

**Submission
No 60**

INQUIRY INTO RURAL WIND FARMS

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The Director
General Purpose Standing Committee No. 5
Parliament House
Macquarie St
Sydney NSW 2000

Dear Sir/Madam

Inquiry into rural wind farms

Thank you for the opportunity to provide a submission into the above inquiry. With the recent passing of the Mandatory Renewable Energy Target (MRET), Australia is poised for significant growth in the renewable electricity generation sector. The inquiry's timing and scope is therefore all the more relevant.

ACCIONA Energy

ACCIONA Energy belongs to the ACCIONA Group (<http://www.accion.es/>), and has been established in Australia since 2002. The Company operates as ACCIONA Energy Asia Pacific (AEAPac) and comprises a significant and growing team of Australian professionals.

ACCIONA Energy is one of the world's largest renewable energy companies dedicated to the development, construction, operation and ownership of projects. The company has installed in excess of 5,400 MW of renewable energy worldwide, has another 700 MW under construction, and over 15,000MW in development. This includes wind farms, solar energy generation (both solar thermal and solar PV), biomass, biofuels and mini hydro facilities.

ACCIONA has built over 195 wind farms in 13 countries, is the sixth largest manufacturer of wind turbines and is positioned as a world leader in the implementation of wind technology.

ACCIONA Energy's Australian operations

ACCIONA Energy has a significant and growing pipeline of projects under construction, in the 'construction ready' stage and/or awaiting planning permits. Construction the Waubra wind farm, located 35kms north-west of Ballarat in Victoria has just been completed with final commissioning currently taking place on the last of 128 turbines. With an installed generating capacity of 192MW it will be one of the largest wind farms built to date in the southern hemisphere.

ACCIONA has an additional five projects with planning consent including Gunning (48MW) in NSW, Mt Gellibrand (232MW), Berrimal (24MW) and Newfield (22.5MW) all located in Victoria. In addition to this, ACCIONA Energy has three projects in



the planning application phase including Mortlake (144MW) and Waubra North (approx 50MW) in Victoria, and Allendale (70.5MW) in South Australia. In total, this represents nearly 700MW of renewable energy projects. We also have as substantial pipeline of wind projects that are yet to enter the planning application phase with NSW being a State of significant interest to us.

The below provides a general response to each of the terms of reference established for the inquiry.

The role of utility-scale wind generation in:

a. reducing greenhouse gas emissions generated by electricity production

Utility scale wind farms, in conjunction with other new renewable energy capacity added to the grid, will play an important part in reducing greenhouse gas emissions generated by electricity production.

In 2006, McLennan Magasanik Associates undertook a detailed study into the level of greenhouse gas abatement from wind generation in Victoria. The study found that new electricity generation from wind displaces a mix of energy from hydro, gas, brown coal and imports of electricity from other states.

The level of greenhouse gas abatement was found to be dependent on the amount of wind generation, with the higher the level of wind energy, the more likely that black and brown coal generation will be displaced. Increasing electricity generated from wind farms initially reduces gas-fired generation, but as more wind is introduced into the system, proportionally more coal fired generation is reduced.

On the basis of the above, as more wind energy generation capacity is brought on line to the NSW grid, the greater the proportion of coal fired electricity would be able to be displaced.

b. producing off peak and base load power

The concept of 'base load' power has emerged not in response to our electricity demand (which is naturally higher during the day and very low at night time), but from the nature of the dominant, coal based electricity generators.

Coal fired power stations generally take a considerable timeframe to start up and shut down- such that they generally need to be operated 24 hours a day.

A fluctuating electricity demand poses a problem when combined with a base load generator like coal, and so demand (rather than supply from the power station) has generally been adapted to use the base load power produced at night time. An example of this is off peak hot water heating and large industrial smelters.

Intermediate-load and peak-load power stations provide for any additional electricity demand during the daytime over and above the coal base load level.

It's true that the wind doesn't blow all the time. However, large scale wind energy generated from geographically dispersed wind farms (subject to different wind regimes) can form a reliable, consistent source of electricity when combined with peak-load in the form of hydro or gas. Such arrangements are commonplace in European countries such as Denmark, Germany and Spain where wind power contributes a significantly greater portion of their nation's electricity generation capacity than currently exists in Australia.



It is important to note that base load generators break down from time to time. For example, coal-fired generation in Victoria's Latrobe Valley have been periodically shut down over the past couple of years due to flooding, heat waves and fires.

ACCIONA Energy holds the belief that the provision of utility scale wind farms, combined with other geographically dispersed generation sources can provide an overall greater level of electricity generation security, whilst contributing to a reduction in greenhouse gas emissions.

Locating rural wind farms to optimise wind resource use and minimise residential and environmental impacts

To be most viable, a wind farm needs to be located in an area of consistent winds. Such locations are relatively rare in NSW- particularly so when combined with a requirement for proximity to suitable electricity grid. Such locations are also rarely isolated from at least some local residential population.

