

Australian Community Energy

CONCEPT PAPER

New South Wales



This concept paper describes the background, vision and concept of Australian Community Energy and how it is intended to structure community wind farm projects in New South Wales. It demonstrates the possibilities for the establishment of a community driven renewable energy investment in the true spirit of sustainability establishing a platform for communal ownership of and identification of the public with renewable energy investments.



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Photos on Title Page: Starfish Hill Wind Farm, South Australia



The world is quickly acknowledging that climate change is already influencing our lives and will do for future generations to come. It is becoming a more and more accepted fact that human induced climate change poses a severe risk for future

generations and that immediate action to help reducing carbon dioxide emissions is crucial for the survival of our communities. After many generations of economies relying on the exploration of finite natural resources such as coal and oil it becomes more evident that there is an urgent need to transform our way to do business towards more sustainable management. The need to change the way we traditionally generate electricity is one part of the climate change abatement option that until now communities at the local scale have had little influence over. To date most if not all wind farm or solar energy developments have been in the hands of international or large scale, utility owned developers. Generally, these companies all have one thing in common and that is they develop individual projects for themselves, using their own international networks and expertise. This concept works well, especially for very large projects requiring extensive funding and expertise, but has one significant common downside – the local communities are often left out! In the true sense of economic sustainable development, these projects, while claiming to be sustainable, certainly miss out on the important factor of social sustainability.

Corporate wind farm development in Australia and overseas often faces substantial opposition from local communities, particularly during the consent process. Local communities can feel alienated by corporate developers, particularly when the developer resides outside the development region, such as in capital cities or even overseas. Communities often express significant concerns about corporate wind farm developers imposing a development on the community while the financial benefits only extend to a few local residents. The overall result has in some circumstances tarnished the reputation of the renewable energy industry, with some elements of the industry being viewed as not overly interested in the local communities and residents but rather primarily focused on maximising their own profits. The requirement to maximise return based on economies of scale has led to very large scale projects which require substantial infrastructure and conversely have the potential to substantially alter the rural ambience of the area they are located in.



Shoalhaven

Economic Sustainable Development incorporates the ability to use resources in a way, which caters for the present without compromising the ability of future generations to use resources while balancing the ecological, economic and social aspects of the project. The idea of community owned renewable energy projects provides the “sustainability” balance, whereby the community can collectively develop a project, receive a financial return from the project and contribute to ecologically sustainable electricity generation

which has obvious environmental benefits. However this idea has been limited by finding the expertise required to successfully develop renewable energy projects in partnership with communities.

This has been the driver for the formation of **Australian Community Energy** – the vision of providing such support and expertise to develop a truly sustainable concept for direct involvement of, and partnership with, local communities and the combination of wind development know-how with local ownership. This can create a true and lasting link between the people of the land and their natural, unlimited resources whether it be wind, solar or biomass!

Please read about us, the concept and our vision for holistic wind farm development in the following chapters.

