https://retreview.dpmc.gov.au/online-submissions

Introduction

Heartland Farmers Association was formed in early 2013, evolving from the Yorke Peninsula Community Group that formed in 2009 in response to the threat of Senvion's 'Ceres' 197 turbine development proposed for prime cropping land on the Yorke Peninsula in South Australia. The project was granted approval by the state Planning Minister in February 2014, a few days before the government went into caretaker mode, and with 54 conditions attached. These include five reserve matters that must have further ministerial approval; the final design & lay out of all turbines, underground and undersea cabling, roads and associated infrastructure.[1]

The Ceres Project is yet to secure either a Power Purchase Agreement or funding.

Currently there are over 270 members of Heartland Farmers. Members are primarily landowners, farmers & local residents who all oppose the Ceres Project.

Overview

The local community has overwhelmingly opposed the Ceres Project. In March 2013, the Yorke Peninsula District Council unanimously voted to oppose the project, as it was at variance with over 100 objectives & principles of the YPDC Development Plan.[2]

The Black Point Progress Association,[3] the Sheoak Flat Progress Association, the Port Julia Association, as well as the state agricultural bodies Grain Producers of South Australia[4] & Primary Producers of South Australia also unanimously opposed the Ceres Project.

One of the key reasons for this opposition is the negative economic impact the Ceres development would have on the neighbouring farming enterprises and on tourism in the region.

The RET in its current form will impact these local small businesses twice; once as farming yields are reduced and tourism impacted, and again through the high power prices paid by these businesses & residents.

Background

The Ceres Project initially involved two local land owners who tested wind-speeds over a number of years, and then approached potential developers with this data and a list of 22 other local landholding families who would be willing to host turbines. This region was not picked for its ideal wind conditions. Many Heartland Farmers members were invited to participate as hosts but chose not to, as they believed that their land was more valuable if it was unencumbered by both turbines and contracts. This is evident in the piecemeal layout of the proposed development.[5]

The majority of the turbine hosts are either non-farming landowners, absentee farmers or traditional, small-scale, exit-generation farmers. By contrast, many of the Heartland Farmers members run agricultural enterprises that are committed to continually improving farm output through the implementation of innovative techniques such as minimal-till farming and the use of aerial agriculture.

Agriculture on Yorke Peninsula

The Ceres development has set an unwelcome precedent; for the first time in Australia, a large turbine development has been approved on prime agricultural land. Prior to this, turbine developments have been place on grazing land, rocky outcrops or coastal land of low agricultural value.[6]

Primary Industries & Regions SA have stated that the Yorke Peninsula is South Australia's leading grain producing area, and by a substantial margin.[6] The Yorke Peninsula reliably produces ¼ of the state's grain harvest,[2] & wheat alone is South Australia's biggest export earner.

PIRSA have also reinforced the importance of aerial agriculture on production levels, as highlighted by all YP Agronomy Companies. In short, the aerial application of products to treat diseases such as rust, pests such as mice, as well as fertilise at critical times is crucial to maximise yields. Should 197 turbines be placed near the boundaries of over 50 non-involved neighbouring landowners, this crucial tool will not be easily available to them. As such, local agronomists state that an average yield loss would be 10% on a normal year, but in times of disease or pest outbreaks, this could be as high as 80% losses on some paddocks.[7] To put this in an economic perspective, a 10% yield loss equates to a $6 million shortfall per annum, 80% losses over the impacted area could result in $48 million shortfall in income.[8]

In an attempt to mitigate this acknowledged issue, the proponents have entered into a commercial, confidential agreement with one local agricultural aviation provider to switch turbines off if given 24 hours written notice. However, Heartland Farmers have obtained expert advice from a US aviation agricultural authority, stating that such an agreement is insufficient & unworkable.[9]

Tourism

The proposed location for the Ceres turbines is adjacent to the coastal regions of Pine Point through to Port Vincent. Along this strip of coast are over 1200 residences; many of them second homes/lifestyle properties used for holidaymakers. Worldwide, studies such as Peter Reardon's "The Impact of Wind Turbine Developments on Surrounding Rural Land Values in the Southern Tablelands, NSW"[10] & the NSW Valuer General's report [11] clearly outline that such lifestyle properties are most impacted by falling values once a wind turbine development is built.

Concerns regarding noise, health & safety issues (aerial firefighting, accident retrievals, blade throw & catastrophic turbine failure) can all play a part in peoples reluctance to invest in or even visit a region dwarfed by industrial turbines.[3]

Broad-based multipliers from regional input-output economic models suggest that the negative impacts on the tourism industry of Yorke Peninsula could be a loss of income to the region of at least $60m to $80m per annum. [8]

Economics of turbines

Should the REC review be unchanged and the Ceres Development proceeds, at $35/REC this development would earn nearly $70 million per annum from all power consumers.

