if new technologies emerge over time, making current solutions less efficient or practical, the impact of removal of these, or the impact of having had the renewable solutions working for us in the meantime is zero. The impact of coal and nuclear is unfortunately with us for hundreds if not hundreds of thousands of years thereafter.

The proposed eco-generating devices proposed for the Kyoto Energy Park are in all cases proven and use long-tested technology, highly sophisticated and have successfully proven decades of use around the world.

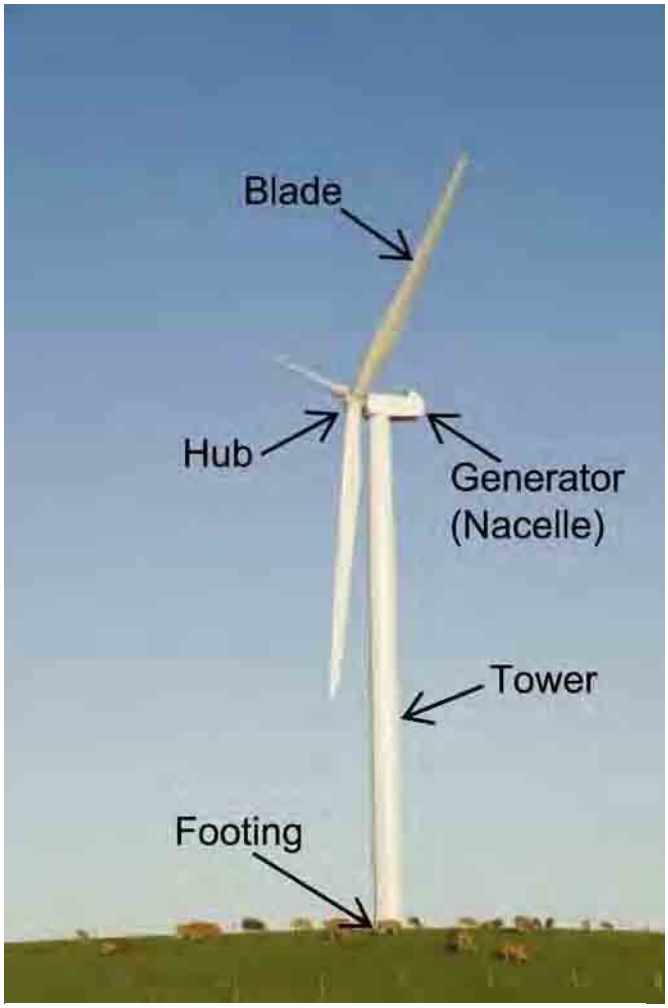
The design of the Kyoto Energy Park will take into consideration all of the proposed energy generation methods. The following is a general description of the proposed technologies.

E4.1 Wind Turbine Generators

The project involves a total of 42 wind turbine generators each capable of generating about 2 to 3 megawatts of electricity. The wind farm component of the Kyoto Energy Park will be located on two separate sites referred to as Mountain Station and Middlebrook Station three dominant ridge lines within the project boundary.

Each turbine will comprise a footing, tower structure (tower tubes), a wind turbine comprising a rotor assembly (nose cone, three blades),a nacelle, meteorological equipment, control and communications. The turbine footings will comprise either a gravity or anchored reinforced concrete block footing with final dimensions dependent on final design. Following construction of the footing the base will be back-filled with soil and revegetated with native species.

The tower will be constructed from five sections of about 20 metres length each. The tower will taper from the base to the top. Each of the turbine blades will be approximately 45-50 metres long and weigh 6 to 7 tonnes each. The turbines will have a hub height of about 105 metres and be of variable speed design with rotation at between 7 and 18 revolutions per



Component parts of a typical wind turbine generator

minute or rpm. The turbine operation will commence at a wind speed above about 3 metres per second (11 kilometres per hour) and cut out above 25 metres per second (90 kilometres per hour). The turbines will be designed to operate automatically and will also be able to be monitored from a control room located in the site substation or controlled remotely from site via telecommunications links.

Image of a typical fixed- frame solar photovoltaic plant

E4.2 Mt Moobi Solar Photovoltaic (PV) Farm

A Solar Photovoltaic (PV) plant will be constructed and installed along the flat cleared section of Mount Moobi Plateau located in the south-eastern portion of Mountain Station. The Mt Moobi Solar PV farm will cover an area of approximately 210,000 m^2 or 21 hectares, dependent on the final layout.

The Mt Moobi Solar PV farm will be composed of photo-voltaic solar cells which will be regrouped in solar modules. Solar modules will be mounted on supporting structures which may be fixed or mobile depending on final design parameters. Solar modules generate a DC current which is generated at low voltage of few hundred volts. The DC output of the solar module is converted to 50Hz AC current via a power inverter in each individual module, which would be mounted on the supporting frame structures connected to in-situ footings poured on site. Four different types of frame structures have been considered in this environmental assessment report to improve overall exposure and reduce costs. Final design of the solar PV plant shall subsequent to approval from the Minister.

Fixed structures allow for longer cells or rows, whereas power tracker structures are designed to maximise power output efficiency through single or dual axes tracking. Frames would be prefabricated off site and transported to the site for installation. The total peak output of the solar farm would be between 3-10MW (gross or rated capacity) depending on the final configuration and area of the plant. Future capacity for up to 30MW is also available within the sites. The Mt Moobi Solar PV farm size and configuration will depend on the type of supporting structure selected.

E4.3 Mini hydro Plant (Closed-loop)

A mini-hydro plant (Closed loop) is proposed to provide a power generation source that can supplement local electricity peak output periods, store surplus renewable energy during off peak periods, high electricity pricing and help balance power output quality from intermittent generation sources such as wind and solar used in the project.

The topography of the proposed site is well suited for this application. Water will be sourced from the site runoff or trucked in and used to fill the header tanks for later discharge through the hydro turbines.

During discharge (under gravity) the water in the header tanks drives a series of smaller mini hydro turbine units located within the closed loop system. Electricity for reverse pumping of water to header storage tanks shall be sourced from excess energy generators from wind and/or solar plants.

Electrical works include a single substation in the order of 100 MVA located close to the site access on Mountain Station. About 21 kilometres of 33kV cable will be laid for underground reticulation within both sites.

E4.4 Transmission line connection to the Grid

Overhead transmission lines will be used for external connection to the grid. There are two main options for connection to the grid a 66kV and a 132kV with final selection based mainly on final park capacity. Variations to these options have also been included. The 66kV connection from the site substation to the new Scone STS consists of approximately 13km of external overhead transmission line (Connection 1 in the diagram below). The 132kV connection would be to the existing Muswellbrook STS, consisting of 42km of overhead line (Connection 3 in the diagram below). An option also exists for connection to

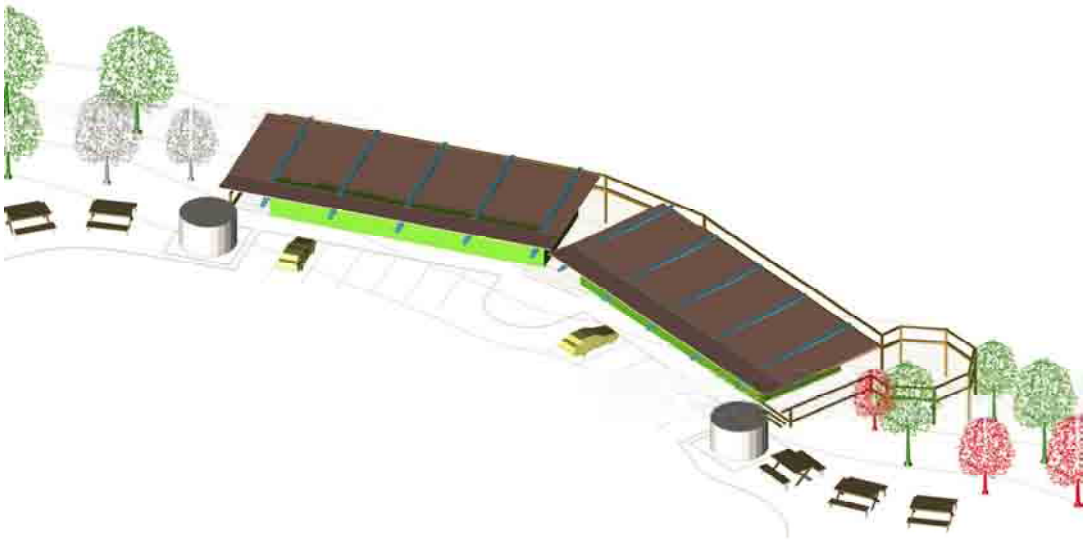
Dartbrook Mine along the same route.

In addition about 9km of 33kV overhead line would be used to connect Middlebrook Station to the site substation. Most of the new line will replace existing pole infrastructure along existing road routes that have been selected to bypass built-up areas and residential zones.

E4.5 Ancillary facilities

Ancillary works include a the installation of a Maintenance shed, a Managers residence, a Visitor's and Education Centre which will be used by visitors, educational institutions and for displaying information regarding the Kyoto Energy Park and local heritage.

The Kyoto Energy Park is designed to be operated automatically and remotely, however permanent staff will be located on site for environmental management and control facilities, safety and general maintenance.



3D Visualisation of the Proposed Visitor's and Education Centre Mt Moobi Plateau, Scone

E5.0 Development Phases and Timelines

The overall development phases for the Kyoto Energy Park can be broadly categorised into

- planning and approval;
- final design, preparation of contracts and tendering;
- construction; and
- commissioning and operation.

Other requirements prior to operation of the project include a Connection Agreement with Energy Australia for connection to the electricity grid and a Power Purchase Agreement (PPA) between the generator (Kyoto Energy Park Scone) and an energy purchaser (eg electricity retailer).

The construction stage of the project will continue for an estimated 20 months duration including construction of all components such as site establishment and preparation, civil works, access tracks, turbine footings and underground cabling, erection of turbine structures, installation of a Solar Photovoltaic (PV) Plant, site substation, construction of the mini hydro plant, a Maintenance shed, Manager's residence, a Visitors and Education Centre and transmission line connection to the grid. The actual duration may vary, depending upon the detail of the final contracts, scheduling of activities and any delays that may be encountered due to factors such as unfavourable weather conditions or supply of equipment or materials.

The overall generating life of the initial Kyoto Energy Park equipment would be approximately 30 years from the commencement of operations. This timeframe is based on the typical collective design life of the generator components. During operations the Kyoto Energy Park would be staffed by up to 10-15 staff at any given period with additional resources used during regular maintenance periods and servicing. At the end of the design life of the Kyoto Energy Park components, refurbishment of the equipment is proposed.