CONCEPT



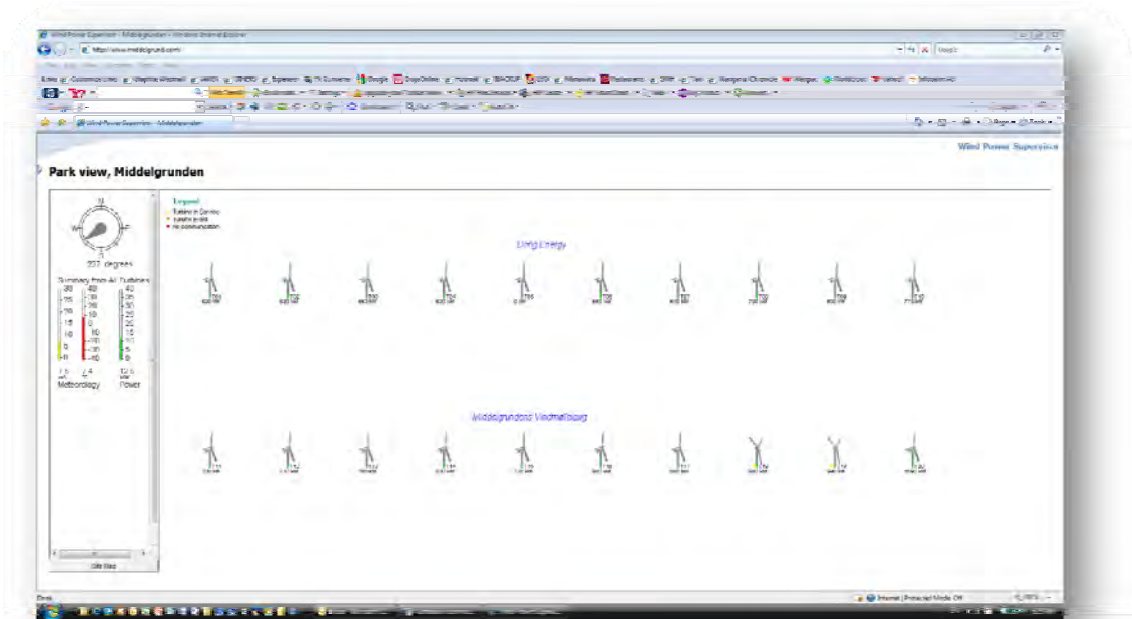
Community wind energy is well established overseas but a relatively new concept here in Australia. Whilst the renewable energy industry in Denmark and Germany grew substantially on the basis of community and private funding with mostly smaller wind farms making both countries world leaders in sustainable energy generation, Australia has pursued a different path introducing large scale multi-megawatt wind farms owned by the incumbent utilities. In fact, community wind energy, owned by private investors and supported by a large part of the local population was the foundation for a thriving renewable energy industry in

Europe, creating thousands of new sustainable jobs – much more than conventional energy generation would ever be able to create. Community wind energy has become a substantial contributor to the economy of countries like Denmark and is still the cornerstone of world leading companies like Vestas, Nordex and Enercon. Some quite well known wind farms were built in Europe as community projects and kicked off major development:

- Middelgrunden, Denmark: Denmark's first offshore wind farm with 20 x 2MW Turbines 50% owned by the Middelgrunden Wind Turbine Cooperative with some 8,500 members;
- Butendiek, Germany: One of Germany's first offshore wind farm projects founded by the Butendiek Cooperative with some 8,400 members.

In addition to these large scale developments there are countless smaller wind park projects especially in Germany owned by local residents. These wind projects usually have high acceptance rates and are the pride of the local community.

Some of them, such as Middelgrunden, even provide the public with actual real-time production information allowing everyone to see, how their investment performs. We intend to do something similar providing all cooperative members with secure online access to current project information.



Middelgrunden Website

WHAT IS COMMUNITY ENERGY?



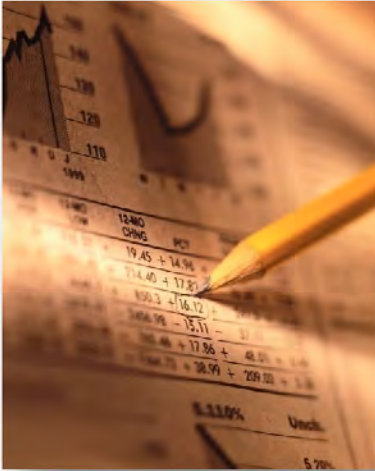
Community wind energy is a very simple concept. Similar to the long existing rural cooperatives, community wind energy is the combination of community, residents, businesses and councils owning their own renewable power generation! It is about helping the environment by investing in renewable energies. It is about creating profits to benefit the local community, keeping revenues within the region. It is also about creating identification with renewable power generation, it is about encouraging local pride, about creating local jobs, it is about enhancing the community spirit and securing the community future by taking your destiny in your own hands.

A community wind project is usually smaller scale and therefore may blend well into the environment. It is classified as distributed power generation, usually connected to the local electricity network. Community wind projects generally have very limited infrastructure requirements allowing all energy generated to be consumed locally and thus directly benefiting the local community and environment. Distributed power generation reduces the transmission losses generally associated with energy transport and therefore does not require massive transmission infrastructure.

We at **Australian Community Energy** help facilitate this true collaboration by working together with local Councils, residents, businesses and interest groups providing our know-how and experience and committing our resources to the success of local wind farm development.



HOW DOES IT WORK?



The following example has been used to help describe the operation of community wind energy. A typical community wind farm consists of five to ten turbines, generally equivalent to 10 - 15 Megawatts of generating capacity. This reflects a total investment of around \$25 - \$50 million. Wind farm projects are usually financed with an equity capital of approximately 30% thus a total of \$7.5 - \$15 million would be required as capital investment for the operating project and \$17.5 - \$35 million coming from banks – ideally cooperative ones – as loan.