Added to this cost would be the direct loss to agriculture, conservatively $10million pa, to tourism of $60million pa & flow-on losses to the state of another $30million pa.[8]

The Ceres Project would result in South Australians losing $170million pa on an intermittent, unreliable source of power that would only further increase the current power oversupply in SA.

Such losses dwarf any touted benefits to farmers, employment figures or regions from this development.

Conclusion

Large industrial wind turbine developments no longer have a place in Australian society. After nearly 30 years here, they still cannot exist without heavy subsidising. These subsidies are currently crippling industry and individuals alike with some of the world's highest power prices.

Added to this imposition are the additional costs borne by impacted neighbouring residents, who are also losing income & having assets devalued.

Wind turbine developments such as the Ceres Project fail economically, socially, technically and environmentally. They do not deserve the excessive taxpayer-funded support that they are currently receiving.

1:Yorke Peninsula Country Times, February 18, 2014

YP Council still concerned

YORKE Peninsula Council's position on the development remains unchanged since it requested the Development Assessment Commission recommend to the minister the project be refused development approval.

"We only became aware last Thursday (February 13) the minister had provided conditional consent for the Ceres Project to proceed," CEO Andrew Cameron said.

"The Decision Notification Form refers to five reserve matters which must be addressed before construction — final designs, specifications and layout plans for the turbines; the operations compound and converter stations; the undersea cable; the Globe Derby Park substation; the control building and temporary facilities, including temporary batching plant at the Port Julia converter station site.

"Holding these matters in reserve effectively means they remain unresolved and approval will not be forthcoming until suitable plans are approved by the minister.

"Given the fact the reserve matters comprise most, if not all, of the wind farm development and the government has gone into caretaker mode, it is reasonable to assume the newly-elected government and the planning minister will be left to finalise these matters.

"In addition to the reserve matters listed, DAC has placed more than 50 additional conditions on the proposal.

"In effect, all the concerns this council has raised have been validated by the conditions placed on the applicant.

"This situation raises the question, why has approval been granted with so many unresolved issues?

"Council is concerned that, as this is a section 49 application under the control of the Minister for Planning, we will have limited input in the decisions which must be made in order for the project to commence."

2: http://heartlandfarmers.com/2013/03/22/the-dcyps-recommendation/

3: http://blackpoint.org.au/newsletter/2013_2_BPPA_NEWSLETTER_WINTER.pdf (pg7-9)

4:

23 October 2013

Mr Simon Neldner Principal Planning Officer Department of Planning and Local Government via email

Dear Sir

This Submission is tendered as opposition to the Ceres wind farm development as proposed by Yorke Peninsula Wind Farm Project Pty. Ltd. It comes from Grain Producers SA Ltd, as recommended by its Agricultural Security and Priority Committee.

The objection to this "Development" is NOT to the principle of wind energy, BUT to the placement of wind turbines in an intensive agriculture region where a long established, successful, and ever improving industry is already renowned and entrenched. To call this proposal "development" makes a travesty of the word, since the placement of wind turbines amongst an area of advanced and intensive grain production will adversely affect the industry that is already thriving. If it is the wish of State and Federal Governments to develop agricultural land, and particularly, the fertile and reliable region of Yorke Peninsula, then their attention could be drawn to road infrastructure, and investment into agricultural research to at least enable grains production to stay ahead of its international competitors. A report from Deloitte Access Economics earlier this month identified Agribusiness in the five "super- growth" sectors of the next 20 years. The demand for protein based food from Asia's middle classes was cited as a significant growth area, and this is a demand that SA grain producers can develop and fulfil.

Wind turbines amongst land used for intensive grains production will irrevocably impinge upon crop management practises. Timeliness of crop nutrition, and the application of crop protection products, is critical in maximising productivity and profitability in agriculture. To this end, aerial applications of fertilisers for nutrition, and herbicides, fungicides and insecticides for crop protection and quality, are the key to efficient and rapid management decisions as weather patterns and rainfall events unfold. Imported pests, such as Italian snails, are contained by aerial baiting of large areas of land when small windows of opportunity are presented for this practice to be effective. To restrict and deny aerial access to the cropping lands of those grain producers on whose properties wind turbines are placed, or are adjacent to such structures, is an impost on grain production that ground based machinery cannot compensate for. It is also a major concern, though the effects cannot be calculated or modelled, that turbulence caused by rotating turbines has the capacity to cause drift onto neighbouring crops or properties. Who, then, bears responsibility for that situation?