Table 3.2 - Kyoto Energy Park - Construction Timeline

Kyoto Energy Park Construction Program	Mth1	Mth2	Mth3	Mth4	Mth5	Mth6	Mth7	Mth8	Mth9	Mth10	Mth11	Mth12	Mth13	Mth14	Mth15	Mth16	Mth17	Mth18	Mth19	Mth20
Mountain Station																				
Site Establishment	■																			
Upgrade access tracks and hardstands		■	■																	
Establish batching plant		■																		
Internal underground cabling			■	■	■							■								
Turbine concrete foundation				■	■	■	■													
Construct substation/switchyard/control							■	■					■	■						
External connection to the Grid*									■	■	■	■	■		■					
Erect WTGs								■	■	■	■	■								
Construct Mini Hydro Plant											■	■	■	■	■					
Commission Wind Turbines															■		■	■		
Construct Maintenance building															■					
Construct Manager's residence															■	■				
Construct Visitor's Education Centre																	■	■		
Install Mt Moobi Solar Plant (5MW)													■	■	■	■	■	■		
Commission Solar Plant																			■	
Project operation (Wind + Hydro)																			■	
Project operation (Solar)																				■
Middlebrook Station																				
Upgrade access tracks and hardstands				■	■															
Internal underground cabling					■	■														
Turbine concrete foundation							■	■												
Erect WTGs													■	■	■					
33kV to Site Substation											■	■	■							
Commission Wind Turbines																			■	

** Includes timeframe for 132kV connection Option 2 (Vemtec 2008)*

E5.1 Construction Activities

Construction facilities will be set up on site at Mountain Station for the duration of construction phase. On-site construction facilities would include a mobile concrete batching plant, site offices and a laydown area. The laydown area would be located adjacent to the site offices and used for temporary storage of large wind turbine parts prior to erection along ridgeline locations. Road base material would be sourced locally and transported to the site for use in access tracks and crane hardstand areas. Sand, cement and gravel used for concrete production shall be sourced locally and transported to site.

On-site construction activities would occur between 7am to 7pm Monday to Friday and 7am to 1pm Saturday, excluding Sundays and public holidays. On some occasions, some cranage activities will occur outside these working times and possibly on Sundays and public holidays. This is due to the cranage sequence for the lifting of the last sections of the tower, nacelle and blade assembly of the wind turbines. The wind speed must be low and once the sequence of lifting commencing of the four components, it should not be interrupted.

Deliveries would generally occur in bulk loads minimising truck movements to and from the site. Transportation of materials shall occur during associated construction activities to minimise stockpiling on site. Heavy haulage of wind turbine components would occur during NSW Police and RTA approved times. The Traffic and Transportation Assessment identified feasible transportation routes for delivery to site. Final transportation routes for oversize and over mass components would be subject to a permit from the RTA and NSW Police prior to delivery to site.

E6.0 Statutory Planning and Consultation

Planning Approval is being sought pursuant to Part 3A of the Environmental Planning & Assessment Act 1979 for the construction and operation of the Kyoto Energy Park. The Consent Authority for the Kyoto Energy Park project is the NSW Minister for Planning.

Pamada Pty Ltd (the proponent) lodged a Project Application on 29 November 2005 and 14 December 2006 to cover all components of the proposed project. The Department advised on 13 March 2006 and 30 January 2007 that the proposal is declared to be a project that part 3A of the EP&A Act 1979 applies.

The Director-General of the NSW Department of Planning has specified the matters to be dealt with by the Environment Assessment. Director Generals Requirements (DGRs) were issued by the Department of Planning on 1 May 2007.

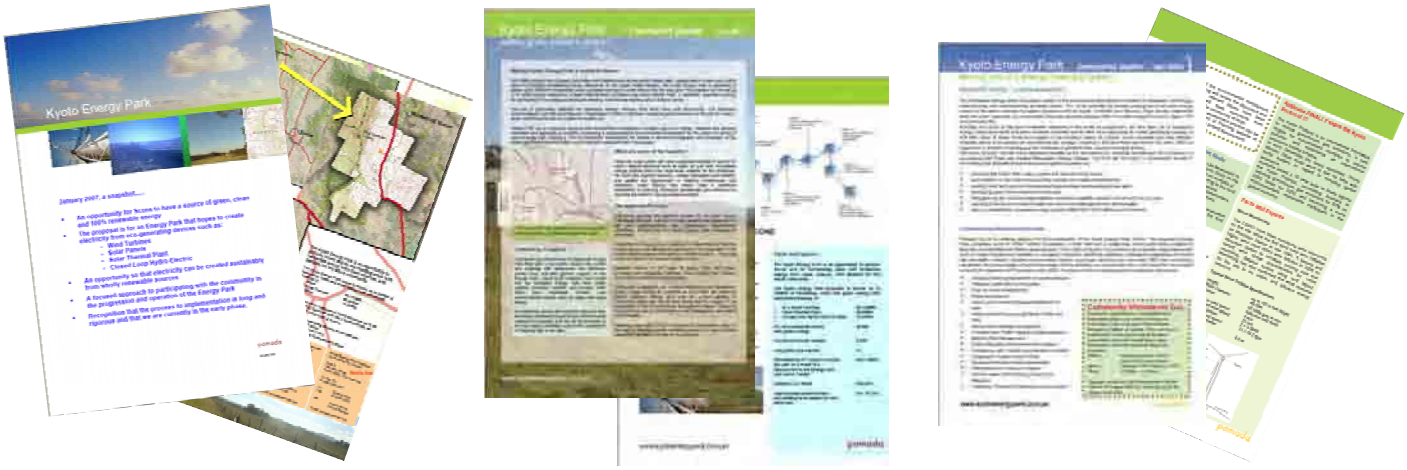
This environmental assessment report has been prepared to address the DGRs for the project and other relevant matters of the project. Pamada are seeking approval or consent for construction and operation of the Kyoto Energy Park.

Other approvals and licences required for the Kyoto Energy Park include a consent for works within and/or over the road reserve under Section 138 of the Roads Act 1993.

The objectives of all EPI's relevant to the subject sites and project are all consistent with the proposal.

E7.0 Community Participation

Community participation is an important consideration for the project in firstly providing accurate and up to date information to the local community, local organisations and business groups, and secondly in gaining non-biased feedback on project parameters.



Examples of Community Information distributed to Local Community and Stakeholders

Public consultation began in 2005 with the rezoning of the subject sites to allow for renewable energy generators to be considered for development. In December 2006 formal planning and environmental assessment of the sites commenced and Pamada prepared a Community Consultation Plan as a management framework for engaging community awareness, providing information and addressing concerns. A summary of the Plan is provided in Appendix N.

Community consultation included:

- Community Information Newsletters;
- formal letters to individual residents;
- presentations to key business groups and to the Local Aboriginal Land Council;
- on site Indigenous archaeological surveys with Aboriginal stakeholders;
- the Kyoto Energy Park website;
- a Community Information Day;
- face-to face meetings;
- phone conversations and interviews;
- Direct email communication; and
- extensive public relations initiatives though media, advertising, direct mail, letterbox drops, and on-display information at Upper Hunter Shire Council.

Meeting nearby Resident on-site

Numerous face to face one on one meetings with neighbouring residents occurred on their neighbouring land. Further numerous communiqués between neighbouring landowners and the proponent occurred by email. Very many highly detailed questions of the proposal were asked which, to the extent of knowledge available, all were provided directly to the residents.

Such meetings occurred during the whole process, from the earliest stages in the assessment, when very little information was finalised from the assessment, right up until late December 2008, when representatives contacted three of the neighbours most pressing for information. Inspections occurred on their properties and information contained in this report was discussed.

Other information was presented through informal presentations, briefings to council, meetings and government consultation.

Kyoto Energy Park Website www.kyotoenergypark.com.au

Pamada Scone Office off Kelly Street, Scone

A Pamada site office was set up in the main street of Scone from 2006 to answer questions from local residents and facilitate meetings. The site was used by Pamada for local appointments with the Community Liaison Officer on a part time basis (Approximately 2-3 days per week).

Extensive media coverage has occurred throughout the project lifetime to date. The bulk of media coverage was undertaken by the local newspaper, the Scone Advocate. Other articles have also appeared in the Newcastle Herald and the Sydney Morning Herald with specific discussion generated on ABC Radio programs (Muswellbrook and Newcastle) and NBN TV news.

The newspaper articles have generally maintained a neutral position and have been informative. Articles have outlined both positive and negative impacts of the proposed development. At a regional level there has been a greater focus on the potential of the development in combating global warming.

In the 'Letters to the Editor' section of the Scone Advocate, letters were received both in support and against the proposed energy park.

- Topics in support, covered matters such as desire to have renewable energy, 'what's the problem, they are a beautiful thing', and desire to slow down the progression of coal mines in the area.
- Topics against, covered matters such as visual intrusion, loss of property values, bird strike, noise, bushfire risk and the concept that the landowner would receive an unfair benefit from the energy park.

No windfarms in Scone

Going through recent issues of The Advocate missed on a trip to Spain I was unpleasantly surprised to read of a proposed installation of wind farms on hills near Scone.
Parts of Spain we drove through are awash with wind farms. Blighted by them would be a better description.
These windfarms may be a triumph of industrial design, and in promotional pictures and videos they do have a certain individual elegance.
But, up close, they are gigantic, up to 150 metres high; as tall as a football field is long plus 50 per cent.
In groups or rows they completely overwhelm and visually annihilate the landscape for kilometres around.
Nobody who is financially or politically disinterested in wind farms but who lives close enough to see or hear them finds them attractive, quite the opposite.
Scone district does however have some of the most attractive country in NSW, heritage grade landscape I suggest.
We don't need the visual pollution of heavily government (ie taxpayer) subsidised wind farms. Please put them in some else's backyard.

By Dr Mj Hunter
The Scone Advocate 28 June 2007

Windfarms needed to save our valley
Thursday, 23 August 2007
Posted By Jan Clifton

What do we want for our valley? Cleaner, less polluted air or filthy clouds of carbon loaded emissions slowly choking us and all our surroundings and our planet.
We must seek an alternative to coal generated electricity.
Power stations, jet fuel, petrol burned by cars, oil refineries and diesel all used in mining account for almost 65 per cent of our country's annual greenhouse gas emissions.
While our government argues Australia is on track to stabilise emissions, it clearly not, although we are beginning to hear the words climate change, global warming, and the greenhouse effect. Call it what you may, it all boils down to one subject, destruction.
Figures show carbon emissions have hit 590 million tonnes per year from Australia alone; our contribution to the cloud of destruction blanketing the earth.
Something beyond most people's comprehension.
And we like to consider ourselves a responsible, developed country.
We in the Hunter Valley are being used as political pawns in a governmental competition of monetary greed of the Super Powers, and damn the consequences.
The future for our children and grandchildren is not a healthy one unless we do something positive now. Each one of us.
Let us harness the sunlight and wind for power and electricity.
A skyline dominated by wind turbines? Surely better than an overturned countryside churned and ravaged, devoid of life, disrupting our agriculture, thoroughbred horse breeding, dairy, winemaking and tourism industries and further jeopardising hundreds of millions of dollars of investments and thousands of jobs.
Smell the roses now. The end process is pretty attractive. Cleaner breathable air, cleaner unpolluted water, cleaner oceans, cleaner living and happier people.

• MORE Letters to the Editor

The Scone Advocate

Examples of Resident Letters as seen in the Scone Advocate and published on the web.

A Community Information Day was held in Scone on the16th February 2008. Pamada engaged an independent consultant (Key Insights Pty Ltd) to advertise, organise, facilitate and record the day which was attended by an estimated 200 local people. 56 feedback forms were collected or mailed to Key Insights providing community feedback on the Day. Core project consultants for the project were in attendance displaying key information, answering specific questions and assessing further local issues relevant to the studies.