The planning and development of a wind farm project is normally funded 100% with equity and depending on the size and complexity costs anything between \$500,000 and \$1.5 million. In the case of a 20MW wind farm the estimated cost is probably around \$750,000 over a period of 2-3 years before

the construction can start. Most of this money is spent on expert consultants during the permitting phase, legal advice and fees charged by Government Authorities.

The planning and development costs, should the project be successful and be constructed, will form part of the project costs. We estimate about \$750,000 is required for works within the first 2-3 years and then another \$6.75 – \$14.25 million prior to commencement of construction.

As an example, if a Local Government Area has around 100,000 residents, a contribution of \$75 - \$150 from everyone would already secure the entire equity financing!

Australian Community Energy's Project Model:

To fund the development of a 20MW wind farm we would form a cooperative, let's call it Community Wind Farm, and issue 1,000,000 shares each worth \$1 for the start to cover the development phase. These shares would then allow the purchase of another 15 shares for each development share, with the requirement to pay another \$0.95/share prior to commencement of construction. The shares would be offered to the public in the following order of priority:

1. Local residents of local Council areas
2. Businesses in local Council areas
3. Local Councils
4. Residents of New South Wales
5. Residents of Australia

As a cooperative everyone becomes a member as soon as they buy or are allocated one or more shares. In order to avoid fragmentation of the cooperative we would allocate a minimum number of shares to be bought to approximately 100 for each member. Everyone with 100 shares or more would have one vote in the membership council irrespective of the actual shareholding. We would also intend to put a maximum number of shares as an upper limit in order to prevent a single entity taking control of the cooperative and we would see this maximum at approximately 25% of all shares.

This model ensures that everyone can have a say and no one can dominate the cooperative by accumulation of shares. This is a democratic model and allows perfect identification of the local community with their project – the Community Wind Farm!

Profits would be allocated to each member according to their number of shares, so the more funds that are invested, the greater the return. All development expenses would be financed from the initial capital raising or further capital raisings if necessary. We would also explore the potential for Government Grants or third party funding of costs to minimise the exposure of cooperative members.

That's the overarching principle of Australian Community Energy!

And – there is a major difference to the other cooperative models currently in the market:

While other models usually start once the project is developed, Australian Community Energy provides full participation of its members and commences the initial development as a fully functioning cooperative, with everyone having a say in the project design and shaping the future of the local Renewable Power Generation! That's true community spirit – that's Australian Community Energy's way!

Of course there are two special groups deserving a slightly preferred position:

- **Landowners**

The landowners who host the future turbines and therefore are directly influenced by the project will either receive rent per turbine on their land or a free allocation of shares or a mix of both.

- **Project Managers**

Australian Community Energy will manage the project and develop it from inception through to completion. This requires significant work and dedication. As highly experienced experts in wind farm development we know how to develop a project from inception to completion to minimise costs and maximise the project efficiency. Australian Community Energy is fully equipped to conduct most of the studies and design work in-house to ensure a successful high quality wind farm project. For our part in developing and managing the project, we would like to participate in the project by subsidising our normal rates in return for remuneration through a free allocation of shares in the cooperative.



Based on the additional allocation of shares to major active partners in the development (land owners and project manager), a sufficient number of \$1 shares would need to be raised to cover development and planning costs for the first phase of the project until construction. This will be worked out in close collaboration with the Council so we can prepare a prospectus which is appealing to the local community and therefore has a good chance to succeed.

WHAT DOES AN INVESTOR GET?



A wind farm cooperative of course only makes sense if the investment also provides a decent return. Wind Farms are considered a very good investment as they have a number of advantages other investments don't have:

- No fuel required and therefore an extremely stable cost base;
 - Energy is and will always be in demand and therefore sales are guaranteed;
 - Wind Energy has no carbon emissions and therefore benefits from the Emission Trading Scheme;
- Wind Energy is viewed as a good investment by banks and superannuation funds and therefore will attract interesting financing rates.

Additionally you get to do something morally good and sustainable – not only for the environment but also for the security of your local energy supply and for the community you're living in!