A further implication of restricted access to aviation within the area of a windfarm, is the matter of fire-fighting with
aerial bombers. The harvesting of South Australia's grain crops occurs from late October to early January, and within this period, immense numbers of complicated machines operate in conditions of heat, dust, and low humidity. With the district intensity of cropping as found on Yorke Peninsula, accidental fire outbreaks are a constant threat. Whilst ground based fire fighting units are essential for perimeter fire extinguishment, and "mopping up", aerial water bombing has proved to be an integral part of rapid fire control because the aeroplane can get access to the head of the fire where no ground rig can go. Again, to restrict or deny this access and privilege to those encumbered by windfarms, is a matter that has potential legal ramifications, as well as the personal trauma of those who are faced with this dilemma.

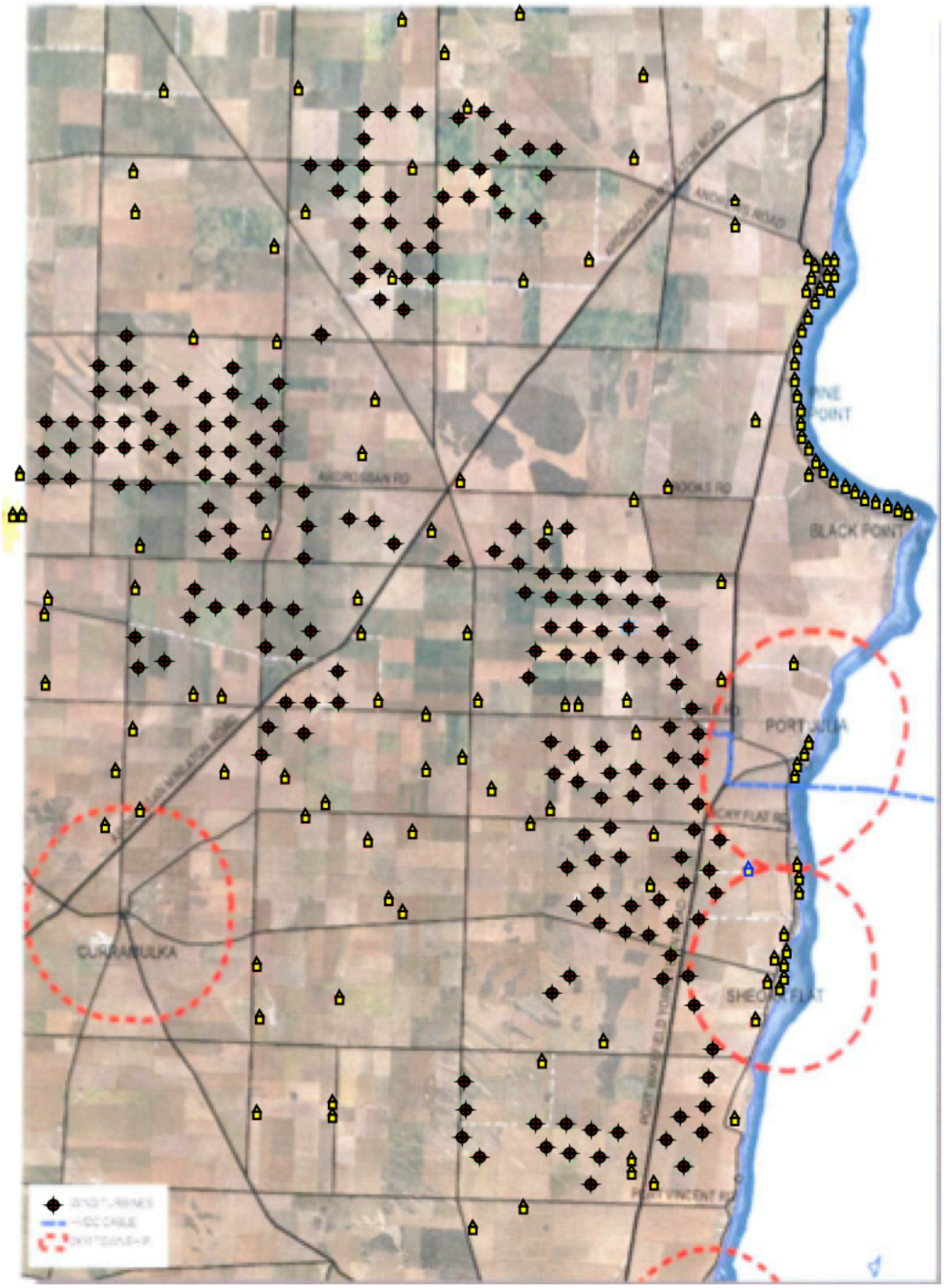
Intensive grain growing in SA is assisted intrinsically by a satellite guided Global Positioning System (GPS). Inter-row sowing to reduce root diseases and allow for sustainable stubble retention farming, controlled traffic navigation to reduce compaction and crop damage, and the use of the GPS information to plot crop production "maps" for future management and planning decisions, are part of the grain production scenario. GPSA knows of no definitive study that can guarantee that grain growers working amongst wind turbines will not have their satellite signals affected by such towers. Again, if they are, who is responsible?