In general the views of the local community have ranged from strong opposition to strong support. Those most strongly opposed to the project have expressed their acceptance of renewable energy technologies but are concerned over local impacts such as noise, visual and devaluation of land values. Those in support of the proposal were generally committed to "green energy" and the association with Scone as a green town.

Community Information Day held at the Scone Equine Centre

It should be noted that a small group of local residents have repeated notified other groups, the media and through letter box drops inaccurate information not originating from the proponent, and not representative of the real proposal.

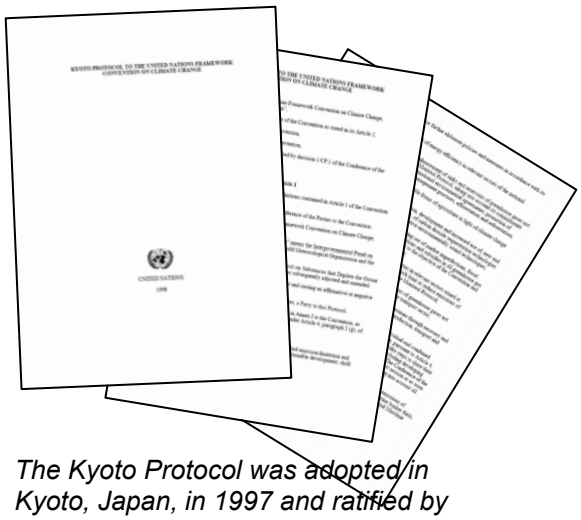
E8.0 Strategic Justification

The final generation capacity of the Kyoto Energy Park will be in the order of 90-140 MW of rated (gross) capacity. Final design capacity shall be based on final selection of wind turbine generator (2-3 MW) and size of the Mt Moobi Solar PV farm (3-10 MW). The maximum generation capacity of the Kyoto Energy Park shall be split between wind turbines (92%), solar photovoltaic (7%) and closed loop mini-hydro (1%).

E8.1 Greenhouse Gas (GHG) Emissions

Over a third of Australia's total GHG emissions are from the electricity supply industry. The Electricity Industry is currently dominated by fossil fuel based energy production of coal (black and brown) and gas with renewable energy production represented mainly through hydro schemes, such as the Snowy Mountains Hydro Scheme in NSW.

The Kyoto Energy Park is being developed as a direct response to long term climate consequences of fossil fuel based electrical generation practices. The Kyoto Energy Park will generate electricity from the latest wind, solar photovoltaic and hydro technology providing a renewable energy source, which will assist and comply with the federal government's most recently announced Mandatory Renewable Energy Target (MRET) of 20% of total electricity by renewable resources by the year 2020.



The Kyoto Protocol was adopted in Kyoto, Japan, in 1997 and ratified by Australia in 2007

The state of NSW currently has a generation capacity deficit and imports large amounts of peak electricity mainly during peak periods from interstate (Victoria and Queensland) which increases overall costs, transmission losses for supply and overall Greenhouse Gas Emissions.

Growth in demand for electricity in NSW, and specifically the Hunter Valley over the next 15 years is expected to increase with consumers increasing reliance on electricity.

The electricity generated by the Kyoto Energy Park would supply in the order of 62,000 households per year, based on an average household electricity consumption of 5,000 kWh per year. Wind and solar components are expected to save 286,000 tonnes of GHG emissions annually or approximately 9.5 million tonnes over the life of the Energy Park components, assisting mitigation of greenhouse gas emissions from stationary energy sources.

Conventional coal fired generation uses large quantities of water mainly for cooling purposes. The Kyoto Energy Park would have negligible water requirements. Using data from the coal fired power stations, it is possible to calculate the quantity of water used in the process of creating electricity from the burning of coal for an equivalent generation capacity to that of the Kyoto Energy Park. The saving in water annually is in the order of 700million litres of potable

water, or the equivalent of some 12 Olympic sized swimming pools of clean water daily.

The mini-hydro plant is a closed system which when charged will require minor top up allocations during maintenance.

When implemented in accordance with the commitments identified in this document, the Kyoto Energy Park does not compromise environmental values at the locality, including ecological, heritage, soils and water quality. It does not place undue stress on local resources with the exception of traffic regimes which would be managed and controlled in a safe and efficient manner.

E8.2 Social and Economic Impacts

Scone has a population of 5,080 people and is fully contained within the Upper Hunter Shire Council, which was formed in 2004 with the amalgamation of the shires of Scone, Merriwa and Murrurundi. The socio-economic profile of Scone and the Upper Hunter reveals a strong labour market, with low unemployment and high workforce participation.

The most significant economic component of the project will be during the manufacturing and construction phase. The total expected capital expenditure for the project is between 140 and 190 million dollars. Final expenditure will depend on the final generator capacity of the park. It is estimated that 60% of total expenditure would be captured domestically.

Total direct Australian job years during construction of the wind farm component are estimated between 329 and 466. An additional 1351 to 1911 Australian job years would be created in relation to multiplier effects associated with increased economic activity in the region during construction of the park. Further local jobs would be sourced for buildings and facilities construction.

The regional workforce and industry is well placed to provide input into various aspects associated with the project, including local employment, transitional employment for trade skills, supply and fabrication of construction materials and industrial services. Much of the material used in construction will be sourced from (including road base, concrete materials), and from the Newcastle Hunter region (steel, prefabricated components, haulage).

View from the Mt Moobi escarpment looking east to Scone

The creation of on-going employment for the Kyoto Energy Park is in the order or 10 to 15 fulltime equivalent jobs. Additional workers to the area will positively impact on local businesses, through an increase in customers and clients. The addition of a tourism component in the form of the Visitor Education Centre would provide further economic benefit to the Upper Hunter region and the local area of Scone.

The development is located on predominantly cleared grazing land and is able to operate compatibly with the existing activities on site. The park would provide additional income to the landowner of the property on which the wind farm will be located.

There appears to be overall positive support from the general community for the project. The project complies with the requirements for inter-generational equity (i.e. the rights of future generations). Those in opposition to the project are generally located in close proximity to the sites and have expressed concerns mainly in relation to noise, visual impacts and land devaluation potential. These impacts are considered to be manageable and outweighed by the positive environmental benefits of the project.

The proposed Kyoto Energy Park development has the potential to improve the environmental quality of the wider Upper Hunter region with minimal and manageable adverse environmental impacts to the site and local area. It is anticipated that the development will not generate any emissions or greenhouse gases during operation, will contribute to state and national greenhouse gas and climate change policy targets, promote the generation and use of renewable energy, and create an opportunity to educate tourists and visitors about renewable energy and the environment.

E8.3 Surrounding land-use and development

The Kyoto Energy Park site was identified by the former NSW Sustainable Energy and Development Authority (SEDA) in 1995 and since 2000 has been monitoring wind conditions on Mountain Station confirming the locations suitability for wind generation.

Scone is primarily a large service town for the surrounding rural areas and is known as the Horse Capital of Australia due to the significant equine industry and the considerable amount of prestigious horse studs in the area. Other surrounding dominant land uses include grazing, agricultural crops, and coal mining which is rapidly expanding in the area.

Rural properties and homesteads are scattered around the Mountain and Middlebrook Station sites mainly to the east towards the Scone urban centre. No residencies are located within 1 km of the wind turbine generators proposed for both sites. The closest residency is approximately 1.1 kilometres to the east of the nearest turbine on Mountain Station.

The closest rural residential development is the Clifton Hills Estate which is a 15 lot rural residential subdivision located north-west of the Mountain Station site. One residence has been constructed within the Estate and noise impacts were found to be within acceptable limits.

Some rural residential subdivisions are located at considerable distance east of both sites in the vicinity of Scone town centre. There are currently no future residential developments proposed close to the site. There is some potential for development of surrounding lots however this is mostly limited to rural lot subdivisions.

In general, local community feeling seeks to keep Scone a clean and green place, without mines, yet many in the region work in the mining and mining support industries, recognising the importance of coal to the health and growth of the region, state and national economies. Although recognising the importance to the communities, there is strong and broad based concern regarding any further mining activities to the extent of the community paying for advertising space on roadside posters.

E8.4 Potential Devaluation of Property

Bob Dupont Land Valuations Pty Ltd were engaged by Key Insights Pty Ltd to undertake a review of the potential for land devaluation in the surrounding properties specifically from wind turbine generators. This is addressed in Key Insights' report (see Appendix K).

The background assessment was based on existing market evidence in both Australia and internationally, information of the Kyoto development, an inspection of the sites and local area, knowledge of land values in the Scone region and the impact developments of this nature have on land values.

The land surrounding the proposed Kyoto Energy Park is dominated by agricultural land, prominent horse studs, scattered rural homesteads, lifestyle blocks, and some rural residential subdivisional developments. Research shows that there is a general consensus that wind farm developments have no impact on the agricultural viability of land. The report concluded that given the prominence of the wind farm component on top of ridge lines, there may be an initial reduction in value to immediately adjacent residencies, however this reduction is more a consequence of the perception of negative effect rather than actual outcomes. Duponts reported that once developments of this nature are in place, after a period of time (generally 1 to 2 years) the effect generally reduces to zero.




E9.0 Existing Environment

The Scone area is known as the Horse Capital of Australia, hosting some of the most prestigious equestrian events in Australia and home to some of the most prestigious horse studs. The Hunter Valley is also a world famous wine producing region mainly in the south which supports a booming tourism sector that has world class restaurants and golf courses all within an hours drive of the Kyoto Energy Park proposal.

The region is well serviced with education facilities. There are seven high schools in the region – and three TAFE colleges. There is also a hospital located in the Scone centre.

The proposed development is located on an inland rural location that has been extensively cleared and has a predominantly pastoral land use. The development does not preclude the existing land use and it is anticipated that the landowners of the property will continue to graze sheep and cattle on the property.

Rainfall is about 600 mm per year. Mean annual temperatures vary from between 10.0 and 24.1degrees Celsius. The site has high average wind speeds that are predominantly from the south-east or west. The site has a sufficient wind energy resource to support the development.

Sheep grazing along Middlebrook Road, Middlebrook Station Scone

E9.1 Air Quality

Impacts to air quality would be primarily limited to the construction stages of the Kyoto Energy Park development. Areas exposed on the site would be minimal and can be managed to reduce soil loss and mitigate dust control. Exposed works areas would be limited to access roads, turbine excavations, material stockpiles, minor earthworks and regrading areas. Dust mitigation measures and soil management practices will be adopted on site. Accordingly the Construction Environmental Management Plan (CEMP) for the project will incorporate controls to keep dust emissions to a minimum.

E9.2 Existing Land Uses

Existing land uses on the Mountain and Middlebrook Station properties include grazing of sheep and cattle, private aviation, and existing tourism activities. An existing Trig station (Myall Trig) is located on Mt Moobi in close proximity to the proposed wind turbines and solar PV farm. The NSW Department of Lands were contacted and responded verbally that no objection to the proposal was made. The “Myall” Trig will remain unaffected by the project however the Department requested that the Trig station is protected during construction works and that final layout details of all structures be submitted to the Department for concurrence prior to construction.

The existing land uses will be continued and can coexist with the elements of the Kyoto Energy Park project. The existing tourism activities include trips to Mountain Station and Mt Moobi lookout. A Visitors and Education Centre will be constructed on Mt Moobi to allow for exiting and future visitors to the site on an intermittent basis. Some possible disruption to grazing activities on Mountain Station may occur during the construction stage of the project.