With **Australian Community Energy** the investor also gets the security of having someone with international experience, know-how and tools to develop a high quality project without having to completely rely on external consultants, plus we are dedicated to the development of a true community driven wind farm!

While we cannot guarantee a return at this stage, wind farms usually generate financial returns well above Government Bond Rates and are seen as attractive long term investments by superannuation funds underpinning their high investment quality.

TEN GOOD REASONS FOR COMMUNITY WIND ENERGY

1. Local ownership results in better planned and acceptable installed wind capacity.
2. Local ownership creates local dialogue and involvement.
3. Local ownership raises public awareness.
4. Local ownership helps to resolve problems and conflicts.
5. Private investment promotes cheaper and better technologies.
6. Local energy generation demands less transmission lines and saves on electricity transmission losses.
7. Local wind turbines are living democracy.
8. Local renewable energy generation demonstrates leadership in ecologically sustainable development for the wider Australian community.
9. Local ownership gives people the opportunity to act and educate for ecological sustainable development.
10. Local ownership keeps the profits in the local community.

WHO IS BEHIND AUSTRALIAN COMMUNITY ENERGY

Australian Community Energy was formed by three seasoned experts in wind farm development. We've created this company to facilitate our ideas to develop community driven investments and allow project development as a true local and collaborative venture utilising our know-how and experience rather than imposing a development on a local community. We want to lift the spirits of our Australian communities and facilitate private investment in renewable power generation. We strongly believe that this is a great opportunity to show that renewable power generation is in everyone's interest and not just benefits the large corporations. We are passionate about renewable energy, sustainability and combating climate change. We strongly believe that community ownership will be the key to a thriving industry, prosperity of local council areas and pride of the locals in regional Australia!

OUR VISION



We want to facilitate the successful sustainable development of renewable energy projects, by and for Australian communities, by providing our expert service and management of the development process on behalf of the local communities. We have confidence in the merits of communal cooperatives. We endeavour to provide a strong and lasting link between residents of a community and their own renewable power generation by combining best practice wind farm development with best practice

cooperation. We are committed for the long term and intend to take responsibility for our actions by not only providing support for the development phase, but also supervising the construction and managing the operation of our wind farm projects. Together with the community, we plan to develop renewable energy options that until now have not been available to local communities.

We consider this truly ecological sustainable development!

OUR REWARD

Australian Community Energy is a business and as such we strive to be successful. We want to link our success to the success of our projects. We are **not** developers seeking to make a large development profit, we are **not** sophisticated investors trying to maximise fees by creating complex investment structures. **We are** engineers, scientists and consultants with a passion for renewable energy. We believe in simplicity and will not create any investment structures attempting to detach the community control from the business. We aim to establish easy to manage concepts tailored for a sustainable future that can be easily understood by everyone. Only true understanding allows proper control and the recent events in the global economy have drastically shown us how important this control is, further supporting our concept of simplicity and accountability.

We of course also have a business interest and our aim is to secure work for us as expert consultants strongly linked to the success of the projects we develop. Accordingly, we suggest our remuneration be split in two parts:

- **Fees for work**

We intend to minimise development costs for the project by doing most of the permitting and design work required for a wind farm project in-house. Between the three directors we cover most disciplines required for the planning and permitting stage and we'll endeavour to use local expertise for areas we're not covering ourselves. For the work we do as consultants during the development phase of the project we intend to charge a fixed rate that is a substantial reduction (approximately 50%) of our usual fees.

- **Reward for Success**

As we will work for substantially reduced fees we would like to balance our remuneration with incentives related to the successful completion of the development which would be at commencement of construction & operation. Our remuneration model is clearly linked to the success of the project, and as we intend to take some risk and responsibility for our work we would like to be remunerated in form of shares in the wind farm cooperative.

THE PEOPLE IN AUSTRALIAN COMMUNITY ENERGY

DR RICHARD FINLAY-JONES, *BScAgr DipEd MBA DBA*



Richard has been in the renewable energy industry for approximately 10 years and was involved in developing a variety of wind farm projects in Australia. Richard has a bachelor degree in Agricultural Science, an MBA and DBA as well as a Diploma in Education. Richard is the owner of EcoEnviro, a consulting firm specialising in Emission Reduction Strategies, Carbon Sequestration, Land Management Services, Forest Management Services, Biomass/Green Energy Projects and Wind Farm Development. Richard is leading the land acquisition and stakeholder communication for a number of wind farm developers in Australia. Richard has excellent

communication skills and a vast experience in landowner discussions, community consultations and relationship management.