GPSA opposes the establishment of windfarms where there is an imposition and impediment indiscriminately placed upon the production of grains, and where there is prior and intensive useage of that land. With but 5% of the SA land mass being currently suitable for grains production, and with the particular farming region around Curramulka, Yorke Peninsula, having no remarkable degree of "windiness", as well as not being in proximity to any electricity feeder line, it seems ludicrous that a heavily subsidised new industry should be imposed upon an industry that has financed and buttressed SA for 130 years or more.

Further, GPSA takes issue with the burden that such proposals as the Ceres Project cast upon those people threatened by this encroachment. The harmony of daily living has been violated by the necessity to commit vast amounts of time and intellect, and personal finances, into the cause of refuting the claims of the project proponents, and arguing a case to defend their security and their future. GPSA supports those fellow grain producers, who at great personal cost financially, business-wise, and emotionally, resist the incursion of an opportunistic and flawed project onto their grain producing endeavours. The already existing industry, its infrastructure, AND its people, deserve to be protected, encouraged, and supported.

Yours sincerely
Darren Arney CEO Grain Producers SA Ltd
Issue X, Month, 2013

5: Proposed turbine layout



6: PIRSA's Submission to the DAC;

2

ATTACHMENT 1 CERES WIND FARM PROJECT – PIRSA COMMENT FOR DEVELOPMENT ASSESSMENT COMMISSION (DAC) CONSIDERATION

In addition to considering the economic and infrastructure benefits of the project outlined in the letter, in relation to the land based elements of the proposal, PIRSA notes the following:

1. This project differs from other existing wind farm developments in the Mid-North and Yorke region in that it is situated on relatively reliable and high yielding cropping land. The District Council of Yorke Peninsula, where this project is situated, is South Australia's leading grain producing local government area (LGA), and by a considerable margin. As such, PIRSA would be concerned about any impacts that may curtail or otherwise affect broadacre cropping activity in the district.
2. PIRSA understands that this industry employs local aerial agriculture contractors for spraying and spreading activities at various times of the year, and in response to particular disease-risk events. In this context, the presence of wind turbines may have an impact on agricultural activity and production because of aircraft exclusion zones (around turbines) recommended by the Australian Aerial Agriculture Association (AAAA). Please note that the AAAA is an industry body; not a regulatory authority.
3. Note also that while farmers have the option of using ground-based rigs for spraying and spreading operations, aerial delivery is often preferred for reasons of:
    a. Timeliness, especially where there is a short window of opportunity for treating a potential pest or disease risk event (ie. treatment needs to occur within an afternoon rather a week);
    b. Traffic-ability of paddocks in winter; and
    c. Minimizing traffic damage and consequent production losses in maturing crops.
4. PIRSA believes loss of production associated with the footprint of the 199 towers and their immediate service area is unlikely to be significant in an LGA that typically crops around 250,000 hectares each year. However, consideration should be given to the effect of aircraft exclusion zones on total cropping area and production in this part of the district as it may be more substantial. These effects might arise directly, as a result of reduced cropping activity on land subject to exclusion zones; or indirectly, as a result of normal agricultural operations being compromised by inability to employ aerial agriculture services. PIRSA recommends that DAC's assessment include consideration of the dimensions of this effect.
5. Mindful of the potential implications of aircraft exclusion zones, PIRSA also notes the potential for "spill-over" effects on those non-participating landholders who own land inside or immediately outside the nominated project area. Participating landowners have, by definition, agreed to the installation of wind turbines and, presumably, accept the effects for their agricultural operations and business; non-participating landowners have not done so. PIRSA recommends that DAC's assessment also consider the effects on those businesses and the options for mitigating these "spill-over" effects.

7:

I am writing on behalf of YP Agriservices and our customers. We are an agronomic consulting and retail business on the Yorke Peninsula with branches in Kadina, Maitland, Curramulka and Yorketown.

As a business we always strive to do the best by our customers through accurate advice focusing on profitability and sustainability. A key part of our role for our customers is to identify and manage pest and disease outbreaks in which we utilize all resources available to us including the use of Aircraft.

The change in farming practices over the last 10-15 years from full cultivation to minimal tillage has led to a number of pests emerging as serious problems that need to be controlled in an efficient and timely matter. Two of these are Snails and Mice. To control these pests over large areas, before too much damage is done, the best and most efficient way is to use an Aircraft. This is due to the way mice attack the newly sown crop. Before the seed germinates mice can eat anywhere from 10-80% of the seed (depending on numbers) having a huge impact on yield. The longer baiting is delayed post sowing, the greater the amount of damage. Without being able to use aerial application of bait it is possible to lose large amounts of yield potential simply through not being able to apply bait quickly enough through ground based spreaders. The use rate of the control measures for these pests is relatively low with only a few kilograms per hectare of product being applied. Ground based application of these control measures is relatively inefficient and at times impossible due to the ground being too wet to use ground based spreading.