E10.0 Flora and Fauna Issues

The Kyoto Energy Park is proposed to be situated on two sites Middlebrook and Mountain Stations. A Flora and Fauna Impact Assessment was undertaken by Conacher Environmental Group between April 2007 and August 2008. A Specialist Bird Impact Assessment was also completed by Conacher Environmental Group in accordance with requirements from the Director General and Auswind Guidelines – Wind Farms and Birds: interim Standards for Risk Assessment. The proposal was referred

to the Department of Environment, Water, Heritage and the Arts in accordance with the Environmental Planning and Assessment Act (1979). The department deemed the proposal to not be a controlled action on 18 March 2008.

The main impacts of the development relate to site disturbance during construction and, once operational, to potential for blade strike by birds and bats from wind turbines.

E10.1 Flora

Middlebrook Station has sparse scattered tree cover and is adjacent to the Towarri National Park to the north and partly to the western border. Middlebrook Station is part of the Glen Range, and has a relatively flat single ridgeline which runs approximately north-south. Terrain slopes around the main ridge can be described as complex in all other directions, as there are steep slopes present, particularly to the east and west. The ground cover is medium tree cover to 6-8m. The valleys surrounding the ridgeline are mainly open grassland, with occasional scattered trees to 8m.

Mountain Station site is predominantly cleared open grass land with occasional shrubs and scattered trees. The remnant vegetation is significantly disturbed and significantly reduced due to occupation and previous clearing. The tree cover is denser on the sloped areas of some ridgelines and the main escarpment. One threatened flora population (Cymbidium canaliculatum), was observed at the Mountain Station site. The proposal will not require the removal of any individuals from this population or impact upon this population. One Endangered Ecological Community (White Box - Yellow Box - Blakely's Red Gum Woodland), was observed within the subject sites. The proposal is likely to remove a maximum of 5.9ha (3.6 ha Middlebrook Station, 2.3 ha Mountain Station) or 0.9% of the community within the sites. Selective removal of vegetation would be required for upgrading of the vehicle access tracks and construction of the wind turbines envelopes and components. The project design and implementation will aim to avoid clearing of native trees whether dead or alive.

There are no areas mapped as vegetation corridors present within the subject site. There are regional and sub-regional corridor areas to the east of the site within the ridgelands and rangelands associated with the Glenbawn Dam catchment. These areas are at considerable distance from the site and have no association or connectivity with the sites.

No areas within the site have been identified as key habitats within the DECC mapping

E10.2 Fauna

Seven threatened fauna species, the Glossy Black-Cockatoo, Grey-crowned Babbler, Spectacled Warbler, Grey-headed Flying-fox, Yellow-bellied Sheathtail-bat, Eastern Bentwing-bat and Eastern Cave Bat, were observed within the subject site. A 7-part test completed for the proposal in accordance with the Threatened Species Conservation Act (1995) and Section 5A of the Environmental Planning and Assessment Act (1979) concluded that the proposed development was not likely to have a significant

impact upon threatened species, endangered populations or endangered ecological communities and a Species Impact Statement should not be required for the proposal.

No Koalas were observed during fauna surveys and there was no evidence of previous Koala habitation within the subject site.

E10.3 Bird and Bats

One threatened fauna species, the Grey-headed Flying-fox, was observed on a single occasion within the subject site. The subject site is not likely to be in the regular flight path of any locally occurring colony or camp of Grey-headed flying-foxes. Any collisions are likely to be isolated individuals and extremely rare. The construction of the turbines is likely to pose some level of risk to smaller bat species (particularly the White-striped Freetail-bat and Yellow-bellied Sheathtail-bat) however the risk posed by the turbines and subsequent population effects are low given the low expected incidence of collision and large amounts of suitable habitat available within the local area including Towarri National Park.

A specialist bird survey was carried out as part of the Bird Impact Assessment completed for the site in accordance with Auswind's Wind Farms and Birds: Interim Standards for Risk Assessment (Auswind 2005). Specialist Bird Surveys were carried out in April, May, June, August December 2007 and February 2008.

Given that the rotors are situated on the ridgeline in exposed areas the impacts are potentially limited to high flying, soaring birds. Two 'Species of Concern' were identified during the assessment that exhibit behaviour that puts them at risk of collision with operating wind turbines. These species were the Wedge-tailed Eagle and the Nankeen Kestrel. Further monitoring of these species will be included in an Adaptive Management Plan implemented prior to commencement of operations of the development. Monitoring of other bird and bat species will also be undertaken during operation of the Kyoto Energy Park.

Glen Range, Middlebrook Station, Scone

E10.4 Vegetation Management

Removal of vegetation will be kept to a minimal. The Kyoto Energy Park will require the selective removal of a small proportion of vegetation for upgrading of access tracks, crane hardstand areas and

site works. Vegetation loss would be offset by firstly protection of the existing remnants during construction and secondly replanting and restoration of significant remnants of the EEC during the operational stages of the project.

Other measures will also be adopted during the construction period to minimise the construction footprint of the site, protect existing vegetation surrounding works areas, limiting vehicle access close to protected vegetation and channels and erosion and sedimentation controls.

E11.0 Heritage

E11.1 Indigenous Heritage Issues

The Aboriginal heritage issues have been assessed for the Kyoto Energy Park sites with the findings presented in Appendix H – Myall Coast Archaeological Services Pty Ltd (September 2007) and summarised in Section 9 of this report.

The Aboriginal heritage investigation involved intensive consultation with the aboriginal stakeholders identified during initial stages of the investigation. Stages of the investigation included research and consultation with stakeholders, predictive planning of heritage items, a presentation of the project by Pamada to the stakeholders, a preliminary site inspection, a detailed survey with Aboriginal stakeholders, and final consultation with stakeholders. The assessment level of sensitivity was based on landscape, known artefact distribution and predictive modelling and discussion with aboriginal stakeholders. The assessment report indicates that the probable use of the area was based on the views and connectivity it provided.

No artefacts of places of aboriginal significance were identified during the investigation on both sites. Areas which were likely to contain evidence of habitation were not identified. Aboriginal stakeholders advised that no impact to known artefacts or aboriginal cultural heritage would occur as a result of the Kyoto Energy Park proposal.

Myall Coast Archaeological recommended that Pamada enters into a negotiated agreement with the registered Aboriginal communities prior to construction regarding Aboriginal Cultural heritage and enhancement of Aboriginal Cultural value in the area.

E11.1 European Heritage Issues

The European heritage issues have been assessed for the Kyoto Energy Park sites with the findings presented in Appendix I – Myall Coast Archaeological Services Pty Ltd (September 2007) and summarised in Section 9 of this report.

The subject sites (Middlebrook and Mountain Station) are of approximately 2000 hectares each, and are currently owned by a single landowner. There are some farm buildings located on the properties, none of which have any local, state or federal heritage significance or are located on any heritage registers. The subject sites are neither adjacent to nor likely to affect any known heritage items.

Background research, a site inspection, and discussion with the local government and the Local Historical Society did not reveal any likely heritage items that may be impacted upon by the Kyoto Energy Park proposal within the vicinity of the sites.

Middlebrook Station is adjacent to and overlooks the Castle Rock formation (located approximately 1.3 km from the closest turbine on Middlebrook Station). However there will not be any physical affect to Castle Rock from the development. The proposal will not cause overshadowing, loss of sunlight or pollution issues on any heritage item.

The heritage investigation areas considered potential impacts arising from all components of the development, including the transmission lines. The proposed line transmission infrastructure was assessed to determine firstly if any heritage items existed along any of the proposed line route options and potential impacts associated with the location of the transmission proposed infrastructure and if transmission construction works could potentially damage the item.

Myall Coast Archaeological Services initially investigated and surveyed four (4) possible line route options for connection of the Kyoto Energy Park to the electricity grid. There are currently two (2) preferred options for connection to the grid (with variations). These are referred to as Option 2 (66kV Scone connection) and Option 4 (132kV Muswellbrook connection). The Option 4 route includes a possible connection at Dartbrook Mine based on final design and capacity issues.

Looking west from Liverpool Street, Scone

Option 2 for transmission line is proposed to pass within the vicinity of one (1) item of local heritage significance (listed on the Scone Local Environmental Plan 1986). This item is referred to as the "petrified stump" on Moobi Road. The petrified stump is a geological item that is close to the road pavement and existing 11kV transmission line infrastructure. The petrified stump is protected by a cage structure as it is located close to the road edge. Proposed works include replacing the existing pole and line infrastructure with a new 66kV line structure. Any damage to this item is unlikely however measures would be adopted during construction to ensure this does not occur. It is recommended that the closest pole near the petrified stump be placed the maximum distance possible.

Option 4 includes a connection to the existing Muswellbrook substation, located just North of Muswellbrook township. This route will require the replacement of existing 11kV distribution line with a new 132 kV pole configuration. The route is at sufficient distance from any known heritage items to ensure there is no impact.

E12.0 Noise Issues

The noise issues associated with the construction and operation of the Kyoto Energy Park have been assessed and documented in Appendix D and are summarised in Section 10. The primary noise assessment was completed by Wilkinson Murray Pty Ltd using the criteria adopted within the South Australian "Wind Farm Environmental Noise Guidelines" (February 2003) and NSW Industrial Noise Policy (INP). The draft Australian Standard (EV16) has also been considered in the report by Wilkinson Murray.

Background noise monitoring was undertaken at sensitive residential receiver locations adjacent tot the Mountain and Middlebrook Station sites on two separate occasions in April/May and in Sept/Oct 2007. Ten (10) different locations were used in the background monitoring period. Background loggers were used at the two closest residencies for both monitoring periods. The closest residence to the wind turbines on Mountain Station is the 'Peakhill' residence (this is a non-landowner residence) at