Richard's role in Australian Community Energy is to manage all local contacts, the landowners, the relations with Council, with stakeholders, and with permitting authorities

STEPHEN MCCALL, *BEnvSc*



Steve is a senior environmental planner/scientist with substantial experience in Wind Farms, Major Project planning and application preparation and management. Steve has been the principle Project Planner responsible for managing the entire planning process for small, medium and large renewable energy projects in both Australia and New Zealand, including; consultation with Statutory Authorities, key stakeholders and community; preparation of environmental impact assessments; visual impact assessments and the project management of sub consultants. Steve has project-managed Part 3A Major Projects for several NSW wind farms and also worked with local councils for smaller projects.

Stephen has a background in the landscape construction industry and extensive Project Management skills that complement his role as Principle Environmental Planner. Combining Stephen's landscape and scientific background with his legislative knowledge as an environmental planner provides him with a unique combination of practical skills to develop contemporary solutions to project and environmental issues.

In Australian Community Energy Steve will manage the permitting process and any planning issues during the development phase.

BERNHARD VOLL, *MScEng*



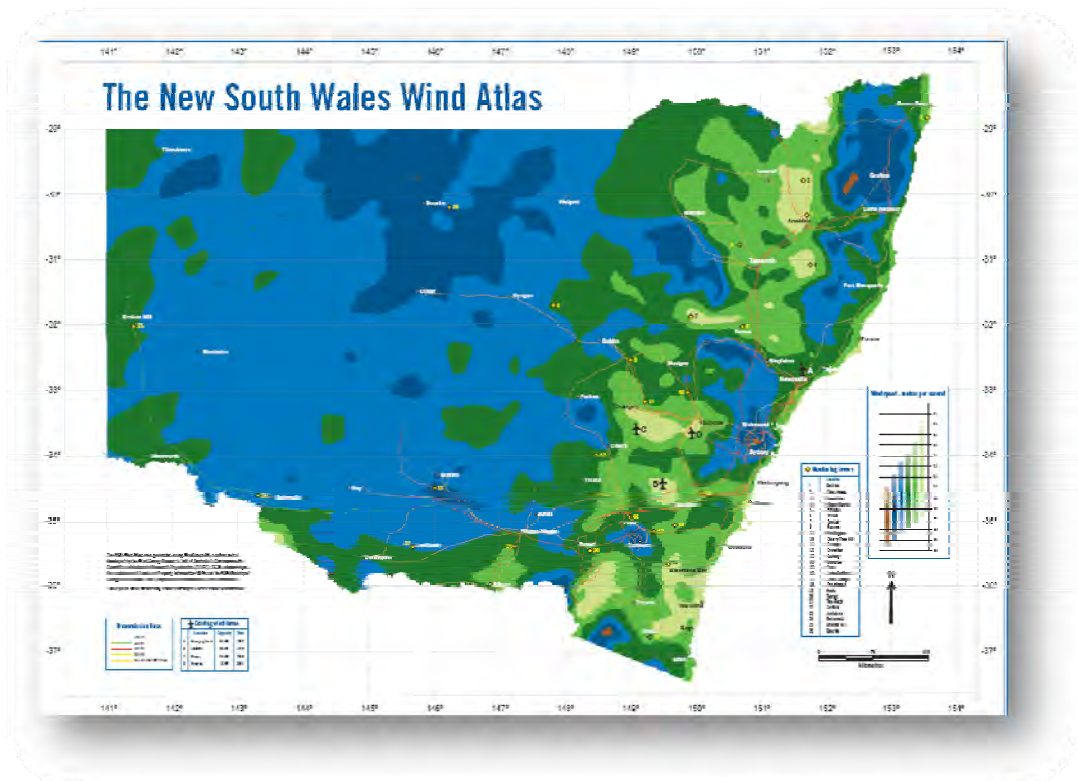
Bernhard is an electrical engineer with more than 15 years experience in the utility industry holding positions as network planner, operations and construction manager and CEO of a vertically integrated utility supplying electricity, natural gas, water and public transport in Germany. In 2000 Bernhard moved away from the utility industry and became technical Director for a number of international and Australian developers developing wind farms in Australia, New Zealand, USA, China and India. In 2008 Bernhard formed his own consulting firm, Zephyros Consulting, specialising in technical support for solar and wind energy projects.