Snails are also a wide spread problem which need to be controlled in a timely manner. Due to them being a widespread pest and effective control depending on rainfall events, we need to be able to spread bait over large areas in a short amount of time, hence the use of an Aircraft plays a big role in their management also. In many cases the control measures for snails need to be applied late in the growing season which is ideally suited to aircraft as the wheel tracks from ground based units can lead to significant crop damage in many cases around 8% loss is possible from wheel tracks alone. Snail contamination can cost growers a minimum of $20/t but this can be significantly higher if the grain is rejected at the delivery point.

The plane is an important tool in managing diseases in nearly all of our crops. Rust in Wheat and Barley, Ascochyta Blight in Faba Beans, Native Budworm in all Legume Crops, Aphids and Native Budworm in Canola are all pests that need to be controlled in a timely matter to protect the yield and quality of our Crops. Without being able to use an Aircraft and with the majority of our customers owning Tractor pulled Boom Sprays rather than Self-Propelled, these pests are very hard to keep on top of over large areas, especially when in many cases there is only 2-3 days over a period of 2 weeks when the weather is suitable for ground spraying. Converting over from Tractor towed to Self –Propelled Boom Sprays is very expensive (around $150K) and many growers will not be able to justify this expense or the higher ongoing costs to run these machines.

This is where the plane comes into its own as an important tool for disease and pest management. Often it is used as the last resort where due to bad weather, break downs or simply a huge disease or pest outbreak it is necessary for large areas to be treated over a very short period of time to avoid large and costly yield losses.

Currently there are growers moving to, or at least considering moving to Controlled Traffic farming in an effort to minimise soil compaction which can be a significant problem in some areas of the Yorke Peninsula. Where possible these growers will need to utilize an Aircraft to minimise track damage within the paddock. If all management of the crops has to be carried out by ground based units I believe this will make Controlled Traffic Farming very difficult, if not impossible.

In wet seasons in which there is a much greater requirement for Nitrogen based fertilizers to be applied to

Cereal and Canola crops, the Aircraft is relied upon to apply these fertilizers. Urea which must be applied prior to rainfall events is used to maintain yield and quality in favourable seasons. These favourable seasons are vital to our growers and must be capitalized on by our growers for their long term viability. If conditions are too wet on the ground an Aircraft must be used for this to be carried out. Late applications to boost Canola yields a practically impossible by ground based units.

If the use of Aircraft was lost as a management tool, the cost to the affected growers could be significant, especially in favourable seasons and could easily be in the order of 10 – 20%. It would add considerable additional risk to their farming enterprise. Not all operations carried out by the Aircraft can be substituted by ground based options and mitigating many of the risks associated with this will come at additional cost to affected growers.

Regards

Troy Johnson

Senior Agronomist YP AG

Troy Johnson YP AG

8: Presentation by Dr Roger Sexton & Barry Noble, Black Point Progress Association, to the Select Committee looking at windfarms, June 12 2013

3.1 Overview on Long Term Costs

- The proponents of the Ceres Wind Farm project have submitted that the project will generate economic benefits to the Yorke Peninsula region of $8 million per annum – on the assumption that the wind farm operates at maximum output of 600MW.

- These benefits (if true) are miniscule compared with the economic costs to the Yorke Peninsula region resulting from the negative direct imposts on prime agricultural land and the tourist industry and the indirect imposts created by the noise, visual amenity and health impacts of wind turbines!

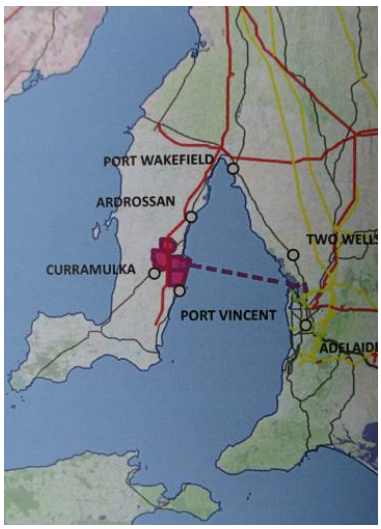
- If this Ceres Wind Farm project is to be considered any further…….a full cost/benefit analysis should be undertaken before final decisions are made, and that study should be undertaken by a reputable, independent body, such as the South Australian Centre for Economic Studies.

- The proper economic facts need to be put on the table about the project.

- Some preliminary work on costs has been done in our submission … by looking at the impacts on both the tourism industry in Yorke Peninsula and the agriculture industry.

3.2 Impacts on Tourism

- The Ceres Project, if it goes ahead, can be expected to have a very deleterious impact on tourism to the area surrounding the proposed wind farm.
- Tourism is a major part of the local economy in the coastal strip that runs from Ardrossan to Stansbury.
- This is the area that will be most affected by the visual, health, safety and noise impacts of the Ceres Wind Farm. Broad-based multipliers from regional input-output economic models suggest that the negative impacts on the tourism industry of Yorke Peninsula could be a loss of income to the region of at least $60m to $80m per annum.