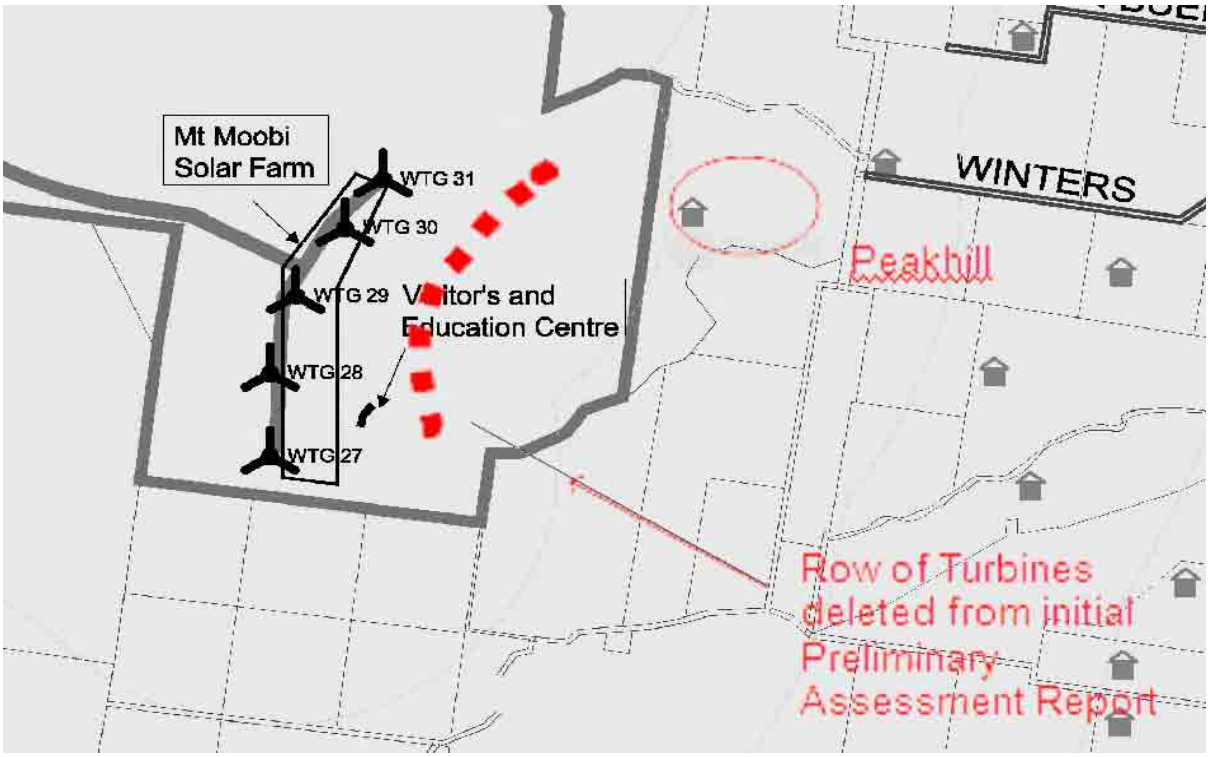
approximately 1.2km away from the nearest wind turbine. The closest residence to wind turbines on Middlebrook Station is the 'Middlebrook Station' residence (this residence is owned by the landowner to the development) at approximately 0.9km away from the nearest wind turbine.

Modelling of the turbine noise was undertaken to determine the likely noise that could be experienced at residences at various distances from the Kyoto Energy Park . The assessment modelled the 'worst case scenario' choice of turbine, the Suzlon Energy A/S S88-2.1 MW, V3 turbines which have a maximum Sound Power Level (SPL) of 104.3dBA. If an alternate turbine is chosen noise levels will not be higher than an SPL of 104.3 dB(A).

Noise levels were predicted to exceed acceptable criteria at the Peakhill residence due to the operation of some of the wind turbines on Mt Moobi (being wind turbines 27,28,29,30,31). Sector management of some or all of these turbines would occur to reduce noise levels during operation under offending wind conditions. Sector Management procedures would be included in the Operational Environmental Management Plan (OEMP) for the Kyoto Energy Park.

The noise assessment concluded that the contribution of the ancillary components (mini hydro plant, Solar PV Plant and site substation) resulted in insignificant increases in noise levels at all closest receivers under adverse weather conditions. Additional shielding of the site substation towards the Clifton Hills Estate was recommended as a precaution. A 4m high grassed earth bund wall will be constructed around the north-eastern edge of the site substation.

Overall, the noise impacts associated with the project are considered to be within acceptable criteria as set out by Government.



Example of Mitigation of Noise Impacts

Van den Berg is concerned about the potential for modulation in turbulent noise levels from the blades which can occur if the wind speed across the blades at the top of the swept path is sufficiently different to the wind speed at the bottom. This is more likely to occur also at night where the atmosphere can be more stable with a steeper wind speed gradient above the ground. Modulation can be exacerbated if two turbines experience this modulation and are in phase when perceived from a particular residence.

The potential for modulation to occur on site is related to the atmospheric stability of the area which was found to fall within the neutral to slightly stable range, such that some slight degree of modulation may occur. The likelihood of modulation would be reviewed during operations to understand whether controlling of wind turbines is required to eliminate modulation under certain stable atmospheric conditions.

E13.0 Visual Assessment

E13.1 Visual Issues

The Kyoto Energy Park consists of elements that will harness wind, solar and water storage as sources of clean energy. While all of these elements and associated facilities such as buildings and a transmission line have a visual effect by far the biggest visual effect and potential impact will be created by the wind farm elements of the project.

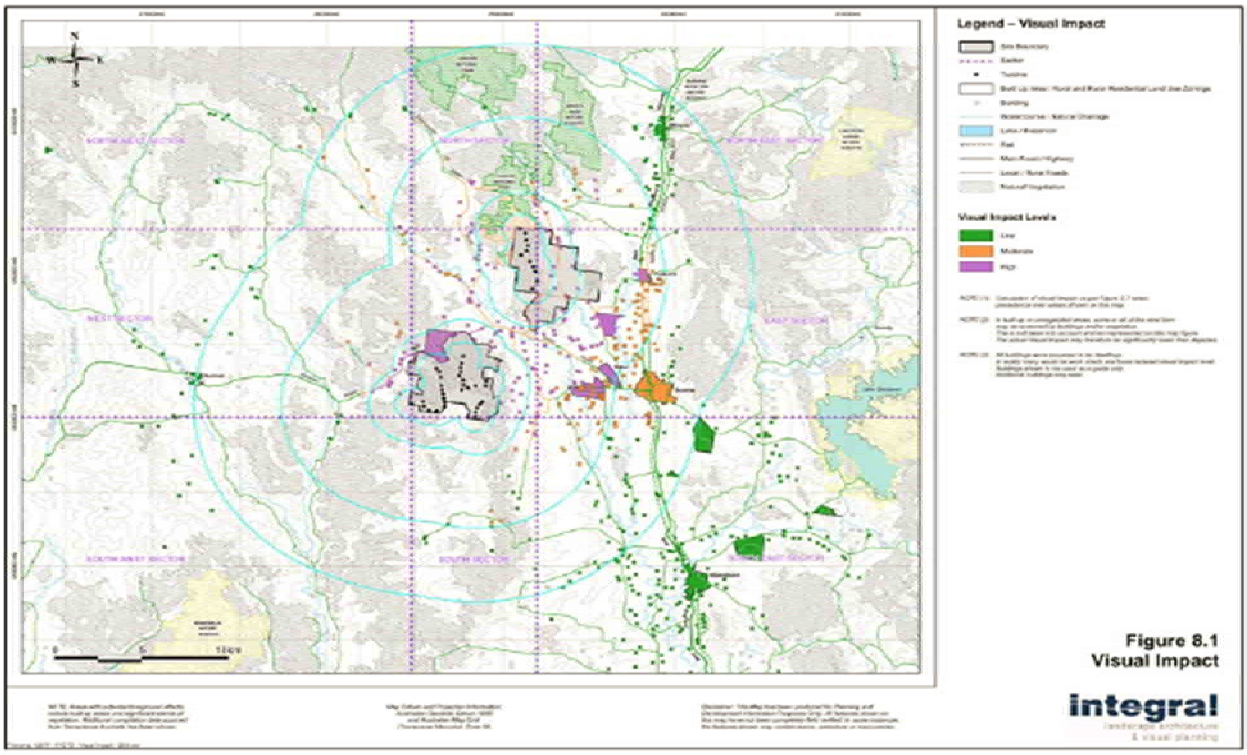
A comprehensive visual impact assessment has been undertaken by Integral Visual Planning (Appendix B) and summarised in Section 11 of this report. The Visual Impact Assessment incorporates elements of landscape character, visual effect and landscape sensitivity impact analysis, and identification of the visual catchment and photomontage preparation.

Wind turbines are large structures that are generally located in exposed and elevated positions. As such they can be visible over a large area and thereby a visual impact assessment is a key element of the wind farm assessment. The wind farm elements of the project were considered in terms of the landscape interactions created by them and the visual effects and impacts resulting on surrounding visual receptors.

In terms of visual interactions with the existing landscape, Mountain Station is more typical and common of rural landscapes within the Australian context with distinctive qualities created by major rock outcropping when viewed in certain local contexts. Middlebrook has high landscape integrity and has recognised distinctive landscape qualities, especially as they relate to Castle Rock. To reduce the visual impact the original layout was modified including the removal of one turbine closest to Castle Rock formation just west of Middlebrook Station.

The visual impacts of the wind farm elements on various view locations were the greatest on near by rural residences directly adjacent to both Middlebrook and Mountain Station. Most of the homesteads are concentrated along rural roads feeding off the main arterial connector being that of Bunnan Road from Scone. High visual impact areas are restricted to rural residential areas most notably in the Thompson's Creek Road (directly west of Middlebrook Station), Middlebrook Road (directly east of Middlebrook Station) and Upper Dartbrook Road (directly west of Middlebrook Station). A Visual Impact Map using GIS data was developed to identify areas of high impact requiring further attention and potential treatments.

Visual impact was found to be lower for rural residencies located to the east of Mountain Station where there is a much broader valley and the scale of visual settings is much greater. Also the visual orientation of households is less likely to be towards the topographic feature that is Mountain Station, however there will be exceptions. To reduce visual impact and clutter four turbines on the original proposed layout were removed from Mt Moobi Plateau, Mountain Station. The revised or current layout comprises a total of 42 turbines on the two sites.



Kyoto Energy Park Visual Impact Map (Integral 2008)

The photomontage below suggests the view (close up and enlarged for the purpose of this report) from a typical property near Thompson's Road, north west of the Middlebrook Station site.

It is very important to understand that this image on this page does not represent the actual perceived size of the landscape and the turbines if viewed by the reader of this report. Please refer to the Visual Assessment report in the Appendix for strict viewing instructions to ensure a correct visual impact assessment of the photo-montages.

It is intended to carry out planting design workshops and in the case of the few highly impacted residences to eliminate views to the Kyoto Energy Park or to visually integrate the wind farm by providing foreground visual frames and or filters of foreground vegetation. In high visual impact areas it is intended to carry out 'compensatory landscape' works as needed to integrate or screen wind farm elements, re-orientate views and or create new visual focuses within foregrounds. Potentially high impacted areas are represented in the following map below (extracted from the Integral Visual Impact Assessment)

Wind turbines would be off-white to soft-grey in colour to improve visual integration. Onsite developments and intelligent interpretation of the various components of the Kyoto Energy Park the project as a whole within the constraints noted above has the potential to be appropriately integrated to achieve the much needed clean energy outcomes for the location.

It is understood that the visual perception of wind farms can be positive because of their visual strength and environmental values in terms of clean energy. However in this visual study, a high visual sensitivity for residences, urban and rural has been assumed. On this basis the visual impacts of the Kyoto Energy Park is mainly experienced by adjoining residents that to varying degrees are impacted by the view of wind turbines.