Whether it was wind farm design using state of the art software or technical expert studies such as Noise and Shadow Flicker, Bernhard has been responsible for all facets of wind farm development including the negotiation of Power Purchase Agreements, discussing grid connections, supply contracts and financing.

Bernhard's role in Australian Community Energy will be wind farm design, wind monitoring, and negotiation of grid connection, power purchase agreements and technical expert studies such as Noise, Shadow Flicker and Electromagnetic Interference.

NEW SOUTH WALES AND WIND

Three regions in NSW have been announced by the NSW Premier, Nathan Rees, as major wind farm areas where the Government would like to accelerate renewable energy development. According to the NSW Wind Atlas there are some good wind speed areas deemed feasible for wind farm development along the coastline from Lake Macquarie in the north, through to south of Batemans Bay as well as some regions in the New England area and around Goulburn/Cooma/Canberra.



Ideally, as a smaller wind farm with around 20MW does not require a substantial grid connection, all energy generated could be supplied to the local electricity network and provide energy for the towns around your local region therefore benefitting the local environment directly.

NEXT STEPS



We would like to introduce our concept to the local Communities in New South Wales and establish the level of interest with the intent to form a number of Community Wind Energy Cooperatives should sufficient interest in a community driven wind farm development be confirmed.

Our aim is to form the cooperative as soon as possible and develop the criteria and prospectus for the initial share offering. We intend to prepare this prospectus in close collaboration with the local Councils and would appreciate the opportunity to facilitate the respective Council's services when it comes to marketing this great idea.

Immediately following this, the cooperative share funding phase would be initiated by offering shares to the public as outlined above. Once sufficient funds are available we would commence wind monitoring and project development. In parallel, with the help of local Councils, we would like to identify and secure sufficient land for a 20MW project within the Local Government Area with good road and electricity network access. For a 20MW wind farm we would assume an area of around 300 acres be required.

The following table outlines a very preliminary timetable anticipated for the project:

Prepare cooperative model and prospectus	1/5/2009 -30/6/2009
Form cooperative	1/7/2009
Fund Raising	1/7/2009 – 30/9/2009
Commencement of wind monitoring	1/12/2009
Commencement of Development Application	1/1/2011
Development Approval	1/7/2011
Second Fund Raising for Construction	1/7/2011 – 1/10/2011
Commencement of Construction	1/1/2012
Commencement of Operation	1/7/2012

Of course this is a very crude timetable but it gives an indication about the timeframe we're talking about.

As this is a community project, a lot of information will be exchanged with the members of the cooperative and the public and we intend to manage this process in the true spirit of participation. In order to make it manageable we'll draw on our own expertise to steer the project development as project managers reporting to the board of the cooperative. We expect to provide all members with a monthly newsletter, a cooperative website and regular information meetings so everyone becomes a true part of this exciting project.

COSTS



Wind farm development is a complex exercise with many steps involved and a lot of expertise and know-how required. Typically smaller developments such as a 20MW projects require around 4% of total project funds for the development phase to cover the costs for:

- Wind monitoring
 - Wind Farm Design
 - Development Application
 - Grid Connection Process
 - Legal advice
-
- Expert reports such as
 - Noise Study
 - Shadow Flicker Study
 - Environmental Effects statement
 - Visual Impact Assessment
 - Electromagnetic Interference Assessment
 - Transport Study
 - Archaeological and cultural heritage (European & aboriginal)
 - Geotechnical and Civil Construction Assessment
 - Accounting
 - Management of cooperative

Whilst we will try to keep costs at a minimum they cannot be completely avoided. We also believe that we need to show best industry practice is possible with community projects and therefore intend to make no compromises when it comes to quality. All costs will be made fully transparent and again it will be the cooperative who decides what needs to be done, with guidance from Australian Community Energy.

SUMMARY



To conclude this concept paper we would appreciate the opportunity to further discuss this idea with local Councils, community groups and businesses and commence with the formation of several Community Wind Farm Cooperatives as soon as possible. To give us security we would like to do this on an exclusive arrangement for a certain period. We will commit substantial resources to further developing this concept and look forward to working with the local community in establishing the first real community wind farm in New South Wales.