3.3 Impacts on Agricultural Industry

- On top of this, is the impact on agricultural production. ABS data shows that the farm lands of Yorke Peninsula consistently produce around 25% of the States annual grain production.
- The proponents of the Ceres Wind Farm Project have submitted that the wind turbines will affect an area of 180 square kilometres.
- However, because the wind turbines criss cross the Peninsula across participating and non-participating farms, the actual footprint of farm land affected by the wind farm project is an area of some 400 square kilometres.
- Because aerial agriculture (spraying, baiting, seeding, fertilising and fire fighting) will be impeded by the wind farm development, local farmers and agronomy companies have estimated that the annual crop yields on the impacted farm lands will be reduced by at least 10%, with possible yield losses of up to 80% in the case of severe pest, disease or fire outbreaks.
- Given that the farm lands in the region produce $1,000 to $2,000 per hectare per annum, a conservative estimate of the potential reduction in agricultural income is between $6 million and $12 million per annum.
- And those numbers would be much higher in the event of a severe pest, disease or fire outbreak.

3.3 Impacts on Agricultural Industry *(continued)*

- The flow on effects to the State's economy can be estimated at between $23.0 million and $46.0 million, based on economic multipliers which have been calculated for agricultural regions with similar characteristics to the Yorke Peninsula.

- In short, the negative impacts or economic costs on the Yorke Peninsula region (and its people), from the tourism and agricultural industries alone, are likely to be in the order of 8 to 10 times the benefits which the Ceres Wind Farm developers have claimed for their project.

- It defies logic that an area of such high quality agricultural land, which generates enormous economic returns for the State, has been put forward for a wind farm project … a project which in itself does not stack up on either economic or social/environmental grounds.

3.4 De-commissioning Costs

- The builders of wind farms should, at the end of their economic life, have an obligation to return the land and the environment to their earlier condition.

- But how is that obligation to be enforced?

- It is not sufficient for the developers of the Ceres Project to say "trust us", and "we will be responsible for taking the turbines down".

- The Developers have claimed that the salvage costs could be expected to cover the cost of decommissioning. But, it is difficult to believe that the cost of pulling down the turbines, and then removing and transporting them, would be offset by the salvage value.

- In a report for a proposed wind-farm near Canberra, to be built by Ratch-Australia, the Engineering Consultants, Sinclair Knight, estimated that the cost of removing just one column and turbine from a wind farm is $375,000.

- So removing 199 turbines would cost close to $75 million (in today's dollars). And this does not include the cost of the massive concrete slabs which would be left in the ground after the turbines themselves are removed.

9:

October 12, 3013

TO WHOM IT MAY CONCERN:

I have been asked to state my opinion and give an educated evaluation of the Ceres Project proposed for the Yorke Peninsula. I am in no position to comment on the overall economic feasibility of this project, or its potential impact on quality of life for those citizens within, and adjacent to, the footprint of the proposed wind development. Those are not my areas of expertise. I am qualified, however, to submit evidence on the impact to aerial applications which will be affected by the Ceres Project.

My name is Rick Reed, and I have just recently retired as owner/operator of my own aerial application company which I founded 37 years ago in Mattoon, Illinois, USA. I hold a multi-engine Airline Transport Pilot (ATP) certificate and have over 16,000 flight hours of which approximately 14,000 hours were logged in agricultural aircraft. I am currently licensed as a commercial aerial applicator in 12 states and have experience in everything from row crops and small grains, to wide scale mosquito applications to forest vector control in mountainous regions. I have a BS degree in Agriculture from the University of Illinois and served four years as a U.S. Army Field Artillery Officer. My dedication and service to my industry is a matter of record. I was elected Vice-President of the National Agricultural Aviation Association (NAAA) in 1987, and served as NAAA President in 1992. I served on the Board of Directors of the National Agricultural Aviation Research and Educational Foundation (NAAREF) for four years. The agricultural aviation industry in the State of Illinois is represented by the Illinois Agricultural Aviation Association (IAAA.) I have served as President of that Association three times for a total of 5 years. I am currently the IAAA Executive Director, a position I have held for over 30 years. As such, I am the primary liaison in communications with Illinois legislature and regulatory agencies on matters pertaining to agricultural aviation.