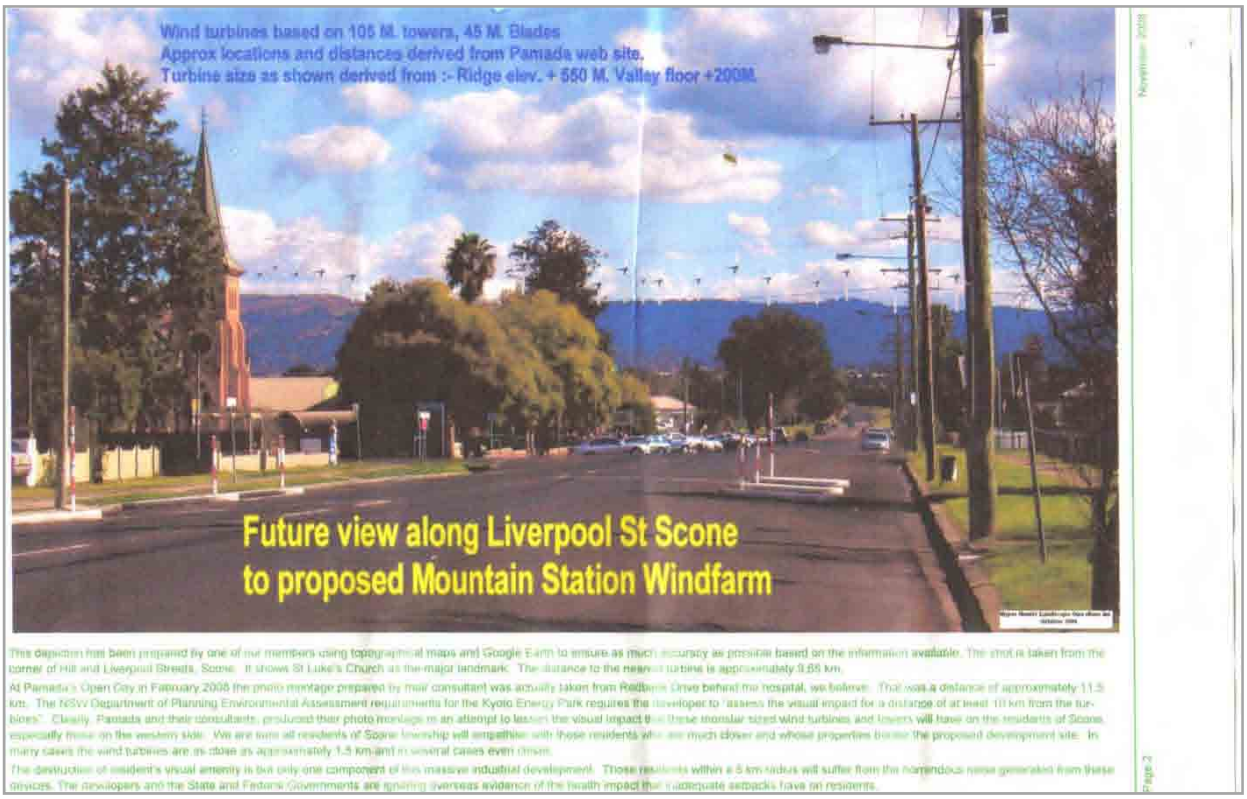
The visual impact of the other generator components and ancillary works is minor when compared to that of the wind turbines and a range of mitigation measures have been incorporated to mitigate their impact.

By mitigating the visual impacts of the wind farm components of the Kyoto Energy Park on affected local receptors, the environmental benefit of the development can be realised.

The visual impact on Scone town is generally moderate reflecting moderate visual effects and sensitivities at this distance. The impacts on the more distant towns of Aberdeen and Muswellbrook will be low.

The visual impact on the highway and railway (which dissect the town of Scone) is generally low and is likely to be a visual feature in an ever changing view as seen from these travel corridors.

It is also important to note that photomontages that have been circulating in the community have not been produced by the proponent or any team member and are a misrepresentation of the impact of the turbines on the town.



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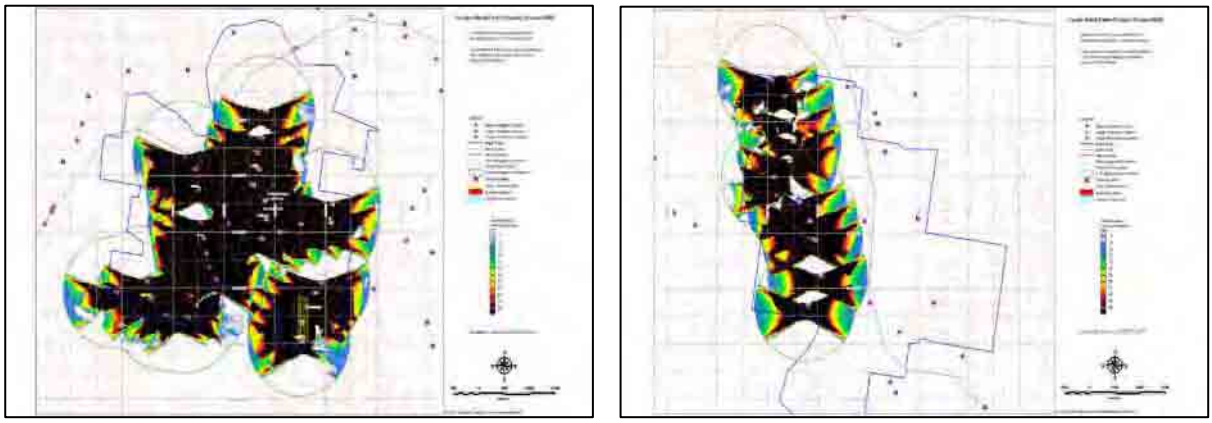
E13.2 Shadow Flicker

A full assessment of the potential for Shadow flicker occurrences was undertaken by Garrad Hassan Pty Ltd, consultants specialising in wind turbine design and modelling. Shadow Flicker from wind turbines can occur when the sun is low in the sky and moving shadows are cast by the rotating blades on an area around them. When viewed from a stationary position this can appear as a flicker.

The Shadow Flicker assessment was undertaken for both Middlebrook and Mountain Station sites (Appendix G) and summarised in Section 11 of this report. Shadow flicker calculated in this manner overestimates the number of annual hours of shadow flicker experienced at a specified location. The assessment predicts the cumulative annual hours of shadow flicker at nearby residencies with the maximum limit of 30 hours per year based on industry guidelines.

The assessment concludes that no nearby houses have modelled shadow flicker of greater than 30 hours per annum and therefore shadow flicker is not expected to be a constraint to the project.



Modelled Shadow Flicker at Mountain and Middlebrook Station's Scone

E13.3 Turbine Blade Glint

Blade glint refers to the potential for the movement of the blades to catch the light and produce a reflection or glint which may be seen from surrounding areas or passing vehicles. Blade Glint was assessed by Garrad Hassan and is attached as Appendix G and summarised in Section 11 of this report.

The paint used on modern blades and tower of the wind turbines helps to significantly reduce any occurrence of glinting and associated impacts. Blades would be finished with a matt surface treatment of low reflectivity to ensure that glint is minimised.

E14.0 Aviation Issues

The Scone local airport is located approximately 5.5 to 6.0 km from the closest proposed wind turbines on Mountain and Middlebrook Station, respectively.

The height of wind turbine structures is 150m above ground level (i.e. greater than 110 metres) and therefore the Civil Aviation Safety Authority (CASA) were contacted and supplied with details of the project including 47 wind turbines (original layout) proposed for both sites. CASA advised that some of the turbines were encroaching the Obstacle Limitations Surface (OLS) for Scone airport. Airservices Australia were also contacted and advised that some of the turbines were infringing flight procedures for the Scone airport defined as the 29RNAV, NDB and CAT C circling procedures.

The revised 42 turbine layout rectified some of these encroachments, with the exception of wind turbines 36, 37, 38, 39, 40, 41 and 42 on Middlebrook Station which are still infringing Airservices Australia flight procedures. The balance of the wind turbines on Middlebrook Station i.e. 32, 33, 34 and 35 are not infringing any of the flight procedures or OLS surfaces. The final turbine layout for Middlebrook Station will depend on discussions between Pamada and Airservices Australia after a more detailed evaluation of the traffic routes and aircraft procedures for Scone airport.

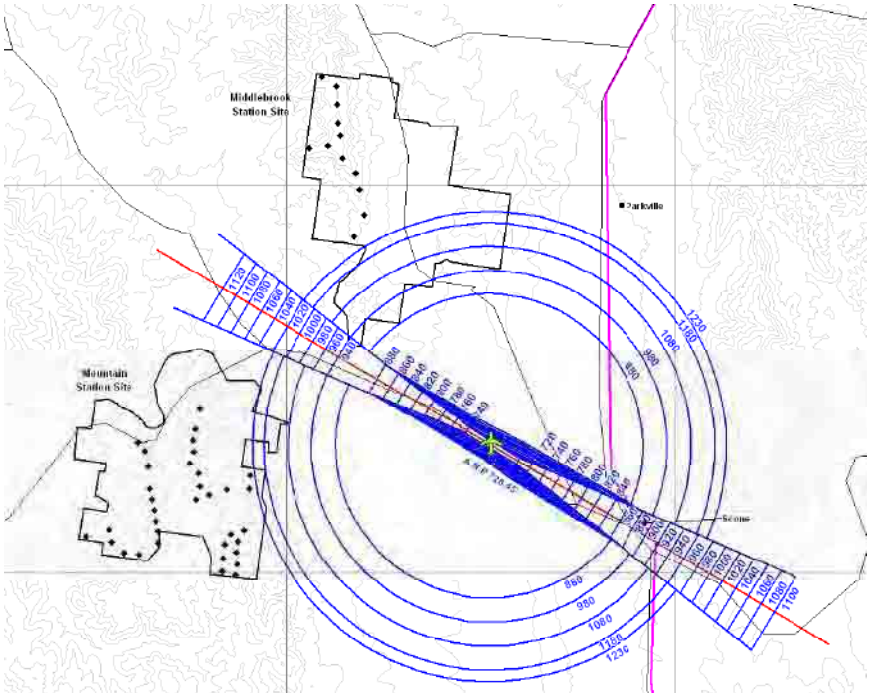
All wind turbines proposed for Mountain Station are outside the limits defined by the OLS and all flight procedures.

The Upper Hunter Shire Council (which owns and operates Scone airport) were contacted in relation to impact of the Kyoto Energy Park wind turbines on Scone airport and local operators. The Councils technical staff advised that the structures need to be located in accordance with Airservices Australia and CASA requirements.

The main commercial operators from Scone airport were also contacted and provided with details of the proposed project and structures. No obstacles were identified in discussions with commercial operators.

The Department of Defence were contacted and advised that the Kyoto Energy Park proposal was outside areas used by the closest RAAF base at Williamtown and that there were no impacts on communication or radar installations.

Final details of wind turbine locations, transmission lines and other structures and their heights will be provided to CASA, Air Services Australia, the Upper Hunter Shire Council and the Royal Australian Airforce RAAF (Williamtown RAAF base and also the RAAF Aeronautical Information Service (AIS) in Victoria) for inclusion in their 'obstacle' databases.