In response to a vocal minority of residents, a number of NSW local councils have implemented Wind Energy Development Control Plans with restrictive provisions- including those incorporating a 2 kilometre setback requirement from residences. ACCIONA Energy opposes such provisions. We believe potential amenity impacts (including noise and visual concerns) associated with a wind farm are not efficiently addressed by merely setting an arbitrary setback. Amenity impacts vary from site to site- such that residential and environmental impacts may be negligible at distances much closer than 2 km (or any other set distance). Equally, in some circumstances, site conditions may dictate a greater buffer (a setback from certain bird flocking sites is a particular environmental example).

ACCIONA Energy strongly considers that prescriptive setbacks inappropriately restrict wind energy development in those rare locations of wind and grid. To follow such a path may significantly hamper industry development and lead to difficulties in satisfying the recently passed MRET (with resulting higher electricity prices).

The impact of rural wind farms on property values

ACCIONA Energy considers that rural wind farms may deliver a slightly positive overall impact on property values in the broader community in which they are located. This is particularly so where the wind farm is located in an area where the property values are predominantly driven by the productive agricultural capacity of the land rather than more intangible lifestyle or 'treechange' factors. This position is substantiated by:

- There being an undeniably positive impact on the values of land hosting wind farm infrastructure. Such properties typically receive a long term rental for the placement of infrastructure, whilst occupying only 1.5-2% of land area. Agricultural activities are thereby able to progress with negligible impact. Indeed in some cases, the provision of improved access tracks and supply of power to remote areas of a property may create improvements in the land's productive capacity.
- Employment creation, through the construction and operational phases of the development will create demand in nearby supporting towns. In turn,



this is likely to result in elevated values for residential and (through increased trade) commercial properties.

- Properties adjacent to the wind farm site are unlikely to be impacted as the wind farm has no impact on the agricultural productivity of that land. Indeed, the generally elevated demand created in the locality through job creation and flow of capital to host land owners may provide a slightly positive impact on adjacent land values.

ACCIONA Energy acknowledges that some potential purchasers of land may have a particular sensitivity to the visual impact of wind turbines and would not purchase on that basis. Conversely, we also consider the elevated local demand for property generated by additional employment and capital in a district, combined with the wind farm not impacting on the base, agricultural capacity of land would result in an overall negligible impact on property values.

Mechanisms for encouraging local ownership and control of wind technology

ACCIONA Energy's business model involves the development of large, utility scale wind developments, designed to provide generation at a scale suitable for connection to backbone high voltage transmission network. The capital costs involved are significant and generally prohibit the direct financial contribution by local groups to any significant degree. Local ability to share ownership and control is therefore limited to a commensurate degree. Whilst ACCIONA Energy is not inherently opposed to greater local involvement, the ability to arrive at a suitable financial risk profile between a developer/operator and local groups has to date precluded the creation of such arrangements.

Nevertheless, ACCIONA Energy sees a potential for larger developers, through their detailed knowledge of the industry, to assist local communities looking to develop their own, small scale community based wind developments. We understand one of the difficulties these groups have had is the ability to access relevant, specific information to enable them to make informed decisions on design and operational requirements of wind technology.

The potential role of energy generated by rural wind farms in relation to the Australian Government's proposed Renewable Energy Target

With the recent passage through federal parliament of the Mandatory Renewable Energy Target (MRET), we have nationally set ourselves a target of an additional 30,000 Gwh of electricity generation per annum to come from renewable energy sources by 2020. This will be a significant undertaking requiring somewhere in the order of 1000MW of installed capacity added to the grid each year. Given its proportion of population and electricity load, NSW is poised to experience a significant level of growth in achieving the MRET.

ACCIONA Energy believes the target will support wind energy in particular, being the most market ready of the technologies available. It is also anticipated that geothermal energy projects stand to benefit from the target. Beyond these two technologies, we do not see the RET driving significant investment decisions in any other mature or emerging technologies. ACCIONA Energy's significant international interests in both solar thermal, and solar photovoltaic technologies has given us a very clear understanding of the cost profile of those technologies. With this



knowledge, we consider it unlikely Australia will see any significant investment in either solar energy generation (at scale) as a direct result of the RET.

Any other relevant matter

Whilst recent announcements to streamline the planning process (which ACCIONA Energy warmly welcomes) will go a long way towards facilitating renewable energy investments in NSW, Government will also need to address issues associated with the State's electricity grid if it is to capture a significant portion of the expanded renewable energy target. Lack of available grid, limited capacity and old infrastructure are critical issues to be dealt with.

In consultation with the renewable energy industry, the NSW Government should consider the development of new and upgraded electricity grid infrastructure into areas of the state offering the best long term wind prospects as well as those offering the best solar and/or geothermal resources. ACCIONA Energy does not consider such infrastructure should be limited to provision within the recently announced Wind Energy Precincts- although many of these areas would also benefit.

Once again, we thank you for the opportunity to provide input to the inquiry. Please do not hesitate to contact the undersigned if you have any query with the contents of our submission.

Yours Sincerely

A handwritten signature in black ink, appearing to read "Iain Lawrie", written in a cursive style.

Iain Lawrie
Manger Planning