Wind development in Illinois began in earnest about 10 years ago, when regulatory mandates for renewable energy resulted in a frantic scramble to build wind farms on prime Illinois farm ground. The competing wind developers were often asked the logical question by target farmer customers, "Will I still be able to have aerial applications on my farm ground?" Unfortunately, the routine response was less than candid and farmers were assured that any impact would be negligible. That was not the case then, and it has been proven false countless times as wind farms were erected and placed into service. As a direct result of misinformation being distributed, the IAAA Board of Directors created a resolution to clarify our position with farmers and landowners. It was originally passed in 2005 and was reviewed and re-endorsed in 2009. It says:

ILLINOIS AGRICULTURAL AVIATION ASSOCIATION RESOLUTION

WHEREAS, we acknowledge the need for affordable electric power and the efficient distribution of that power to the point of its consumption, and
WHEREAS, we acknowledge the environmental benefits of wind generated electrical power, and
WHEREAS, we understand the financial considerations involved when decisions are made to place wind turbines on otherwise productive farm ground, and
WHEREAS, wind turbine generator farms create uniquely hazardous and unacceptable dangers to pilots flying agricultural aircraft in a ground environment,

WE HEREBY RESOLVE that, in the interest of pilot safety, we will refuse to make an aerial application of any product inside a grouping of wind generators, or to farm land immediately adjacent to a grouping of wind generators, should that proximity be considered hazardous by the pilot of the agricultural aircraft.

It is obvious that what we are most concerned with is pilot safety. It is dangerous to fly around wind turbines and that cannot be easily dismissed. The potential for pilot vertigo provoked by turning blades is very real. The most dangerous obstacles are those encountered in a turn and turbine induced turbulence can be a huge factor when the aircraft is heavily loaded in a banked turn. Some find the risks unacceptable, and no one sends low time, first year ag pilots to work in a wind farm. It is challenging and, sometimes impossible; to completely treat all of a field in the turbine environment but conscientious pilots will try. I have personally flown in and around wind turbines and it is, at best, intimidating.

Following the release of this resolution, I was contacted by several of the wind development companies who indicated they were willing to learn more about the true physics and intricacies involved in making aerial applications in close proximity to wind turbines. It also opened the door to more productive discussions on adequately marking the temporary towers erected across the state to obtain meteorological data, which have proven to be deadly obstacles. My personal involvement with wind developers continues as I have been recognized as the primary spokesman for our aerial application industry in Illinois. I have presented at a wind conference hosted by the Illinois Wind Working group, and testified as an expert witness in both public hearing venues and courtroom settings.

The reality is that wind developments and productive agriculture can coexist, but not without making sacrifices. Experience has shown that there will always be a percentage of farm ground that will become inaccessible from the air. Proponents of wind energy who argue against that fact do so without any basis. What percentage will be affected depends on the concentration of the wind turbines and how they are laid out relative to the affected farm ground. Ironically, fields which have no turbines within their borders are sometimes more affected than those with turbines erected.

Turning off the turbines during applications was initially offered here as the "solution" to farmers and landowners who are concerned about losing the option of aerial applications. Yes, that eliminates the potential for pilot vertigo and reduces the downwind turbulence caused by turning blades. But they remain as formidable obstacles. There is also a misconception that any viable plan to turn off the turbines pertains only to the one(s) in the field being treated. When told that all turbines for a mile (1.6km) around the treated field need to be shut down as well, companies begin to balk. The advance notice required is also too prohibitive and requires scheduling which does not address the reality of unpredictable weather. Wind developers in Illinois have conceded that the logistical nightmare and minimal resulting impact make any shutdown plan impracticable.

There currently are at least 10 wind developments in existence in Illinois. All have impacted prime Illinois farm ground. The ag aviation companies who service customers in, and around, those wind developments charge extra to do so. The standard upcharge is 50%. Those companies have written policies outlining the additional charge and containing disclaimers that some fields may not be treatable at any price. Some of those policies also specify that the restrictions and additional fees may also apply to fields within a mile (1.6km) outside the actual footprint of the wind development. The higher charges are not a penalty, but are a reflection of the impact on aircraft efficiency and profit margin caused by the presence of wind turbines. It is becoming common for wind developers to offer to subsidize aerial applications when premiums are charged. There are also some Illinois ag aviation companies who have gone on record as refusing to send planes into a wind development at all.

There are several aspects of the Ceres Project which are cause for concern. Documents and comments I have read seem to indicate they are trying to convince farmers and landowners that there

will be no impact on aerial applications at all. Facts would dispute that claim. It is not clear to me whether that contention only pertains to adjacent landowners or whether they have convinced participating landowners of that mistaken claim.

I judge the strength of the argument by Ceres is their confidence that shutting down the turbines will result in "no impact" of the turbines on adjacent landowners. I suggest that a more feasible plan would be to guarantee that shutting down all turbines within 1.6 km of a field scheduled for treatment would *minimize* the impact. My guess is that will never happen. I find it curious that the Ceres claim is based on a contract with the aerial application company currently providing service in the area. It is my opinion that Aerotech may take the position that they will do everything within their power to minimize impact of the turbines, but it is irresponsible to guarantee zero impact. I also doubt that Aerotech has provided written guarantee to all affected landowners that they will be in business for the life of the wind development. Most assuredly, Ceres has not provided that assurance and that means the agreement is essentially meaningless.