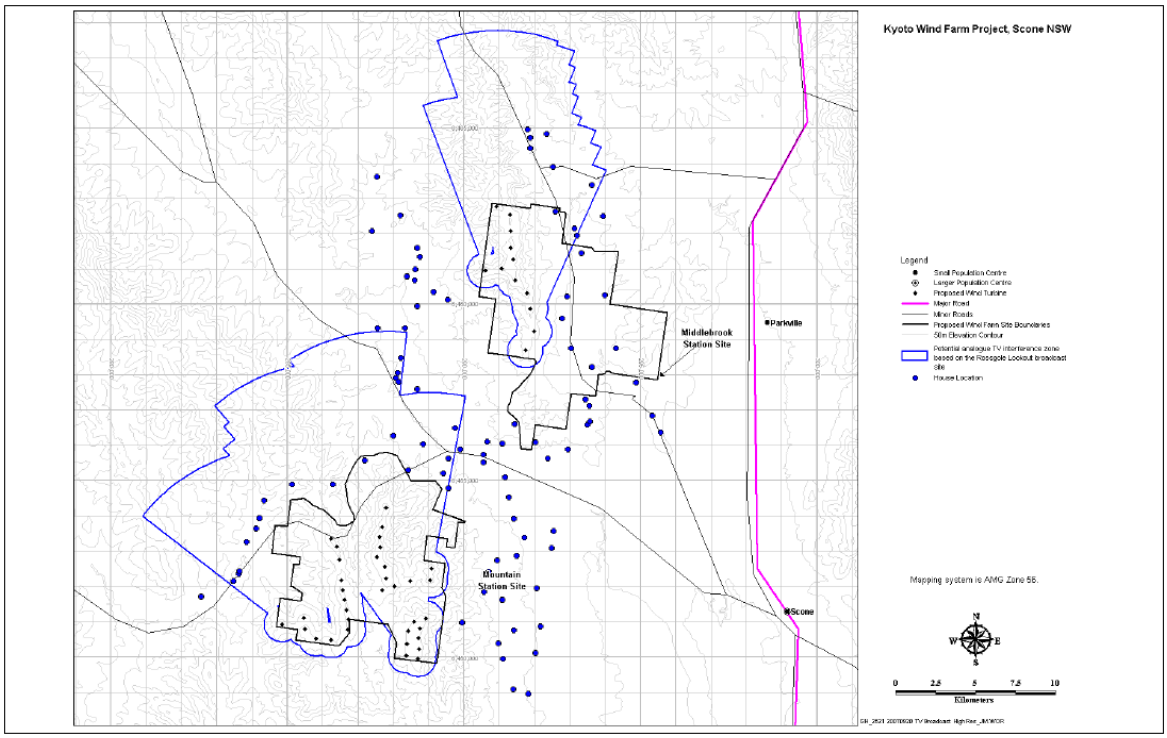
Obstacle Limitations Surface (OLS) for Scone Airport

E15.0 Electromagnetic Interference (EMI)

The potential for Electromagnetic Interference (EMI) associated with the operation of the Kyoto Energy Park has been assessed by Garrad Hassan (Appendix F) and is documented in Section 13. Computer modelling and consultation with telecommunications companies within a 50km radius have not raised any concerns regarding potential interference. The potential for the project to interfere with microwave signals, defence and aircraft navigation signals, radio communications and mobile telephones is unlikely.

As part of the wider community consultation process, essential and emergency service organisations will be contacted, to minimise risks of conflict of the development with radio communications.

The nearest television broadcast tower is at the Rossgale Lookout approximately 8.5 km to the south of Mountain Station. An assessment of the potential for interference of television signals has indicated that some residences to the north of the two sites may be affected and these areas have been identified on a map (shown below). TV interference from turbines once observed can be easily rectified. Various options involving modifications to receiving equipment are available to address potential problems which may be encountered and it is proposed that Pamada will assess any cases of television interference and rectify the problems shown to be associated during operation of the Energy Park.



Potential TV Interference zones identified from the Rossgale Lookout

E16.0 Coal and Gas Resource Sterilization

Mountain Station was identified as having no foreseeable coal resource exploration potential based on high depth of coal seams, likely intrusions and limitations from the overlying topography. The site does contain coal seams which may include gas extraction potential in the future.

Middlebrook Station was identified as having black coal reserves that potentially could be considered for long term reserves, however resource extraction in the next 15 years is unlikely based on the geological complexity of the strata in the area. The Middlebrook site has low potential for gas exploration.

While both sites are in areas defined as having reserves of black coal, extraction potential would be low due to deep and complex reserves. Other constraints to extraction of coal resources under the two sites would include overlying topography, high cost of extraction, social and environmental considerations such as noise, dust, traffic, groundwater impacts and mine subsidence with development of this resource in close proximity to the Scone township.

There are currently no mineral leases or mineral claims applied to the sites or in the proposed area.

Three (3) exploration license holders were identified over the two sites. Current license holders were contacted and confirmed that they had no objection to the Kyoto Energy Park proposal in relation to impacts on the licenses.

There is currently a gravel quarry operation leasing two land portions at Middlebrook Station. The operation is a dry screening operation on an alluvial clayey gravel deposit located west of the main ridgeline. The quarry operations will remain unaffected by the proposal. Road base to be used in the upgrading of access tracks could potentially be sourced from this quarry. There are no identifiable gravel resources present within the Mountain Station site.

The design of generator foundations to consider future mine subsidence measures would not be warranted considering the limitations to the resource under the sites, depths and complexity of strata, timeframes for future extraction should it be considered and economically feasibility of designing foundations for unforeseeable events.

E17.0 Hydrology and Groundwater

The project will require water during the construction stage for activities such as dust control, concrete batching, amenities, washing and cleaning. Depending on weather conditions during construction it may be necessary to import water for the purpose of controlling dust on access tracks or at sites where earthworks are being undertaken and for stabilisation and/or re-establishing vegetation at disturbed areas. Once operational the project will require only a small amount of water and may be able to obtain much of the requirement from roof drainage on site. The mini hydro plant is a closed loop system that requires minimal recharge of water during operations. Any additional water for the system will be sourced from water trucked into site.

An assessment of the potential effects of the proposal on surface water hydrology and groundwater is discussed in Section 15 of this report. The Kyoto Energy Park site is located in an area on ridgelines and exposed hilltops, meaning that it is distant from permanent water courses or ephemeral creeks. The ridgelines are dissected by various second and third order drainage lines.

Groundwater aquifer systems are located along main creeks on the river flats at considerable distance from the proposed structures and works areas. The construction and operations will not impact upon any groundwater systems of resources. No groundwater dependent ecosystems were detected on site. Water for dust control will be sourced from existing dams located on Middlebrook Station or will be trucked to site.

The erosion and sedimentation controls will be adopted during construction periods to protect soils and existing natural drainage of the site. All chemicals and petroleum products used during the construction stages will be properly managed to prevent contamination of soils. A Spillage Control Plan will be implemented during construction and operations to manage chemical spills and reduce risk of occurrences. A Sedimentation and Erosion Control Plan will also be prepared as part of the Environmental Management Plan to prevent soil loss and contamination of natural drainage lines.

E18.0 Geology

The Kyoto Energy Park proposal is situated on two main landholdings known as Mountain and Middlebrook Stations, west of Scone. The sites comprise the Carboniferous and Devonian sediments which include coal bearing Singleton measures, shale and sandstone formations and overlying tertiary deposits of basalt intrusions on much of the higher ground on both sites.

A site inspection and desktop geological analysis was undertaken by HDB which suggest that site conditions are suitable to support large wind turbine structures. Turbine footings would be either gravity or reinforced concrete anchored into bedrock. Final design parameters for foundations would be subject to a detailed geotechnical investigation.

Coal Mine operating just outside Muswellbrook in the Upper Hunter

E18.1 Soils

The differing soil types that occur on site range in erosion potential from low, to very high. The project OEMP will include a Sedimentation and Erosion Control sub management plan that has appropriate erosion and sediment controls for site works. With effective management it is anticipated that the project can be implemented without exacerbating existing areas of erosion. A range of Erosion and Sedimentation measures will be implemented in the CEMP and OEMP.

E19.0 Traffic and Transport Issues

The Traffic and Transport Issues related to the construction and operation of the Kyoto Energy Park have been assessed and documented in Appendix J and are summarised in Section 17. The construction stage of the project involves the transportation of a considerable quantity of components and materials to site, including large wind turbine components, heavy plant and erection equipment, mobile concrete batching plant, building and construction materials, and prefabricated components.

Road transport is considered the preferred method for transport. Some of the technological components would be sourced from overseas and trucked from port to the site. Construction activities will include use of oversize and overmass vehicles that will require special permits and approval from the RTA prior to transportation of these components.

The preferred port of entry is the Newcastle Port which has the capacity for large heavy components, is logistically feasible and is the most suitable and safe point of access. Experienced haulage contractors associated with the Hunter mines were consulted during investigation into transport. Existing heavy vehicle haulage routes were identified from Newcastle to the Kyoto Energy Park site for transportation of large wind turbine components similar to size of components used in the local coal mines. Final routes for transportation of components would need to be approved by the RTA.

Unloading a Wind Turbine Generator at Port

Approximately 8,500 one way truck movements and some 4,800 one way car movements will be involved in the construction stage. Construction vehicle movements will be spread over about 20 months but it is anticipated that some minor disruption to local traffic may occur at times. A Traffic Management Plan (TMP) will be developed and implemented during the construction stage of the project. Some minor road works identified in Traffic and Transport Assessment may require a consent under Section 138 of the Roads Act (1993) from the Upper Hunter Shire Council prior to use.

Once on-site, the existing access tracks will be used wherever possible and these will require minor works to upgrade them. Some new sections of access tracks will be required to access individual turbines, site substation, Visitor's and Education Centre and other facilities buildings. These will be designed in accordance with the erosion and sedimentation requirements for the project and will, as far as possible, avoid the clearing of trees.

E20.0 Bushfire Risk

Both sites are contained within land defined as bush fire prone land under the Planning for Bushfire Protection 2006. A Bushfire Protection Assessment was completed by Conacher Travers Pty Ltd for all site components and facilities (Appendix C) and summarised in Section 18 of this report. The report looks at the potential for bushfire risk on buildings within the site in relation to surrounding topography, slope and vegetation. The Managers residence and Visitors and Education Centre have a medium level of bushfire risk and appropriate design management controls have been adopted to these facilities.

The potential for fire ignition from construction and operational activities has also been assessed as is considered a low risk. Wind turbine generators proposed would comply with Australian design safety standards and have a high level fault protection systems built in to each generator. Wind turbine generators (nacelles) are fully enclosed and regularly maintained. Nacelle generators can automatically shut down during extreme conditions and are designed to full level of lightning protection. Construction and operational bushfire risk would be effectively managed through a Bushfire Risk Management Plan developed in consultation with the Scone Rural Fire Service (RFS) and include emergency procedures.

E21.0 Transmission line connection to the Grid

Two preferred options for electrical connection of the Energy Park to the grid include a:
1. 66kV connection to the new Scone substation and;
2. 132kV connection to the existing Dartbrook Mine or Muswellbrook substation.

The final generation capacity of the Kyoto Energy Park will be in the order of 90 to 140MW based mainly on final wind turbine selection (2-3MW), and solar PV capacity (3-10MW). The final connection option would be selected at final design stage of the project subject to final capacity.

Photographs showing existing timber poles (left) and proposed replacement concrete poles (right) (Energy Australia 2007)

Environmental considerations have been made based on a 'highest impact scenario', to allow for environmental factors to be considered in design. No significant environmental constraints were identified with the preferred connection options. The two preferred options involve variations to bypass town subdivisions and the central township in general. The line routes predominantly follow road reserves, existing transmission easements and along existing lines but also allow for more direct routes through private and public land reserves (private easements). No discussion with private landholders has been undertaken in this assessment. Final line route selection will include discussions with potential private landholders to utilise easements as identified in this report.