The logistics involved in efficiently turning off and on the turbines are formidible, as wind companies here in Illinois have learned. Advance notice is obviously required and may not coincide with optimum weather conditions for application. The opportunity for immediate, timely treatment is lost. Ceres must commit to having a multi-person staff on duty 24 hours a day during the months when applications are made. There also appears to be a lack of understanding of generally accepted practices in agriculture on the part of Ceres. Application of agricultural chemicals in a no-wind situation is discouraged for both air and a ground application because it generally indicates a temperature inversion is present. The optimum time and wind speed for aerial applications will most probably be when the turbines are active. Wind speed, or lack thereof, will not be mutually exclusive.

Pilot safety is not the only reason to shut down the turbines. The reality is that sometimes applications can be made safely even though the turbines are operating at full speed. However, the risk is high that downwind turbulence close to the ground will cause products to drift off the target field. In the United States, that amounts to a violation of federal law and is punishable by a fine or worse. It is of no consequence that damage may not have occurred. I assume Australia has similar regulations.

I asked for a sample map depicting a non-participating landowner adjacent to the Ceres project, so that I could evaluate impact. A drawing of property owned by Martin Hayles was provided, which showed two parcels of farmland. It appears that eight turbines border very closely to his property. That would definitely affect a pilot's ability to treat 100% of Mr. Hayles' farmground, especially with a north or south wind. It is a generally accepted practice to anticipate wind will move the product being delivered downwind and, consequently, the pilot will "lay over" accordingly, even if it means flying outside the border of the target field. It appears that would not be an option on the larger field. Applications of dry materials such as seed, fertilizer, and bait would be most affected, since the aircraft would be performing at a higher altitude above the field. In addition, the stipulation would be that all turbines within 1.6 km of his property be shut down during the optimum time for treatment. That would appear to be about 24 wind turbines. I suggest that won't happen. Incidentally, aligning the blades parallel to the flight path is of no consequence. The blades will be above the aircraft during the actual application on the target field and, while in the turnaround operation, the aircraft isn't flying in a straight line.

A question was posed to me regarding potential protection of Mr. Hayles' house and property if firebombing became necessary. I have limited experience trying to extinguish a fire by air but logic would say that the amount of smoke present would dictate that potential. No pilot I know would risk flying into an area dotted with wind turbines obscured by smoke.

I have studied the layout of the proposed Ceres wind farm, and projected it on a Google photograph of the actual farm ground affected by the project. It is my considered opinion that aerial applications within the actual footprint will definitely be adversely affected to some degree. It is also apparent that pilots attempting applications on adjacent non-participating landowner farm ground will often be

faced with the same obstacles as found on participating landowner's property. I suggest Ceres could be forthcoming and acknowledge that reality. Should the Ceres project go forward as proposed and the inevitable disruption to aerial applications occur, the landowners will have no recourse. Ceres and Aerotech face no penalties short of litigation for breach of contract after the fact.

Wind turbines are not operated trouble free. There will be breakdowns and routine maintenance. I suggest asking for a written statement of policy, especially as it pertains to aerial applications. Placing workers in close proximity to fields being treated with a variety of products is a liability concern. Who will have priority; the turbine mechanics or the landowner being aerially treated?

While pilot safety is our association's stated concern over wind developments, it must also be explained that we profess an obligation to maximize productivity on every tillable farm acre. We need that now and we most certainly need it in the future as the world population nears 8 billion. Higher yields of all our major crops have been the result of new technology developed over the years. Research is ongoing which guarantees even higher productivity. It is not hard to envision a new enzyme or fertilizer introduced 10 years from now which can potentially double yields if applied in a timely fashion *only by aircraft.* Farm ground inaccessible by air will never again reach full potential.

Farmers in the United States and around the world are faced with the challenge to produce enough food for all, while losing more valuable farm ground each year. In our opinion, it is an unacceptable choice to permanently affect the productivity of farm ground in favor of attempting to inefficiently harvest the unpredictable energy of wind. Proponents of this energy source quickly become silent when asked to explain the future of wind energy if government subsidies disappear. At some point in time, the turbines may cease to turn but the obstacles to efficient aerial applications will remain.

I appreciate the request for my input regarding the proposed Ceres Project. It is my hope that I have adequately addressed your concerns and questions. Should you need anything further, please do not hesitate to contact me.

Sincerely,

Rick Reed
Reed's Fly-On Farming

10: http://docs.wind-watch.org/Reardon_Impact-of-Wind-Farm-Development-on-Land-Values_2013.pdf

11: http://www.goyder.sa.gov.au/webdata/resources/files/Attachment_4.pdf