Environmental mitigation measures will be formulated in a Construction Management Plan which will include environmental management and mitigation procedures for electrical and line construction works.

E22.0 Safety and Environmental Risk

A review of potential safety issues associated with the construction and operation of the Kyoto Energy Park is documented in Section 20 of this report.

Health and safety management would be a significant factor during construction and operation of the Kyoto Energy Park. Construction risks were identified as the most potentially hazardous mainly during unloading, transportation, and erection of wind turbine components. This is mainly due to the size and weight of the wind turbine components, and the heights required for erection. Specialist contractors would be engaged to undertake these works during the construction phase. Controls would be incorporated in the Construction and Operational Environmental Management Plans for the Kyoto Energy Park to ensure safe conduct of the activities arising from the project.

Crane crews putting together a Turbine Rotor Assembly

Activities associated with the operations stage of the project are by comparison less risky. Wind turbines have a very low incidence of blade failures and are unlikely to present a safety risk. These stringent regulation and compliance requirements are designed to ensure the safety of site staff and the community.

E22.1 Residual Environmental Risk

The few identified residual risks relate to seven (7) turbines on Middlebrook Station encroaching into airspace, bird strike (mainly from two predator birds) and bushfire risk. The first involves possible reconsideration of turbine locations and would be undertaken in accordance with the Civil Aviation Authority (CASA). The second involves detailed monitoring, management and initiation of preventative management systems. Thirdly new wind turbine generators have a high level of quality and safety standards and electrical fault protection to prevent ignition issues. Newer turbine models are independently monitored and controlled and can shut down if operating temperatures or conditions pose a risk to systems. Turbines are fully earthed to prevent risk and damage to electrical systems from lightning strikes. The potential to generate bushfires is considered low. As the analysis indicates, the mitigation / control techniques available, have the effect of reducing the potential hazards and risks, to a very few aspects of the proposal which will require further investigation.

E22.2 Statement of Commitments

The detailed Statement of Commitments for the Kyoto Energy Park is provided in Section 20 of this Environmental Assessment report. The Statement of Commitments is a product of the analysis of the personal safety and environmental risks that were identified in the project assessment. The identified mitigation measures include some further discussion and negotiation in relation to the aviation, the final route for the grid connection and some minor other issues. All commitments will be rigorously and faithfully followed up, reposted on and closed out in the appropriate time.

E23.0 Cumulative Impact

The wind turbines will be visible over a wide area. Close views of the wind farm will emphasise the size of the structures, but the more distant view points will have a reduced visual impact. At distance, the wind farm may be visible but will not dominate the broader landscape.

Mitigation measures incorporated for the construction and operation will ensure that the wind farm will not exceed acceptable noise limits, disrupt local traffic, cause further erosion and siltation, increase air pollutants or Green House Gases, degrade the ecology of the region, result in long term property devaluation, or cause surface or ground water pollution. In terms of power generation, wind farms are regarded as one of the most benign generation types.

E24.0 Summary and Alternatives Considered

All energy generation in Australia is covered with some form of Government support, that underlines the principal that us, as citizens do not chose to pay the true total cost of generation of electricity through our tariff pricing. Coal-fired power stations and the largest electricity users are some of the largest supported through pricing and support mechanisms, and indeed in the Federal Government White Paper policy launch on 15 th December 2008, provided major concessions to aluminium and intensive energy industries such as coal fired power stations. Thus, as with other energy generation enterprises, renewable energy production is currently supported by a number of government schemes to foster the development of renewable energy projects and reduce Australia's greenhouse gas emissions.

The Federal Government's Mandated Renewable Energy Target (MRET) aims to achieve 9,500 GWh of new renewable energy by 2010. The Federal Minister for the Environment has recently announced that the National MRET's target would increase from 9,500 GWh to 45,000 GWh by 2020 It is anticipated that this increase will be legislated in 2009.

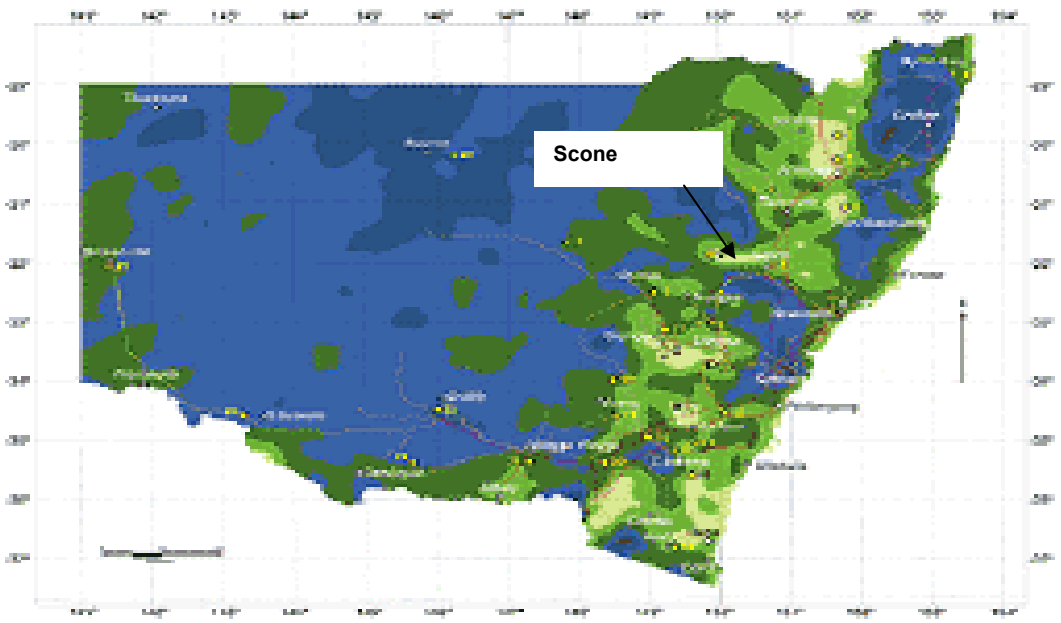
The alternative to renewable energy, is more coal-fired power stations. Whilst nuclear may be suggested as an alternative to coal, the pragmatic reality is that should there be a decision today to generate electricity from nuclear technology it will be 15-20 years for the necessary technological, political, safety, environmental and physical hurdles before a working nuclear power plant could be met.

The application for Planning Approval under Part 3A of the NSW Environment Planning and Assessment Act for the Kyoto Energy Park in Scone should be supported.

The Kyoto Energy Park site (Mountain Station) was selected by the former NSW Sustainable Energy Development Authority (SEDA) in 1998 as a viable wind energy resource, based on wind monitoring undertaken on site by the CSIRO since 2000. From these wind monitoring results the NSW Wind Atlas was produced which identifies the site and Scone in general as a viable wind energy resource. Scone is a good site due to the hills and ridges of the Great Dividing Range interacting with the calmer background winds that blow from west to east across the vast NSW inland.

- **The assessed impacts of the project are well documented and in the circumstances acceptable.**
- **The benefits of the project to the community, local and further a-field are significant.**
- **The perceived adverse impacts, particularly of visual impact and loss of property values are not significant nor sufficient to justify non-approval.**

The Minister for Planning, as Consent Authority is urged to consider this report, as part of the Project Application and grant Planning Approval to the Kyoto Energy Park, and support, not just the Hunter's energy industry, but the creation of electricity from green, clean and renewable sources.



NSW Wind Energy Atlas showing wind speed gradients

a last word from the farmer….

…..He recalls his forebears, of the nineteenth and twentieth centuries that used the Southern Cross Windmill to move water for the stock, and now can see the reality for the twenty-first century farmer who can use the modern windmill and modern mirror to feed the community around his home with clean renewable energy ….

And today, he fears not just the climate, the soils, the water of his chosen place, but also global markets, harsh economic times all that impede his ability to efficiently carry out the trade, the landuse for which he and his forebears have toiled and the culture they have created…the traditions of the Aussie bush life

And, not only does climate change impact on his soils, the air, the water, but too the flora and fauna that has coexisted for hundreds of years. Now another species itself is being endangered, that creature …. that of the farmer himself, unless he can innovate and find new means to sustain ably harvest his patch.

Repeating the Main Points

The Kyoto Energy Park is a genuine attempt to bring to the world, Australia, the Hunter and all its people, a path towards a clean and sustainable future.

The Kyoto Energy Park seeks to create electricity, fed into the national grid, using the completely renewable and non-impacting natural resources of wind, solar energy and gravity. By integrating the numerous technologies, the project seeks to optimise the specific characteristics of the location and make for a genuinely sustainable enterprise.

The key elements of the park are:

- **3-10MW Solar Photo Voltaic Array;**
- **42 Wind Turbines;**
- **1 MW Closed-Loop Hydro Plant; and**
- **Visitor and Education Centre**

The main benefits are:

- The natural wind and solar resources are strong and combined with elevational change, the natural attributes of the site are excellent for an integrated Energy Park;
- Demand for electricity is close by and will make the use of the electricity generated from the Kyoto Energy Park highly efficient, producing enough **green power** for approximately **62 000 households**;
- The creation of the Kyoto Energy Park provides short term and long term **employment** and creates a **new tourism** destination for the Upper Hunter;
- The **Moobi Foundation**, an initiative of the Kyoto Energy Park shall **invest into the community** of the Upper Hunter through a Not-For-Profit structure (using community leaders);
- The Kyoto Energy Park is proposed to create clean and renewable electricity and create a transition to **less reliance on the burning of coal** as the main form of creation of electricity; and
- Creation of an enterprise that may continue without the time constraint of the resource that is harvested (such as coal) running out…. Wind and sun shall continue

The main impacts are:

- The placing onto the landscape of the 42 wind turbines, creating for some, an unacceptable visual intrusion and with others a positive visual beacon of commitment to making and keeping the Upper Hunter a clean green place, without coal mines and the ecological destruction that coal mining brings;
- The overall footprint (i.e. developable area) utilized by the Kyoto Energy Park components and facilities is in the order of 0.5 % of the sites' area. Overall damage and disturbance of the landform is extremely minimal. Upon completion of the life of the generator components (solar, wind, hydro) new technology can be easily installed to replace outdated technology or fully decommissioned, without any land degradation;
- The opportunity to **remove the equivalent of 90 000 cars** off the roads in terms of greenhouse gas abatement (which includes approximately **9.5 million tonnes of CO_2 gases** over the initial life of the proposed technology);
- The opportunity to create electricity with negligible use of water, leaving the water in the landscape not loosing it in the cooling towers of a coal powered power station - the **saving** of approximately **700 million litres of potable water annually** – or the equivalent of about **12 Olympic pools daily!**;
- Clean and renewable energy production free from other air pollutants such as coal dust, heavy metal compounds, carbon monoxide, sulfur and nitrogen oxides;
- Large scale significant **investment into rural Australia**;
- **Short and Long term jobs, reinforcing the Hunter as a region of high skills in the generation of Electricity**

The main matters consistently raised by the community relate to:

- **Intrusion into their visual reference and the potential loss of property values;**
- **Support for the concept of renewable energy, but not in the Hunter;**
- **Bird strike and Bushfire risk; and**
- **Noise Concerns.**

Kyoto Energy Park Scone is wholly an Australian Enterprise. The Management is 100% Australian.
The funding of this proposal and report is 100% Australian.
An Australian Project

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